

# Pathways to Health and Healing

**2nd Report on the Health and Well-being  
of Aboriginal People in British Columbia**

**Provincial Health Officer's Annual Report 2007**



Office of the  
Provincial Health Officer

Copies of this report are available from:

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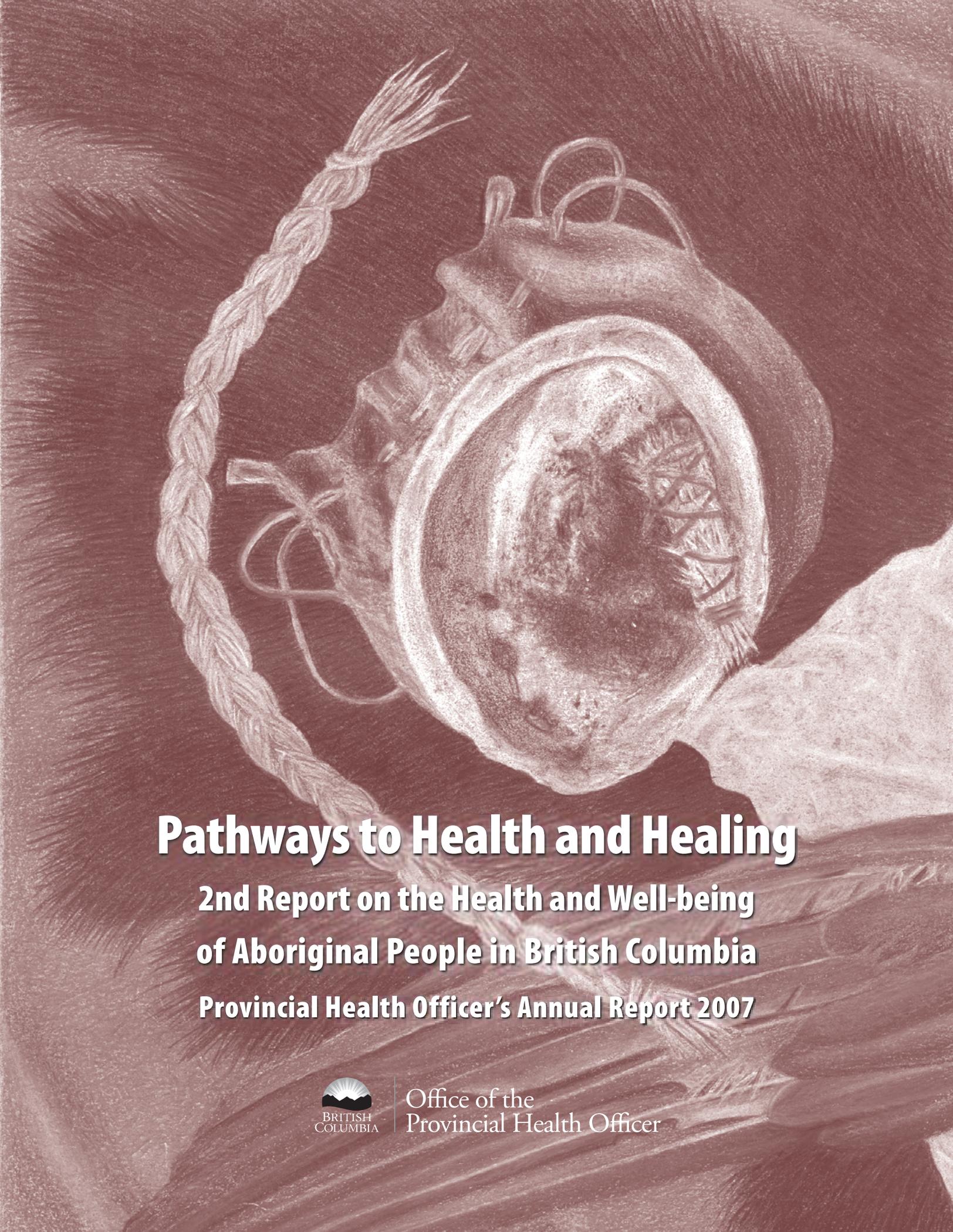
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### **Cover Art: Keilah Lukenbill-Williams, 2007.**

In 2007, with the assistance of the First Nations Health Council, the Provincial Health Officer held an art contest among school students for the design of the cover of this report. Keilah Lukenbill-Williams, a grade 10 student, was the winner of the contest. Keilah is of Coast Salish, Nuw' Chah' Nulth, and German decent. She is graduating this year and plans to study art at a Canadian post-secondary institution.



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Ministry of Healthy Living and Sport  
Victoria, BC

June 25, 2009

To the Minister:

I have the honour of submitting the Provincial Health Officer's Annual Report for 2007.

A handwritten signature in black ink, appearing to read "P.R.W. Kendall", written over a solid horizontal line.

P.R.W. Kendall, OBC, MBBS, MSc, FRCPC  
Provincial Health Officer



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# Highlights

***Since 2001, some progress has been made in improving both the determinants of Aboriginal health status and health outcomes. Nonetheless, significant gaps in health status continue to exist. Evidence shows that health status, economic and educational advances can be made by Aboriginal communities through the application of best practices and the removal of barriers and discrimination. Continuing the foundational work in the Transformative Change Accord and working with Aboriginal political entities to address the challenges should result in continuous improvements in both determinants and outcomes.***

The 2007 Provincial Health Officer's Annual Report, *Pathways to Health and Healing: 2<sup>nd</sup> Report on the Health and Well-being of Aboriginal People in British Columbia*, provides an update to the 2001 Provincial Health Officer's report on the health and well-being of Aboriginal people in BC. This report was made possible with the support of: The First Nations Leadership Council represented by Grand Chief Edward John, Grand Chief Doug Kelly and Dave Porter (First Nations Summit), Grand Chief Stewart Phillip, Chief Robert Shintah, Chief Mike Retasket (Union of BC Indian Chiefs) and Regional Chief A-in-Chut (Shawn Atleo) (BC Assembly of First Nations); First Nations Health Council and many other Aboriginal individuals, groups, and organizations in the province. In addition, in 2008, on behalf of the Provincial Health Officer, the First Nations Health Council (FNHC) hosted a series of consultations on the content and recommendations in the report with many Aboriginal representatives from different regions of the province. The result of the discussions and feedback are reflected in the report.

The 2007 report, *Pathways to Health and Healing: 2<sup>nd</sup> Report on the Health and Well-being of Aboriginal People in British Columbia*, contains eight chapters encompassing discussions on determinants of health, pregnancy, infants and children, diseases and injuries, physical environment, and health services, with a chapter devoted to recommendations on improving the health of the Aboriginal population in BC. In addition, with the availability of the 2006 Métis Nation BC Survey, a chapter is also provided on the health and well-being of the Métis population in the province. The report also includes examples of best practices, programs, and success stories in various Aboriginal communities in the province.

In 2007, under a special agreement between the BC Ministry of Health, Indian and Northern Affairs Canada, and Health Canada, and with special support from the First Nations Leadership Council, an extract of the Status Verification File (SVF) was provided to the BC Ministry of Health to be linked with their databases for the sole purpose of providing the most comprehensive data on the Status Indian population in British Columbia for this report. Through these linkages, data have been provided for 167,782 registered Status Indians in British Columbia. While these data do not include other Aboriginal groups such as non-Status individuals, Inuit, or Métis, the benefit of analysing information for Status Indians is that this is a consistently identifiable group. This affords the opportunity for statistically rigorous trend analysis and monitoring of health-related performance indicators and targets outlined in the Transformative Change Accord: First Nations Health Plan. Efforts are underway to include data on other specific groups such as the Métis population in the near future.

Overall, 64 indicators have been analyzed and are included in this report. For 57 of these indicators, we are able to report the progress since 2001. Of these 57 indicators, 18 have shown improvement, and 10 have worsened, and 8 have shown increasing rates of chronic disease conditions. The remaining indicators have shown either not much change or a fluctuation in data with no trend. The improvements have generally been seen in the decline in overall mortality and increasing life expectancy due to a decline in external causes of death such as motor vehicle accidents, accidental poisoning, and drug-induced and alcohol-related deaths. However, more effort is still necessary in these areas as the

rates for the Aboriginal population were 2 to 4 times higher than the rates for other residents based on the latest data available in 2006. Cancer mortality was lower among the Status Indian population compared to other BC residents. Overall, prevalence of chronic disease is increasing and remains higher for the Status Indian population compared to other residents. The most concerning outlier is the widening gap between Status Indians and other residents for HIV/AIDS disease, which is clearly reflective of both increased vulnerability and a lack of access to Highly Active Antiretroviral Therapy (HAART).

Compared to other British Columbians, the Status Indian population is also twice as likely as other residents to be hospitalized for diseases of the digestive system and external causes such as injuries, and five times more likely to be hospitalized for mental and behavioural disorders due to psychoactive substance use. The Status Indian population is also more likely to be hospitalized for medically preventable

conditions, which is likely a corollary of their lower utilization of MSP services. Based on data from the Ministry of Health Services, in 2006/2007, over twice as many Status Indians received a hospital discharge relating to a mental health condition than other residents.

The 2001 Provincial Health Officer's report suggested that Aboriginal people on average scored considerably lower on socio-economic ranking compared to other residents. This gap still persists, although for some communities it has narrowed considerably.

Evidence has shown that economic self-determination and educational achievements are critical determinants of health; therefore, the removal of structural impediments to First Nations community economic development and educational attainment should be a priority.

The following table is a summary of the 64 indicators and the progress to date:

### Progress Towards Aboriginal Health and Well-being

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
<b>Determinants of Health</b>		<i>For every indicator, outcomes are 2 to 3 times worse for Aboriginal people</i>
Unemployment Rate (25 years & over)	21%	Improving (14%) <sup>1</sup>
Occupations	Trend not available	Trend not available
Income (< \$20,000/year)	64%	Not much change
Education (First-time Graduate)	48%	Not much change
Children in Care (Aboriginal)	Worsening (2,901 in 1997)	Worsening (4,647 in 2009)
Youth in Justice Institution	Not much change (22.8 per 10,000)	Improving (17.7 per 10,000)
<b>Healthy Beginnings: Pregnancy, Infants, and Children</b>		<i>For every indicator, outcomes are 2 to 5 times worse for Aboriginal people</i>
Teen Pregnancy	6.3 vs. 2.1 per 100	Slight decline (5.8 vs. 1.6 per 100)
Preterm Births	Worsening (10.0 per 100)	Worsening (11.7 per 100)
Low Birth Weight	Not much change (5.5 per 100)	Worsening (6.1 per 100)
High Birth Weight	Not much change (4.2 per 100)	Improving (3.0 per 100)
Infant Mortality <sup>2</sup>	Improving (6.6 per 1,000)	Improving (5.3 per 1,000)
Neonatal Mortality	Improving (3.9 per 1,000)	Improving (2.8 per 1,000)
Post-Neonatal Mortality	Improving (2.7 per 1,000)	Not much change
Dental Surgeries (Age 0–4)	Worsening (43.9 per 1,000)	Improving (39.7) – Gap = 4 times
Dental Surgeries (Age 5–9)	Not much change	Not much change – Gap = 3 times
Childhood Immunization	Not much change	Not much change

<sup>1</sup> May be underreported due to non-participation.

<sup>2</sup> The Status Indian infant mortality rate is subject to fluctuation from year to year because it is derived from small numbers. Statistical testing shows that the recent decline in infant mortality in the Status Indian population was not statistically significant. During the last 11-year period, indicators of risk to infant health in the Status Indian population have not improved: preterm birth rates have been increasing, as well as low birth weight rates. Furthermore, the adequacy and timeliness of prenatal care for Status Indian mothers is much worse compared to other residents. For these reasons, it is believed that the decline in the Status Indian infant mortality rate in 2006, as in 1998, is merely another random fluctuation of an indicator that is prone to such year-to-year fluctuations.

## Progress Towards Aboriginal Health and Well-being continued

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
<b>Disease and Injuries</b>		
Life Expectancy	Males: Improving (71.4 yrs) Females: Not much change (77.1 yrs) (1997–2001 data)	Males: Improving (73.0 yrs) Females: Not much change (77.0 yrs) (2002–2006 data)
Mortality (All Causes)	81.5 per 10,000	Improving (73.6 per 10,000)
Food Security	Trend not available	Trend not available
Overweight and Obesity	Trend not available	Trend not available
Chronic Disease (Prevalence) <sup>3</sup> (since 2002/2003)		<i>Prevalence increasing as the population ages and grows</i>
Diabetes	5.8 vs. 4.1 per 100	Increasing (6.7 vs. 4.8 per 100)
Hypertension	9.7 vs. 11.2 per 100	Increasing (11.6 vs. 12.9 per 100)
Stroke	1.4 vs. 0.8 per 100	Increasing (1.6 vs. 0.9 per 100)
Ischemic Heart Disease	2.9 vs. 2.3 per 100	Increasing (3.1 vs. 2.5 per 100)
Congestive Heart Failure	2.1 vs. 1.2 per 100	Increasing (2.2 vs. 1.3 per 100)
COPD	2.1 vs. 1.3 per 100	Increasing (2.3 vs. 1.4 per 100)
Circulatory System Deaths (2001)	21.6 vs. 18.6 per 10,000	Improving (18.5 vs. 14.8 per 10,000)
Dementia	0.4 vs. 0.5 per 100	Increasing (0.6 vs. 0.6 per 100)
Osteoarthritis	7.8 vs. 4.9 per 100	Increasing (8.9 vs. 5.6 per 100)
Cancer (Mortality) <sup>4</sup>		<i>In general, cancer mortality is lower for Aboriginal people</i>
All Cancers	14.0 vs. 16.0 per 10,000	Fluctuating – No significant trend
Lung Cancer	2.1 vs. 4.2 per 10,000	Fluctuating – No significant trend
Female Breast Cancer	2.0 vs. 2.3 per 10,000	Fluctuating – No significant trend
Colorectal Cancer	2.0 vs. 1.4 per 10,000	Fluctuating – No significant trend
Cervical Cancer	0.1 vs. 0.2 per 10,000	Fluctuating – No significant trend
Prostate Cancer	3.5 vs. 2.6 per 10,000	Fluctuating – No significant trend
Digestive System Deaths	7.4 vs. 2.1 per 10,000	Fluctuating – No significant trend

<sup>3</sup> Prevalence of chronic disease has been increasing for both Status Indians and other residents.

<sup>4</sup> No significant trend was seen in the types of cancers analyzed (lung, female breast, colorectal, cervical, and prostate) for the Status Indian population. Mortality rates for these cancers were generally higher for other residents.

## Progress Towards Aboriginal Health and Well-being continued

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
External Causes of Death		<i>Rates are 2 to 5 times higher for Aboriginal people</i>
Motor Vehicle Accidents	Improving (2.9 vs. 0.9 per 10,000)	Improving (1.9 vs. 0.7 per 10,000)
Accidental Poisoning	Improving (2.9 vs. 0.7 per 10,000)	Improving (0.9 vs. 0.5 per 10,000)
Alcohol-Related Deaths	Improving (19.7 vs. 3.8 per 10,000)	Improving (15.1 vs. 3.4 per 10,000)
Medically Treatable Diseases	Improving (0.7 vs. 0.3 per 10,000)	Fluctuating – No significant trend
Drug-Induced Deaths	Improving (3.3 vs. 1.0 per 10,000)	Improving (1.2 vs. 0.7 per 10,000)
TB (Incidence)	Worsening On-Reserve (31.6 per 100,000) Improving Off-Reserve (32.5 per 100,000)	Improving (19.9 per 100,000) Worsening (38.1 per 100,000)
HIV/AIDS	Worsening (1.5 vs. 0.2 per 10,000)	Worsening (1.9 vs. 0.2 per 10,000)
Suicide	Improving (1.7 vs. 1.0 per 10,000)	Not much change
<b>Physical Environment</b>		
Housing	Improving	Worsening
Homelessness	Trend not available	Trend not available
Second-hand Smoke	1997 (32% vs. 18% all BC)	Trend not available
Mould	Trend not available	Trend not available
Drinking Water	Improving	Not much change
<b>Health Services</b>		
Pap Tests	No reliable data available	No reliable data available
Screening Mammography	No reliable data available	No reliable data available
MSP Utilization	756.9 vs. 877.5 per 1,000	708.1 vs. 844.0 per 1,000
Hospitalization for Homicides	216.4 vs. 35.6 per 100,000	Improving (208.0 vs. 41.0 per 100,000) – Gap > 5 times
Hospitalization for Suicides	251.6 vs. 48.8 per 100,000	Improving (155.0 vs. 32.5 per 100,000) – Gap > 4 times
Preventable Admissions	Improving (56.9 per 10,000)	Improving (54.5 per 10,000) – Gap = 1.5 times
The Use of Prescription Drugs in the Aboriginal Community		
Antimanic Agents	9.8 vs. 22.6 per 10,000	Worsening (14.7 vs. 27.6 per 10,000) – Gap = 2 times
Antidepressants	89.9 vs. 100.5 per 1,000	Worsening (96.0 vs. 116.0 per 1,000)
Antipsychotics	9.3 vs. 12.7 per 1,000	Worsening (22.1 vs. 22.8 per 1,000)
Anxiolytics	8.7 vs. 9.6 per 100	Not much change
Cerebral Stimulants	8.9 vs. 7.6 per 1,000	Worsening (10.3 vs. 8.9 per 1,000)
Anti-Infectives	43.2 vs. 37.2 per 100	Not much change
Mental Health Follow-Up After Hospital Separation	Not much change	Improving (61.3 vs. 79.3 per 100)

**Progress Towards Aboriginal Health and Well-being continued**

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
<p><b>The Métis Population of BC</b></p> <p>Overall Health</p> <p>Health Conditions</p> <p>Chronic Conditions</p> <p>Mental Health</p> <p>Income</p> <p>Social Issues</p> <p>Youth Suicides and Drug Addiction</p>	<p>Data not available in 2001</p>	<p>Data based on 2006 MNBC survey</p> <p><i>54% of Métis households reported having arthritis and 41% reported having diabetes. 17% of the youth surveyed contemplated committing suicide. 91% regarded drug addiction as the most important issue facing youth.</i></p> <p><i>Overall, Métis health indicators appear to be closer to the indicators for the Status Indian population rather than other residents.</i></p>

**Why is there a gap between the health of the Aboriginal population and other BC residents?**

For many years, research has supported the influence of socio-economic factors on health.

The Aboriginal population in BC has a much higher unemployment rate, and for those who are employed, the jobs are generally lower paying and more hazardous compared to the rest of the BC population. Aboriginal students have a lower first-time graduation rate from high school compared to non-Aboriginal students. Data from Indian and Northern Affairs Canada showed that from 1994/1995 to 2005/2006, the percentage of Aboriginal housing units in need of major renovations in BC increased by 121 per cent. Survey results showed that many Aboriginal people experience a disproportionate level of food insecurity due to poverty. Those living on remote reserves also face additional challenges in obtaining fresh and healthy food that must be transported long distances. Food insecurity is a precursor

to many health problems including malnutrition, low birth weight babies, unhealthy pregnancies, sub-optimal child development, poorer health in seniors, and greater rates of chronic disease. For infants and children, poor health is often associated with parental low income and low levels of education. Several studies have shown a strong link between a mother’s income and education and her infant’s health.

Many factors are responsible for the lower socio-economic status and the consequent lower health status of the Aboriginal population. A long history of colonization, systemic discrimination, the degrading experience of residential schools, and other experiences have led to adverse, multi-generational health effects on Aboriginal families. These experiences have been the root of inequities in the health and well-being of the Aboriginal population, and these inequities have continued through the generations. Colonization and cultural deprivation have created an environment that has negatively impacted the social structures, personal psychology, and coping strategies of many of the Aboriginal population.

## Solutions

As in other reports from the Provincial Health Officer, this report concludes that simply providing more money or more hospitals is not the answer. In fact, many Aboriginal groups and researchers have argued that the key to improving the health of Aboriginal people lies in programs that involve the full participation of Aboriginal communities in their design, delivery, and evaluation. Efforts are being made to improve services for Aboriginal people and address some of these longstanding concerns. In 2006, the bilateral First Nations Health Plan was signed to ensure that First Nations are integral partners in the design and delivery of health services. In 2007, the Tripartite First Nations Health Plan was signed. The intention of this plan is to deliver First Nations health services through a new governance structure that will lead to improved accountability and control of these health services by First Nations.

Under the 2007 Tripartite First Nations Health Plan, a new First Nations Health Governing Body will be established to provide for the effective participation of First Nations in enacting policies, setting targets, allocating resources, establishing service standards, implementing ongoing reciprocal accountability requirements, and other key functions of governance. Upcoming health governance negotiations between the province, First Nations, and the federal government will focus on the transfer of programs, services, and funding from First Nations and Inuit Health, BC Region, to the First Nations Health Governing Body. These negotiations will culminate in BC First Nations assuming control over the design, delivery, day-to-day management, and accountability of health programs and services for First Nations in BC.

The Ministry of Healthy Living and Sport, Aboriginal Healthy Living Branch, in partnership with the health authorities, has secured funding of approximately \$8.5 million through the federal government's Aboriginal Health Transition Fund: Adaptation Envelope. This funding is available over a 3-year period to support adaptation of existing health programs to the unique needs of Aboriginal people. Initiatives vary between regions and include cultural competency curriculum development, circles of practice, Aboriginal patient navigators, and improved client transition strategies.

In addition, in British Columbia, a number of Aboriginal communities have revived their cultural and spiritual traditions, to aid in the healing of community members.

The following general recommendations were provided in the 2001 report. Many of these recommendations are still valid and are therefore summarized below:

### Formal Commitments

Establish provincial and regional targets for achieving comparable health status between the Aboriginal population and other British Columbians or specific Aboriginal targets, where appropriate. Hold ministries and health authorities accountable for progress toward those targets and for coordination with agencies that serve the same populations.

### Improved Standard of Living

Work collaboratively to improve housing conditions and economic and educational opportunities for Aboriginal people.

### More Recognition and Respect

Increase awareness of the health status of Aboriginal people and the health issues and challenges that Aboriginal people face.

### More Holistic Approach

- a) Pay more attention to the non-medical, cultural, and spiritual determinants of health.
- b) Encourage participatory research to gain a more clear understanding as to why some aboriginal communities are "healthier" than others.
- c) Identify and collect indicators that are meaningful and useful to Aboriginal communities. Perceived progress in a return to traditional ways, personal commitment to healing, housing quality, and employment opportunities are some examples from the BC First Nations Regional Health Survey that could be used as a starting point.

### More Autonomy

Support efforts by Aboriginal people to achieve self-determination and a collective sense of control over their futures, in both on- and off-reserve communities.

## More Representation

Encourage greater Aboriginal participation in health governance and in the design and delivery of culturally-appropriate health services.

## What has been done since 2001?

In March 2005, the Province of British Columbia and First Nations leaders agreed to enter into a New Relationship guided by principles of trust, recognition, and respect for Aboriginal rights and title.

In November 2005, the Province of British Columbia, the First Nations Leadership Council, and the Government of Canada signed the Transformative Change Accord, which identified general actions to close the gaps in education, health, housing, and economic opportunities for First Nations peoples over the next ten years. Building on the Accord, a bilateral First Nations Health Plan was developed and released in November 2006. This plan identified 29 specific actions in 4 areas, with 7 key targets, to close the gap and improve the health of the First Nations population in BC. In June 2007, the Province, the First Nations Leadership Council, and the Government of Canada signed the Tripartite First Nations Health Plan, formally committing Health Canada to the bilateral Plan and adding new tripartite governance requirements.

The Tripartite Plan is an enabling document that allows the federal, provincial, and First Nations partners to develop, test, and implement new priorities, structures, and processes over time. It recognizes the fundamental importance of community solutions and approaches and that cultural knowledge and traditional health practices and medicines will be respected as integral to the well-being of First Nations. The Tripartite Plan is based on the four key principles: respect and recognition; commitment to action; nurture the relationship; and transparency. The implementation of the commitments is ongoing and is being coordinated in partnership with the province, the First Nations Health Council, Health Canada, and health authorities. Upcoming negotiations between the province, First Nations, and the federal government will focus on the transfer of First Nations and Inuit Health programs and services to the First Nations Health Governing Body.

On May 12, 2006, the Province of British Columbia and the Métis Nation British Columbia signed the Métis Nation Relationship Accord. The Accord complements an existing 2003 agreement, signed between the Province of BC, the Government of Canada, and the Métis Provincial Council, to address Métis socio-economic challenges.

The following table lists the indicators, targets, and interim measures of progress for the First Nations Health Plan:

## First Nations Health Plan Performance Indicators

Indicator and Baseline* Measure in 2005	Target by 2015	Baseline Measure (2001)**	Reduction in Gap 2006 (Since 2001)
Life Expectancy Status Indians: nearly 75 yrs Other Residents: 82 yrs	Decrease the gap in life expectancy between Status Indians and other British Columbians by 35 per cent to less than 3 years difference	Status Indians: 74.1 yrs Other Residents: 80.1 yrs <i>(based on five year aggregate data 1997–2001)</i>	Status Indians: 74.9 yrs Other Residents: 80.7 yrs <i>(based on five year aggregate data 2002–2006)</i>  Gap: ↓ 3%
Age-Standardized Mortality Rate (deaths due to all causes) ASMR 1.5 times greater for Status Indians than for other residents	Reduce the gap in mortality rates between Status Indians and other British Columbians by 35 per cent	Status Indians: 83.8/10,000 Other Residents: 57.8/10,000 <i>(based on five year aggregate data 1997–2001)</i>	Status Indians: 73.9/10,000 Other Residents: 52.7/10,000 <i>(based on five year aggregate data 2002–2006)</i>  Gap: ↓ 19%
Status Indian Youth Suicide Rate Status Indian youth suicides approximately 5 times higher than for other youth.	Reduce the gap in youth suicide rates between Status Indians and other British Columbians by 50 per cent	Status Indians: 4.1/10,000 Other Residents: 0.7/10,000 <i>(based on three year aggregate data 2001–2003)</i>	Status Indians: 2.9/10,000 Other Residents: 0.7/10,000 <i>(based on three year aggregate data 2004–2006)</i>  Gap: ↓ 35%
Infant Mortality Rate Status Indians: 8/1,000 Other Residents: 4/1,000	Reduce the gap in infant mortality between First Nations and other British Columbians by 50 per cent	Status Indians: 7.7/1,000 Other Residents: 3.8/1,000 <i>(based on five year aggregate data 1997–2001)</i>	Status Indian infants die in their first year over 2 times more often than other infants. <i>(based on five year aggregate data 2002–2006)</i>  Status Indians: 8.7/1,000 Other Residents: 3.9/1,000  Gap: ↑ 23%
Prevalence of Diabetes Status Indians: 6.0% Other Residents: 4.5%	Reduce the gap in the prevalence of diabetes between First Nations and other British Columbians by 33 per cent	Status Indians: 5.6% Other Residents: 3.8% <i>(2001/2002 data)</i>	Status Indians: 6.7% Other Residents: 4.8% <i>(2006/2007)</i>  Gap: ↑ 6%
Childhood Obesity	Not yet available	Not yet available	Not yet available
Practicing, Certified First Nations Health Care Professionals	Not yet available	Not yet available	Not yet available

\* Data obtained from The Transformative Change Accord: First Nations Health Plan, 2006.

\*\* Data obtained from this Provincial Health Officer's Annual Report.

## What more needs to be done?

- Commit to making self-determination for the Aboriginal population in the province a reality.
- Examine and review systemic barriers to economic development and make it a priority.
- Continue to improve the socio-economic status of the Aboriginal population by creating more educational and job opportunities.
- Focus on implementing demonstrated best practices so that Aboriginal children can fully benefit from educational opportunities.
- Improve housing and the physical environment for the Aboriginal population.
- Continue to work on Aboriginal health plans for health authorities.
- Recommit to achieving stated goals.
- Make issues underlying HIV/AIDS a priority.
- Create a provincial Aboriginal Mental Health and Wellness Plan.

### Provincial Health Officer's Reports

Since 1993, the Provincial Health Officer has been required by the *Health Act* to report annually to British Columbians on their health status and on the need for policies and programs that will improve their health. Some of the reports produced to date have given a broad overview of health status while others have focused on particular topics such as food, air quality, drinking water quality, immunization, injection drugs, First Nations health, injury prevention, school health, and public health approach to alcohol policy. Reports by the Provincial Health Officer are one means for reporting on progress toward the provincial health goals, which were adopted by the province in 1997.

Copies of the Provincial Health Officer's report are available free of charge from the Office of the Provincial Health Officer by calling (250) 952-1330 or at [www.hls.gov.bc.ca/pho](http://www.hls.gov.bc.ca/pho)

# Chapter 1

## Aboriginal People: Land, Tradition, and Culture

### Life of Aboriginal People Pre-Contact

Aboriginal people<sup>1</sup> have occupied the area that is now British Columbia for at least 12,000 years. Prior to 11,000 years ago, most of what is now BC was under ice; however, by about 10,000 years ago glaciers had retreated, allowing for the establishment of a wide variety of plants and animals (Muckle, 2007).

Before Europeans arrived, British Columbia had an estimated population of 200,000 to 300,000 people (Muckle, 2007). Nowhere north of Mexico were there greater numbers or denser concentrations of people (Tennant, 1990). At the time of contact, some habitation sites had been occupied for well over 4,000 years (Indian and Northern Affairs Canada [INAC], 1996) and some up to 9,000 years (Muckle, 2007). There were 30 separate peoples, each with its own name, language, culture, politics, and territory, and each was composed of a number of local communities (Tennant, 1996). The Aboriginal groups were as distinct from one another as were the various European nations of the time (Tennant, 1990).

BC has three of the ten general culture areas<sup>2</sup> identified for First Nations in North America: Northwest Coast, Interior Plateau, and the Subarctic.

The Northwest Coast culture area extends from Alaska to northern California: the environment is coastal rainforest with abundant marine and terrestrial resources. Major BC ethnic groups include Comox, Gitksan, Haida, Haisla, Halq'emeylem, Heiltsuk, Homalco, Hul'qumi'num, Klahoose, Kwakwaka'wakw', Nisga'a, Nuuchah'nulth, Nuxalk, Oweekeno, Sechelt, Sliammon, Squamish, Straits Salish, Tsimshian, and Tsleil Waututh. The Taku Tlingit are sometimes included in the Northwest Coast area and sometimes in the Subarctic.

The Interior Plateau culture area includes the southern interior of BC, as well as the interior portion of the Pacific Northwest States. The climate is arid and the terrain is diverse. Major ethnic groups include Ktunaxa,<sup>3</sup> Nlaka'pamux, Okanagan, Secwepemc, Stl'atl'imx, and Tsilhqot'in. The Dekalh are sometimes included in this group.

The Subarctic culture area includes territory from the central interior, north to the boundary with the Yukon and west to the coast range (excluding the coastal area). The environment includes forests, lakes, rivers, and muskeg with long, cold winters and short summers. Major ethnic groups in this area include the Dene-thah, Dunne-zah, Kaska, Nat'oot'en, Sekani, Tahltan, and Wet'suwet'en (Muckle, 2007).

<sup>1</sup>The terms used in this report to describe the Aboriginal population will vary according to the data and the sources used. For consistency, material presented from a published study quote the exact terms and definitions used in that study.

<sup>2</sup>A culture area is a term used to identify a geographic area in which separate societies have similar cultures.

<sup>3</sup>The Ktunaxa are sometimes considered part of the Plains culture area because they lived in tipis and hunted bison.

The Northwest Coast, Interior Plateau, and Subarctic groups were distinguished by their unique settlement types: their type of dwellings and the permanence or impermanence of their settlements. Between 5,000 and 3,000 years ago, the Northwest Coast nations developed highly structured societies with permanent positions of political leadership, which was unique not only in BC, but also in Canada. Their use of the cedar tree helped make coastal First Nations distinct. From the cedar, the coastal people made the world's largest dugout canoes and large plank houses. Canoes allowed for the full use of the coastal environment, giving access to areas inaccessible by land (Tennant, 1990). The abundance from the sea and the development of more effective means of preserving salmon supported larger populations and created great wealth through trade (Muckle, 2007).

The coastal nations travelled during the summer, fishing and gathering food. In winter, they returned to permanent villages consisting of plank houses facing the ocean that housed separate extended family groups. Winter village populations ranged from 200 to 1,000 people (Muckle, 2007). The leader of each house was the chief, a hereditary position. The house often had rights to specific resource harvesting locations, including fishing, hunting, and gathering areas, as well as certain songs, dances, and stories. The chief organized hunting and food-gathering activities and regulated relations with other groups. Traditions varied but in many communities, there was no single authority for decision-making for the entire village, and the chiefs of each house made decisions by consensus.

Interior peoples travelled in small family groups during summer, hunting game and gathering berries and other plants, but returned each winter to permanent villages, which were groups of pithouses located in major river valleys. Approximately 30 to 40 people from related kinship groups would typically occupy a pithouse, with 3 or 4 pithouses to a village; thus, the village population was approximately 100–150 people. Ktunaxa lived in villages of tipis, a pole framework covered in animal hides, similar to those used by plains peoples.

The Interior Plateau and Subarctic groups were generally composed of smaller communities with less need for a complex social organization similar to the coastal tribes; thus, they had a more egalitarian type of society (Tennant, 1996). In some nations, such as the Okanagan, population density was sufficient to require permanent chieftaincies.

The Subarctic nations were nomadic hunter-gatherers who travelled in smaller groups of up to 100, living in temporary or portable structures. Shelters were built around a pole framework, covered in hides, bark, or brush. Salmon was a food source in some areas, but the majority of the population relied on moose, caribou, and Dall sheep for their staple diet. Subarctic groups had a much more egalitarian society than the other two cultural groups, with no formal chiefs and a greater emphasis on self-reliance and personal autonomy (Muckle, 2007).

## Managing Resources

BC First Nations used highly sophisticated methods to harvest their food from a diverse range of sources, and there is considerable evidence to suggest that they did manage their resources and environment to maximize harvests. Harvesting was managed in a way that allowed a plant or tree to continue to produce, and even included moving fish spawn from one stream to another stream with depleted stocks. Controlled fires were set to maintain open habitat to allow certain plants to continue to thrive, and to enhance the food supply for animals they hunted (Muckle, 2007).

Coastal groups used the inner bark of the cedar for basketry and clothing. Cedar canoes ranged in length from 4–20 metres, with a carrying capacity of up to 40 people in addition to cargo. Interior and subarctic groups used birch, spruce, or other trees for canoes and baskets. They also used animal hides in their clothing and housing more often than coastal First Nations.

Although most comparable cultures made pottery, Aboriginal people in BC did not. However, their extremely intricate basket work provided containers that combined all the benefits of pottery—inexpensive, watertight, and good for storage—without being heavy or fragile (Muckle, 2007).

## Art and Culture

Art was a key element in the life of Aboriginal communities pre-contact. Basket weaving, carving, sculpture, and painting, as well as songs, music, drumming, and dancing were all part of cultural activities. Dances (sometimes with elaborate costumes), drumming, and storytelling were important parts of feasts and celebrations. Certain stories and dances belonged to specific clans. The status of clans was demonstrated through displays of jewellery; clothing decorated with porcupine quills, bone, and feathers; and large houses, as well as the giving away of possessions in potlatch ceremonies.

The potlatch, an elaborate feast or celebration, was an essential institution that served to legitimize political rank. Potlatches were the primary means of validating political succession, maintaining authority, and demonstrating prestige. Chiefs held periodic potlatches to demonstrate their rank and wealth by giving away large amounts of personal goods, including food, tools, and clothing. This ensured a circulation of wealth. Unlike European society, the prestige and rank of the chiefs was maintained by giving away wealth rather than accumulating it. The coastal peoples came as close as human societies ever have to resolving the perennial political problem of misuse of power for personal gain (Tennant, 1990).

## Traditional Health and Healing

The survival of Aboriginal people in a challenging environment depended on their skill in hunting and fishing, and their knowledge of native plants and techniques for preserving food. Plant and animal life were considered sacred and were never wasted or taken unnecessarily (Health Canada, 1995). The Aboriginal diet was based on wild game, fish and shellfish, roots, berries, and plants, which were lower in fat and higher in nutrients than modern, farmed food (Provincial Health Officer [PHO], 2006).

In pre-contact times, First Nations in BC were well-nourished and relatively free from high-mortality epidemic diseases. Important factors in maintaining good health were the relatively small size of their settlements (aside from winter); a hygienic, physically active lifestyle; a varied diet; and knowledge of natural medicines and holistic health

practices. Ill health was considered either physical or spiritual in nature. Physical ailments could be treated by anyone with sufficient knowledge and experience—including using plant medicines, setting bones with splints, and treating infected gums and teeth using cauterization.

On the other hand, spiritual conditions were generally treated by shamans (Muckle, 2007). Sweat baths enhanced the effectiveness of plant medicines, but were also used for purification rights before hunting, fishing, and warring expeditions. All First Nations had midwives to assist with birthing and infant care. As midwifery was linked to the Creator and the bringing of life, this position was highly respected and valued (Carroll & Benoit, 2001).

It is not presently understood how Aboriginal peoples acquired their knowledge of herbal medicines, but their effectiveness is not in doubt. More than 500 drugs used in the medical pharmacopoeia today were originally used by First Nations peoples (Dickason, 1992, as cited INAC, 1996).

In contrast, European settlers were often sickly from diseases they brought with them or from the effects of conditions they endured on the voyage. Those who accepted the unfamiliar cures prescribed by Aboriginal healers—such as bathing, fasting, and sweating—were the most likely to recover (INAC, 1996).

***“Obesity, diabetes and heart disease among Aboriginal people were unknown until very recently. No aboriginal language has a word for diabetes.”***

**– Dr. Jay Wortman**  
(CBC, 2009)

Historical records and the findings of modern paleo-biology suggest that many of the illnesses common today were nearly non-existent among the Aboriginal population. There was no plague, cholera, typhus, small-pox, or measles. Cancer was rare and even fractures were infrequent (Vogel, 1970 as cited in INAC, 1996).

## European Arrival – Disease, Devastation, and Population Decline

With the arrival of Europeans, the traditional way of life was significantly changed. Sources of food and clothing from the land became scarce and traditional economies collapsed. Aboriginal people were now confined to small plots of land with limited resources and poor sanitation. In addition, the population was devastated by diseases brought by Europeans to North America, including smallpox, tuberculosis, scarlet fever, influenza, and measles. The Aboriginal people had no acquired immunity to these diseases, and with no access to vaccinations, these diseases nearly eradicated the population. Europeans also introduced First Nations people to alcohol and firearms, both of which contributed to socio-economic problems and eventual population loss (Muckle, 2007).

In addition, ancient traditions, cultural practices, norms, values, social systems, and spiritual practices were undermined or outlawed (Tennant, 1996). The Aboriginal population in BC, which was once estimated to be approximately 250,000 during the mid-1700s, declined to about 100,000 by 1835, and to 28,000 by 1885. By 1929, the population had dropped to about 23,000 (Table 1.1) (Muckle, 2007).

**Table 1.1** Aboriginal Population in BC

Year	Estimated Population
Mid-1700s	250,000
1835	100,000
1885	28,000
1929	23,000
2001	170,025
2006	196,070

Sources: Muckle, 2007; Statistics Canada, 2006.

### Smallpox Epidemic 1862–1863

The smallpox epidemic of 1862–1863 was one of the most devastating epidemics for Aboriginal people in BC. Thousands of Aboriginal people were killed (estimates are as high as 20,000) (Duff, 1964, as cited in Boyd, 1999).

The epidemic began in March 1862 in Victoria, with the arrival of an infected passenger on a ship from San Francisco. The disease spread quickly, particularly among the north coastal First Nations encamped just outside of Victoria. Since the gold rush of 1858, many north coastal First Nations (including Tsimshian, Haida, Stikine Tlingit, Heiltsuk, and Kwakwaka'wakw) had come to Victoria looking for trade and employment. On the whole, there was no history of previous vaccination among these groups, which left them particularly vulnerable to the spread of smallpox (Boyd, 1999).

The Songhees First Nations of Victoria did not suffer as much as the visiting north coastal tribes, due to immunization and a self-imposed quarantine; the Songhees left their villages and moved temporarily to Discovery Island, soon after smallpox appeared in the northerners' camps. Many of the Songhees were immunized by Dr. John Helmcken (reportedly over 500 by mid-April 1862), whose assistance had been enlisted by Governor James Douglas.

In May 1862, the north coastal First Nations were forced out of the city by local authorities, due to the fears of white settlers that the epidemic would spread to them. While this slowed the spread in Victoria, it increased the reach of the epidemic in BC, as returning First Nations brought smallpox back to their villages. While some First Nations largely escaped the epidemic, either due to vaccination (carried out mostly by visiting missionaries) or acquired immunity from earlier epidemics, others were not as fortunate. By June 1862, reports of the devastation caused by the epidemic came to Victoria from the north. A report in the *Daily British Colonist* from June 13, 1862, reported that hundreds of First Nations in Fort Simpson and Prince Rupert were dying and many bodies remained unburied.

The estimated 20,000 Aboriginal people killed in the epidemic dealt a crushing blow to many First Nations groups in BC, and made it harder for them to avoid cultural, economic, and social assimilation.

Sources: Boyd, 1999; Historylink.org, 2007; Keddie, 2003; .

## Pre-Contact Education System

Before Europeans came, Aboriginal peoples in North America had systems of education that reflected their community's values and helped develop vocational skills necessary for survival. The emphasis was on the 3 Ls: looking, listening, and learning. In contrast to European educational techniques, proper behaviour was instilled through indirect and non-coercive means. Strategies for shaping behaviour included positive behaviour modeling, subtle guidance towards desired behaviours through games and play, and the use of stories for presenting life lessons. According to tradition, it was imperative to avoid imposing one's will on another individual, and this approach allowed children much more scope for self-expression. In adolescence, there was a distinct shift to imparting lessons through more formal and ritualized rite-of-passage ceremonies. The learning process was such a natural part of growing up that in later life people were often unaware that they had been educated and trained by adult society (Miller, 1996).

## Establishment of Residential Schools

The residential school system, in which Aboriginal children were separated from their families, was part of a concerted effort by government to assimilate Aboriginal people into non-Aboriginal society. In 1879, the Davin Report recommended the adoption of the American model of residential schools focusing on industrial training, to be operated by various religious organizations with a commitment to “Christianizing and civilizing” First Nations (Assembly of First Nations [AFN], 1994).

The first residential school in BC—St. Mary's—opened in 1863, and was the last to close in 1984. British Columbia had the most residential schools in the country, with as many

as 22 (Indian Residential Schools Survivors Society, n.d.). It is estimated that approximately 80,000 people are alive today who attended residential schools across Canada, with approximately 35,000 survivors in BC (Indian Residential Schools Resolution Canada, n.d.; Provincial Residential School Project, 2001).

Residential school attendees were prohibited from speaking their own languages at any time, a rule that was strictly and severely enforced. At first, only boys were allowed to attend. Mornings were spent on reading, writing, and arithmetic, while afternoons were spent on training in various trades such as blacksmithing, carpentry, shoemaking, ranching, and farming. Later, enrolment was extended to girls. The girls received the same basic literacy education as well as instruction in cooking, cleaning, sewing, and practical nursing (Miller, 1996). From the beginning, education for First Nations was separate from and of poorer quality than that provided to Euro-Canadian children (Barman, Hebert, & McCaskill, 1986).

In 1920, the *Indian Act* was amended to make residential school attendance compulsory for all First Nations children between the ages of 7 and 15. Children could be and often were forcibly taken from their parents by members of the clergy, Indian agents, and RCMP officers. By the 1940s, attendance had risen to approximately 8,000 children (York, 1990 as cited in AFN, 1994).

There is an abundance of documentation, including the 1996 Royal Commission on Aboriginal Peoples, detailing how children in residential schools lost their culture, family, identity, and language, and suffered abuse (physical, sexual, psychological, and spiritual). Many who attended residential school show symptoms similar to post-traumatic stress disorder: nightmares, flashbacks, detachment from others, difficulty in relationships, sleep and anger management difficulties. Some clinicians have coined a new term—

***We are First Nations people who had everything intact when we were yanked away from our families and assimilated into another culture. We have to take that same step and totally immerse our children and grandchildren in the language and culture and begin raising them in the traditional way....”***

— Anonymous

(Secwepemc Cultural Education Society, 2000, p. 168)

residential school syndrome—to describe the symptoms of survivors (Brasfield, 2001). The lingering effects of residential schools—including high levels of substance abuse, suicide, and family violence—have been far-reaching, not only for survivors, but for their families as well.

There has been a move towards using traditional healing methods to help survivors, as a way to restore the balance between the four aspects of humanity: mental, emotional, physical, and spiritual. The Western medical method of counselling is combined with traditional healing methods such as prayer/meditation, sweat lodges, naming ceremonies, and smudge ceremonies. The Aboriginal Healing Foundation, a national, non-profit organization, was set up in 1998 with a \$350 million fund to support community healing projects across Canada. Since 1998, the Foundation has supported a number of projects in BC, totalling over \$75 million as of fiscal 2004/2005 (Aboriginal Healing Foundation, 2006).

Another way of healing has been the move to reclaim Aboriginal culture and language. Some First Nations bands offer language courses (eg., Sto:lo Nation <http://www.stonation.bc.ca/Miramar/Education/Index.html>); others have partnered with post-secondary institutions (e.g., Certificate in Nisga'a Studies at the University of Northern British Columbia [http://www.unbc.ca/calendar/certificates/first\\_nations.html#ns](http://www.unbc.ca/calendar/certificates/first_nations.html#ns)); or have provided translations and voice clips on their websites, to help people learn their language (e.g., Nuuchahnulth <http://nuuchahnulth.org/language/language.html>). The FirstVoices project, run by the First Peoples' Cultural Foundation, is a set of web-based tools that helps to preserve Aboriginal languages. There is a database of various languages, including an alphabet, dictionary, and phrase book, and there are audio clips, text, images, and video files to assist with language acquisition (First Peoples' Cultural Foundation, 2003) (See information box "FirstVoices" on page 12).

Other groups have dealt with the history of the residential school system by taking control of the physical legacy, such as the Ktunaxa Nation, who built the St. Eugene Mission Resort on the site of the former residential school.

In May 2006, a Settlement Agreement was approved between the federal government, Aboriginal groups, and various religious groups (the nine provincial/territorial jurisdictions involved in the Agreement gave their approval in March

### St. Eugene Mission – Reclaiming History

The Ktunaxa Nation has taken a reminder of a dark time in their history and turned it into a symbol of hope for a brighter future. The St. Eugene Mission Resort, located on St. Mary's Reserve, in Cranbrook, was developed from the site of the former Kootenay Indian Residential School, which ran from 1910 to 1970.

A golf course opened on the site in 2000, and a hotel and casino in 2003, with the help of \$3 million in funding assistance from the federal government. Chief Sophie Pierre highlighted the importance of the redevelopment project:

As we worked to finalize this project, we were continually guided by the vision of one of our elders, Mary Paul, who said in 1994 that it was within the St. Eugene Mission that the culture of the Kootenay Indian was taken away, and it should be within that building that it's returned (INAC, n.d.).

The Ktunaxa Nation Council operates an interpretive centre within the resort, which displays artifacts and details of the history and mythology of their people. The resort is currently owned and operated by SEM Resort Limited Partnership, made up of the Ktunaxa Nation, Samson Cree Nation, and Mnjikaning First Nation. It employs 250 people, of which approximately 25 per cent are from First Nations, and it has been a boost to the local economy (St. Eugene Mission Resort, n.d.).

Sources: Indian and Northern Affairs Canada, n.d.; St. Eugene Mission Resort, n.d.

### ***Behind Closed Doors: Stories from the Kamloops Indian Residential School***

This book is a series of stories from 32 individuals who attended the Kamloops Indian Residential School. It contains stories of abuse, trauma, loneliness, and confusion, and also the beginnings of healing and forgiveness.

Kamloops Indian Residential School operated from 1893 to 1977 as part of the federal government's residential school system. This book was developed by the Secwepemc Cultural Education Society, under the direction of an advisory group. This project supported individuals who experienced or witnessed abuse in the school to tell their stories, as a way to begin or continue to heal. Involvement in the project was voluntary. "All storytellers came forward to share their stories, not to find blame, but so that there would be a better future for their children, and their children's children" (p. 9).

Storytelling is a powerful tool that can help the healing process. "Like in traditional times, the people are using storytelling to educate and to heal. The real strength of the survivors of the residential schools can be found in their stories" (p. 200).

Source: Secwepemc Cultural Education Society, 2000.

2007). The Agreement provides a financial settlement to former students, and money for programs for survivors and their families for healing, truth, reconciliation, and commemoration. In exchange, former students and family members would give up their right to sue the federal government, the churches that joined the Agreement, or any other defendants, in class actions over residential schools (Residential Schools Settlement, n.d.).

## **Government Actions – Steps Towards Health and Healing for Aboriginal People**

### **Federal Government's Apology for Residential Schools**

On Wednesday June 11, 2008, Prime Minister Stephen Harper made a long-anticipated official apology (in Ojibwa, Cree, Inuktituk, French, and English) to thousands of Aboriginal people for a century of abuse under the residential school system. Several churches had already apologized for their roles in residential schools. The apology was made in the House of Commons, with Aboriginal leaders seated on the floor of the House. In anticipation of the emotional impact of the apology, the Assembly of First Nations had health-support workers on hand both on Parliament Hill and staffing a 24-hour toll-free distress line (Fitzpatrick & Nguyen, 2008).

The Prime Minister condemned the effort to wipe out Aboriginal culture, stating that "this policy of assimilation was wrong, has caused great harm, and has no place in our country."

*The Government of Canada sincerely apologizes and asks the forgiveness of the Aboriginal peoples of this country for failing them so profoundly. . . . You have been working on recovering from this experience for a long time and in a very real sense, we are now joining you on this journey. . . . The government recognizes that the absence of an apology has been an impediment to healing and reconciliation. . . . The burden of this experience has been on your shoulders for far too long. The burden is properly ours as a government and a country.*

Prime Minister Harper acknowledged that the legacy of Indian residential schools has contributed to social problems that continue to exist in many communities today, and that it has taken extraordinary courage for the thousands of survivors that have come forward to speak publicly about the abuse they suffered. He expressed regret that many former students have died never having received a full apology from the Government of Canada.<sup>4</sup>

Making parliamentary history by speaking on the floor of the House of Commons, representatives of First Nations, Inuit, and Métis peoples welcomed the apology and hailed it as a turning point in the history of relations between Aboriginal peoples and other Canadians.

Phil Fontaine, National Chief, Assembly of First Nations, who was one of the first to come forward and disclose his experiences in the residential school system, said the apology marked a new dawn in race relations and called it “the achievement of the impossible.” His words were greeted with thunderous applause and the pounding of drums from the gallery.

Métis leader Clement Chartier declared the apology to be “deep and real.” Inuit leader Mary Simon echoed earlier comments that a “new day has dawned” and said that she considered the apology a sincere one, not just theatrics (O’Neill & Dalrymple, 2008).

In BC, A-in-Chut (Shawn Atleo), BC Assembly of First Nations Regional Chief, felt that the apology was a very high-level political recognition. Grand Chief Stewart Phillip, President of the Union of BC Indian Chiefs, hoped that with the apology, all Canadians would learn from the past and ensure that such genocide would never be carried out again. Grand Chief Edward John pointed out that the responses to the apology were both individual and collective and emphasized that it was extremely important to respect the many survivors who, in their own time, would consider the Prime Minister’s apology and determine in their own interest, how each of them would deal with it (First Nations Leadership Council, 2008).

<sup>4</sup> The full text of the apology can be found at <http://www.ainc-inac.gc.ca/ai/rqpi/apo/pmsb-eng.asp>

***“The residential school took my culture, language and my freedom. I know my language and culture and I am still scared to use it to this day. It hurts deep inside.”***

– **Anonymous**

(Secwepemc Cultural Education Society, 2000, p. 66)

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***“We bear witness in this House that our survival as First Nations peoples in this land is affirmed forever.”***

– **Phil Fontaine**

National Chief, Assembly of First Nations (Martin, 2008).

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***“I am hopeful today’s apology can help the survivors in their individual journeys towards healing and that tomorrow all Canadians will work together to ‘turn this heavy page’ of our dark history.”***

– **A-in-Chut (Shawn Atleo)**

Regional Chief, BC Assembly of First Nations

*“For most Canadians, it would be considered absolutely criminal to think of children being forcibly removed from their families, experiencing sexual and physical abuse, living in substandard conditions and being stripped of their cultural identity. By apologizing publicly for the residential school atrocities, we hope that all Canadians will learn from the past and ensure that no such disgusting genocidal programs are ever designed, legislated and carried out in Canada ever again.”*

– **Grand Chief Stewart Phillip**  
President, Union of BC Indian Chiefs

*“Collectively, we celebrate and stand on the dignity of who we are and celebrate our survival. Together we will build for our individual and collective well-being. We ask Canadians to join us in this important historical moment to talk about and understand the depths and consequences of the multi-layered and intergenerational impacts on our people.”*

– **Grand Chief Edward John**  
First Nations Summit

## Transformative Change Accord: First Nations Health Plan

In November 2005, the Province of British Columbia, the First Nations Leadership Council, and the Government of Canada signed the Transformative Change Accord, which identified general actions to close the gaps in education, health, housing, and economic opportunities for First Nations peoples over the next ten years. Building on the Accord, a bilateral First Nations Health Plan was developed and released in November 2006. This plan identified 29 specific actions in 4 areas, with 7 key targets, to close the gap and improve the health of the First Nations population in BC. In June 2007, the Province, the First Nations Leadership Council, and the Government of Canada signed the Tripartite First Nations Health Plan, formally committing Health Canada to the bilateral plan and adding new tripartite governance requirements.

Implementation of the 29 action items is ongoing and is being coordinated in partnership with the province, the First Nations Health Council, Health Canada, and the health authorities. The seven performance indicators and targets are:

- **Life expectancy at birth** – The target is to decrease the gap in life expectancy between Status Indians and other British Columbians by 35 per cent to less than 3 years difference by 2015.
- **Mortality rates (deaths due to all causes)** – The target is to reduce the gap in mortality rates between Status Indians and other British Columbians by 35 per cent by 2015.
- **Status Indian youth suicide rates** – The target is to reduce the gap in youth suicide rates between First Nations and other British Columbians by 50 per cent by 2015.
- **Infant mortality rates** – The target is to reduce the gap in infant mortality between First Nations and other British Columbians by 50 per cent by 2015.
- **Diabetes rates** – The target is to reduce the gap in the prevalence of diabetes between First Nations and other British Columbians by 33 per cent by 2015.

- **Childhood obesity** – There is no measure currently available. A baseline and an ongoing mechanism for collecting relevant data will be developed.
- **Practicing, certified First Nations health care professionals** – There is no accurate information on the number of certified health care professionals in BC who are First Nations. A baseline and an ongoing mechanism for collecting relevant data will be developed.

## Characteristics of the Aboriginal Population in BC

### Age Distribution

According to the 2006 Census, approximately 196,070 people of Aboriginal “identity” live in British Columbia: 129,575 North American Indian (known as First Nations on previous

Census documents), 59,445 Métis, 795 Inuit people, and 6,255 Aboriginal people identifying with multiple or other groups (Statistics Canada, 2006).<sup>5</sup>

Currently, the Aboriginal population is much younger than the overall BC population. Around 28 per cent of the Aboriginal population is under 14 years of age compared to 16 per cent of the non-Aboriginal population. Overall, 46 per cent of the Aboriginal population is under the age of 25, compared to 29 per cent of the non-Aboriginal population. In addition, close to 13 per cent of the Aboriginal population is over 55 years of age, compared to 27 per cent of the non-Aboriginal population (Figure 1.1) (Statistics Canada, 2006).

The age distribution of the Aboriginal population is changing. The large group of children and teens from the past decade is now moving into adulthood. By 2017, over half of the Aboriginal population will be in their working years, based on projections for the Registered Indian population (Figure 1.2).

### Truth and Reconciliation Commission

The Truth and Reconciliation Commission, part of the Residential School Settlement Agreement, began its work on June 1, 2008. The Commission was established to examine the legacy of decades of abuse at Canada’s residential schools for Aboriginal children. The Commission is a forum for people to share their experiences in a safe and culturally appropriate manner, including First Nations, Inuit, and Métis former residential school students; their families; communities; the Churches; former school employees; government; and other Canadians. The Commission has a budget of \$60 million over five years to help fulfill their mandate to “help the country understand the residential schools era and its impact on the lives of real people,” Indian Affairs Minister Jim Prentice said in June 2007.

Over the course of its five-year mandate, the Commission will prepare a record of the policies and operations of the schools, and describe what happened to the children who attended those schools. The Commission will prepare a report that includes recommendations to the federal government on the residential schools system and its legacy. In addition, by the end of the five-year mandate, the Commission will establish a research centre that will be a permanent resource for all Canadians.

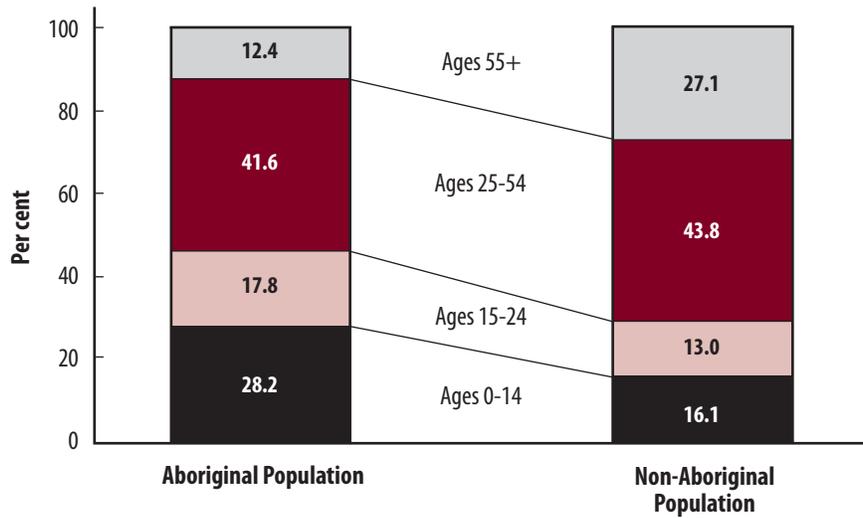
Jane Brewin Morley and Claudette Dumont-Smith were originally appointed as Commissioners, together with the Chair of the Commission, Justice Harry LaForme. Unfortunately, preparations for the public hearings were stalled by the abrupt resignation of Justice LaForme in October 2008 due to conflicts over his role as Chair. A panel has been struck to select a new Chair and two new commissioners to replace Morley and Dumont-Smith, who will step down in June 2009.

Sources: CBCNews.ca, 2008; Diebel, 2009, Indian Residential Schools Resolution Canada, 2008a, 2008b; Indian Residential Schools Truth and Reconciliation Commission, 2009.

<sup>5</sup> Census statistics may under-represent the actual numbers due to non-participation and exclusion of those people who, for example, are homeless or live in rooming houses.

**Figure 1.1**

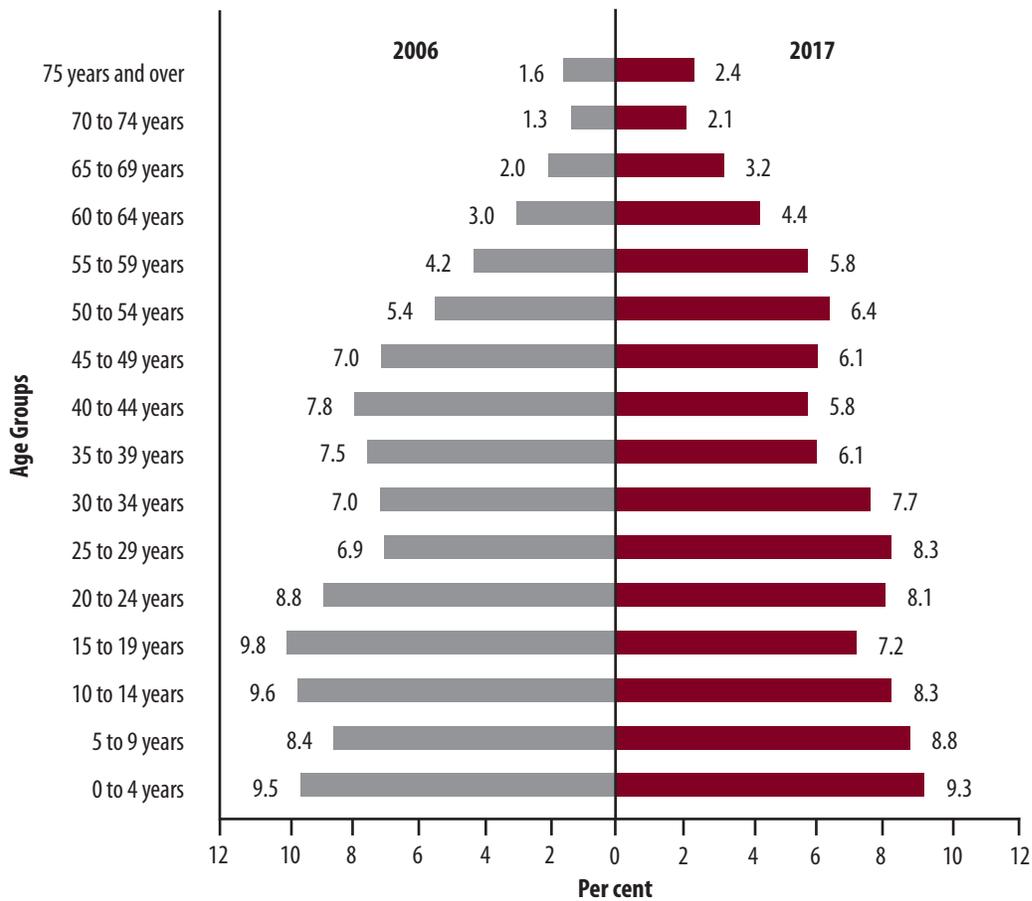
**Age Distribution, Aboriginal and Non-Aboriginal Population, BC, 2006**



Source: 2006 Census data, provided by BC Stats; prepared by Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Figure 1.2**

**Age Distribution, Aboriginal Population in BC, 2006 and 2017 (Projected)**



Source: Statistics Canada, 2005, p. 88; prepared by Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

With higher birth rates, the Aboriginal population is growing more rapidly than the non-Aboriginal population. Population projections show that the Registered Indian population is expected to increase by almost 2 per cent per year, with the on-reserve population having an annual growth rate of 3 per cent (INAC, 2000). The annual growth rate for the province overall is projected to be 1.4 per cent per year (Figure 1.3).

As the population grows and ages, there will be increasing pressures for employment opportunities, housing, and other services for people entering the labour force. The needs of children, youth, young families, and adults in their working years will be an important focus for health and social services.

Based on population numbers alone, services for older Aboriginal people would seem to be a less urgent issue than for the general population of British Columbia. However, given the lower average health status of the Aboriginal population, it may be that services for older Aboriginal people are needed at a younger age than in the general population.

**FirstVoices**

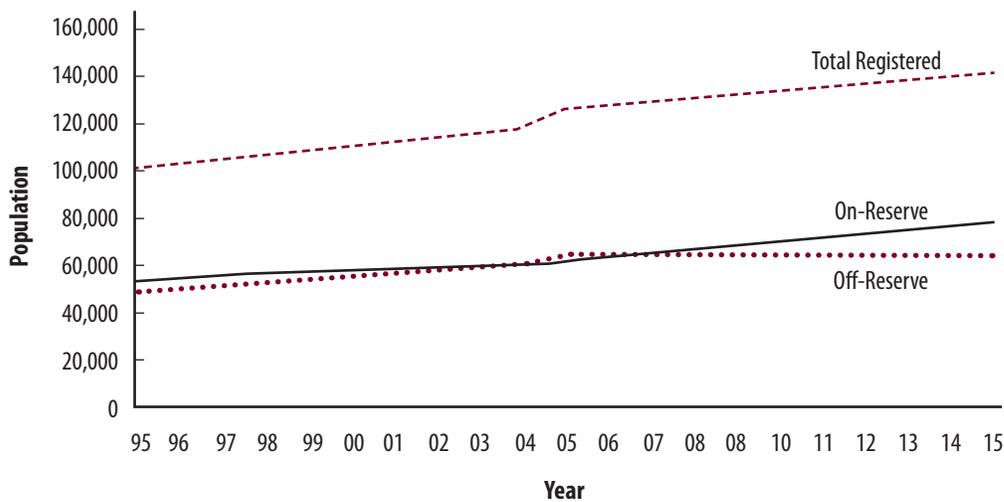
FirstVoices is an innovative initiative that uses technology to assist in the preservation of Aboriginal languages. The diversity of Aboriginal languages spoken in British Columbia—over half of the Aboriginal languages spoken in Canada come from BC—meant that an innovative approach was needed to reverse the language loss that was occurring. FirstVoices provides an easy-to-use, flexible platform for Aboriginal communities to develop and manage their own language resources.

FirstVoices is a series of web-based tools that allow Aboriginal language speakers to archive text, sound, pictures, and video. Each language collection contains an alphabet, dictionary, and phrase book. Also available are interactive language games, children’s activities, and teacher resources. There are currently 26 communities archiving their languages with FirstVoices.

For more information on the FirstVoices project, please refer to their website at <http://www.firstvoices.com/>.

Sources: First Peoples’ Cultural Foundation, 2003, 2005; FirstVoices, n.d.

**Figure 1.3 Registered Indian Population, Actual and Projected, BC, 1995-2015**



Note: 1995 to 2004 are unadjusted for late reporting and under-reporting. The baseline population for the projection series is 2004 year-end from the Indian Registry, adjusted for the late reporting and under-reporting of births and deaths.

Source: 1995-2004: Indian and Northern Affairs Canada Indian Registry System, as of December 31 of the appropriate year; Indian Register Projections 2004-2029 by region for on- and off-reserve, medium growth scenario only, provided by Indian and Northern Affairs, 2007; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

## Languages

Although the majority of Aboriginal people use English as their principal language, Aboriginal languages remain an important element that brings members of Aboriginal communities together. BC's landscape, with its numerous mountain ranges and other physical barriers, was an important factor in the evolution of the province's many languages, each with its own unique culture and group identity. During the second half of the 19th century, epidemics of disease decimated the Aboriginal population and consequently many languages disappeared. The assimilation of the Aboriginal population through government initiatives such as residential schools—which outlawed the speaking of Aboriginal languages in public—further destroyed many Aboriginal languages (Ignace, 1998). Today, more than 30 languages are spoken in British Columbia, which accounts for over half of all the Aboriginal languages spoken in Canada.

A recent Assembly of First Nations survey examined the state of Aboriginal languages in Canada. Overall, most Aboriginal languages in BC were considered endangered (meaning that less than 50 per cent of the adult population spoke the language or that generally no identified speaker under age 45 was located) or critical (meaning that less than 10 speakers living in the community spoke the language). Loss of language can severely affect the transmission of culture to the next generation (Ignace, 1998).

A recent survey conducted by the Métis Nation British Columbia (MNBC) reported that in 2006, less than 5 per cent of the Métis population surveyed spoke Michif, their traditional language. Almost 15 per cent indicated that Michif was spoken in their home and over two-thirds of the respondents indicated that they were interested in learning the Michif language (MNBC survey, 2006).

The 2001 Aboriginal Peoples Survey reported that close to half of the Aboriginal population 15 years of age and older in BC agreed that it is important to keep, learn, or relearn their Aboriginal languages (Statistics Canada, 2003).

### Legal Definitions of Aboriginal People

In Canada, the *Constitution Act* recognizes three groups of Aboriginal peoples: Indian, Inuit, and Métis.

Under the *Indian Act*, the term "Status Indian" is used to distinguish a person whose name appears on the Indian Register maintained by the federal government. The criteria for being recognized as a Status Indian (also called Registered Indian) have been revised several times, with eligibility including such things as ancestry, marriage, education, and occupation (Muckle, 2007). The most recent amendment, in 1985, brought the *Indian Act* in line with the Canadian Charter of Rights and Freedoms. This change approximately doubled the Status Indian population between 1985 and 1986 (Ontario Federation of Indian Friendship Centres, 1999). A non-Status Indian is a person of Indian ancestry who does not meet the criteria for registration under the *Indian Act* or who has chosen not to be registered (Muckle, 2007).

The Inuit are a distinct population of Aboriginal people and are registered under a 1924 revision to the *Indian Act*. The Inuit live mostly in the northern parts of Canada.

The Métis are people of mixed First Nation and European ancestry who identify themselves as distinct from other Aboriginal people. Métis history dates back to the arrival of Europeans to the North American continent approximately 500 years ago. Currently, the federal government has supported the establishment of Métis citizenship registries in the provinces of Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. The Métis Nation in each of these provinces, known as the Métis Nation Governing Members, have formalized a national citizenship definition that is defined as a person who self-identifies as Métis, is of historic Métis Nation ancestry, is distinct from other Aboriginal Peoples, and is accepted by the Métis Nation. According to the 2006 Census, the Métis population is evenly distributed throughout these provinces and the Métis Nation Governing Members are validating and verifying Métis citizenship through a variety of registry processes. Unlike Status Indians and Inuit, the Métis are not entitled to the provisions of the *Indian Act* (Provincial Health Officer, 2002).

The term "First Nations" has been widely used since the 1970s, replacing the word "Indian" as the preferred term used by many First Nations in Canada. First Nations refers to both Status and non-Status Indians. First Nations customarily defines groups formerly known as bands, as well as affiliations of distinct bands and nations. Under the *Indian Act*, "band" refers to the primary unit established by the federal government for administration purposes; in many cases, it does not reflect past social and political organization of First Nations (Muckle, 2007).

## Sources of Data for this Report

### Data

Data and research are essential not only for measuring the health status of a population, but also for designing successful programs and policies that will help to improve health and well-being. Providing data and information on the Aboriginal population is challenging due to unavailability and incompleteness of data for this population. Even counting the Aboriginal population can be difficult, because of the different concepts of “Aboriginal identity” based on ancestry, self-identity with Aboriginal communities, and legal Indian status. Table 1.2 provides the three main sources of information about the Aboriginal population used in this report: the Indian Register and the Status Verification File (SVF); the British Columbia Vital Statistics Agency database; and the Canada Census. Each of these sources has strengths and limitations.

The Indian Register is a list of Registered or Status Indians (as defined by the *Indian Act*) kept by Indian and Northern Affairs Canada. Information about the demographic characteristics of the Indian population is updated regularly by band officials and is published on a yearly basis. The Status Indian population has certain rights that may include on-reserve housing benefits, education, and exemption from federal, provincial, and territorial taxes in specific situations (INAC, 2003). The Status Verification File (SVF) is a subset of the Indian Register, and is managed by the First Nations and Inuit Health Branch, Health Canada. The SVF contains information on the entire Status Indian population in Canada.

The British Columbia Vital Statistics Agency’s statistical database is the major source of birth and death data for the population in British Columbia. Registrations of birth include a Status Indian identifier based on parent information, while registrations of death include band numbers for Status Indians; however, this information is not always completed on the registration forms. In 2007, under a special agreement between the BC Ministry of Health, Indian and Northern Affairs Canada, and Health Canada, an extract of the SVF file was provided to the BC Ministry of Health to be linked with their databases for the sole purpose of providing the most comprehensive data on the Status Indian population in British Columbia for this report. Through these linkages, data have been provided for 167,782 registered Status Indians in British Columbia. While these data do not include other Aboriginal groups such as non-Status individuals, Inuit, or Métis, the benefit of analysing information for Status Indians is that they are a consistently identifiable group. This affords the opportunity for statistically rigorous trend analysis and monitoring of health-related performance indicators and targets outlined in the Transformative Change Accord: First Nations Health Plan.

The Canada Census is the vehicle used to count the Canadian population. The 2006 Census data are based on the definitions of ethnic origin (ancestry), Aboriginal identity, Registered Indian, and band membership. There is always some under-coverage with the Census data, and the under-coverage seems to be higher among Aboriginal people than among other segments of the population. Under-coverage occurs because of the non-participation of some reserves in enumeration, the exclusion of people who are homeless or living in rooming houses, and the personal decision of some Aboriginal persons not to complete the Census form or identify themselves as Aboriginal.

Table 1.2

Data Sources

Data Source	Owner	Terms Used	Who's Included	Strengths	Limitations	Population Estimate for BC
<b>Indian Register and the extract of the Status Verification File</b>	Indian and Northern Affairs Canada	Registered Indians	Individuals registered under the <i>Indian Act</i> , including those residing outside of Canada, those in institutions, and homeless individuals.	<ul style="list-style-type: none"> <li>• Authoritative source for historical and current data on all Registered Indians.</li> <li>• Population projections are produced regularly.</li> </ul>	<ul style="list-style-type: none"> <li>• Residency may be outdated.</li> <li>• Does not provide information about Métis or non-Registered (non-Status) First Nations.</li> </ul>	2007: 123,927 (adjusted for late and under-reporting of births and deaths).
<b>BC Vital Statistics Agency Database</b>	BC Vital Statistics Agency, Ministry of Health Services. Analysis is undertaken in collaboration with First Nations and Inuit Health Branch, Health Canada.	Status Indians	Individuals identified as Status Indian residents in BC in any of three sources: Health Canada's Status Verification File; Vital Statistics (birth and death) registrations; and the Status Indian entitlement files from the BC Medical Services Plan database.	<ul style="list-style-type: none"> <li>• The most complete and up-to-date estimates for Status Indians in BC, due to extensive computer-matching process.</li> <li>• Can be used to provide birth and death statistics.</li> <li>• Has been linked to Medical Services Plan, hospitalization data, and Pharmanet data to provide statistics on hospital utilization, prescription use, and other similar indicators.</li> </ul>	<ul style="list-style-type: none"> <li>• Reliable data available from 1993 (historical trends are not available using current methodology).</li> <li>• Does not provide information about Métis or non-Status First Nations.</li> </ul>	2006: 167,782
<b>Canada Census</b>	Statistics Canada	Aboriginal self-identity and/or ethnic origin. North American Indian (Registered, non-Registered), Métis, and Inuit.	Individuals who report that they are a band member or a Registered Indian, have Aboriginal ancestry, or consider themselves to be Aboriginal, based on Census questions.	<ul style="list-style-type: none"> <li>• Inclusive definition of Aboriginal. Includes Aboriginal ancestry, self-reported identity, and legal status.</li> <li>• Demographic and social characteristics can be compared to the general (non-Aboriginal) population.</li> </ul>	<ul style="list-style-type: none"> <li>• Incomplete enumeration and under-coverage, both off- and on-reserve.</li> <li>• Census conducted only every five years.</li> <li>• Survey definition changed in 1996; therefore, historical trends are not available.</li> </ul>	2006: 196,070 (Aboriginal self-identity)

## Surveys

Throughout this report, data from available federal and provincial surveys have also been used. The surveys included in this report are summarized in Table 1.3.

The most comprehensive survey, the 2001 Aboriginal Peoples Survey, was conducted by Statistics Canada from the fall of 2001 to the spring of 2002. The survey was designed in partnership with national Aboriginal organizations for the purpose of collecting data on lifestyles and living conditions of the Aboriginal population in Canada. The 2001 Aboriginal Peoples Survey included First Nations, Métis, and Inuit, with a sample size of 117,241 across Canada. The sample size for BC was 15,148.

For the first time in British Columbia, we are able to provide information on the Métis population of the province based on a survey conducted in 2006. The sample size for this survey included 3,000 Métis individuals living in BC; the survey included questions on indicators such as culture, education, housing, and health.

Other smaller surveys have also been included, and although the sample sizes for BC are small, they may provide a better understanding of different aspects of the living conditions of Aboriginal people, and help us move towards reducing the gap in health and well-being between the Aboriginal and non-Aboriginal population in the province.

**Table 1.3**

**Surveys**

Survey	Conducted by	Terms Used	Who's Included (Sample Size)	Response Estimates for BC
<b>Aboriginal Peoples Survey</b>	Statistics Canada	Aboriginal self-identity and/or ethnic origin. North American Indian (Registered, non-Registered, Métis, and Inuit).	Individuals who report that they are a band member or a Registered Indian, have Aboriginal ancestry, or consider themselves to be Aboriginal, based on Census questions.	2001: 15,148
<b>BC First Nations Regional Longitudinal Health Survey</b>	Chiefs' Health Committee	First Nations	238 First Nations communities across Canada.	2002/2003: 1,944 surveys (712 adults, 566 youth, and 666 children)
<b>Survey of First Nations People Living On-Reserve</b>	Indian and Northern Affairs Canada	First Nations	1,507 First Nations people living on-reserve. Criteria included: <ul style="list-style-type: none"> <li>• Member of Indian Band or First Nation.</li> <li>• Resident on a reserve in Canada.</li> <li>• 16 years of age and older.</li> </ul>	2002: 200
<b>Survey of First Nations People Living Off-Reserve, Métis, and Inuit</b>	Indian and Northern Affairs Canada	First Nations	2,183 First Nations individuals living off-reserve.	2002: 428
<b>Canadian Community Health Survey</b>	Statistics Canada	Aboriginal population	5,064 Aboriginal people in Canada.	2002: 536
<b>Métis Survey</b>	Métis Nation British Columbia	Métis population	3,000 Métis people in BC.	2007: 1,523

**Wilp Wilxo'oskwhl Nisga'a**

The Wilp Wilxo'oskwhl Nisga'a Institute is a dynamic Aboriginal post-secondary institution, located in the Nass Valley region of northern BC. Founded in 1993, the Institute prides itself on its strong community- and student-focused culture, with specific interest in providing education and training to people within the Nisga'a community. Their mission is to ensure "... that Nisga'a adults have equitable access to quality learning in the community where they live and work."

One of the main goals of the Institute is to preserve the Nisga'a language and culture. In fact, they are the sole educational organization where students can receive a certificate in Nisga'a Studies. The Institute partners with other institutions to offer some of its programs, including the University of Northern British Columbia, Northwest Community College, and Royal Roads University. In addition to First Nations Studies and Nisga'a Studies, the Institute offers career and college preparation, undergraduate degrees and certificate programs, vocational/technical programs, and continuing community education.

For more information on Wilp Wilxo'oskwhl Nisga'a Institute, please refer to their website at <http://wwni.bc.ca>.

Sources: Indian and Northern Affairs Canada, 2006a; Wilp Wilxo'oskwhl Nisga'a Institute, n.d.



# Chapter 2

## Determinants of Health

Community environments are particularly important in influencing the health and well-being of Aboriginal people. Families and social units with shared languages, values and beliefs, traditions and practices, traditional knowledge, relationship to land and water, artistic expression, and spirituality are all essential elements to Aboriginal people's health and well-being. This is entirely consistent with a growing body of evidence demonstrating the influence of a variety of socio-economic factors on health. Community identity, connectedness, employment, income, education, and other societal factors all influence and determine the health of individuals.

This chapter will provide an analysis of some of the non-medical factors that affect the health of the Aboriginal people in BC. It will discuss the on- and off-reserve population, employment, occupations, income, and education, and provide a detailed discussion of economic development and other community measures such as violence, abuse, and crime.

### Highlights

- Approximately 5 per cent of the total BC population are Aboriginal. The Aboriginal population is evenly distributed between Northern, Interior, Vancouver Island, and Fraser Health Authorities at 24.5, 22.9, 20.7, and 19.4 per cent respectively. Vancouver Coastal Health Authority has the lowest percentage of the Aboriginal population at 12.5 per cent.
- Research in BC clearly shows that there are unnecessary structural barriers to on-reserve economic development.
- Based on 2006 Census data, the unemployment rate for the Aboriginal population was approximately 13.7 per cent, compared to 4.7 per cent for the rest of the BC population.
- Based on 2006 Census data, nearly 62 per cent of the Aboriginal population in BC (15 years of age and older) earned less than \$20,000 per year, compared to 44.4 per cent of the non-Aboriginal population.
- Recent research in BC has shown that given a supportive school environment, Aboriginal students perform as well as their non-Aboriginal peers.
- In 2005/2006, Aboriginal students had a first-time graduation rate of 50.9 per cent, compared to 78.4 per cent for non-Aboriginal students. In 2005/2006, approximately 88 per cent of Aboriginal students who were eligible to graduate completed high school, compared to 74.2 per cent in 1994/1995. For non-Aboriginal students, the rate increased from 90.2 per cent in 1994/1995 to 94.6 per cent in 2005/2006.
- A disproportionate number of Aboriginal children and youth are in government care. The records of the Ministry of Children and Family Development show that in January 2009, there were 8,960 children in the care of child welfare authorities. Over half of these children (4,647) were Aboriginal.
- In 2006/2007, the rate of Aboriginal youth in custody was 17.7 per 10,000 population, versus a rate of 2.4 per 10,000 for non-Aboriginal youth.

## Community

Around 45 per cent of the Registered Indian population<sup>1</sup> in British Columbia live on reserves, which range from around 1 hectare to more than 18,000 hectares (3,500 square kilometres), and account for 0.5 per cent of the land in British Columbia. Many First Nations operate businesses on-reserve, ranging from sawmills to wineries. Registered Indians do not pay tax on income earned while working on-reserve or sales taxes on goods purchased on-reserve (Muckle, 2007).

Before British Columbia joined Confederation, reserves were allocated unilaterally, first by the Hudson's Bay Company on behalf of the British government, then by the governor of the colony or his designate (Tennant, 1996). Upon joining Confederation, reserves became the responsibility of the federal government. According to the *Indian Act, 1876*, "on-reserve" refers to people living on a tract of land, the legal title to which is vested in the Crown, that has been set apart for the use and benefit of a band.

For most Registered Indians, the primary administrative unit is the band. Federal government funding tends to be allocated to the band, making them the most direct way for Registered Indians to obtain their benefits and entitlements. The governance of most bands follows the *Indian Act*. Each band is governed by an elected chief and council, with the number of councillors dependent on the number of band members. Since 1985, band membership lists have been managed by the chief and council. In many cases, bands do not represent past social and political organizations; the system was created by the federal government to administer land and other matters related to First Nations (Muckle, 2007).

Over the years and particularly through the latter part of the 20th century, new bands have emerged in BC. There are approximately 200 bands in BC today. Historically, these bands were divided into major groupings including Haida, Tsimshian, Kwakiutl, Nootka, Coast Salish, Interior Salish, Bella Coola, Athapaskan, Inland Tlingit, and Kutenai, although many First Nations people consider this to be a very simplistic depiction of their ethnic diversity (Muckle, 2007).

The majority of the Aboriginal population are affiliated with tribal councils,<sup>2</sup> which are associations of bands formed to

deal with administrative, economic, political, or other issues. Currently, there are approximately 30 tribal councils in the province. Tribal councils tend to be regional and may cross ethnic boundaries (Muckle, 2007).

Aboriginal people have other affiliations, including organizations that support the arts, economic development, health, education, politics, and affiliations to negotiate treaties. Some prominent umbrella organizations include: the BC Assembly of First Nations, the First Nations Summit, the Union of BC Indian Chiefs, the United Native Nations, Métis Nation British Columbia, and the BC Association of Aboriginal Friendship Centres (Muckle, 2007).

### Friendship Centres

Friendship Centres in BC began in 1954, with the formation of the Coqualeetza Fellowship Club in Vancouver. The Club was originally formed to provide support to Aboriginal students moving to Vancouver, but requests for services increased. In 1963, the Club was incorporated as the Vancouver Indian Centre Society. By the mid-1960s, support organizations were springing up in many urban centres, as a result of the influx of Aboriginal people, including: Port Alberni (1965), Nanaimo (1968), Williams Lake (1969), Prince George (1969), and Fort St. John (1970). In 1971, the federal government began providing core funding to Friendship Centres through the Migrating Native People's Program. Over the next 10 years, 14 new centres were established across BC.

In the beginning, Friendship Centres were perceived as a place for Aboriginal people to socialize and receive emotional support. Their primary role was to refer people to existing social services. By the mid-1970s, Friendship Centres began to provide a number of services in the areas of employment, substance abuse, family support, legal services, and cultural retention. Today, Friendship Centres continue to provide support to Aboriginal people, and play a leadership role in their communities. There are currently 24 Friendship Centres located throughout BC. "While each Centre is as unique as the community it serves, all are united in their effort to improve the quality of life of Canada's Aboriginal people and to protect and preserve Aboriginal culture for the benefit of all Canadians" (British Columbia Association of Aboriginal Friendship Centres, n.d.)

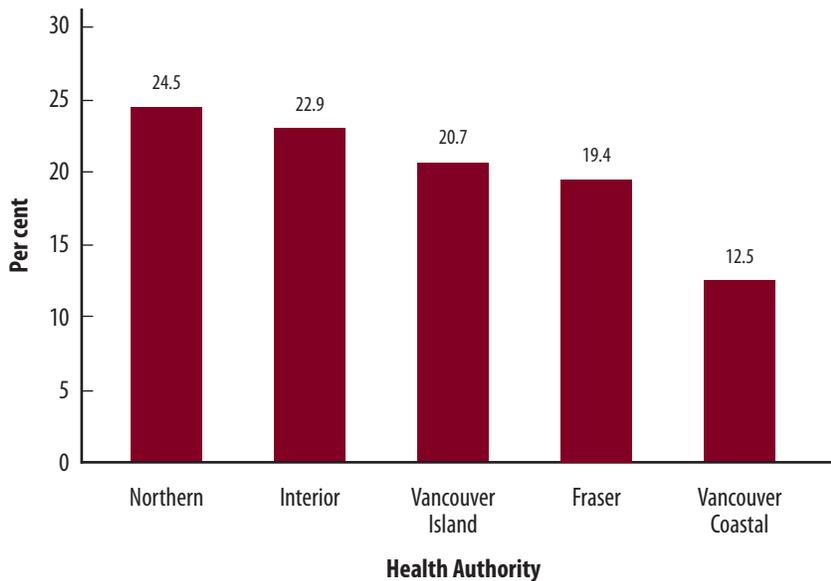
Source: British Columbia Association of Aboriginal Friendship Centres, n.d.

<sup>1</sup> For specific definitions of the Aboriginal population, please refer to Chapter 1.

<sup>2</sup> The Métis population is not affiliated with tribal councils.

Figure 2.1

### Distribution of the Aboriginal Population, by Health Authority, BC, 2006

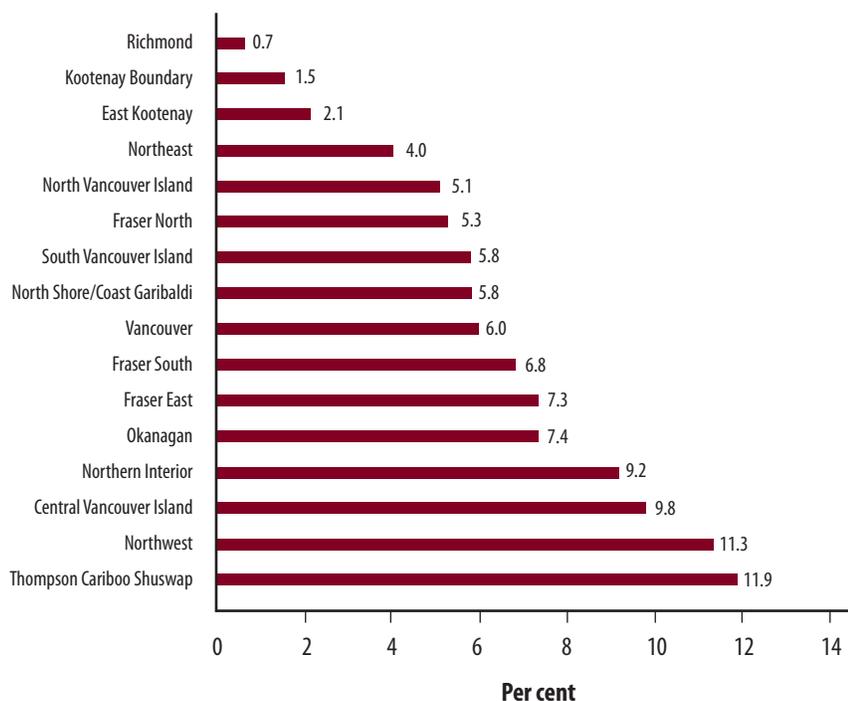


Note: These proportions are additive and include both the on-reserve and off-reserve Aboriginal population.

Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.2

### Distribution of the Aboriginal Population, by Health Service Delivery Area, BC, 2006



Note: These proportions are additive and include both the on-reserve and off-reserve Aboriginal population.

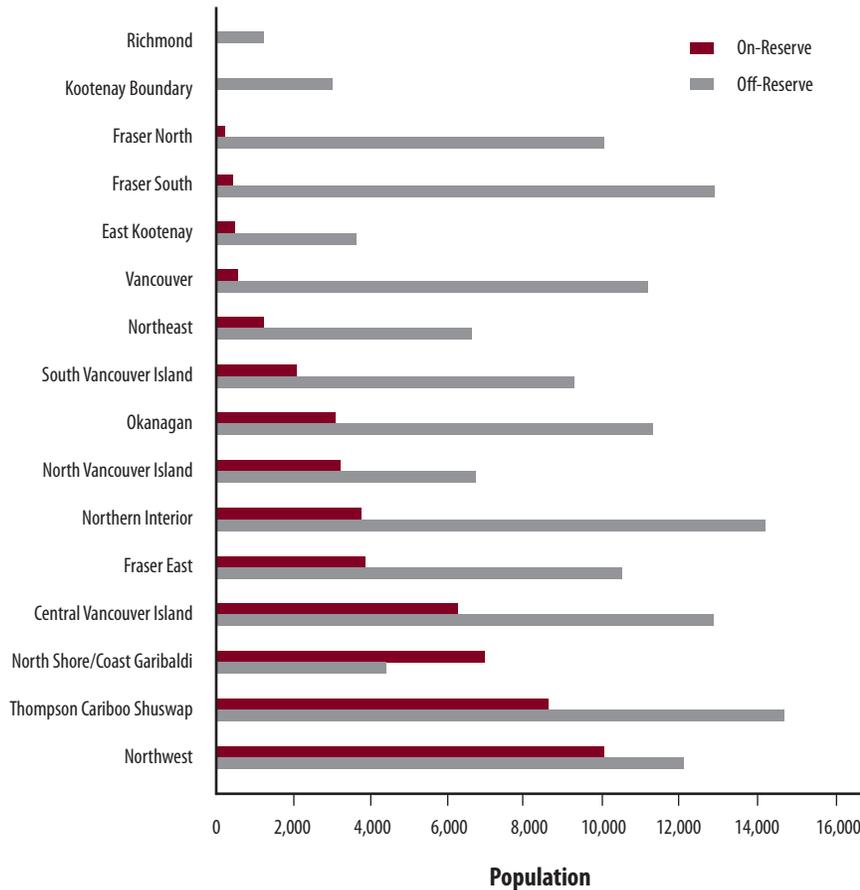
Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## Aboriginal Population Distribution

According to 2006 Census data, approximately 5 per cent of the total BC population identified themselves as Aboriginal, a relative increase of 14 per cent from the 2001 Census figure of 4.2 per cent. The Aboriginal population is geographically dispersed throughout the province; however, close to half live in the Northern and Interior Health Authorities (24.5 and 22.9 per cent respectively). Vancouver Island and Fraser Health Authorities have 20.7 and 19.4 per cent of the Aboriginal population respectively, while Vancouver Coastal Health Authority has the lowest percentage of the Aboriginal population at 12.5 per cent (Figure 2.1). Within the health service delivery areas (HSDAs), the highest percentage of the Aboriginal population lives in the Thompson/Cariboo/Shuswap (nearly 12 per cent), while the lowest proportion lives in Richmond (less than one per cent) (Figure 2.2).

**Figure 2.3**

**Aboriginal Population, On-Reserve/Off-Reserve, by Health Service Delivery Area, BC, 2006**



Note: There is some seasonal fluctuation in the numbers of Aboriginal people living on-reserve, which could impact the accuracy of the Census enumeration process. Kootenay Boundary and Richmond Health Service Delivery Areas show no on-reserve Aboriginal population.

Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**On- and Off-Reserve Population in BC**

According to 2006 Census data, approximately 74 per cent of Aboriginal people in British Columbia live off-reserve. Males are more likely to live on-reserve compared to females (27.7 and 24.5 per cent respectively). Compared to other age groups, females 25–39 and 45–49 are more likely to live off-reserve (data provided by BC Stats).

Based on 2006 Census data, 196,070 people live in BC who either self-identified or were identified by their parents as Aboriginal. Over 145,000 Aboriginal people live off-reserve, and the other 51,000 live on-reserve. Figure 2.3 illustrates the population of Aboriginal people living on- and off-reserve in BC. The regions with the largest concentrations of the off-reserve Aboriginal population in BC are the Thompson/Cariboo/Shuswap, Northern Interior, South Fraser, Central Vancouver Island, and Northwest HSDAs. These regions represent 46 per cent of the off-reserve Aboriginal population living in BC. There were moderate concentrations of off-reserve Aboriginal people living in the Okanagan, Vancouver, Fraser Valley, Simon Fraser, and Southern Vancouver Island regions (36 per cent).

The Northwest, Thompson/Cariboo/Shuswap, North Shore/Coast Garibaldi and Central Vancouver Island regions had the largest proportions of the on-reserve Aboriginal population in BC, totalling almost 63 per cent. The Fraser Valley, Northern Interior, North Vancouver Island, and Okanagan HSDAs represent just over 27 per cent of the on-reserve Aboriginal population. The 2006 Census data showed few or no Aboriginal people living on-reserve in the Kootenay Boundary and Richmond regions. This may be due to small numbers and data suppression (Figure 2.3).

### How does Canada rank?

If Canada was judged solely on the economic and social well-being of its Aboriginal population, its rank on the United Nations human development scale would be much lower than its 2006 placing of 6th out of 174 nations.

The Human Development Index (HDI) examines human development in three dimensions: life expectancy, education, and income. According to information reported in the December 2004 report of the Special Rapporteur for the Commission on Human Rights, when the HDI is calculated for Registered Indians in Canada, this population would be ranked 48th among the countries in the report.

The report makes a series of recommendations intended to reduce the disparities between the Aboriginal and non-Aboriginal population in Canada. British Columbia has led the way in Canada and has made attempts to address some of these disparities through initiatives such as the Tripartite First Nations Health Plan.

In November 2006, the Government of BC and the First Nations Leadership Council released the bilateral Transformative Change Accord: First Nations Health Plan to close the health gap between First Nations and other British Columbians. And on June 11, 2007, the Province, First Nations Leadership Council and the Government of Canada officially signed the Tripartite First Nations Health Plan, formally committing the federal government to the bilateral plan and adding new tripartite governance requirements.

The Métis Nation British Columbia achieved historic success May 12, 2006, with the signing of the Métis Nation Relationship Accord with the Province of British Columbia. The accord provides a framework for the province and Métis Nation British Columbia to strengthen existing relationships.

Sources: CBCNews.ca, 2005; Commission on Human Rights, 2004; United Nations Development Programme, n.d.

## Socio-Economic Conditions and Well-Being

### Human Development Index

Previous reports by the Provincial Health Officer (PHO) have shown a relationship between socio-economic conditions and the health status of communities. In general, improvement in indicators such as education, employment, and income are associated with a lower rate of premature death (PHO, 2000). In 1990, the United Nations Development Programme developed the Human Development Index (HDI), which measures three dimensions of a country's human development: life expectancy, education, and income. Although the index is not a comprehensive measure of human development, it provides an outlook on the complex relationship between the health and socio-economic conditions of individuals in a country. Based on this index, in 2006, Canada ranked sixth, while Norway ranked first (United Nations Development Programme, 2006).

### Community Well-Being Index for BC

During the 1990s, the Strategic Research and Analysis Directorate, Indian and Northern Affairs Canada, took the HDI one step further and developed the Community Well-Being Index (CWB) as a measure of the well-being of communities across Canada. The methodology used in the CWB index is based on the HDI, although CWB uses four indicators: education, labour force, income, and housing. Education is measured by functional literacy at a grade 9 level for the proportion of the population 15 years and older, as well as the proportion of the population who have a high school diploma. Labour force is determined by participation<sup>3</sup> and employment of the population 20 years of age and over.<sup>4</sup> Income is measured by total income per capita, while housing is measured by housing quantity (crowding conditions) as well as quality.<sup>5</sup>

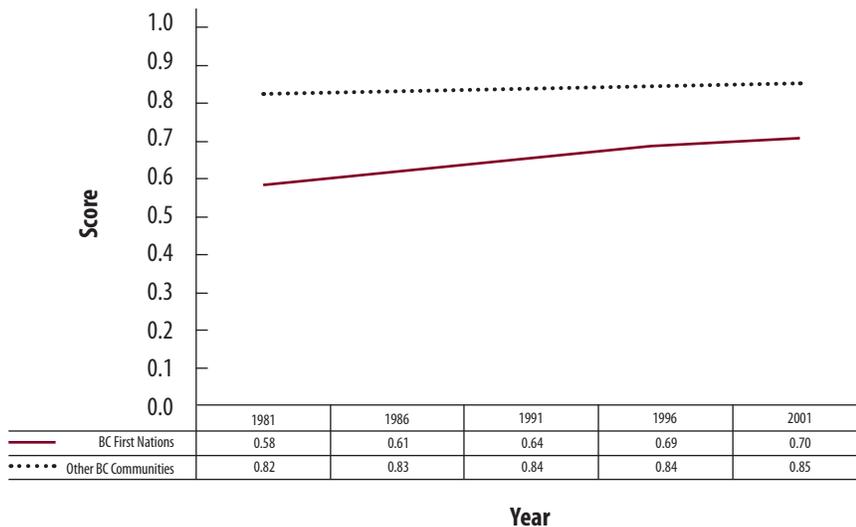
<sup>3</sup> Total labour force for the working population age 15 and over expressed as a percentage.

<sup>4</sup> Age 20 was used as opposed to age 15, to account for the number of people under age 20 in communities who were still attending school.

<sup>5</sup> For more information on the methodology and limitations of the CWB index, please refer to *First Nations Community Well-Being in Canada: The Community Well-Being Index (CWB), 2001* (McHardy & O'Sullivan, 2004).

**Figure 2.4**

**Community Well-Being Scores, First Nations and Other Communities, BC, 1981 to 2001**



Source: O’Sullivan, 2006; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

***In 2001, only two First Nations communities ranked among the top 50 communities in BC. All of the bottom 50 communities in BC were First Nations.***

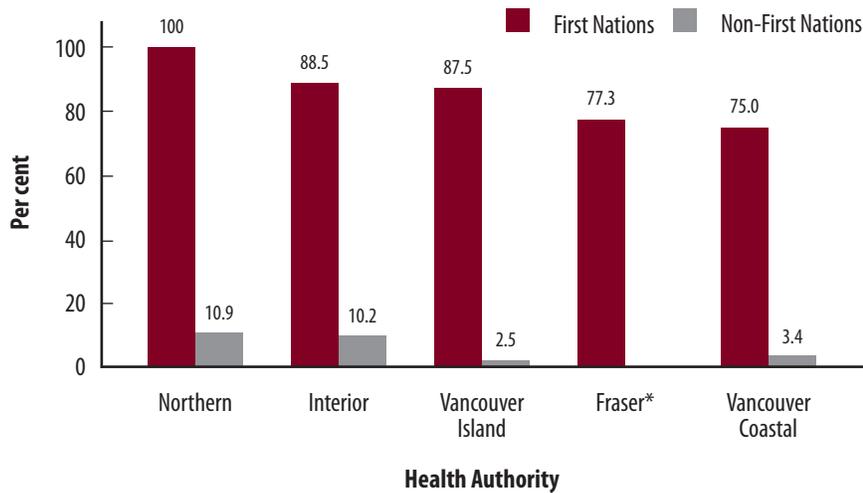
**Eric Guimond,**  
 Indian and Northern Affairs, Presentation, March 8, 2005

Taking these four indicators into account, a score from 0 to 1 was applied to each of the communities, with 0 being the lowest score and 1 being the highest. The communities measured were based on Census subdivisions and Census data. Since data for community measurement is only available for some communities for years prior to 2001, it is important to look at the overall trend in community well-being for BC since 1981. From 1981 to 2001, community well-being has improved for BC First Nations (0.58 to 0.70 respectively). Community well-being for other BC communities for the same years was 0.82 and 0.85 respectively (Figure 2.4). Not all the communities in the Census subdivisions were used in the study; however, the sample size in most cases was representative of most areas of the province.

For the purposes of this report, the Census subdivisions were amalgamated into the five regional health authorities. The BC data includes 170 First Nations communities and 316 other BC communities. Overall, First Nations communities were much worse off than other BC communities in all regions. The overall average score for First Nations communities was 0.70, compared to 0.85 for other BC communities. The lowest score in the First Nations communities was 0.49, while the lowest score in other BC communities was 0.68. Northern Health Authority alone had 30 First Nations communities with scores below 0.70, including 11 communities with scores less than 0.60.

Figure 2.5

### Community Well-Being Scores Under 0.80, by Health Authority, First Nations and Non-First Nations Communities, BC, 2001



\* Fraser Health Authority showed no non-First Nations communities with a Community Well-Being score under 0.80.

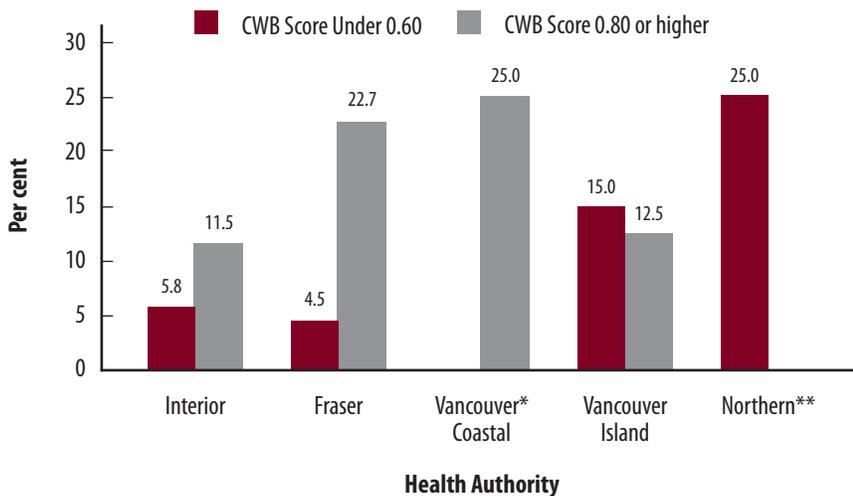
Source: Statistics Canada, Population Census, 2001; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.5 shows the community well-being scores under 0.80 by health authority. This figure shows a clear separation between First Nations and other BC communities. In general, the vast majority of First Nations communities had scores under 0.80, while the opposite was true for other BC communities. For example, 100 per cent of First Nations communities in Northern Health Authority had scores below 0.80, versus nearly 11 per cent of other BC communities. In Fraser Health Authority, over 70 per cent of First Nations communities had a score below 0.80. All other BC communities in Fraser Health Authority had a score above 0.80.

Within each health authority, many communities were prospering while others seemed to be at a disadvantage (Figure 2.6). Vancouver Coastal and Fraser Health Authorities had the highest percentage of CWB scores 0.80 and above, at 25 and 22.7 per cent respectively, while Vancouver Island and Interior Health Authorities had much lower percentages, at 12.5 and 11.5 per cent respectively. Northern Health Authority had no First Nations community with the score of 0.80 and above. In contrast, Northern and Vancouver Island Health Authorities had the highest percentage of communities with scores of under 0.60, at 25.0 and 15.0 per cent respectively, while Vancouver Coastal Health Authority did not have any communities with a score under 0.60.

Figure 2.6

### Range of Community Well-Being Scores Below 0.60, and 0.80 or Higher, by Health Authority, First Nations Communities, BC, 2001



\* Vancouver Coastal Health Authority showed no First Nations communities with a Community Well-Being (CWB) score of under 0.60.

\*\* Northern Health Authority showed no First Nations communities with a CWB score of 0.80 or higher.

Source: Statistics Canada, Population Census, 2001; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## First Nations Economy – Pre-Contact

The pre-contact First Nations economy in BC encompassed a series of interconnected relationships to the land, to family and community, and to other First Nations. In fact, Indigenous economics has been described as the science of dealing with the production, distribution, and consumption of wealth in a naturally holistic, reciprocal manner that respects humankind, fellow species, and the eco-balance of life (First Nations Development Institute, 1997, as cited in Wuttunee, 2004).

### Land

First Nations relationship to the land is complex and not easily experienced or understood by people not born of this culture. This complexity is reflected in Aboriginal languages, which convey a depth of meaning and feeling in relation to the land that cannot be adequately expressed or translated into English. The land touches every aspect of life, both spiritual and material. First Nations relationship to the land is characterized by the responsibility and thankfulness for all creatures, both animate and inanimate (Wuttunee, 2004). First Nations economies in BC varied according to the availability of the natural resources from one region to another and were based on hunting, gathering, fishing, and sea harvesting (Helin, 2006). Aboriginal peoples observed Nature's cycles closely in order to adapt their food harvesting techniques to survive in a harsh climate with limited resources (Wuttunee, 2004). Sustainable harvesting practices were adopted to maximize potential harvest from trees, shrubs, and plants and to provide appropriate habitat for game animals (Muckle, 2007).

### Family and Community

For all First Nations in BC, the interdependence of tribal members was essential for survival. First Nations communities exhibited a high degree of social cohesion in order to maximize their success. The guiding principles were respect for others, sharing with community members, and caring for the young and infirm (Wuttunee, 2004). Cultural practices reinforced their interdependence, and teamwork was consciously fostered through games, rituals, and daily routines. This vision of community is summed up in the Tsimshian language by the phrase “sayt k,ilim goot”, meaning

“all tribal members are being of one heart, one path, and one mind” (Helin, 2006).

For many Interior First Nations, individual equality and flexibility were key features of community. People worked and lived in small family groups, hunting and harvesting a variety of foods over large territories. In more structured coastal First Nations communities, permanent positions of leadership were established according to family lineage, and communities were organized into “houses” based on family groups or clans. Houses possessed a wide range of property, which could include: land and buildings; places for hunting, fishing, and gathering berries, roots, and plant medicines; as well as material goods such as canoes and totems. In addition, houses often possessed “intellectual” property, such as certain songs and stories and the knowledge of the manufacture of stone tools (Tennant, 1990). In the Nuu’chah’nulth First Nation, the head of each clan had responsibilities for specific territories, rivers, and beaches. Women traditionally were keepers of the family histories and lineages and were also responsible for trade (Wuttunee, 2004). Concepts of property were just as detailed and sophisticated as those of their European counterparts (Tennant, 1990).

The potlatch was originally used to facilitate food exchanges between different groups with surpluses and shortages. Over generations, it evolved into the means for dispensing different responsibilities and status, as well as being an exchange of food and other material goods. Potlatches served an important economic function, ensuring the circulation of wealth. Status was maintained by giving away wealth rather than by accumulating it. Many BC First Nations did not have the potlatch as part of their culture, but for all, the necessities of life were shared among community members (Dickason, 2002).

### Trade and Gifting Among First Nations

As physically taxing and time-consuming as the hunter-gatherer economy was, its members were not kept continually busy procuring food (Dickason, 2002). They had leisure time to devote to cultural matters, such as dancing, music, storytelling, and art and also the creation of surplus goods for trade. Trading relationships with other First Nations were an essential part of the economy and extensive trading networks existed between coastal and interior First Nations. Many kinds

of preserved foods were exchanged. Interior First Nations traded hides and furs for dried fish from coastal nations. Oolichan oil was highly prized and trade routes to the Interior became known as the “grease trails” (Muckle, 2007).

Trade goods sometimes travelled long distances. Obsidian from quarries at Edziza in the northern interior has been found in areas far from its place of origin. Manufactured items such as canoes and baskets were also traded, along with various kinds of shells for personal adornment, and commercial, diplomatic, and ceremonial use. Certain locations became trading centres, such as Lillooet, which was central to several First Nations from the interior and the northwest coast (Muckle, 2007). Widespread trade brought the need to communicate effectively, and fluency in more than one language was required for trade and diplomacy purposes. In BC, Chinook Jargon (a combination of Chinook, Sahaptin, and Nuu’chah’nulth) became a major trading language (Dickason, 2002). War was also a factor in the economy and raids were sometimes made for slaves or material goods, such as canoes (Muckle, 2007).

Gift exchanges were a social and diplomatic obligation and gifts were presented to guests. Gifts were also presented on special occasions such as a naming ceremony or marriage. “Gifts were metaphors for words” and signified the esteem in which a person was held. The higher the status of the recipient, the greater the value of the gift, and to acquire high status one must, in turn, be generous. Treaties, once agreed upon, were kept alive with ritual gift-giving to signify the importance of the ongoing relationship (Dickason, 2002).

## First Nations Economy – Post-Contact

Contact on the west coast resulted in an estimated 80 per cent drop in the Aboriginal population within a century due to diseases introduced by European and American traders, miners, and settlers. This sharp decline in population led to a devastating loss of cultural and economic knowledge relating to plant medicines, healing techniques, and the harvesting of various kinds of foods, which had a major impact on First Nations economies. Trade in sea otter began in the 1780s, and initially led to greater wealth for many coastal First Nations before the sea otter population was decimated through over-harvesting (Dickason, 2002). Fur trading disrupted traditional life paths as people focused on the harvesting of otters and

the accumulation of trade goods, rather than gathering traditional foods (Muckle, 2007).

Gold rushes on several BC rivers, starting in the late 1850s and lasting until the 1870s, also had a major negative impact on Aboriginal peoples traditional economy and their food sources, as mining activity damaged critical salmon spawning habitat. Although incursions by gold seekers were initially repelled, the massive influx of 30,000 gold seekers could not be resisted indefinitely. Some First Nations became gold seekers themselves or abandoned traditional food harvesting to seek wages providing services to the gold trade. Settlers did not arrive in substantial numbers until the late 1850s, and colonial administrators facilitated their takeover of considerable portions of First Nations land. First Nations were restricted to much smaller parcels of land or “reserves”, disrupting their traditional harvesting practices still further and forcing them to seek employment in larger centres (Muckle, 2007).

At first, Aboriginal peoples were considered essential to the fur trade and Europeans maintained good business relations with them, but colonial attitudes changed once Britain established dominance over the territory that would become British Columbia. The intent of colonial policy was to bring these “outsiders” to the accepted economic structure of the wage economy, albeit at the lowest level of paid labour. Colonial administrators pursued the creation of a separate legal and regulatory process for those considered

***“For thousands of years Native people were part of the local and regional economy. Yet over the last 100 years Natives have been marginalized and denied their right to provide for themselves and their families. If you go back 100 years in our territory you find a sustainable economy, a trading people who did business with people to the north and to the south.”***

**Chief Clarence Louie,**  
South Okanagan

outside mainstream society, pending their full citizenship. It was considered advisable to target Aboriginal children who were thought to be the most open to change, using the Christian churches as an essential medium for producing citizens (Armitage, 1995, as cited in Helin, 2006).

From this strategic policy came the pre-emption of Aboriginal lands to European settlers, the implementation of the *Indian Act*, the establishment of residential schools, the denial of the right to vote (at a time when Aboriginal people far outnumbered other residents), and the banning of the potlatch and activities related to treaty making. The force of colonial administration came down on the BC Aboriginal population in an unprecedented fashion. BC became one of two territories within the British Empire to implement the doctrine of *terra nullius*, meaning that the land was considered to have lacked any significant previous human occupation, and thus was devoid of any Aboriginal title (Tennant, 1996).

Over the years, prohibitions and restrictive policies and laws caused First Nations to lose control over their governance, traditional practices, and economic independence. For many years, communities were placed under rigid governance systems that prohibited practices and meaningful participation

***“Our major weakness, and it is considerable, is all the leftover dysfunction from our colonial past — the control exerted over us by the Indian Act, the administration of our affairs by the Department of Indian Affairs, family breakdown, the cycle of welfare, the victimization syndrome, the dependency syndrome are still with us today. We are like a Third World country trying to emerge from a colonial past. After 100 years of abuse by the Federal and Provincial governments, many of our people are not ready for work.”***

**Chief Clarence Louie,**  
South Okanagan

of First Nations in economic activities. These prohibitions and restrictions have resulted in a socio-economic disparity that has affected the health and well-being of First Nations.

## **First Nations Economic Development – Current Challenges**

In October 2006, Ted Williams, a member of the Cowichan Tribe and an Economic Consultant to the First Nations Leadership Council and BC Ministry of Economic Development, began a detailed study of the economic development of First Nations in BC. Based on the New Relationship agreement and the Transformative Change Accord signed by the federal and provincial governments and the First Nations Leadership Council in 2005, this project was to contribute to the progress in economic development strategies and plans. In April 2007, Williams received invitations from 11 First Nations who agreed to participate in the project. Leaders, councillors, and economic development officers of the participating First Nations were asked to respond to research questions based on the Harvard Project on American Indian Economic Development. Based on the results, two approaches to community economic development were identified: (1) development of First Nations community-owned and operated enterprises; and (2) support for the development of First Nations entrepreneurs and their participation in mainstream businesses. In the context of these two approaches, three main areas of First Nations economic development were identified: (1) development of lands, resources, and water; (2) benefit and revenue-sharing agreements; and (3) partnerships (Ministry of Economic Development et al., n.d.).

The data that was collected identified seven themes that are being addressed in varying degrees by participating First Nations communities.

### **1) Understanding First Nations communities**

BC First Nations had a vibrant economy for thousands of years; however, after the arrival of Europeans, prohibitions and restrictive policies and laws caused First Nations to lose control over their governance, traditional practices, and economic independence. These restrictions have resulted in socio-economic disparities between First Nations communities and other British Columbians. An

understanding of the elements that caused this disparity is necessary and a collaboration of all those involved is needed to move forward.

In 2005, with the commitment to the New Relationship with Aboriginal Peoples and the signing of the Transformative Change Accord, the federal and provincial governments and the First Nations Leadership Council announced their shared commitment to support social and economic well-being of First Nations and to focus actions on closing the gap between First Nations and other BC residents.

## 2) Understanding the opportunities of land, water, and other available resources

### *Land*

During the study, Williams noted that all First Nations have an interest in pursuing economic development opportunities throughout the province on-reserve and within their traditional territory lands; however, many barriers related to land developments prevent such activities. Some of the barriers identified were:

- No accumulation of equity for First Nations homeowners.
- Lengthy and uncertain timelines and high costs for land designation decisions and delegated authority.
- Limited opportunities for self-government.

### *Water*

Water and the business opportunities associated with it are essential to the quality of life and economy of the First Nations communities in BC. Although several First Nations are developing water resources on their traditional lands and on-reserve, barriers exist in the development of and access to this resource. Some of these barriers are:

- Limited expertise, training, and capacity among First Nations related to water resource management.
- A lack of information to help First Nations identify opportunities in power production or aquaculture.
- The application process of aquaculture licences and tenures is challenging in terms of timelines and costs.

### **Harvard Project on American Indian Economic Development**

In 1987, two professors, Stephen Cornell and Joseph P. Kalt, developed the Harvard Project on American Indian Economic Development. The project's aim was to understand the conditions that foster sustained, self-determined social and economic development for the American Indian nations. The core activities of this project included research, advisory services, education, and administration of a tribal governance awards program. Some of the key research findings of the Harvard Project include:

- **Sovereignty** – Native communities are much more successful when they make their own decisions about all matters related to natural resource management, economic development, health care, and social service provisions.
- **Institutions** – In order for developments to be successful, sovereignty needs to be supported by effective governance that will make fair and independent decisions and aid in dispute resolution.
- **Culture** – Successful economic development depends on culturally grounded institutions of self-government. Each Indigenous society needs to establish a governing structure with policies that fit its own culture and customs.
- **Leadership** – Native communities that are successful have leaders who introduce new knowledge and experiences, challenge assumptions, bring about change, and inspire their community to take action and move forward.

Source: John F. Kennedy School of Government, n.d.

### **Resources**

The control and use of natural resources by First Nations is fundamental to their success in economic development. The economic opportunities associated with resource development on-reserve and within traditional territory lands are substantial, but many barriers exist. Some of these barriers include:

- Limited access to revenue and benefit sharing agreements for BC First Nations.
- A lengthy and costly resource permitting process on-reserve.

### **3) Planning**

Community planning is essential for achieving economic success. There are two types of planning related to First Nations economic development: comprehensive community planning, which is a holistic process that enables a community to build a roadmap to sustainability, self-sufficiency, and improved governance capacity; and economic development planning, a component of comprehensive community planning that focuses on achieving the community's vision for developing a sustainable economy. Barriers to effective planning include:

- A shortage of First Nations expertise and capacity to execute the planning process.
- Limited access to funding for First Nations to carry out the planning process.

### **4) Leadership, corporate governance, and capacity**

Sustainable economic development and business operations require strong governance with personnel that have the necessary expertise. Barriers to corporate governance and capacity are:

- Lack of expertise to develop corporate governance models.
- Lack of resources to develop and implement economic development activities.

### **5) Benefit and revenue-sharing agreements**

Benefit agreements are an exchange of opportunities between business proponents or investment partners and First Nations. These agreements provide employment, training, and other benefits for First Nations communities while creating business opportunities for proponents or investors on-reserve or within the First Nation's traditional territory. Revenue-sharing agreements refer to arrangements between the federal or provincial governments and First Nations communities. Through these agreements, revenues directed to the government are shared with the First Nations community. Barriers related to both benefit and revenue-sharing agreements are:

- Lack of clear guidelines.
- No standards related to benefit sharing negotiations or access to negotiating resources.
- Limited access to opportunities for First Nations procurement.

### **6) Partnerships**

Many First Nations leaders believe that business partnerships are an important way of achieving successful business opportunities; however, the difficulty lies in determining if a business partner has the same values and if a fair and equitable deal can be reached. Barriers identified in such partnerships are:

- Uncertainty of industry and First Nations about how and where to find prospective partners.
- Lack of First Nations expertise in negotiating agreements in a range of different economic sectors.

### **7) Access to capital**

In general, sources of capital for economic ventures are limited, unaffordable, restrictive, and insufficient. Existing programs for projects under \$20 million are typically directed towards small business ventures and entrepreneurs. In addition, demand for this funding always exceeds supply. Financial institutions tend to have prohibitive security and collateral requirements and Section 89 of the *Indian Act* eliminates the ability of a

First Nations community or individual to pledge real and personal property on-reserve as security for financing.

Barriers to accessing capital include:

- Limited conventional sources of capital.
- Lack of information for investors and First Nations on potential partners.
- Limited opportunity for First Nations and potential investors to communicate with each other.

In his research, Williams concluded that the economies of the First Nations studied fell into three categories: (1) those with opportunities close to them but no capacity or means to seize the opportunities; (2) those who have begun to make changes in order to better develop their economic activities; and (3) those that have implemented significant change and are now well along the path to sustainable economic development (Ministry of Economic Development et al., n.d.).

## Summary of Structural Barriers to Economic Development

In summary, the major structural barriers to economic development are:

- No bankable land title and no asset accumulation.
- No accumulation of equity for First Nations homeowners.
- Economic development funding for First Nations is deemed non-essential.
- The land development approval processes on-reserve can take five to nine times longer than off-reserve.

Evidence has shown that economic self-determination is a critical determinant of health; therefore, the removal of structural impediments to First Nations community economic development should be a priority.

### Access to Internet and Broadband Connectivity

To help bridge the digital divide for First Nations, the provincial government is providing a total of \$30.8 million for broadband connectivity for First Nations communities. Connectivity is vital for all First Nations communities to increase participation in economic and educational opportunities as well as to increase access to health care services. Ninety-two per cent of British Columbians currently have broadband access to the Internet, but of the 203 First Nations communities in British Columbia, only about 85 per cent currently have some form of broadband connectivity. The importance of providing broadband connectivity to First Nations communities in British Columbia was identified in the Transformative Change Accord.

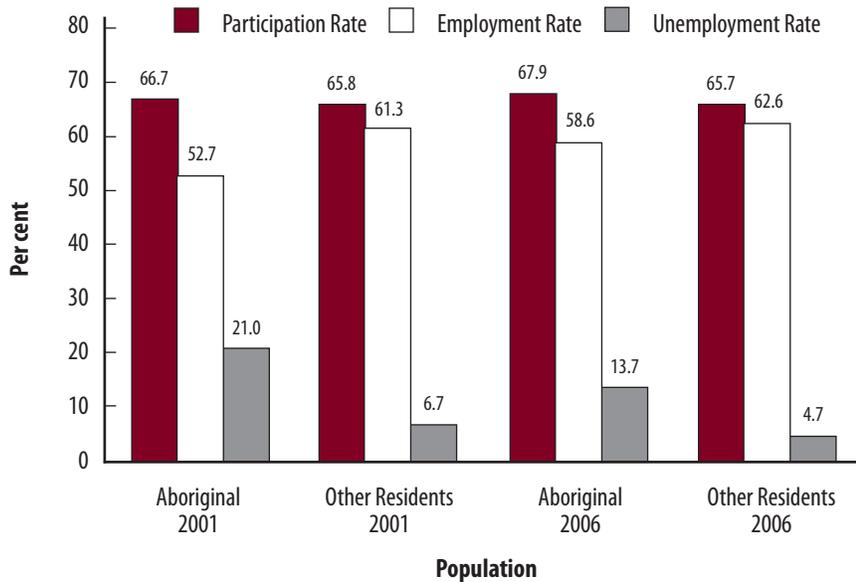
The province, through Network BC, has granted the All Nations Trust Company (ANTCO) \$17.5 million to create a connectivity fund, \$8.3 million targeted to the needs of remote communities, and \$5 million for a capacity building fund (Ministry of Labour and Citizens' Services, 2008, 2009). These funds will assist ANTCO and its First Nations partners to move forward on this multi-year project to build connectivity infrastructure and develop digital literacy and technical skills programs.

Due to many complexities and variables, including limited financial resources, it may be four years or longer before all communities are connected. Communities that receive either enhanced connectivity or first-time connectivity will reap the benefits in many areas including health, education, economic development, cultural development, land management, and infrastructure monitoring. Broadband connectivity is generally acknowledged to be an important component of community infrastructure, equivalent in importance to roads and water/sewer systems. There will be no cost to the community for the development of the infrastructure, but once completed there will be a monthly fee associated with accessing the Internet. Community consultations will take place once the planning and design phase moves into implementation (Pathways to Technology, n.d., About the Project, FAQ).

Sources: Ministry of Labour and Citizens' Services, 2008, 2009; Pathways to Technology, n.d.

**Figure 2.7**

**Labour Force Participation, Employment, and Unemployment Rates, Aboriginal and Other Resident Population, Age 25+ Years, BC, 2001 and 2006**



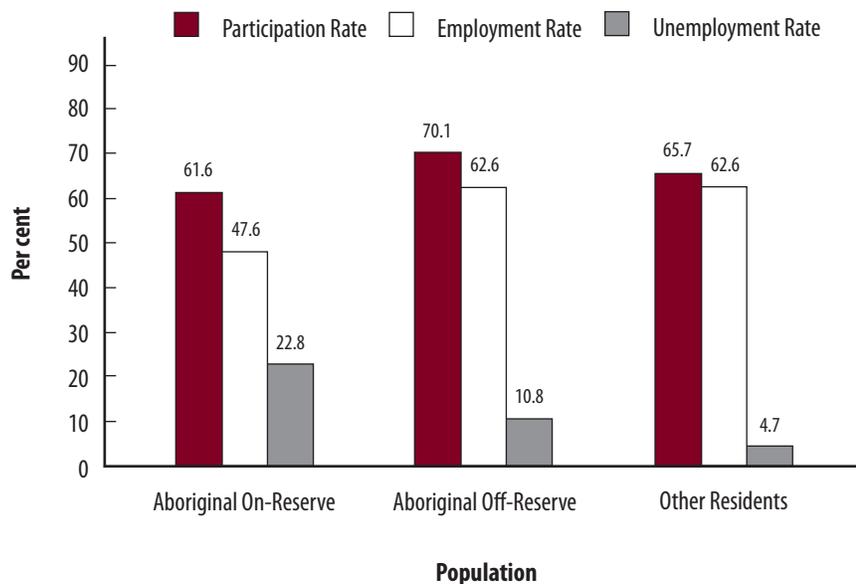
Source: Statistics Canada, 2001 and 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## Employment

Employment prospects for the Aboriginal population are much more challenging than for other British Columbians, although the 2006 Census<sup>6</sup> indicates significant improvements in employment rates for this population compared to 2001. In 2001, the unemployment rate (age 25 and older) was 21 per cent for BC’s Aboriginal population, compared to 6.7 per cent for other residents. In 2006, the unemployment rate for the Aboriginal population decreased to 13.7 per cent, while the rate for the other BC resident population decreased slightly to 4.7 per cent. In 2006, the labour force participation rate (age 25 and older who were eligible to work) was over 2 per cent higher for the Aboriginal population than the rate for other BC residents (Figure 2.7).

**Figure 2.8**

**Labour Force Participation, Employment, and Unemployment Rates, Aboriginal On-Reserve/Off-Reserve and Other Resident Population, Age 25+ Years, BC, 2006**



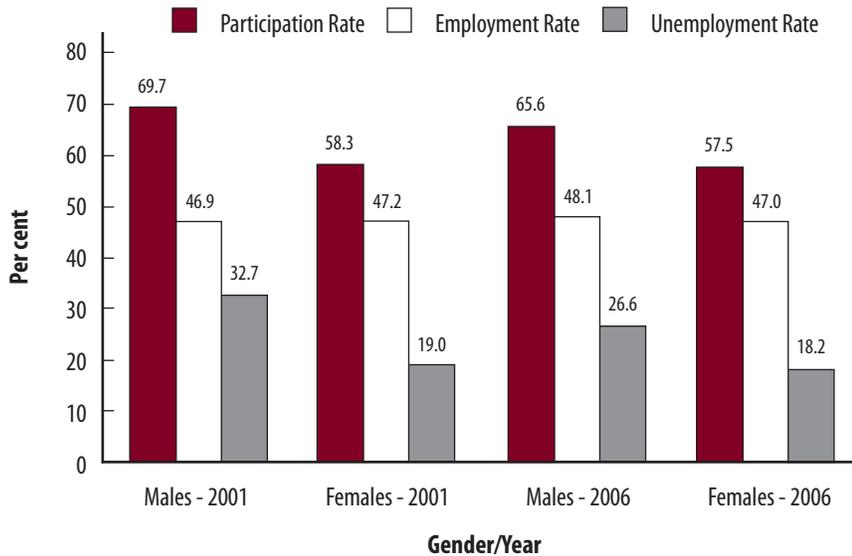
Source: Statistics Canada, 2006 Census data (Labour Force Profile); prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

The Aboriginal population on-reserve had lower rates of labour force participation and employment compared to those who lived off-reserve. At 22.8 per cent, the unemployment rate for the on-reserve Aboriginal population was over double that for Aboriginal people off-reserve and nearly 5 times the rate for other residents. The employment rate for the off-reserve Aboriginal workforce was nearly 63 per cent, compared to nearly 48 per cent for those living on-reserve. The labour force participation rate was nearly 9 per cent lower for Aboriginal people living on-reserve (Figure 2.8).

<sup>6</sup> The figures from the 2006 Census reflect only those individuals or communities who responded to the Census questions. Aboriginal people living on some reserves may not have participated in the 2006 Census, which could lead to underestimation in figures for unemployment and other measures.

Figure 2.9

**Labour Force Participation, Employment, and Unemployment Rates, by Gender, On-Reserve Aboriginal Workforce, Age 25+ Years, BC, 2001 and 2006**



Source: Statistics Canada, 2001 and 2006 Census data; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

As illustrated in Figure 2.9, while the employment rate in 2006 was nearly the same for both males and females on-reserve, the labour force participation rate was lower for females compared to males (57.5 per cent versus 65.6 per cent). However, even with the lower rate of participation, on-reserve females had a much lower unemployment rate than on-reserve males (18.2 per cent versus 26.6 per cent).

In the 2001 and the 2006 Census, the on-reserve employment rate was approximately 47 per cent for both males and females. The unemployment rate dropped by 6 per cent for males but remained constant for females. Minor decreases were seen in participation rates for both males and females from 2001 to 2006.

### Aboriginal Youth Internship Program

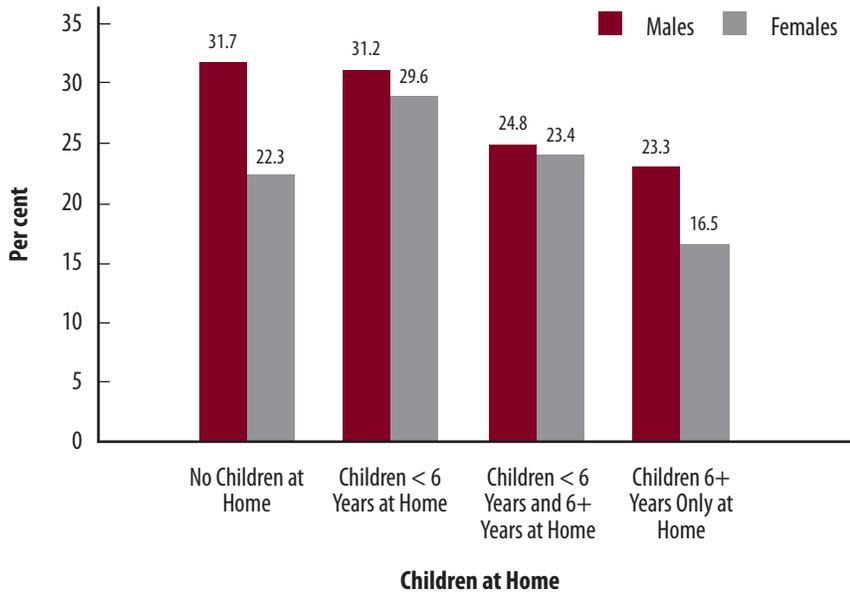
Launched in May 2007, the Aboriginal Youth Internship Program is designed to give Aboriginal youth opportunities for employment and training in the BC Public Service and Aboriginal organizations. The annual program involves 12-month placements for BC Aboriginal youth aged 18–29: 9 months of work experience in government ministries, followed by 3 months of work experience in selected Aboriginal organizations. There are currently 25 interns participating in the program. In 2009, up to 50 placements will be made available. The program was developed by the BC Public Service Agency and the Ministry of Aboriginal Relations and Reconciliation, in partnership with various First Nations and Métis organizations.

For more information on the Aboriginal Youth Internship Program, please refer to their website at <http://www.bcpublicservice.ca/AboriginalYouthInternship>.

Sources: BC Public Service Agency, n.d.; Hobbs, S., personal communication, January 21, 2009; Ministry of Aboriginal Relations and Reconciliation & BC Public Service Agency, 2007a, 2007b.

**Figure 2.10**

**Unemployment Rate, by Gender, On-Reserve Aboriginal People With Children at Home, Age 15+ Years, BC, 2006**



Source: Statistics Canada, 2006 Census data (Labour Force Profile); prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.10 illustrates the percentage of the on-reserve Aboriginal population, 15 years of age and older, who were unemployed and who had children at home in 2006. The unemployment rate was highest for males with no children living at home (31.7 per cent), compared to 22.3 per cent for females with no children at home. This may be due to the different types of occupations that Aboriginal males and females often hold. The majority of Aboriginal males are employed in traditional occupations such as trades, transportation, primary industries,<sup>7</sup> and jobs relating to processing or manufacturing, for which the demand has been reduced significantly with technology. On the other hand, females are generally employed in the service industry and administrative positions, both sectors that have experienced steady growth. Further discussion of occupations for Aboriginal males and females is provided in the next section of this chapter.

As expected, unemployment rates were high for both males and females with children under the age of 6 (31.2 per cent for males and 29.6 per cent for females). The unemployment rate appears to decrease as the children get older.

<sup>7</sup> Primary industries refer to occupations in agriculture, forestry, mining, oil and gas, and fishing.

### BladeRunners

BladeRunners is an award-winning employment program created to help at-risk youth build careers in the construction trades. BladeRunners began in 1994 as a pilot wage-subsidy program offering employment for street-involved youth to work on construction of GM Place arena, the Ford Theatre, and Collingwood Village. Since that time it has expanded, and is now offered in Duncan, Nanaimo, Vancouver, Victoria, the west coast of Vancouver Island (Port Alberni, Ucluelet, Tofino, and Ahousaht) and Prince George.

The program, which is funded by the BC government and administered by the Aboriginal Community Career Employment Services Society (ACCESS), provides a standardized training program to youth age 15–30 years old (19–30 in some regions). The program consists of a 3-week training program that prepares participants for a typical construction workplace. Training includes:

- life skills (goal setting, communication, financial management, anger management, etc.).
- job readiness skills.
- certified courses (WHMIS, Health and Safety, WCB Awareness, First Aid Level 1, etc.).
- hearing tests.
- on-the job support of up to 18 months for workplace communication to enhance long-term employability.

After three months, job coaches work to identify apprenticeship opportunities and provide after hours support to assist with personal issues so they don't interfere with job performance. Participants who enter apprenticeships receive support for academic upgrading. Other assistance offered through the program includes referral to community agencies and affordable housing.

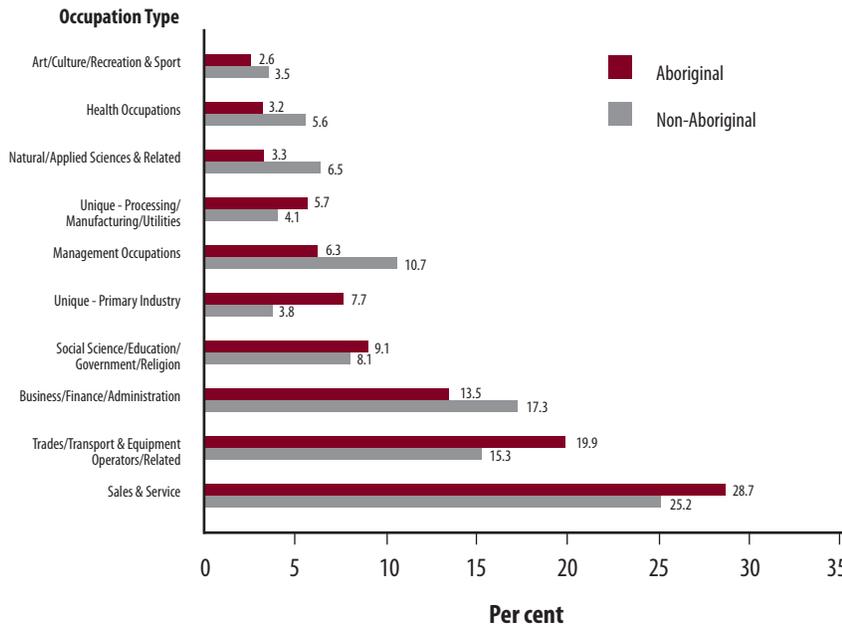
The program has been very successful to date. Province-wide, there is an 80 per cent success rate of participants remaining self-sufficient in the construction trades after 2 years. In Vancouver, the program has achieved 98 per cent job placements (95 per cent of these are Aboriginal; 28 per cent female). In 1999, the program received the PEPNet Award (Promising and Effective Practices Network) from the US-based National Youth Coalition. The Coalition presents awards to outstanding North American programs that promote youth employment and development opportunities.

For more information on BladeRunners, please refer to their website at <http://www.buildingfuturestoday.com/progladeruners.htm>.

Sources: BladeRunners, n.d.; Aboriginal Human Resource Development Strategy, Service Canada, 2006.

**Figure 2.11**

**Labour Force, by Occupation Type, Aboriginal and Non-Aboriginal Population, Age 15+ Years, BC, 2006**



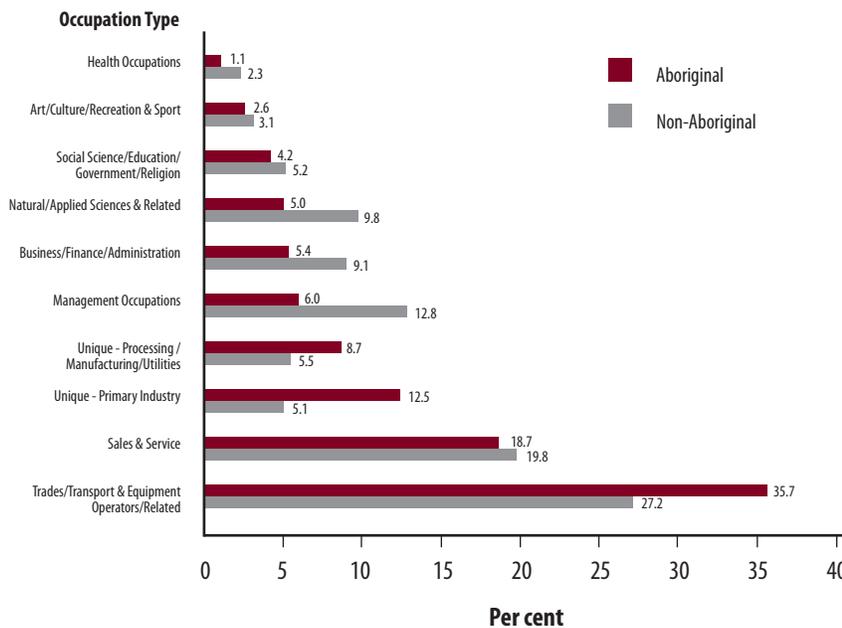
Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## Occupations

The Aboriginal population is often employed in lower-paying or more hazardous jobs, typically in primary industries (men) or the service industry (women). Figure 2.11 shows the different occupations for the Aboriginal population compared to the non-Aboriginal population. Overall, compared to the non-Aboriginal population, a higher percentage of the Aboriginal population tends to hold jobs in primary industries, trades, and sales and service, which are often low-paying or insecure. In addition, a lower proportion of the Aboriginal population tends to be employed in business and finance, management, applied sciences, and health occupations.

**Figure 2.12**

**Labour Force, by Occupation Type, Aboriginal and Non-Aboriginal Males, Age 15+ Years, BC, 2006**

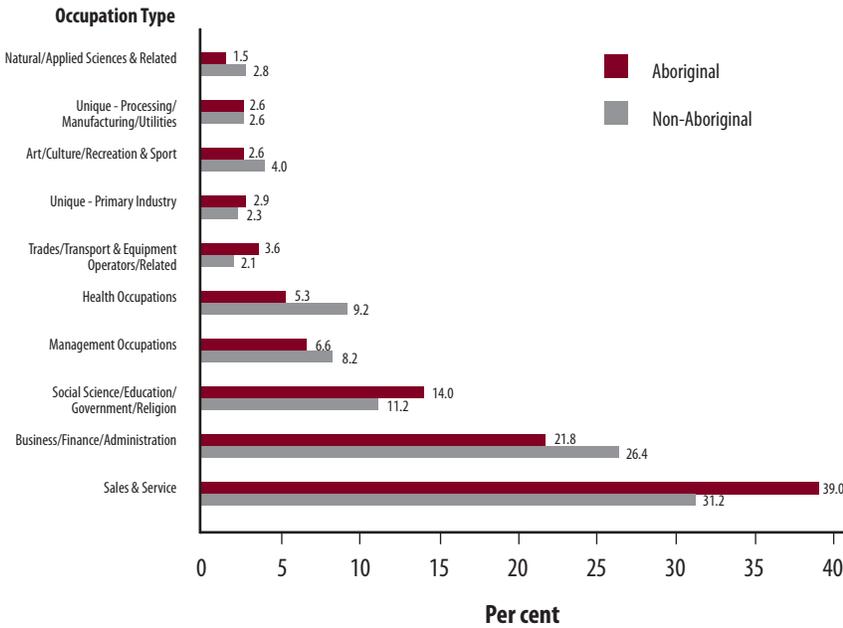


Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

In comparison to non-Aboriginal males, a larger percentage of Aboriginal males are employed in trades and transport, manufacturing, or primary industries. Only 6.0 per cent of Aboriginal males were in management occupations in 2006, compared to 12.8 per cent of non-Aboriginal males. Also, a lower percentage of Aboriginal males were employed in natural and applied sciences and business/finance/administration positions (Figure 2.12). Thirty-nine per cent of Aboriginal females worked in sales and service industries in 2006, compared to 31.2 per cent of non-Aboriginal females. These are generally low-paying and insecure positions with limited future prospects. In addition, only 5.3 per cent of Aboriginal females

**Figure 2.13**

**Labour Force, by Occupation Type, Aboriginal and Non-Aboriginal Females, Age 15+ Years, BC, 2006**



Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

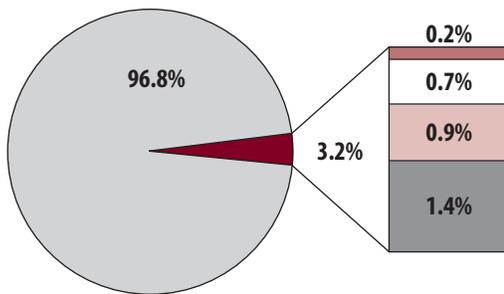
held positions in health occupations, compared to 9.2 per cent of non-Aboriginal females (Figure 2.13).

Figure 2.14 compares the Aboriginal and non-Aboriginal populations in health care professions. Aboriginal people are under-represented in the “professional” category, which includes doctors, dentists, and pharmacists (0.2 per cent), compared to the non-Aboriginal population in the same occupation group (1.2 per cent). Most Aboriginal health care workers are in “assisting” occupations such as aides, orderlies, and porters.

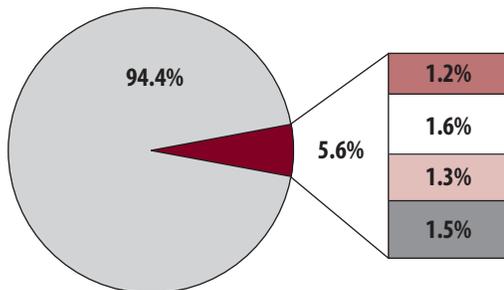
High unemployment in the Aboriginal population, combined with under-representation in certain occupational sectors, could reflect a shortage of jobs, a mismatch between jobs and educational qualifications and work experience, and/or a lack of child care availability. However, it may also reflect labour market discrimination. A 2006 survey of First Nations people living off-reserve reported that 25 per cent of the Aboriginal population surveyed felt they were being discriminated against by an employer. The same percentage reported that they experienced racism in schools (Indian and Northern Affairs Canada, 2006).

**Figure 2.14**

**Aboriginal Population in Health Occupations, BC, 2006**



**Non-Aboriginal Population in Health Occupations, BC, 2006**

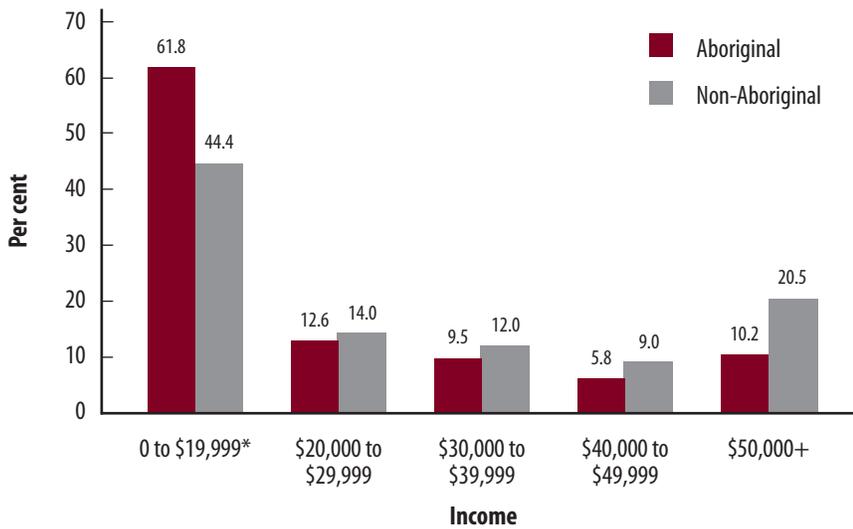


Legend: Non-Health Care Occupations (grey), Professional (dark red), Nursing (white), Technical (light red), Assisting (dark grey)

Source: Statistics Canada, 2006 Census data (Labour Force Profile); prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Figure 2.15**

**Total Income Distribution, Aboriginal and Non-Aboriginal Population, Age 15+ Years, BC, 2006**



\* 8.3 per cent of Aboriginal people and 4.7 per cent of non-Aboriginal people, 15 years of age and older, had no income in 2005. These people are included in the 0 to \$19,999 income category.

Source: Statistics Canada, 2006 Census data (Labour Force Profile); prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## Income

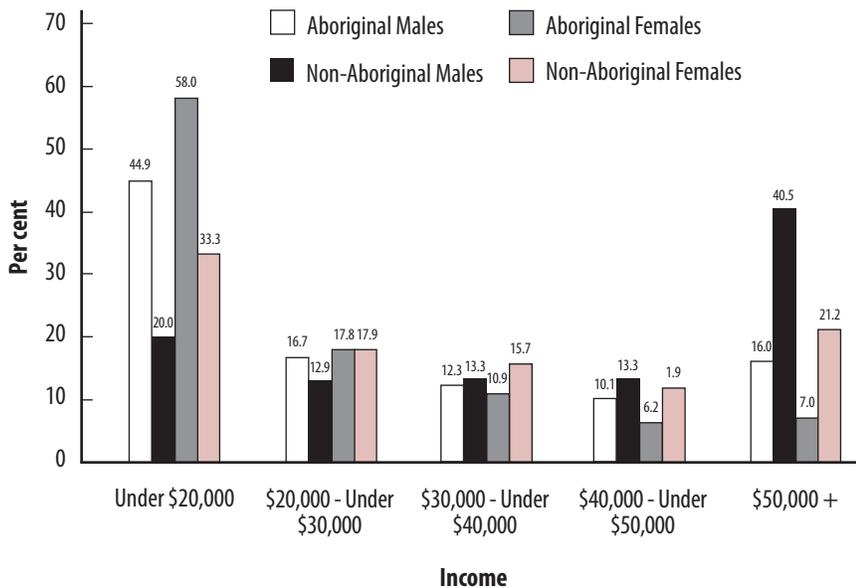
Aboriginal people with paid employment earn substantially less than non-Aboriginal people, partly due to a predominance of part-time or seasonal work. Based on 2006 Census data, nearly 62 per cent of the Aboriginal population in BC (15 years of age and older) earned less than \$20,000 per year, compared to 44.4 per cent of the non-Aboriginal population. Moreover, only 10.2 per cent of the Aboriginal population earned over \$50,000, compared to 20.5 per cent of the non-Aboriginal population (Figure 2.15).

Low income is of particular significance in lone-parent families. The latest data available (2001 Census) shows that the majority of lone-parent families earn less than \$20,000 per year. A higher proportion of the Aboriginal population have low income and are lone parents compared to the non-Aboriginal population. Overall in 2001, 58 per cent of lone-parent Aboriginal females and almost 45 per cent of lone-parent Aboriginal males earned less than \$20,000, compared to the non-Aboriginal population (33.3 per cent and 20.0 per cent respectively) (Figure 2.16).

A recent Canadian study noted that, compared to all groups including visible minorities, Aboriginal people are the most disadvantaged group when it comes to employment and income. In particular, inequity in employment and occupation affects individuals not only in relation to income, but also social status and self-esteem. One possible reason that many Aboriginal people have lower incomes and are in lower-paying occupations is racial discrimination.

**Figure 2.16**

**Lone-Parent Families, by Income, Aboriginal and Non-Aboriginal Population, BC, 2001**



Source: Statistics Canada, 2001 Census data; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Aboriginal job applicants may be denied interviews or be excluded from consideration from the outset. Even when they are hired, any chance of career advancement may elude them (Canadian Council on Social Development, 2000).

## Education

### Why Is Education Important for Health?

Research has shown that the health status of individuals is closely associated with their level of education, income, and employment. Education is perhaps the most important of the indicators, since it is a determinant of an individual's future

employment and income. In addition, those who graduate from high school live approximately 9.2 years longer than those who do not. The increase in life expectancy can be attributed to an improvement in cognitive ability and decision-making, as well as the possibilities of a better occupation and higher income. Adults who do not graduate from high school are more likely to die prematurely from cardiovascular disease, cancer, infection, injury, lung disease, and diabetes. Therefore, higher educational attainment can increase an individual's future income, and occupational and social status, all of which contribute to improved health (Alliance for Excellent Education, 2006).

#### Aboriginal Enhancement Agreements

An Aboriginal Enhancement Agreement is a partnership between a school district, the Ministry of Education, and the local Aboriginal communities to improve the educational achievement of Aboriginal students. The five-year agreements focus not only on academic performance, but also recognize that traditional Aboriginal culture is an integral component to student development and success. All First Nations, Métis, and Inuit students in a participating school district are included in the agreement.

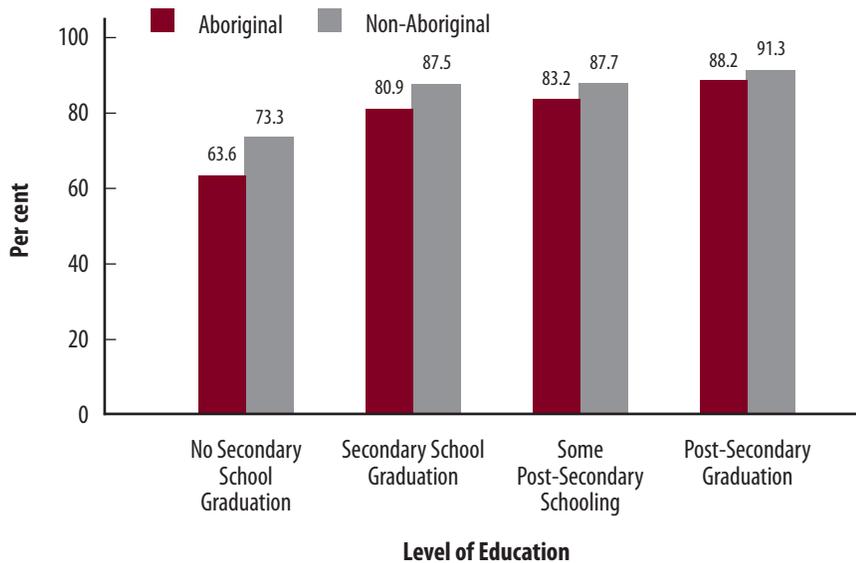
Development of enhancement agreements is a collaborative process. All Aboriginal communities represented in the student population work together with the school district to develop and implement the agreement. Each agreement is unique, in that the programs that are developed reflect the local Aboriginal culture and increase knowledge and respect for that culture.

Enhancement agreements grew out of an acknowledgement that the BC school system has not been successful in helping Aboriginal students receive a quality education. In 1999, a Memorandum of Understanding (MOU) committing to improving opportunities for Aboriginal students was signed by the BC Ministry of Education, Indian and Northern Affairs Canada, the Chiefs Action Committee, and the BC Teachers' Federation. This MOU eventually led to the creation of enhancement agreements. The first agreement was signed in 1999, and as of November 2008, 43 of BC's 59 school districts had signed agreements.

Sources: Ministry of Education, 2008a, 2008b, 2007, 1999, n.d (*Aboriginal Education*).

**Figure 2.17**

**Good to Excellent Self-Reported Health, by Educational Attainment, Aboriginal and Non-Aboriginal Population, Age 25+ Years, BC, 2005**



Note: Non-responders have been excluded from the data.

Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

In Canada, the Canadian Community Health Survey (CCHS) has also shown that higher education leads to better health. In both the Aboriginal and non-Aboriginal populations, those who graduate from secondary school report better health compared to those who do not graduate. Furthermore, those who go on to post-secondary schooling have even higher rates of good to excellent self-reported health (Figure 2.17).

Other research and evidence indicates that education is particularly important in enabling Aboriginal people to earn good incomes and escape poverty. In his book, *Dances with Dependency*, Calvin Helin (2006) points out that in any nation, people need to be brought to a basic level of competence in order to take advantage of the opportunities inherent in growing economies. A better education leads to better employment and income as well as non-monetary benefits such as better health.

**Backpack Picnic**

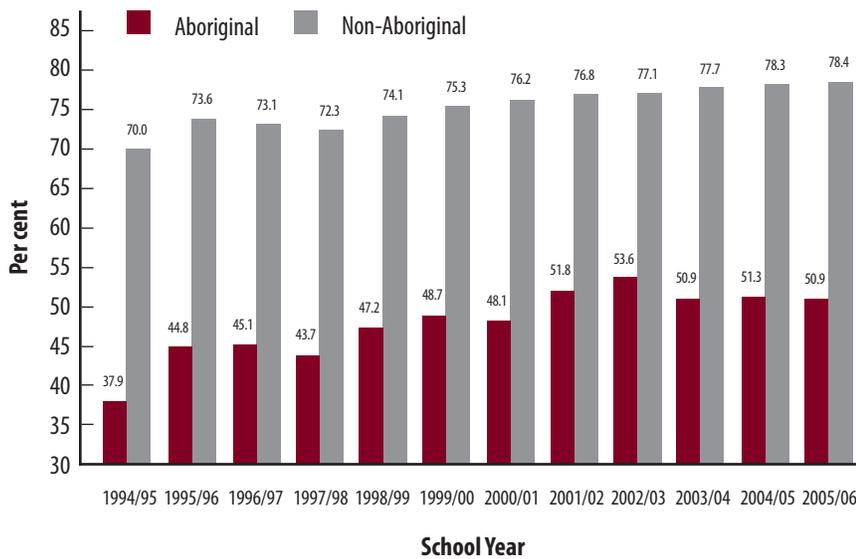
In August 2007, the Surrounded by Cedar Child and Family Services agency of Victoria hosted their annual picnic, where they provided 550 backpacks filled with school supplies to low-income Aboriginal families. The first picnic was held five years ago, with 150 people attending. In 2007, there were an estimated 700. Backpacks were given to families who pre-registered. Over 130 names were added to a waiting list for those who missed the pre-registration. Students ended up with about half to three-quarters of what they needed to start the school year.

The picnic is an opportunity for families to get together and have some fun. The get-together also sends a message to children that school is important, and that their parents and community want them to succeed. This is particularly important for Aboriginal students, who have often struggled within the school system.

Source: Gauk, 2007.

Figure 2.18

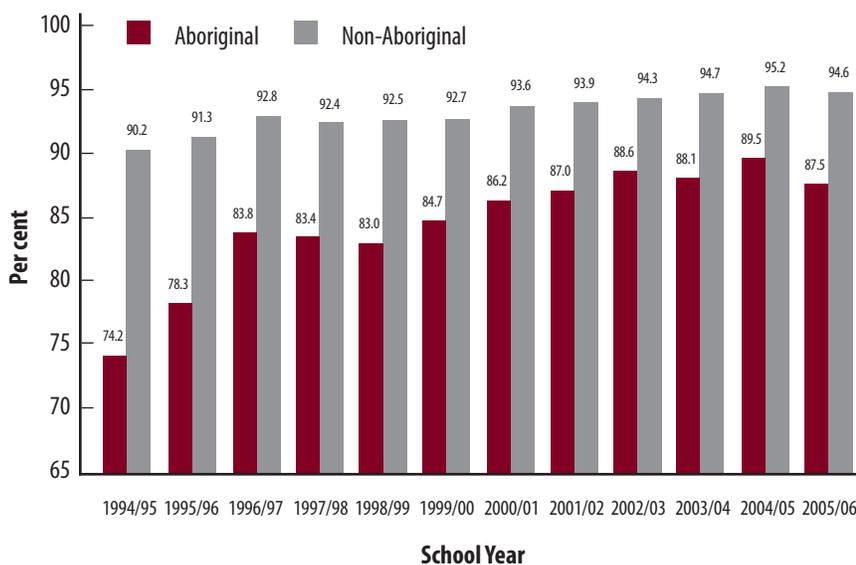
### Graduation Rate, First-Time Graduates, Aboriginal and Non-Aboriginal Students, BC, 1994/1995 to 2005/2006



Source: Ministry of Education, 2005/2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.19

### Graduation Rate, Those Eligible to Graduate, Aboriginal and Non-Aboriginal Students, BC, 1994/1995 to 2005/2006



Source: Ministry of Education, 2005/2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

<sup>8</sup> Data from the Ministry of Education include Aboriginal students who have self-identified as being of Aboriginal ancestry as of September 30 of the school year. Aboriginal is defined as Status and non-Status Indians, Métis, and Inuit. There is a fairly equal gender representation of Aboriginal students. Approximately 25 per cent of Aboriginal students live on-reserve (Ministry of Education, 2006).

## Graduation Rates

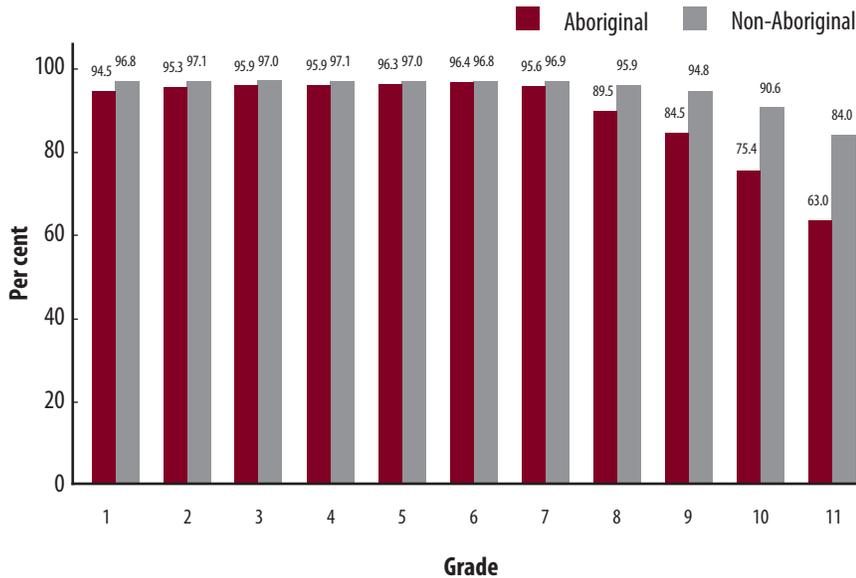
High school graduates can be classified as either first-time graduates or as students who are eligible to graduate. First-time graduates are students who have reached grade 12 for the first time, while those who are classified as being eligible to graduate includes both the students that are returning to school as adults and those who are graduating for the first time.<sup>8</sup>

From 1994/1995 to 2002/2003, there was an increase in first-time graduation rates for both Aboriginal and non-Aboriginal students; however, since 2002/2003, first-time graduation rates have decreased for Aboriginal students, and the rate more or less stayed the same through 2005/2006. Data also show a gap of approximately 25 to 30 per cent between the graduation rates of Aboriginal and non-Aboriginal students. In 2005/2006, Aboriginal students had a first-time graduation rate of 50.9 per cent, compared to 78.4 per cent for non-Aboriginal students (Figure 2.18). The graduation rate for Aboriginal female students tends to be slightly higher than for Aboriginal males; in 2005/2006, the rates for Aboriginal females and males were 52.5 per cent and 49.2 per cent respectively.

In 2005/2006, approximately 88 per cent of Aboriginal students who were eligible to graduate completed high school, a significant increase from 1994/1995 (74.2 per cent). However, since 2003/2004, the graduation rates for Aboriginal and non-Aboriginal students have remained constant. The rate for non-Aboriginal students was 94.6 per cent in 2005/2006, compared to 90.2 per cent in 1994/1995 (Figure 2.19). In the past decade, more Aboriginal females than males who

**Figure 2.20**

**Successful Grade Transitions, Aboriginal and Non-Aboriginal Students, BC, 2005/2006**



Source: Ministry of Education, 2005/2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

were eligible to graduate completed high school; however, in 2005/2006, the graduation rates were almost equal for both genders.

**Grade Transitions**

In looking at the progression of students from one grade to the next, little difference exists between Aboriginal and non-Aboriginal students until they reach junior high school. For both populations, students begin to drop out of school at grade 8; however, Aboriginal students tend to drop out of school at a much higher rate. The gap is particularly significant in grades 9, 10, and 11 (Figure 2.20). An intervention strategy is necessary to encourage students, particularly Aboriginal students, to stay in school beginning in grades 7 and 8, and continuing through to grade 12.

**Seventh Generation Club**

The Seventh Generation Club is an initiative for BC First Nations students designed to help them make healthy lifestyle choices and consider their future. The Club, which began in 1997, is sponsored through a partnership between the First Nations Schools Association, Histor!ca, BC Hydro, Indian and Northern Affairs Canada, and the Vancouver Canucks.

The term “seventh generation” is a common First Nations expression, meaning that decisions made and actions taken today can affect seven generations in the future. This fits well with the Club’s objective of helping students make good decisions today, in order to improve their future. The Club’s initiatives include:

- An annual Science Day, to encourage student interest in science. The Club has also developed a book of science experiments for teachers and support workers to use in their classrooms.
- An annual Sports Day, to promote healthy living.
- A series of newsletters and a website, with information on education, healthy living, goal setting, career planning, etc.
- A series of fun contests, which encourage student participation.

For more information on the Seventh Generation Club, please visit their website at [www.seventhgenerationclub.com](http://www.seventhgenerationclub.com).

**Foundation Skills Assessment Scores**

Foundation Skills Assessment (FSA) tests are administered to grades 4 and 7 students in all public schools and provincially funded independent schools each spring.<sup>9</sup> Developed by BC teachers, each FSA test contains prescribed learning outcomes listed in the provincial curricula, which describe what BC students are expected to know and be able to do in all subject areas and grades (Ministry of Education, 2003).

FSA tests take students approximately four-and-a-half hours to complete, and most schools administer the assessment in three separate sessions: (1) reading comprehension and (2) numeracy, which both consist of multiple choice and

<sup>9</sup> Grade 10 students took the FSA tests up to 2003/2004, when the FSA tests were replaced with provincial exams.

written-response questions; and (3) writing, which consists of two writing tasks—one extended (longer) piece and one focused (shorter) piece (Ministry of Education, 2003).

The FSA scores represent one way of evaluating students' progress; there are other evaluation methods, such as student interviews, parent interviews, self-assessments, peer assessments, group assessments, portfolios, etc. FSA scores have been included in this report only to point out some potential areas for improvement and to identify progress in student achievement. Since the scores are published and schools are ranked publicly, there is potential for some schools to exclude students that are anticipated to do poorly, in order to boost the school's ratings. In fact, reports have shown that vulnerable groups such as Aboriginal students or children in care are more likely to be excluded (Representative for Children and Youth & Provincial Health

Officer [PHO], 2007). Also, in looking at time trends for the FSA scores, it should be observed that these scores compare different groups of students that enter into a grade each year and that the abilities of the students from year to year may differ based on their background and socio-economic circumstances. Also, a "cohort" effect may exist whereby a particularly weak or strong cohort of students can progress through the grades together (BC Teachers' Federation, 2003). This may or may not account for sharp fluctuations in the data. The charts presented in this chapter do not track one cohort of students as they progress through the grade levels.

Table 2.1 presents the different levels of student performance that are used to evaluate the FSA scores. For the purpose of this report, students identified as "Meeting Expectations" include both the categories of "Fully Meets Expectations" and "Minimally Meets Expectations."

Table 2.1

### The BC Performance Standards - Four Levels of Student Performance (based on prescribed learning outcomes)

<b>NOT YET WITHIN EXPECTATIONS</b>	<ul style="list-style-type: none"> <li>the work does not meet grade-level expectations</li> <li>there is little evidence of progress toward the relevant prescribed learning outcomes</li> <li>the situation needs intervention</li> </ul>
<b>MINIMALLY MEETS EXPECTATIONS</b>	<ul style="list-style-type: none"> <li>the work may be inconsistent, but meets grade-level expectations at a minimal level</li> <li>there is evidence of progress toward relevant prescribed learning outcomes</li> <li>the student needs support in some areas</li> </ul>
<b>FULLY MEETS EXPECTATIONS</b>	<ul style="list-style-type: none"> <li>the work meets grade-level expectations</li> <li>there is evidence that relevant prescribed learning outcomes have been accomplished</li> </ul>
<b>EXCEEDS EXPECTATIONS</b>	<ul style="list-style-type: none"> <li>the work exceeds grade-level expectations in significant ways</li> <li>the student may benefit from extra challenge</li> </ul>

Source: Ministry of Education, n.d (*Classroom Assessment*).

### School Performance and Foundation Skills Assessment Tests

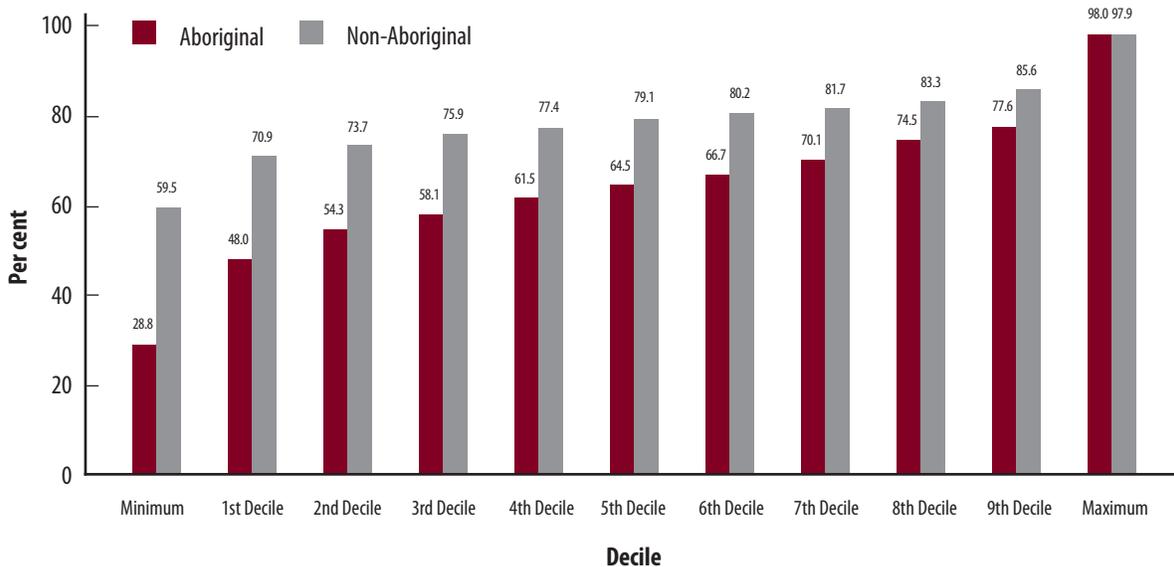
A recent study done in BC observed the performance of Aboriginal students in 366 schools.<sup>10</sup> FSA scores of each of the schools were examined for five school years (1999/2000 to 2003/2004). The study took into account three sets of variables: socio-economic (parents' education and family income), in-school (school-level meet/exceed ratios among non-Aboriginal students and number of Aboriginal test scores in the school), and district effect (whether districts systematically influence Aboriginal student performance in the schools). A multi-regression analysis relating to school performance (meet/exceed ratios on FSA scores), in-school variables, district effect variables, and socio-economic variables revealed that in-school and district effect variables were more important than the socio-economic factors. In general, Aboriginal students performed better in schools that ranked higher in areas such as curriculum, teacher proficiency, facilities, teaching materials, student evaluation

options, and range of strategies to engage parents and students. Other international studies of indigenous students in Bolivia and Chile have shown similar results (McEwan, 2004, as cited in Richards, Hove, & Afolabi, 2008).

Figure 2.21 illustrates the direct relationship between FSA scores and school rankings. School rankings show that Aboriginal students tend to do better in schools with higher rankings. In fact, in the 9th decile of school rankings, there is very little difference between the percentage of Aboriginal students meeting or exceeding expectations (77.6 per cent) and the percentage of non-Aboriginal students (85.6 per cent). As the school rankings decline, so does the performance of all students, but particularly Aboriginal students. In the lowest decile, the percentage of Aboriginal students meeting or exceeding expectations was 28.8 per cent, compared to 59.5 per cent for non-Aboriginal students. This finding suggests that the school atmosphere and environment strongly influences student performance, particularly for Aboriginal students (Richards et al., 2008).

**Figure 2.21**

**Meet/Exceed Ratio, Foundation Skills Assessment Scores, Aboriginal and Non-Aboriginal Students, 1999/2000–2003/2004**



Note: The BC schools used in this analysis had to satisfy the following criteria: 1) the school reported more than 30 Aboriginal student scores over the years under review; 2) Statistics Canada was able to provide reasonable Census socio-economic data, disaggregated to the estimated school catchment area, for Aboriginal and non-Aboriginal families. There were 366 schools in 43 school districts who satisfied this criteria. Approximately half of BC's school districts are represented in the sample.

Source: Richards, Hove, & Afolabi, 2008; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

<sup>10</sup> Schools were included in the study if they satisfied two criteria: (1) the school reported more than 30 Aboriginal student scores over the years studied; and (2) Statistics Canada could provide reasonable Census socio-economic data, disaggregated to the estimated school catchment area, for Aboriginal and non-Aboriginal families (Richards, Hove, & Afolabi, 2008).

Richards et al. (2008) also conducted interviews with district staff and stakeholders in eight school districts in the 2006/2007 school year. The interview responses were compared, grouped by theme, and cross-referenced with the rankings of district schools with meet/exceed ratios (MERS) above forecast. The results were then analyzed against four criteria designed to measure the extent of district leadership in Aboriginal education. Table 2.2 shows the results of this

process:<sup>11</sup> the districts with high-performing schools are those with consistent policies in leadership and coordination. These policies include a firm commitment to Aboriginal Enhancement Agreements, collaboration between districts and local Aboriginal representatives, establishment of a “frontline educator” committee that meets regularly and reports their findings to the districts, and publication of annual reports to measure transparency and accountability.

Table 2.2

Correspondence of District Meet/Exceed Ratio Rankings and Policy Initiatives in Aboriginal Education

		Date of First Enhancement Agreement <sup>1</sup>	Existence of Joint D Advisory Committee <sup>2</sup>	Existence of “Frontline Educator” Committee <sup>3</sup>	Published Annual Reports <sup>4</sup>
<b>High-Performing</b> Fifty per cent or more of district schools included in the sample realized school-level Meet/Exceed Ratios (MERS) above forecast.	District 1	1999	Yes (since 1994) <sup>5</sup>	Yes	Yes
	District 2	2001	Yes (since 1989) <sup>5</sup>	Yes	Yes
	District 3	In process	Yes (since 1994)	Yes (not yet regularized)	Yes
	District 4	In process	Yes	No	No
<b>Low-Performing</b> Fewer than 50 per cent of district schools included in the sample realized school-level MERS above forecast.	District 5	2008	Yes	No	No
	District 6	In early stages	Yes (separate committee for different First Nations Communities)	No	No
	District 7	2006	Yes	Yes	No

1. This is the date of signing of the Aboriginal Enhancement Agreement between the district, local Aboriginal communities, and the BC Ministry of Education. Note that Districts 1 and 2 have now implemented their second Enhancement Agreement, which represents a longer commitment to Aboriginal education.
2. The existence of a joint district-community advisory committee is a measure of collaboration between the district and local Aboriginal representatives. Although all districts included have such a committee, they have been in operation in the top three districts for more than 10 years and are more highly institutionalized in terms of decision-making responsibilities.
3. The existence of a “frontline educator” committee is a measure of coordination between the district and individual schools. These committees (of teachers, principals, support workers, and band education councillors) meet regularly and are responsible for directing their findings up to the district-level decision-making body and down to the school level.
4. The publishing of regular reports on Aboriginal education is a measure of transparency and accountability in terms of attaining specific goals.
5. Institutionalized as a council.

Source: Richards et al., 2008.

<sup>11</sup> Of the eight districts interviewed, only seven had applicable data.

## Characteristics of High-Ranking Schools with High Student Performance

Another 2003 study showed that both Aboriginal and non-Aboriginal students performed better in schools that had the following characteristics:

- Vision statements that were focused on student learning.
- Links with community partners and agencies to support students.
- School administrators and teachers who shared the responsibility of planning and decision-making.
- Measurement of the school according to district-level expectations.
- Improvements in the understanding and use of assessment data by school staff.
- Staff development based on curriculum that is collaboratively developed (Maguire, 2003 cited in Richards et al., 2008).

Based on their findings and the findings of other studies, Richards et al. (2008) concluded that the following points are crucial in improving the performance of Aboriginal students:

- **A collaboration between Aboriginal communities and school district staff** – This collaboration will not only result in improved responsiveness of Aboriginal students to the programs but will also improve the level of buy-in of the Aboriginal families, communities, and leaders.
  - › **Commitment of teachers and administrators**  
Committed teachers and administrators are needed to carry out successful programs that support and include Aboriginal content in the school curriculum. Counsellors, teachers, and Aboriginal support workers need to work together in developing curriculum and providing academic support.
  - › **Inclusion of Aboriginal languages and culture programs in schools** – Programs on Aboriginal languages and culture promote cultural awareness in the entire school population. Also important are cultural events that bring Aboriginal community members into the schools to promote cross-cultural awareness (e.g., “elders-in-residence” programs).
- **Decision-making and interaction between decision-makers and stakeholders** – How decisions are made and how decision-makers and stakeholders interact are key components of success in districts.
  - › **Influence of key district-level leaders** – The creation of district-level leadership that monitors and reports on the improvement of Aboriginal students signals to the outside community that Aboriginal education is a priority.
  - › **Involvement of Aboriginal and non-Aboriginal communities** – Building a relationship between Aboriginal and non-Aboriginal communities helps foster an understanding of Aboriginal culture and heritage in the school environment, reduce racism in the community, and banish mistrust of the formal school system among Aboriginal students and the Aboriginal community.
  - › **Influence of Aboriginal communities** – High-performing districts often have a good working relationship between school districts and Aboriginal stakeholders, who are committed to improving educational outcomes for Aboriginal students.
  - › **Shared decision-making** – In successful school districts, effective decision-making involves Aboriginal communities, who are often also responsible for oversight of funding allocations. This depends on the creation of positions dedicated to Aboriginal education, and a willingness of school district authorities to shift ownership of decision-making to Aboriginal communities.
  - › **Consensus among teachers on making Aboriginal education a priority** – Successful school districts have teachers who are open to inclusion of cultural learning and practices in their classrooms and who believe in building a collaborative relationship with Aboriginal community members.
  - › **Innovative programming and collection of data** – The top ranking school districts engage in innovative programs such as increasing the number

of Aboriginal educators, or becoming involved with university research projects that aim to rework educational practices to address the needs of Aboriginal learners. Although all school districts must collect data for reporting purposes, the higher ranking districts are far more willing to evaluate programs using assessment data and to create new data to measure specific dimensions of student performance.

Another study of 10 Aboriginal schools identified 24 factors that were linked to success in school (Bell, 2004). These factors fit into 6 broad categories: leadership, school climate, staff, funding and resources, community, and programs.

- **Leadership** – Effective leadership was the most frequently identified element across all schools. Factors related to leadership include: a shared vision and purpose, an atmosphere of continuous improvement, and building a culture of success. Local ownership and control of the school and the influence of long-term strategic planning by local authorities were also important.
- **School climate** – A positive and successful school climate characterized by a high level of trust and high expectations. A “welcoming climate” incorporating hospitality and generosity was key to making parents and students feel comfortable. Consistent standards of restitution and student accountability were important in helping students feel safe and respected.
- **Staff** – A high level of caring and dedication by the teachers, and the presence of Aboriginal teachers and staff were factors linked to success, as were ongoing professional development and long-term staff continuity.
- **Funding and resources** – This category included the availability and strategic deployment of resources, and parent and community partnerships as a means of increasing the educational resources available to students.
- **Community** – This category included community engagement, local ownership of education, a shared vision for the school, and excellent communication between the school and community.

- **Programs** – The following factors were common in the successful schools: a holistic approach incorporating Aboriginal content and an openness and sensitivity to local culture, and a focus on literacy and early literacy interventions, with programming to meet individual learning needs.

## Foundation Skills Assessment Scores: Grades 4, 7, and 10

The FSA charts included in this report show FSA results for grades 4, 7, and 10 (provincial exams replaced the FSA tests for grade 10 in 2003/2004 and onwards).<sup>12</sup> The data presented in the FSA charts look at those students who were able to either meet or exceed expectations in each of the subject areas covered by the FSA tests. For many of these charts the trend lines are parallel. When there is improvement in the FSA scores for the non-Aboriginal students, an improvement is also seen for the Aboriginal students. The same can be observed when the FSA scores go down. This may be due to the way the FSA tests are designed and/or implemented, the result of the cohort effect, or other external circumstances. An analysis of these patterns is beyond the scope of this report.

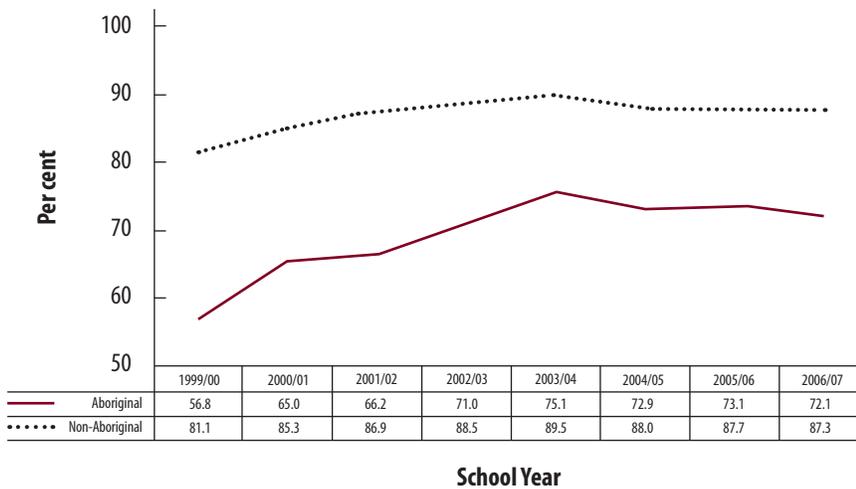
Prior to examining and comparing the results of the FSA scores for Aboriginal and non-Aboriginal students, it is important to note the differences in circumstances of these students. As mentioned before, years of cultural assimilation, residential schools, and other, similar experiences have had a major negative impact on the Aboriginal population. When the parents of a child have not had opportunities for educational advancement themselves, they are not in a position to be role models or play an important part in the educational life of their child. In spite of these disadvantages, Aboriginal students have still managed to narrow the gap in certain areas over a relatively short period of time. This is a testament to the strong effort that they have made under adverse circumstances. These successes need to be recognized and built upon.

This section of the report analyzes the numeracy, reading comprehension, and writing scores for grades 4, 7, and 10.

<sup>12</sup> Data in this section only include those children who participated in FSA testing.

**Figure 2.22**

**Grade 4 Numeracy, Foundation Skills Assessment Scores that Met or Exceeded Expectations, Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2006/2007**



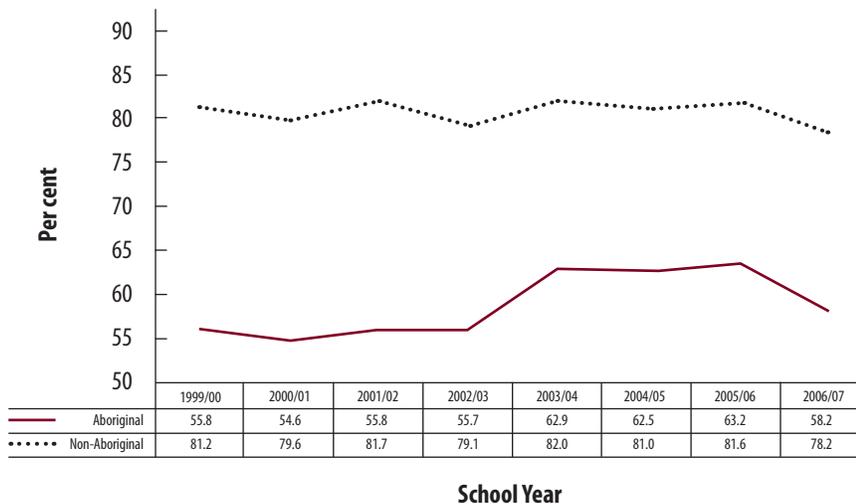
Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Grade 4 – Numeracy**

In 2006/2007, over 72 per cent of Aboriginal students met or exceeded expectations in grade 4 numeracy. Although this figure is lower than the score for non-Aboriginal students (87.3 per cent), it is a significant improvement over the 1999/2000 score (56.8 per cent). Aboriginal students appear to have made the most progress between the 1999/2000 and 2003/2004 school years; since 2003/2004, they have maintained their standing relative to non-Aboriginal students. Overall, 15.3 per cent more Aboriginal students met or exceeded expectations between 1999/2000 and 2006/2007, compared to 6.2 per cent more non-Aboriginal students in the same time period (Figure 2.22).

**Figure 2.23**

**Grade 4 Reading Comprehension, Foundation Skills Assessment Scores that Met or Exceeded Expectations, Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2006/2007**



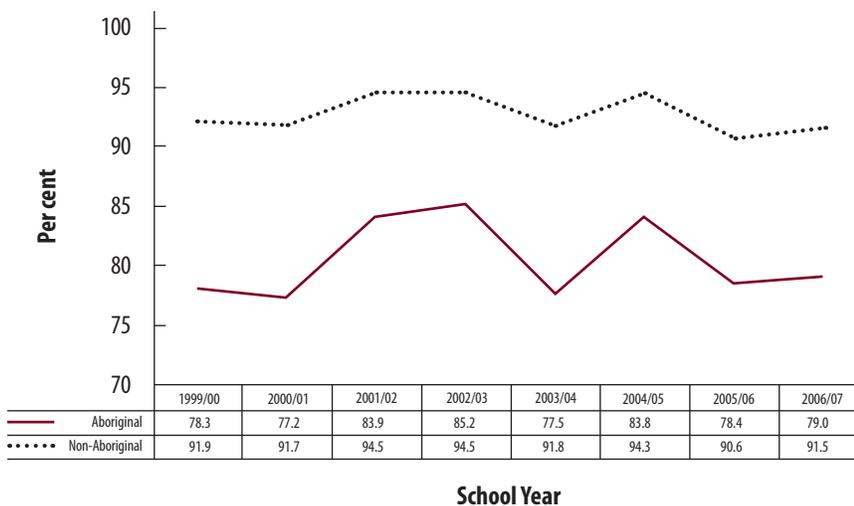
Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Grade 4 – Reading Comprehension**

In the reading comprehension component, FSA scores for grade 4 Aboriginal students remained well below scores for non-Aboriginal students between 1999/2000 and 2006/2007 (Figure 2.23). In 2006/2007, 58.2 per cent of Aboriginal students and 78.2 per cent of non-Aboriginal students met or exceeded expectations.

Figure 2.24

**Grade 4 Writing, Foundation Skills Assessment Scores  
that Met or Exceeded Expectations,  
Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2006/2007**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

### Grade 4 – Writing

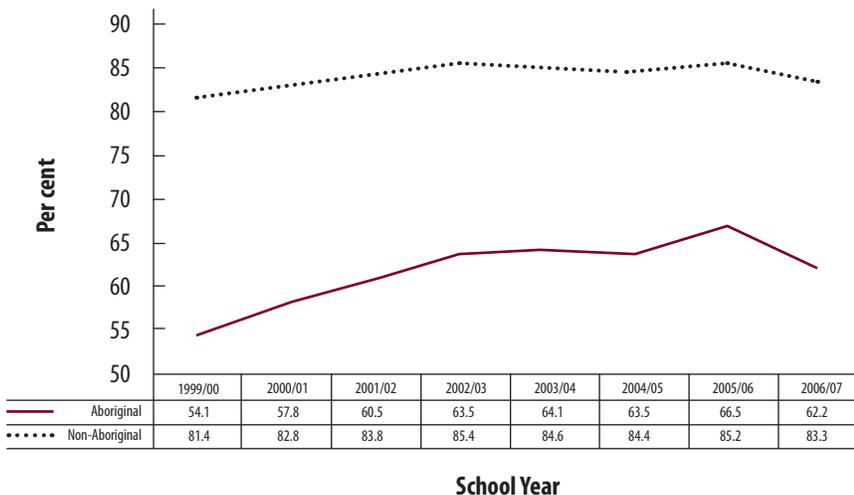
In 2006/2007, more non-Aboriginal grade 4 students met or exceeded expectations in writing than Aboriginal students (91.5 per cent and 79 per cent respectively). The size of the gap between Aboriginal and non-Aboriginal students has not changed considerably since 1999/2000 (Figure 2.24).

### Grade 7 – Numeracy

Between 1999/2000 and 2006/2007, there was a considerable difference between the Aboriginal and non-Aboriginal student population in grade 7 FSA scores for numeracy. In the 2006/2007 school year, 62.2 per cent of grade 7 Aboriginal students met or exceeded expectations in numeracy, versus 83.3 per cent of non-Aboriginal students (Figure 2.25).

Figure 2.25

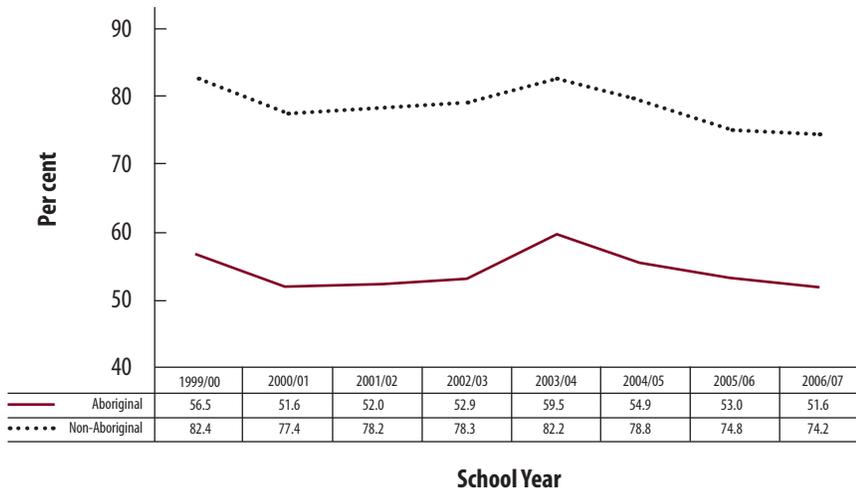
**Grade 7 Numeracy, Foundation Skills Assessment Scores  
that Met or Exceeded Expectations,  
Aboriginal and Non-Aboriginal Students, BC,  
1999/2000 to 2006/2007**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Figure 2.26**

**Grade 7 Reading Comprehension, Foundation Skills Assessment Scores that Met or Exceeded Expectations, Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2006/2007**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Grade 7 – Reading Comprehension**

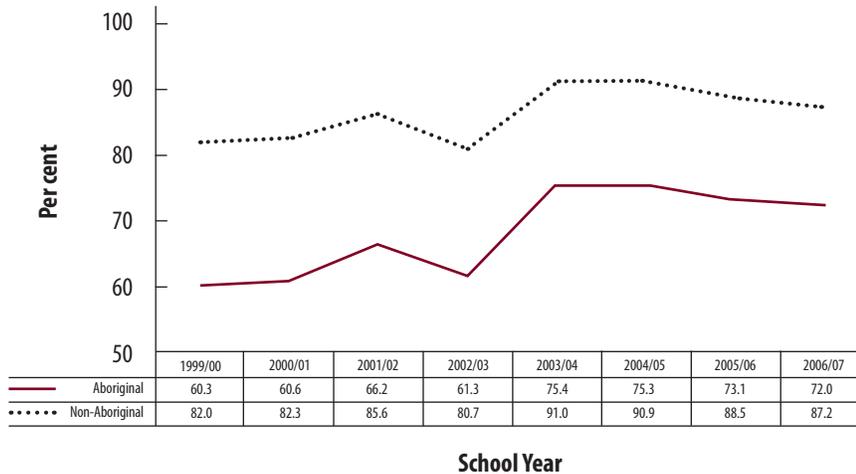
The gap between Aboriginal and non-Aboriginal grade 7 students in reading comprehension is consistent with the gap identified in grade 4 scores. In the 2006/2007 school year, only 51.6 per cent of Aboriginal grade 7 students met or exceeded expectations, compared to 74.2 per cent of non-Aboriginal grade 7 students (Figure 2.26).

**Grade 7 – Writing**

While both Aboriginal and non-Aboriginal grade 7 students have shown considerable improvement in their writing skills since the 1999/2000 school year, there has been a greater improvement by Aboriginal students (60.3 per cent in 1999/2000 to 72.0 per cent in 2006/2007 for Aboriginal grade 7 students, versus 82.0 per cent to 87.2 per cent for non-Aboriginal students). The largest increase was seen between 1999/2000 and 2003/2004; since that time, the scores for writing have declined for both populations. The main cause of this decline has been lower scores obtained by male students in both populations (Figure 2.27).

**Figure 2.27**

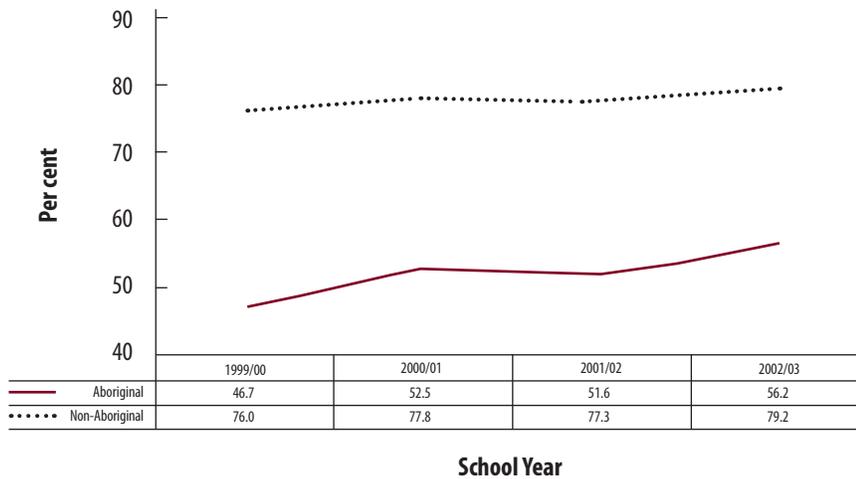
**Grade 7 Writing, Foundation Skills Assessment Scores that Met or Exceeded Expectations, Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2006/2007**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.28

**Grade 10 Numeracy, Foundation Skills Assessment Scores that Met or Exceeded Expectations, Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2002/2003**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

### Grade 10 – Numeracy

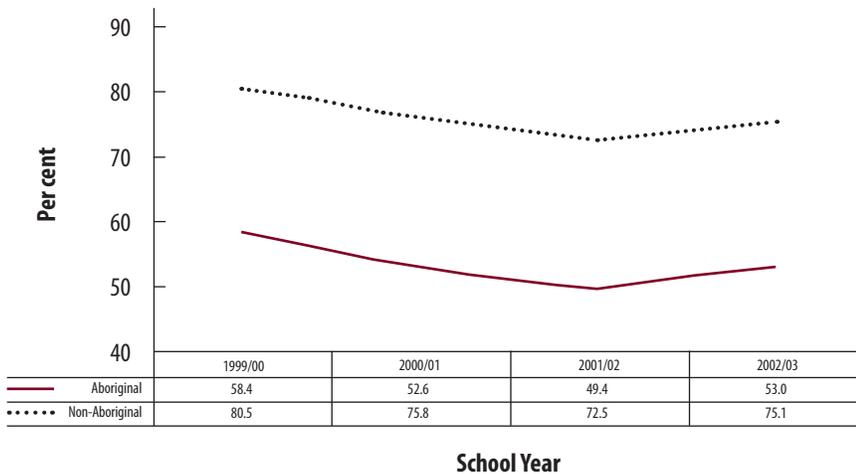
FSA scores are only available for grade 10 students up to and including the 2002/2003 school year. Although there was a large gap between Aboriginal and non-Aboriginal grade 10 students in meeting or exceeding expectations for numeracy in 2002/2003 (23 per cent), the size of the gap decreased between 1999/2000 and 2002/2003 due to a significant improvement in the score for Aboriginal students (Figure 2.28).

### Grade 10 – Reading Comprehension

There was an overall downward trend in grade 10 reading comprehension scores for both populations between 1999/2000 and 2001/2002, with a slight rise in 2002/2003 (Figure 2.29). Scores for Aboriginal grade 10 students were consistently below scores for non-Aboriginal students: only 53.0 per cent of Aboriginal grade 10 students met/exceeded expectations in 2002/2003, versus 75.1 per cent of non-Aboriginal students.

Figure 2.29

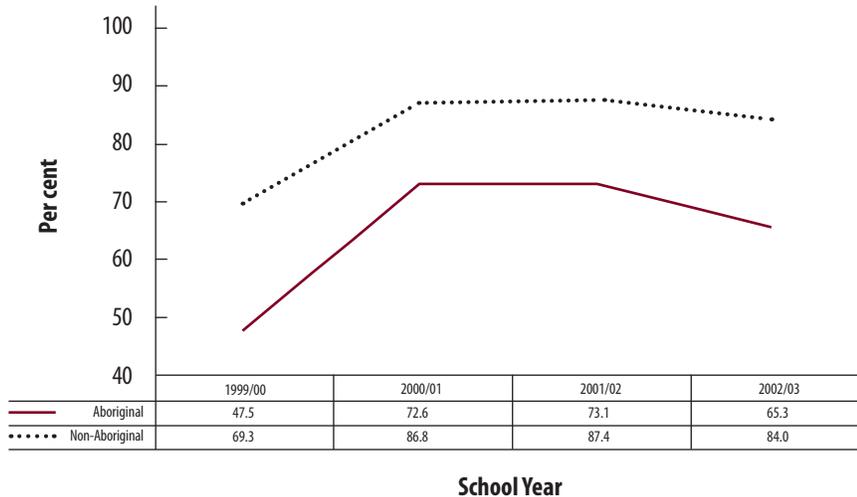
**Grade 10 Reading Comprehension, Foundation Skills Assessment Scores that Met or Exceeded Expectations, Aboriginal and Non-Aboriginal Students, BC, 1999/2000 to 2002/2003**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Figure 2.30**

**Grade 10 Writing, Foundation Skills  
Assessment Scores that Met or Exceeded Expectations,  
Aboriginal and Non-Aboriginal Students,  
BC, 1999/2000 to 2002/2003**



Source: Ministry of Education, Foundation Skills Assessment scores, released December 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Grade 10 – Writing**

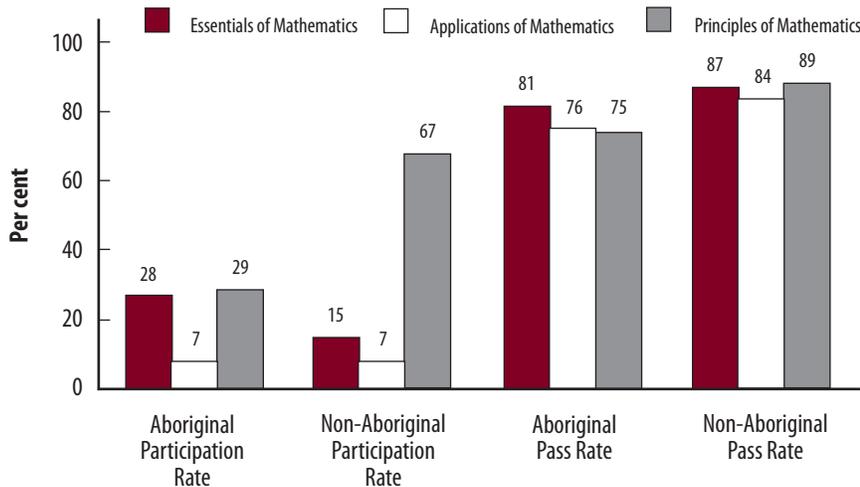
Aboriginal grade 10 students made great progress in meeting or exceeding expectations in writing from 1999/2000 to 2001/2002 (47.5 per cent in 1999/2000 to 73.1 per cent in 2001/2002). There was a minor decline for both populations after 2001/2002 (Figure 2.30).

**Grade 10 Provincial Exams**

The FSA tests for grade 10 were replaced with provincial exams in 2003/2004. In looking at the provincial exam results, the Math 10 exam is of particular interest, including the participation rate of Aboriginal and non-Aboriginal students in the three math course options available (see information box on page 53).

**Figure 2.31**

**Participation/Pass Rates, Math 10 Courses,  
Aboriginal and Non-Aboriginal Students, BC, 2005/2006**



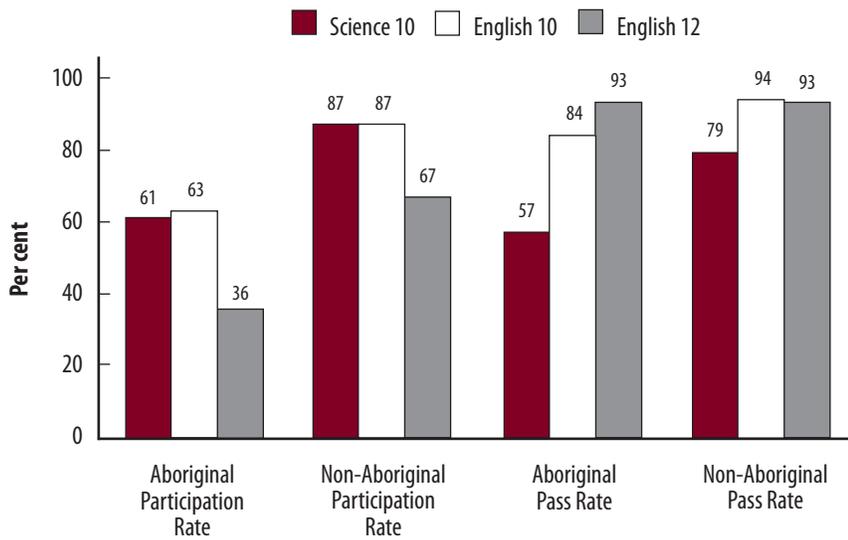
Note: Pass rate is based on a grade of C- or higher.

Source: Ministry of Education, 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.31 illustrates the participation and results in grade 10 math exams. While the participation rate of Aboriginal and non-Aboriginal students is the same for the Applications of Mathematics course, only 29 per cent of Aboriginal grade 10 students are enrolled in the Principles of Mathematics course, which limits their chances of advancing to higher levels of mathematics in higher grades and post-secondary institutions. The pass rate for Principles of Mathematics is not significantly different for Aboriginal students compared to non-Aboriginal students.

Figure 2.32

### Participation/Pass Rates, Science 10, English 10, and English 12, Aboriginal and Non-Aboriginal Students, BC, 2005/2006



Note: Pass rate is based on a grade of C- or higher.

Source: Ministry of Education, 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 2.32 shows participation and results for exams in Science 10 and English 10. Students wishing to take sciences (e.g., chemistry, physics, and biology) in higher grades or at post-secondary institutions need to do well in Science 10. In 2005/2006, the participation rate in Science 10 was substantially lower for Aboriginal students compared to non-Aboriginal students (61 per cent versus 87 per cent). The pass rate for Aboriginal students in Science 10 was 22 per cent lower than the pass rate for non-Aboriginal students. The progress of Aboriginal students in sciences at this grade level needs to be monitored and encouraged if these students are to move on to the more specialized science courses in the higher grades and in post-secondary programs.

As with Science 10, the participation rate for English 10 was substantially lower for Aboriginal students compared to non-Aboriginal students (63 per cent versus 87 per cent). The pass rate for English 10 for Aboriginal students (84 per cent) was still lower than the rate for non-Aboriginal students (94 per cent), but it was better than the pass rate for Science 10.

#### Grade 10 Math Course Options

There are three math courses available to grade 10 students through BC public schools. The decision on which courses a grade 10 student enrolls in depends on the student's ability, interests, and future plans. A brochure produced by the British Columbia Association of Math Teachers (2004) outlines the differences between the three choices:

- **Option 1: Essentials of Mathematics** – This course is for students who experience difficulty in math and who are not considering post-secondary courses that require prerequisite courses in math. These students are more likely to enter the Arts or Humanities.
- **Option 2: Applications of Mathematics** – This course is for students with stronger math skills who may wish to enter a career in the trades or technical industry.
- **Option 3: Principles of Mathematics** – This course is recommended for students who are considering a Bachelor of Science degree and who will be taking math or statistics courses at the post-secondary level.

Source: British Columbia Association of Math Teachers, 2004.

#### Grade 12 English Provincial Exam

Figure 2.32 also shows participation and results for English 12 exams. Many post-secondary programs require English 12 as a basic entrance requirement. The participation rate of Aboriginal students in English 12 was significantly below the rate for non-Aboriginal students (36 per cent versus 67 per cent). The pass rate for both populations was quite high (93 per cent).

### Sharing Our Success – Ten Case Studies in Aboriginal Education

In 2004, the Society for the Advancement of Excellence in Education released a report on ten case studies of excellence in Aboriginal schooling in Canada.

Schools serving Aboriginal students contend daily with issues related to the consequences from residential schools, including poverty, learned helplessness, despair, and high levels of abuse, addictions, and violence. All schools in the study showed high levels of trust and positive environments that were safe, accepting, and respectful. All schools possessed highly effective governance structures, marked by stable leadership, long-term planning, and strategic alignment of available resources towards specified goals. Each school offered instruction to all classes in the Aboriginal language of the community. Students were challenged to attempt higher levels of achievement, and were given multiple levels of support to optimize their chances for success. Transition rates were tracked by the schools, and programs were adjusted to better support students' progress to senior grades and post-secondary opportunities. The following is a summary of activities in the three BC schools included in this report:

Alert Bay Elementary School on Cormorant Island, operated by School District 85, has a student population that is 70 per cent Aboriginal. In 2000, FSA scores for reading for grade 4 students showed that 78 per cent met or exceeded expectations. In 2001 and 2002, 100 per cent achieved this goal. The school district has committed to test students in grades 3 to 10 every fall, using the Canadian Test of Basic Skills (CTBS). This data allows teachers to monitor student progress more closely and gauge the impact of new teaching strategies to help students improve their performance. Alert Bay Elementary School does not suffer the chronic absenteeism of Aboriginal students that affects some other schools; in addition, compared to their peers, Aboriginal students in the school perform well above the provincial average in reading, writing, and numeracy. One interesting innovation is that telephones are available in every classroom for students to phone home to celebrate successes as well as to inform parents of the need to stay after school to complete overdue assignments.

Chalo School, a band school run by Fort Nelson First Nation (FNFN), has 129 preschool to grade 7 students. In order to improve grade transition results, a partnership agreement with School District 81 was negotiated to provide core academic courses for grades 8 through 10 in Chalo, with electives available at the district school. Lessons and materials have been tailored to the visual learning style of Aboriginal students. Morning Circle, a defining characteristic of Chalo School, is used to model respectful behaviour, develop social responsibility skills and behaviours, and to provide instruction and practice in public speaking. Chalo has strong, enthusiastic leadership, a history of consistently tracking student progress with the CTBS, and the support of family and community. School attendance is in the 92–95 per cent range.

Merritt Secondary School, operated by School District 58, has an enrolment of approximately 600 students in grades 9–12, 35 per cent of whom are Aboriginal (from 5 bands). The school has a strong focus on academic courses, encouraging students to take the path that will allow them the greatest possible range of choices after graduation. First Nations Support Workers track Aboriginal student attendance and performance, and submit monthly reports showing the contact they have had with students, parents, and teachers. The success of Aboriginal students is demonstrated by the high percentage that meet or exceed expectations (based on FSA scores), and the small difference in success rates compared to non-Aboriginal students in report card marks. Merritt has also experienced strong success in grade-to-grade transitions and graduation rates. The number of Aboriginal students graduating with Dogwood Certificates has tripled in the past ten years. Merritt is also the location for the Nicola Valley Institute of Technology, the province's only First Nations university.

Source: Bell, 2004.

## Streaming

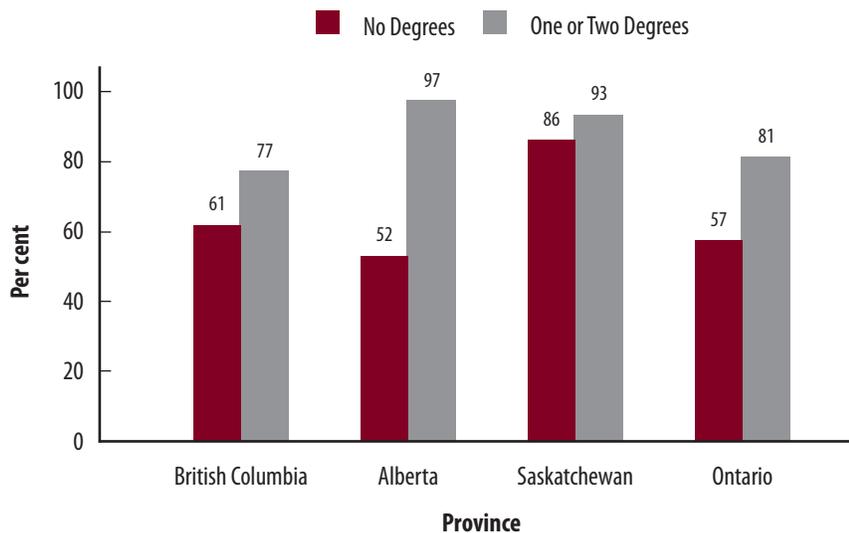
Streaming refers to the practice of selecting and placing students in less challenging courses, with the idea that they do not have the academic capability to succeed in the regular courses. Although this practice may alleviate some of the pressure and stress on students, it may also create problems when these students discover that they are not adequately prepared for entrance to post-secondary institutions. It is very difficult to obtain quality data on Aboriginal students with respect to streaming and to what extent it is being practiced; however, preliminary discussions and research have shown that this may be one reason for the lack of participation of Aboriginal students in post-secondary institutions.

In the report entitled, *“Streaming” in the 10th Grade in Four Canadian Provinces in 2000*, Krahn and Taylor (2007) examined the extent to which streaming of grade 10 students occurred in four provinces (Ontario, Saskatchewan, Alberta, and British Columbia) in 2000. While their research does not look at Aboriginal children specifically, it does draw some conclusions with respect to students in low-income families or in families with parents that do not have post-secondary education.

Krahn and Taylor's findings suggest that a student's social background plays a significant role in their course-selection choices. For example, students' academic placement in grade 10 math, science, and english courses was found to be strongly related to the parents' education and family income. The students with parents who had higher education—higher

Figure 2.33

### Grade 10 Students Keeping Post-Secondary Options Open, by Parents' Level of Education, BC, 2000



Source: Krahn & Taylor, 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

#### Simon Fraser University Kamloops

Established in 1989, Simon Fraser University Kamloops is a collaboration between Simon Fraser University (SFU) and the Secwepemc Nation. The program's goal is to help Aboriginal peoples develop capacity to become self-governing and self-sufficient, while staying rooted in their languages, cultures, and histories. Fittingly, their motto is: *knuwentsutce me7 knuwentwecw-ep*, which means "help yourself and help one another" (Simon Fraser University, Kamloops Program, n.d.).

Courses are generally offered in small classes with individualized instruction and include general university studies, First Nations studies, First Nations languages, Aboriginal Pre-Health, Archaeology, and Criminology. The Archaeology Field School is an innovative collaboration between the Kamloops Indian Band and SFU, giving students the opportunity for "hands-on" cultural education.

For more than twenty years, a key focus for Simon Fraser Kamloops has been coordinating language instruction in BC First Nations communities, by pairing instructors with Elders from the communities to deliver language classes (Cormack, 2008). Courses in Aboriginal Languages and the Certificate in First Nations Language Proficiency are currently available in cooperation with local First Nations communities and language authorities for the following languages: Secwepemctsin; Halq'emeyeym – Upriver; Halkomelem – Downriver; Heiltsuk; Haida; Nuxalk; Tsilhqot'in; and St'at'imcets (Simon Fraser University, Kamloops Program, n.d.).

Sources: Cormack, 2008; Simon Fraser University, Kamloops Program, n.d.

education generally being recognized as an indication of higher socio-economic status—were more likely to take the type of math, science, and english courses that prepared them for post-secondary education, compared to students with parents who did not have any post-secondary education. This finding suggests that parents with higher education are aware that their children need to take the right courses to give them more options for post-secondary programs. The study also showed that out of the four provinces studied, Alberta and Saskatchewan had higher rates of grade 10 students pursuing post-secondary options, compared to Ontario and British Columbia (Figure 2.33). When the differences between the provinces are considered, this raises important questions about how provincial educational policies and practices combine to produce educational attainment outcomes for students. In their conclusion, Krahn and Taylor recommend further research in this area for both immigrant and Aboriginal students.

## Barriers to Obtaining Higher Education

As mentioned before, research has established that higher education leads to better socio-economic conditions and ultimately to better health. A recent study identified some of the historical, geographic/demographic, social, cultural, and personal barriers that prevent Aboriginal students from graduating from secondary school and attending post-secondary institutions (R.A. Malatest and Associates, 2004).

### Historical Barriers

In the past, Aboriginal people were forced to give up their status (enfranchisement) in order to attain a higher level of education. While the law changed after World War II, education for Aboriginal people was still focused on assimilation, alienating Aboriginal students from their families and communities.

The residential school system that was in place between the 1880s and the 1980s also separated Aboriginal children from their families, language, and culture; this ultimately resulted in a high level of distrust of educational institutions by Aboriginal people (R.A. Malatest and Associates, 2004). A more in-depth look at residential schools is provided in Chapter 1.

### Geographic/Demographic Barriers

The geographic and demographic characteristics of the Aboriginal population create another obstacle for Aboriginal students. Aboriginal students who live in remote areas are often forced to leave a place where they have financial, social, and cultural support from their communities or families, in order to pursue their education elsewhere. While there may be some courses offered through community delivery mechanisms, many courses are only available through the major institutions in urban centres. In addition, some Aboriginal students are not able to leave their communities because of family responsibilities. This is particularly difficult for Aboriginal women, who are more likely to have dependents. In general, Aboriginal post-secondary students tend to be older than non-Aboriginal students, and while mature students tend to have better life skills, they may be missing some academic skills, and may have more family and financial responsibilities.

### Social and Cultural Barriers

Aboriginal students also face social barriers when attending post-secondary institutions. For instance, reserve and remote schools do not typically provide the academic preparation required for students to succeed at post-secondary institutions. In many instances, Aboriginal post-secondary students feel that their secondary school preparation was inadequate to prepare them for post-secondary studies.

Another significant social barrier is racism. The university setting can often represent an impersonal and hostile environment, where Aboriginal students' culture, traditions, and values are not understood or supported. There are also concerns that governments are discriminatory in the funding they provide to post-secondary institutions. For example, Aboriginal institutions tend not to be eligible for direct funding grants from governments for mainstream programs.

### Personal Barriers

Many Aboriginal students also face personal barriers, such as poor self-esteem, poor mental and physical health, and feelings of powerlessness, apathy, anger, and frustration (Unruh, 1989, as cited in Council of Ministers of Education, Canada, 2002).

#### Control Over Educational Programs

Research from the University of Victoria suggests that "Indian"\* control of Indian education is essential to respond to the specific needs of Aboriginal peoples for program delivery and content. While there have been improvements, the devolution of control of Aboriginal education from education authorities to the communities remains a slow process. These difficulties are in part due to the federal government's interpretation or perception of "Indian control," which seems to be focused on administrative control over programs, rather than on a restructuring or redefinition of Indian education (Richardson & Blanchet-Cohen, 2000).

*\*The terminology in this section came directly from Richardson & Blanchet-Cohen (2000).*

More students drop out of the programs for “personal reasons” than all other reasons combined. In fact, academic failure comes last as a reason for leaving. Family stress, discrimination, loneliness and an alien environment combine to overwhelm students. Other personal barriers that have been identified include the age of the student and the amount of time that the student has for post-secondary education (R.A. Malatest and Associates, 2004, p. 216).

A factor that has been evident for many years, particularly in the public school system, is that some Aboriginal students do not do well in school because nobody expects them to do well. This low expectation and lack of recognition may be one of the reasons for the lower percentage of Aboriginal students

finishing secondary school, and the over-representation of Aboriginal children in special needs and alternative programs (D. Jeffrey, personal communication, as cited in Petten, 2003).

Overall in BC, data have shown that Aboriginal students fare worse than non-Aboriginal students in educational achievement. While trends are slowly changing, improvements are necessary in providing access to post-secondary institutions and academic counselling for Aboriginal students, and in ensuring that more Aboriginal students make successful transitions through the lower grades and are given the opportunity to prepare for post-secondary education.

### **Historic Agreement to Improve First Nations Education**

In July 2006, a tripartite agreement was signed that will lead to recognition of the rights of First Nations communities in BC to have control over the education of their learners. The agreement, signed by representatives from First Nations and the federal and provincial governments, will give First Nations communities legal authority to govern and control kindergarten to grade 12 education on-reserve. The agreement could later be expanded to include early childhood and post-secondary education. In December 2006, the federal *First Nations Jurisdiction over Education Act* was passed, paving the way to the negotiation of individual agreements with interested First Nations. Key areas being negotiated include equitable levels of funding between First Nations schools and public schools, equivalency of standards, credentialing, recognizing First Nations school certification, teacher certification, reciprocal tuition agreements, and information sharing.

Jurisdiction includes control over curriculum and teacher and school certification and standards development. In addition, students in certified First Nations schools will be eligible to receive both a graduation certificate of the First Nation and the provincial Dogwood Graduation Certificate. To ensure a smooth transition to local jurisdiction, First Nations schools will continue to use established learning outcomes for the core courses, but will be able to determine the standards for all other courses.

This initiative will allow participating First Nations to develop community-specific, culturally relevant curriculum that integrates language, culture, and community values in the learning environment. They will also be able to develop community capacity around education.

As of February 2009, 63 First Nations in BC have taken the first step towards becoming Participating First Nations (First Nations Education Steering Committee, 2009). Once a community has begun the process, they will have up to three years to prepare, before signing and ratifying the Canada-First Nations Education Jurisdiction Agreement and the funding agreement. Communities can opt-out of the process, which means that they will still be governed by Sections 114-122 of the *Indian Act*, and will continue to receive their current services.

Sources: First Nations Education Steering Committee, n.d.; First Nations Education Steering Committee, 2006, 2007, 2009; Office of the Premier, 2006a, 2006b.

## Other Community Measures

Rates of crime, abuse, and children apprehended by child protection agencies are some of the measures used to assess the levels of security and stress that families and communities are experiencing. The following section provides information on community measures such as children in care, violence and abuse, and crime.

### Children in Care

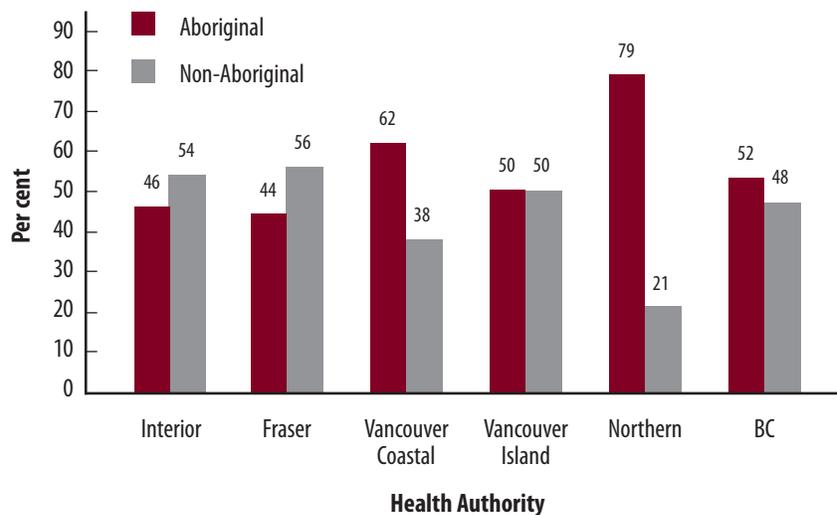
Traditionally, caring for Aboriginal children was a communal responsibility. Over the past two centuries, Aboriginal people have experienced major, prolonged social and cultural upheaval, which has jeopardized their ability to provide a safe and healthy environment for their children.

A disproportionate number of Aboriginal children and youth are in government care. The records of the Ministry of Children and Family Development show that in January 2009, there were 8,960 children<sup>13</sup> in the care of child welfare authorities. Over half of these children (4,647) were Aboriginal. A 2006 report on the health and well-being of children in care showed that on any given day, 0.5 per cent of the province’s non-Aboriginal children were in care, compared to 7 per cent of Aboriginal children (PHO, 2007).

Similarly, a 2007 report on the education of children in care showed that 1 in 7 Aboriginal children had been in care at some point in their life, compared to 1 in 50 non-Aboriginal children. This means that over the course of the school-aged years, on a given day, an Aboriginal child is 14 times more likely to be in care than a non-Aboriginal child (Representative for Children and Youth & PHO, 2008).

**Figure 2.34**

**Children in Care, Aboriginal and Non-Aboriginal Population, by Health Authority, BC, January 2009**



Source: Ministry of Children and Family Development, 2009; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2009.

<sup>13</sup> The 8,960 figure does not include those children living with a grandparent or other relative (M. Wright, personal communication, February 26, 2009).

### Health Promotion Comic Book Series for Youth

The Healthy Aboriginal Network's Executive Director, Sean Muir, realized that to reach young people and create literacy on health and social issues it was necessary to use a medium that appeals to visual learners. Since 2005, the Healthy Aboriginal Network has developed a series of highly successful health promotion comic books on a variety of topics including: suicide prevention, diabetes prevention, gambling addiction, youth health issues, and staying in school. Comics currently in production include: residential schools, physical activity, living with fetal alcohol spectrum disorder, and child mental health.

The first comic, *Darkness Calls* was released in 2006. This comic book focuses on youth suicide prevention. The comic and companion video are not intended as stand-alone resources, but more as icebreakers to let youth know that it is okay to talk about suicide and to reach out if they or someone they know is in pain or depressed.

*Darkness Calls* is the story of a teenager who is bullied at school, misunderstood by his teacher, and socially isolated from his family. The story was previewed with both Aboriginal youth and health professional audiences for authentic characters, storyline, and language. It took nearly nine months to complete the process from conception to finish. More than 65,000 copies have been sold to date. The video was filmed in the Gitksan language. Youth involved in the production learned the words and phrases necessary to speak the dialogue. The short won honourable mention in the Outstanding Canadian Short Film category at ReelWorld 2008 in Toronto.

Another comic, *An Invited Threat*, is about diabetes prevention. It focuses on a young boy and what he likes to eat more than anything—junk food. It also looks at the role played by the local store manager, someone who has the ability to change the dietary habits of his people. The comic was focus group-tested for its ability to convey what is and is not healthy food.

The theme of staying in school is featured in the comic *Level Up*, about Terry, a boy who is considering dropping out of school. Before he gets the chance he's asked to spend some time with his cousin Dave, a successful video game developer. Rather than lecture Terry about school, he compares it to character strengths and weaknesses in a video game. Once the importance of school is put in terms he can understand, Terry is better able to make a decision about his future.

Funding for the comics has come from a wide variety of sources including the BC Ministry of Health, the Ministry of Children and Family Development, Vancouver Coastal Health Authority, First Nations and Inuit Health (Health Canada), the Canadian Council on Learning, the Ontario Federation of Indian Friendship Centres, and the Victoria Foundation.

For further information, please go to <http://www.thehealthyaboriginal.net/>.

There is considerable regional variation in the percentage of Aboriginal children in care. Aboriginal children constitute a higher percentage of children in care in the North than anywhere else in the province. Figure 2.34 shows that in 2009, Northern Health Authority had the highest percentage of Aboriginal children in care (79 per cent), while Fraser Health Authority had the lowest percentage (44 per cent).

Ministry of Children and Family Development records show that the proportion of children in care who are Aboriginal has increased over time. In 1997, 31 per cent of children in care were Aboriginal. By January 2009, the percentage had risen to 52 per cent. The reason for the increase is two-fold. From 1997 to 2009, the number of Aboriginal children in care increased (from 2,901 to 4,647), and the number of non-Aboriginal children in care decreased (from 6,309 to 4,313).<sup>14</sup>

The average age of Aboriginal children in care is lower than non-Aboriginal children (Child and Youth Officer & PHO, 2006), and one of the implications is that Aboriginal children in permanent care<sup>15</sup> will likely be in care longer and will constitute a higher percentage of children in permanent care in the future. Almost two-thirds (63 per cent) of Aboriginal children in care are in permanent care, compared to just over half of non-Aboriginal children (53 per cent).

The high rate of Aboriginal children in care reflects the historical disadvantages experienced by Aboriginal communities. Residential schools caused generations to grow up without opportunities to develop parenting skills. Poverty,

<sup>14</sup> The number of Aboriginal children in care could be higher than reported.

<sup>15</sup> Permanent care means that government is the sole guardian of the child, and usually means the child will be in government care until he/she turns 19 or is adopted.

relative isolation, unemployment, and inadequate housing all contribute to family disruption. When Aboriginal families experience difficulties, they have not always been given the resources and support they need to ensure that children are raised in their home communities and culture. Federal child welfare funding for children living on-reserve is based on children coming into care, rather than on prevention and support for children in the home.

In March 2001, Aboriginal leaders and government signed an agreement that committed to reducing the number of Aboriginal children and youth in care and to returning Aboriginal children to their home communities. Though progress has been made, as seen in the increase in the number of Aboriginal children in care looked after by delegated Aboriginal agencies, the total number of Aboriginal children in care continues to grow. In March 2001, 493 children (12 per cent of Aboriginal children in care) were cared for by delegated Aboriginal agencies. By April 2007, this number had increased to 1,445 children (31 per cent of Aboriginal children in care). Over this same period of time, the total number of Aboriginal children in care increased from 4,051 to 4,725 (an increase of 17 per cent).

As reported in the 2006 Child and Youth Officer and Provincial Health Officer joint report, *Health and Well-Being of Children in Care in British Columbia*, Aboriginal children in care were more likely to be diagnosed with a medical condition than were children in the general population. Compared to non-Aboriginal children and youth, Aboriginal children in care were over 4 times more likely to experience health problems during the perinatal period; over 1.5 times more likely to be diagnosed with a congenital anomaly; 1.4 times more likely to suffer injuries and poisonings; almost 4 times more likely to be diagnosed with a mental disorder; and over 5 times more likely to become pregnant in their youth.

Educational attainment has also been poorer for Aboriginal children in care compared to the general population. Only 15.5 per cent of Aboriginal children in care graduate from high school, compared to 24.4 per cent of non-Aboriginal children in care. For Aboriginal children who are not in care the figure is approximately 51 per cent, versus approximately 78 per cent for the non-Aboriginal population not in care. Aboriginal female students have a higher graduation rate compared

### **R'Native Voice**

In 2003/2004, the Okanagan Nation Alliance developed a series of workshops for Aboriginal youth to teach them about their culture and connect them to their communities. A review of research on Aboriginal child welfare and youth mental health had shown that knowledge and pride in one's culture and heritage can reduce the risk of youth engaging in high-risk behaviours. The pilot project included participation by the seven bands and three Friendship Centres in the Okanagan Territory, and was funded by the Victoria Foundation Aboriginal Trust Advisory.

The project was delivered in eight communities, and in each, a Youth Liaison Worker was hired or assigned to work on the project. Curriculum topics were selected to give youth information and skills to help make healthy choices and cope with societal pressures. The structure of the curriculum encouraged the participation of local people, including Elders, storytellers, and mentors. Each community could adapt the workshop to meet the needs of youth in their area. Sixty-two youths completed the program (80 per cent of the 78 youth who registered). Evaluation of the project was positive; participants reported that, as a result, they would make better life choices.

In the Fall of 2006, the Okanagan Nation Alliance worked with the seven bands and three Friendship Centres to mobilize the community. A new program coordinator was hired in January 2007, and a series of eight workshops ran from mid-February to June 2007 in eight sites. Evaluation of the workshops continues to be positive.

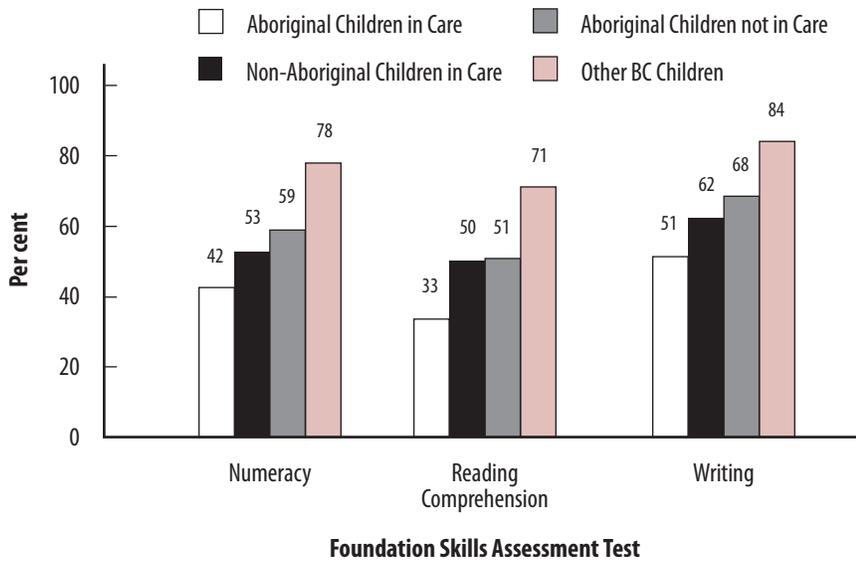
The workshops continue on a variety of topics that address youth concerns, including issues such as racism, drugs and alcohol, family relationships, and self-esteem.

For more information on the Okanagan Nation Alliance and their programs, please refer to their website at <http://www.syilx.org/>.

Sources: Okanagan Indian Band, 2009; Okanagan Nation Alliance, 2007, n.d.

Figure 2.35

**Grade 4 Students Who Met or Exceeded Provincial Foundation Skills Assessment Scores, Aboriginal and Non-Aboriginal Children in Care and not in Care, BC, 2004/2005**



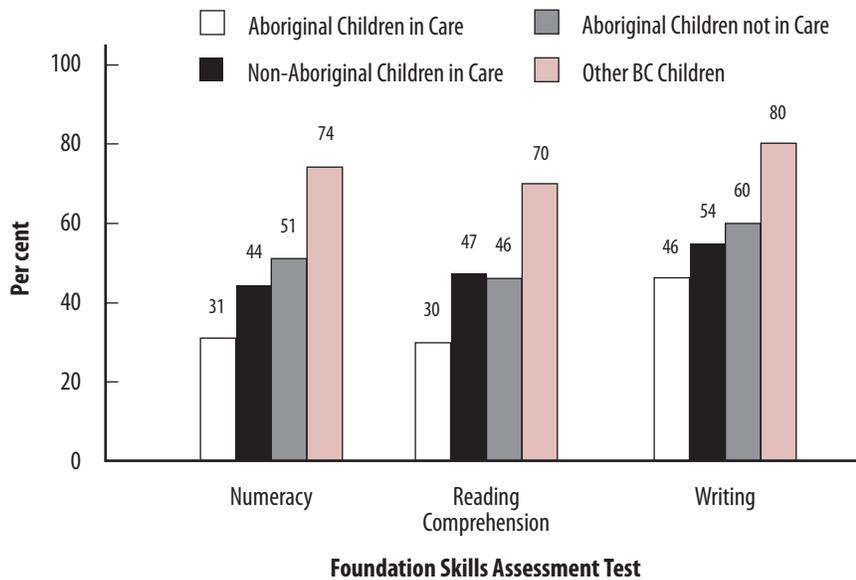
Source: Ministry of Education, 2004/2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

to male students (Representative for Children and Youth & PHO, 2007).

Educational difficulties begin much earlier than graduation. Over half of the children in care were not considered to be “school ready” based on their scores on the Early Development Instrument (EDI), which is administered in kindergarten. More than twice as many children in care were not school ready compared to the general population. This trend of struggling in school continues and is reflected in the grades 4 and 7 provincial FSA scores. Aboriginal children in care fared worse than all other students (Figures 2.35 and 2.36), with only 33 to 51 per cent meeting or exceeding standards in grade 4, and 30 to 46 per cent meeting or exceeding standards in grade 7 (Representative for Children and Youth & PHO, 2007).

Figure 2.36

**Grade 7 Students Who Met or Exceeded Provincial Foundation Skills Assessment Scores, Aboriginal and Non-Aboriginal Children in Care and not in Care, BC, 2004/2005**



Source: Ministry of Education, 2004/2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

The vulnerability of Aboriginal children in care can also be seen in the number of students with special needs. Within the education system, approximately 64 per cent of Aboriginal children in care were identified by the age of 16 as having special needs. This compares to 58 per cent of non-Aboriginal children in care, 27 per cent of Aboriginal students not in care, and 11 per cent of the non-Aboriginal population not in care (Representative for Children and Youth & PHO, 2007).

Figure 2.37

### Average Daily Rate of Youth in Custody, Age 12–18 Years, BC, 2000/2001 to 2006/2007



\* April 1, 2006 to January 31, 2007.

Source: Ministry of Children and Family Development, 2007; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## Violence and Abuse

Research indicates that most Aboriginal people will have first-hand experience with violence or abuse at some point in their lives. One study in British Columbia found that Aboriginal girls and women are subject to more violent crimes, much higher rates of sexual and physical violence, and murder compared to the non-Aboriginal population (Macdonald, 2005). Young Aboriginal girls also tend to experience more sexual abuse and physical assaults in their schools and communities, compared to non-Aboriginal girls (McCreary Centre Society, 2005).

## Crime

In BC, as in other Canadian provinces and territories, Aboriginal people are over-represented in the prison system relative to their percentage of the overall population. A 1999 study showed that about 17 per cent of those admitted to adult correctional facilities in BC were Aboriginal, while the provincial Aboriginal adult population was approximately 3 per cent (Finn, Trevethan, Carriere, & Kowalski, 1999).

In 2006/2007, the rate of Aboriginal youth in custody was 17.7 per 10,000 population, versus a rate of 2.4 per 10,000 for non-Aboriginal youth. Although the rate of Aboriginal youth in custody has decreased significantly since 2000/2001, their representation is still much higher than non-Aboriginal youth. Aboriginal youth have rates of institutionalization that are more than 4 to 8 times higher than non-Aboriginal youth (Figure 2.37).

### **Moving Upstream: Aboriginal Marginalized and Street-Involved Youth in BC**

In 2000, the McCreary Centre Society conducted a health survey of marginalized and street-involved youth in six communities across British Columbia. In 2006, the survey was expanded to nine communities and was completed by 762 youth between the ages of 12 and 18. The survey was aimed at youth who were homeless, panhandling, involved in the sex trade, selling or using drugs, or living in unstable housing. The research found that 54 per cent of those surveyed self-identified as Aboriginal, which was much higher than the 9.8 per cent of Aboriginal youth in school based on data from the Ministry of Education. In the communities that participated in both surveys, youth identifying as Aboriginal increased from 35 to 57 per cent.

The *Moving Upstream* report was initiated to delve further into the experiences of street-involved Aboriginal youth, and seek feedback from community stakeholders. The community feedback provided cultural context to issues faced by Aboriginal youth and their families and emphasized the importance of culturally-relevant interventions.

#### **Key Findings**

- 47 per cent of participants had gone hungry because they or their parents did not have money for food.
- Street-involved youth were likely to report a family history of substance use, as well as using drugs and alcohol themselves.
- 63 per cent of participants reported having witnessed family violence, and almost 60 per cent had been physically abused. More than one in three participants reported they had been sexually abused (39 per cent).
- 40 per cent of males and 47 per cent of females had first run away from home at age 12 or younger, and one in three had been kicked out by age 12.
- 42 per cent of those surveyed had been in foster care.
- Far more Aboriginal youth surveyed identified as being lesbian, gay, or bisexual than did Aboriginal youth in BC schools who completed a similar survey in 2003.
- 30 per cent of females and 18 per cent of males had attempted suicide at least once during the past year.
- 41 per cent of youth who lived in squats, abandoned buildings, on the street, or in shelters reported attending school. One-half of all youth surveyed reported that they had at least one pet and those who had a pet were significantly more likely to attend school than those who did not.

#### **Recommendations from Youth and Community Members Surveyed**

- Safe, affordable housing.
- Early prevention and intervention programs to promote healthy families.
- Interventions to foster greater connections to school.
- Culturally-specific programming for street-involved youth, and training in cultural safety for people who work with youth.
- Services to support lesbian, gay, or bisexual street-involved youth.
- Additional support for Aboriginal youth in foster care.
- Opportunities for youth to develop skills to take ownership over their lives.
- More research on the influence of cultural connectedness on Aboriginal youth and communities.

Source: McCreary Centre Society, 2008.

### Spotlight on McCreary Centre Society: *Raven's Children II: Aboriginal Youth Health in BC*

Since 1992, the McCreary Centre Society, a non-profit BC organization concerned with the health of youth in BC, has conducted three surveys on BC adolescents in Grades 7-12, including Aboriginal youth. After the publication of the second survey (1998), the McCreary Centre approached Aboriginal community members about producing a report on the Aboriginal youth that responded to the survey. The result was *Raven's Children*, published in 2000.

A subsequent report, *Raven's Children II: Aboriginal Youth Health in BC*, released in 2005, is based on the responses of over 4,800 Aboriginal students who took part in the three province-wide Adolescent Health Surveys (1992, 1998, and 2003). As with the original report, *Raven's Children II* was compiled with considerable input from the Aboriginal community, including analysis of the results by an Aboriginal research team, with guidance from an Aboriginal advisory committee.

Specific highlights include:

- In 2003, 83 per cent of Aboriginal youth rated their health as good or excellent, compared to 84 per cent in 1998 and 80 per cent in 1992. The percentage for non-Aboriginal youth was slightly higher in 2003, at 86 per cent.
- Most Aboriginal youth felt strongly connected to families and school.
- Almost two-thirds (64 per cent) of Aboriginal students wanted to continue their education beyond high school, compared to 76 per cent of non-Aboriginal students. This percentage has remained stable over the past decade (65 per cent in 1992, and 63 per cent in 1998).
- Smoking has decreased significantly among Aboriginal students.
- A quarter of Aboriginal youth (25 per cent) were exposed almost everyday or everyday to second-hand smoke.
- Fewer Aboriginal youth drink alcohol. In 2003, 67 per cent of youth surveyed reported that they had tried alcohol, compared to 80 per cent in 1992, and 73 per cent in 1998.
- Sexual activity among Aboriginal students has declined over the last decade, from 52 per cent who reported having sexual intercourse in 1992, to 36 per cent in 2003. There was also a decline in early sexual activity, with 29 per cent of Aboriginal students reporting that they had sex for the first time before the age of 14, down from 44 per cent in 1992.
- The percentage of Aboriginal youth who think about or attempt suicide has not improved significantly in the past decade. In 2003, 22 per cent of Aboriginal youth seriously considered suicide, the same percentage as in 1992.
- Twelve per cent of Aboriginal youth attempted suicide in 2003, compared to 6 per cent of non-Aboriginal youth. Twenty-six per cent of Aboriginal students had a family member attempt suicide, compared to 13 per cent of non-Aboriginal youth.
- The percentage of Aboriginal youth who reported being physically or sexually abused has declined; however, there are still too many who experience it, particularly girls.
- Internet safety is a concern, particularly among girls. In 2003, 19 per cent of Aboriginal students had contact with a stranger on the Internet that made them feel unsafe (compared to 15 per cent of non-Aboriginal students). Aboriginal girls were 3 times more likely than boys to have this happen (28 per cent versus 9 per cent).
- Marijuana use among Aboriginal students has increased over the past decade and the majority of Aboriginal youth who tried marijuana for the first time were 14 years old or younger.

For more information visit the McCreary Centre Society's website at [http://www.mcs.bc.ca/pdf/Ravens children\\_2-web.pdf](http://www.mcs.bc.ca/pdf/Ravens%20children_2-web.pdf).

Source: McCreary Centre Society, 2005.

### **Urban Native Youth Association – Vancouver**

The Urban Native Youth Association (UNYA) has been providing programs and services to Native youth in Vancouver since 1988. UNYA views health from a holistic perspective, which includes the physical, emotional, mental, and spiritual aspects of a person. The association provides 18 diverse programs in the areas of education and training, personal support, residential programs, and sports and recreational opportunities, and seeks youth input into program development and evaluation to ensure that the programs meet their needs.

UNYA strives to provide innovative and culturally appropriate programming that can better meet the unique needs of Native youth, such as the School Support Team, an alcohol and drug prevention program to help keep youth in school and doing well both academically and socially; Young Wolves Lodge, a program for 17 to 24-year-old Native females to help them leave the streets, work towards becoming free of substance abuse, and reunite with their children; Aboriginal Youth First Sports & Recreation Program, which focuses on healthy physical activity, interpersonal skills, and eating; and Mediation and Mental Health Programs, which teach youth skills that will help them to positively address communication and stressful issues in their lives.

Source: L. Gray, personal communication, August 13, 2007.

### **A Personal Journey - Young Wolves Lodge**

Twenty-year old Julie\* entered Young Wolves Lodge for a four-month stay with one goal in mind, to get herself better so that she could see her young child on a regular basis. Julie had been in the care of the Ministry of Children and Family Development from the age of 6 months until she was 19. She had gone through as many as 20 different foster homes and became pregnant with her child at age 15. Her addiction began at the age of 11 and she was on to harder drugs by age 14. Her addiction escalated when she received tragic news about one of her parents. This downward spiral eventually led her onto the streets; she left her child with his biological father. She suffered physical and mental abuse from a variety of partners, and suffered a total breakdown before entering Young Wolves Lodge. At this point she realized that if she didn't make better choices, and change her life, she would die.

While at Young Wolves Lodge, Julie began to come to terms with her past, low self-esteem and personal image and realized that she was just at the beginning of her recovery. Before graduating from the Lodge, she became a voice for youth throughout the community and blossomed into the woman that was always there, but hidden. A past graduate of the Lodge encouraged her to attend the recovery program, and she recognized the importance of sharing her story so that others could benefit from the program. She stated that the Young Wolves Lodge staff saved her life and were giving her another chance to be with her child. She realizes that she is not cured, but that she is on a long journey to recovery. She began looking into treatment programs that she could continue with once she left Young Wolves Lodge, something she was against in her first couple of months of recovery. She went on to enter a 10-week treatment program and set a one-year goal to work her way to reunite with her child and continue her life on the Red Road.

\* Name has been changed to provide anonymity.

## Summary of What We Know:

- For many years, research has supported the influence of socio-economic factors on health. Community identity, employment, income, education, and other societal factors all influence and determine the health of individuals.
- Approximately 5 per cent of the total BC population are Aboriginal. The Aboriginal population is evenly distributed between Northern, Interior, Vancouver Island, and Fraser Health Authorities at 24.5, 22.9, 20.7, and 19.4 per cent respectively. Vancouver Coastal Health Authority has the lowest percentage of the Aboriginal population at 12.5 per cent.
- In 1990, the United Nations Development Programme developed the Human Development Index (HDI), which measures a country's three dimensions of human development: life expectancy, education, and income. The HDI provides an outlook on the complex relationship between the health and socio-economic conditions of individuals in a country.
- During the 1990s, the Strategic Research and Analysis Directorate, Indian and Northern Affairs Canada, took the HDI one step further and developed the Community Well-Being Index (CWB) as a measure of the well-being of communities across Canada. The methodology used in the CWB index is based on the HDI, although CWB uses four indicators: education, labour force, income, and housing.
- In 2001, only two First Nations communities ranked among the top 50 communities in BC on the CWB index, while all of the bottom 50 communities in BC were First Nations.
- Research in BC clearly shows that there are unnecessary structural barriers to on-reserve economic development.
- Based on 2006 Census data, the unemployment rate for the Aboriginal population was approximately 13.7 per cent, compared to 4.7 per cent for the rest of the BC population.
- The Aboriginal population is often employed in lower-paying or more hazardous jobs, typically in primary industries (men) or the service industry (women).
- Based on 2006 Census data, nearly 62 per cent of the Aboriginal population in BC (15 year of age and older) earned less than \$20,000 per year, compared to 44.4 per cent of the non-Aboriginal population.
- Research has shown that the health status of individuals is closely associated with their level of education, income, and employment. Education is perhaps the most important of the indicators, since it is a determinant of an individual's future employment and income. This is why the lower graduation rate and lower level of post-secondary participation of the Aboriginal population are major concerns.
- Recent research in BC has shown that given a supportive school environment, Aboriginal students perform as well as their non-Aboriginal peers.
- In 2005/2006, Aboriginal students had a first-time graduation rate of 50.9 per cent, compared to 78.4 per cent for non-Aboriginal students. In 2005/2006, approximately 88 per cent of Aboriginal students who were eligible to graduate completed high school, compared to 74.2 per cent in 1994/1995. For non-Aboriginal students, the rate increased from 90.2 per cent in 1994/1995 to 94.6 per cent in 2005/2006.
- A disproportionate number of Aboriginal children and youth are in government care. The records of the Ministry of Children and Family Development show that in January 2009, there were 8,960 children in the care of child welfare authorities. Over half of these children (4,647) were Aboriginal.
- Research indicates that most Aboriginal people will have first-hand experience with violence or abuse at some point in their lives. One study in British Columbia found that Aboriginal girls and women are subject to more violent crimes, much higher rates of sexual and physical violence, and murder compared to the non-Aboriginal population.
- In BC, as in other Canadian provinces and territories, Aboriginal people are over-represented in the prison system relative to their percentage of the overall population. A 1999 study showed that about 17 per cent of those admitted to adult correctional facilities in BC were Aboriginal, while the provincial Aboriginal adult population was approximately 3 per cent.

- In 2006/2007, the rate of Aboriginal youth in custody was 17.7 per 10,000 population, versus a rate of 2.4 per 10,000 for non-Aboriginal youth.

## What Actions Can We Take?

### Individuals and families can:

- Actively oppose racism.
- Find out more about self-governance and other self-determination issues.

### Aboriginal communities and organizations can:

- Work together to overcome the disadvantages of small community size; for example, they can form institutional cooperatives to achieve economies of scale.

### Employers can:

- Examine hiring practices to ensure equality of opportunity.

### Schools can:

- Provide strategies that will incorporate the factors that are linked to success in school. These factors fit into six categories: Leadership, school climate, staff, funding and resources, community, and programs.

### Governments and communities can:

- Continue to honour and support principles in the First Nations Health Plan.
- Facilitate the removal of structural impediments to economic development in First Nations communities.
- Set clear, measurable goals for employment, income, and education levels of Aboriginal people equal to those within the general population, along with methods for public reporting of results.
- Support efforts by Aboriginal people to achieve self-determination and a collective sense of control over their futures, in both on- and off-reserve communities.
- Invest in adult education opportunities, skills upgrading, training, job preparation, financial assistance for finding work and work clothing, child care, and stable, affordable housing.
- Ensure that effective, culturally appropriate programs are in place to support those who have suffered abuse.
- Encourage participatory research to gain a more clear understanding of the relationship between socio-economic conditions and the health of Aboriginal communities.



# Chapter 3

## Healthy Beginnings: Pregnancy, Infants, and Children

The health of infants and children has been internationally accepted as an indicator of the health and well-being of a population. Trends in indicators such as infant mortality, neonatal mortality, post-neonatal mortality, prematurity, and low birth weight births provide an understanding of how healthy the infants are in a population and what needs to change to improve their health. For many years, the Aboriginal population has experienced significantly higher infant mortality, neonatal mortality, post-neonatal mortality, and low birth weight births, compared to the rest of the BC population. This chapter will provide information on these and other indicators directly related to the health of infants and children for the Aboriginal population and other residents of the province.<sup>1</sup>

Although there is considerable interest in the health status of all Aboriginal peoples (including Métis, non-Status, and Inuit), in most cases, relevant data are only available for Status Indians. Information to identify Status Indian data in this chapter was obtained from the British Columbia Vital Statistics Agency and First Nations and Inuit Health, Health Canada. A comparison between the Status Indian population and other residents is provided for all health conditions discussed. For those health indicators with a large gap between the

two populations, more detailed regional analysis is also provided in the appendices. Data from the British Columbia Vital Statistics Agency, the Medical Services Plan, and the BC Perinatal Database Registry<sup>2</sup> were also linked to provide analysis and better understanding of factors that affect the health of Status Indian infants in British Columbia. For more detailed data tables and additional regional data please refer to the website of the Office of the Provincial Health Officer at <http://www.hls.gov.bc.ca/pho>.

### Highlights

- For many years, the Aboriginal population has experienced significantly higher infant mortality, neonatal mortality, post-neonatal mortality, and low birth weight births, compared to the rest of the BC population.
- From 1998–2004, twice as many Status Indians mothers had inadequate prenatal care compared to other resident mothers. For the same time period, infant mortality was significantly higher for both Status Indian and other resident mothers who had inadequate prenatal care, compared to those mothers who had adequate or more than adequate care.

<sup>1</sup> The terms used to describe the Aboriginal population in this chapter will vary according to the data and the sources used. For consistency, material presented from a published study quote the exact terms and definitions used in that study.

<sup>2</sup> Data were available for linkage for the time period 1998–2004, yielding 16,180 Status Indian live births among a provincial total of 286,040 live births. These data were used for analysis of the Status Indian and other resident populations. The factors assessed included maternal age, preterm births, low and high birth weights, place of residence, substance use during pregnancy, pre-pregnancy body mass index, and prenatal care.

- Research has widely recognized the association between poor socio-economic status and poor health. For infants and children, poor health is generally a result of parents' low income and low levels of education. Several studies have shown a strong link between a mother's income and education and her infant's health.
- A long history of colonization, systemic discrimination, and experiences such as residential schools have led to adverse health effects on Aboriginal families and their children. The results of these experiences are the root of inequities in infant health for Aboriginal peoples.
- Infant deaths are caused by many conditions, including perinatal conditions, congenital anomalies, sudden infant death syndrome (SIDS), respiratory diseases, and infectious diseases, as well as other natural and external causes.
- From 1998–2004, Status Indian mothers who lived off-reserve had a significantly higher infant mortality rate than those who lived on-reserve (10.4 per 1,000 live births versus 6.5 per 1,000 live births respectively).
- From 1998–2004, Status Indian mothers had a higher percentage of substance use during pregnancy than other residents. Infant mortality rates were higher for Status Indian mothers who indicated smoking, alcohol, or drug use during pregnancy, compared to those mothers with no reported substance use.

### Indigenous Fathers Project

Jessica Ball, a professor with the University of Victoria School of Child and Youth Care, is the first in North America to study Aboriginal fathers. Her Indigenous Fathers Project conducted interviews with 80 men of all ages and backgrounds, from sole parents to men who had never met their children. Ball sought to tap into the strengths and resources Aboriginal men can offer their children and each other despite the decimation of their communities, relocation, residential schools, foster care, racism, cultural losses, and the general exclusion of fathers.

Few of the men studied had affectionate and available fathers. They frequently felt like outsiders in the lives of their own children, but are working to overcome this issue. Aboriginal men have higher levels of poverty, illness, injury, and early death compared to non-Aboriginals, coupled with the lowest standard of housing. The residential school experience has been a major factor for every one of the men in the study. Aboriginal men's sense of themselves is still affected by the loss of their traditional role living off the land, and by history books that taught they were "primitive and savage and lazy and drunk," says Ron George, Aboriginal Advisor to the project. Fathers have to work hard at healing, but also at learning about children's needs and feelings and how to care for them. "Everybody agrees, it's not our fault. But we still have to do the work. It's a cruel irony."

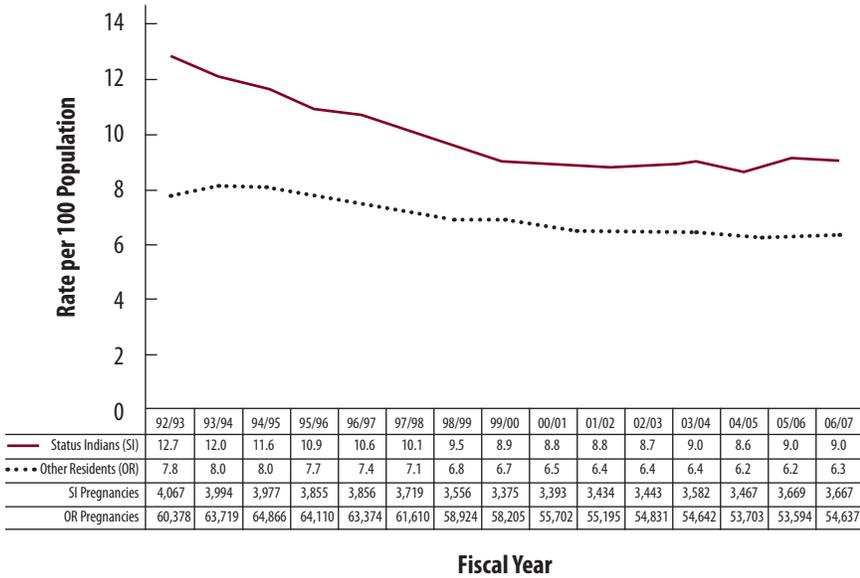
Based on her research, Ball has created a how-to-booklet, DVD, and poster. The video, *Fatherhood: Indigenous Men's Journeys*, features interviews with six First Nations fathers telling what it has been like for them to become fathers and to grow into the role of dad. These men hope that other fathers will be encouraged by their stories. The video comes with a screening guide to support its use as a tool for workshops and courses in family health, early childhood education, social services, and youth care.

The DVDs are available from Jessica Ball at: [jball@uvic.ca](mailto:jball@uvic.ca) or by phone 250-472-4128.

Source: Dedyne, 2007.

**Figure 3.1**

**Pregnancy Rate, Status Indians and Other Residents, Age 15–44 Years, BC, 1992/1993 to 2006/2007**



Note: Rates are the sum of live births, stillbirths, miscarriages, and abortions in each fiscal year, divided by the population of women age 15–44 years, multiplied by 100.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services; BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## Maternal Health

### Pregnancy Patterns

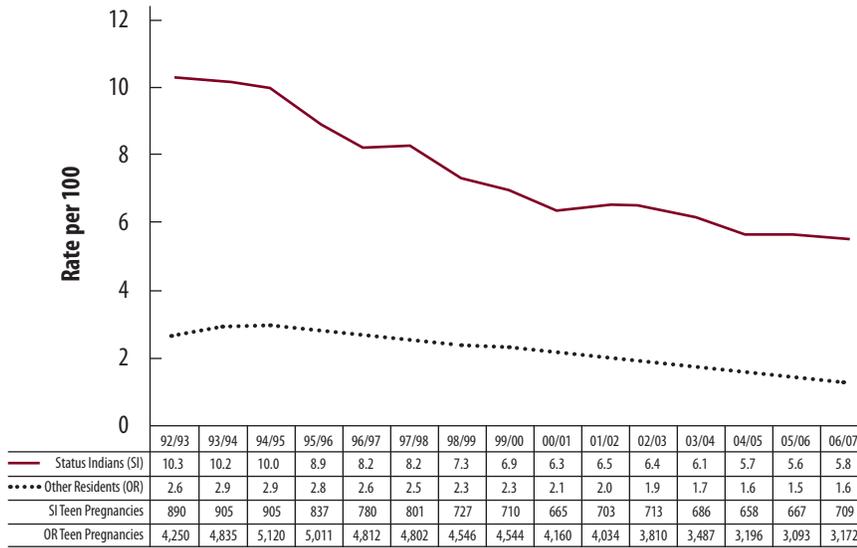
Pregnancy rates have a major impact on the demographic characteristics of a population. Research and analysis of pregnancy trends and patterns can assist in tracking the level of reproductive health, as well as assessing needs for services that contribute to reproductive and child health.

Factors affecting the health of infants occur through the pre-conception phase, pregnancy, and delivery, to the end of the first year of life. Having a healthy mother with good prenatal care contributes to a healthy start for the infant and reduces the risk of illness and possible death. Indicators such as teen pregnancy, preterm birth, and birth weight rates can provide information on the health and wellness of infants, and can suggest ways to improve their health and well-being in the future.

As shown in Figure 3.1, from 1992/1993 to 2006/2007, the pregnancy rate for Status Indian women has been higher than the rate for other BC women. In 2006/2007, the pregnancy rate for Status Indian women age 15–44 was 9.0 per 100, compared to 6.3 per 100 for other BC women. Since 1992/1993, there has been a decrease in the pregnancy rate for both populations; however, the rate of decrease for Status Indian women is more significant.

**Figure 3.2**

**Pregnancy Rate, Status Indians and Other Residents, Age 12–19 Years, BC, 1992/1993 to 2006/2007**



**Fiscal Year**

Note: Rates are the sum of live births, stillbirths, miscarriages, and abortions in each fiscal year, divided by the population of women age 12–19 years, multiplied by 100.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services; BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## Teen Pregnancy

Teen pregnancy refers to mothers who give birth at less than 20 years of age. Teen pregnancies can adversely affect the health and well-being of the mother and child, and may lead to health issues later on in life. Although the teen pregnancy rate decreased significantly for both populations from 1992/1993 to 2006/2007, the Status Indian rate remained nearly 4 times higher than the rate for other residents (5.8 per 100 versus 1.6 per 100 respectively) (Figure 3.2).

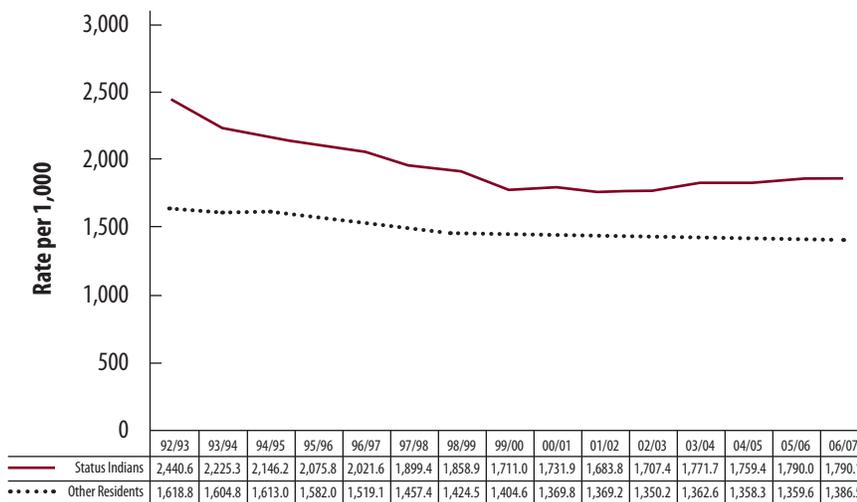
Data for 2006/2007 show that Status Indians had significantly higher teen pregnancy rates than other residents in all health authorities.

## Total Fertility Rates

From 1992/1993 to 2006/2007, there has been a decline in the total fertility rates for both Status Indian and other BC women; however, the rate for Status Indian women has remained higher than the rate for other BC women. In 2006/2007, the total fertility rate was 1,790.1 per 1,000 for Status Indian women, versus 1,386.5 per 1,000 for other BC women (Figure 3.3).

**Figure 3.3**

**Total Fertility Rate, Status Indians and Other Residents, Age 15–44 Years, BC, 1992/1993 to 2006/2007**



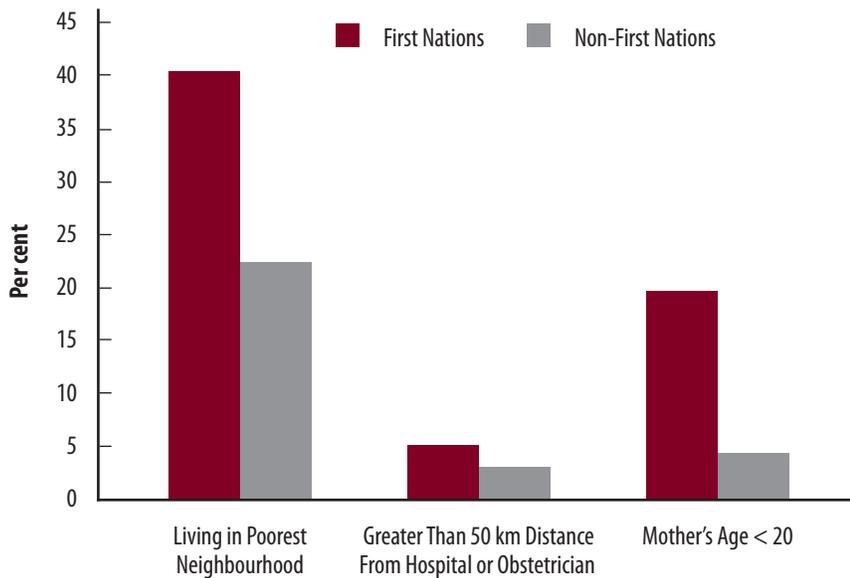
**Fiscal Year**

Note: The total fertility rate (TFR) is the number of births that a group of 1,000 women would have if, during their childbearing years, they had the age-specific birth rates observed in a given calendar year. TFR is a hypothetical measure of completed family size based on current levels of fertility by age (BC Vital Statistics Agency, 2006, p. 141).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Figure 3.4

### Maternal and Pregnancy Characteristics, First Nations and Non-First Nations Mothers, BC, 1981–2000



Source: Luo, Kierans, Wilkins, Liston, Uh, et al., 2004; prepared by the Office of the Provincial Health Officer, Ministry of Healthy Living and Sport, 2008.

#### Circle of Life Program

The Circle of Life Program is an initiative of the Three Corners Health Services Society (consisting of the Canoe Creek, Soda Creek, and Williams Lake First Nations) to assist women of childbearing years who are using alcohol and/or drugs or who may be affected by fetal alcohol spectrum disorder (FASD). The program also aims to reduce the incidence of FASD in the communities.

The program uses a blend of traditional and contemporary approaches to support and empower women. Traditional beliefs, values, and childrearing practices are taught, and cultural and spiritual awareness are emphasized. Peer mentors work with caseloads of up to 15 families, working with participants and their support network to identify goals and develop a service plan. The mentors connect participants with services in the community and assist them to resolve barriers.

Eligibility criteria for the program include women who are in their childbearing years, are pregnant or have recently given birth, are not connected to community services, have family who may be affected by FASD, are currently using alcohol/drugs, and/or have previously had a child while using alcohol/drugs.

More information on the Circle of Life Program can be found at <http://www.threecornershealth.org/index.php?page=programdetails&ID=19>.

Sources: McCullough, M., personal communication, March 2, 2007; Three Corners Health Services Society, n.d.

### Mother's Place of Residence

Aboriginal people in BC live in many different parts of the province and are very mobile. According to the 2006 Census, 74 per cent of Aboriginal people in BC live off-reserve (data provided by BC Stats). Reserves around the province are located both in urban centres and in remote parts of the province. Living conditions and access to health care services vary from one area to another. The differences in living conditions and health care access for women who live on- and off-reserve can affect infant health. For live births analyzed in this section, the reserve status was known for 16,180 mothers, of whom 4,152 (or 26 per cent) were on-reserve and 12,028 (or 74 per cent) were off-reserve.

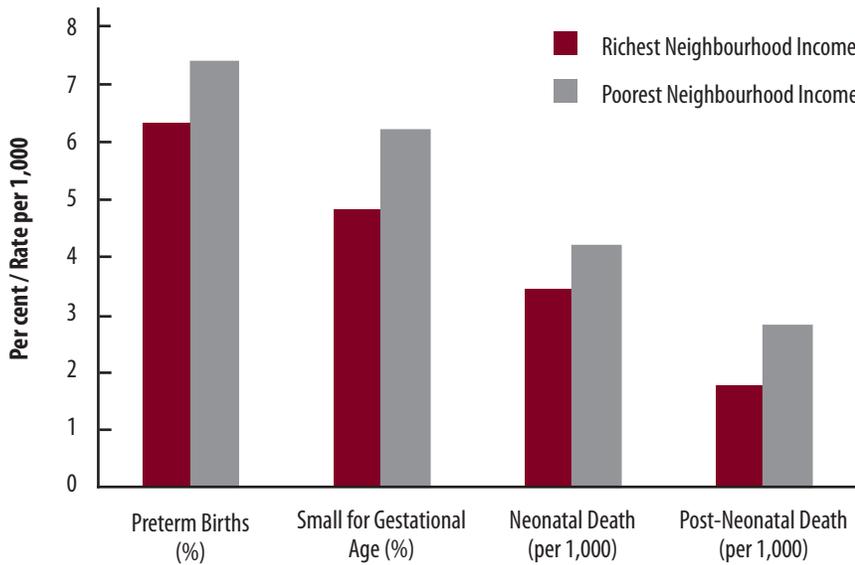
### Socio-Economic Conditions and the Health of Infants and Mothers

Research has widely recognized the association between poor socio-economic status and poor health. For infants and children, poor health is correlated with parents' low income and low levels of education.

A recent study of infant mortality among First Nations in BC showed that First Nations mothers, particularly in urban areas, were more likely to live in poor neighbourhoods, be teenage mothers, and live more than 50 km from the nearest hospital (Figure 3.4). The study further showed that First Nations infants were much more likely to experience deaths likely due to preventable causes such as sudden infant death syndrome (SIDS), infections, and other external causes compared to non-First Nations infants. In fact, SIDS accounted for

**Figure 3.5**

**Crude Risks of Adverse Birth Outcomes, by Neighbourhood Income, From Richest to Poorest in Urban Areas, BC, 1985–2000**



Source: Luo, Kierans, Wilkins, Liston, Uh, et al., 2004; prepared by the Office of the Provincial Health Officer, Ministry of Healthy Living and Sport, 2008.

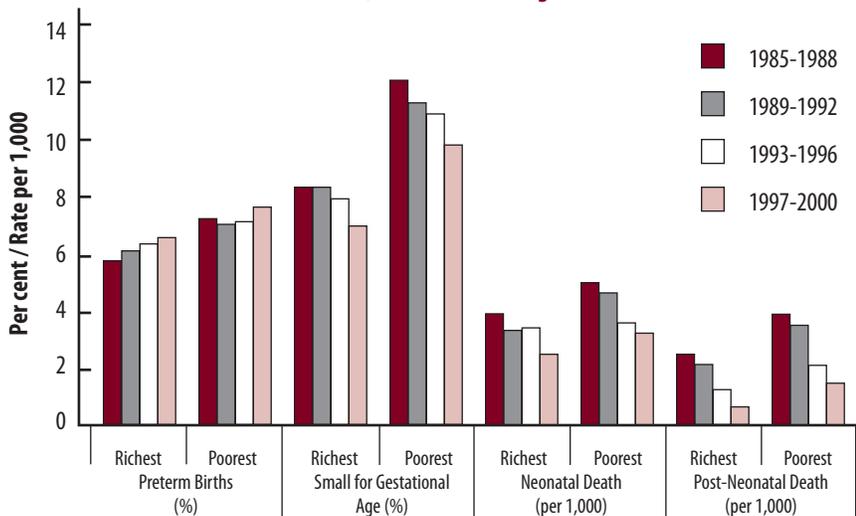
approximately 59 per cent of post-neonatal deaths and one-third of overall infant deaths among the BC First Nations population (Luo, Kierans, Wilkins, Liston, Uh, et al., 2004).

Although the study looked at the population in both rural and urban areas, the disparities in birth outcome were more pronounced in urban areas of the province. The disparities were particularly apparent in preterm and small for gestational age (SGA) births, and post-neonatal deaths.

Another similar study in BC examined the risks of adverse birth outcomes by neighbourhood income. The study showed that from 1985 to 2000, mothers in the poorest neighbourhood income group in BC experienced higher preterm births, SGA births, neonatal deaths, and post-neonatal deaths than mothers in the richest neighbourhoods (Figure 3.5). This was particularly significant for SGA and preterm births (Figure 3.6). Both SGA and preterm births have been associated with many adverse, long-term health effects beyond infancy. Possible explanations for the higher rates are that mothers in poor neighbourhoods are more stressed during pregnancy, lack good nutrition, and are less effective in their use of health care resources (Luo, Kierans, Wilkins, Liston, Mohamed, et al., 2004).

**Figure 3.6**

**Risks of Adverse Birth Outcomes, by Neighbourhood Income, From Richest to Poorest in Urban Areas, BC, 1985–1988 through 1997–2000**



Source: Luo, Kierans, Wilkins, Liston, Mohamed, et al., 2004; prepared by the Office of the Provincial Health Officer, Ministry of Healthy Living and Sport, 2008.

A recent study in Quebec showed that babies from poor families were perceived to be in less than good health (the study included a survey of mothers on the health of their newborns) and were admitted to hospital for a variety of illnesses far more than families whose income was above the low-income threshold. The study recommended

preventing premature and low birth weight births, and monitoring the health of children in disadvantaged families with low income and low levels of education (Séguin, Xu, Potvin, Zunzunegui, & Frohlich, 2003).

Another study in Quebec showed the relationship between birth outcomes and socio-economic status. In their study, White and Wilkins (2006) showed that mothers in lower income neighbourhoods were much more likely to experience premature births, SGA births, stillbirths, neonatal deaths, and post-neonatal deaths. The mother’s level of education was also shown to have an impact on the health of newborns. Mothers who did not complete high school were significantly more likely to have babies who were small for gestational age or to experience post-neonatal deaths. The study concluded that women in poorer neighbourhoods and with a lower socio-economic status may benefit from initiatives and programs that would help to reduce post-neonatal deaths, such as initiatives to improve knowledge of SIDS prevention.

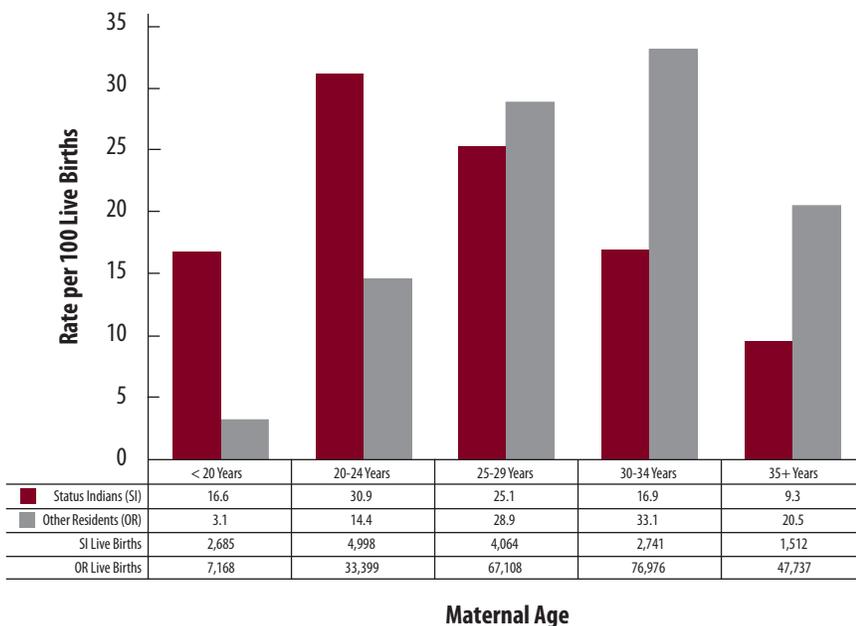
A long history of colonization, systemic discrimination, and experiences such as residential schools have led to adverse health effects on Aboriginal families and their children (Freemantle et al., 2006).

The physical, emotional, and sexual abuse in residential schools caused many Aboriginal children to lose their sense of identity and self-esteem and be specially vulnerable to

Experiences of colonization are at the root of inequities in infant health for Aboriginal peoples (Smith, Varcoe, & Edwards, 2005).

addiction and violence. The residential school experience also specifically disrupted family relationships and methods of traditional teaching. Parenting skills for many Aboriginal people were compromised and were not passed on to future generations. The disruption in family relationships and methods of traditional teaching continues today for many of the Aboriginal children who are in foster care.

**Figure 3.7** Births, by Maternal Age, Status Indians and Other Residents, BC, 1998–2004



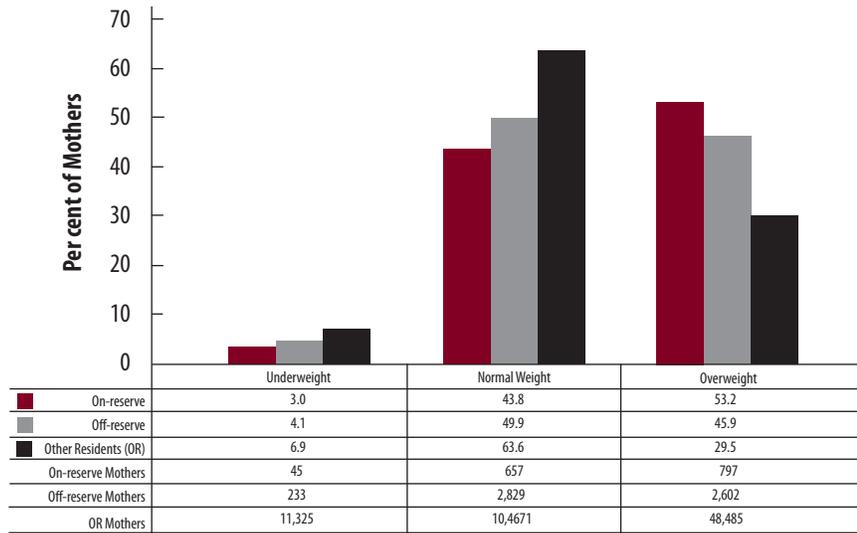
## Births and Mother’s Age

Pregnancy and birth at the extremes of the childbearing years—under 15 or over 44 years of age—can compromise the health of mothers and their infants. For the time period 1998–2004, the highest proportion of births for Status Indian women was in the 20–24 age group, followed by ages 25–29 (Figure 3.7). For other residents, the highest proportion of births was in the 30–34 age group. Factors such as post-secondary education and career responsibilities can contribute to women having babies at older ages.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Figure 3.8**

**Pre-Pregnancy Body Mass Index, Status Indians (by Reserve Status), and Other Residents, BC, 1998–2004**



Note: Data do not include cases where mothers were under the age of 20, because the body mass index (BMI) standards do not apply to teens.

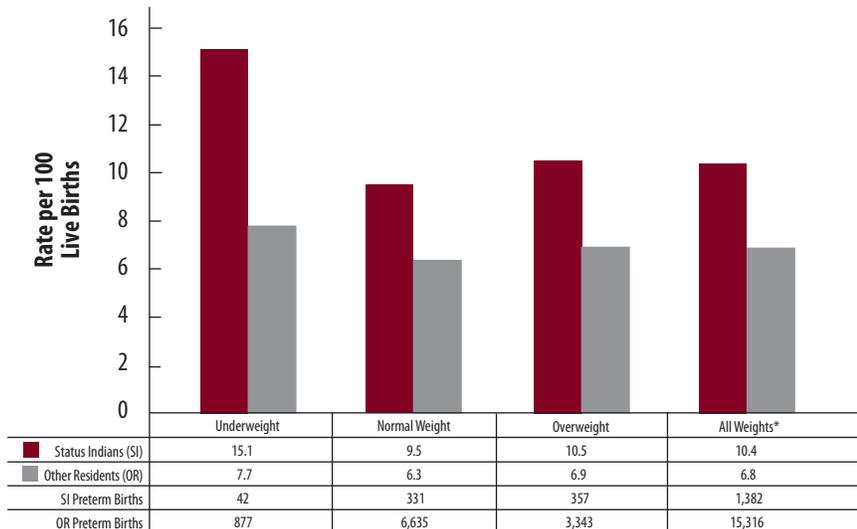
Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Pre-Pregnancy Body Mass Index**

Being underweight or overweight during pregnancy can influence conditions such as low birth weight births and gestational diabetes (Brennand et al., 2005; Yekta, Ayatollahi, Poral, & Farzin, 2006). A pre-pregnancy body mass index (BMI) was calculated for mothers 20 years of age and older using height and weight recorded in the BC Perinatal Database Registry.<sup>3</sup> As shown in Figure 3.8, Status Indians and other residents had different BMI profiles for the period 1998–2004. Over half of Status Indian women on-reserve (53.2 per cent) and nearly half of Status Indian women off-reserve (45.9 per cent) had an overweight pre-pregnancy BMI. The majority of other residents had a normal pre-pregnancy BMI (63.6 per cent).

**Figure 3.9**

**Preterm Births and Pre-Pregnancy Body Mass Index, Status Indians and Other Residents, BC, 1998–2004**



\* Includes births where body mass index (BMI) is unknown.

Note: Data do not include cases where mothers were under the age of 20, because the BMI standards do not apply to teens.

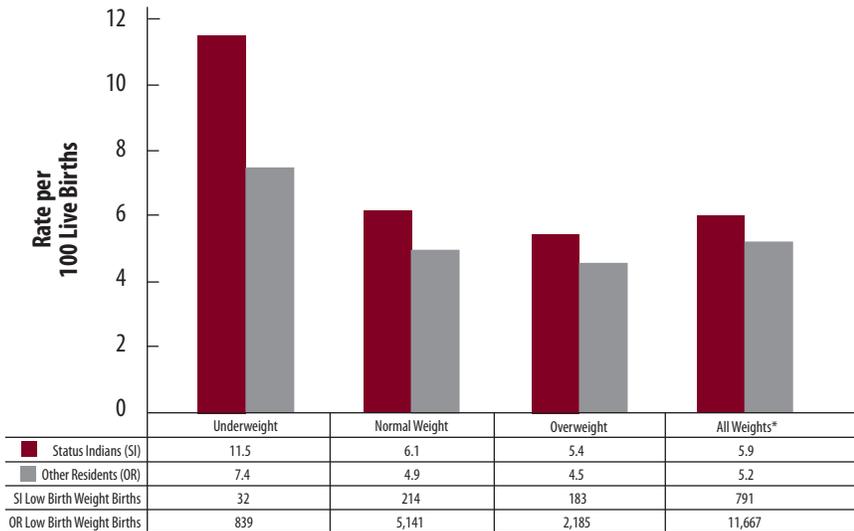
Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

For the period 1998–2004, preterm births were not significantly associated with pre-pregnancy BMI for Status Indians. Figure 3.9 illustrates that the rate of preterm births was higher for mothers who had an underweight pre-pregnancy BMI for both Status Indians and other residents, compared to other BMI categories.

<sup>3</sup> If “pre-pregnancy weight” was not recorded, a weight recorded in the first trimester was used. BMI = (weight in kilograms)/(height in metres<sup>2</sup>). For adults, a BMI under 18.5 is classified as “underweight”; 18.5 to < 25 is classified as “normal weight”; 25 to 30 is classified as “overweight”; and 30+ is classified as “obese”. For this analysis, all women with a BMI of 25 and above were classified as “overweight”.

**Figure 3.10**

**Low Birth Weight Births and Pre-Pregnancy Body Mass Index, Status Indians and Other Residents, BC, 1998–2004**



\* Includes births where body mass index (BMI) is unknown.

Note: Data do not include cases where mothers were under the age of 20, because the BMI standards do not apply to teens.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

For the period 1998–2004, low birth weight births were least common in overweight Status Indian mothers. As expected, the highest rate of low birth weights were seen for mothers who were underweight in both populations, although the rate for Status Indian mothers was significantly higher (Figure 3.10).

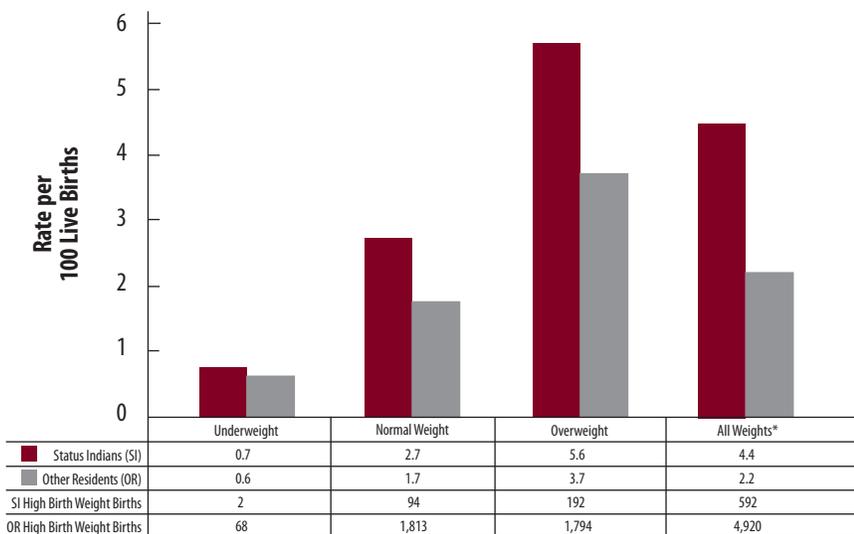
Figure 3.11 shows that high birth weight births were more common in every weight category for Status Indian mothers compared to other residents. Moreover, the rates of high birth weight births for overweight Status Indian mothers were significantly higher than the rate for normal weight Status Indian mothers.

Aboriginal practices that encouraged a healthy weight before and during pregnancy have been affected by colonization. Many Aboriginal groups believed that physical work and exercise in moderation were a healthy practice during pregnancy and helped to provide the strength required during childbirth (Sokoloski, 1995; Vallianatos et al., 2008).

A well-balanced diet with moderate portions was also practiced by women in many Canadian Aboriginal groups to help maintain a healthy pregnancy and prevent big babies, who were more difficult to deliver (Vallianatos et al., 2008). Teachings around diet before and during pregnancy have been affected by the loss of traditional food sources and traditional knowledge. Health and nutrition education incorporating biomedical and traditional knowledge have been suggested by some Aboriginal groups for inclusion in the school curriculum to educate youth long before they become parents (Smith,

**Figure 3.11**

**High Birth Weight Births and Pre-Pregnancy Body Mass Index, Status Indians and Other Residents, BC, 1998–2004**



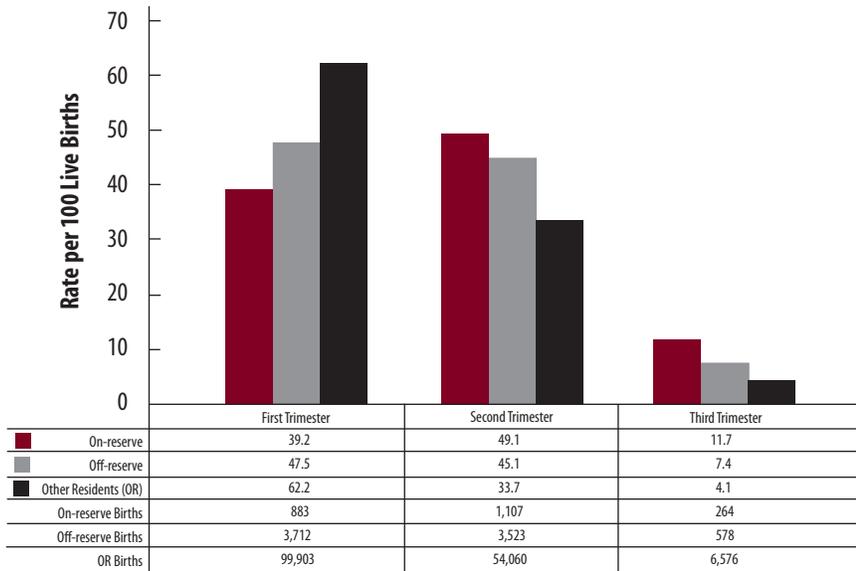
\* Includes births where body mass index (BMI) is unknown.

Note: Data do not include cases where mothers were under the age of 20, because the BMI standards do not apply to teens.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Figure 3.12**

**Births by Time of First Prenatal Contact, Status Indians (by Reserve Status) and Other Residents, BC, 1998–2004**

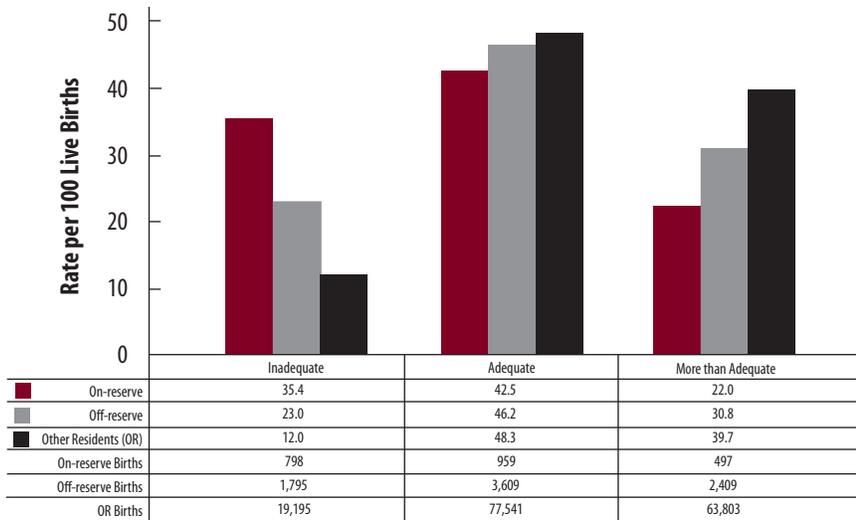


Note: Data on time of first prenatal care contact were not available for all cases.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Figure 3.13**

**Births by Adequacy of Care Level, Status Indians (by Reserve Status) and Other Residents, BC, 1998–2004**



Note: Adequacy of care is a measurement based on the number of prenatal visits a woman received; only full-term babies were included in this measure. Data on adequacy of care were not available for all cases.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Edwards, Varcoe, Martens, & Davies, 2006). Educating BC’s Aboriginal youth on practices for healthy body weight, and incorporating traditional teaching methods, may be the most sustainable means of promoting healthy weight before and during pregnancy.

## Prenatal Care

Several studies have revealed an association between lack of prenatal care<sup>4</sup> and infant mortality (Heaman, Gupton, & Moffat, 2005). Globally, indigenous women suffer from a lack of prenatal care, as well as poor pregnancy outcomes. Delayed initiation and infrequent use of prenatal care can develop from different perceptions of pregnancy and from barriers to accessing prenatal care (Smith et al., 2006).

For the period 1998–2004, significantly more Status Indian mothers initiated prenatal care after the first trimester, than did other residents (Figure 3.12). Only 39.2 per cent of on-reserve and 47.5 per cent of off-reserve mothers initiated prenatal care in the first trimester, compared to 62.2 per cent of other residents (all differences were statistically significant). A study in Manitoba had similar findings, where almost twice as many Aboriginal women initiated prenatal care after the first trimester compared to non-Aboriginal women (Heaman et al., 2005).

<sup>4</sup> Prenatal care is defined as care provided by a physician or midwife and billed to BC Medical Services Plan. For this analysis only, a required assumption was that term births would be considered a full-term pregnancy, in order to calculate trimester of prenatal care contact and adequacy of prenatal care.

In addition to examining when care was initiated, the frequency of prenatal care was also explored. “Inadequate prenatal care” is classified as less than 9 prenatal visits during term pregnancy, while “adequate prenatal care” is classified as 9 to 15 prenatal visits during term pregnancy, and “more than adequate prenatal care” is classified as 16 or more visits during term pregnancy.

Figure 3.13 shows that the rate of inadequate prenatal care was more than two times higher among Status Indians compared to other resident mothers for the period 1998–2004. The proportion of inadequate prenatal care was significantly worse for on-reserve mothers (35.4 per cent) as compared to off-reserve mothers (23.0 per cent) and other

resident mothers (12.0 per cent). This gap was also found in Manitoba, where Aboriginal women were four times more likely to receive inadequate prenatal care compared to non-Aboriginal women (Heaman et al., 2005).

Canadian Aboriginal women have identified barriers to prenatal care, including transportation problems, lack of continuity of care, communication difficulties, and prejudicial attitudes on the part of health care workers (Sokoloski, 1995). Prenatal care that addresses these barriers needs to have outreach components, be culturally relevant, and allow relationships to be established between mothers and prenatal care providers.

### **Prenatal Care for Aboriginal Women**

Access to good prenatal care is key to improving birth outcomes and infant health for Aboriginal women. Aboriginal women can access prenatal services through a variety of channels, including doctors, midwives, community health representatives, and/or public health nurses; and they can access extra support from a pregnancy outreach program, either on- or off-reserve.

Pregnancy outreach programs (POPs) were established to assist those women who normally do not access prenatal services, and those women who are at-risk of poor birth outcomes. Risk factors include poverty, food insecurity, isolation/poor social support, alcohol and drug use, and family violence. Services provided by POPs include nutrition counselling, food/vitamin supplements or vouchers, community kitchens, education about child development, breastfeeding support, parenting education, referral to other agencies and services, and child care.

First Nations and Inuit Health, Health Canada, has been funding prenatal nutrition projects (including some provided through pregnancy outreach programs) on all reserves in Canada since 1994/1995 through the Canada Prenatal Nutrition Program (CPNP). The CPNP provides funding to community groups to develop or enhance programs for vulnerable women. The aim of the program is to reduce unhealthy birth weights, improve the health of both mother and infant, and encourage breastfeeding. In BC, the CPNP provides \$1.6 million in annual funding to all First Nations Bands.

The CPNP is committed to relevant, culturally appropriate programming for Aboriginal participants. In some programs, Elders share their experiences of traditional childbirth and parenting. In addition, traditional foods have been included in programming. Finally, participants have commented on the supportive atmosphere provided by CPNP-supported programs (Public Health Agency of Canada, 2007).

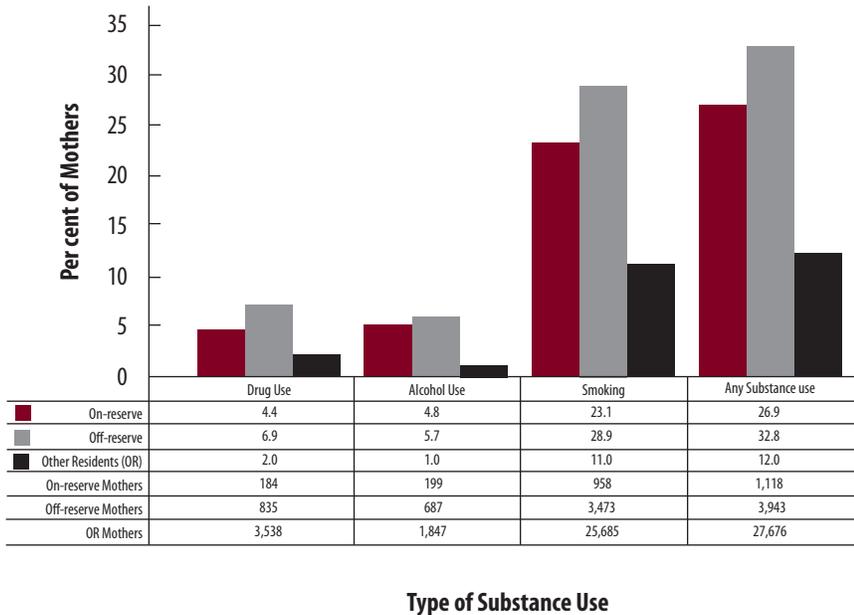
In 2004/2005:

- 1,177 women living on-reserve in BC participated in the CPNP.
- Most First Nations women (67 per cent) accessed CPNP services early in their pregnancy.
- 72 per cent of women received food vouchers through their participation in the program. 18 per cent accessed a community kitchen, and 29 per cent received a food basket or food box. Dietitians were involved in over half (52 per cent) of all BC CPNP projects.
- Elders were involved in almost half (44 per cent) of all projects.

Sources: First Nations and Inuit Health Branch, n.d.; Public Health Agency of Canada, 2007.

**Figure 3.14**

**Substance Use During Pregnancy, Status Indians (by Reserve Status) and Other Residents, BC, 1998–2004**



Note: Substance use categories are not mutually exclusive. Data reported are cases where a physician noted substance use as a risk factor during pregnancy. In many instances the physician did not answer the questions about substance use on the prenatal forms; thus, the data are not complete.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## Substance Use During Pregnancy

Conditions such as fetal alcohol spectrum disorder (FASD) and neonatal abstinence syndrome can develop from substance use<sup>6</sup> in pregnancy. Screening for substance use, including cigarettes, alcohol, and drugs, is generally recommended during pregnancy. The completion of substance use screening in pregnancy depends on factors related to the health care provider and the mother.

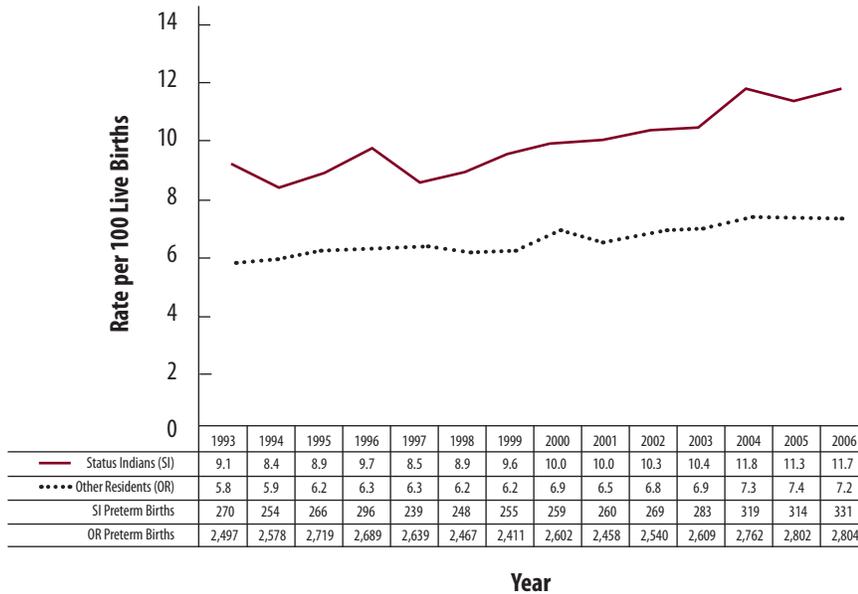
According to the BC Perinatal Database Registry, from 1998–2004, Status Indian mothers had a higher reported percentage of substance use during pregnancy than other residents. This finding could mean that there was increased substance use, or that health care providers screened Aboriginal mothers more often for substance use, or that health care providers answered based on previous knowledge or assumptions. Data reported are cases where a physician noted substance use as a risk factor during pregnancy. In many instances, the physician did not answer the questions about substance use on the prenatal forms. This analysis assumes that a failure to answer the risk factor questions means that the risk factors were not present.

Figure 3.14 shows that cigarette smoking was the most common type of substance use indicated for both Status Indians and other residents. This could mean that smoking was higher compared to other substance use during pregnancy or that health care providers were more comfortable screening for smoking during pregnancy. Births for mothers

<sup>6</sup> Substances are defined as cigarettes, alcohol, and drugs (including heroin, cocaine, marijuana, methadone, solvents, prescription medication, and others).

Figure 3.15

### Preterm Birth Rate, Status Indians and Other Residents, BC, 1993 to 2006



Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

who indicated cigarette, alcohol, or drug use during pregnancy were significantly more common in Status Indians compared to other residents. Off-reserve mothers exceeded on-reserve mothers in all categories of substance use, but the differences for alcohol use were not statistically significant. Overall, the percentage of Status Indian mothers with a reported experience with substance use exceeded that of other residents: The rate was 2.2 times higher for on-reserve mothers, and 2.7 times higher for off-reserve mothers.

Identifying and working with mothers who use substances during pregnancy is challenging. Culturally sensitive and supportive programs are needed to address the root cause of substance use and help achieve better health outcomes for these mothers and their infants.

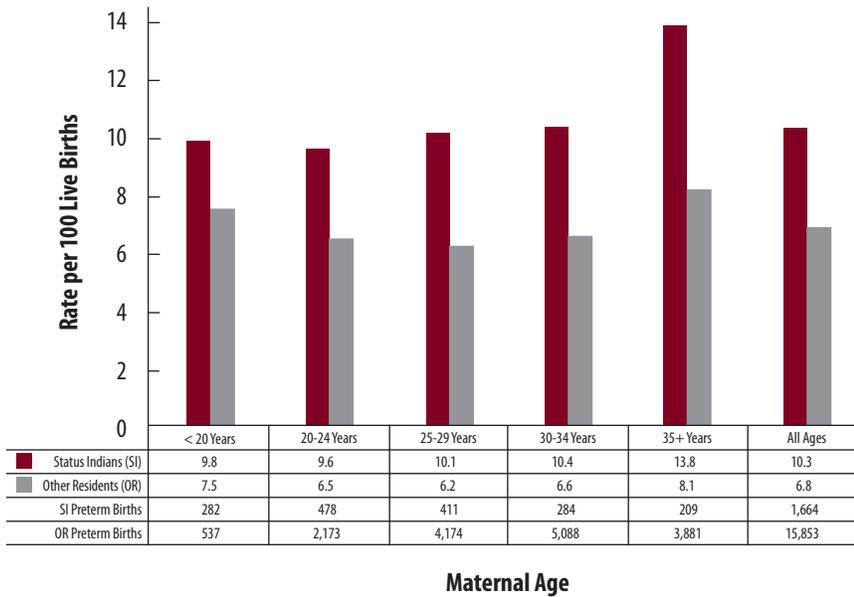
## Preterm Births

A preterm birth refers to a newborn whose gestational age is less than 37 weeks. The rate of preterm birth for the Status Indian population is significantly higher than the rate for other residents. From 1993 to 2006, the rate for Status Indians increased from 9.1 to 11.7 per 100 live births (Figure 3.15). An increase in preterm birth was also seen for other residents during the same period (5.8 to 7.2 per 100 live births).

Aggregate regional data for 2002–2006 show that Status Indians had significantly higher preterm birth rates than other residents in all health authorities and in the province as a whole. The differences were most pronounced in Fraser, Vancouver Coastal, and Vancouver Island Health Authorities.

**Figure 3.16**

**Preterm Births, by Maternal Age, Status Indians and Other Residents, BC, 1998–2004**



Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

For the period 1998–2004, preterm births were highest for women 35 years of age and older in both the Status Indian and other resident populations (Figure 3.16). The gap in preterm birth rates between the two populations increased with age.

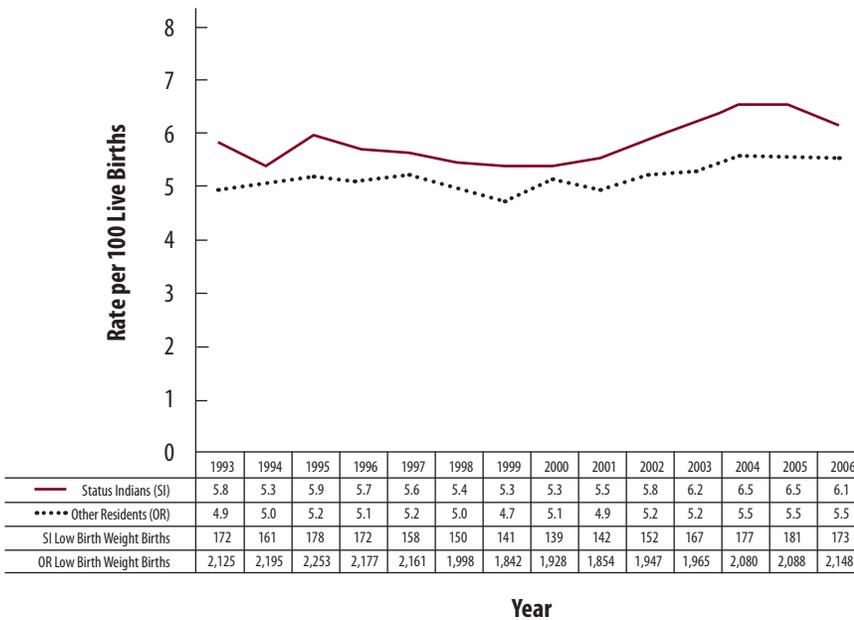
### Low Birth Weight

Low birth weight refers to newborns who weigh less than 2,500 grams. From 1993 to 2006, the rate of low birth weight births among the Status Indian population increased slightly from 5.8 to 6.1 per 100 (Figure 3.17). An increase in low birth weight births was also seen in the other resident population during the same period (4.9 to 5.5 per 100).

Aggregate regional data for 2002–2006 show that the low birth weight rates for Status Indians were significantly higher than the rates for other residents in Vancouver Coastal and Vancouver Island Health Authorities, and in the province as a whole.

**Figure 3.17**

**Low Birth Weight Births, Status Indians and Other Residents, BC, 1993 to 2006**



Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Figure 3.18

### Low Birth Weight Births, by Maternal Age, Status Indians and Other Residents, BC, 1998–2004

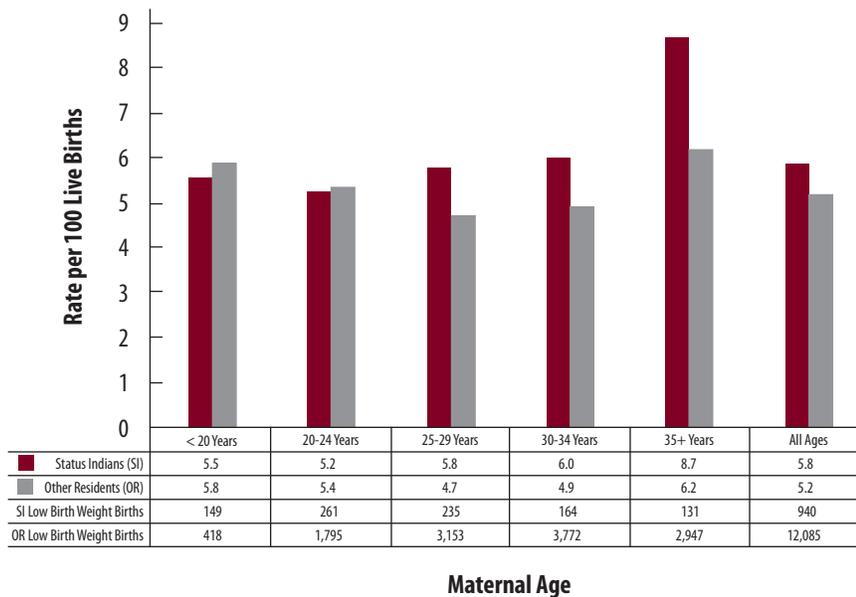


Figure 3.18 shows that low birth weight births increased with age for Status Indian women for the period 1998–2004. The highest proportion of low birth weight births was seen in those 35 years of age and older for both Status Indians and other residents. Compared to other residents, Status Indians had a higher proportion of low birth weight births overall (all ages), and in age groups 25–29, 30–34, and 35 years and older.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

#### Carrier Coming of Age Ceremony

Many cultures traditionally celebrate and honour the coming of age process with their young people. Differing cultures may approach the ceremony through differing rituals, at different ages, or at the occurrence of various life events; for example, a young woman's moon time.

From a holistic perspective, such ceremonies impact the health and well-being of youth and community. Indigenous cultures recognize that taking time to honour and celebrate the transition from childhood to young adulthood is a key part of instilling a sense of belonging and cultural identity. Many such traditions also include the transfer of knowledge and wisdom from Elders, family, and community to the youth.

In Carrier tradition, when a girl enters into her first moon time, a ceremonial celebration is planned. In this matriarchal society, particular attention is paid to the invitation of significant women in the community who are in the best position to lead, teach, and guide the child into womanhood. Invitations to all of the participants, men and women, are prepared and then delivered personally. Dressed in traditional regalia, the parents and child go from home to home, bang a talking stick 3 times at the entrance of each home, and then state their name and purpose.

Often a significant female matriarch will be chosen as leader in planning and guiding the day. On the day of the celebration, the women gather at the ceremonial site. They open the ceremony with prayer and song. Then, in a circle, each woman takes a turn to share her thoughts and hopes for the day. Together the women then build a fire and prepare the table for food. Throughout these preparations, each of the women spend time with the Carrier child, on a walk or near the fire, sharing and gifting her with medicine pouches, carvings, jewellery, and teachings about life and becoming a woman. After the feast, the ceremony is closed with a prayer circle and the honoured young Carrier woman has an opportunity to share her feelings.

While the women are in ceremony, the men gather at the host family home to organize for the return of the women from the ceremonial site. The women then present her to the men as a young woman with a new sense of responsibility and purpose. She is welcomed by the men through speech and gifts and then the day continues with further feasting and celebration, as well as gifting to each guest. It is important to complete the circle of giving by gifting back; binding the participants of the ceremony to one another and to the significance of the day.

Source: C. Bortoletto, personal communication, March 31, 2009 (based on interviews with P. Lacerte and K. Lacerte).

### **Rural Aboriginal Maternity Care Project**

The Rural Aboriginal Maternity Care Project was a collaborative effort of researchers from the University of British Columbia in Nursing, Medicine, and Psychology, and three First Nations in four communities: the Haida Nation of Old Massett and Skidegate, the 'Namgis First Nation in Alert Bay, and the Nuxalk First Nation in Bella Coola. The project was conducted over a period of four years, from 2003 to 2007.

The purpose of the project was to look at Aboriginal women's experiences of traditional birthing practices and current maternity care, and future desires for maternity care, from the women's point of view. Previous research on the maternity experiences of rural BC women had focused on the experience of health care providers and non-Aboriginal women.

In addition, the project aimed to develop research capacity for future investigations and to promote trust and respect between the academic community and the Aboriginal community. In this project, women within the communities became the researchers. They partnered with the academic researchers to guide how the research was conducted, to analyze the findings, and to decide how the research would be communicated and used within and outside of the community.

Interviews were conducted with over 100 women individually or in focus groups, with additional information from informal interviews and community meetings with family members, health care providers, and community leaders. The research team then looked at the themes that emerged from the interviews, to gain insight into how Aboriginal women viewed their own birthing experiences, and how these experiences could be improved.

One of the most important conclusions of the project was that you cannot look at the birthing experiences of Aboriginal women in isolation from the broader context of the First Nations experience—the effects of geography, isolation and colonization, and the move towards self-determination and reclaiming Aboriginal culture. All of these factors have affected what services are available, what expectations there are for maternity care in each community, and what types and levels of stresses were experienced by the individual women.

Another important finding was that the level of power, choice, and control available within the community affected how women viewed their birthing experiences. If women felt that there was no choice involved in where they had their babies, or how their labour was managed, they often had negative feelings towards the birth experience.

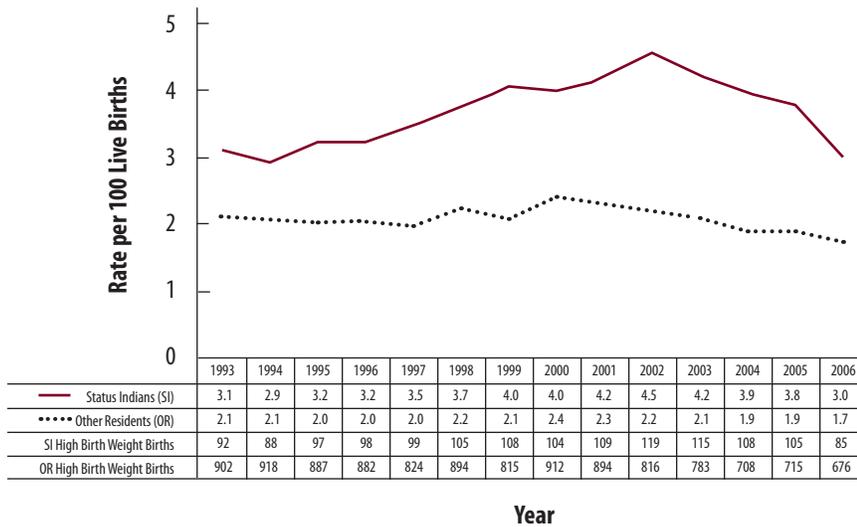
Finally, many of the women who had given birth outside of the community spoke of feeling isolated, scared about the birth, worried about their other children who remained at home, and burdened by the costs. They talked about the importance of being able to give birth in, or close to, their home community, so that there was family and community support to welcome the baby and support the birthing mother. An example of this support can be seen in the baby welcoming feast held in Old Massett in June 2007, as a formal welcome for Haida babies born between June 2005 and June 2007. This ceremony helped connect the babies and families to Haida culture and community, and can be seen as an effort by the community to reclaim some of their traditional practices related to birthing. In all of the communities, participants spoke of their desires for further involvement and improvements in birthing choices for Aboriginal people.

It is hoped that this type of research will help highlight challenges in current maternity care for rural Aboriginal women, in order to improve their birthing experiences in the future. In addition, it may provide a basis for future research partnerships between academics and Aboriginal communities.

Source: B. Calam and C. Varcoe, personal communication, March 7, 2008.

Figure 3.19

High Birth Weight Births, Status Indians and Other Residents, BC, 1993 to 2006



Source: BC Vital Statistics Agency and BC Perinatal Database Registry, data for the period between January 1, 1998, and December 31, 2004; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

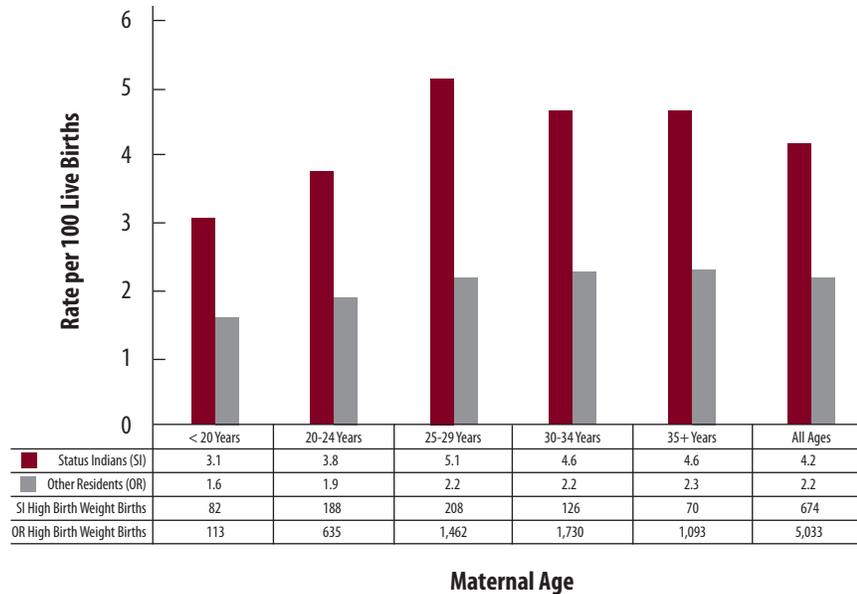
## High Birth Weight

Another major concern for Aboriginal communities is high birth weight births. High birth weight infants (newborns weighing more than 4,500 grams) are at risk for birth injuries and may be predisposed to being overweight both at one year of life and in adolescence (Brennand, Dannenbaum, & Willows, 2005). From 1993 to 2002, the rate of high birth weights increased slightly from 3.1 to 4.5 per 100 and then declined to 3.0 in 2006. A decrease in high birth weights was seen for other residents between 1993 and 2006 during the same time period (2.1 to 1.7 per 100) (Figure 3.19). For the period 1998–2004, the rate of high birth weight births was approximately two times higher for Status Indian women than for other residents in all age groups (Figure 3.20). For the most part, differences by maternal age were not statistically significant.

Aggregate regional data for 2002–2006 show that the high birth weight rates for Status Indians were significantly higher than the rates for other residents in Vancouver Coastal and Vancouver Island Health Authorities, and in the province as a whole.

Figure 3.20

High Birth Weight Births, by Maternal Age, Status Indians and Other Residents, BC, 1998–2004



Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

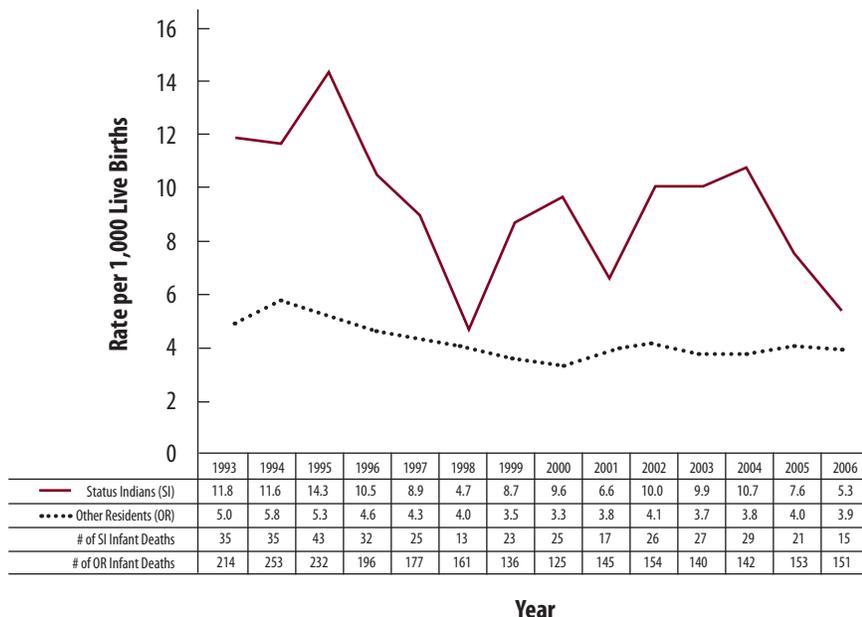
## Infant Mortality

Infant mortality refers to the deaths of infants less than one year of age. Although rates have fluctuated over the years, there has been an overall decrease in the infant mortality rate for the Status Indian population, from 11.8 per 1,000 live births in 1993 to 5.3 per 1,000 live births in 2006.<sup>7</sup> However, the decrease has not been constant, and there have been fluctuations from year to year,

<sup>7</sup> The infant mortality rates dating back to 1998 reported in this annual report are different from those given in the 2001 Provincial Health Officer's Report, The Health and Well-being of Aboriginal People in British Columbia (Provincial Health Officer, 2002). This is due to issues with an operational registry system implemented by the British Columbia Vital Statistics Agency in 1998. Changes to the source system and the resulting file extraction for record linkage resulted in some infant deaths no longer being identified as Status Indian infant deaths. From 1998 onwards, Status Indian infant deaths were only identified from information on death records, leading to approximately 50 per cent lower reported infant mortality in the Status Indian population. This problem was corrected in 2007 and the data in this report reflect this correction.

**Figure 3.21**

**Infant Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



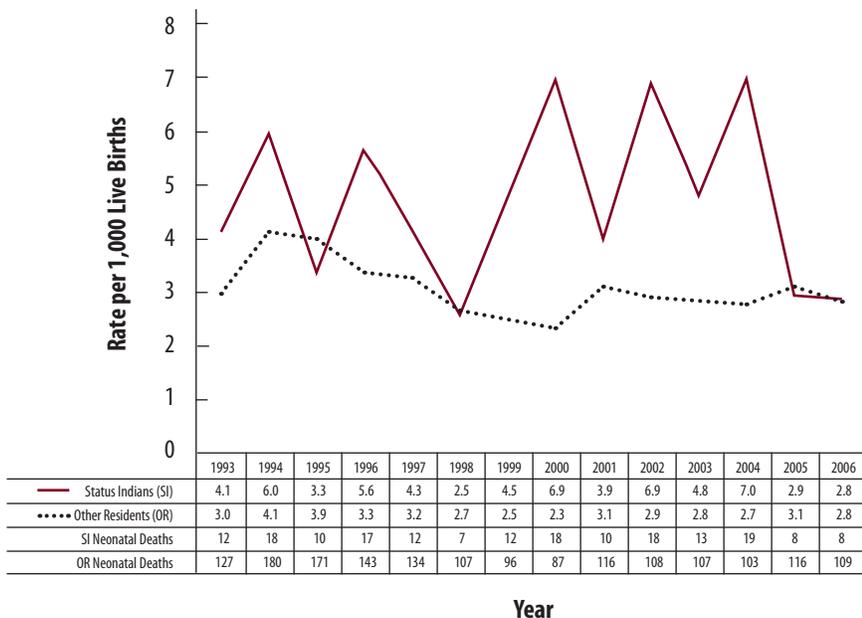
Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

due to the small numbers of Status Indian infant deaths recorded. From 1996 to 2006, there has been a plateau effect; i.e., there has been no statistically significant trend in infant mortality for either population. As shown in Figure 3.21, in most years, the Status Indian infant mortality rate has been two or more times higher than the rate for other residents.

Aggregate regional data for 2002–2006 show that Status Indian infant mortality rates were significantly higher than the rates for other residents in the Interior, Vancouver Coastal, and Vancouver Island Health Authorities; as well, the provincial Status Indian infant mortality rate was significantly higher than the overall rate for other residents for this time period. Differences between health authorities were not statistically significant for either population, nor were differences between the health authorities and the provincial total.

**Figure 3.22**

**Neonatal Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Neonatal death is defined as the death of a child in the first 28 days of age.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

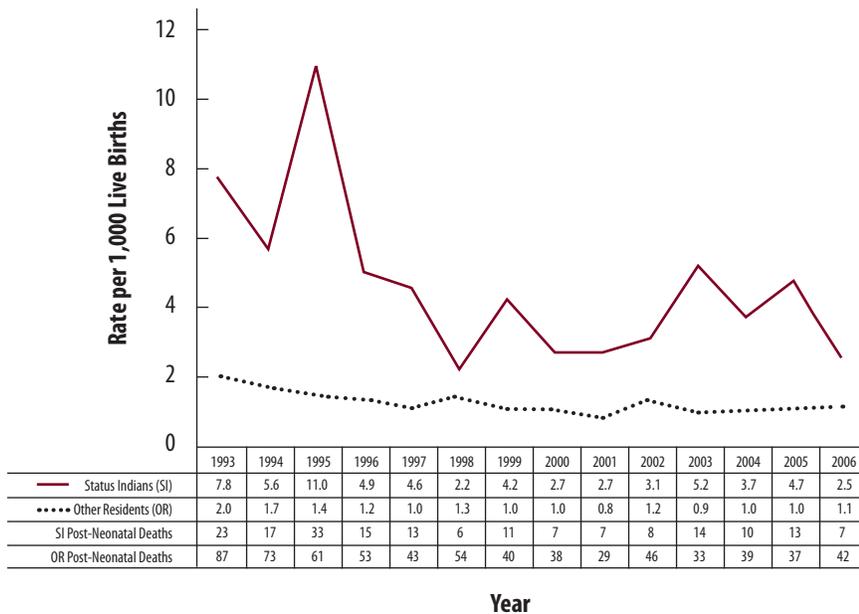
**Neonatal Mortality**

Neonatal mortality refers to the deaths of infants in the first 28 days of life. While the rate of neonatal mortality decreased slightly for other residents from 1993 to 2006 (3.0 to 2.8 per 1,000 live births), the trend over the last 10 years has not been statistically significant. The rate for Status Indians showed more extreme fluctuation with no trend, and was generally higher than the rate for other residents, although the difference was not statistically significant in most years. In fact, the rates for both populations were virtually the same in 2005 and 2006 (Figure 3.22).

Aggregate regional data for 2002–2006 show that only Vancouver Coastal Health

Figure 3.23

### Post-Neonatal Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Post-Neonatal death is defined as the death of a child between 28 and 364 days after birth, as a rate per 1,000 live births.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

#### Sudden Infant Death Syndrome

Sudden infant death syndrome (SIDS) refers to the unexpected death of a healthy infant whose death remains unexplained even after a thorough autopsy. SIDS mostly occurs in the first two to four months of life, but can happen up to one year of age. The cause of SIDS is unknown; however, the latest research shows that the following preventive actions can help reduce the risk. These are:

- Put babies to sleep on their backs, on a firm, flat surface.
- Keep a baby's crib free of clutter such as extra pillows, comforters, or duvets.
- Don't smoke during pregnancy and don't smoke around babies.
- Keep babies at a comfortable temperature—not too cold, not too hot.
- Breastfeed your baby.
- Do not use alcohol or drugs during or after pregnancy.

For more information, please visit [www.sidscanada.org](http://www.sidscanada.org) or call 1-800-363-7437.

Source: Canadian Foundation for the Study of Infant Deaths, 2004.

Authority had a Status Indian neonatal mortality rate that was significantly higher than the rate for other residents. The rates were also higher for Status Indians in Interior and Vancouver Island Health Authorities, but the differences were not significant due to small numbers. The provincial rate for Status Indians was about 70 per cent higher than the rate for other residents during this time period, and the difference was statistically significant.

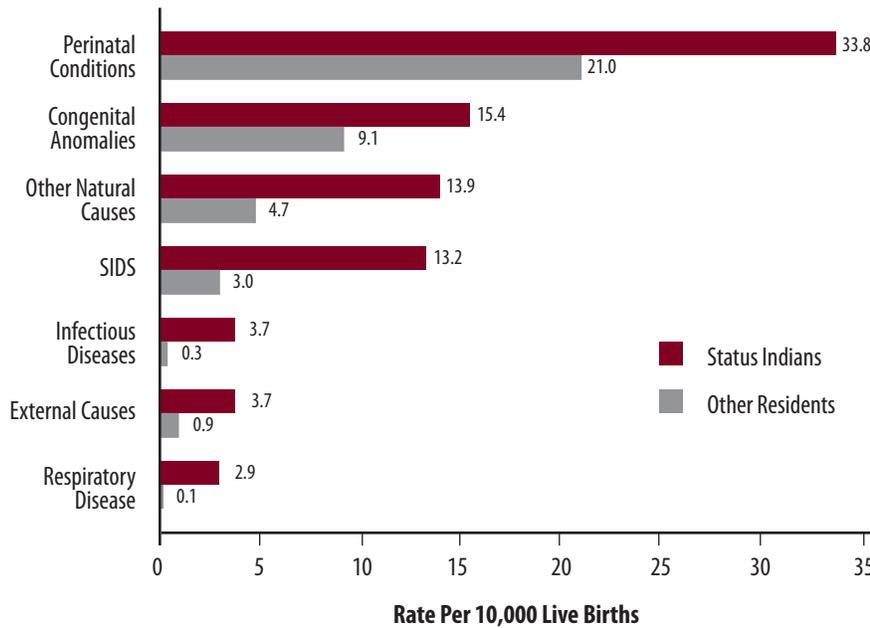
## Post-Neonatal Mortality

Post-Neonatal mortality refers to the deaths of infants between 28 days and one year of age. The rate of post-neonatal mortality for the Status Indian population, while higher than the rate for other residents, declined from 7.8 per 1,000 live births in 1993 to 2.5 per 1,000 live births in 2006. A decline was also seen in the rate for other residents in the same time period. Both populations showed a similar pattern, with the highest rates occurring from 1993 to 1995, followed by a lower fluctuating plateau with no trend (Figure 3.23).

Aggregate regional data for 2002–2006 show that Status Indians had higher post-neonatal mortality rates than other residents in all health authorities, and the differences were statistically significant for Fraser, Vancouver Island, and Northern Health Authorities. The provincial rate for Status Indians was almost 4 times higher than the rate for other residents (a statistically significant difference), indicating that the gap between Status Indians and other residents is much larger for post-neonatal mortality (3.7 times) than for neonatal mortality (1.7 times).

**Figure 3.24**

**Infant Mortality Rate, Selected Causes of Death, Status Indians and Other Residents, BC, 2002–2006**



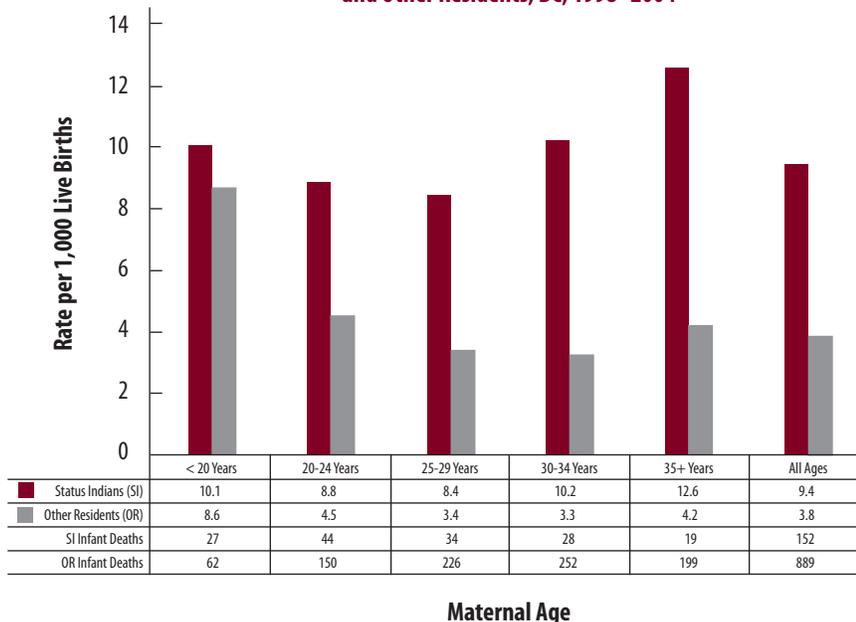
Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## Causes of Infant Mortality

Infant deaths are caused by many conditions, including perinatal conditions,<sup>8</sup> congenital anomalies,<sup>9</sup> sudden infant death syndrome (SIDS), respiratory diseases, and infectious diseases, as well as other natural and external causes. The causes of neonatal mortality are often different from the causes of post-neonatal mortality, with perinatal conditions and congenital anomalies being more common neonatal causes, and SIDS being the most common post-neonatal cause of death. All major causes of infant deaths are shown in Figure 3.24. For 2002–2006, mortality rates for perinatal conditions, SIDS, infectious diseases, respiratory diseases, and all other natural causes were significantly higher for Status Indians than for other residents.

**Figure 3.25**

**Infant Mortality, by Maternal Age, Status Indians and Other Residents, BC, 1998–2004**



Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Prenatal and neonatal care services can help improve outcomes for infants with perinatal conditions and congenital anomalies. Programs to identify and reduce the risk of SIDS and to promote infectious disease prevention and immunization could target gaps in post-neonatal mortality between Status Indians and other residents.

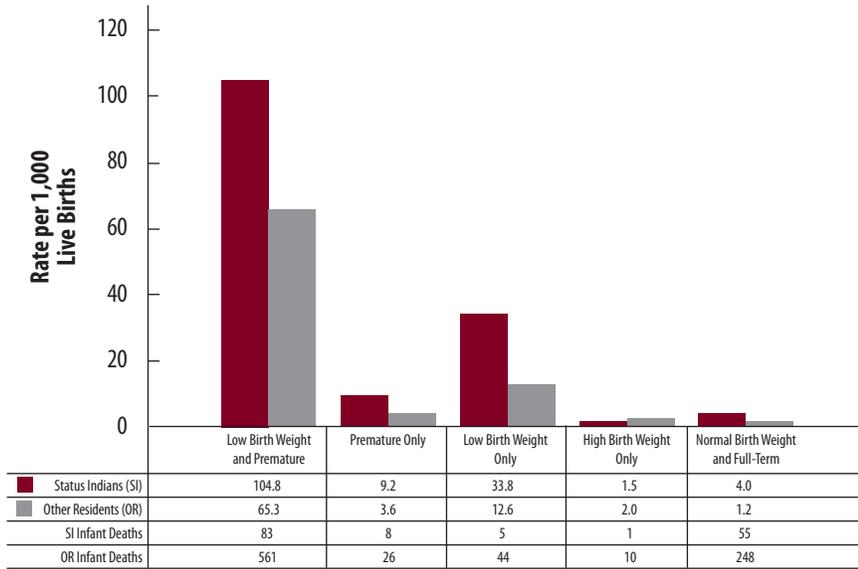
For the period 1998–2004, infant mortality rates for teen mothers (age less than 20 years) were similar for Status Indians and other residents (Figure 3.25). A Canadian study also found that teen pregnancy was not a risk factor for infant mortality in Status Indians (Morrison, Semenciw, Mao, & Wigle, 1986). Infant

<sup>8</sup> Perinatal conditions include infants affected by maternal factors, premature/post-mature and fetal growth disorders, birth trauma, respiratory and cardiovascular disorders, infections specific to the perinatal period, hemorrhage and hematological disorders, transitory endocrine and metabolic disorders, digestive system disorders of the fetus and newborn, other disorders originating in the perinatal period, and fetal death of unknown cause.

<sup>9</sup> Congenital anomalies include infants affected by abnormalities of the nervous system; eye, ear, face, and neck; heart and circulatory system; respiratory system; digestive system; genital organs; urinary system; and musculoskeletal system; and by other multiple system syndromes and chromosomal anomalies.

**Figure 3.26**

**Infant Mortality, Low Birth Weight, High Birth Weight, and Premature Infants, Status Indians and Other Residents, BC, 1998-2004**



Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

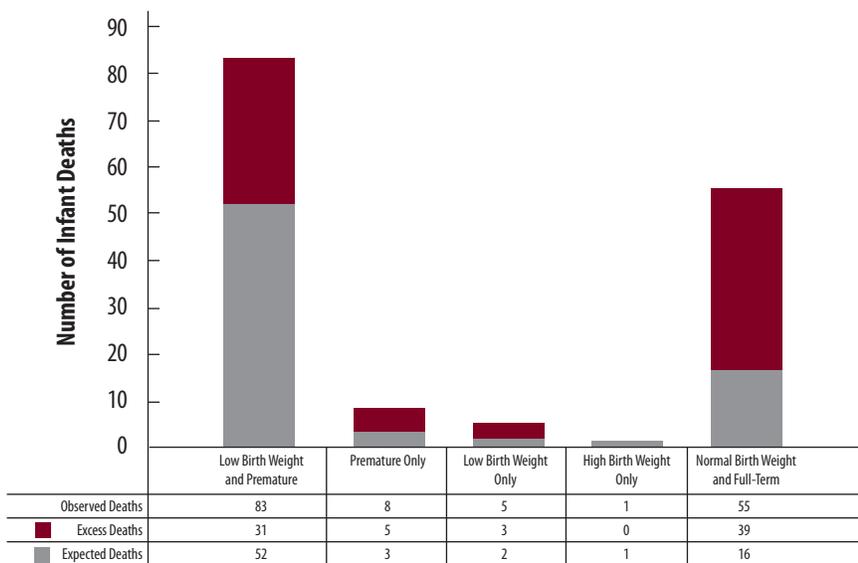
mortality rates were significantly higher for Status Indians than for other residents in all age groups after age 20 and increased slightly with maternal age, but the differences were not statistically significant. For other residents, the infant mortality rate was significantly higher for teen mothers than for mothers aged 20 or more.

**Infant Mortality in Relation to Birth Weight and Maturity**

Both prematurity and low birth weight are risk factors for infant mortality, either individually or in combination. Figure 3.26 shows that for the period 1998–2004, the mortality rate for Status Indians for these factors was significantly higher than the rate for other residents. The greatest risk was associated with low birth weight, either alone or in combination with prematurity; however, the difference between the rate for Status Indians and other residents, for low birth weight only, was not significant. Also of concern is the fact that a Status Indian infant with no risk factors relating to weight or gestational age still had a 3.3 times higher risk of death than a similar other resident infant.

**Figure 3.27**

**Infant Mortality, Mortality Gap as Estimated by the Difference Between Observed and Expected Infant Deaths, Status Indians, BC, 1998-2004**

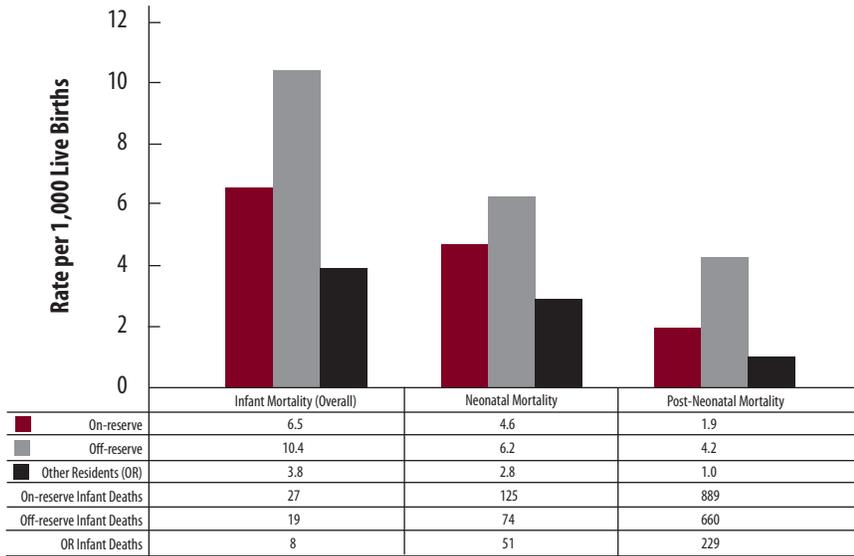


Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

These data can also be used to calculate the gap between the observed and the expected number of Status Indian infant deaths. The number of expected deaths is calculated using the same birth risk profile and mortality rate for other residents in each of the aforementioned infant categories (low birth weight, prematurity, high birth weight). Figure 3.27 shows that, of the 152 observed infant deaths to Status Indians in the period 1998–2004, 74 deaths would

**Figure 3.28**

**Infant Mortality, Status Indians (by Reserve Status) and Other Residents, BC, 1998–2004**



Note: Data regarding reserve status was not available for all Status Indian infant deaths; cases where reserve status could not be determined have been excluded from this figure.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

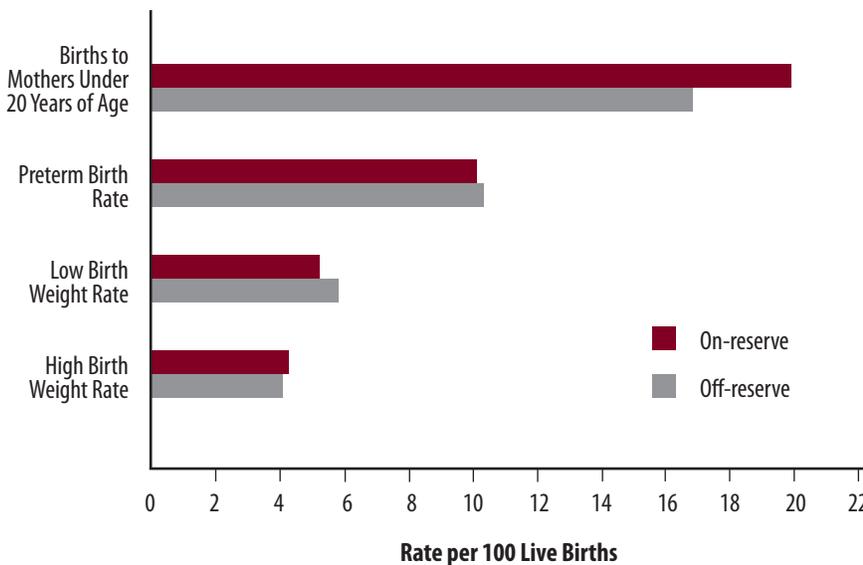
be expected and 78 deaths would be considered to be in excess of the other residents' experience (the gap). The gap comprises the 39 deaths associated with low birth weight and prematurity (whether in combination or alone), and another 39 deaths to babies who were normal birth weight and full-term.

For the period 1998–2004, Status Indian mothers who lived off-reserve had a higher infant mortality rate than those who lived on-reserve (10.4 per 1,000 live births versus 6.5 per 1,000 live births respectively), although the differences were not statistically significant (Figure 3.28). Both Status Indians on- and off-reserve had a substantially higher overall infant mortality rate than other residents, as well as higher post-neonatal and neonatal mortality rates. The differences between the off-reserve and other resident populations were statistically significant, while the differences between the on-reserve and other resident populations were not. These results are consistent with a 2004 study on infant mortality among BC First Nations, which showed that disparities in infant health were more pronounced in urban areas of the province (Luo, Kierans, Wilkins, Liston, Uh, et al., 2004).

In an effort to explain the differences in infant mortality between the on- and off-reserve populations, indicators such as teen pregnancy, preterm births, and low/high birth weight births were analyzed for these populations. However, while there were some minor differences found between the populations for these indicators, none of the differences were statistically significant (Figure 3.29).

**Figure 3.29**

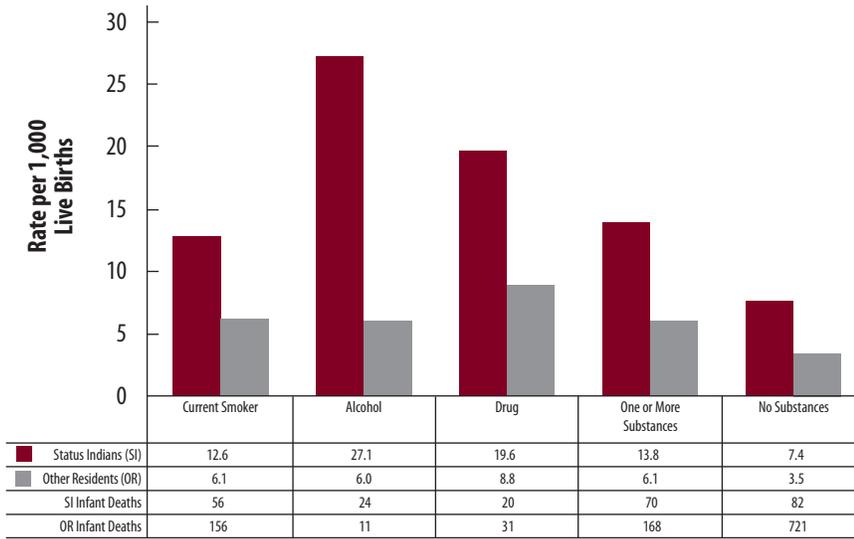
**Perinatal Indicators, by Reserve Status, Status Indians, BC, 1998–2004**



Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Figure 3.30**

**Infant Mortality and Maternal Substance Use, Status Indians and Other Residents, BC, 1998–2004**



Note: Substance use categories are not mutually exclusive. Data reported are cases where a physician noted substance use as a risk factor during pregnancy. In many instances the physician did not answer the questions about substance use on the prenatal forms; thus, the data are not complete.

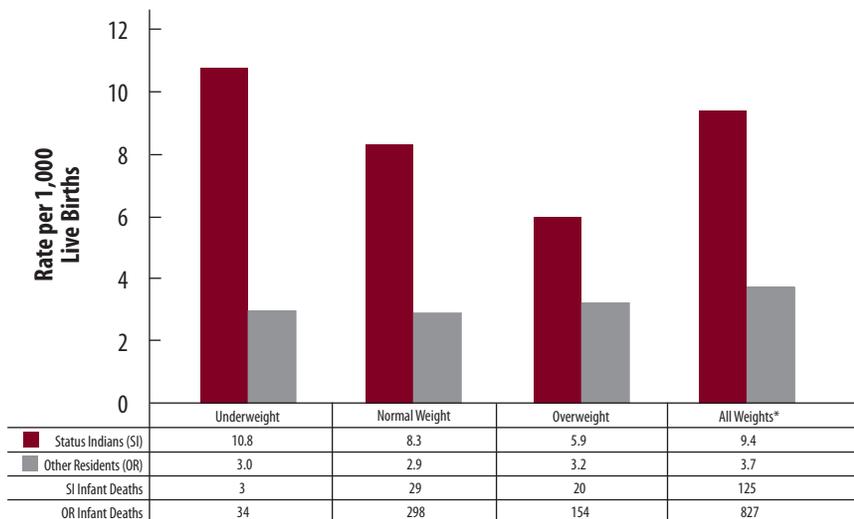
Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

For the period 1998–2004, infant mortality rates were significantly higher for Status Indian and other resident mothers who reported smoking, alcohol, or drug use during pregnancy, compared to those mothers with no reported substance use (Figure 3.30). Status Indian mothers who used alcohol during pregnancy had the highest infant mortality rate. Comparative analysis by reserve status was not possible due to small numbers. A study among American Northern Plains Indians found that SIDS was associated with binge drinking (more than five drinks in one sitting) in the three months before pregnancy and in the first trimester (Iyasu et al., 2002).

For the period 1998–2004, the infant mortality rate was approximately two times higher for Status Indians than for other residents in all weight categories. Compared to other women in BC, Status Indian mothers who were underweight before pregnancy had over 3 times the rate of infant mortality (Figure 3.31). Factors associated with the higher infant mortality rate in underweight women could include poverty and food insecurity.

**Figure 3.31**

**Infant Mortality and Pre-Pregnancy Body Mass Index, Status Indians and Other Residents, BC, 1998–2004**



\* Includes births where body mass index (BMI) is unknown.

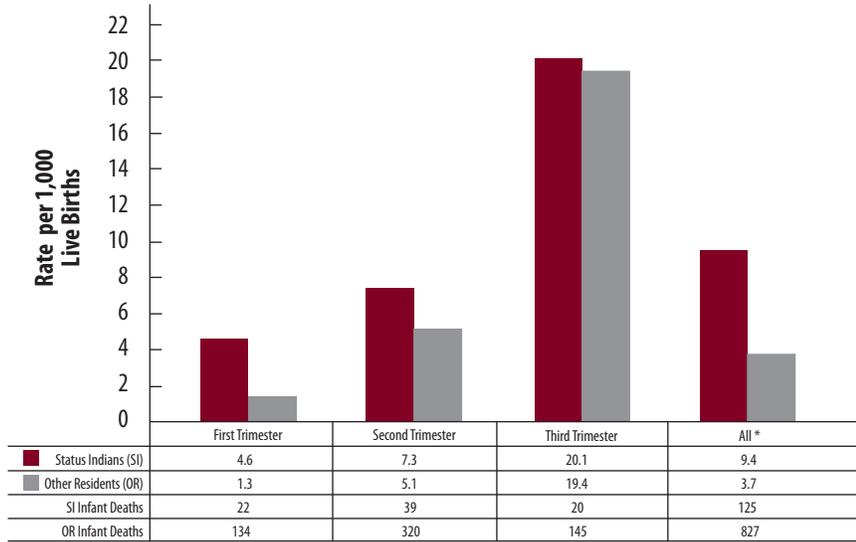
Note: Data do not include cases where mothers were under the age of 20, because the BMI standards do not apply to teens.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

For the period 1998–2004, infant mortality was significantly higher for both Status Indians and other resident mothers who initiated prenatal care in the third trimester (Figure 3.32). However, the infant mortality rate was significantly higher (three and a half times) for Status Indian mothers who initiated prenatal care in the first trimester compared to other resident mothers. This suggests that Status Indian mothers and infants may not be fully benefiting from early initiation of

**Figure 3.32**

**Time of First Prenatal Care Contact and Infant Mortality, Status Indians and Other Residents, BC, 1998–2004**



\* Includes all births where time of first contact was not recorded.

Note: Data on time of first prenatal care contact were not available for all cases.

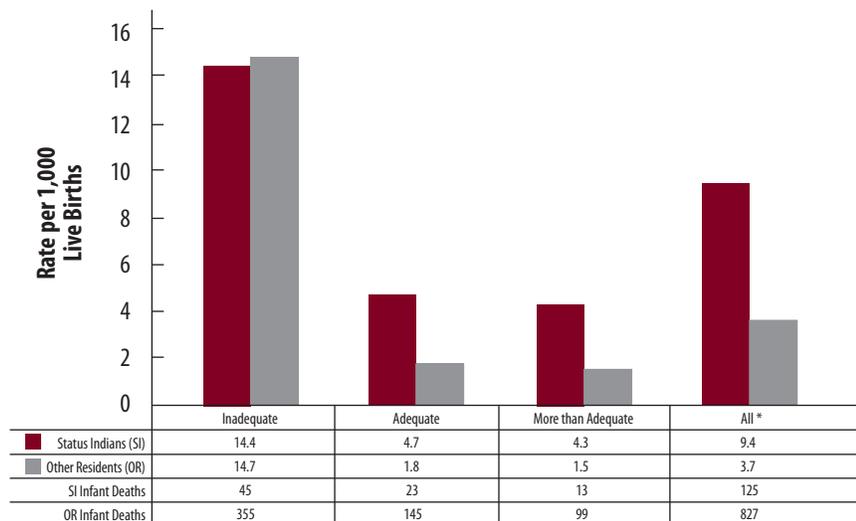
Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

prenatal care, and/or other factors are exerting a negative influence on infant health. A comparative analysis by reserve status was not possible due to small numbers.

For the period 1998–2004, infant mortality was also significantly higher for both Status Indian and other resident mothers who had inadequate prenatal care, compared to those mothers who had adequate or more than adequate care. A Manitoba study found that women who did not receive adequate prenatal care were more likely to be Aboriginal, and were more likely to live in poverty, experience highly stressed lives, and have low levels of self-esteem (Heaman et al., 2005). However, as shown in Figure 3.33, the gap in infant mortality was highest for Status Indian mothers who had adequate or more than adequate levels of prenatal care. Both rates were over two and a half times higher than the rates for other residents, and the differences were statistically significant. Therefore, while adequate prenatal care is associated with a lower infant mortality rate, it is not sufficient, by itself, to close the infant mortality gap.

**Figure 3.33**

**Adequacy of Care and Infant Mortality, Status Indians and Other Residents, BC, 1998–2004**



\* Includes records where first contact was not recorded.

Note: Adequacy of care is a measurement based on the number of prenatal visits a woman received; only full-term babies were included in this measure. Data on adequacy of care were not available for all cases.

Source: BC Vital Statistics Agency and BC Perinatal Database Registry, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

### Aboriginal Quality of Life: Promoting Equity and Dignity for Aboriginal Children in Canada

The article, *Aboriginal Quality of Life: Promoting Equity and Dignity for Aboriginal Children in Canada*, documents the negative effects of colonial disruption on Aboriginal families and communities that continue to shape the quality of life of young Aboriginal children.

Due to separation from their parents at an early age, many former residential school students lost confidence in their ability to nurture and relate to infants and young children. The loving care of a parent is the primary means of instilling self-esteem, a positive cultural identity, language development, and knowledge about the world during infancy and childhood. The consequences of residential schools have compounded over multiple generations.

A higher percentage of Aboriginal children live in poverty as compared to other Canadian children, and as a result they have unacceptably high rates of health and developmental challenges. Studies have shown that up to 50 per cent of the variance in early childhood outcomes is associated with socio-economic status. Significant structural inequities persist: while Aboriginal children are more likely than non-Aboriginal children to need health services and early interventions, they are far less likely to receive them.

The article complements the federal government's decade-long investment in the Aboriginal Head Start programs. These programs are designed to provide family-centred, holistic, health, safety, and nutrition guidance for children aged 3 to 5. The programs help bridge gaps in services to support families during the early stages of formation, when many parents are quite young and have few resources. The program currently serves 10 per cent of the population. The article recommends increasing funding to 25 per cent.

Other recommendations include: the creation of a national centre for excellence for Aboriginal children to enhance knowledge creation and sharing; research programs to create new methods and interpretive frameworks for program evaluation; increased support for the Regional Health Survey and the Aboriginal Peoples Survey; mobile teams of specialists to ensure that Aboriginal children have access to diagnostic and ancillary health services in their home communities; and more investment in high-quality, centre-based child care for Aboriginal infants and children. Success in all of these endeavours lies in taking a coordinated approach with the federal, provincial, and territorial governments working together with local and national Aboriginal groups.

Source: Ball, 2008.

## Children's Health

### Dental Surgeries

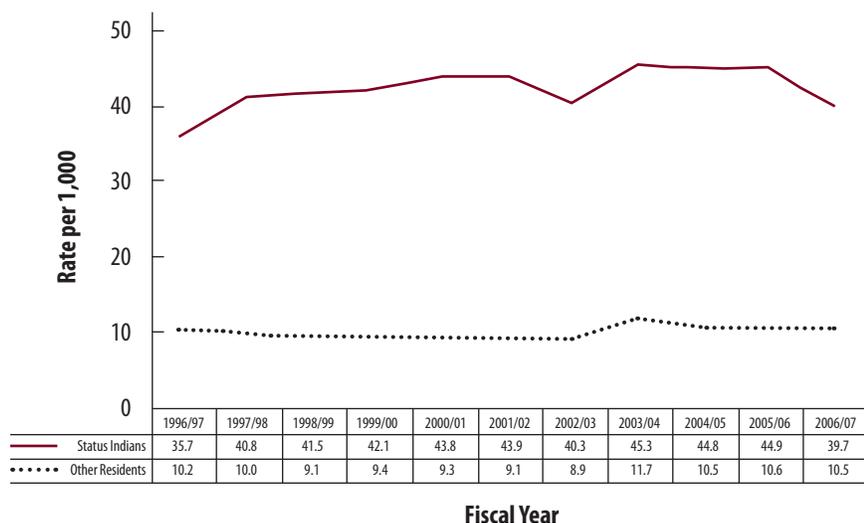
Pediatric dental surgery is the most common surgical day care procedure at most pediatric hospitals in Canada. Dental caries (a disease that damages the structure of teeth) is far more prevalent than any other pediatric illness. This type of tooth decay, which is referred to as early childhood caries (ECC), is particularly prevalent among Status Indian children 0–4 and 5–9 years of age.

Infants can be more susceptible to ECC, because their immune systems are not yet developed. The oral cavity is home to many different species of bacteria, such as *streptococci*. *Streptococcus mutans* is the leading cause of tooth decay worldwide, and is considered to be the most cariogenic of all *streptococci*. It is usually transmitted to the infant by the mother or primary caregiver by saliva. The earlier a child is infected by these cariogenic bacteria, the greater their risk of tooth decay (Bassett, McDonald, & Woods, 1999).

From 1996/1997 to 2006/2007, the rate of dental surgeries for Status Indian children under 5 years of age was 3 to 4 times higher than the rate for other resident children in BC. In 2006/2007, the rate of dental surgeries for Status Indian children under the age of 5 was 39.7 per 1,000, compared to 10.5 per 1,000 for other resident children in this age group (Figure 3.34).

**Figure 3.34**

**Dental Surgeries, Children Age 0–4 Years, Status Indians and Other Residents, BC, 1996/1997 to 2006/2007**



Note: Produced using data for Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with a length of stay greater than 180 days are excluded. Data for 2001/2002 and onwards are based on ICD-10-CA; previous years are based on ICD-9. Coding differences between these two systems may have impacted this analysis. Children with an unknown geographical region are included at the provincial level.

Source: Ministry of Health, Hospital Discharge Abstract Database; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Of all the health authorities, Interior and Northern Health Authorities had the highest rates of pediatric dental surgeries in this age group (both at 47.2 per 1,000), followed closely by Vancouver Island Health Authority (43.4 per 1,000). Northwest Health Service Delivery Area within Northern Health Authority had the highest rate of dental surgeries in the province at 65 per 1,000.

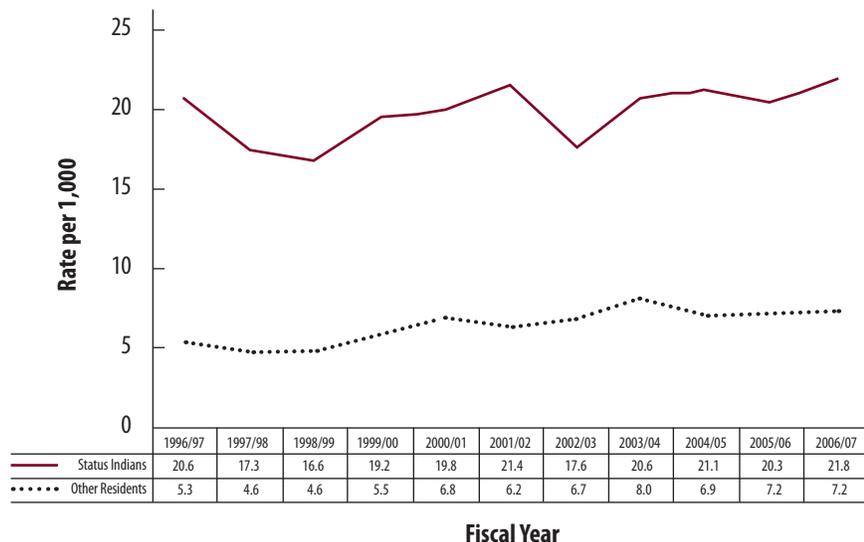
Vancouver Coastal Health Authority had moderately lower rates (31.6 per 1,000 for Status Indian children and 9.2 per 1,000 for other resident children), while Fraser Health Authority had the lowest rates in the province for both Status Indian and other resident children (14.3 per 1,000 and 7.2 per 1,000 respectively).

Although the rate of dental surgeries for Status Indian children is lower for children 5–9 years of age than for children 0–4, there is still a large gap between this population and other resident children in this age group. From 1996/1997 to 2006/2007, the rate of dental surgeries for Status Indian children age 5–9 years was consistently higher than the rate for other resident children. In 2006/2007, for children 5–9 years of age, the rate of dental surgeries was 21.8 per 1,000 for Status Indian children, compared to 7.2 per 1,000 for other resident children (Figure 3.35).

In 2006/2007, Status Indian children in all health authorities had much higher rates of dental surgeries than other resident children, with Northern Health Authority having the highest rate—over 4 times the rate of other resident children (33.4 per 1,000 versus 7.7 per 1,000).

**Figure 3.35**

**Dental Surgeries, Children Age 5–9 Years, Status Indians and Other Residents, BC, 1996/1997 to 2006/2007**



Note: Produced using data for Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with a length of stay greater than 180 days are excluded. Data for 2001/2002 and onwards are based on ICD-10-CA; previous years are based on ICD-9. Coding differences between these two systems may have impacted this analysis. Children with an unknown geographical region are included at the provincial level.

Source: Ministry of Health, Hospital Discharge Abstract Database; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

### Brighter Smiles – Hartley Bay

The Brighter Smiles program is part of a collaborative health initiative between the University of British Columbia (UBC) Department of Pediatrics and Hartley Bay. Hartley Bay is a remote First Nations community of about 200 people, located about 135 km southeast of Prince Rupert. It is only accessible by boat or float plane. As with other rural and remote First Nations, accessing health care can be a challenge. For example, regular pediatric and dental services were not available in the community, and a dental therapist from the First Nations and Inuit Health Branch provided dental treatment services intermittently. The community, in collaboration with UBC, identified children's oral health as a major concern. As a result, an oral health program, Brighter Smiles, was developed and began in 2002.

Brighter Smiles provides dental health education to school children in Hartley Bay, and community visits by pediatric residents and community dental hygienists. Program elements include:

- School-based daily “brush-ins”, where the children brush their teeth with fluoride toothpaste, under the supervision of teachers and nursing station staff.
- Weekly fluoride rinses for youth 9 years and older, or tri-annual fluoride varnish applications for children under 9 years.
- Incentives for children taking part in the brush-ins and the fluoride rinses. Participation in both of these programs is usually 100 per cent of eligible children.
- Dental health education by pediatric residents during health clinic visits.
- Classroom presentations by visiting residents, with a focus on oral health. These presentations have expanded to other health-related topics as well, including nutrition and tobacco use.

The program has seen improvement in children's oral health, and is well-received by parents, Elders, teachers, and the children. Prior to the start of the program, a sample of the children had dental examinations. Of this sample, only 31 per cent of pre-Kindergarten and 8 per cent of school-age children had no dental caries (Harrison, MacNab, Duffy, & Benton, 2006). Since the introduction of the program, the number of children who were caries-free increased. At the end of the first year, 41 per cent of the children had no new cavities. After two years, the government dentist reported that the majority of the children had improved oral hygiene (MacNab et al., 2005).

Sources: Harrison, MacNab, Duffy, & Benton, 2006; Northern Health, 2003; MacNab et al., 2005; University of British Columbia, 2005.

## Factors Contributing to Tooth Decay and Dental Surgeries

### Lack of Oral Hygiene

Poor oral hygiene can cause teeth to decay, and if the decay is left untreated, it can lead to dental surgery. Brushing twice a day and flossing once a day can help remove plaque from the surfaces of teeth, between the teeth, and under the gums. With less plaque, there are fewer bacteria that can cause tooth decay.

### Diet

Foods high in sugar and refined carbohydrates (pastries, grains, pasta, and bread) encourage the formation of dental caries. For infants, fruit juice, sweetened tea, soft drinks, all types of milk, and formula all contain sugars that can cause tooth decay if left in contact with teeth for long periods of time. When a child uses a bottle for long periods, especially during rest or sleep times, tooth decay can develop. Water is the recommended choice in the sippy cup or bottle between regular feeding times. A baby's first teeth may appear between six and nine months of age, so daily teeth cleaning is needed to remove food and bacteria that stick to teeth and lead to tooth decay.

### Socio-Economic Conditions and Dental Health

Low socio-economic conditions can lead to poor health, including poor dental health. A poor diet, limited awareness of the need for regular brushing, and a lack of care or trust in health promotion or health services can lead to poor dental health. High transportation costs and the refusal of some dentists to treat recipients of social benefits are also major impediments to care when financial resources are scarce (MacEntee, Harrison, & Wyatt, 2001).

### Fluoridation

Evidence shows that fluoride has several different mechanisms for preventing dental caries. According to researchers, children in particular benefit from water fluoridation. Actual ingestion of fluoride, through water fluoridation, allows the fluoride to work its way into the dentin and enamel of those teeth that have not yet erupted, thus making them more resistant to acid attack in the oral cavity after eruption.

Furthermore, the ingested fluoride is secreted into the saliva, and although the fluoride is only present in small concentrations, it is accumulated in the plaque where it can decrease microbial acid production. Fluoride from the saliva is also incorporated directly into the enamel of newly erupted teeth. Researchers continue to support fluoridation of community water supplies as the most effective way to reduce the incidence of dental caries in the general population (MacEntee et al., 2001; McDonald, Avery, & Dean, 2004)

## Otitis Media (Ear Infections)

Otitis media is inflammation of the middle ear, or middle ear infection. The disease is very common in children, with the average toddler having two to three episodes a year. It can occur as a result of a cold, sore throat, or respiratory infection, and happens mainly in the winter and early spring. Otitis media is the most common childhood infection for which antibiotics are prescribed (University of Minnesota, n.d.), and is the number one reason that children under the age of one are taken to the doctor (Brown, 2000).

The health risks for otitis media are infections to other parts of the head, permanent hearing loss, and problems with

### How can you prevent early childhood tooth decay?

Good infant dental health care includes cleaning and wiping his/her mouth daily with a clean, wet face cloth or a soft baby toothbrush. Once teeth appear, it is important to clean the child's teeth twice a day, using a soft baby toothbrush or wet face cloth with a smear of toothpaste containing fluoride. One cleaning should be after the last feeding of the day. To reduce the chance of passing harmful bacteria onto a child, caregivers should not share toothbrushes, lick soothers to clean them, or test the child's food with the same spoon.

The Canadian Dental Association recommends regular dental visits beginning six months after the first tooth appears, or at about one year of age. For more information on preventing early childhood tooth decay, please refer to the BC HealthFile #19A, *Infant Dental Care*, at <http://www.healthlinkbc.ca/healthfiles/pdf/hfile19a.pdf>.

Source: Ministry of Health, 2007b.

speech and language development, mainly due to temporary/permanent hearing loss (University of Virginia Health System, n.d.).

Those children who experience otitis media have an increased risk of developing repeated infections later in childhood. The disease is more common in boys than in girls, and is also more common in people with lower socio-economic status, and in children born with structural problems of the face or skull (Schmidt, 1990).

### Causes of Otitis Media

Anything that causes the eustachian tube to become irritated, or causes more fluid to be produced, can lead to a blocked tube and an ear infection. This can include colds and sinus infections, allergies, tobacco smoke or other irritants, infected or overgrown adenoids, or excess mucus and saliva produced during teething (MedlinePlus, 2008).

The size and shape of the eustachian tube is also a factor in the higher rate of infection among younger children compared to older children and adults. In younger children the tube is shorter and straighter, floppier, and the opening is smaller (MedlinePlus, 2008).

### Treatment of Otitis Media

There is some controversy associated with treatment of otitis media, due to the difficulty in distinguishing a viral infection from a bacterial infection, and the fact that a viral infection can progress to a bacterial infection at any time. Neither antihistamines nor decongestants are recommended for use in treating otitis media at any stage in the disease process.

Treatment of otitis media usually involves the use of antibiotics. However, some of the bacteria that can cause otitis media have become resistant to some antibiotics. Antibiotic resistance occurs most frequently in patients with recently treated acute otitis media, children who attend daycare facilities, and children younger than two years of age (Pichichero, 2000).

Furthermore, research suggests that antibiotics are not always the best approach to this disease. For example, in the case of acute middle ear infections, the risk of repeated infections may be almost three times greater if antibiotics are used (Schmidt, 1990).

A major challenge for the practitioner is to differentiate between otitis media with effusion (OME) and acute otitis media (AOM). OME is more common than AOM. It may accompany viral upper respiratory infections, be a prelude to AOM, or be a secondary result of AOM. When OME is wrongly identified as AOM, antibacterial agents may be prescribed unnecessarily (American Academy of Pediatrics & American Academy of Family Physicians, 2004).

Research has shown that in general practice, middle ear cultures are not performed to determine whether or not harmful bacteria actually exist. In addition, children who have had repeated doses of antibiotics for otitis media often suffer from a secondary infection, and further antibiotic treatment can severely aggravate this infection. Although earlier research in Canada supported the use of antibiotics for almost any type of middle ear infections, more recent research has called this

conclusion into question. For example, “when researchers compared Canada, where antibiotics are used aggressively to treat middle ear problems, with the Netherlands, where antibiotics are used much less aggressively, they found virtually no difference in the outcome of severe ear infections (Smith, 2003).

In chronic cases, surgery is sometimes performed to help restore hearing to a normal level and minimize problems with language development. This can include removal of the adenoids and, in some cases, the tonsils. However, studies have shown that tonsillectomies do not affect the long-term course of otitis media; in addition, “tonsils are essential lymphoid structures that play an important role in protecting the ear, nose and throat area from bacteria and viruses” (Smith, 2003).

### **Breastfeeding and Early Infancy**

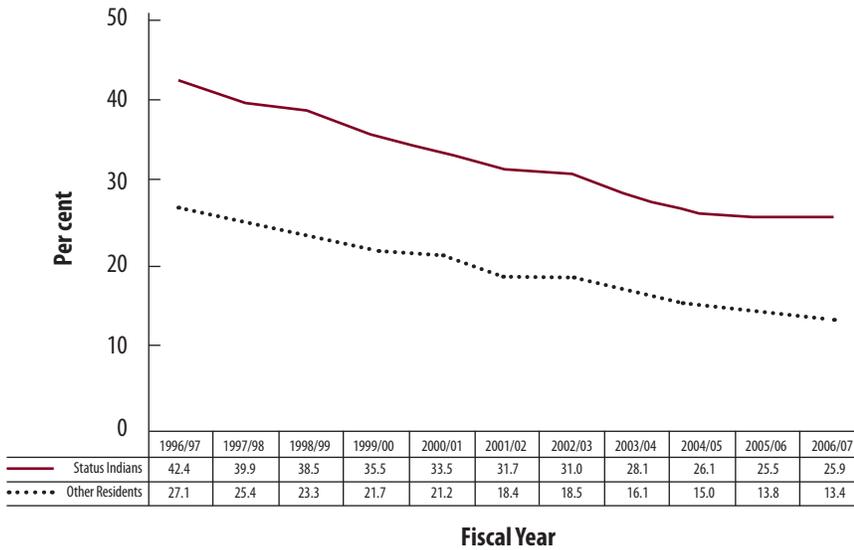
A study by Alan D. Bowd, from Lakehead University (2002), indicates that the majority of Canadian Aboriginal mothers do not breastfeed beyond early infancy. It points to 1989 research from Health and Welfare Canada’s Medical Services Branch, which reported that while 61 per cent of Aboriginal children were breastfed at birth, only 42 per cent were breastfed at 3 months, and only 31 per cent at 6 months.

Bowd recommended that breastfeeding education start by targeting adolescents in school, including having young parents speak to high school students about the benefits of breastfeeding with respect to ear disease. He further suggested that programs target the whole community and not just pregnant women, in order to create a supportive community and family environment for breastfeeding mothers. In addition, Bowd’s research identified a diet of low nutritional value, exposure to second-hand smoke, and limited access to medical care as the main causes of the high prevalence of ear infections in Aboriginal communities.

Source: Bowd, 2002.

**Figure 3.36**

**Incidence of Otitis Media, Children Under 1 Year of Age, Status Indians and Other Residents, BC, 1996/1997 to 2006/2007**



Source: Ministry of Health Services, Medical Services Plan Claims database (ICD9: 381 – 382); prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

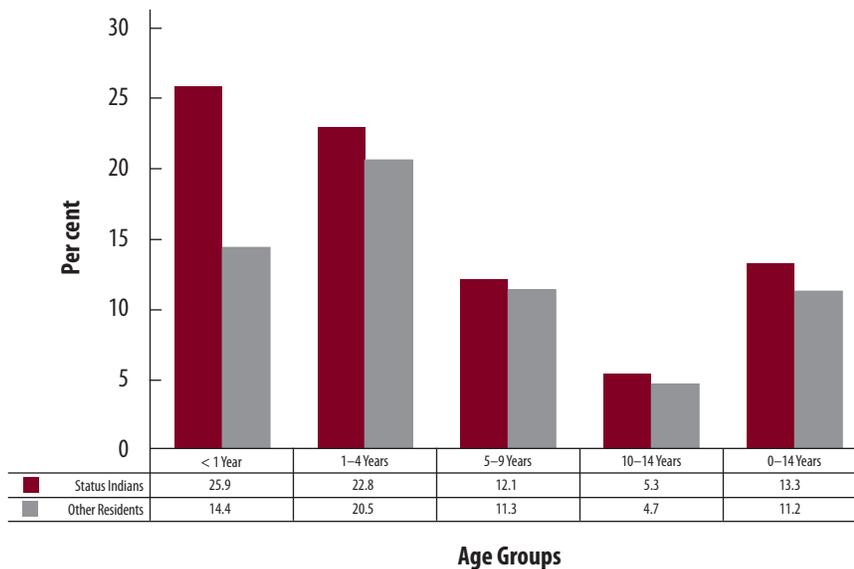
**Incidence of Otitis Media in British Columbia**

In British Columbia, the incidence of otitis media has declined for both the Status Indian population and other residents over the past decade (Figure 3.36). In spite of this decrease, a gap still persists between the two populations.

In 2006/2007, the proportion of children who contracted otitis media was the same for both Status Indians and other residents with the exception of children under one year of age (Figure 3.37). For this young age group, almost twice as many Status Indian children were diagnosed compared to other children.

**Figure 3.37**

**Incidence of Otitis Media, by Age, Status Indians and Other Residents, BC, 2006/2007**



Source: Ministry of Health Services, Medical Services Plan Claims database (ICD9: 381 – 382); prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

## Early Childhood Immunizations

In British Columbia, all infants and children have access to free immunizations to protect them against diphtheria, pertussis, tetanus, polio, haemophilus influenzae type b (Hib), measles, mumps, rubella, and hepatitis B. Most childhood vaccines are given in a “series” during the first year of life. Each dose of vaccine boosts the antibody levels produced by the previous one, until the baby’s immune system is developed well enough to “remember” how to produce the needed antibodies for a real virus or bacteria.<sup>10</sup>

British Columbia has recently expanded the availability of some new vaccines, including meningococcal C conjugate vaccine and varicella vaccine. Invasive meningococcal disease is a serious illness that can progress rapidly to shock and death. The fatality rate ranges from 8–15 per cent, with an additional 10–20 per cent of survivors suffering long-term effects including mental retardation, hearing loss, and loss of limb use. The varicella-zoster virus causes significant morbidity every year in BC from chickenpox and shingles. The varicella-zoster virus can occur in up to 10,000 BC residents annually and cause 25–30 deaths each year (Vancouver Coastal Health, n.d.)

Immunizations in BC are delivered by both private physicians and health authority public health staff. The proportion of physician/public health delivery varies substantially between health authorities, making it challenging to accurately measure immunization rates. The BC Centre for Disease Control (BCCDC) is responsible for data collection and is developing new reporting methodology to standardize and improve data quality (Ministry of Health, Provincial Health Services Authority, & BCCDC, 2008). On-reserve First Nations receive immunization services from federal, band-employed, or regional health authority nurses (Dawar, McColgan, & Ng, 2005).

Immunization rates for First Nations on-reserve have been estimated to be up to 20 per cent lower than the rates for the general population. In 2003, the federal government dedicated \$32 million over 5 years to develop and implement the First Nations and Inuit Health Branch Targeted Immunization Strategy, to increase immunization coverage rates in children under 6 living on-reserve and to implement newly recommended vaccines (conjugate pneumococcal, conjugate meningococcal C, and varicella) (Dawar et al., 2005).

In 2004, a national Immunization Strategy was endorsed by the Conference of Deputy Ministers of Health. Targets for immunizations for 2-year-olds were set globally at 95 per cent or higher. British Columbia’s rates have increased from 69 per cent in 2004/2005 to 74 per cent in 2005/2006. To achieve the target of 95 per cent, collaboration between the public, decision makers, and service providers is essential (Ministry of Health, 2007a).

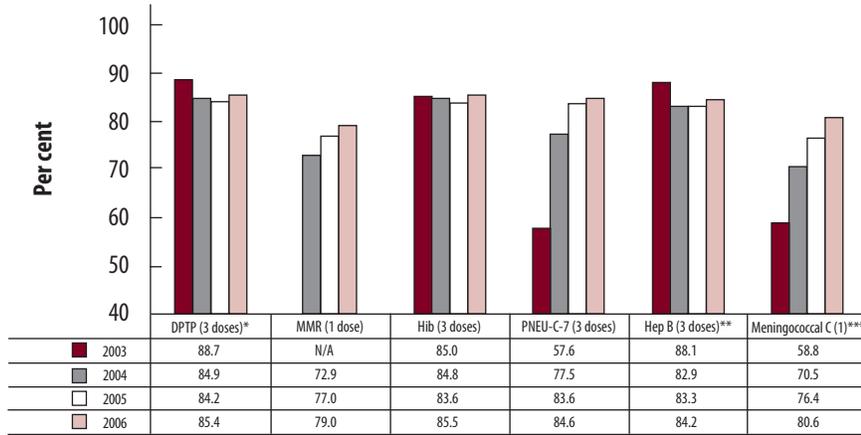
The immunization data in this report were provided by First Nations and Inuit Health and include the First Nations on-reserve population.<sup>11</sup> One of the priority actions for BC identified in the 2007 document *Immunize BC: A Strategic Framework for Immunization in BC* (Ministry of Health, 2007a) is the creation of a single, integrated immunization registry; however, this is a complex task that requires a system of interconnected immunization registries. For this reason, gathering reliable data for immunization is difficult; as a result, it is not easy to make a direct comparison between on-reserve and off-reserve First Nations people and the general population living off-reserve, or even to compare immunization coverage for off-reserve First Nations to the coverage for other residents.

<sup>10</sup> The BC child immunization schedule can be found at <http://www.immunizebc.ca/VaccSched/Vaccine+Schedules.htm>.

<sup>11</sup> The number of First Nations communities included in the immunization coverage was 169 (out of 200) in 2003, 174 (of 201) in 2004, 171 (of 200) in 2005, and 166 (of 202) in 2006.

**Figure 3.38**

**Immunization Coverage, On-Reserve First Nations, 1-Year-Olds, BC, 2003 to 2006**



**Vaccines**

\* In 2003, immunizations for diphtheria, pertussis, tetanus, and polio were given individually. In order to provide one rate for comparison purposes with later years, the individual 2003 rates were reviewed, and a rate of 88.7 was introduced as an approximation for the four combined immunizations.

\*\* The 2004 target population for hepatitis B immunization was 785 children; the 2004 target for the other diseases was 916 children. The target population for 2003 for hepatitis B was significantly lower.

\*\*\* In 2003, the target population for Meningococcal C was 396 children as compared to 806 for the other vaccines for that same year.

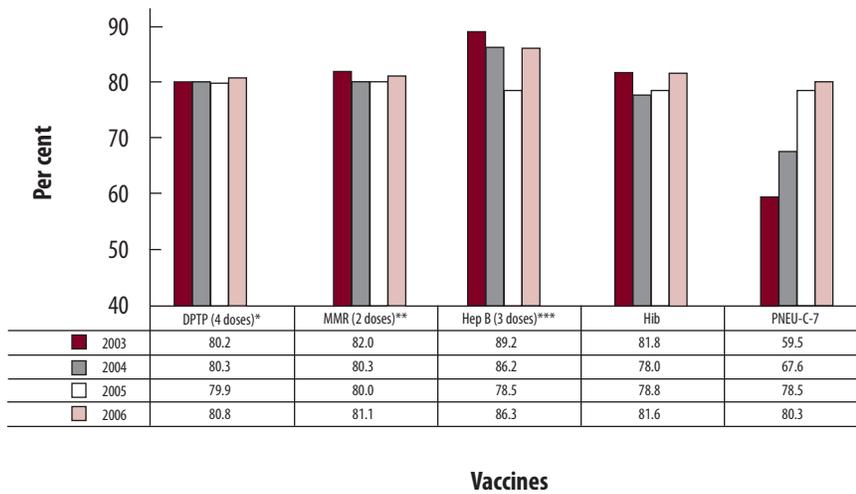
Notes: DTP: diphtheria, pertussis, tetanus, polio; MMR: measles, mumps, rubella; Hib: haemophilus influenzae type b; PNEU-C-7: pneumococcal conjugate; Hep B: hepatitis B.

Source: First Nations and Inuit Health, Health Canada, 2003 to 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 3.38 shows the level of immunization coverage for the 1-year-old, on-reserve, First Nations population. Based on the data shown, immunization rates for diphtheria, pertussis, tetanus, and polio (DTP), administered in one vaccine after 2003, are in the range of 84–89 per cent. The measles/mumps/rubella (MMR) vaccine was administered to 1-year-old First Nations children beginning in 2004, and its usage has increased since that time (from 72.9 per cent in 2003 to 79.0 per cent in 2006). The Hib immunization rate was in the 85 per cent range from 2003 to 2006, while the Hep B immunization rate was lower (83 to 84 per cent) with the exception of 2003 in which the target population was significantly lower. Immunization coverage for the PNEU-C-7 and meningococcal C conjugate vaccines has increased significantly since their introduction in 2004 and 2003 respectively.

Figure 3.39

### Immunization Coverage, On-Reserve First Nations, 2-Year-Olds, BC, 2003 to 2006



\* In 2003, immunizations for diphtheria, pertussis, tetanus, and polio were given individually. In order to provide one rate for comparison purposes with later years, the individual 2003 rates were reviewed, and a rate of 80.2 was introduced as an approximation for the four combined immunizations.

\*\* In 2003, immunizations for measles, mumps, and rubella were given individually. In order to provide one rate for comparison purposes with later years, the individual 2003 rates were reviewed, and a rate of 82.0 was introduced as an approximation for the three combined immunizations.

\*\*\* The 2004 target population for hepatitis B immunization was 819 children; the 2004 target for the other diseases was 822 children.

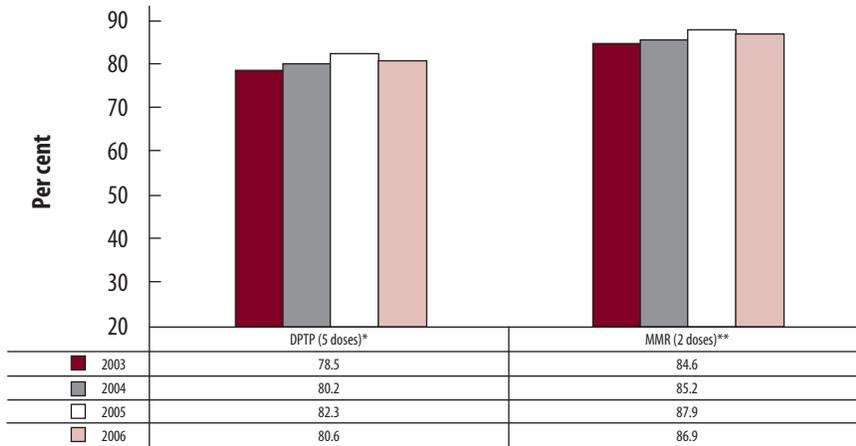
Notes: DTP: diphtheria, pertussis, tetanus, polio; MMR: measles, mumps, rubella; Hep B: hepatitis B; Hib: haemophilus influenzae type b; PNEU-C-7: pneumococcal conjugate.

Source: First Nations and Inuit Health, Health Canada, 2003 to 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

From 2003 to 2006, immunization coverage for 2-year-olds for the DTP, MMR, and Hib vaccines was fairly consistent, and was generally in the 80 to 82 per cent range. During this time period, the Hep B immunization rate was generally higher than the rates for other immunizations in this age group. Although the rate did decline from 89.2 per cent in 2003 to 78.5 per cent in 2005, it increased to 86.3 per cent in 2006. Immunization coverage for the PNEU-C-7 vaccine has increased steadily over this time period, from 59.5 per cent in 2003 to 80.3 per cent in 2006 (Figure 3.39).

**Figure 3.40**

**Immunization Coverage, On-Reserve First Nations,  
6-Year-Olds, BC, 2003 to 2006**



For the 6-year-old, on-reserve First Nations population, the only immunization data reported from 2003 to 2006 was for the DTP and MMR vaccines.<sup>12</sup> Figure 3.40 shows the coverage for both vaccines from 2003 to 2006. Coverage for the DTP vaccine ranged from 78.5 per cent in 2003, to a high of 82.3 per cent in 2005, and 80.6 per cent in 2006. Coverage for the MMR vaccine ranged from 84.6 per cent in 2003, to a high of 87.9 per cent in 2005, and 86.9 per cent in 2006.

**Vaccines**

\* In 2003, immunizations for diphtheria, pertussis, tetanus, and polio were given individually. In order to provide one rate for comparison purposes with later years, the individual 2003 rates were reviewed, and a rate of 78.5 was introduced as an approximation for the four combined immunizations.

\*\* In 2003, immunizations for measles, mumps, and rubella were given individually. In order to provide one rate for comparison purposes with later years, the individual 2003 rates were reviewed, and a rate of 84.6 was introduced as an approximation for the three combined immunizations.

Notes: DTP: diphtheria, pertussis, tetanus, polio; MMR: measles, mumps, rubella.

Source: First Nations and Inuit Health, Health Canada, 2003 to 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

<sup>12</sup> *Haemophilus influenzae (Hib)* immunization was only reported in 2003 for this age group, as in later years, the Hib vaccine was administered to the 1-year-old and 2-year-old population.

**Hook and Hub**

The “hook and hub” model is an integrated approach to family and children’s services that shows promise in some Aboriginal communities. Most health services in Canada are provided according to a problem-based, individual-centred model. For many First Nations communities, this model does not fit with their holistic view of wellness; they are interested in an integrated method of service delivery, which focuses on the well-being of the entire family or community. The vision of integrated service delivery was recommended by the 2002 Romanow Commission, specifically for improving the health of Aboriginal people and Canadians living in rural and remote settings.

One way of promoting integration is the hook and hub model: this model integrates child health and development programs on-site with other health, cultural, and social programs for the child/family (e.g., parenting programs, alcohol and drug treatment, job training, etc.). The child care/development programs attract the families (the “hook”), and then these families can gain access to other programs and services that are housed in the same location (the “hub”).

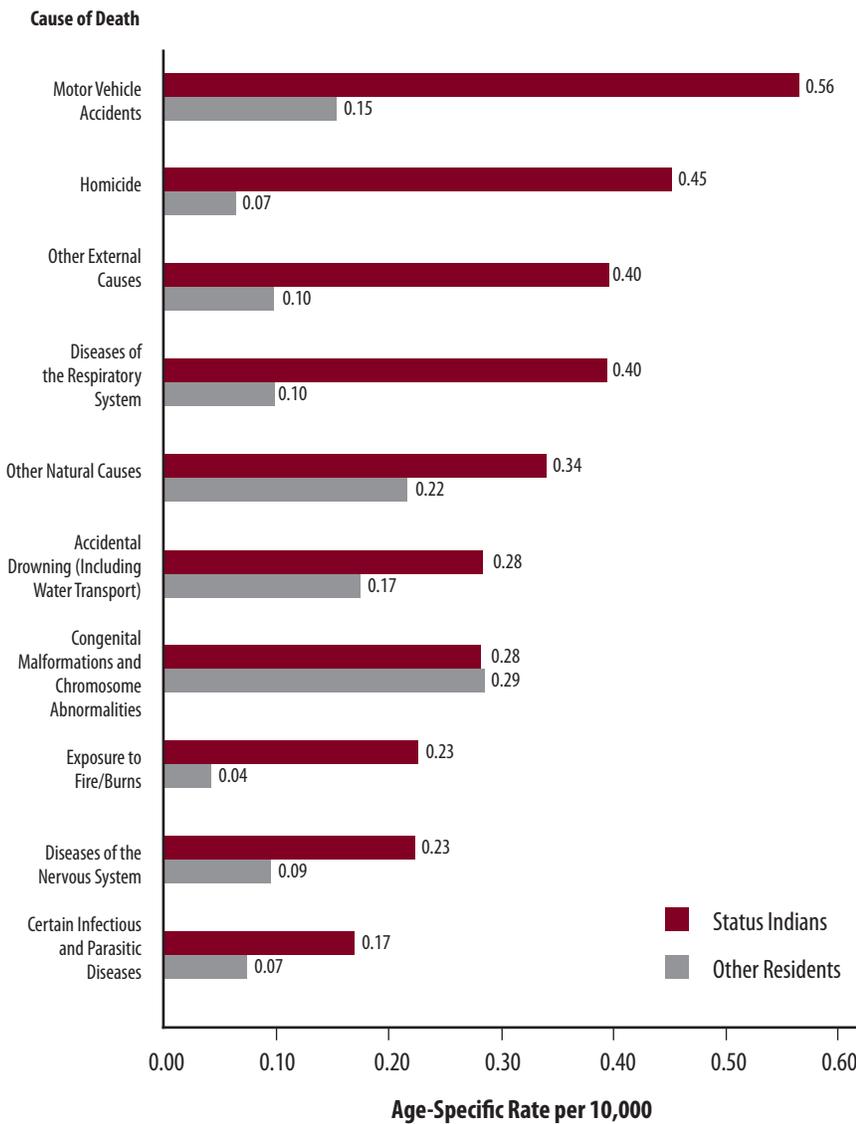
This type of model was studied in a project undertaken as part of the Early Childhood Development Intercultural Partnerships Program at the University of Victoria. The community-university research project found promising practices in three groups of rural First Nations that are working toward integration of programs to meet the needs of children and families. Each community participated in a 2-year, post-secondary early childhood care and development training program between 1997 and 1999. A follow-up study was conducted in 2003–2004. The study showed that all of the communities were working to create linkages between the child care and development programs and other health, cultural, and social programs; they were creating a “hub” for services to enhance the well-being of the family and community as a whole.

The success of the hook and hub model in these communities demonstrates the potential of utilizing early childhood care and development centres as hubs for a range of services that can help promote cohesion, stability, and social and cultural well-being within a community.

Sources: Ball, 2005a, 2005b, 2006.

**Figure 3.41**

**Top Ten Causes of Death, Children Age 1–4 Years, Status Indians and Other Residents, BC, 1992–2006**



Source: BC Vital Statistics Agency, data as of June 19, 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

### Causes of Death for Children

From 1992–2006, substantially more Status Indian children aged 1–4 years died from external causes of death such as motor vehicle accidents and homicides, compared to other BC children. Deaths from motor vehicle accidents for children in this age group were nearly four times higher for Status Indian children compared to other BC children, and homicide deaths were nearly seven times higher. Status Indian children age 1–4 also had significantly higher rates of death from other external causes and diseases of the respiratory system compared to other BC children (Figure 3.41).

## Summary of What We Know:

- The health of infants and children has been internationally accepted as an indicator of the health and well-being of a population.
- For many years, the Aboriginal population has experienced significantly higher infant mortality, neonatal mortality, post-neonatal mortality, and low birth weight births, compared to the rest of the BC population.
- Research has widely recognized the association between poor socio-economic status and poor health. For infants and children, poor health is generally a result of parents' low income and low levels of education. Several studies have shown a strong link between a mother's income and education and her infant's health.
- Some studies have concluded that women in poorer neighbourhoods and with a lower socio-economic status may benefit from initiatives and programs that would help to reduce post-neonatal deaths, such as initiatives to improve knowledge of SIDS prevention.
- Being overweight during pregnancy can influence conditions such as gestational diabetes. Over half of Status Indian women on-reserve (53.2 per cent) and nearly half of Status Indian women off-reserve (45.9 per cent) had an overweight pre-pregnancy BMI. The majority of other residents had a normal pre-pregnancy BMI (63.6 per cent).
- Several studies have revealed an association between lack of prenatal care and infant mortality.
- From 1998–2004, twice as many Status Indians mothers had inadequate prenatal care compared to other resident mothers. For the same time period, infant mortality was significantly higher for both Status Indian and other resident mothers who had inadequate prenatal care, compared to those mothers who had adequate or more than adequate care.
- A preterm birth refers to a newborn whose gestational age is less than 37 weeks. The rate of preterm birth for the Status Indian population is significantly higher than the rate for other residents. From 1993 to 2006, the rate for Status Indians increased from 9.1 to 11.7 per 100 live births.
- Low birth weight refers to newborns who weigh less than 2,500 grams. From 1993 to 2006, the rate of low birth weight births among the Status Indian population increased slightly from 5.8 to 6.1 per 100. Another major concern for Aboriginal communities is high birth weight births. High birth weight infants (newborns weighing more than 4,500 grams) are at risk for birth injuries and may be predisposed to being overweight both at one year of life and in adolescence.
- Infant mortality refers to the deaths of live-born infants less than one year of age. Although there has been an overall decrease in the infant mortality rate for the Status Indian population—from 11.8 per 1,000 live births in 1993 to 5.3 per 1,000 live births in 2006—the gap between the Status Indian population and other BC residents has persisted over the last 10 years.
- Neonatal mortality refers to the deaths of infants in the first 28 days of life. While the rate of neonatal mortality has decreased for both Status Indians and other residents from 1993 to 2006 (4.1 to 2.8 per 1,000 live births and 3.0 to 2.8 per 1,000 live births respectively), the gap between the two populations has persisted over the last 10 years.
- Post-Neonatal mortality refers to the deaths of infants between 28 days and one year of age. Data for post-neonatal mortality indicate a significant improvement for the Status Indian population since 1993. While the rate of post-neonatal mortality for the Status Indian population has declined from 7.8 per 1,000 live births in 1993 to 2.5 per 1,000 live births in 2006, the gap between the Status Indian population and other BC residents has persisted over the last 10 years.
- Infant deaths are caused by many conditions, including perinatal conditions, congenital anomalies, sudden infant death syndrome (SIDS), respiratory diseases, and infectious diseases, as well as other natural and external causes.
- From 1998–2004, Status Indian mothers who lived off-reserve had a significantly higher infant mortality rate than those who lived on-reserve (10.4 per 1,000 live births versus 6.5 per 1,000 live births respectively).

- From 1998–2004, Status Indian mothers had a higher percentage of substance use during pregnancy than other residents. Infant mortality rates were higher for Status Indian mothers who reported smoking, alcohol, or drug use during pregnancy, compared to those mothers with no reported substance use.
- From 1996/1997 to 2006/2007, the rate of dental surgeries for Status Indian children under the age of 5 was 3 to 4 times higher than the rate for other children in BC.
- In British Columbia, the incidence of otitis media has been reduced for both the Status Indian population and other residents over the past decade. In spite of this decrease, a gap still exists between the two populations, and it has not narrowed significantly since 1996/1997.
- A long history of colonization, systemic discrimination, and experiences such as residential schools have led to adverse health effects on Aboriginal families and their children. The results of these experiences are the root of inequities in infant health for Aboriginal peoples.

### Sheway

Sheway, a Coast Salish word meaning “growth”, is a program located in the Downtown Eastside of Vancouver that provides health and social service supports to pregnant women or women with children under 18 months of age, who are dealing with substance use issues. Established in 1993, the program has shown success in meeting the health and social needs of a population with highly complex needs. Services are provided through both outreach and drop-in. Key program areas include food and nutrition services, primary health care services, counselling services, healthy child development, advocacy, community education, and fundraising.

Sheway is a partnership initiative between Vancouver Coastal Health Authority, the Ministry of Children and Family Development, Vancouver Native Health Society, and the YWCA of Vancouver.

Source: Sheway, 2006; Vancouver Coastal Health, 2004, n.d.

## What Actions Can We Take?

### The health system can:

- Work with Aboriginal communities to develop culturally appropriate reproductive care programs, including better prenatal access, outreach, and nutrition programs for mothers and infants.
- Continue to monitor the birth weights of Status Indian infants, to better understand the factors that affect it.
- Develop better methods for diagnosing and tracking the occurrence of fetal alcohol spectrum disorder.
- Support Aboriginal communities in motivating community members to reduce tobacco misuse.
- Develop culturally sensitive and supportive programs to address the root cause of alcohol and substance use and to help achieve better health outcomes for mothers and their infants.
- Continue to promote an awareness of how to prevent sudden infant death syndrome.
- Continue to improve immunization coverage.
- Promote car safety including appropriate child seats.

### Government and community organizations can:

- Tackle the larger issues that affect children’s health and development: Poverty, food security, and social conditions.
- Implement community programs (such as the Four Pillars Approach in Vancouver) to prevent, treat, and reduce harms from substance abuse, with a focus on culturally-based services specific to the Aboriginal population.

# Chapter 4

## Disease and Injuries

Previous research and studies have shown that the health status of the Aboriginal population falls below that of the general population. Although there have been some improvements, some areas have worsened or stayed relatively unchanged.

This chapter provides data and analysis on a number of health conditions for the Aboriginal population.<sup>1</sup> Although there is considerable interest in the health status of all Aboriginal peoples (including Métis, non-Status, and Inuit), in most cases, relevant data are only available for Status Indians.

Where possible, this report attempts to compare the data and trends with the 2001 Provincial Health Officer's report, *The Health and Well-being of Aboriginal People in British Columbia*. Due to the availability of additional data, there are more concepts included in this chapter than previously reported in 2001. For more detailed data tables and additional regional data please refer to the website of the Office of the Provincial Health Officer at <http://www.hls.gov.bc.ca/pho>.

### Highlights

- The average life expectancy for Status Indian males increased from 69.8 in 1992–1996 to 73.0 in 2002–2006. The life expectancy for Status Indian females increased from 76.2 to 77.0 in the same time period.

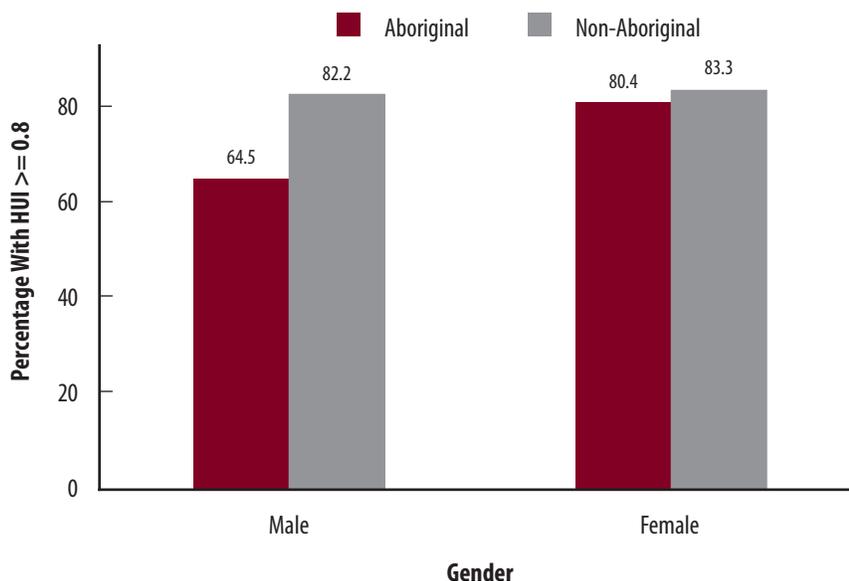
- In Canada, compared to the general population, First Nations have higher rates of arthritis/rheumatism, high blood pressure, diabetes, asthma, heart disease, cataracts, and chronic bronchitis. In BC, the prevalence of heart disease, diabetes, arthritis, and other chronic diseases is also much higher in the Status Indian population compared to other residents.
- The combination of a western diet high in carbohydrates, simple sugars, and fats, and a sedentary, inactive lifestyle has more than likely contributed to the epidemic of diabetes and other chronic conditions among the Aboriginal population.
- Aboriginal groups clearly experience a disproportionate level of food insecurity due to poverty and remote locations. Many people living on low incomes are unable to afford sufficient or nutritious food. Those living on remote reserves face additional challenges in obtaining fresh and healthy food, as it must be transported long distances. Food insecurity is a precursor to many health problems, including malnutrition, low birth weight babies, unhealthy pregnancies, sub-optimal child development, as well as poorer health in seniors, and greater rates of chronic disease.

<sup>1</sup> The terms used in this report to describe the Aboriginal population will vary according to the data and the sources used. For consistency, material presented from a published study quote the exact terms and definitions used in that study.

- Deaths due to medically treatable diseases are those for which mortality could potentially have been avoided through appropriate and timely medical intervention. Since 1993, the age-standardized mortality rate (ASMR) for these diseases has fluctuated and has generally been 2 to 5 times higher for the Status Indian population compared to other residents. In 2006, the rate for the Status Indian population in BC was 1.5 per 10,000, compared to 0.3 per 10,000 for other residents. The higher death rates from these diseases for the Status Indian population more than likely reflect gaps in access to primary care services in this population.
- Although the ASMRs for external causes of death such as motor vehicle accidents, accidental poisoning, and drug-induced deaths are higher for the Status Indian population compared to other residents, there has been a significant decline in rates from 1993 to 2006.
- The rate of deaths due to HIV disease for the Status Indian population has more than doubled since 1993 (0.8 per 10,000 in 1993 to 1.9 per 10,000 in 2006), while the rate for other residents has decreased significantly in the same time period (0.8 per 10,000 in 1993 to 0.2 per 10,000 in 2006).
- A possible explanation for the higher rates of HIV deaths in the Status Indian population may be that Aboriginal people are disproportionately represented in the hard-to-reach populations that are medically eligible for Highly Active Antiretroviral Therapy (HAART), but do not currently access it: those who are addicted to drugs, the mentally ill, the homeless, and those who live in remote communities without access to expert care. As well, mistrust in medical institutions and lack of culturally safe and supportive care may negatively impact the uptake of treatment for Aboriginal patients.

Figure 4.1

**Health Utility Index  $\geq 0.8$ , by Gender, Aboriginal and Non-Aboriginal Population, Age 12–24 Years, BC, 2005**



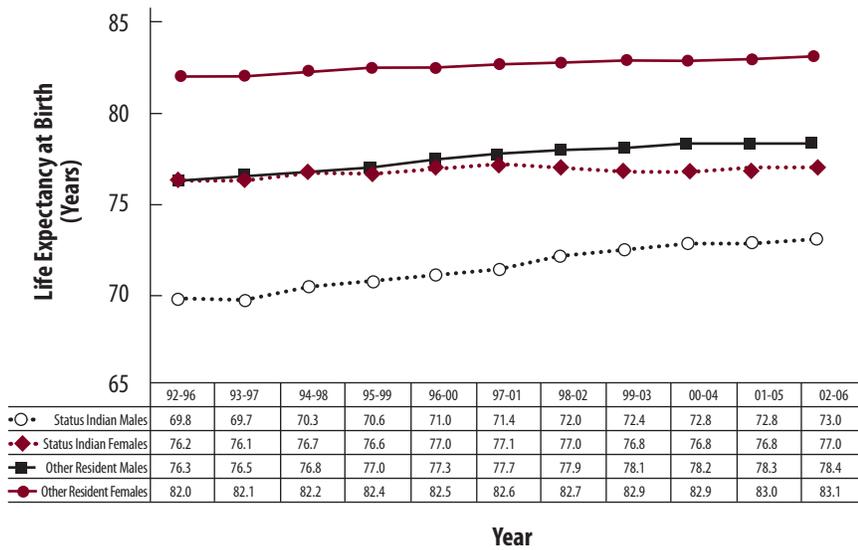
Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Health Utility Index**

Developed by McMaster University’s Centre for Health Economics and Policy Analysis, the Health Utility Index (HUI) measures the overall health of the population, based on eight dimensions of functioning (vision, hearing, speech, mobility, dexterity, feelings, cognition, and pain). A score of 0.8 to 1.0 is considered to be very good or excellent health; scores below 0.8 indicate moderate or severe functional health problems (Statistics Canada & Canadian Institute for Health Information, 2006). Figure 4.1 illustrates the HUI for the Aboriginal population and the non-Aboriginal population, age 12–24 years, based on the findings of the Canadian Community Health Survey. In 2005, 64.5 per cent of Aboriginal men surveyed had a score of 0.8 and above, compared to 82.2 per cent of non-Aboriginal males. A larger proportion of Aboriginal women than men (80.4 per cent) had scores of 0.8 or higher, although this percentage was still lower than the percentage for non-Aboriginal females (83.3 per cent).

Figure 4.2

Life Expectancy at Birth, by Gender, Status Indians and Other Residents, BC, 1992–1996 to 2002–2006



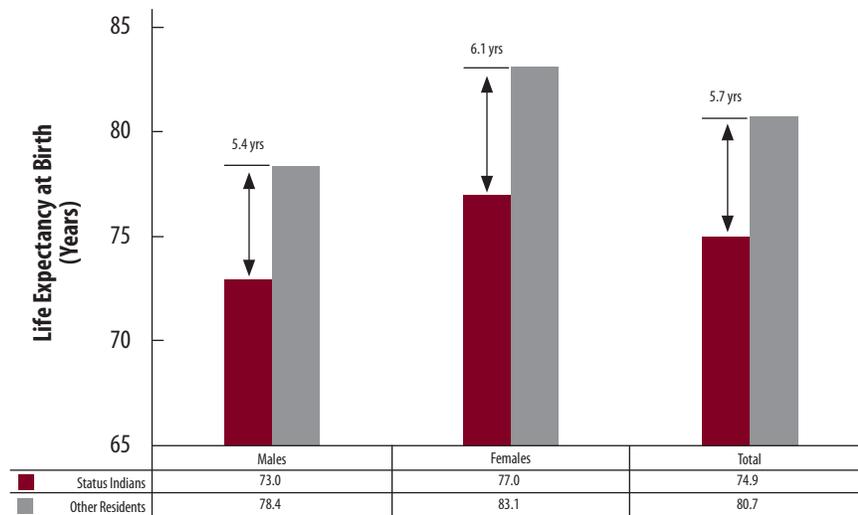
Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## Life Expectancy

The life expectancy for Status Indians has improved consistently over the past decade. Figure 4.2 illustrates the life expectancy at birth for both male and female Status Indians and other residents. The average 5-year life expectancy for Status Indian males increased from 69.8 years in 1992–1996 to 73.0 years in 2002–2006. Life expectancy for Status Indian females increased only slightly during the same time period, from 76.2 to 77.0 years. Both Status Indian males and females have a shorter life expectancy than other residents, although the gap is narrowing between males in the two populations. For the period 2002–2006, the life expectancy at birth for Status Indian males was 5.4 years less than other male residents; for Status Indian females, it was 6.1 years less than other female residents (Figure 4.3).

Figure 4.3

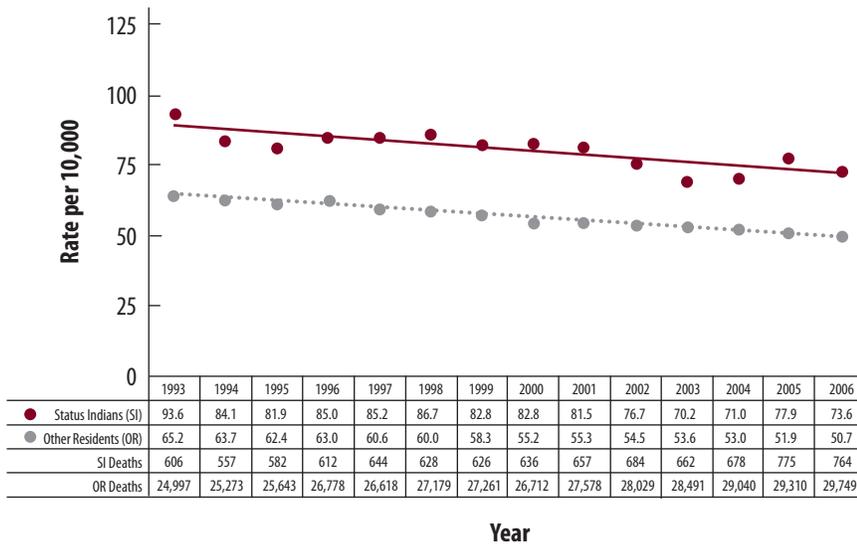
Life Expectancy at Birth, by Gender, Status Indians and Other Residents, BC, 2002–2006



Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Figure 4.4**

**Deaths From All Causes, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## Mortality Due to All Causes

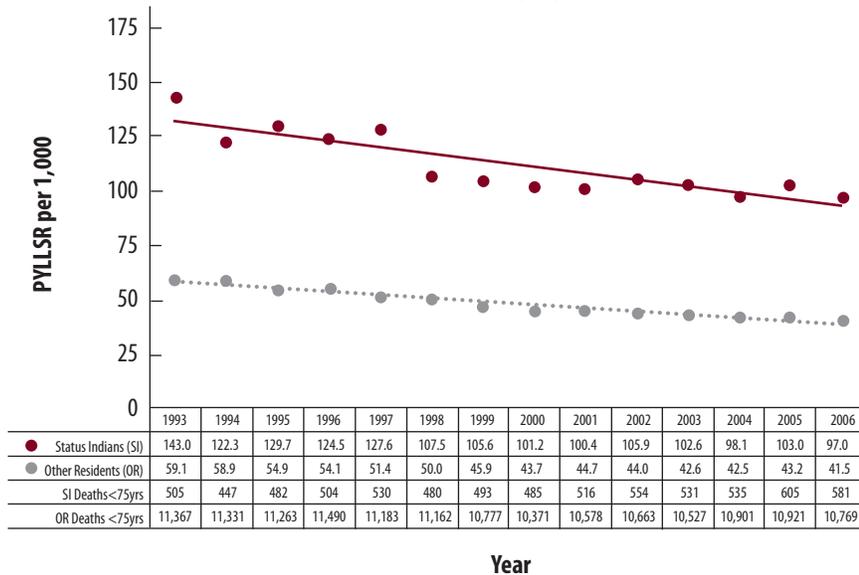
Since 1993, the age-standardized mortality rate (ASMR)<sup>2</sup> for all causes of death has been substantially higher for the Status Indian population compared to other residents. From 1993 to 2006, the ASMR for all causes of death decreased significantly for both populations; however, the gap between the two populations has persisted, with an absolute difference of approximately 23 per 10,000 over time. In 2006, the ASMR for all causes of death for the Status Indian population was 73.6 per 10,000, compared to 50.7 per 10,000 for other residents (Figure 4.4).

Aggregate regional data for 2002–2006 show that the Status Indian mortality rate was significantly higher than the rate for other residents in every health authority and in BC as a whole.

<sup>2</sup> The age-standardized mortality rate (ASMR) is a summary of age-adjusted death rates by age and gender, adjusted to a standard population (1991 Canada Census). It can be used to compare differences between genders, different time periods, and geographical locations (British Columbia Vital Statistics Agency, 2004). Further technical explanation of this and other measures is provided in Appendix A.

Figure 4.5

**Deaths From All Causes, Potential Years of Life Lost  
Standardized Rate, Status Indians  
and Other Residents, BC, 1993 to 2006**



Note: Potential years of life lost (age under 75 years) rate per 1,000 standard population (1991 Canada Census).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Another meaningful way of looking at mortality patterns is to consider potential years of life lost (PYLL).<sup>3</sup> As illustrated in Figure 4.5, the PYLL standardized rate<sup>4</sup> (PYLLSR) is substantially higher for the Status Indian population compared to other residents, which indicates that a greater proportion of the Status Indian population dies before reaching age 75. From 1993 to 2006, there was a significant decrease in PYLLSR for all causes of death for both populations; however, in relative terms, the PYLLSR persisted at a level slightly over 2 times higher for the Status Indian population compared to other residents. In 2006, the PYLLSR was 97.0 per 1,000 for the Status Indian population, compared to 41.5 per 1,000 for other residents. This gap of approximately 55 per 1,000 in 2006 is an improvement in absolute terms over a gap of approximately 80 per 1,000 in 1993.

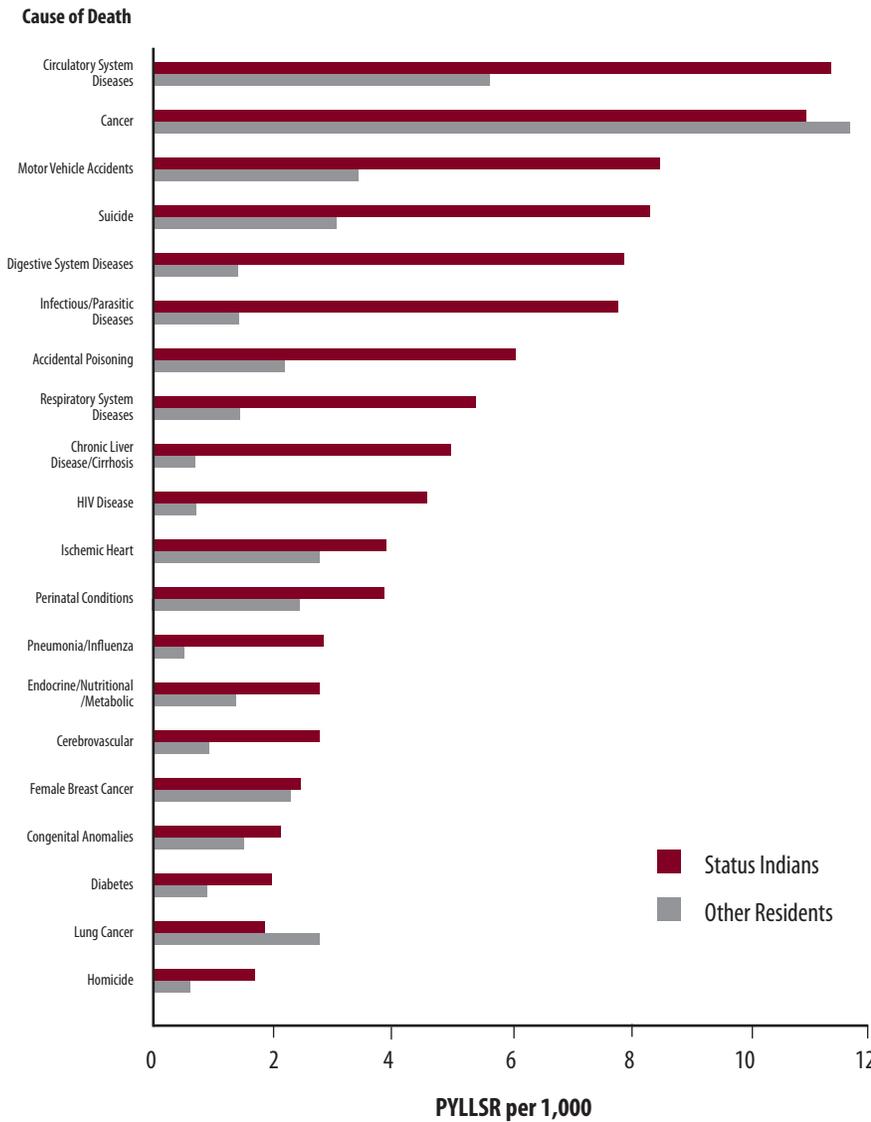
Aggregate regional data for 2002–2006 show that a significant gap exists between the Status Indian population and other residents in all health authorities, ranging from 3.2 times in Vancouver Coastal Health Authority to 1.7 times in Northern Health Authority.

<sup>3</sup> Potential years of life lost (PYLL) is the number of years of life lost when a person dies before a specified age (defined in this report as 75 years of age).

<sup>4</sup> PYLL standardized rate (PYLLSR) is a health status indicator that measures the age-standardized rate of PYLL, adjusted to the 1991 Canada Census standard population (British Columbia Vital Statistics Agency, 2004).

**Figure 4.6**

**Causes of Death, Potential Years of Life Lost Standardized Rate, Status Indians and Other Residents, BC, 2002–2006**



Note: Potential years of life lost (age under 75 years) rate per 1,000 standard population (1991 Canada Census).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Figure 4.6 shows PYLLSRs for specific causes of death for the Status Indian population and other residents. Compared to other residents, the Status Indian population had a higher rate of dying before reaching age 75 from every cause of death except cancer. For the 5-year period 2002–2006, the highest PYLLSR for the Status Indian population was 11.3 per 1,000 population for circulatory system diseases, compared to 5.6 per 1,000 for other residents. The difference in rates between the Status Indian population and other residents was also apparent for other causes of death, including motor vehicle accidents, suicides, accidental poisoning, digestive system diseases, and infectious/parasitic diseases. As many of these causes of death are classified as “external” (e.g., motor vehicles accidents and suicides), it is possible that some of the premature mortality for Aboriginal people in BC could be prevented.

## Analysis of Chronic Diseases and Major Causes of Death

The following sections provide data and analysis on the chronic diseases and major causes of death for the province as a whole. For more detailed data tables and additional regional data please refer to the website of the Office of the Provincial Health Officer at <http://www.hls.gov.bc.ca/pho>.

### Chronic Diseases

Most indigenous populations worldwide, including the Canadian Aboriginal population, share a pattern of premature morbidity. The key considerations are genetics, lifestyle, socio-economic factors, and a long history of colonization, cultural deprivation, political impotence, and systematic discrimination. Some researchers have focused on the role of genetics as a risk factor for adverse health outcomes and suggest that in the Canadian Aboriginal population, the gene-environment interaction may be particularly strong. Others argue that socio-economic status, along with health-damaging behaviours such as smoking, alcohol and drugs, often lead to the presence of two or more diseases (co-morbidities) together in an individual, and this may be more responsible for premature mortality rather than having an “Aboriginal” background (Cass, 2004).

In Canada, compared to the general population, First Nations have higher rates of arthritis/rheumatism, high blood pressure, diabetes, asthma, heart disease, cataracts, and chronic bronchitis (First Nations Regional Health Survey, 2002/03). In BC, the prevalence of chronic diseases such as heart disease, diabetes, and arthritis is also much higher in the Status Indian population compared to other residents. A combination of factors such as smoking; a diet high in carbohydrates, simple sugars, and fats; a sedentary, inactive lifestyle, and socio-economic factors has more than likely contributed to the epidemic of chronic disease in the Aboriginal population.

A discussion of traditional Aboriginal diets and what has changed may provide insight into the significant increase in chronic disease among the Aboriginal population.

## Food, Diet, and Chronic Disease

### Traditional Foods

The traditional foods of BC’s Aboriginal population provided a diet high in protein, low in carbohydrates, and rich in essential minerals and vitamins (Kuhnlein & Chan, 2000). In coastal communities, dried herring eggs on kelp were a favourite snack, with the eggs providing protein, calcium, iron, and thiamine. Smoked salmon and salmon eggs were a common breakfast. Local plants supplied a fresh and diverse selection of fruits and vegetables, and nuts were often added to meat stock to make tasty and nutritious soups.

At the time of European colonization, approximately one-third of Canada’s native population lived in BC. The abundance of seafood available year-round made it possible for coastal tribes to settle in permanent villages, often located along the shores of sheltered bays and inlets. When the Europeans arrived, some village sites had been occupied for more than 4,000 years (Indian Affairs and Northern Development Canada, 1996). Smaller numbers of Aboriginal people lived in BC’s Interior. Those in the Northern Interior (Subarctic) lived a nomadic life of hunting and gathering. Southern Interior (Plateau) Aboriginals travelled around the region’s dry

### Food Guide for First Nations, Inuit, and Métis

On April 11, 2007, a national food guide for First Nations, Inuit, and Métis entitled *Eating Well with Canada’s Food Guide – First Nations, Inuit and Métis*, was launched by the federal government. This is the first time that Canada’s Food Guide has been tailored to reflect the unique values, traditions, and food choices of Aboriginal populations. More than 400 people, including national Aboriginal organizations, intermediaries, and nutrition professionals, were consulted in the development of the nationally tailored food guide. It is hoped that the guide will help Aboriginal communities make healthy choices, within the context of their traditional way of life.

For more information on *Canada’s Food Guide – First Nations, Inuit and Métis* visit Health Canada’s website at: [http://www.hc-sc.gc.ca/fn-an/alt\\_formats/fnihb-dgspni/pdf/pubs/fnim-pnim/2007\\_fnim-pnim\\_food-guide-aliment-eng.pdf](http://www.hc-sc.gc.ca/fn-an/alt_formats/fnihb-dgspni/pdf/pubs/fnim-pnim/2007_fnim-pnim_food-guide-aliment-eng.pdf).

Source: Health Canada, 2007.

grasslands and forests in the summer, seeking seasonal food, then settled into small villages of pithouses for the winter.

An estimated 90 per cent of the dietary protein of coastal Aboriginal people was derived from the ocean, but land animals and plants were also important sources of nutrition (Mos et al., 2004). Salmon, halibut, smelt, and herring were significant components of the traditional diet of many Aboriginal people, who relied on salmon runs on the Fraser River and its tributaries and throughout the Columbia River system. Wild game, such as deer, was another major source of protein, particularly in interior regions far from the ocean and its buffet of seafood. Studies show that wild game is healthier than farmed animal food, which has a higher fat content. Compared to the farmed animals eaten today by most consumers, most wild game has about one-half the energy (calorie/kilojoule) content and is 50 per cent higher in other nutrients (Health and Welfare Canada, 1985).

A wide variety of fresh fruits and vegetables that are now known to be high in vitamins and minerals were integral to traditional Aboriginal diets. Seaweeds were eaten fresh or dried for the winter by coastal peoples. Cooked dandelion greens supplied vitamins A and C, as well as calcium. Wild clover roots and silverweed roots, consumed by the coastal

Aboriginal population, were high in iron. Greens like fireweed and salmonberry sprouts supplied folic acid, vitamins A and C, and important minerals like iron, calcium, and magnesium. Altogether, 135 different kinds of plants were used as food, drinks, or for flavour in the traditional diet of BC's Aboriginal population (Turner, 1978).

Many fats found in the traditional diet of BC's Aboriginal population came from fish, seeds, and nuts. These fats, which are known to help reduce blood cholesterol levels, were used to bake bannock; to cook meats, fish, and vegetables; and to preserve food. Some traditional fats were a key source of fat-soluble vitamins (A, D, E, and K) and a source of essential fatty acids (Health and Welfare Canada, 1985).

Many plants also made a contribution to a balanced Aboriginal diet. The stalks of the rhubarb plant were eaten, but the leaves, which contain toxic amounts of oxalic acid, were avoided. Blue camas bulbs provided an important source of carbohydrates in the form of a complex sugar called inulin. Along with plants, fruits such as berries were also an important part of the traditional diet. In BC, there were more than a dozen varieties, including salmonberries and wild strawberries, bog cranberries, thimbleberries, and salal berries. Berries were also used as a natural sweetener. All food

### **Fish Intake and Human Health**

The regular consumption of fish has been touted as part of a healthy diet, and of particular importance to heart health. However, concerns about the risks of contamination in fish and seafood—particularly levels of mercury, dioxins, and polychlorinated biphenyls (PCBs)—have caused consumer confusion about whether it is safe to eat.

In 2006, a meta-analysis was published in the *Journal of the American Medical Association* (Mozaffarian & Rimm, 2006, as cited in BC Cancer Agency, n.d.) on the benefits and risks of fish consumption. The analysis found that 1–2 servings of fish per week, especially tuna, trout, sardines, and salmon (both wild and farmed), reduced the risk of coronary death by 36 per cent and total mortality by 17 per cent. The authors then estimated the potential cancer risk associated with levels of contaminants, particularly in wild and farmed salmon. Based on 100,000 lifetimes of consuming one, 6-ounce serving of salmon per week, their estimate showed 7,125 fewer deaths from coronary heart disease, compared to 2 additional cancer deaths associated with eating wild salmon, and 6 additional cancer deaths associated with eating farmed salmon.

The study concluded that avoiding modest fish consumption because of the confusion about the risks and benefits could result in thousands of excess deaths annually due to coronary heart disease.

Source: Mozaffarian & Rimm, 2006, as cited in BC Cancer Agency, n.d.

was considered to be sacred, and ceremonies were often held to celebrate the ripening and harvesting of different kinds of berries and other fruits.

Aboriginal people traditionally had their own healthy version of today's sweetened soft drinks. Using the stems, bark, or leaves of shrubs such as wild blackberry, they brewed beverages that were consumed for pleasure or to cure illness. Tea made from the Labrador bush, a scraggly shrub with dense clusters of white flowers, was popular throughout the province. The Sliammon prepared Labrador leaves by steaming them in a shallow pit, amidst layers of licorice fern rhizomes for flavouring, while the Haida drank Labrador tea as a medicine for sore throats and colds (Turner, 1975). Spruce bark, which has a plentiful supply of vitamin C, was boiled to make a tea that prevented scurvy.

Most food was only available seasonally, so effective food preservation techniques were important to ensure sufficient food in times of scarcity. Fish and game, such as deer, were smoked and dried for the lean winter months. Berries were poured into wooden frames set on skunk cabbage leaves, and placed near a fire to dry slowly for several days. Bulbs, roots, rhizomes, tree cambium, and seaweed were also cleaned and dried for winter. Dried black tree lichen contained a carbohydrate that swelled when mixed with liquid, giving those who ingested it the sensation of a full belly. The lichen, also used for thickening soups, was rich in iron and was a source of calcium as well (Health and Welfare Canada, 1985).

Collecting and storing enough food for survival was a time-consuming and challenging task. It demanded constant activity and kept the Aboriginal population physically active and fit. Men hunted and fished together. Women dug roots and bulbs; cleaned fish and hung them to dry in smokehouses; collected shellfish such as clams, oysters, and mussels; and gathered berries in the summer and fall.

### ***Change in Dietary Traditions***

The first changes in the traditional Aboriginal diet occurred soon after European contact. Refined sweeteners, such as sugar and molasses, became readily available. Carbohydrates, such as potatoes, flour, rice, and beans, were instantly popular among coastal and interior Aboriginal groups. The consumption of traditional plant foods swiftly gave way to “white man’s” fruits and vegetables (Turner, 1978). As

industrialization and urbanization made commercial food more accessible, game meat was replaced by store-bought meat, natural foods by processed foods, and traditional beverages by pop, juice, and alcohol.

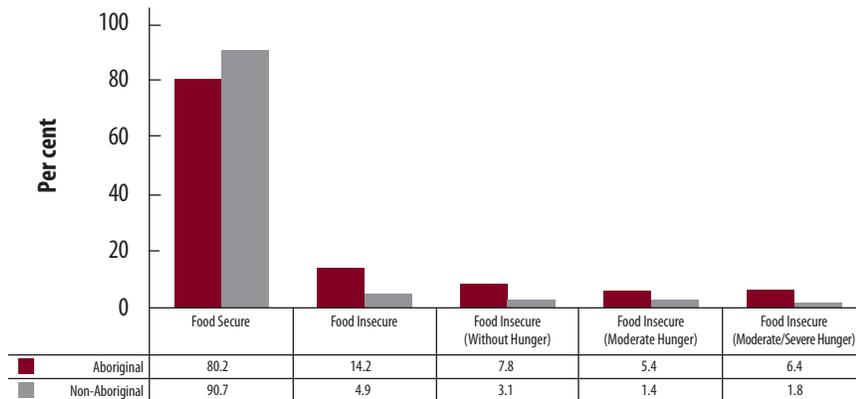
For millennia, Aboriginal people had been sustained by the diverse harvests of the land, ocean, rivers, and lakes. Suddenly, over the course of a few decades, the traditional diet virtually vanished and a western diet was almost universally adopted. Instead of fresh or preserved local fare, commercial foods produced elsewhere were consumed. Furthering the loss of the traditional diet, the establishment of residential schools separated children from their families and communities, hindering the custom of passing down traditional food knowledge from generation to generation. Other factors such as commercial traplines, unsustainable forestry, industrial pollution, and fish farming may also have contributed to the loss of traditional diets. Lifestyles became far more sedentary after Aboriginal reserves were established, contributing to an increased risk of obesity and associated chronic disease.

The amount of carbohydrates consumed by BC's Aboriginal people was very limited prior to the introduction of sugar, potatoes, wheat, and other starchy foods. Following European contact, flour and sugar became prominent features in the Aboriginal diet, and were used in a variety of breads, bannock, cakes, and cookies. Today, market food makes up the bulk of Aboriginal diets. Across Canada, only about 15 per cent of Aboriginal people still obtain most of their animal proteins from hunting and fishing (Young, Reading, Elias, & O'Neil, 2000). For the most part, nutrient-rich traditional plant foods are no longer gathered for barter or sale, although some people still collect them to share with friends and family (Turner, 1978). Many fish and shellfish, however, continue to represent an important source of nutrition and culture for BC's Aboriginal peoples (Mos et al., 2004). One study of the Nuxalk Nation found that, with the exception of fish, very few traditional foods were still consumed (Hans, Hilland, & Kuhnlein, 2003).

More recently, research is exploring the health implications of the radical shift from traditional diets to western diets, and from hunting-gathering to sedentary consumption. Generally, risk factors for common chronic diseases increasingly point to the role of diet and nutrition.

Figure 4.7

### Household Food Insecurity, Aboriginal (Off-reserve) and Non-Aboriginal People, BC, 2005



#### Level of Food Insecurity

Note: The "Food Insecure" variable includes those households that experienced food insecurity without hunger, food insecurity with moderate hunger, and food insecurity with severe hunger. Data for "Food Insecure (Severe Hunger)" are not reportable due to a small sample size. The Aboriginal non-response data are also not reportable due to a small sample size.

Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

#### Doctor Day, Food Boxes, and Community Kitchens in Aboriginal Communities

BC's five regional health authorities have made improving Aboriginal health a priority. The Vancouver Island Health Authority is emphasizing nutrition and diet in the following programs:

- **Doctor Day** – a "traveling clinic" of health professionals visits the semi-remote Pacheedaht First Nation on the west coast of Vancouver Island on a monthly basis. The team includes a dietitian, a diabetes nurse, and a public health nurse, as well as an Aboriginal physician. The community nutritionist supports healthy eating for families, healthy eating on a limited income, and nutrition during pregnancy.
- **Food Box** – a collaborative of south island Aboriginal people. It provides reliable access to good, nutritious food by coordinating bulk purchase and delivery of healthy foods to individuals and families. More than 300 boxes are regularly delivered.
- **Meal Bag Program** – provides a package of all ingredients for a nutritionally balanced meal to a small group of community members, who gather to prepare and sample the meal and discuss preparation alternatives. This approach distributes appropriate foods and information and builds individual capacity in a social setting.

Source: PHO, 2006.

Generally, the western diet embraced by a vast majority of BC's Aboriginal population today is far less healthy than a traditional diet, since it represents an increase in calories, carbohydrates, total fat, and saturated fat intakes (Mos et al., 2004; Kuhnlein & Chan, 2000). It is also lower in nutrients than traditional food, and is thought by some researchers to be contributing to chronic diseases such as diabetes among Aboriginal people (Turner & Ommer, 2003). This combination of a western diet high in carbohydrates, simple sugars, and fats and a sedentary, inactive lifestyle has more than likely contributed to the epidemic of diabetes and other chronic conditions among the Aboriginal population.

#### Socio-Economic Status and Access to Food

Aboriginal people living in BC generally experience a standard of living 20 per cent below the provincial average, based on measures such as income, employment, educational attainment, and housing adequacy. Canadian and other data generally indicate that low socio-economic status and living in poverty increases the risk of obesity, and is associated with a 58 per cent increase in chronic conditions (Cass, 2004).

Aboriginal groups clearly experience a disproportionate level of food insecurity due to poverty. Many people living on low incomes are unable to afford sufficient or nutritious food. Data from the Canadian Community Health Survey showed that in 2005, a much higher proportion of the Aboriginal population off-reserve were food insecure compared to the non-Aboriginal population (14.2 per cent versus 4.9 per cent) (Figure 4.7).

In addition, those living on remote reserves face additional challenges in obtaining fresh and healthy food, as it must be transported long distances (Health and Welfare Canada, 1985).

Food insecurity is a precursor to many health problems, including malnutrition, low birth weight babies, unhealthy pregnancies, sub-optimal child development, as well as poorer health in seniors, and greater rates of chronic disease. A disproportionate amount of calories are consumed as junk food because junk food is generally cheaper and more readily available than healthier foods like fruits and vegetables.

Enhancing physical and economic access to sufficient nutritious food to meet dietary and food preference needs is an essential determinant of good health for the Aboriginal population. Some programs have been initiated by BC's health authorities to provide remote communities with increased access to low-cost, healthy food, as well as dietary information and education. Such programs require further support and coordination.

## Overweight and Obesity

Over the last 25 years, rates of overweight and obesity have increased dramatically worldwide, including Canada and British Columbia. For the Aboriginal population, overweight and obesity has increased significantly. The impact of this epidemic, which affects both adults and children, is profound in terms of its potential health and social consequences.

### Understanding Body Mass Index

Body mass index (BMI) is the standard measure used to categorize overweight and obesity both at the individual and population level. Body mass index is calculated by taking a person's weight (in kilograms) divided by height (in metres squared). Individuals with a BMI of 25–29.9 are considered

overweight, and those with a BMI of 30 and above are considered obese.

Individuals with BMIs of 25 or greater generally have a higher risk of metabolic syndrome,<sup>5</sup> diabetes, coronary heart disease, stroke, cancer, gall bladder disease, arthritis, and other health problems; the higher the BMI, the greater the risk of health problems.

### Body Mass Index Limitations

Given that BMI is based on a calculation of body measure, it is not recommended for use with certain populations. Some of the inaccuracies include:

- **Certain body types:** Athletic, muscular individuals will weigh more and have a higher BMI that does not reflect their true health risk. Individuals who are very lean, very tall, or very short may also have inaccurate BMIs (Tjepkema, n.d.).
- **Growing children and adolescents:** As children grow and develop, their BMI changes and their rates of overweight and obesity do not correspond to the adult categories. Canada has adopted the United States Centers for Disease Control and Prevention (CDC) growth charts, updated in 2000. The revised growth charts provide an improved tool for evaluating the growth of children, based on the growth of both breastfed and formula-fed babies in the United States. The CDC BMI growth charts can be used clinically beginning at 2 years of age, when an accurate stature can be obtained.
- **Ethnic groups:** The BMI rate can miscalculate the risk of obesity-related health complications in non-European populations. Studies have shown that people of Asian, South Asian, and Aboriginal heritage may have a higher risk of health problems at lower BMI measures, while individuals of African descent may not see health problems until a BMI surpasses 26 (Razak et al., 2005). Some have called for BMI rankings to be revised for non-Europeans, setting thresholds of BMI 23 (overweight) and BMI 26 (obese) for Asian populations, and BMI 26 (overweight) and BMI 32 (obese) for those of African descent (Razak et al., 2005).

#### Body Mass Index Measures

**Underweight:** < 18.5

**Normal:** 18.5–24.9

**Overweight:** 25–29.9

**Obese:** ≥30

<sup>5</sup>Metabolic syndrome is characterized by a group of metabolic risk factors in a person, including: abdominal obesity, blood fat disorders, elevated blood pressure, insulin resistance, or glucose intolerance (American Heart Association, n.d.).

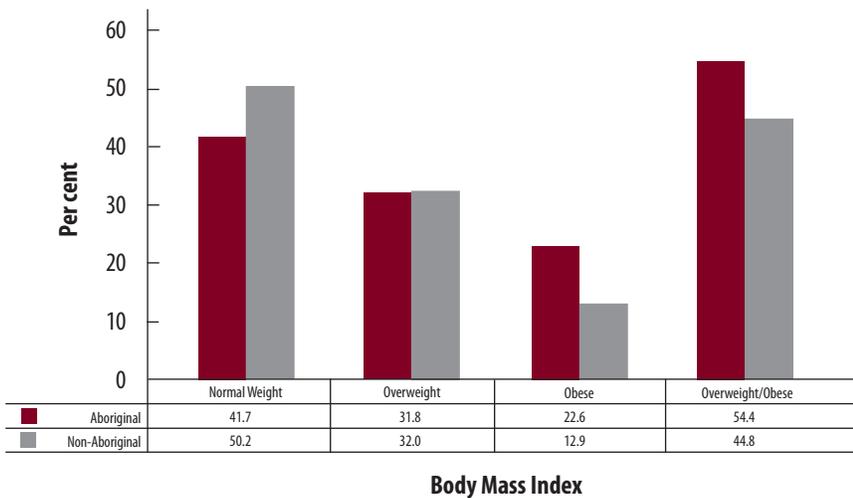
- **Elderly:** As people age they lose muscle mass, making them lighter but not necessarily leaner. Body mass index can misclassify them as being in a healthy range when their actual fat levels put them at risk of health problems.

Despite the limitations of BMI, it is the most convenient and efficient method available to screen populations for overweight and obesity trends. However, due to its weaknesses, BMI should not be used as the sole method to screen individuals in terms of obesity-related health problems. Other important elements should also be considered, including:

- **Waist size:** In women, waists larger than 76.2 cm (30 inches) generally correspond to being overweight; waists over 88 cm (35 inches) correspond to being obese. For men, the measures are 88 cm (35 inches) for overweight and 100 cm (39.5 inches) for obese. This tool is currently recommended for use in conjunction with BMI.
- **Medical tests where warranted:** For individuals with risky BMIs or high waist circumference, tests for high blood pressure, blood lipid levels, and blood sugar levels can confirm elevated health risks such as metabolic syndrome and diabetes.

**Figure 4.8**

**Body Mass Index, Aboriginal and Non-Aboriginal Population, Age 18+, BC, 2005**



Note: Due to rounding, percentages may not add up.

Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

**Overweight and Obesity in the Aboriginal Population**

In 2005, based on Canadian Community Health Survey data, close to 32 per cent of the Aboriginal population (18 years of age and older) reported that they were overweight, and close to 23 per cent reported that they were obese (Figure 4.8). The obesity rate for the Aboriginal population was almost double the rate for the non-Aboriginal population (12.9 per cent). Combining both the overweight and obese categories, over half (54.4 per cent) of the Aboriginal population surveyed reported that they were either overweight or obese.

Being overweight or obese is a risk factor for a number of chronic conditions such as high blood pressure, diabetes, and heart disease. Obesity and Type 2 diabetes are considered major health problems for the Aboriginal population, with over 50 per cent of this population having one of these conditions (Young et al., 2000, as cited in Douketis, Paradis, Keller, & Martineau, 2005).

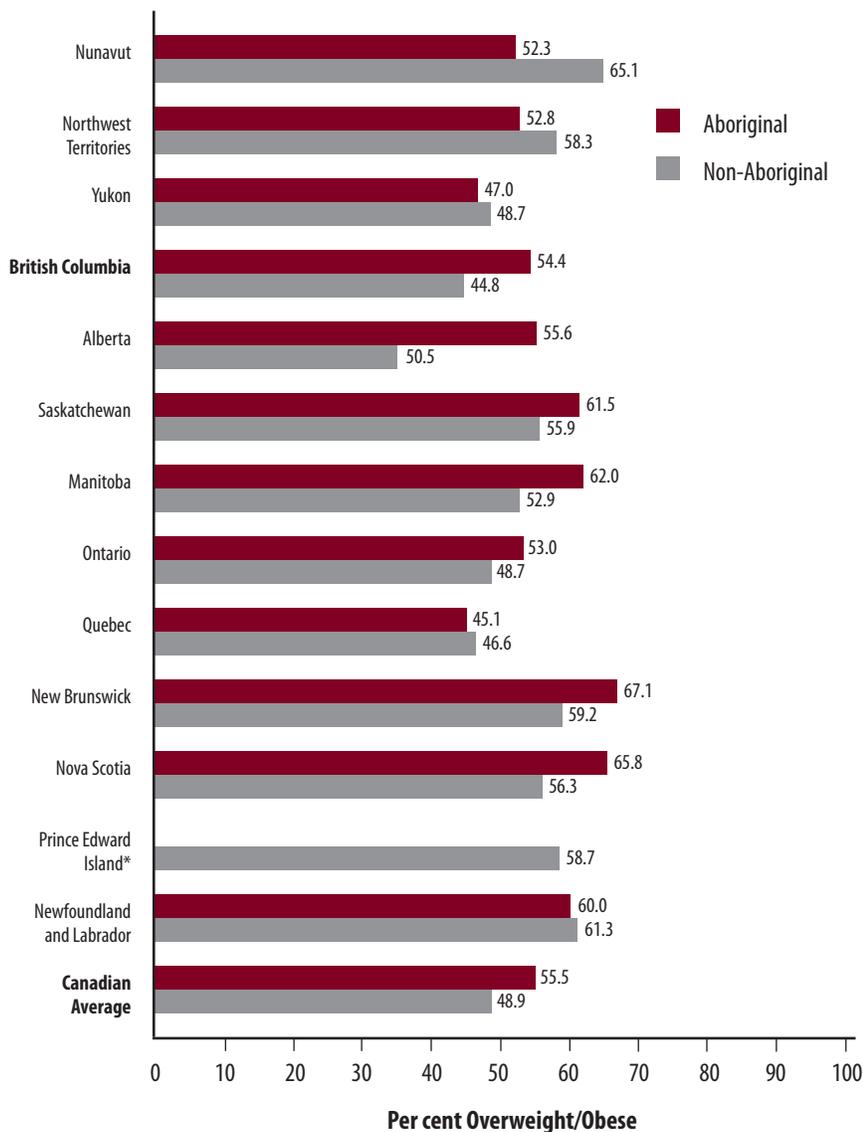
**Nike Air Native N7**

On September 25, 2007, in the United States, Nike unveiled the Nike Air Native N7, a running shoe specifically designed for Native Americans, addressing the unique fit and width requirements of the Native American foot. Nike’s goal is to provide a product that helps Native Americans suffering from health issues to lead physically active lifestyles. Profits from the sale of the Nike Air Native N7 will go towards “Let me Play” programs, which support active and healthy lifestyles on Native American lands.

Source: Nikebiz.com, 2007.

Figure 4.9

### Overweight/Obese, by Aboriginal Identity and Province, Age 18+, 2005



\* Aboriginal data for Prince Edward Island is not reportable due to a small sample size.

Note: The rates of overweight and obese were combined to provide better sample size and more reliable data.

Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 4.9 illustrates the combined rates of overweight and obesity for the Aboriginal population in Canada and individual provinces. The Canadian average for the Aboriginal population (55.5 per cent) was higher than the average for the non-Aboriginal population (48.9 per cent). The highest rates of overweight and obesity among the Aboriginal population were reported in New Brunswick and Nova Scotia (67.1 and 65.8 per cent respectively), followed closely by Manitoba and Saskatchewan (62.0 and 61.5 per cent). BC's rate was 54.4 per cent, just below the Canadian average.

Appropriate public health interventions can help prevent chronic disease. Research suggests effective primary and secondary interventions<sup>6</sup> to address chronic disease risk factors should be directed at critical stages of life. This includes targeting children and youth, given the evidence of significant challenges for diet, nutrition, and chronic disease in this age group.

<sup>6</sup> Primary interventions involve actions that prevent development of chronic disease through promoting healthy lifestyles. Secondary interventions involve early diagnosis and delaying the progress of the disease (Last, 1980).

### **Wellness Shield**

Sometimes it can take more than just knowledge of the importance of physical activity and proper nutrition to prevent or manage chronic diseases such as diabetes. The psychological impact of residential schools and physical and emotional abuse can make it difficult for Aboriginal people to focus on maintaining or improving their health. Vancouver Island Health Authority's Aboriginal-focused diabetes team, consisting of a diabetes educator and dietitian, travels to Aboriginal communities on the South Island to provide health promotion, prevention, and treatment/management support for people with diabetes. There are currently approximately 180 diabetes clients served by the team, spread across 9 reserves and the urban areas in and around Victoria.

In the course of their work, the team found that psychological barriers such as depression and post-traumatic stress disorder were hampering individuals' attempts to effectively manage their health. As a result, in 2006, the Wellness Shield project was born; a psychologist joined the team to help individuals work through the issues that were preventing them from improving their health.

The project name comes from the traditional Aboriginal view of health and human nature, reflecting an interaction between the four aspects of life: mental, spiritual, emotional, and physical. The project's approach is to work with clients, their families, and the communities, using resources from these four aspects to help "shield" clients against the complications of diabetes.

The project began as a pilot with a small group of clients (35–40). The psychologist was introduced to Band, community, and health unit representatives, and worked with community members, including Elders, to build relationships and develop culturally appropriate strategies.

The most common presenting problems have been exceptional family stress, substance abuse, and post-traumatic stress disorder and depression related to residential school experiences. For some Elders with diabetes, these issues have been made worse by social isolation and other medical conditions.

The community, peers, and physicians have supported this approach. Including a psychologist on the team has allowed the remaining team members to focus on the physical health of their clients. The fact that this service is on-site (within the home or on the reserve) has had a positive effect on service utilization, and is crucial to effective engagement of the client in treatment. Overall, the project has shown the feasibility of providing culturally appropriate psychotherapy to improve the health outcomes of Aboriginal diabetes clients.

Sources: McGougan, D., & Bradfield, T., personal communication, March 26, 2007; Vancouver Island Health Authority, Aboriginal Health, n.d.

### **Honour Your Health Challenge**

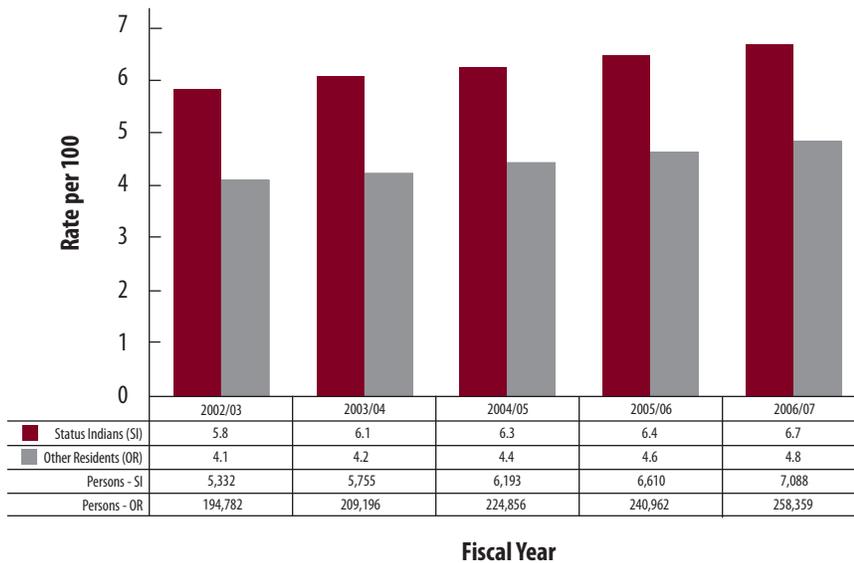
The Honour Your Health Challenge (HYHC), an Aboriginal ActNow BC initiative funded by the Ministry of Healthy Living and Sport, is a province-wide, community-based health initiative that encourages individuals and communities to live active and healthy lives. The Challenge blends Aboriginal cultural and traditional knowledge with best practices from mainstream health programs, focussing on strategies to increase healthy eating and physical activity, reduce tobacco misuse, and support healthy pregnancies. Participation has increased from 1,000 to over 7,500 since the program began in 2001.

HYHC coordinators gather annually for a provincial training event. Coordinators may then apply for a grant to run a community challenge event from January through March. In 2008/2009, 250 community grants were approved, an increase from 187 in 2007/2008.

The HYHC Aboriginal InTraining Program, offered in partnership with SportMedBC, is a 13-week program that supports participants of all fitness levels, to prepare to walk or run a 10K event. In 2008/2009, over 2,400 individuals participated in the InTraining program, and 1,500 participants registered for the Vancouver Sun Run.

Figure 4.10

### Diabetes, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007

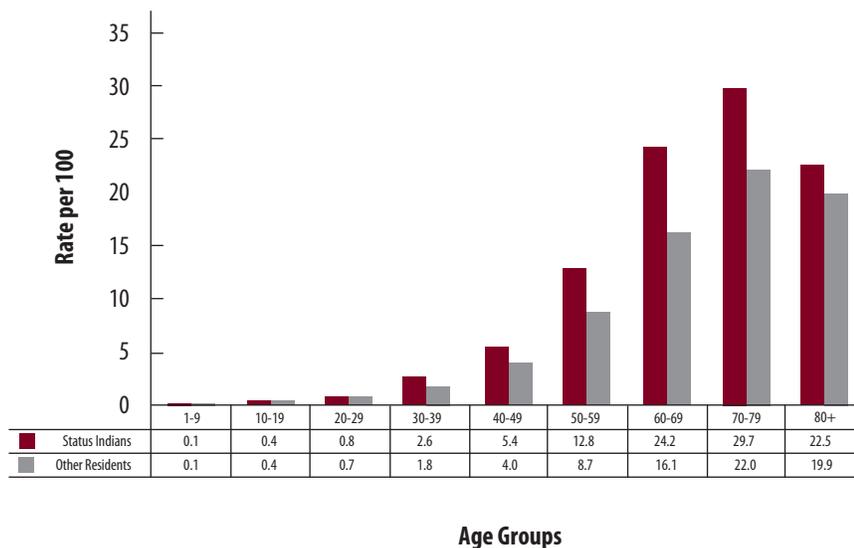


Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 4.11

### Diabetes, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

## Analysis of Selected Chronic Diseases

The data presented on diabetes and other chronic diseases were produced using the National Diabetes and Chronic Disease Surveillance System software. This national surveillance system is a result of collaboration among the provinces, territories, Aboriginal partners, and the Public Health Agency of Canada, to improve the collection of data in order to measure the prevalence, incidence, and mortality rates of diabetes, diabetes-associated diseases, and other chronic diseases for Canada as a whole and for the provinces and territories.

### Diabetes

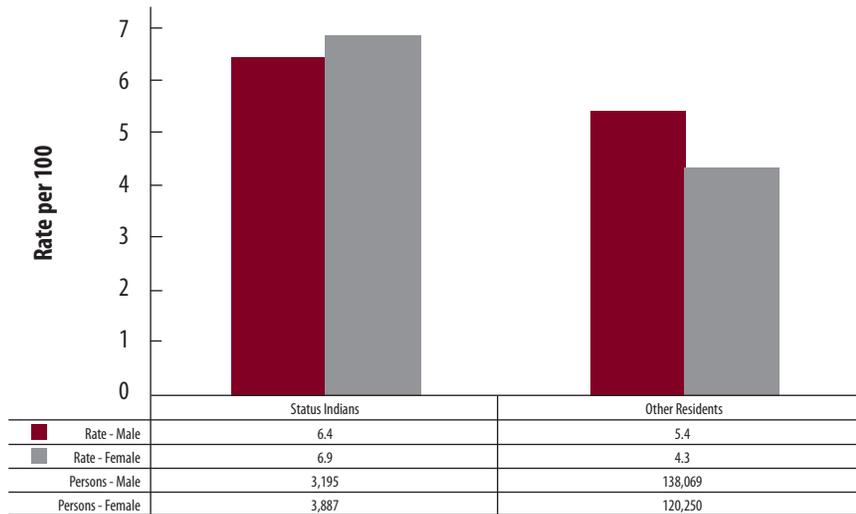
The prevalence of diabetes among the First Nations population in Canada has increased significantly in the last 50 years (Health Canada, 2000). At the end of fiscal year 2006/2007, there were approximately 7,100 Status Indians (3,200 males and 3,900 females) living with diabetes in British Columbia. This number has been increasing by approximately 450 persons per year in recent years.

In 2006/2007, the age-standardized diabetes prevalence rate was 6.7 per cent for the Status Indian population compared to 4.8 per cent for other BC residents (Figure 4.10). The Status Indian rate remains about 40 per cent higher than the rate for other residents.

The Status Indian population is affected by diabetes at a younger age; in 2006/2007, the age-specific rates were higher for Status Indians across all age groups beyond age 30 (Figure 4.11). For

**Figure 4.12**

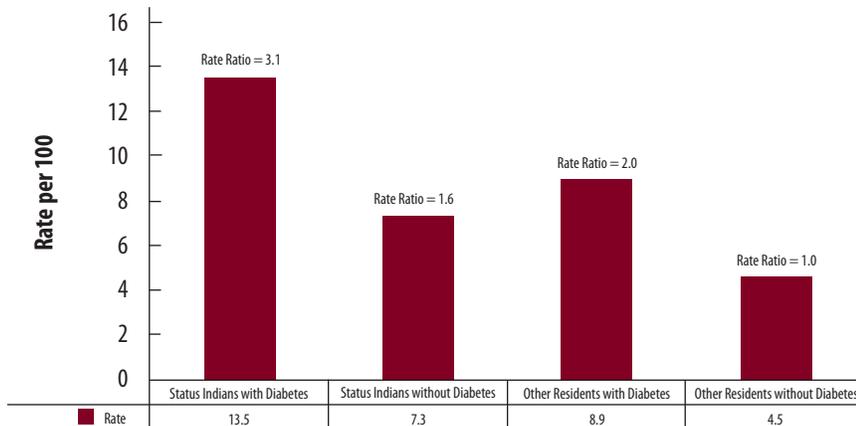
**Diabetes, Age-Standardized Prevalence Rate, by Gender, Status Indians and Other Residents, BC, 2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Figure 4.13**

**Diabetes Mortality Rate, Status Indians and Other Residents, BC, 2002/2003–2006/2007**



Note: Rate ratio is calculated by dividing the mortality rate for each group by the mortality rate for Other Residents Without Diabetes.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

example, the diabetes rate for Status Indians in the 60–69 age group was higher than the rates in the 70–79 and 80+ age groups of other residents.

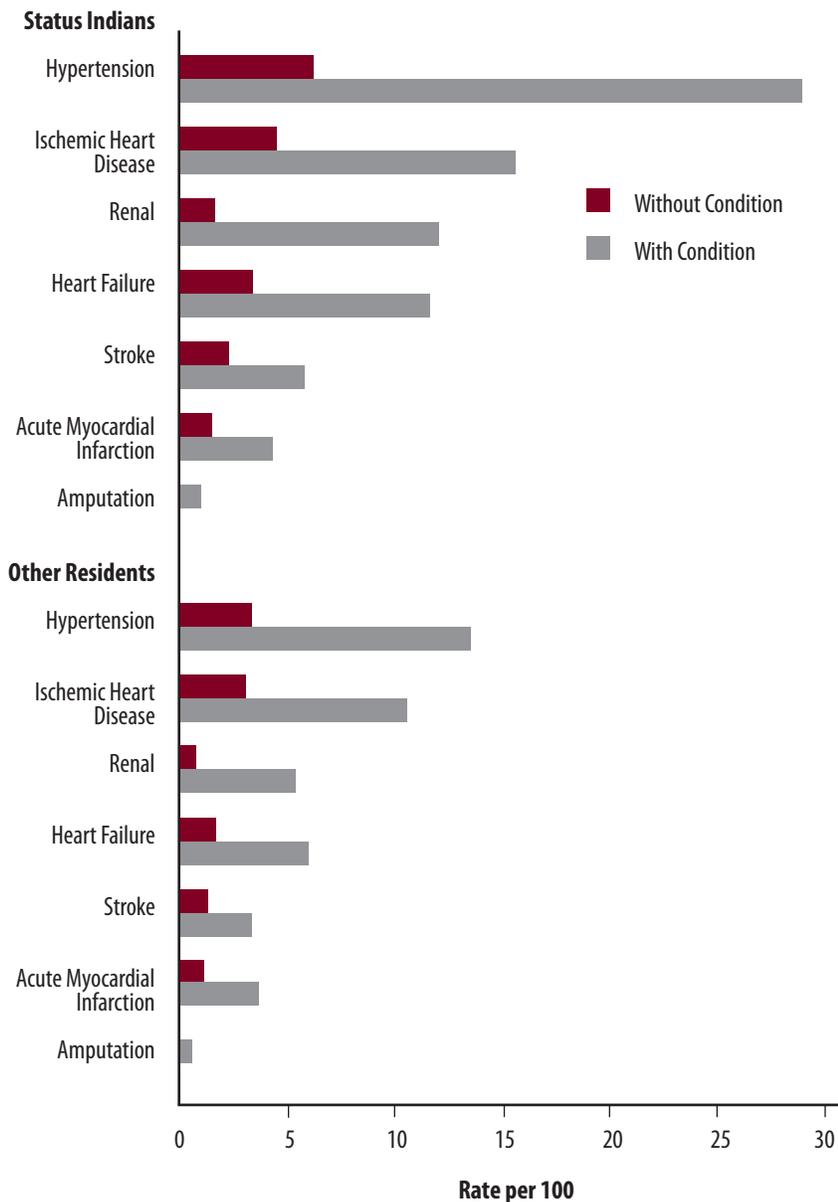
In 2006/2007, the gap in the diabetes rate between female Status Indians and other female residents was substantially larger than the gap between the male populations. The prevalence rate for female Status Indians was higher than for male Status Indians, although the difference was not statistically significant. This finding is opposite to the pattern for the other resident population, where the rate was higher for males than for females (Figure 4.12). The difference may be attributable to the fact that Status Indian males are less likely to be diagnosed compared to Status Indian females. This is also supported by the fact that the prevalence of cardiovascular co-morbidities often associated with diabetes (ischemic heart disease and stroke) is greater for Status Indian males than females.

Aggregate regional data for 2002–2006 show that mortality directly due to diabetes was substantially higher (almost double) among the Status Indian population than other residents. While the rates were higher for Status Indians than other residents in all of the health authorities, Fraser, Vancouver Coastal, and Vancouver Island Health Authorities had the largest gaps between the populations.

Similarly, the mortality rate from all causes of death for individuals with diabetes (both Status Indians and other residents) was almost double the mortality rate for individuals without diabetes from 2002/2003–2006/2007.

Figure 4.14

**Hospitalized Co-morbidity Rate, Status Indians and Other Residents With and Without Diabetes, BC, 2002/2003–2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

During the same period, the mortality rate for Status Indians with diabetes was nearly twice the mortality rate for Status Indians without diabetes (Figure 4.13).

Persons with diabetes frequently suffer from serious complications and co-morbid conditions (co-existing medical conditions) at a rate much higher than persons without diabetes. These complications and co-morbid conditions contribute to the elevated rate of mortality, and many times, they can be attributed to undiagnosed or poorly controlled diabetes. Based on hospitalizations only for the period 2002/2003–2006/2007, Status Indians with diabetes, compared to Status Indians without diabetes, had a rate of hypertension that was nearly 5 times greater, rates of heart failure and ischemic heart disease that were a little over 3 times greater, a rate of renal disease that was 7 times greater, a rate of stroke that was 2.5 times greater, a rate of acute myocardial infarctions (heart attacks) that was 3 times greater, and a rate of amputations that was 42 times greater (Figure 4.14).

### **Mount Currie Health Centre – Diabetes Program Update**

The diabetes program at Mount Currie Health Centre in Mount Currie, British Columbia, profiled in the 2004 Provincial Health Officer's Report, *The Impact of Diabetes on the Health and Well-being of People in British Columbia*, continues to be very active. Out of approximately 1,500 residents on the reserve, 55 are known to have Type 2 diabetes. The program focuses on physical activity and nutrition as ways to prevent and manage diabetes; in addition, it looks at spiritual issues as another way to help people improve their health and well-being.

The program's Neighbourhood House is a gathering place. People in the diabetes program meet once a week to eat together and learn about nutrition. They have opportunities to monitor blood sugar levels, blood pressure, weight, and body mass index. There is also a gym, with a variety of workout equipment, and a full-time recreation director.

Keeping an Aboriginal focus to the diabetes program is important. For example, once a month, Mount Currie hosts a clinic for people in the program. The clinic runs for two to three hours, and during that time clients have the opportunity to visit the foot-care nurse, chat with the community health nurse about diabetes management, see the physiotherapist about exercise, listen to guest speakers, and share stories amongst themselves about their experiences in being diabetetic. One of the local Pemberton doctors visits four clients during the two-hour clinic. The longer appointment times (30 minutes each) fit well with the cultural needs of the patients, as there is more opportunity to build in-depth, one-on-one relationships.

Another example is the all-day session provided to program participants by the Squamish Hospital education team. The session is similar to ones provided in Vancouver to both Aboriginal and non-Aboriginal individuals, but participants in the Squamish session found it less intense than going to Vancouver, and liked the Aboriginal focus of the day.

In 2007, Mount Currie diabetes staff were trained in the Chronic Disease Self Management Program run by the University of Victoria. They have gone on to teach a six-week course to community members.

Sources: CBC Radio, 2007; Samuels, A., personal communication, March 2007.

### **Diabetes Screening – Hartley Bay**

The diabetes screening project in the remote First Nations community of Hartley Bay came about as a result of the Brighter Smiles initiative, an oral health program begun three years earlier as a collaboration between the community and the Department of Pediatrics at the University of British Columbia (UBC) (see Brighter Smiles information box in Chapter 3). Part of that program involved the development of well-child clinics. When a child visiting a clinic was diagnosed with Type 2 diabetes, the community consulted with the UBC investigators about the possibility of screening all of the community's children and teens for Type 2 diabetes. Community screening is an important way to increase awareness of issues and to promote change.

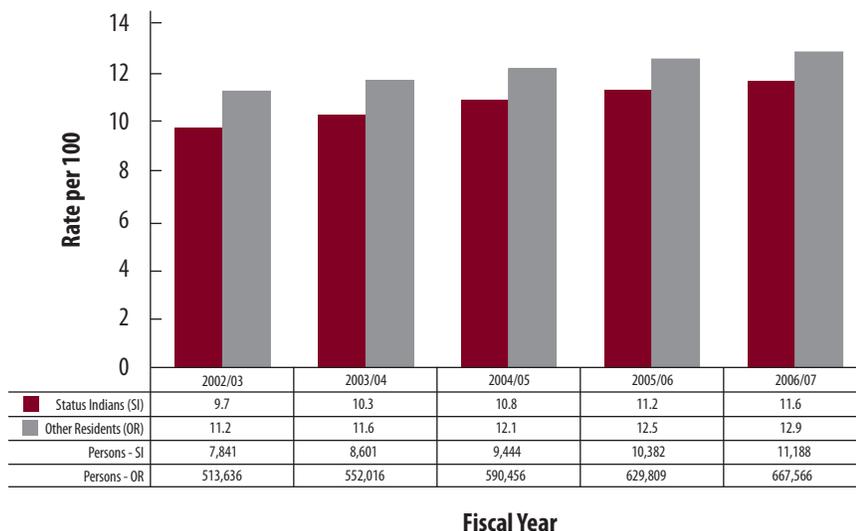
Two trips in advance of the screening laid the groundwork for the initiative. The first trip involved discussing the project with the community and obtaining commitment from community leaders. Investigators met with Elders and hosted a dinner for the community where the project was presented. Community support for the project was high. The second trip involved discussing the project details, obtaining consent, and scheduling subjects for screening. In September 2006, a third trip was made to conduct the screening. All children 6–18 years in the community were eligible.

The previous relationship between the UBC medical staff and the community established through the Brighter Smiles program made this project possible. Confidence and trust were critical components to the success of this initiative. The screening was very successful: 100 per cent consent was obtained and data were compiled on 85 per cent of the children.

Sources: Panagiotopoulos, Rozmus, Gagnon, & Macnab, 2007; Thomson, 2006; Wahi, Klimek, Macnab, & Panagiotopoulos, 2007.

Figure 4.15

### Hypertension, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007

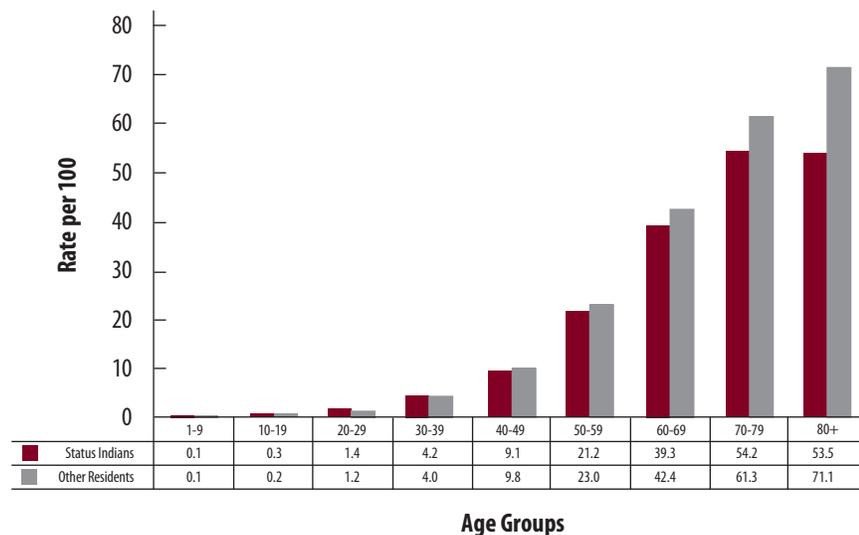


Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 4.16

### Hypertension, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

## Circulatory System Diseases

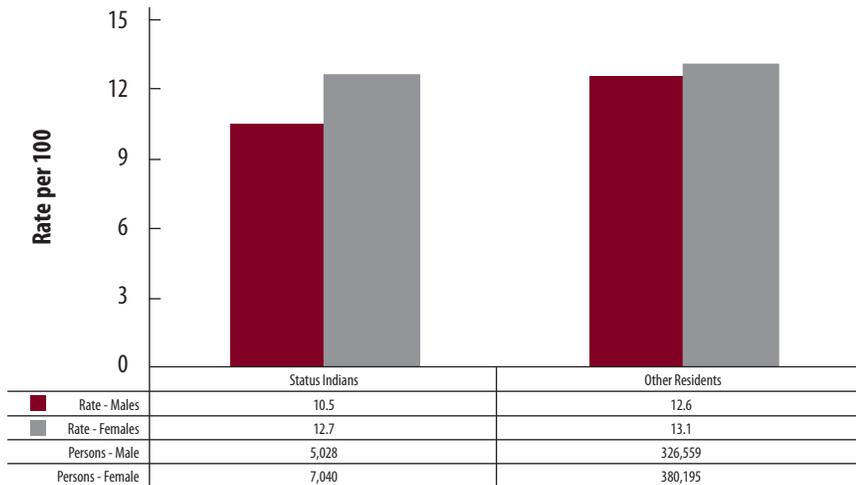
### Hypertension

Hypertension (high blood pressure) is an important risk factor for ischemic heart disease and stroke. Hypertension is the most common of the conditions examined in this section, and is often a co-morbidity of diabetes. The combination of poorly controlled blood pressure and blood sugar is particularly dangerous. In 2006/2007, of the approximately 265,000 individuals (both Status Indians and other residents) with diabetes, around 60 per cent also had hypertension.

From 2002/2003, the age-standardized prevalence rate of hypertension was about 10 per cent lower in the Status Indian population compared to other residents (Figure 4.15). This is somewhat of an anomaly, since other circulatory system conditions and diabetes are more common among Status Indians, and there is no biological reason to explain why their risk of hypertension should be lower. One possible explanation for this difference is that Status Indians may not have their blood pressure checked as often as other residents, and hence have a higher rate of undiagnosed hypertension. Over 11,000 Status Indians were living with hypertension in 2006/2007, and the average yearly increase in this number is about 850 persons. The age-specific rates of hypertension in Status Indians are consistently lower than the rates for other residents starting at age 40 (Figure 4.16).

**Figure 4.17**

**Hypertension, Age-Standardized Prevalence Rate, by Gender, Status Indians and Other Residents, BC, 2006/2007**

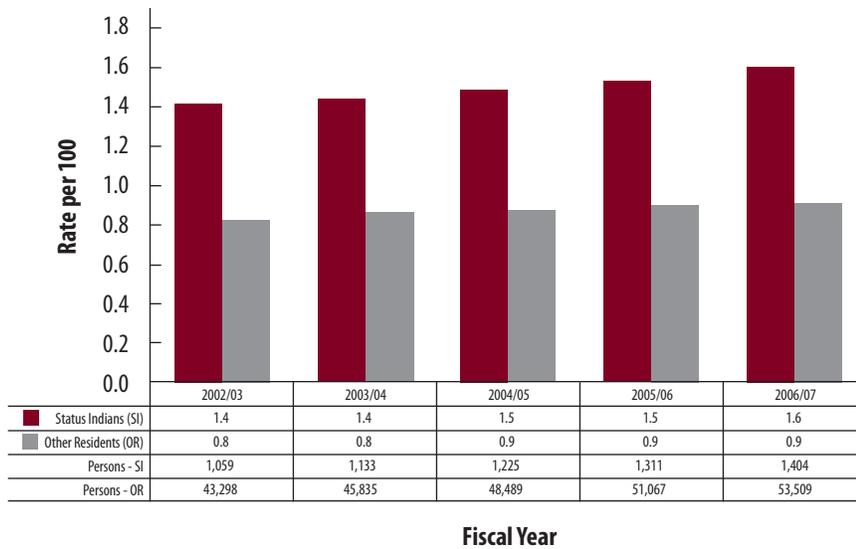


Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

For both Status Indians and other residents, the rate of hypertension was higher among females than males in 2006/2007. However, the gender difference was greater in the Status Indian population (Figure 4.17). While the rates among females were similar in both populations, the rate for males was substantially lower among Status Indians. As noted earlier, this may reflect a tendency for Status Indian males to have their blood pressure checked or to have routine medical examinations less often. Since Status Indians males have a greater rate of hypertension complications such as ischemic heart disease and stroke, these data suggest that hypertension may be even less diagnosed in male Status Indians than in females.

**Figure 4.18**

**Stroke, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007**



Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

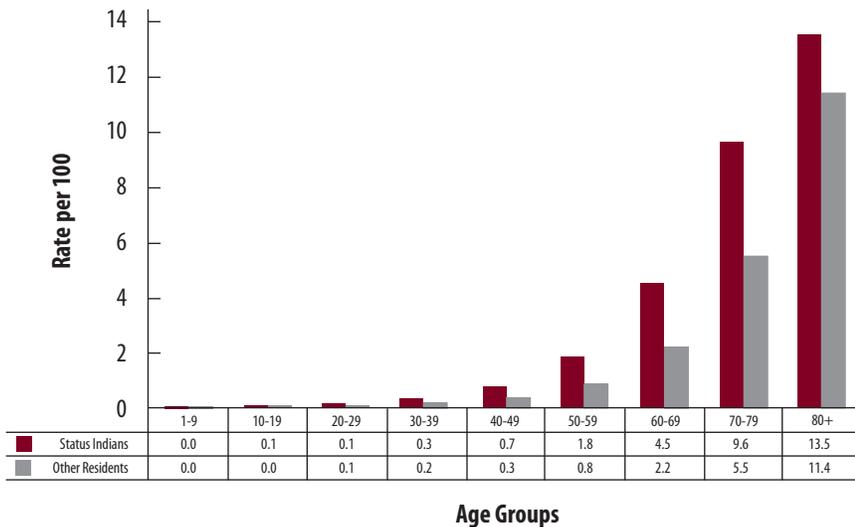
**Stroke**

Stroke is a condition in which damage to brain cells results from a blood clot in, or bleeding from, a blood vessel supplying the brain. The symptoms can range from mild transitory weakness to permanent severe paralysis or death. The risk of death due to stroke is high, and for those who survive a stroke, there is a significant risk of disability and elevated risk of subsequent stroke. Hypertension is thought to account for 35 to 50 per cent of strokes (Whisnant, 1996).

In 2006/2007, the age-standardized prevalence rate of stroke (those living with the effects of a previous stroke) among Status Indians was 70 per cent higher compared to other residents (Figure 4.18). In 2006/2007, there were about 1,400 Status Indians living with the effects of a prior stroke, and the annual increase in recent years was about 90 persons.

**Figure 4.19**

**Stroke, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007**



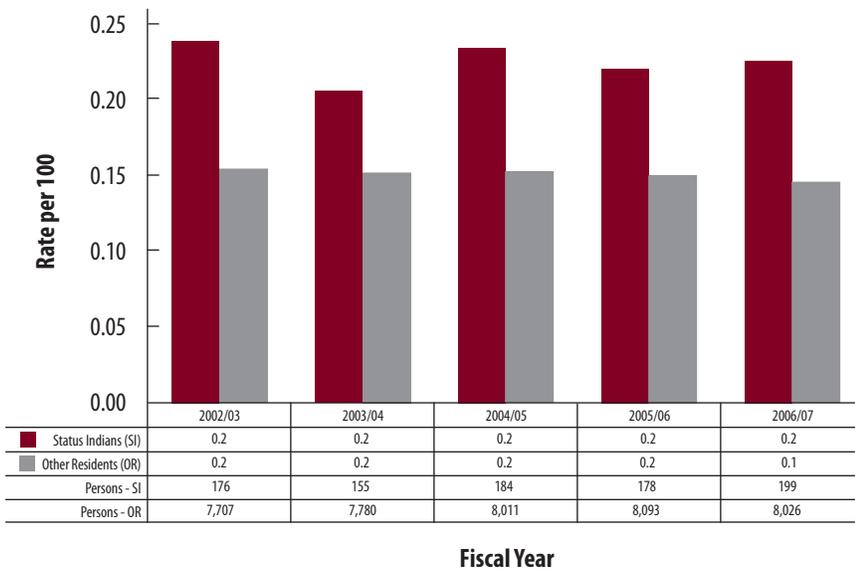
Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

In 2006/2007, the age-specific prevalence rate of stroke in Status Indians was consistently higher in all age groups compared to other residents (Figure 4.19).

From 2002/2003 to 2006/2007, the age-standardized incidence rate of stroke (the rate of first-time strokes) was much higher for the Status Indian population compared to other residents (Figure 4.20).

**Figure 4.20**

**Stroke, Age-Standardized Incidence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007**

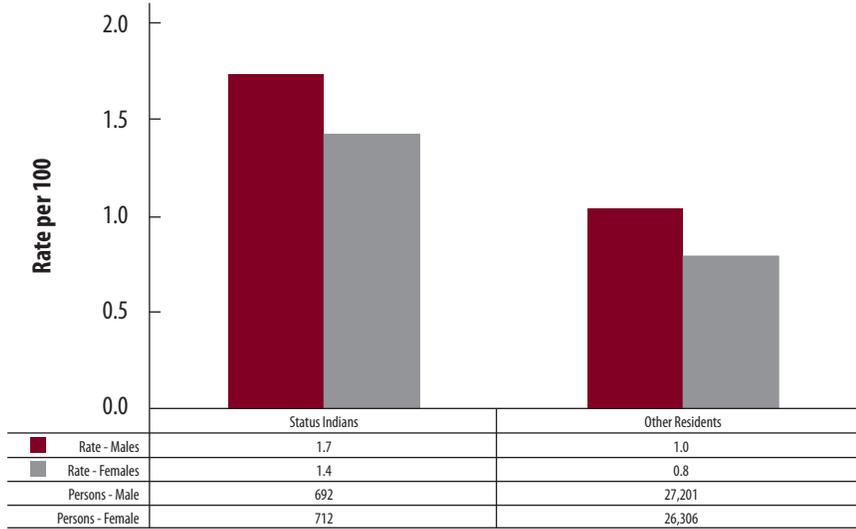


Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Figure 4.21**

**Stroke, Age-Standardized Prevalence Rate, by Gender, Status Indians and Other Residents, BC, 2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

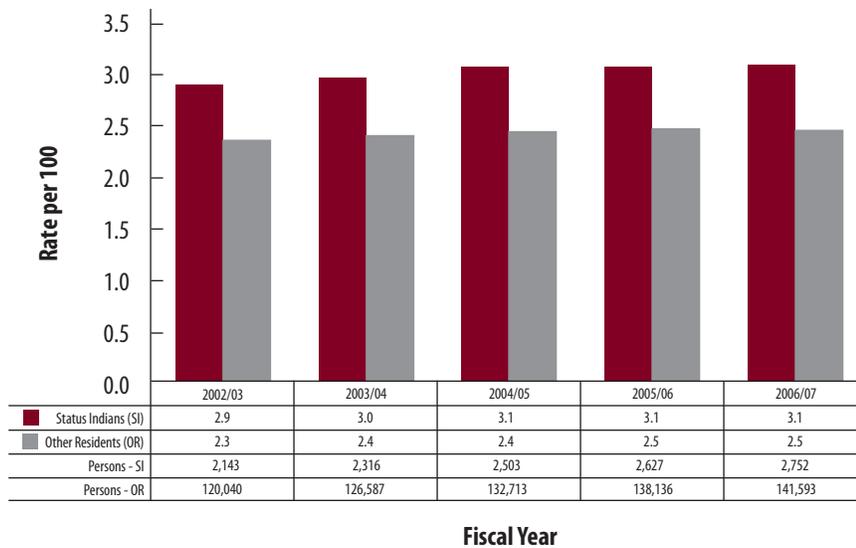
In 2006/2007, males had higher age-standardized rates of strokes in both the Status Indian and other resident populations (Figure 4.21). Rates for both males and females were about 70 to 75 per cent higher in the Status Indian population than in the other resident population.

**Ischemic Heart Disease**

Ischemic heart disease (IHD) is characterized by narrowing and blockages of the blood vessels leading to the tissue of the heart. In some cases, these blockages can lead to heart attacks (impairment or loss of heart muscle tissue) and death. The age-standardized prevalence rate of IHD is about 25 per cent higher among Status Indians than other residents, and has been relatively stable in the last three years. In 2006/2007, 2,752 Status Indians were living with IHD, and the annual increase in recent years was about 150 persons (Figure 4.22).

**Figure 4.22**

**Ischemic Heart Disease, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007**

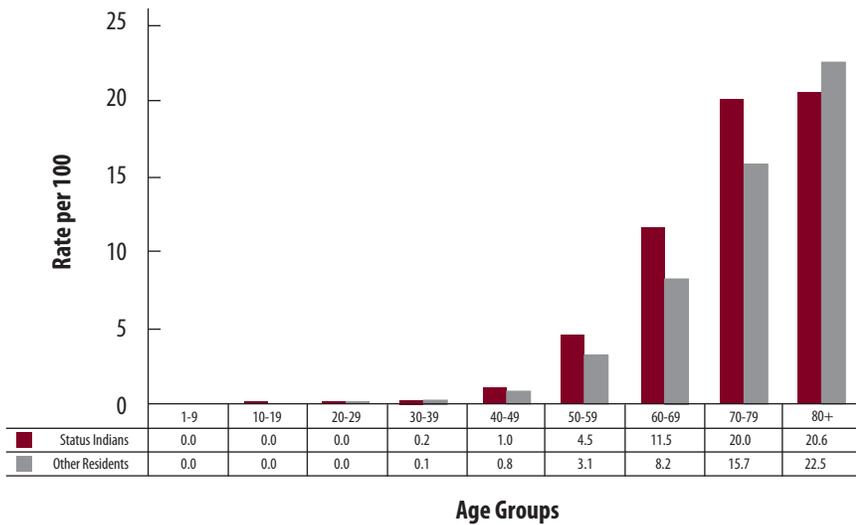


Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Figure 4.23**

**Ischemic Heart Disease, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007**



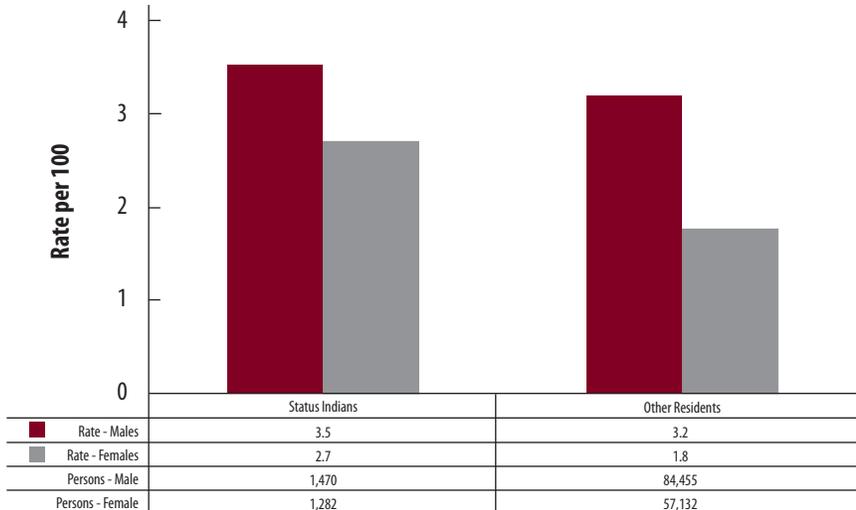
Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Compared to other residents, the Status Indian population had a higher age-specific prevalence rate of IHD across all age groups, with the exception of the 80+ age group (Figure 4.23).

In 2006/2007, both Status Indian and other resident females had a lower rate of IHD than males, although the gender gap was smaller in the Status Indian population (Figure 4.24). While rates for males in the two populations were similar, there was a large gap between the rates for females in the two populations, with the rate for female Status Indians being 50 per cent higher than the rate for other female residents. This higher rate among female Status Indians may be related to the higher prevalence of diabetes among this population compared to other female residents.

**Figure 4.24**

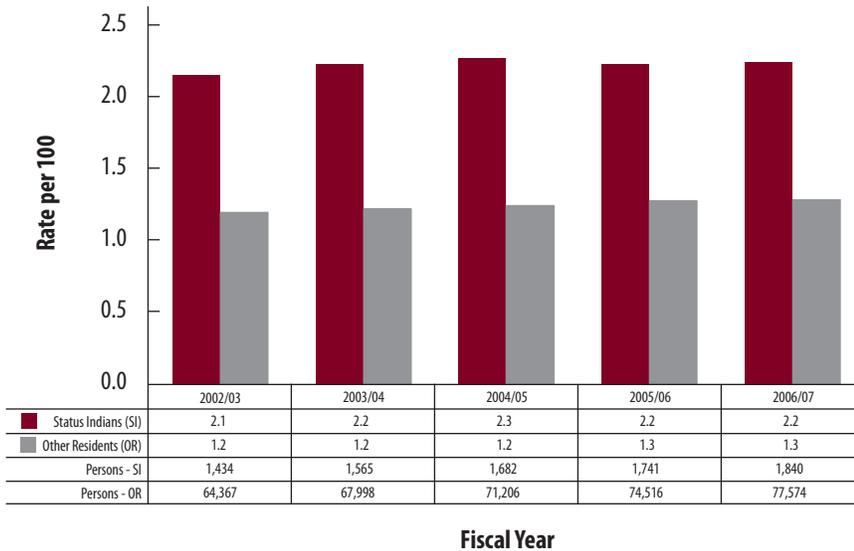
**Ischemic Heart Disease, Age-Standardized Prevalence Rate, by Gender, Status Indians and Other Residents, BC, 2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Figure 4.25**

**Congestive Heart Failure, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007**



Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Congestive Heart Failure**

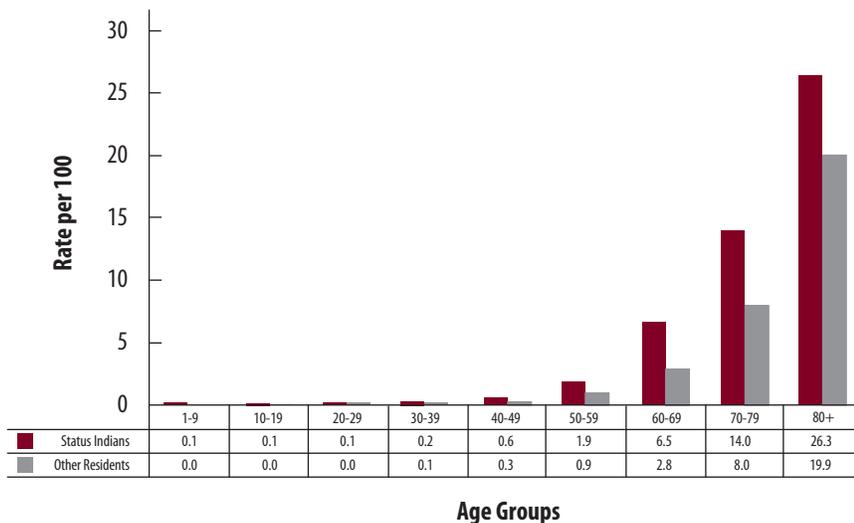
Congestive heart failure (CHF) usually results when ischemic heart disease causes a structural or functional problem that hinders the heart’s ability to fill with blood and pump it to other parts of the body. This can result in fluid pooling in the lungs, abdomen, and lower extremities, causing swelling in the feet and legs (Heart & Stroke Foundation, n.d.). As these changes can cause impaired heart function, affected individuals find it increasingly difficult to perform ordinary daily activities without becoming short of breath.

From 2002/2003 to 2006/2007, the age-standardized prevalence rate for CHF among Status Indians was about 75 per cent higher than the rate for other residents, although both rates have been relatively stable in recent years (Figure 4.25). Over 1,800 Status Indians were living with congestive heart failure in 2006/2007, and this number has increased by about 100 persons per year in the last four years.

In 2006/2007, the age-specific prevalence rate of CHF for Status Indians was higher in all age groups compared to other residents. The majority of cases generally occur in those people 50 years of age and older (Figure 4.26).

**Figure 4.26**

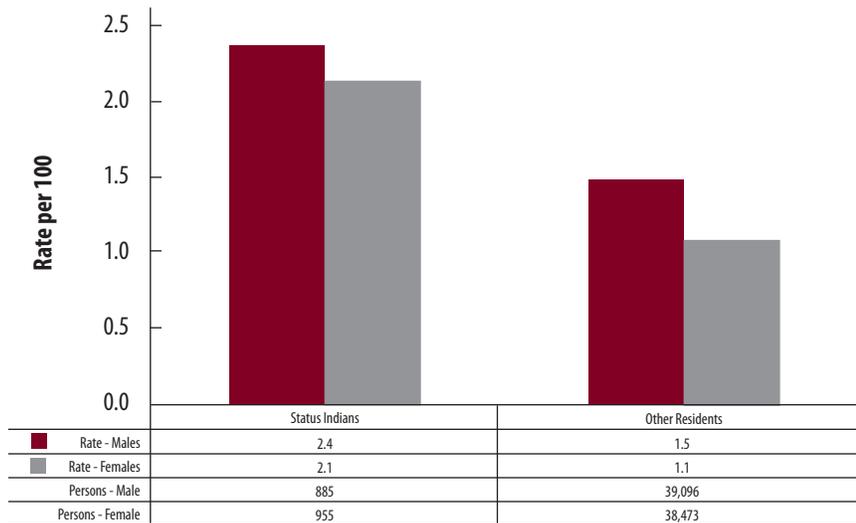
**Congestive Heart Failure, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 4.27

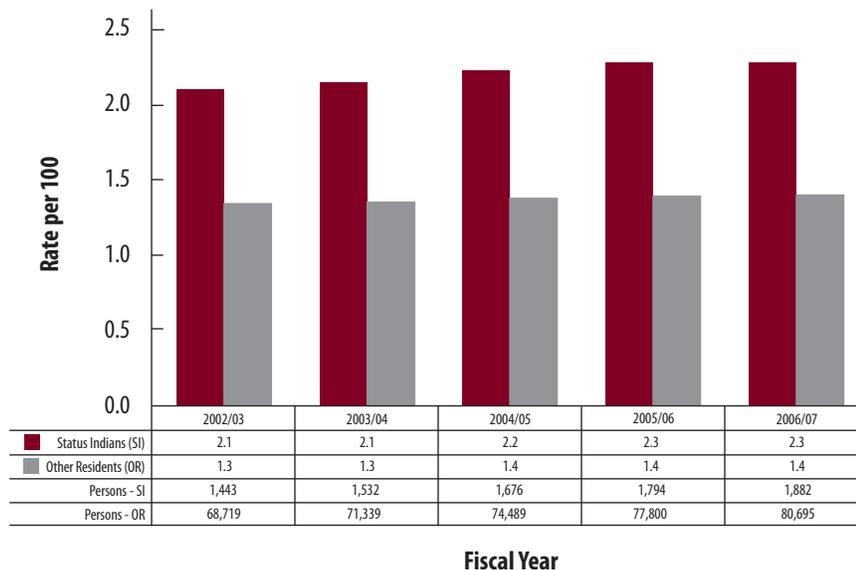
### Congestive Heart Failure, Age-Standardized Prevalence Rate, by Gender, Status Indians and Other Residents, BC, 2006/2007



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 4.28

### Chronic Obstructive Pulmonary Disease, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007



Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

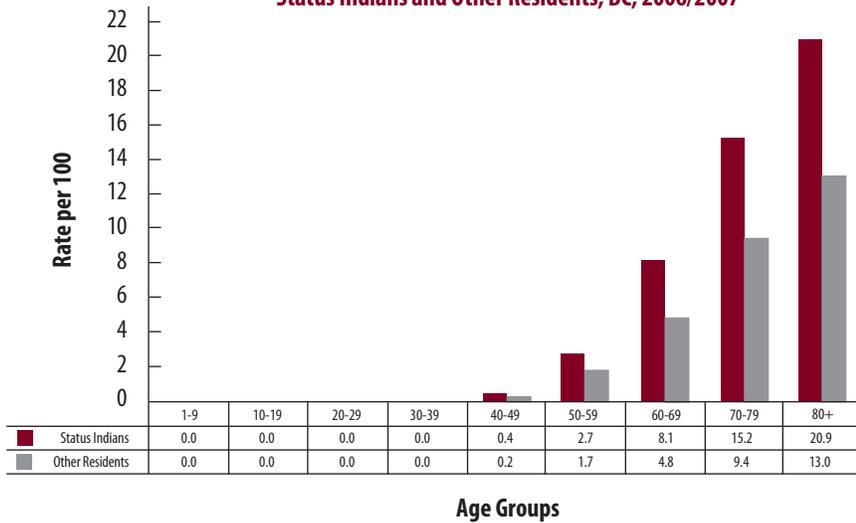
In 2006/2007, the age-standardized prevalence rate of CHF among Status Indians was 60 per cent higher for males and 90 per cent higher for females than the respective rates among other residents (Figure 4.27). The relatively higher rates in female Status Indians compared to other residents may be a consequence of their higher rates of diabetes and ischemic heart disease.

### Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD), or chronic bronchitis and emphysema, is a non-reversible narrowing of the airways that limits air flow to and from the lungs (Rabe et al., 2007). Many cases are caused by smoking, or exposure to smoke, and some may be associated with occupational exposure. The age-standardized prevalence rate among Status Indians was 60 per cent higher than the rate for other residents, although the rates have been relatively stable in the last two years. Approximately 1,900 Status Indians were living with COPD in 2006/2007, and this number has increased by about 100 persons per year over the last number of years (Figure 4.28).

**Figure 4.29**

**Chronic Obstructive Pulmonary Disease,  
Age-Specific Prevalence Rate,  
Status Indians and Other Residents, BC, 2006/2007**



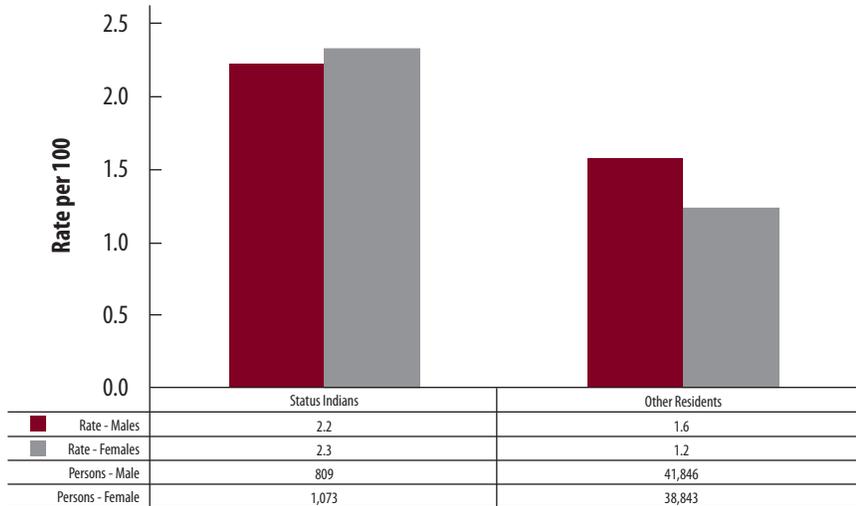
Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

COPD largely affects the older adult population (age 50+), and the age-specific prevalence of COPD was significantly higher in all age groups for Status Indians in 2006/2007 (Figure 4.29).

In 2006/2007, the age-standardized prevalence rates for Status Indian males and females were roughly equal. Compared to other residents, the rate for male Status Indians was about 40 per cent higher, while the rate for female Status Indians was about 90 per cent higher (Figure 4.30).

**Figure 4.30**

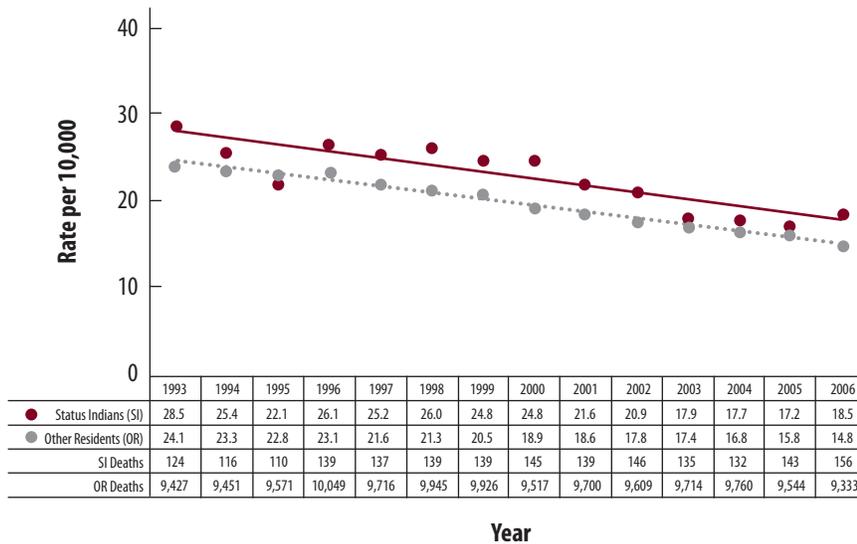
**Chronic Obstructive Pulmonary Disease,  
Age-Standardized Prevalence Rate,  
by Gender, Status Indians and Other Residents, BC, 2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 4.31

**Diseases of the Circulatory System,  
Age-Standardized Mortality Rate,  
Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: I00-199.

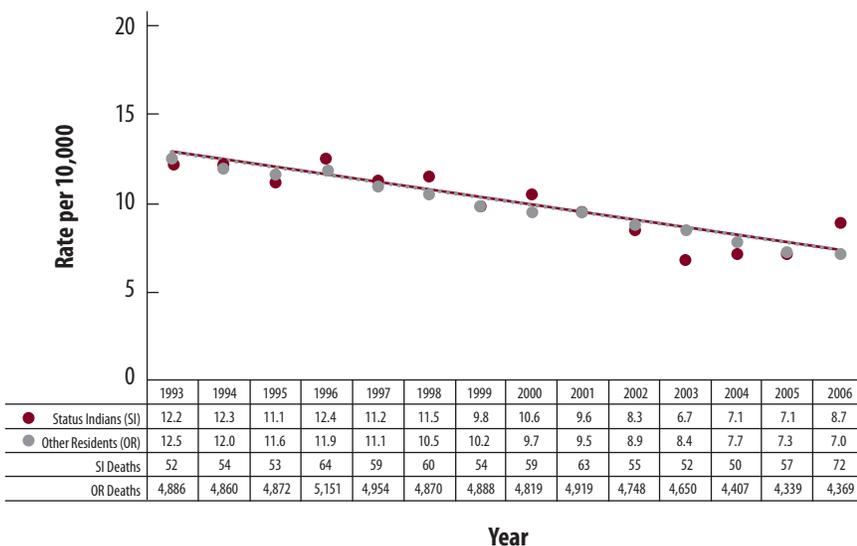
Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Deaths due to Circulatory System Diseases**

Circulatory system diseases include conditions such as ischemic (or coronary) heart disease, cerebrovascular disease (mainly stroke), high blood pressure, and other cardiovascular diseases. From 1993 to 2006, the ASMR for circulatory system diseases significantly decreased for both the Status Indian population and other residents. The ASMR for the Status Indian population decreased from 28.5 to 18.5 per 10,000, while the rate declined from 24.1 to 14.8 per 10,000 for other residents. While it is encouraging that the ASMR for circulatory system diseases declined for the Status Indian population from 1993 to 2006, the rate was still higher for Status Indians than for other residents in every year except 1995 (Figure 4.31).

Figure 4.32

**Ischemic Heart Disease, Age-Standardized Mortality Rate,  
Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: I20-I25.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

Aggregate regional data for 2002–2006 show that the rates for Status Indians were significantly higher than the rates for other residents in Vancouver Coastal and Vancouver Island Health Authorities, as well as in BC as a whole, with the provincial gap being approximately 12 per cent between the two populations.

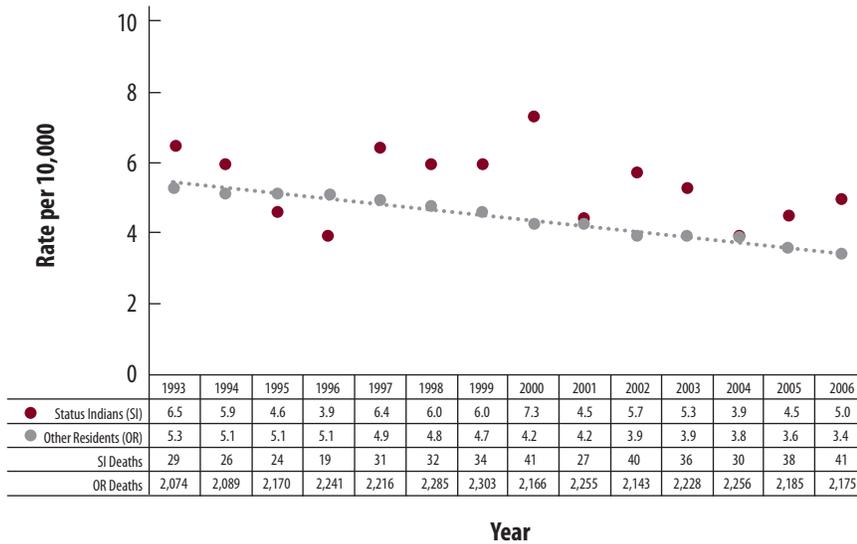
**Ischemic Heart Disease**

The mortality for ischemic heart disease, which includes heart attacks, was similar for Status Indians and other residents, with a significant declining trend for both populations (Figure 4.32).

Aggregate regional data for 2002–2006 show that the only significant difference was in Fraser Health Authority, where the Status Indian rate was much lower than the rate for other residents. Overall, there is no gap between the two populations for ischemic heart disease mortality.

**Figure 4.33**

**Cerebrovascular Disease, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: I60-I69.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

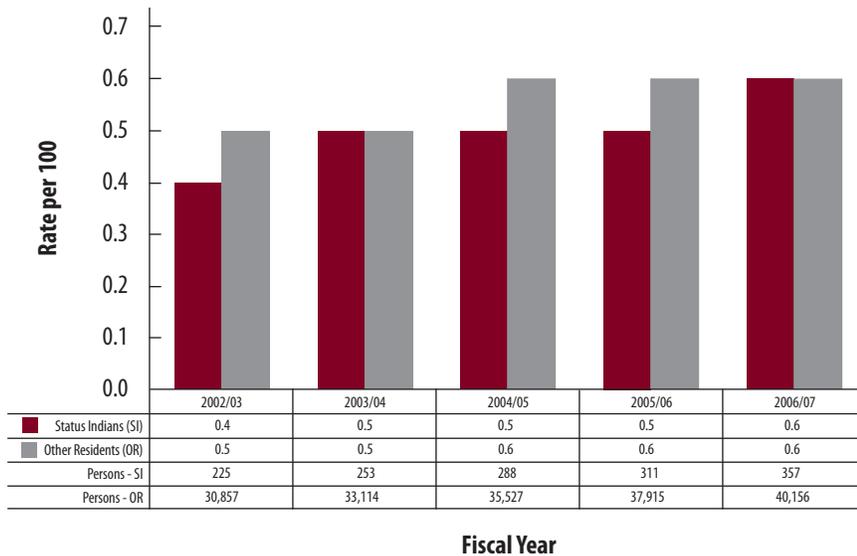
**Cerebrovascular Disease**

Since 1993, there has been a significant declining trend in the ASMR for cerebrovascular disease (mainly stroke) for other residents; in contrast, there has been no trend in the rate for Status Indians. The rate for Status Indians was higher than the rate for other residents in most years (Figure 4.33).

Aggregate regional data for 2002–2006 show that the stroke mortality rates for Status Indians were higher in most health authorities, although the differences between the two populations were not statistically significant. For BC as a whole, there was a statistically significant gap between the two populations, as Status Indians had a 30 per cent higher stroke mortality rate than other residents.

**Figure 4.34**

**Dementia, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007**



Note: Totals include unknown gender.

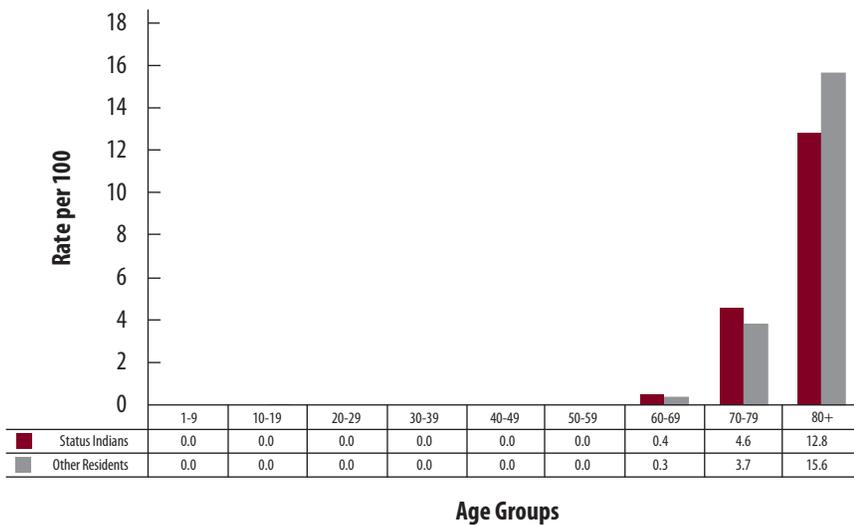
Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Dementia**

Dementia is a syndrome that consists of symptoms such as memory loss, impaired judgment and reasoning, and changes to one’s personality and behaviour (Alzheimer Society of Canada, *Introduction*, n.d.). Alzheimer’s disease is the most common form of dementia (Alzheimer Society of Canada, *Vascular Dementias*, n.d.). The Alzheimer Society of Canada estimates that there are 420,600 Canadians 65 years and older that have Alzheimer’s disease and related dementias (Alzheimer Society of Canada, *Common Questions*, n.d.).

**Figure 4.35**

**Dementia, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007**



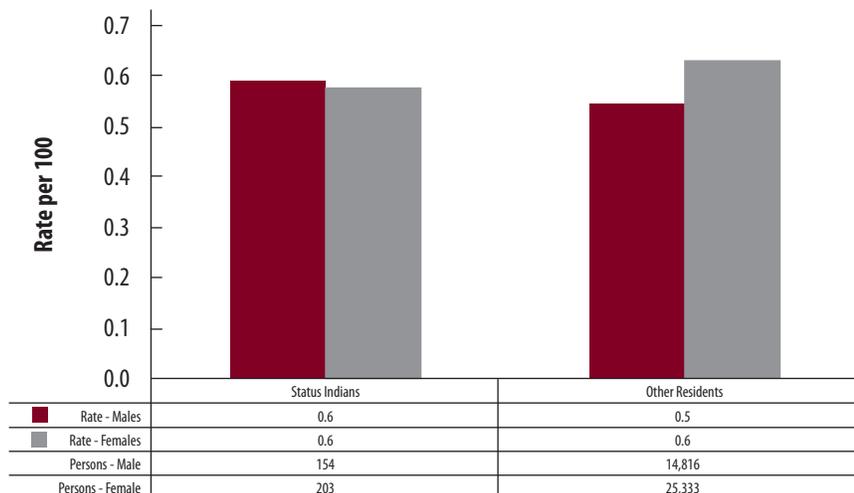
Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

From 2002/2003 to 2006/2007, the age-standardized rate for dementia among Status Indians was slightly lower than the rate for other residents, but the difference was not significant. About 360 Status Indians were living with diagnosed dementia in 2006/2007, and this number is increasing by 30 to 40 persons each year (Figure 4.34).

Dementia affects older persons; consequently, the great majority of cases are concentrated in ages 70+. Compared to the age-specific prevalence rate for other residents, the rate for Status Indians was slightly higher in the 70–79 age group and lower in the 80+ age group (Figure 4.35).

**Figure 4.36**

**Dementia, Age-Standardized Prevalence Rate, by Gender, Status Indians and Other Residents, BC, 2006/2007**

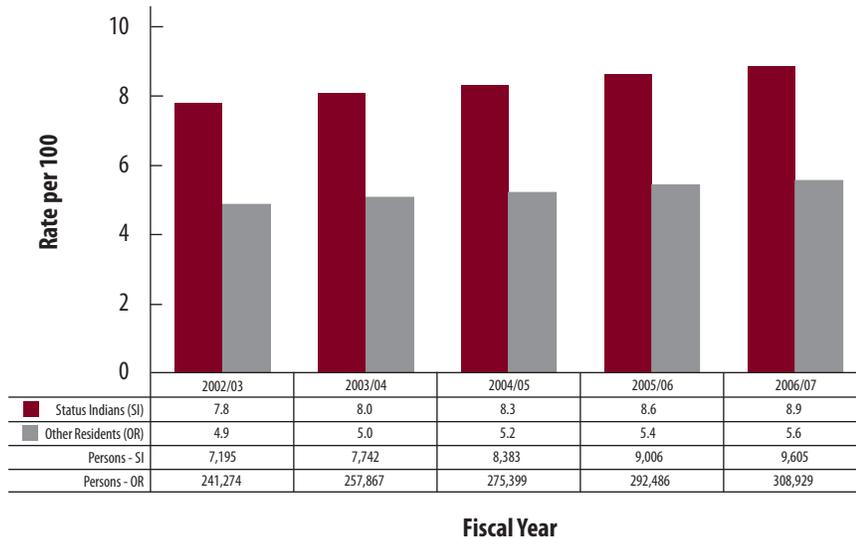


Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

In 2006/2007, the age-standardized prevalence rates for females and males in both populations were not significantly different (Figure 4.36).

**Figure 4.37**

**Osteoarthritis, Age-Standardized Prevalence Rate, Status Indians and Other Residents, BC, 2002/2003 to 2006/2007**



Note: Totals include unknown gender.

Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

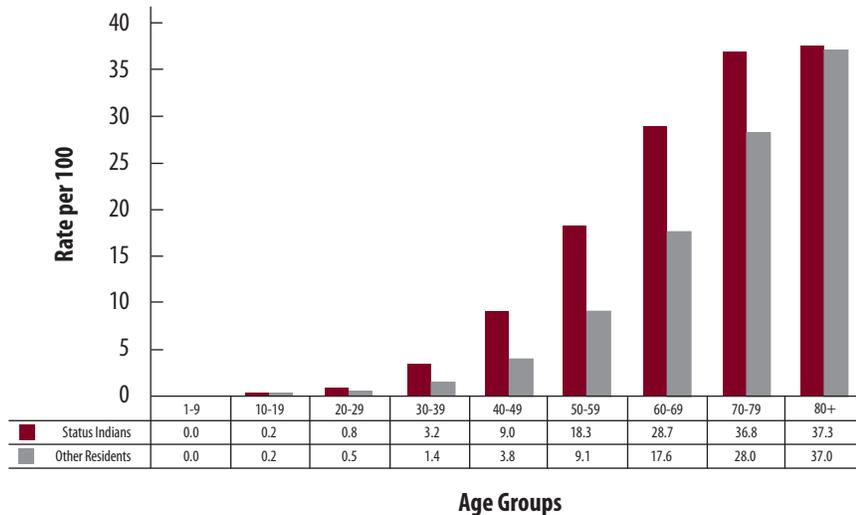
**Osteoarthritis**

Osteoarthritis, also known as degenerative arthritis or degenerative joint disease, is a syndrome that occurs due to continuing low-grade inflammation, resulting in joint pain and abnormal wearing of the cartilage, or a decrease of the synovial fluid that lubricates the joints. Due to the decrease in fluid and wearing away of cartilage, the bony surfaces are less protected over time, and joints become more painful (National Collaborating Centre for Chronic Conditions, 2008).

In 2006/2007, there were about 9,600 Status Indians living with osteoarthritis, and in recent years, the average annual increase was about 600 persons. In 2006/2007, the age-standardized prevalence rate for Status Indians was about 60 per cent higher than the rate for other residents (Figure 4.37).

**Figure 4.38**

**Osteoarthritis, Age-Specific Prevalence Rate, Status Indians and Other Residents, BC, 2006/2007**

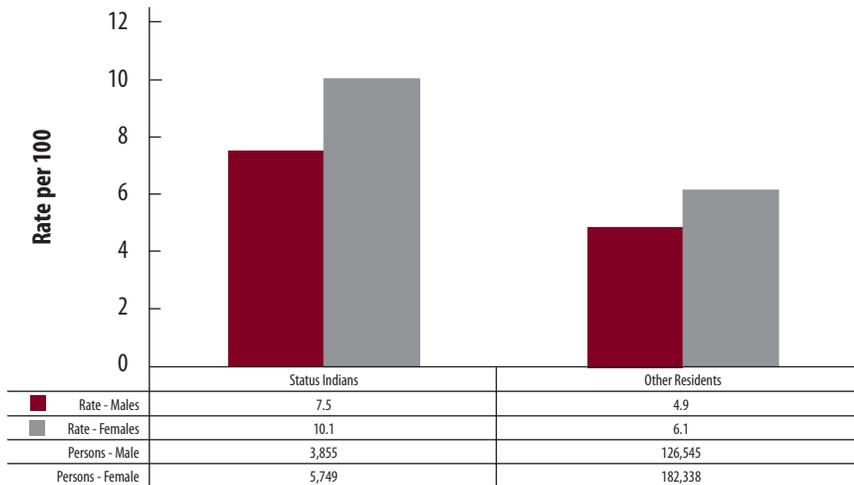


Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Similarly, the age-specific prevalence rates were higher for Status Indians in most age groups in 2006/2007, but similar in the 80+ age group. The prevalence of the condition exceeded 35 per cent in the oldest age group for both populations (Figure 4.38).

Figure 4.39

**Osteoarthritis, Age-Standardized Prevalence Rate,  
by Gender, Status Indians and Other Residents, BC, 2006/2007**



Source: Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

In 2006/2007, the age-standardized prevalence rate of osteoarthritis was significantly higher among females in both populations (Figure 4.39). Rates for both genders were higher among Status Indians than among other residents (50 per cent higher for males and almost 65 per cent higher for females).

### Supporting Healthy Relationships

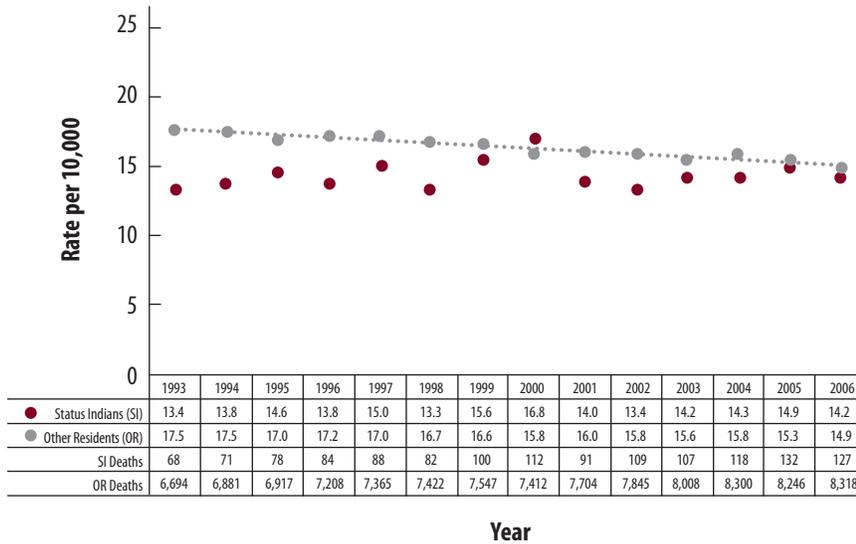
The Canadian Red Cross and the First Nations Health Council have signed a Memorandum of Understanding to develop strategies in the areas of water safety, violence, and first aid. The two partners are working together to develop culturally appropriate versions of their healthy relationship programs, including RespectED and Walking the Prevention Circle (First Nations Health Council, 2008).

First Nations Health Council is also providing funds to support pilot initiatives that develop “best” or “better” practices in mental wellness, chronic disease management, and maternal and child health. The funding covers a three-year period, to a maximum of \$100,000 per year (First Nations Health Council, n.d.).

Sources: First Nations Health Council, 2008, n.d.

**Figure 4.40**

**All Cancers, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: C00-C97.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

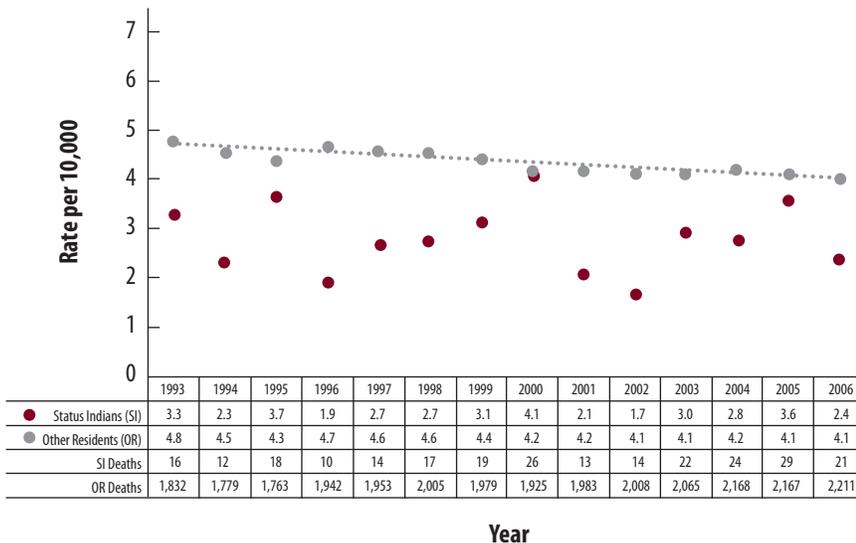
## Cancer

From 1993 to 2006, the ASMR for all cancers in the Status Indian population was relatively stable (13.4 to 14.2 per 10,000), while the rate for other residents decreased slightly from 17.5 to 14.9 per 10,000 (a statistically significant declining trend) (Figure 4.40).

Aggregate regional data for 2002–2006 show that there was no statistically significant difference in the rates between the Status Indian population and other residents in BC as a whole or in any health authority, except Northern Health Authority, where the Status Indian rate was significantly lower than the rate for other residents.

**Figure 4.41**

**Lung Cancer, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: C33, C34-C349, C384, C450.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

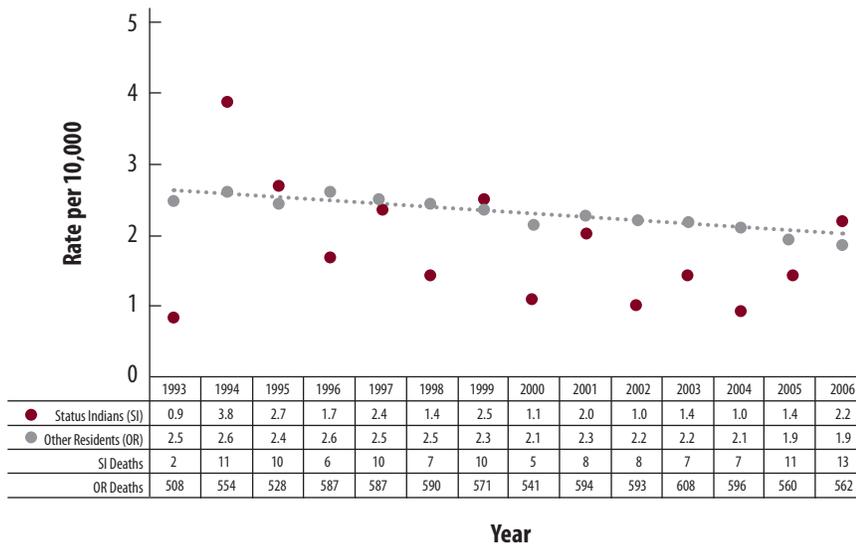
## Lung Cancer

Between 1993 and 2006, the Status Indian population consistently had a lower rate of lung cancer deaths compared to other residents, and the rate fluctuated, ranging from a low of 1.7 per 10,000 to a high of 4.1 per 10,000. In 2006, the ASMR for lung cancer for other residents was 4.1 per 10,000, and there has been a slight but significant decline in the rate over the last 14 years (Figure 4.41).

Aggregate regional data for 2002–2006 show that the rates for Status Indians were significantly lower than the rates for other residents in Interior, Vancouver Island, and Northern Health Authorities, as well as in BC as a whole.

Figure 4.42

### Female Breast Cancer, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).  
ICD Codes: C500-C509.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

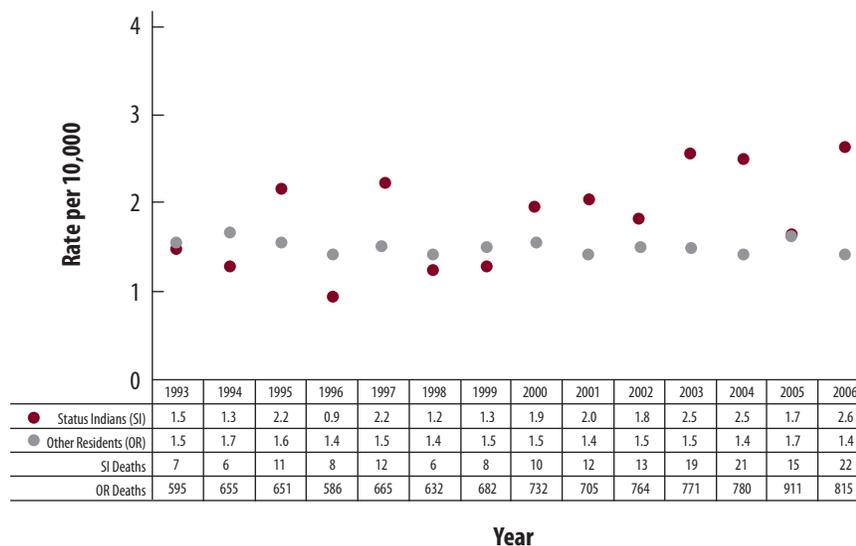
### Female Breast Cancer

From 1993 to 2006, the ASMR for breast cancer among Status Indian women has fluctuated, ranging from 0.9 per 10,000 to 3.8 per 10,000. The rate for other women in the province decreased from 2.5 per 10,000 in 1993 to 1.9 per 10,000 in 2006, a significant declining trend. For the majority of the years, Status Indian women had a lower rate of death due to breast cancer compared to other BC women (Figure 4.42).

Aggregate regional data for 2002–2006 show that Status Indian women had significantly lower breast cancer mortality rates in Interior, Vancouver Coastal, and Northern Health Authorities, as well as in BC as a whole.

Figure 4.43

### Colorectal Cancer, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).  
ICD Codes: C180-C218.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

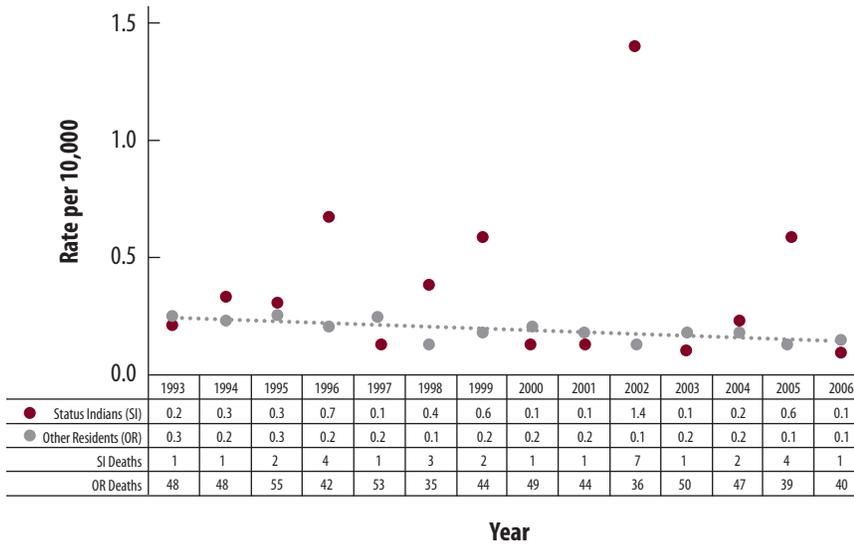
### Colorectal Cancer

There was no significant trend for colorectal cancer mortality for either Status Indians or other residents from 1993 to 2006. The Status Indian rate ranged from 0.9 to 2.6 per 10,000, while the rate for other residents ranged from 1.4 to 1.7 per 10,000 (Figure 4.43). In most years, the Status Indian rate was higher than the rate for other residents.

Aggregate regional data for 2002–2006 show that Status Indians had higher colorectal cancer mortality rates than other residents in all health authorities, but none of the differences between the two populations were statistically significant. However, for BC as a whole, the Status Indian rate was significantly different (approximately 50 per cent higher) than the rate for other residents.

**Figure 4.44**

**Cervical Cancer, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: C53.  
 Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

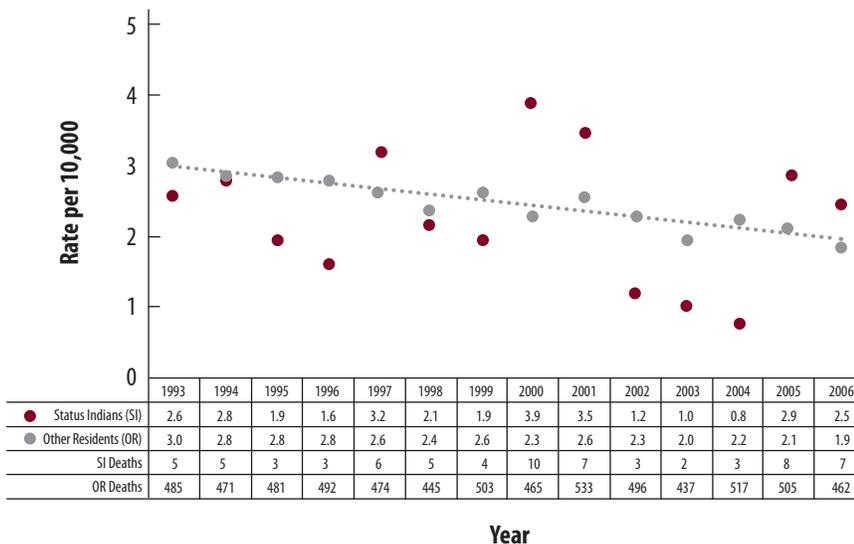
**Cervical Cancer**

There was no significant trend in cervical cancer mortality for Status Indians from 1993 to 2006, with the rate ranging from 0.1 to 1.4 per 10,000. There was a significantly declining trend in the rate for other residents, from 0.3 per 10,000 in 1993 to 0.1 per 10,000 in 2006 (Figure 4.44).

Aggregate regional data for 2002–2006 show that there were no Status Indian cervical cancer deaths in Fraser or Northern Health Authorities; however, the rates for Status Indians were higher than the rates for other residents in the other health authorities, although the differences were not statistically significant, due to small numbers. The Status Indian rate for BC as a whole was 3 times higher than the rate for other residents, a statistically significant difference.

**Figure 4.45**

**Prostate Cancer, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census). ICD Codes: C61.  
 Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

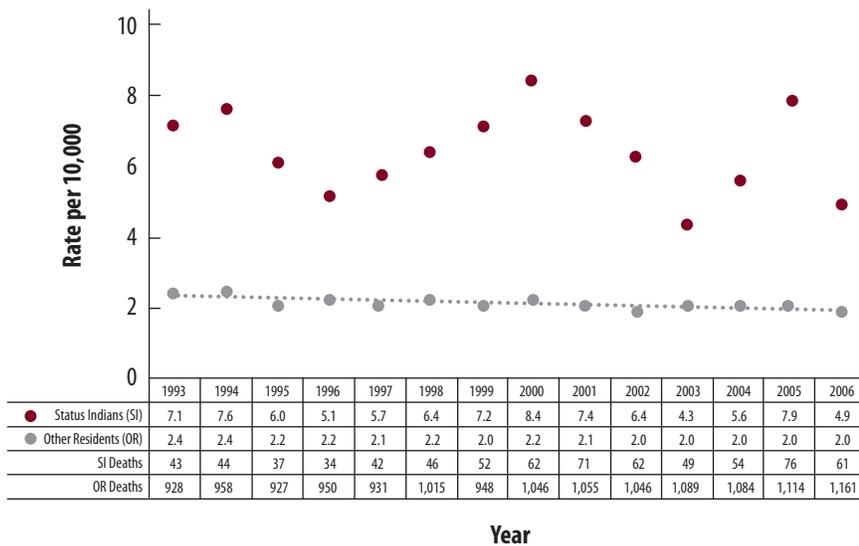
**Prostate Cancer**

There was no significant trend in prostate cancer mortality for Status Indians from 1993 to 2006, with the rate ranging from 0.8 to 3.9 per 10,000. There was a significant declining trend in the rate for other residents, from 3.0 per 10,000 in 1993 to 1.9 per 10,000 in 2006 (Figure 4.45).

Aggregate regional data for 2002–2006 show that there was no significant difference in prostate cancer mortality rates between the two populations in most of the health authorities or in BC as a whole, with the exception of Fraser and Vancouver Island Health Authorities, where Status Indians had significantly lower prostate cancer mortality rates than other residents.

Figure 4.46

### Diseases of the Digestive System, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).  
ICD Codes: K00-K92.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

#### Centre for Indigenous Peoples' Nutrition and Environment

The Centre for Indigenous Peoples' Nutrition and Environment (CINE) is a research and education centre, located at McGill University. CINE's mission is to "undertake community-based research and education related to traditional food systems." CINE was created by Canada's Aboriginal leaders, to address the concerns of Aboriginal Peoples around the world, about the integrity of their traditional food systems. CINE receives many requests from Aboriginal communities both within Canada and internationally, for information on food systems and the environment.

An example of one of CINE's resources is the Global Health project. This project is documenting traditional food systems of indigenous peoples in each global region (North and Central America, South America, Africa, Asia, and Oceania). The goal is to document successful food-based strategies to protect the health status of Indigenous Peoples, using their local food systems. Food and nutrition tables for 12 case studies are being compiled, and will be a resource for health professionals and researchers in dietary assessment and nutrition promotion. The Nuxalk Nation, from Bella Coola, is one of the indigenous groups included in this project.

For more information on CINE and the Global Health project, please see <http://www.mcgill.ca/cine/>.

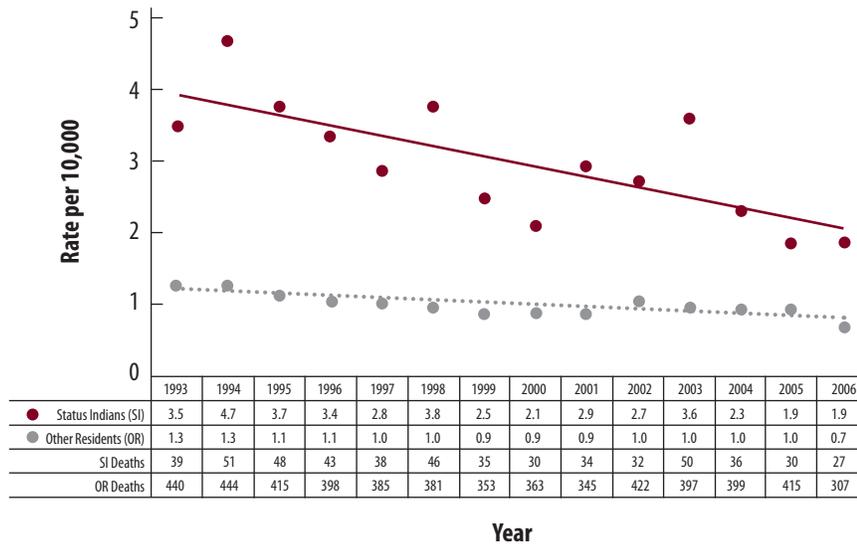
## Digestive System Diseases

Figure 4.46 illustrates the ASMR for digestive system diseases from 1993 to 2006. A detailed investigation of the data revealed that the most common condition causing death is chronic liver disease/cirrhosis, followed by conditions including peptic ulcer, inflammatory bowel disease, and gastrointestinal hemorrhage. From 1993 to 2006, the ASMR for digestive system diseases was consistently 2 to 4 times higher for the Status Indian population than for other residents. In 2006, the rate for the Status Indian population was 4.9 per 10,000, compared to 2.0 per 10,000 for other residents. The ASMR for digestive system diseases for the Status Indian population has not decreased over time, fluctuating widely from 1993 to 2006. On the other hand, the ASMR for other residents has significantly declined over time. Even in the years with the lowest Status Indian rate, there was still a large gap between the two populations.

Aggregate regional data for 2002–2006 show that Status Indian rates were significantly higher than the rates for other residents in all health authorities and BC as a whole. The gap between the two populations ranged from 4.3 times in Vancouver Coastal Health Authority to 1.7 times in Northern Health Authority, and 2.9 times in BC as a whole.

**Figure 4.47**

**Motor Vehicle Accidents, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).

ICD Codes: V02-V04, V09, V12-V14, V190-V196, V20-V79, V803-V805, V820-V821, V823-V890, V899, Y850.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

## External Causes of Death

### Motor Vehicle Accidents

From 1993 to 2006, deaths due to motor vehicle accidents were significantly higher for the Status Indian population than for other residents. Although the ASMR for the Status Indian population declined from 3.5 per 10,000 in 1993 to 1.9 per 10,000 in 2006, the rate was still nearly 2 to 4 times higher for this population compared to the rate for other residents (Figure 4.47). Motor vehicle accidents were also the third highest cause of death for Status Indians who died before reaching age 75 (Figure 4.6).

Aggregate regional data for 2002–2006 show that Status Indians had significantly higher motor vehicle accident mortality rates in all health authorities, except Northern Health Authority. The rate for Status Indians in Northern Health Authority was higher than the rate for other residents, but the difference between the populations was not significant. The rate for BC as a whole was also significantly higher for Status Indians than other residents (approximately 2.5 times higher).

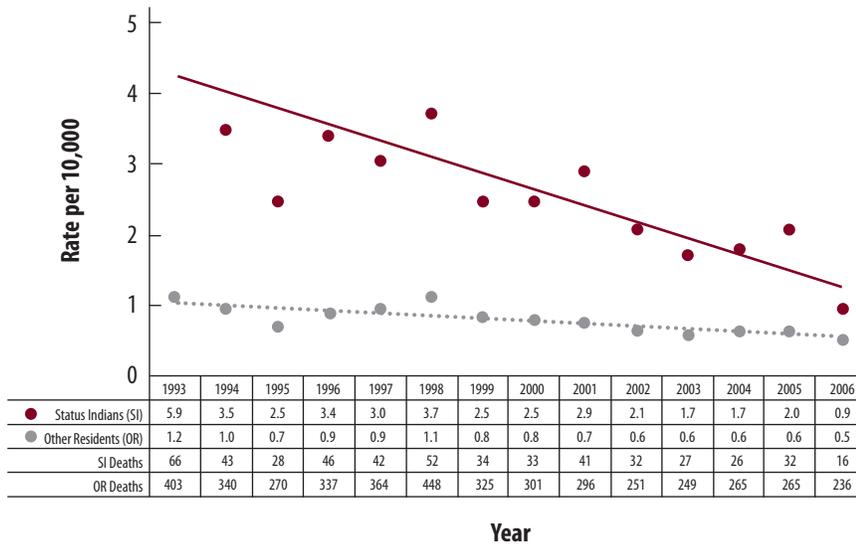
### Promoting Car Seat Use and Safe Driving in First Nations Communities

The Tripartite Injury Prevention Working Group has partnered with the BCAA Traffic Safety Foundation to develop practical tools and tips to help families and communities be safer on our roads. A community-based information campaign is planned to help increase awareness of the importance of using infant, child, or booster seats. Other options to be explored include increasing access to car seats within communities, and providing expertise to guide safe installation. An interactive DVD workshop for parents and family members of teen drivers is also in development.

Source: First Nations Health Council, 2009.

Figure 4.48

### Accidental Poisoning, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).  
ICD Codes: X40-X49.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

### Accidental Poisoning

Deaths due to unintentional poisoning include accidentally taking the wrong medication; illicit drug overdoses; alcohol poisoning; consuming organic solvents; or being exposed to gases, vapours, pesticides, or other substances. Although the ASMR for accidental poisoning has declined significantly for the Status Indian population since 1993 (from 5.9 per 10,000 in 1993 to 0.9 per 10,000 in 2006), the rate was still higher than the rate for other residents. From 1993 to 2006, 2 to 3 times as many Status Indians died of accidental poisoning as other residents (Figure 4.48). Accidental poisoning was also the fourth highest cause of death for Status Indian females who died before age 75.

Aggregate regional data for 2002–2006 show that Status Indian mortality rates for accidental poisoning were significantly higher than the rates for other residents in Fraser, Vancouver Coastal, and Vancouver Island Health Authorities, as well as in the province as a whole. The gap between the two populations was approximately 2.8 times in BC as a whole, ranging from no significant gap in Interior and Northern Health Authority, to a gap of approximately 5 times in Vancouver Coastal Health Authority.

### RoadHealth

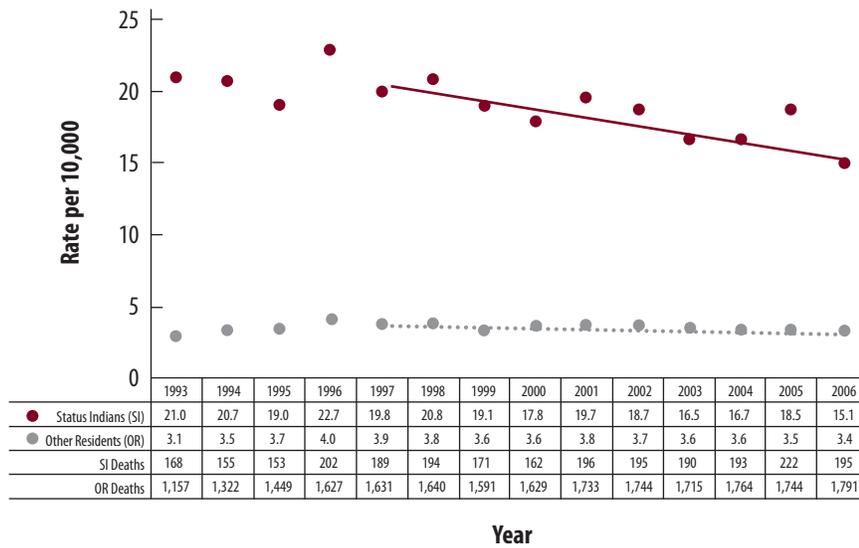
In 2005, a task force for the Northern Health region, RoadHealth, was created to improve road safety using strategies that support the 3 E's: engineering, enforcement, and education (Bowering, 2007). In October 2007, RoadHealth held a First Nations and Roads Summit to look at the needs of the 63 First Nations communities in the north. The Summit focused on engagement and awareness initiatives for northern First Nations communities, many of which are accessed only by poorly maintained resource roads that are not often policed. Recommendations from the Summit include improving communication between First Nations and forest companies, providing better road maintenance, and providing resource road driver training (Central Interior Logging Association, 2006).

RoadHealth partners include the Northern Health Authority, the Insurance Corporation of British Columbia, WorkSafe BC, the RCMP, BC Forest Safety Council, Enform (formerly BC Petroleum Council), and the provincial government (Ministry of Forests & Range, Ministry of Transportation and Infrastructure, Ministry of Public Safety and Solicitor General, Coroners Service of BC, and Commercial Vehicle Safety Enforcement) (RoadHealth, n.d.).

Sources: Bowering, 2007; Central Interior Logging Association, 2006; RoadHealth, n.d.

**Figure 4.49**

**Alcohol-Related Deaths, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

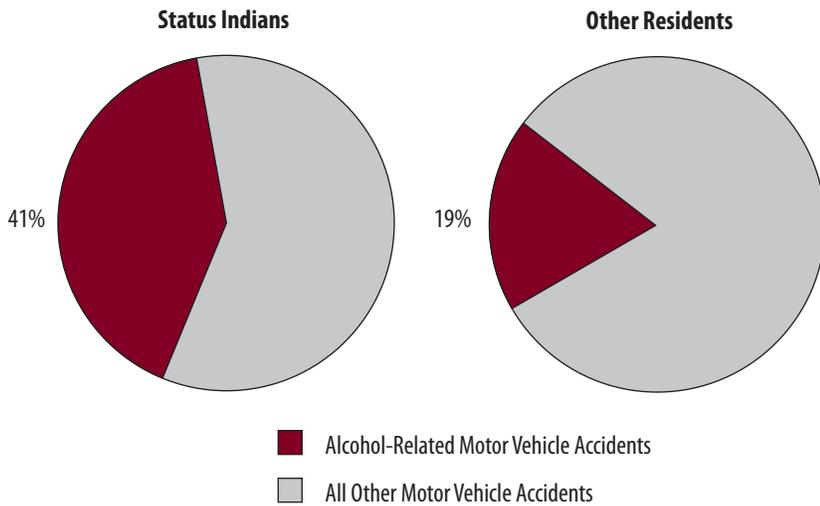
**Alcohol-Related Deaths**

Alcohol-related deaths are deaths due directly to alcohol, as well as deaths where alcohol was a contributing factor. From 1993 to 2006, the ASMR for alcohol-related deaths for the Status Indian population was approximately 5 times higher than the rate for other residents. In 2006, the ASMR for alcohol-related deaths for the Status Indian population was 15.1 per 10,000, compared to 3.4 per 10,000 for other residents (Figure 4.49). Since 1996, there has been a statistically significant decline in the rate for the Status Indian population.

Aggregate regional data for 2002–2006 show that the Status Indian mortality rates related to alcohol were significantly higher than the rates for other residents in all health authorities and in BC as a whole. The gap between the two populations ranged from 3.9 times in Fraser Health Authority to 7.5 times in Vancouver Coastal Health Authority.

**Figure 4.50**

**Proportion of Deaths Due to Alcohol-Related Motor Vehicle Accidents, Status Indians and Other Residents, BC, 2002–2006**



Note: BC Vital Statistics Agency data received from Coroners Services of BC on alcohol-related deaths are incomplete and are currently under review. ICD Codes: V02-V04, V09, V12-V14, V190-V196, V20-V79, V803-V805, V820-V821, V823-V890, V899, V850.

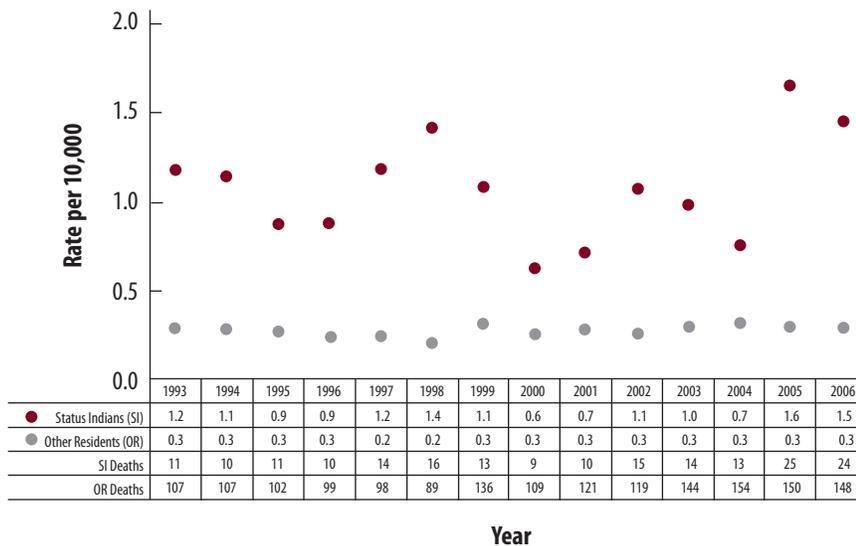
Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Alcohol-Related Deaths due to Motor Vehicle Accidents**

As mentioned previously, motor vehicle accidents are responsible for a significant number of deaths among the Status Indian population, particularly for those who die before reaching age 75. A high percentage of those motor vehicle accidents are alcohol-related (Figure 4.50). From 2002–2006, 41 per cent of deaths due to motor vehicle accidents for the Status Indian population were alcohol-related, over twice the percentage for other residents (19 per cent).

Figure 4.51

### Medically Treatable Diseases, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

#### Diagnostic Category (Charlton's Classification)

- Bacterial infections (ages 5–64)
- Tuberculosis (ages 5–64)
- Cervical cancer (ages 5–64)
- Hodgkin's disease (ages 5–34)
- Deficiency anemias (ages 5–64)
- Chronic rheumatic heart disease (ages 5–44)
- Hypertensive disease (ages 5–64)
- Acute respiratory infections and influenza (ages 5–49)
- Pneumonia and unspecified bronchitis (ages 5–49)
- Asthma (ages 5–49)
- Abdominal hernias, cholecystitis, cholelithiasis, appendicitis (ages 5–64)

#### Medically Treatable Diseases

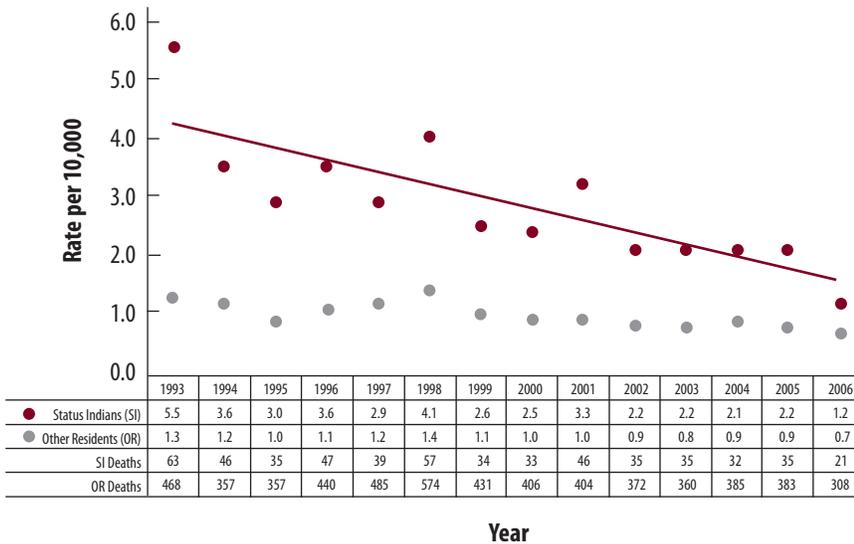
Deaths due to medically treatable diseases are based on Charlton's classification (Charlton, 1987). These disease categories are ones for which mortality could potentially have been avoided through appropriate and timely medical intervention. Causes are considered to have been medically treatable only if the death occurred to persons within a specified age range within each disease category.

Figure 4.51 illustrates the ASMR for medically treatable disease deaths for Status Indians and other residents. Since 1993, the ASMR for these diseases has fluctuated and has generally been 2 to 5 times higher for the Status Indian population compared to other residents. In 2006, the rate for the Status Indian population was 1.5 per 10,000, compared to 0.3 per 10,000 for other residents. There was no trend for either population. The higher death rates from these diseases for the Status Indian population more than likely reflect gaps in access to primary care services in this population.

Aggregate regional data for 2002–2006 show that Status Indian rates for these conditions significantly exceeded the rates for other residents in all health authorities except Interior Health Authority, and in BC as a whole. Overall in BC, the gap was 4 times between the two populations.

**Figure 4.52**

**Drug-Induced Deaths, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006**



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

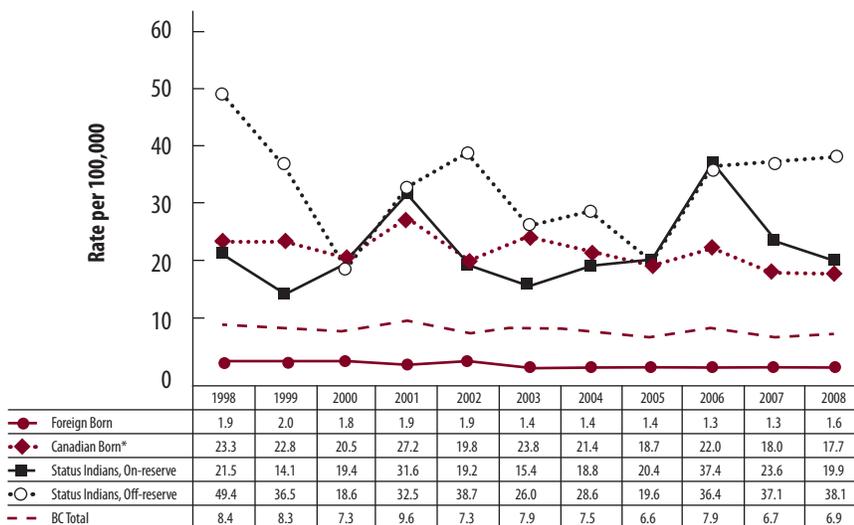
**Drug-Induced Deaths**

Drug-induced deaths are categories of deaths that include drug use or abuse, accidental poisoning by drugs, suicide by drugs, and adverse effects of drugs and medication as an underlying cause of death. There was a significant decline in drug-induced deaths for the Status Indian and other resident populations from 1993 to 2006; however, the rate was still substantially higher for Status Indians compared to other residents (Figure 4.52).

Aggregate regional data for 2002–2006 show that Status Indian mortality rates were significantly higher than the rates for other residents in Fraser, Vancouver Coastal, and Vancouver Island Health Authorities, as well as in BC as a whole. The rates were also higher in Interior and Northern Health Authorities, but the differences were not statistically significant. Overall in BC, the gap was 2.5 times between the two populations.

**Figure 4.53**

**Tuberculosis Incidence Rates, by Birthplace and Year, BC, 1998 to 2008**



\* Includes Non-registered Aboriginal population. Population using PEOPLE 33-revised.

Note: The term Status Indians appears as Registered Aboriginal in BC Centre for Disease Control data.

Source: TB Control, BC Centre for Disease Control, 2009.

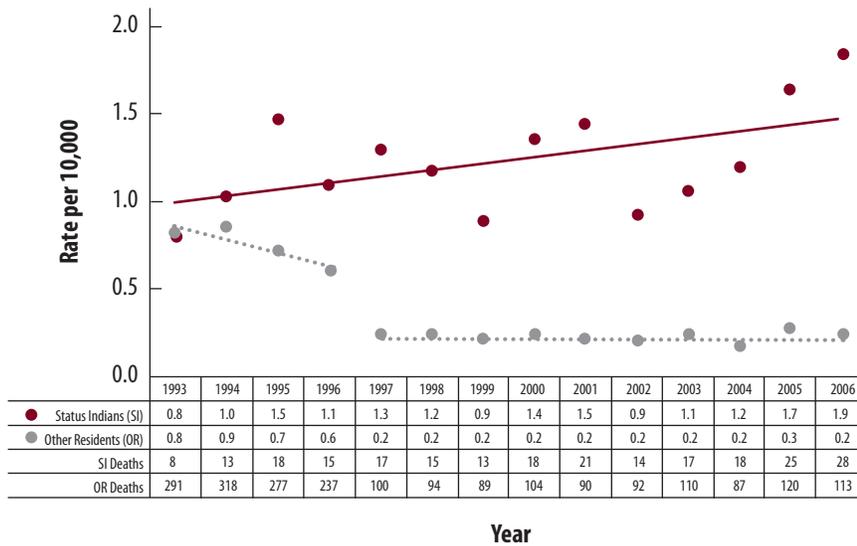
**Tuberculosis**

The incidence rate of tuberculosis (TB) is a concern among the Aboriginal population, both in British Columbia and Canada as a whole. In 2008, the TB incidence rate was 19.9 per 100,000 for the on-reserve Aboriginal population and 38.1 per 100,000 for the off-reserve population. Both rates were considerably higher than the provincial rate of 6.9 per 100,000 (Figure 4.53).

Tuberculosis is more prevalent among the younger off-reserve population, with equal representation by both genders. Since July 2006, BC has experienced a

Figure 4.54

### HIV, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).  
ICD Codes: B20-B24.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services,  
and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

significant outbreak of TB in the Port Alberni area, a previously low-incidence area, with 44 active cases predominantly involving the Aboriginal community living both on- and off-reserve. The outbreak was complicated by late diagnoses of the disease (K. Elwood, BC Centre for Disease Control, personal communication, April 2009).

### HIV/AIDS

There are approximately 55 to 70 new positive HIV tests (or new diagnoses of HIV) among Aboriginal people in BC per year. While Aboriginal people represent approximately 5 per cent of the BC population, they account for 15 to 17 per cent of all new positive HIV tests each year. Aboriginal females make up 30 to 40 per cent of the cases among the total female population, while Aboriginal males make up 10 per cent of the cases among the male population (M. Gilbert, BC Centre for Disease Control, personal communication, April 2009).

The rate of deaths due to HIV disease for the Status Indian population has more than doubled since 1993 (0.8 per 10,000 in 1993 to 1.9 per 10,000 in 2006), while the rate for other residents has decreased significantly in the same time period (0.8 per 10,000 in 1993 to 0.2 per 10,000 in 2006) (Figure 4.54). Studies have shown that illicit drug use among the Aboriginal population may be the reason for the increase in the prevalence of HIV and AIDS. In a study on injection drug use in Vancouver, the researchers found that the majority of those who were HIV positive were Aboriginal, and most likely females and daily drug users (Wood et al., 2008).

### The Gathering Tree

*The Gathering Tree* is a children's book on HIV awareness and prevention, co-published in 2005 by Chee Mamuk, the Aboriginal HIV education program of the BC Centre for Disease Control, and Theytus Books. The Gathering Tree tells the story of a First Nations family who is dealing with HIV. Key messages in the book include the importance of HIV prevention and the fact that there is currently no cure. In addition, the book explores aspects of physical, spiritual, mental, and emotional health.

The book includes study materials for teachers, students, and health educators. It is recommended for children age 9 years and older.

For more information on *The Gathering Tree*, please visit the BC Centre for Disease Control website at <http://www.bccdc.org/content.php?item=96#2>

Source: BC Centre for Disease Control, STD/AIDS Control, Chee Mamuk, 2005.

### Highly Active Antiretroviral Therapy (HAART)

Highly active antiretroviral therapy (HAART) was introduced in 1995 as the standard for treatment of HIV infection. HAART reduces the levels of the virus in the body, making people less infectious. HAART has resulted in significant improvements in HIV-related morbidity and mortality.

Currently, however, approximately only 50 per cent of those who are medically eligible for HAART receive it. To a great extent, this is due to the fact that many of those eligible are in hard-to-reach populations, including those who are addicted to drugs, the mentally ill, the homeless, and those who live in remote communities without access to expert care—and Aboriginal people are disproportionately represented in these populations. Even with this low level of uptake, the BC Centre for Excellence in HIV/AIDS estimates that approximately 400 HIV infections are averted each year.

In 2005, researchers at the Centre began to develop a hypothesis that expanding the uptake of HAART in the eligible population could prevent new HIV infections. This hypothetical model has been presented at a number of international conferences and a variety of scientific publications.

Using the model, researchers estimate that by increasing HAART coverage by 25 per cent over current uptake, the annual number of new HIV cases could be reduced by 37 per cent. And if coverage could be expanded to include all those currently eligible, the number of new cases could be reduced by over 60 per cent.

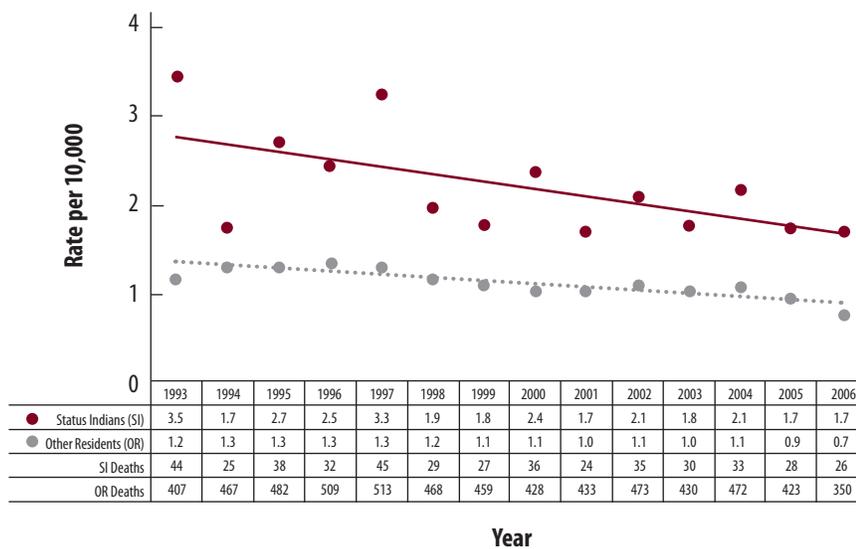
Sources: Hansen, 2008; Lima et al., 2008.

A possible explanation for the higher rates of HIV deaths in the Status Indian population may be that Aboriginal people are disproportionately represented in the hard-to-reach populations that are medically eligible for HAART, but do not currently access it: those who are addicted to drugs, the mentally ill, the homeless, and those who live in remote communities without access to expert care. As well, mistrust in medical institutions and lack of culturally safe and supportive care may negatively impact the uptake of treatment for Aboriginal patients (E. Adams, personal communication, February 11, 2009).

Aggregate regional data for 2002–2006 show that the Status Indian rates of death due to HIV disease were significantly higher than the rates for other residents in BC as a whole, and in almost all health authorities. The exception was Fraser Health Authority, where the rate was higher among Status Indians, but the difference between the two populations was not statistically significant. The gap between the two populations was 6.5 times in the province as a whole, and approximately 8 times in the Vancouver Coastal Health Authority.

Figure 4.55

### Suicide, Age-Standardized Mortality Rate, Status Indians and Other Residents, BC, 1993 to 2006



Note: Age-Standardized mortality rate per 10,000 standard population (1991 Canada Census).  
ICD Codes: X60-X84, Y870.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services,  
and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

#### Winds of Change

Tragedy struck the community of Mount Currie early in 2002, with the death of a young man from Mount Currie in Pemberton, in an area where drug and alcohol use were common. The two communities realized that they needed to come together to address the drug and alcohol problems that were affecting both communities.

As a result, in 2003, a Joint Task Force was created by the Mount Currie Band Council and the Village of Pemberton Council. The Task Force's goal was to reduce the harms associated with drugs and alcohol and increase the safety of their communities. In 2004, they produced a "vision of wellness" in the report *Winds of Change: A Healing Vision*. The report included 13 recommendations in 4 categories, representing the four winds of change: North Wind (Promoting Healthy Lifestyle Choices); West Wind (Community Leadership and Responsibility); South Wind (Increasing Awareness); and East Wind (Improving Services).

Source: Pemberton/Mount Currie Drug and Alcohol Task Force, 2004; Village of Pemberton, n.d.

#### Suicides

Although the ASMR for suicide deaths has dropped for the Status Indian population, a large gap still exists between this population and other residents. From 1993 to 2006, the suicide death rate for the Status Indian population fell from 3.5 per 10,000 to 1.7 per 10,000; however, the 2006 figure was still over twice the rate for other residents (1.7 per 10,000 versus 0.7 per 10,000) (Figure 4.55). The declining trends for both populations were statistically significant. Suicide deaths were the fourth highest overall cause of death in the Status Indian population under age 75 (Figure 4.6).

Aggregate regional data for 2002–2006 show that Status Indian suicide rates were higher than the rates for other residents in all health authorities and in BC as a whole. The difference was statistically significant in BC and all health authorities except Interior and Fraser Health. The provincial gap was approximately two times between the populations.

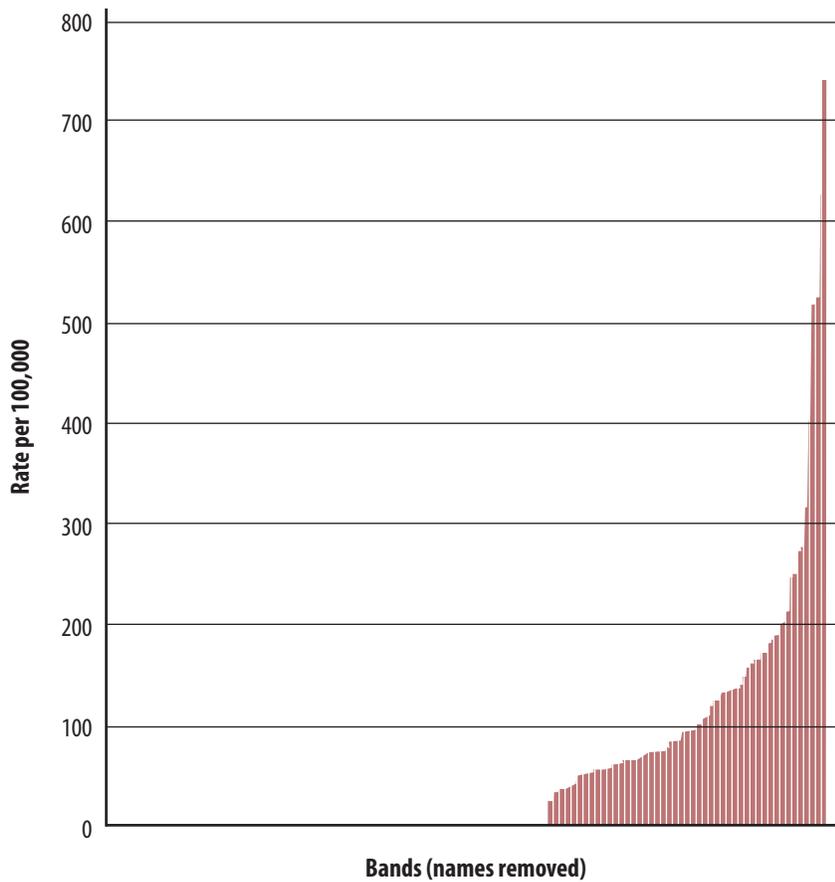
#### Suicide – Myth and Reality

In Canada and most provinces, including BC, the overall suicide rate has been significantly higher among the Aboriginal population compared to other residents. Researchers and Aboriginal groups have tried to examine the patterns of suicides and the reasons for the elevated rate of suicides among the Aboriginal population.

Since 1989, Chandler and Lalonde have examined suicide rates and their patterns among First Nations bands in British Columbia. Their examination

**Figure 4.56**

**Total Youth Suicide Rates, Age 15–24, by Band, BC, 1992–2006**



Source: Lalonde, 2009.

“Suicide is most promisingly understood as an outcome of some personal or cultural collapse of those identity preserving practices that serve to secure enduring connections to one’s past and foreseeable future.”

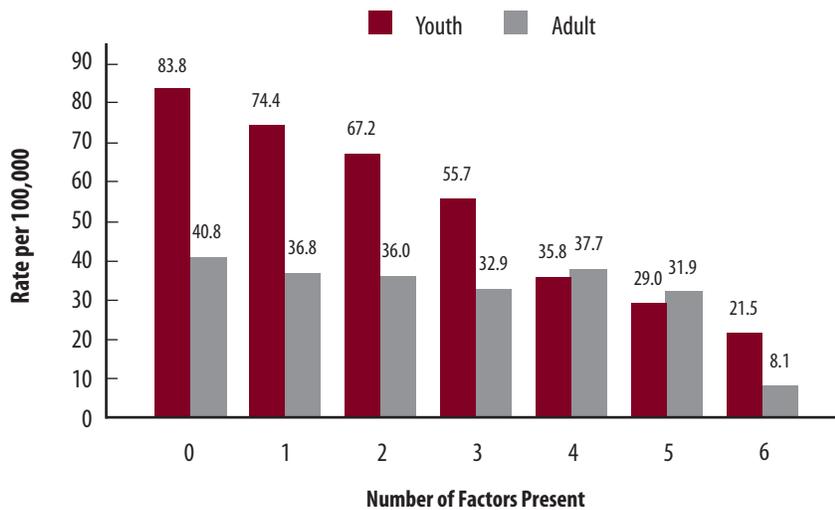
*Chandler & Lalonde, 2008.*

of data from 1987–1992 showed that suicide rates and patterns were not the same for all the bands in BC. In fact, suicide rates were lower for First Nations bands that had made progress toward self-government and land claims, had cultural facilities, and had control over local services such as health care, education, police, and fire. At first, the researchers looked at six “protective factors” as significant determinants of the number of youth suicides in Aboriginal communities. Every community that had the six protective factors present showed no youth suicides, while the bands that had none of these factors present had suicide rates more than ten times the national average (Chandler & Lalonde, 2008).

In 2009, under a special agreement with the Provincial Health Officer, Chris Lalonde was exclusively provided with the latest data (1992–2006) to update the previous Chandler and Lalonde study on suicides for this report. This study confirmed the results of the previous studies. From 1992–2006, youth and adult suicides were reported in 77 and 135 bands respectively; with more than 60 per cent of the bands reporting no youth (age 15–24) suicides (Figure 4.56). The fact that the majority of these communities experienced no suicides clearly shows that youth suicide is not inherently an Aboriginal risk. Looking at what works in these communities may help more vulnerable communities to address these issues. Further, the study showed that the presence of the first six protective factors (self-government, land claims, education, health care, cultural services, and control over police and fire protection) in a community result in

Figure 4.57

## Suicide Rates by Number of Factors Present, BC, 1992-2006



Source: Lalonde, 2009.

**Protective Factors**

The protective factors used in Chandler and Lalonde's study were:

- Evidence of particular bands taking steps to secure Aboriginal title or their traditional lands.
- Evidence of securing certain rights of self-government and some degree of community control.
- Evidence of some control over educational services.
- Evidence of some control over police and fire protection.
- Evidence of some control over health delivery services.
- Evidence of having established within their communities certain officially recognized cultural facilities to help preserve and enrich their cultural lives.

fewer suicides (Lalonde, 2009). Figure 4.57 shows that youth suicide rates were substantially higher with no factors present (83.8 per 100,000) than those communities with all factors present (21.5 per 100,000). Adult suicide rates showed similar patterns but not to the same degree as youth suicides.

The Chandler and Lalonde analysis did not show a clear relationship between suicide rates and levels of income, employment, or labour force participation level. In communities with no reported suicides, rates of unemployment and dependency on government transfer payments were slightly lower, and school completion rates slightly higher. Labour force participation was slightly higher in communities that experienced suicides. None of these differences were statistically significant.

Another recent study looked at the healing experiences of First Nations women who had attempted suicide. This study showed that most women who attempted or contemplated suicide had experienced separation from family, community, and cultural practices (Paproski, 1997).

In a national study by Health Canada on suicide prevention, it was found that the two most common causes of suicide were the rapid disintegration of traditional values and the breakdown of both the nuclear and the extended family. Research has repeatedly shown that colonization directly influenced the belief system and religious education of Aboriginal children, which resulted in the dismantling and rejection of native spiritual beliefs. The historical separation

of children from their families and elders in the community has resulted in the destruction of the cultural fabric of many Aboriginal communities (Paproski, 1997).

First Nations children who were separated from their home environment and placed in residential schools or foster homes have often suffered psychological damage and emotional problems, which resulted in drug abuse and suicide (Kimelman, 1985, as cited in Paproski, 1997). This finding is also supported by research on suicides in American Indian youth (Berlin, 1987). This study reported on the prevalence of suicide among adopted Indian children, which may be a result of cultural isolation, loss of tribal traditions, and limited contact with extended families and their communities.

Overall, colonization and cultural loss has created an environment that has negatively impacted the social structures, personal psychology, and coping strategies of a majority of the Aboriginal population. High rates of suicide among the First Nations population may be better understood in the context of the cultural loss experienced by many Aboriginal communities (Paproski, 1997). Cultural connections and native spirituality appear to have important implications for the prevention of suicide in First Nations youth.

## Disabilities

Disability is defined as a physical or mental condition or health problem that restricts an individual in the type of or amount of activity they can do at home, work, or leisure (First Nations Chiefs' Health Committee, 2002/2003). Based on data from the 2001 Aboriginal Peoples Survey, 31 per cent of Aboriginal people in Canada reported having a disability, compared to 13 per cent of other residents (MacDougall, 2006). In the 2002/2003 BC First Nations Regional Longitudinal Health Survey, 20 per cent of First Nations respondents in BC reported having a disability that limited them in their activities at home, while 16 per cent were limited in their activities at work or in school, and 17 per cent reported being limited in their leisure or traveling activities. Disability generally affected those people 45 years of age and older, and the main causes were arthritis (12 per cent), chronic back pain (12 per cent), asthma (6 per cent), and allergies (6 per cent) (First Nations Chiefs' Health Committee, 2002/2003).

### **BC Aboriginal Network on Disability Society – Information and Referral Service**

It can sometimes be difficult for Aboriginal people with disabilities to navigate through the complex web of social and health programs/information available to them. The National Information and Referral Service on Aboriginal Disability Issues helps connect Aboriginal people with disabilities with relevant programs and information. The service, which began in April 2003, consists of an advocate who provides information and makes referrals, through use of an information database that can access employment, training, and other programs for people with disabilities, along with general information on disability- and health-related issues. The information and referral service is accessible by telephone at 1-888-381-7303 (TTY-accessible).

The service is operated by the BC Aboriginal Network on Disability Society (BCANDS), a non-profit organization that has been providing services and advocacy on behalf of Aboriginal people with disabilities since 1991. BCANDS has a membership of approximately 6,100. For more information on BCANDS and the information and referral service, please refer to their website at <http://www.bcands.bc.ca>.

Source: BC Aboriginal Network on Disability Society, 2008.

## Injury Prevention

Injuries are one of the leading causes of death, hospitalization, and disability among Aboriginal people in British Columbia. The Tripartite First Nations Health Plan identifies injury prevention as one of its four priority areas for action to help close the health gap for BC First Nations.

A Provincial Aboriginal Injury Prevention Strategy is being developed to support better health and longevity for First Nations by enhancing surveillance, skills, knowledge, and community capacity. Programs and initiatives that support injury prevention in First Nations communities focus on road safety and driver awareness, occupant restraint (seatbelt use), the proper use of child seats, first responder training, and the prevention of violence and abuse.

One of the leading causes of injuries in the Aboriginal population is motor vehicle crashes. From 1996 to 2002, close to 500 First Nations people died as a result of motor vehicle crashes in BC. This is roughly equivalent to two First Nations communities disappearing in a decade from a preventable cause (Insurance Corporation of British Columbia, 2008). Two issues related to motor vehicle crashes involving First Nations are the high fatality rate in rural crashes, and lack of proper seatbelt use.

Many Aboriginal people live in rural and remote areas, and must drive longer distances to carry out their daily activities. Although there are more crashes in urban areas than in rural,

the ratio of fatalities to injuries demonstrates that rural crashes are more likely to be fatal. Reasons for the increased fatality rates include: higher speeds on poorly maintained resource roads; longer emergency response times and distance to hospitals; multiple victims in a single crash; and crashes involving wildlife. Inadequate vehicle maintenance can also be a factor: this can be due to poverty or to lack of repair services in remote communities (Bowering, 2005).

Transport Canada data shows that 83 per cent of British Columbians wear a seatbelt. However, a study by Health Canada showed that in motor vehicle crashes involving First Nations people, seatbelt use was only noted in 30 per cent of drivers and 10 per cent of passengers (Insurance Corporation of British Columbia, 2008).

### First Nations Emergency Services Society

The Society of Native Indian Fire Fighters of BC was established in 1986 with the initial objective of helping reduce the number of fire-related deaths on First Nations reserves. In 1994, the Society changed its name to First Nations' Emergency Services Society of BC, to reflect its growing diversity of services including: fire safety public education, critical incident stress management, CPR/first responder training, and firefighter training.

Source: First Nations Emergency Services Society, n.d.

### Secwepemc Injury Surveillance Project

Launched in 2005, the Secwepemc Injury Surveillance Project is a community-based project using ACCISS (Aboriginal Community Centered Injury Surveillance System), a data collection and database tool, to gather injury data and deliver injury prevention activities in 10 First Nations communities throughout the Shuswap territory. The project is a collaboration of 10 Secwepemc communities, in partnership with Interior Health, First Nations and Inuit Health, Health Canada, and the Ministry of Healthy Living and Sport. All data is community owned and controlled.

The project has increased awareness of community injury patterns through injury surveillance, enhanced community capacity, and training of community members to collect and input data. The project has expanded to include retrieval of injury data from Williams Lake and 100 Mile House hospitals for use by each of the five First Nations communities served by those hospitals. As well, in partnership with Interior Health, the project has offered injury prevention training and developed a program to provide community-specific injury prevention activities.

Source: L. Jameson, personal communication, April 14, 2009.

## Summary of What We Know:

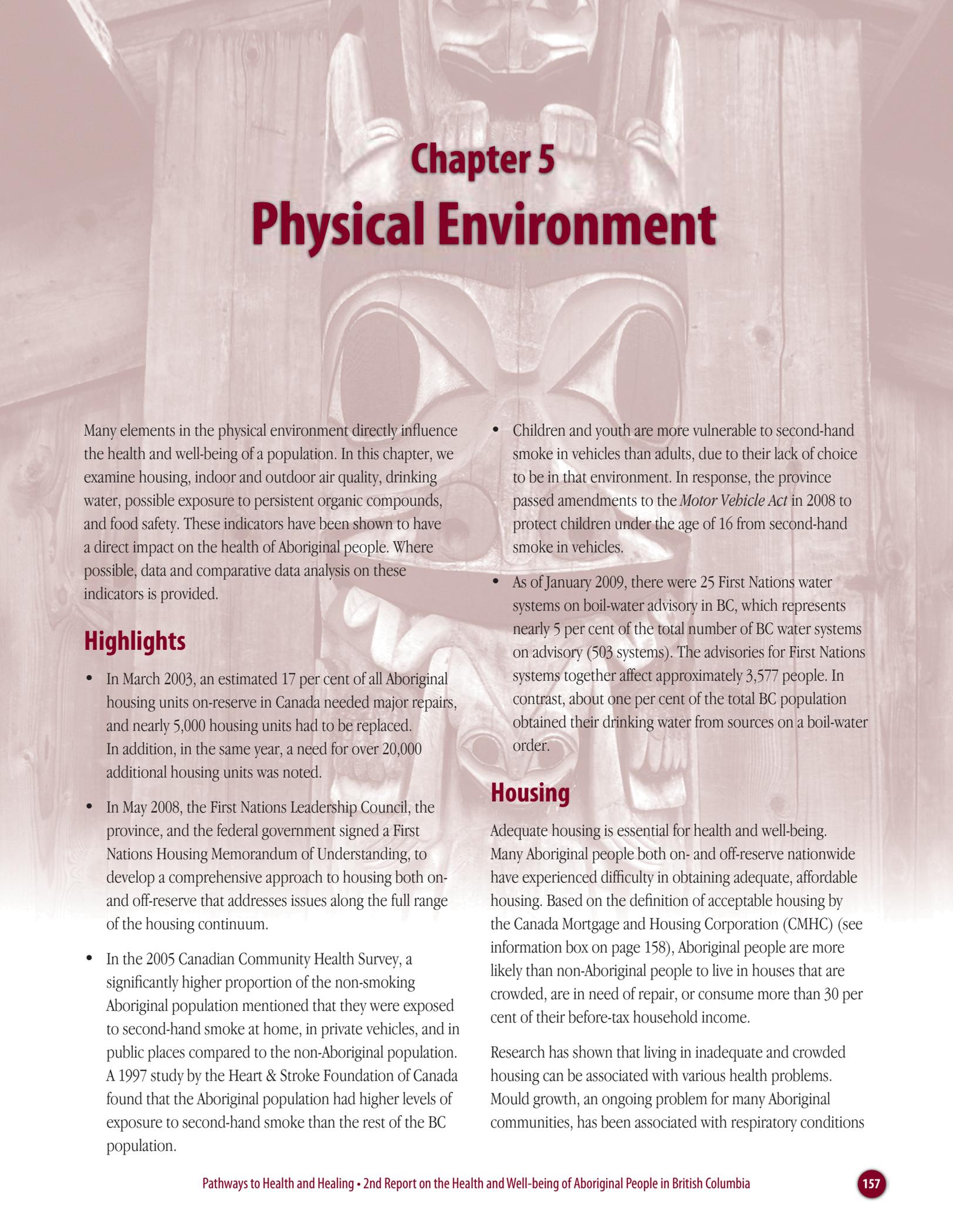
- The average life expectancy for Status Indians males increased from 69.8 in 1992–1996 to 73.0 in 2002–2006. The life expectancy for Status Indian females increased from 76.2 to 77.0 in the same time period.
- Since 1993, the age-standardized mortality rate (ASMR) for all causes of death has been substantially higher for the Status Indian population compared to other residents. From 1993 to 2006, the ASMR for all causes of death decreased significantly for both populations; however, the gap between the two populations has persisted, with an absolute difference of approximately 23 per 10,000 over time.
- The potential years of life lost standard rate (PYLLSR) is substantially higher for the Status Indian population compared to other residents, which indicates that a greater proportion of the Status Indian population dies before reaching age 75. In 2006, the PYLLSR was 97.0 per 1,000 for the Status Indian population, compared to 41.5 per 1,000 for other residents.
- In Canada, compared to the general population, First Nations have higher rates of arthritis/rheumatism, high blood pressure, diabetes, asthma, heart disease, cataracts, and chronic bronchitis. In BC, the prevalence of heart disease, diabetes, arthritis, and other chronic diseases is also much higher in the Status Indian population compared to other residents.
- The combination of a western diet high in carbohydrates, simple sugars, and fats, and a sedentary, inactive lifestyle has more than likely contributed to the epidemic of diabetes and other chronic conditions among the Aboriginal population.
- Aboriginal groups clearly experience a disproportionate level of food insecurity due to poverty and remote locations. Many people living on low incomes are unable to afford sufficient or nutritious food. Those living on remote reserves face additional challenges in obtaining fresh and healthy food, as it must be transported long distances. Food insecurity is a precursor to many health problems, including malnutrition, low birth weight babies, unhealthy pregnancies, sub-optimal child development, as well as poorer health in seniors, and greater rates of chronic disease.
- In 2005, based on Canadian Community Health Survey data, close to 32 per cent of the Aboriginal population (18 years of age and older) reported that they were overweight, and close to 23 per cent reported that they were obese. The obesity rate for the Aboriginal population was almost double the rate for the non-Aboriginal population (12.9 per cent). Combining both the overweight and obese categories, over half (54.4 per cent) of the Aboriginal population surveyed reported that they were either overweight or obese.
- From 1993 to 2006, the ASMR for all cancers in the Status Indian population was relatively stable and generally lower compared to other residents, while the rate for other residents decreased slightly from 17.5 to 14.9 per 10,000 (a statistically significant declining trend).
- The most common condition for digestive system disease deaths is chronic liver disease/cirrhosis, followed by conditions including peptic ulcer, inflammatory bowel disease, and gastrointestinal hemorrhage. From 1993 to 2006, the ASMR for digestive system diseases was consistently 2 to 4 times higher for the Status Indian population than for other residents. In 2006, the rate for the Status Indian population was 4.9 per 10,000, compared to 2.0 per 10,000 for other residents.
- From 1993 to 2006, deaths due to motor vehicle accidents were significantly higher for the Status Indian population than for other residents. Although the ASMR for the Status Indian population declined from 3.5 per 10,000 in 1993 to 1.9 per 10,000 in 2006, the rate was still nearly 2 to 4 times higher for this population compared to the rate for other residents.
- Although the ASMR for accidental poisoning has declined significantly for the Status Indian population since 1993 (from 5.9 per 10,000 in 1993 to 0.9 per 10,000 in 2006), the rate was still higher than the rate for other residents. From 1993 to 2006, 2 to 3 times as many Status Indians died of accidental poisoning as other residents.

- From 1993 to 2006, the ASMR for alcohol-related deaths for the Status Indian population was approximately 5 times higher than the rate for other residents. In 2006, the ASMR for alcohol-related deaths for the Status Indian population was 15.1 per 10,000, compared to 3.4 per 10,000 for other residents.
- Deaths due to medically treatable diseases are those for which mortality could potentially have been avoided through appropriate and timely medical intervention. Since 1993, the ASMR for these diseases has fluctuated and has generally been 2 to 5 times higher for the Status Indian population compared to other residents. In 2006, the rate for the Status Indian population was 1.5 per 10,000, compared to 0.3 per 10,000 for other residents. The higher death rates from these diseases for the Status Indian population more than likely reflect gaps in access to primary care services in this population.
- There was a significant decline in drug-induced deaths for the Status Indian and other resident populations from 1993 to 2006; however, the rate was still substantially higher for Status Indians compared to other residents.
- The rate of deaths due to HIV disease for the Status Indian population has more than doubled since 1993 (0.8 per 10,000 in 1993 to 1.9 per 10,000 in 2006), while the rate for other residents has decreased significantly in the same time period (0.8 per 10,000 in 1993 to 0.2 per 10,000 in 2006).
- A possible explanation for the higher rates of HIV deaths in the Status Indian population may be that Aboriginal people are disproportionately represented in the hard-to-reach populations that are medically eligible for HAART, but do not currently access it: those who are addicted to drugs, the mentally ill, the homeless, and those who live in remote communities without access to expert care. As well, mistrust in medical institutions and lack of culturally safe and supportive care may negatively impact the uptake of treatment for Aboriginal patients.
- Although the ASMR for suicide deaths has dropped significantly for the Status Indian population, a large gap still exists between this population and other residents. From 1993 to 2006, the suicide death rate for the Status Indian population fell from 3.5 per 10,000 to 1.7 per 10,000; however, the 2006 figure was still over twice the rate for other residents (1.7 per 10,000 versus 0.7 per 10,000). Suicide deaths were the fourth highest overall cause of death in the Status Indian population who died before reaching age 75.
- In a 2001 study, Chandler and Lalonde examined suicide rates and their patterns among First Nation bands in British Columbia. In general, their examination showed that suicide rates and patterns were not the same for all the bands in BC. In fact, suicide rates were lower for First Nations bands that had made progress toward self-government and land claims, had cultural facilities, and had control over local services such as health care, education, police, and fire.
- A 2009 study on suicide by Chris Lalonde showed that from 1992–2006, more than 60 per cent of bands did not report any youth (age 15–24) suicides.
- In a national study by Health Canada on suicide prevention, it was found that the two most common causes of suicide were the rapid disintegration of traditional values and the breakdown of both the nuclear and the extended family. Research has repeatedly shown that colonization directly influenced the belief system and religious education of Aboriginal children, which resulted in the dismantling and rejection of native spiritual beliefs. The historical separation of children from their families and elders in the community has resulted in the destruction of the cultural fabric of many Aboriginal communities.
- Colonization and cultural loss has created an environment that has negatively impacted the social structures, personal psychology, and coping strategies of a majority of the Aboriginal population. High rates of suicide among the First Nations population may be better understood in the context of the cultural loss experienced by many Aboriginal communities.

## What Actions Can We Take?

### The health and social services systems can:

- Work on Aboriginal control, planning, governance, and delivery of services (especially primary care services) and enhance these services in ways that meet the needs of Aboriginal people, in order to reduce the gap in medically treatable and other diseases.
- Develop services to assist Aboriginal people with chronic illnesses and disability-related activity limitations.
- Work with communities to develop prevention programs for diabetes in order to improve treatment outcomes.
- Continue to improve data collection systems, in order to get comparative regional data about the occurrence of diabetes, arthritis, and other chronic conditions in the Aboriginal population.
- Expand arthritis services to include all health professionals important in arthritis care (e.g., physiotherapists, occupational therapists) and provide these services to the areas of the province where care is needed.
- Develop a priority system for surgical intervention for Aboriginal people with severe arthritis to reduce surgical wait times.
- In consultation with Aboriginal communities, develop and deliver education programs to heighten awareness of arthritis, osteoporosis, exercise, weight control, and injury prevention. Expand prevention and treatment for alcohol and substance misuse.
- Focus on underlying factors that lead to illness, such as poverty, family distress, child abuse, inadequate housing, and untreated mental illness.
- Increase awareness and promotion of HIV disease prevention and develop more treatment options and increase uptake of HAART among Aboriginal patients.
- Collaborate with Aboriginal groups to review external causes of death data (e.g., motor vehicle accidental deaths and other injury deaths) and develop local strategies to reduce these causes of death in each community.
- Continue to develop a coordinated response to the health and social problems faced by injection drug users.
- Create a provincial Aboriginal mental health and wellness plan. One pillar of the plan would focus on vulnerable communities and youth suicide prevention.



## Chapter 5

# Physical Environment

Many elements in the physical environment directly influence the health and well-being of a population. In this chapter, we examine housing, indoor and outdoor air quality, drinking water, possible exposure to persistent organic compounds, and food safety. These indicators have been shown to have a direct impact on the health of Aboriginal people. Where possible, data and comparative data analysis on these indicators is provided.

### Highlights

- In March 2003, an estimated 17 per cent of all Aboriginal housing units on-reserve in Canada needed major repairs, and nearly 5,000 housing units had to be replaced. In addition, in the same year, a need for over 20,000 additional housing units was noted.
- In May 2008, the First Nations Leadership Council, the province, and the federal government signed a First Nations Housing Memorandum of Understanding, to develop a comprehensive approach to housing both on- and off-reserve that addresses issues along the full range of the housing continuum.
- In the 2005 Canadian Community Health Survey, a significantly higher proportion of the non-smoking Aboriginal population mentioned that they were exposed to second-hand smoke at home, in private vehicles, and in public places compared to the non-Aboriginal population. A 1997 study by the Heart & Stroke Foundation of Canada found that the Aboriginal population had higher levels of exposure to second-hand smoke than the rest of the BC population.
- Children and youth are more vulnerable to second-hand smoke in vehicles than adults, due to their lack of choice to be in that environment. In response, the province passed amendments to the *Motor Vehicle Act* in 2008 to protect children under the age of 16 from second-hand smoke in vehicles.
- As of January 2009, there were 25 First Nations water systems on boil-water advisory in BC, which represents nearly 5 per cent of the total number of BC water systems on advisory (503 systems). The advisories for First Nations systems together affect approximately 3,577 people. In contrast, about one per cent of the total BC population obtained their drinking water from sources on a boil-water order.

### Housing

Adequate housing is essential for health and well-being. Many Aboriginal people both on- and off-reserve nationwide have experienced difficulty in obtaining adequate, affordable housing. Based on the definition of acceptable housing by the Canada Mortgage and Housing Corporation (CMHC) (see information box on page 158), Aboriginal people are more likely than non-Aboriginal people to live in houses that are crowded, are in need of repair, or consume more than 30 per cent of their before-tax household income.

Research has shown that living in inadequate and crowded housing can be associated with various health problems. Mould growth, an ongoing problem for many Aboriginal communities, has been associated with respiratory conditions

### Acceptable Housing

The Canada Mortgage and Housing Corporation provides the following criteria for “acceptable housing”:

- Adequate – Housing that does not require major repairs such as defective plumbing, electrical wiring, or structural repairs to walls, floors, and ceilings.
- Suitable – Housing that has enough bedrooms for the size and make-up of resident households according to the National Occupancy Standards requirements.
- Affordable – Housing that costs less than 30 per cent of before-tax household income.

A household is in “core housing need” if it falls below at least one of the above standards (Treasury Board of Canada Secretariat, 2004).

reserve continue to be serious problems for the Aboriginal population. In March 2003, an estimated 17 per cent of all Aboriginal housing units on-reserve in Canada needed major repairs, and nearly 5,000 housing units had to be replaced. In addition, in the same year, a need for over 20,000 additional housing units was noted (Treasury Board of Canada Secretariat, 2004). Most on-reserve housing is in the form of single-family dwellings and is not suitable for single people and seniors. There are currently no mechanisms in place to move people from these single-family dwellings into smaller, more affordable units when their families are grown and have moved away (BC Office of Housing and Construction Standards, 2007).

and other immune system complications.

Crowded living conditions can also lead to transmission of infectious diseases such as tuberculosis and hepatitis A, as well as risks of injury and mental health problems (Treasury Board of Canada Secretariat, 2004). In addition, spending over 30 per cent of before-tax income on housing may result in families not having sufficient income left for other necessities such as food, clothing, heating their home, and transportation.

The quality, suitability, and availability of housing on-

Lack of housing on-reserve has resulted in overcrowding, which accelerates its deterioration and negatively impacts the health and well-being of the occupants. According to the 2003 Auditor General’s report on First Nations on-reserve housing, houses built under earlier Indian and Northern Affairs Canada [INAC] standards have a lifespan of less than half of the national average home (BC Office of Housing and Construction Standards, 2007).

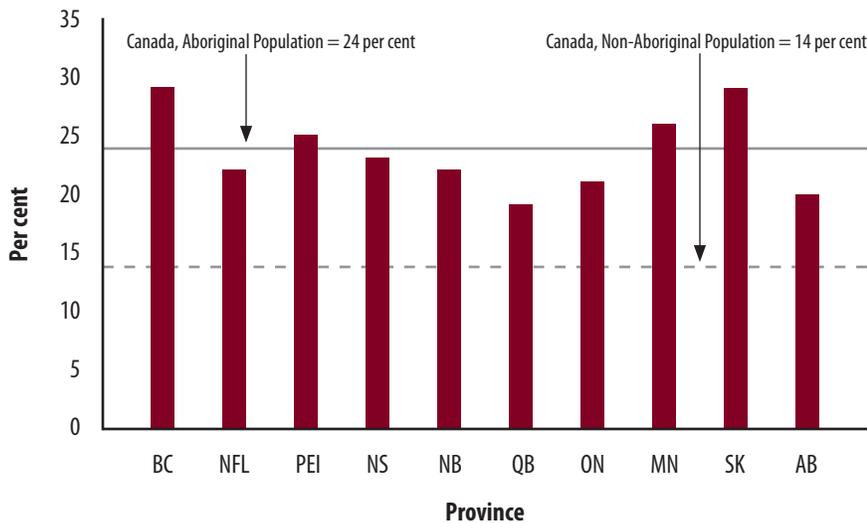
Other barriers to affordable housing on-reserve include construction costs for materials, labour, and utilities that are often higher due to remote locations (Canada Mortgage and Housing Corporation [CMHC], 2004a); and land tenure and financing issues. Due to provisions of the *Indian Act*, First Nations do not have ownership of reserve land, making it difficult to finance housing construction (BC Office of Housing and Construction Standards, 2007). There is also a gap in matrimonial real property laws on-reserve that affects First Nations women, who do not have rights to the matrimonial home in the event of marital breakdown. Provincial laws in this area do not apply on-reserve and the federal government has yet to pass legislation to address this issue. Federal courts do not recognize First Nations traditional law in these matters (Commission on Human Rights, 2004).

For the Aboriginal population living off-reserve, low income has been an important factor preventing them from finding adequate housing. In 2001, the Aboriginal People’s Survey showed that nearly 24 per cent of the Aboriginal population living off-reserve in Canada was in “core housing need,” which meant that they were living in housing units that were inadequate, unsuitable, or unaffordable. The figure for the non-Aboriginal population was 14 per cent. In addition, 18 per cent of the off-reserve Aboriginal population in Canada lived in housing that required major repairs, compared to 8 per cent of the non-Aboriginal population (O’Donnell & Tait, 2003).

While the incidence of core housing need among Aboriginal households in BC has improved since 1996, close to one-third of the Aboriginal population in BC was still in core housing need in 2001. Approximately 32 per cent of North American Indian households, 25 per cent of Métis households, and 38 per cent of Inuit households were in core housing need (O’Donnell & Ballardin, 2006).

Figure 5.1

### Core Housing Need, Aboriginal Population, Canada and Provinces, 2001



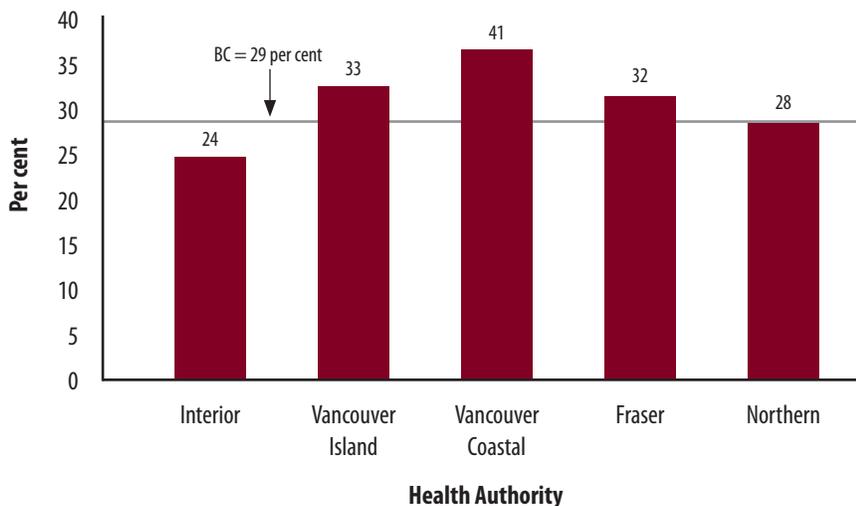
Source: Canada Mortgage and Housing Corporation, Census-based housing indicators and data, revised 2004; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

As shown in Figure 5.1, in 2001, BC and Saskatchewan had the highest percentage of the Aboriginal population in core housing need at 29 per cent. The overall rate for Aboriginal households in Canada was 24 per cent, while the overall rate for non-Aboriginal households was 14 per cent (Treasury Board of Canada Secretariat, 2004).

Figure 5.2 shows the percentage of Aboriginal housing in need of repair or major renovations, by health authority. Vancouver Coastal Health Authority had the highest percentage of Aboriginal housing in need of repair or renovation at 41 per cent, with Fraser and Vancouver Island Health Authorities close behind at 32 and 33 per cent respectively. The overall BC rate was 29 per cent (Jakubec & Engeland, 2004).

Figure 5.2

### Aboriginal Housing Requiring Repair or Major Renovations, by Health Authority, BC, 2005

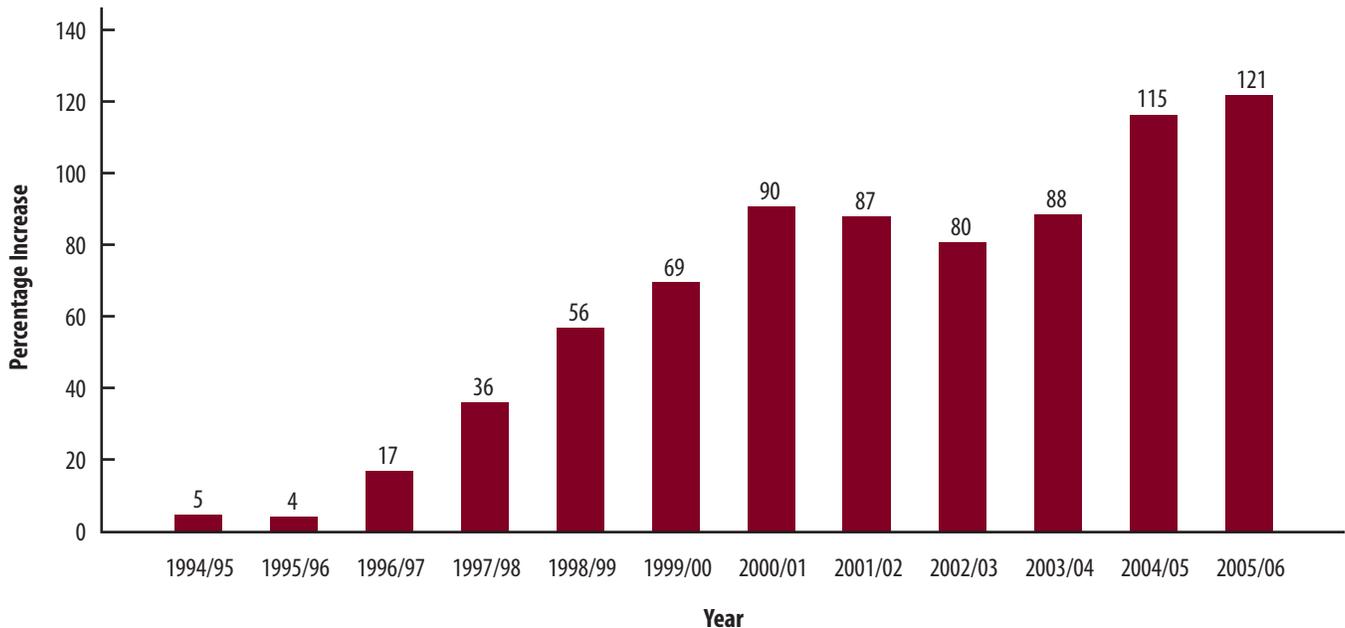


Note: Major renovations could include (but are not limited to) extensive structural faults; structural repairs to the walls, floors, ceilings, or roof; and replacement or upgrading of defective plumbing or electrical wiring (INAC, 2006b).

Source: Housing and Structural Assets, Indian and Northern Affairs Canada, 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Figure 5.3

### Percentage Increase in Number of Aboriginal Housing Units in Need of Major Renovations, 1994/1995 to 2005/2006



Note: Major renovations could include (but are not limited to) extensive structural faults; structural repairs to the walls, floors, ceilings, or roof; and replacement or upgrading of defective plumbing or electrical wiring (INAC, 2006b). To determine the relative changes over time, the process of indexing was used. A base year (1993/1994) was selected as a benchmark with a value of 100. If an index is higher than 100, it shows an increase in the percentage of major renovations. For example, the value in 1994/1995 was 105, which meant a 5 per cent increase over the base year.

Source: Housing and Infrastructure Assets, Indian and Northern Affairs Canada, 2006; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Data from INAC showed that over the period of 1994/1995 to 2005/2006, the percentage of Aboriginal housing units in need of major renovations increased by 121 per cent (Figure 5.3).

per cent). This indicates that Aboriginal people who are homeless are not comfortable with or are not well-served by the available shelters. The street homeless population

## Homelessness

Homelessness is a growing problem in British Columbia, in spite of a provincial economy that had, until recently, been experiencing a period of considerable economic growth. Clearly, not all British Columbians have benefitted from this success. The current financial downturn will undoubtedly add to the numbers of homeless people.

It is difficult to collect data on the homeless due to the transient nature of this population, but estimates indicate that Aboriginal people are significantly over-represented. In the Lower Mainland, Aboriginal people represent 2 per cent of the Greater Vancouver Regional District population, but constitute 30 per cent of the homeless (Social Planning and Research Council of BC [SPARC], 2005). The rate is higher among the street homeless, who do not access shelters (34

### Aboriginal Housing Management Association of BC

Created in the mid-1990s, the Aboriginal Housing Management Association is the only Aboriginal social housing management agency in Canada, and is responsible for management and delivery of affordable and quality housing to all Aboriginal people in the province. It currently represents 14 Aboriginal housing associations in BC.

In October 2004, the province and the association agreed to transfer administrative responsibility for 189 units of social housing to the association. This agreement was the first of its kind in Canada and was an important step toward Aboriginal self-management of social housing (BC Housing, 2006).

surveyed were generally worse off than the sheltered homeless and had a range of health problems (SPARC, 2005). A Vancouver city staff report concluded that 2,200 units of housing were needed in the next 10 years to meet basic housing needs (Laird, 2007).

## Federal and Provincial Housing Initiatives

In 2006, the federal government committed \$450 million to improve the water quality and housing on-reserve, education outcomes, and socio-economic conditions for the Aboriginal population. In addition, up to \$300 million was committed to the provinces to address issues of off-reserve Aboriginal housing (Department of Finance Canada, 2006).

In July 2007, the province announced the allocation of 292 units at 13 housing developments in 10 communities across BC under the Aboriginal Housing Initiative. This initiative was funded through a \$50.9 million grant transferred by the federal government from the Off-Reserve Aboriginal Housing Trust. The trust is being administered in consultation with the Aboriginal Housing Management Association (BC Housing, 2007).

In April 2007, the federal government announced it would create a \$300 million First Nations Market Housing Fund. The purpose of this fund is to broaden the range of housing options for residents of First Nations communities. The fund will provide partial financial backing for the lender and establish a credit enhancement facility to help individuals on-reserve obtain loans (First Nations Market Housing Fund, n.d.).

In May 2008, the First Nations Leadership Council, the province, and the federal government signed a First Nations Housing Memorandum of Understanding, to develop a comprehensive approach to housing both on- and off-reserve that addresses issues along the full range of the housing continuum. Possible initiatives for consideration include exploring ways to increase cultural appropriateness and sustainability of social- and market-based housing for First Nations communities, and exploring on- and off-reserve partnership opportunities between the public and private sectors to promote home ownership (INAC, 2008a).

### Seabird Island Sustainable Community Housing

In 2004, the Seabird Island First Nation, located near Agassiz, opened the Seabird Island First Nation Sustainable Community Development Project. The project involved the construction of seven affordable housing units on-reserve that combined the principles of sustainable community housing, and took advantage of renewable, energy-efficient technology. It is the first sustainable Aboriginal community development of its kind in the world.

The project was a joint venture between the Seabird Island First Nation, Indian and Northern Affairs Canada, and the Canada Mortgage and Housing Corporation. The homes are designed to reflect community values and needs, and to be affordable, durable, energy-efficient, flexible, healthy, and environmentally responsible.

The homes, which are expected to last 100 years, are made of high-quality, healthy materials that should reduce future maintenance and repair issues and protect the health of the occupants (e.g., mould-resistant drywall, rainscreen wall system to keep water out, formaldehyde-free insulation, ultra-low VOC paints, etc.). They integrate renewable energy sources (wind, solar, and geo-thermal), to save on heating and electrical costs. The three wind generators built for the project provide 15 per cent of the total energy required by the homes, and it is expected that the building envelope design and the renewable energy systems together will reduce energy usage by 75 per cent when compared to a typical home.

In addition, the design of the homes is flexible, to accommodate the changing needs of the occupants, whether they are families, Elders, or people with disabilities. Each unit in the triplex, and each detached home, can be converted into two self-contained suites to create more housing units.

Source: CMHC, 2004b.

## Air Quality

### Indoor Air Pollution

From a public health perspective, indoor air pollution is an important issue, since most people spend the majority of time living and working indoors. Of the different types of indoor air pollutants, second-hand smoke and mould are the most critical, particularly for the Aboriginal population.

#### Second-hand smoke

Second-hand smoke is made up of mainstream smoke (smoke exhaled by the smoker) and sidestream smoke (smoke from the burning end of the cigarette, cigar, or pipe). It is identified as a “Class-A” cancer-causing substance, which means that it is very dangerous to human health, and there is no safe level of exposure (Health Canada, First Nations and Inuit Health, 2005).

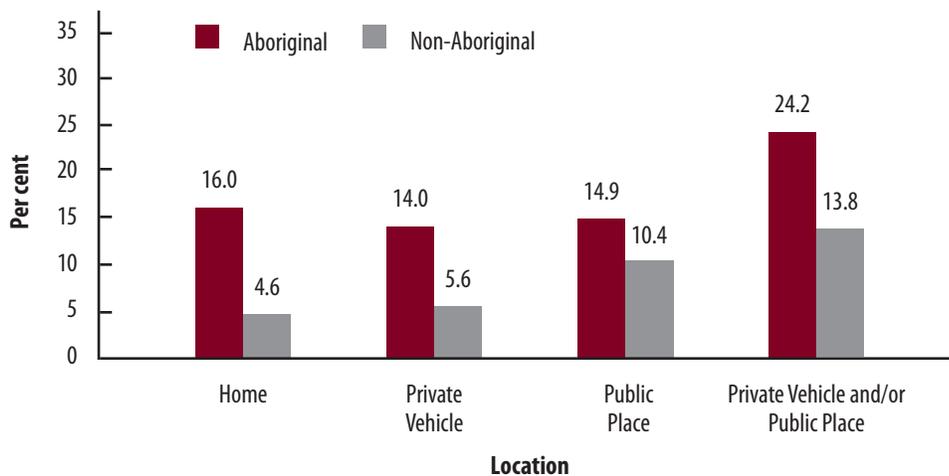
Less than half of the smoke from cigarettes is inhaled by the smoker, leaving the remainder in the air, where it can be inhaled as second-hand smoke. Compared to what is inhaled

by the smoker, second-hand smoke has twice the nicotine and tar and five times the carbon monoxide. In addition, it remains in the environment, in clothes, carpets, draperies, and air even after the cigarette has been extinguished — and it remains toxic (Alberta Alcohol and Drug Abuse Commission [AADAC], 2007).

People exposed to second-hand smoke are at risk for lung cancer, heart disease, leukemia, lymphoma, and breathing problems. Children are particularly vulnerable as their lungs are still developing and their intake is higher due to faster breathing rates. Risks for children include bronchitis, pneumonia, asthma, middle ear infection, and tonsillitis. Second-hand smoke can affect children’s behaviour and their ability to understand and reason. Studies have shown that children who are regularly exposed to second-hand smoke score lower on tests in reading, math, logic, and reasoning skills (Ministry of Health [MOH], 2005). Infants have a higher likelihood of dying of sudden infant death syndrome (SIDS), and there are also risks to unborn babies, including improper fetal development or stillbirth (AADAC, 2007).

**Figure 5.4**

**Exposure to Second-hand Smoke, Non-Smoking Population Aged 12+ Years, BC, 2005**



Note: The Aboriginal population includes those people living in Canada who identified themselves or their cultural and/or racial background as North American Indian, Métis, or Inuit. The Aboriginal people identified in the 2005 Canadian Community Health Survey includes only those who live off-reserve.

Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005. Data was extracted from table 105-0491 (CANSIM). Due to changes in the questionnaire introduced in 2005, these data are not comparable to the CANSIM table 105-0112; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

Based on data from the 2005 Canadian Community Health Survey (CCHS), 38.4 per cent of the Aboriginal population smoked compared to 17.2 per cent of other British Columbians. Due to this higher smoking rate among the Aboriginal population, the issue of second-hand smoke is particularly important to this group. In the 2005 CCHS, a significantly higher proportion of the non-smoking Aboriginal population mentioned that they were exposed to second-hand smoke at home, in private vehicles, and in public places compared to the non-Aboriginal population (Figure 5.4). A 1997 study by the Heart & Stroke Foundation of Canada also found that the Aboriginal population had higher levels of exposure to second-hand smoke than the rest of the BC population, at home, work, and school (Heart & Stroke Foundation of BC & Yukon, 1997).

Measures are underway to expand smoke-free environments. In 2008, the province passed amendments to the *Motor Vehicle Act* to protect children under the age of 16 from

second-hand smoke in vehicles. Children and youth are more vulnerable to second-hand smoke in vehicles than older people, due to their lack of choice to be in that environment (Provincial Health Officer [PHO], 2008). Research indicates that smoking one cigarette in a parked vehicle with the windows rolled up will produce a concentration of second-hand smoke up to 11 times higher than what would be encountered in a smoky bar (MOH & Ministry of Public Safety and Solicitor General, 2008). Regulatory requirements for the legislation are being determined and enforcement will be the responsibility of local police and the RCMP (MOH & Ministry of Public Safety and Solicitor General, 2008).

### **Mould**

BC has a relatively damp climate, conducive to the growth of mould both indoors and outdoors. There has not been much systematic study of the health effects of mould in BC; however, studies that are available indicate associated health problems. In 2001, a study by a Health Canada team noted that the frequency of substandard housing in First Nations communities was associated with humid, damp conditions, and that these conditions contributed to poor air quality and health problems, such as asthma (Lawrence & Martin, 2001).

### **North Island Mould Issue**

The Tsulquate reserve near Port Hardy has seen a number of prenatal deaths, child removals, and a high incidence of asthma and respiratory illness, which the Gwa'sala-'Nakwaxda'xw Nation blames on mould-riddled housing. Overcrowding is a common concern on the reserve, with about 500 people packed into 112 homes (Kines, 2008a).

According to the Band Manager, four homes have been abandoned and others are making the occupants sick. The Band maintains that the houses were improperly designed in the first place, which contributes to the mould problem.

The Minister of Children and Family Development has stated that none of the 47 band children in foster care were removed because of substandard housing; however, the minister stressed his willingness to work with Chief, Council, and the federal government to get help for the Band (Kines, 2008b).

Indian and Northern Affairs Canada recognizes that mould is a serious problem and a health hazard on the reserve. The department has been working with the Gwa'sala-'Nakwaxda'xw Nation to develop a mould remediation plan (Kines, 2008a, 2008b).

Source: Kines, 2008a, 2008b.

### **Mould Prevention**

Mould has been a consistent problem for many Aboriginal communities and is linked to a variety of health problems, such as allergies, breathing problems, and serious illness. Mould can look like a stain or smudge, and often gives off a musty smell.

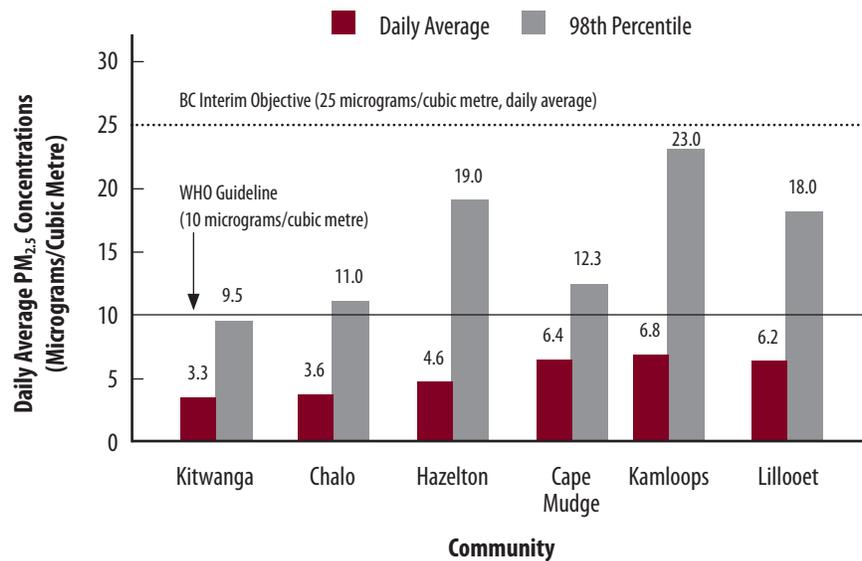
To determine if a stain is mould, dab the mark with a drop of household chlorine bleach. If the colour of the stain changes or disappears, it is likely mould. As mould needs moisture to grow, the best way to prevent it from appearing is to control the level of moisture in your home.

The local housing department should be contacted if the mould returns, if the mould area is large, or if the house contains a lot of mould.

More information on mould can be obtained from Health Canada's website at <http://www.hc-sc.gc.ca/ewh-semt/air/in/poll/mould-moisissure/index-eng.php>.

Source: Health Canada, n.d.

Figure 5.5

Average and Extreme Concentrations of PM<sub>2.5</sub>, 2004–2008

Note: The BC Interim Objective (25 micrograms/cubic metre) is used for the purposes of issuing air quality advisories. The World Health Organization guideline (10 micrograms/cubic metre) is used to address concerns about long-term exposure to PM<sub>2.5</sub>.

Source: Ministry of Environment & Ministry of Healthy Living and Sport, 2009.

Children, people with a history of allergies, those with underlying lung damage, and immunocompromised persons are most vulnerable to the health effects of mould. These effects include coughs, asthma, bronchitis, and allergic reactions (PHO, 2004).

The basic advice for dealing with mould, second-hand smoke, or other indoor air contaminants is to keep houses clean, dry, and well-ventilated, and to remove the source or reduce the level of the contaminant.

The Office of the Auditor General of Canada is monitoring the progress of INAC, CMHC, and Health Canada in addressing mould issues in First Nations communities. The Auditor General's report in May 2006 noted that no federal organization had taken responsibility for assessing the extent of the problem and developing a comprehensive strategy for addressing it. Without sustained attention to an action plan to address the problem, it is likely that housing stock will continue to degrade and negative health impacts will continue (Office of the Auditor General of Canada, 2006).

## Outdoor Air Pollution

Outdoor air pollution is another issue that has a significant health impact in BC, both for the Aboriginal population and the BC population as a whole. In BC in 2007, over one-third of monitored sites exceeded the provincial air quality objective for fine particulate matter (PM<sub>2.5</sub>) at least once in the year. Outside of the Lower Mainland, particulate pollution is a major issue, due to industry (e.g., pulp and paper mills) and open burning of forest debris and domestic sources (e.g., wood stoves) (PHO, 2004). In the Lower Mainland, pollutants related to vehicle exhaust are likely the most significant health risks.

In order to assess whether First Nations communities have better or worse air quality than non-First Nations communities, pollutant concentrations on or near a number of First Nations communities in BC were analyzed. Airborne particulate matter is of particular concern, as it has been linked to mortality and increased disease from both short- and long-term exposure. Fine particulate matter (extremely

Table 5.1

**BC First Nations Communities Where PM<sub>2.5</sub> or PM<sub>10</sub> Was Monitored, Between 2004 and 2008**

Location	Pollutant Monitored
New Aiyansh*	PM <sub>2.5</sub>
Cape Mudge (Quadra Island)	PM <sub>2.5</sub>
Kamloops Indian Band (adjacent to City of Kamloops)	PM <sub>2.5</sub>
T'it'q'et Band office (Lillooet)	PM <sub>2.5</sub> & PM <sub>10</sub>
Chalo School (near Fort Nelson)	PM <sub>2.5</sub> & PM <sub>10</sub>
Kitwanga Elementary School	PM <sub>2.5</sub> & PM <sub>10</sub>
Hazelton	
• Northwest Community College (Hazelton)	PM <sub>2.5</sub> & PM <sub>10</sub>
• New Hazelton Elementary School (Hazelton)	PM <sub>10</sub>

\* There was insufficient data from this location for analysis.

Note: Data are not continuous throughout the monitoring period (2004 to 2008).

Source: Ministry of Environment, Regional Meteorologists, personal communication, 2009.

small solid or liquid particles smaller than 2.5 millionths of a metre and labelled PM<sub>2.5</sub>), has been shown to penetrate deep into the lung, where it is capable of causing lung and other respiratory diseases. PM<sub>2.5</sub> is a prime constituent of smoke emitted by both domestic heating and the open burning of woody debris. Airborne particulate up to 10 millionths of a metre in size (PM<sub>10</sub>) includes PM<sub>2.5</sub> and coarser particulate matter that cannot penetrate deep into the lung. However, these coarser particles can still aggravate disease in the upper respiratory tract and can aggravate asthma. This analysis only includes particulate matter, since particulates are the primary pollutants that have been monitored in or near First Nations communities (see Table 5.1).

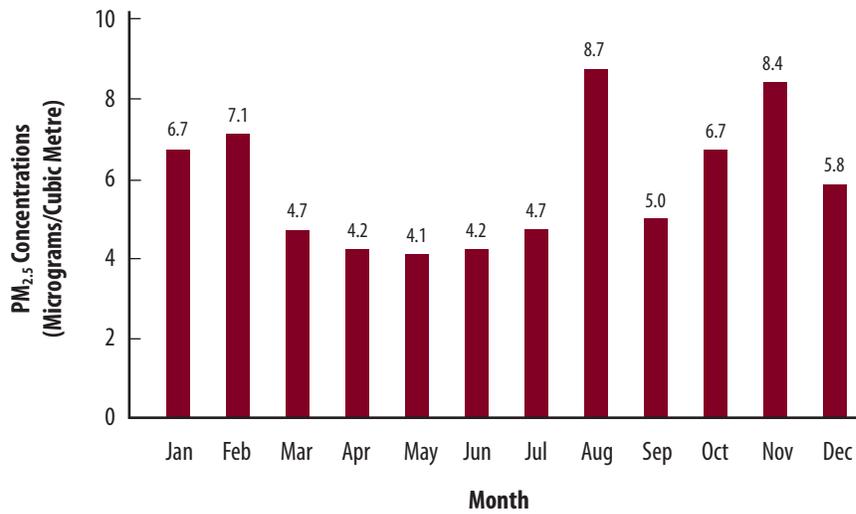
Figure 5.5 shows the daily averages of PM<sub>2.5</sub> concentrations and a measure of the highest concentrations at six First Nations communities from 2004 to 2008, although some sites have data gaps.

Figure 5.5 indicates that the average PM<sub>2.5</sub> concentrations at all six First Nations communities meet the guidelines of the

World Health Organization (10 micrograms per cubic metre). This guideline is used to address concerns about long-term exposure to PM<sub>2.5</sub>. Of the six communities monitored, the Kamloops Indian Band and the Cape Mudge First Nation had the highest average PM<sub>2.5</sub> concentrations (6.8 and 6.4 micrograms per cubic metre, respectively), suggesting that residents there would have a higher level of exposure to PM<sub>2.5</sub> over the long-term than the other sites.

The 98th percentile bars in Figure 5.5 show the daily average concentration of PM<sub>2.5</sub> that was not exceeded (98 per cent of the year). Based on this metric, this figure indicates that all of the communities listed had PM<sub>2.5</sub> concentrations below the BC Interim Objective for PM<sub>2.5</sub> (25 micrograms per cubic metre) for 98 per cent of the year. In the central interior (Hazelton, Chalo, Kitwanga) and the coast (Cape Mudge), the highest pollution days usually occur during cold, stagnant winter days when major emission sources are domestic wood stoves, open burning, and industry. In the southern interior (Lillooet, Kamloops), summer wildfires are often the cause of these relatively high PM<sub>2.5</sub> concentrations.

Figure 5.6

Average Monthly PM<sub>2.5</sub> Concentrations, Kamloops, BC, 2000–2006

Source: Ministry of Environment & Ministry of Healthy Living and Sport, 2009.

Figure 5.6 compares the concentration of PM<sub>2.5</sub> throughout the year at the Kamloops Indian Band location, to illustrate how seasonal changes in emissions and meteorology influence air quality in First Nations communities. A blanket of snow and deep, cold air masses frequently cover central and northern BC for much of the late fall and winter. This leads to high concentrations of air pollutants at these times, for the following reasons. First, cold temperatures increase the need for domestic heating, resulting in higher use of wood stoves and therefore higher emissions of PM<sub>2.5</sub> and gaseous organic pollutants. Also, the forest industry prefers to burn forest debris at these times. This is because snow cover prevents the spread of any wildfires that may be ignited by open burning. Finally, cold air is dense and sluggish and settles in valley bottoms during stagnant conditions, where it traps pollutants. This allows PM<sub>2.5</sub> concentrations to gradually build up over several days, sometimes significantly degrading the air quality, until a new weather system arrives and pushes fresh, cleaner air into the valley. It is generally after a few days of cold, stagnant conditions that the Ministry of Environment issues most air quality advisories related to PM<sub>2.5</sub>. At the Kamloops

Indian Band location and in other southern interior First Nations locations, late-summer wildfires can also lead to high PM<sub>2.5</sub> concentrations that trigger air quality advisories.

Figures 5.5 and 5.6<sup>1</sup> suggest that outdoor air quality in the six First Nations communities monitored is comparable to that of an interior non-Aboriginal community (Kamloops). However, additional monitoring is needed to improve the understanding of air quality in the First Nations communities. That said, any improvement in air quality will further protect the health of people in these communities.

In addition to the locations in Table 5.1, air quality was analyzed in the Sto:lo Nation traditional territory in the Lower Fraser Canyon, where salmon drying occurs each summer and fall. Concentrations of airborne mercury, chromium, phosphorus, potassium, metals, pesticides, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and ozone were measured. Fortunately, only extremely low concentrations of these pollutants were detected, suggesting that any health risk associated with these air pollutants was negligible (M. Graham, Ministry of Environment, personal communication, 2009).

<sup>1</sup> In Figures 5.5 and 5.6, the Kamloops data is representative of both the City of Kamloops and the Kamloops Indian Band located adjacent to the city. Therefore the Kamloops data in these charts can be used to compare a non-Aboriginal community to all six First Nations communities. Except for Kitwanga, which had only ten months of data, all communities had at least one year of air quality data.

Over the years, governments at all levels have engaged in activities to protect the environment and the health of the public, including First Nations communities. BC implemented the *Environmental Management Act* in 2004, which gives the province overall responsibility for air emissions, and provides the legislation for air quality-related regulations, including industrial point sources, mobile sources, and area sources. More recently, the Air Action Plan has been implemented, diesel retrofits of school buses and trucks are underway, and the Open Burning Smoke Control Program is being updated. Airshed plans are also in place or near completion in many BC communities, including Metro Vancouver, Fraser Valley Regional District, Prince George, Whistler/Sea to Sky Highway, Quesnel, Williams Lake, Bulkley Valley-Lakes District, North Okanagan, Central Okanagan, Okanagan-Similkameen, and Merritt. Most First Nations' communities, however, do not yet have their own airshed plans, though First Nations representatives are invited and often participate in community airshed planning.

In February 2005, a workshop on Air Quality on First Nations' Lands was held at the Shxw̓ha:y First Nation Hall in Chilliwack. Workshop participants agreed that air quality issues in First Nations communities were at least as important as other environmental issues such as waste water, drinking water, and contaminated sites. The main gaps and challenges identified at the workshop included:

- A province-wide air quality network to share information on initiatives to monitor, assess, and improve air quality in First Nations communities should be developed.
- Greater jurisdictional certainty on air quality issues on First Nations lands needs to be established. This includes development of a clearer definition of who has responsibility for improving air quality on First Nations land.
- A First Nations "air quality pathfinder" should be put in place to help find information and resources to improve air quality in each community.
- Partnerships should be developed between First Nations, the health care community, and other levels

of government to improve indoor and outdoor air quality.

- Community knowledge of indoor and outdoor air quality and its relation to health should be increased through improved communication and education.
- First Nations communities should be more involved in air quality monitoring and management through training and through partnerships with other levels of government (Ministry of Water, Land and Air Protection, 2005).

## Drinking Water

There are currently 280 First Nations community water supply systems in BC, under the local First Nations jurisdiction.<sup>2</sup>

The local First Nation is responsible for construction, design, operation, and maintenance of their water systems, supported by funding from INAC. Funding is also available for water filtration treatment (PHO, 2007).

While bands ultimately make decisions about management of their water supply systems, programs on-reserve in BC are similar to those off-reserve. For example, INAC<sup>3</sup> undertook an engineering assessment of most water supply systems on-reserve serving more than three homes. INAC has committed

### 2008 Victor M. Terry Award

In 2008, James Tomma from the Little Shuswap Indian Band was awarded the BC Water and Waste Association's Victor M Terry Award for the Drinking Water System Operator of the Year.

Since 2003, James Tomma has been the water systems operator for the five reserves that comprise Little Shuswap Indian Band. He has become a role model to all students, but in particular to First Nations students. James has been a guest speaker at several workshops provided for operators and managers of First Nations treatment facilities. His first-hand knowledge of treatment issues and his overall dedication to First Nations' causes has made him very successful in this area.

<sup>2</sup> R. Lawrence, personal communication, May 7, 2009.

<sup>3</sup> Funding provided by INAC does not necessarily cover all costs.

to filtering all surface water sources and meeting criteria set out in the *Guidelines for Canadian Drinking Water Quality* (PHO, 2007).

Operators of First Nations water systems have access to training and certification. For example, First Nations communities can participate in the Circuit Rider Program, where an experienced operator trains the local First Nations operator on the proper operation and maintenance of the water supply system. The number of certified operators working for local First Nations has steadily increased. Before 2003, there were 86 certified operators. In 2003/2004, 42 more were certified, and in 2004/2005, 18 additional operators obtained certification (PHO, 2007).

Another example of training is Health Canada’s Drinking Water Safety Program (see information box). As of 2007/2008, 167 BC First Nations participated in the program, and over 75 per cent of participating bands have been provided with on-site water sampling equipment and supplies (R. Lawrence, personal communication, March 13, 2007).

The safety of drinking water in First Nations communities is a concern both provincially and nationally. Boil-water advisories are one way to track issues with a drinking water source. A boil-water advisory is a notice from a water supplier to a consumer that the drinking water may be contaminated, and

that they should boil or otherwise disinfect the water before use, or use an alternate source of drinking water. As of January 2009, there were 25 First Nations water systems on boil-water advisory in BC, which represents nearly 5 per cent of the total number of BC water systems on advisory (503 systems). The advisories for First Nations systems together affect approximately 3,577 people (L. Pillsworth, personal communication, January 28, 2009).

Boil-water advisories are usually temporary, but may last weeks, months, or even years if the situation is not addressed. Concern has been raised that long-term boil-water advisories can result in consumer complacency. “Many surface water sources in BC contain few pathogens and communities relying on these sources without treatment may not experience a noticeably high incidence of intestinal illness. However, when a contamination event does occur—something as simple as a beaver taking up residence near the intake works—a high proportion of the population can become infected by pathogens” (MOH, PHW, 2006). As of January 2009, of the 25 boil-water advisories in place on First Nations systems, 5 had been in place for 5 to 10 years (see Table 5.2).

**Drinking Water Safety Program**

Testing and monitoring of drinking water supplies are crucial activities in ensuring the availability of safe drinking water. The Drinking Water Safety Program was launched by Health Canada in 1991, as a means to develop First Nations capacity in these activities.

The program provides:

- Water sampling training.
- Community microbiological laboratory equipment for water testing.
- Ongoing assistance of Environmental Health Officers on drinking water issues.
- An online data management tool that allows users to generate water quality reports.

Source: R. Lawrence, personal communication, March 13, 2007.

**Table 5.2**

**Boil-Water Advisories in Place for Specified Periods of Time, First Nations On-Reserve, as of January 28, 2009**

Time Periods	Number of Boil-Water Advisories
0–1 Year	9
> 1–5 Years	10
> 5–10 Years	5
> 10 Years	1
<b>TOTAL ADVISORIES</b>	<b>25*</b>

\* Does not include “do not consume” advisories, which would bring the total number of advisories to 27.

Source: L. Pillsworth, personal communication, January 28, 2009.

The concern with the quality of drinking water in First Nations communities was highlighted in the September 2005 report by the Office of the Auditor General of Canada. The report found that many First Nations communities were at risk from unsafe drinking water, and that there was a lack of legislation on the quality of drinking water and inadequate technical support available to assist First Nations in managing their water systems (Office of the Auditor General of Canada, 2005). Subsequently, in October 2005, the community of Kashechewan in Northern Ontario was evacuated, due to concerns about water quality in the community (INAC, 2006d).

In response to the national attention focused on drinking water quality in First Nations communities, the federal government launched an action plan in 2006 to address these concerns. The federal action plan committed to the following:

- Implement the protocol for safe drinking water for First Nations communities (with standards for design, construction, operation, and maintenance of systems).
- Implement mandatory training for treatment plant operators.
- Appoint an expert panel to advise on a regulatory framework.<sup>4</sup>
- Implement remedial plans for those First Nations communities with serious water issues (INAC, 2006c).
- Provide regular reporting on the progress of the plan.

INAC is conducting regional consultations with First Nations in British Columbia, as part of a cross-Canada process to gain feedback necessary to develop a legislative framework for drinking water protection.

Twenty-one First Nations water systems across Canada were identified as priority systems for action under the federal government's plan, due to the high-risk nature of the water systems, and the fact that they were under boil-water advisories. Six of these communities are located in BC (Semiahmoo, Shuswap, Toqhaht, Canoe Creek, Lake Babine Nation [Fort Babine], and Toosey). Remedial plans are currently in place for all of these community water systems,

and progress has been made towards improving the safety of the drinking water supplies. For example, in November 2006, the boil-water advisory was lifted for the Shuswap (INAC, 2006a). The remaining BC communities have been removed from the Priority Community category as their risk level has been downgraded from high to medium (INAC, 2008b).

For the off-reserve population, the safety of drinking water is not assured. According to the 2001 Aboriginal Peoples Survey, 17 per cent of Aboriginal people living off-reserve in BC reported that the water in their homes was not safe for drinking, and 21 per cent reported that there were times in the year when their water was contaminated (O'Donnell & Ballardin, 2006).

## Traditional Foods and Food Safety

The traditional diet of Aboriginal peoples included many varieties of fish, seafood, wild game, berries, and plants. It was a diet high in protein, fruits and vegetables, and essential minerals and vitamins, and low in refined and starchy carbohydrates. Harvesting of traditional foods had non-nutritional benefits as well, through increased physical activity. The traditional diet of Aboriginal peoples sustained them for centuries before European contact.

Contact with Europeans resulted in many changes to Aboriginal peoples' diets and lifestyles. The traditional diet changed, and began to include refined and starchy carbohydrates, such as flour, potatoes, rice, and beans. The residential school system separated children from their families, and this hindered the passing down of knowledge about traditional foods. Generally, the current western diet is less healthy than the traditional diet, due to the increase in calories, carbohydrates, total fat, and saturated fat, and lower levels of nutrients (Mos et al., 2004; Kuhnlein & Chan, 2000). Changes in the Aboriginal diet may be an important factor underlying higher rates of premature morbidity and mortality among the Aboriginal population.

Only about 15 per cent of Aboriginal people across Canada still obtain most of their animal proteins from hunting and fishing (Young, Reading, Elias, & O'Neil, 2000); however, fish, shellfish, and wild game are still an important part

<sup>4</sup> The expert panel's report, *Report of the Expert Panel on Safe Drinking Water for First Nations* (INAC, 2006d), was released in November 2006.

of Aboriginal nutrition and culture. There are risks of contamination that must be considered in consuming these types of foods.

- Red tides, or harmful algae blooms, are a concern for Aboriginal people who harvest shellfish. The algae produce a biotoxin that can be fatal to individuals who eat the affected shellfish.
- Industrial pollutants, such as methylmercury and polychlorinated biphenyls (PCBs), can contaminate marine animals and result in fishery closures. Long-term exposure to mercury, through consuming infected marine animals, can cause permanent brain and kidney damage.

### Red Tide

Red Tides, also called harmful algae blooms, can be a problem for those Aboriginal communities who continue to harvest shellfish as part of their traditional heritage. Red Tide is caused by an algae, *Alexandrium*; this algae produces a biotoxin that can cause a potentially fatal nervous system disease known as Paralytic Shellfish Poisoning (PSP).

Monitoring of shellfish harvesting areas can help reduce the risk of PSP. Some Aboriginal communities on the coast manage their own PSP-monitoring programs. For example, Nisga'a Fisheries was contracted by the Department of Fisheries and Oceans to conduct a bivalve biotoxin study for the Nisga'a harvest areas. Four PSP-monitoring stations were installed in Winter Inlet, Nasoga Gulf, and the north and south ends of Observatory Inlet (Nisga'a Nation, 2004).

To find out if an area is open for shellfish harvesting, contact the Department of Fisheries and Oceans toll free at 1-866-431-3474, or visit their website at [http://www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/biotoxins/closures/default\\_e.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/biotoxins/closures/default_e.htm).

Source: Nisga'a Nation, 2004.

- Foodborne botulism is a concern among Aboriginal peoples; common sources include home-prepared products like canned foods, fermented Inuit food, and improperly stored marine meat (Weir, 2001). At the beginning, the symptoms of botulism can be similar to food poisoning (e.g., vomiting and nausea). It can progress, however, to include blurred vision, slurred speech, and muscle weakness. In some cases, the victim can become completely paralyzed (Public Health Agency of Canada, 2002).
- Micro-organisms, such as trichinella, can be found in wild game (e.g., bear, wolf). In 2005, 27 cases of trichinosis were diagnosed in BC, primarily from eating bear meat (McIntyre et al., 2006).

The potential risks from contamination of traditional foods must be weighed against the nutritional benefits of the diet. Ensuring the safety of traditional foods requires partnerships with scientific, health, and government organizations, such as the Department of Fisheries and Oceans.

## Summary of What We Know:

- In March 2003, an estimated 17 per cent of all Aboriginal housing units on-reserve in Canada needed major repairs, and nearly 5,000 housing units had to be replaced. In addition, in the same year, a need for over 20,000 additional housing units was noted.
- In 2001, BC and Saskatchewan had the highest percentage of the Aboriginal population in core housing need at 29 per cent. The overall rate for Aboriginal households in Canada was 24 per cent, while the overall rate for non-Aboriginal households was 14 per cent.
- Data from Indian and Northern Affairs Canada showed that over the period of 1994/1995 to 2005/2006, the percentage of Aboriginal housing units in need of major renovations increased by 121 per cent.

- Other barriers to affordable housing on-reserve include construction costs for materials, labour, and utilities that are often higher due to remote locations; and land tenure and financing issues. Due to provisions of the *Indian Act*, First Nations do not have ownership of reserve land, making it difficult to finance housing construction.
- In the Lower Mainland, Aboriginal people represent 2 per cent of the Greater Vancouver Regional District population, but constitute 30 per cent of the homeless. The rate is higher among the street homeless, who do not access shelters.
- In July 2007, the province announced the allocation of 292 units at 13 housing developments in 10 communities across BC under the Aboriginal Housing Initiative. This initiative was funded through a \$50.9 million grant transferred by the federal government from the Off-Reserve Aboriginal Housing Trust.
- In May 2008, the First Nations Leadership Council, the province, and the federal government signed a First Nations Housing Memorandum of Understanding, to develop a comprehensive approach to housing both on- and off-reserve that addresses issues along the full range of the housing continuum.
- In the 2005 Canadian Community Health Survey, a significantly higher proportion of the non-smoking Aboriginal population mentioned that they were exposed to second-hand smoke at home, in private vehicles, and in public places compared to the non-Aboriginal population. A 1997 study by the Heart & Stroke Foundation of Canada found that the Aboriginal population had higher levels of exposure to second-hand smoke than the rest of the BC population.
- Children and youth are more vulnerable to second-hand smoke in vehicles than adults, due to their lack of choice to be in that environment. In response, the province passed amendments to the *Motor Vehicle Act* in 2008 to protect children under the age of 16 from second-hand smoke in vehicles.
- In 2001, a study by a Health Canada team noted that the frequency of substandard housing in First Nations communities was associated with humid, damp conditions, and these conditions contributed to poor air quality and health problems, such as asthma.
- As of January 2009, there were 25 First Nations water systems on boil-water advisory in BC, which represents nearly 5 per cent of the total number of BC water systems on advisory (503 systems). The advisories for First Nations systems together affect approximately 3,577 people. In contrast, about one per cent of the total BC population obtained their drinking water from sources on a boil-water order.

## What Actions Can We Take?

### Individuals and families can:

- Maintain a smoke-free home, and encourage others to do so.
- Use newer, less polluting, wood-burning stoves.

### The health system can:

- Engage with Aboriginal organizations to actively improve on-reserve housing.
- Work with First Nations to ensure that housing conditions on-reserve are regularly monitored and tracked so that deficiencies may be addressed.
- Develop ways to monitor indoor air quality and study the health effects resulting from second-hand smoke, inadequate heating, and moisture control.
- Continue to provide training and certification for water system operators and make this mandatory, with subsidies to enable participation. Undertake monitoring to make sure water systems are adequately maintained and that they are providing health benefits.

**Governments can:**

- Support Aboriginal communities to identify and address local housing needs; e.g., by supporting loan funds operated by First Nations organizations or by offering courses on technical or administrative subjects.
- Work with First Nations, on a priority basis, to make continued improvements to drinking water systems on-reserve.
- Encourage research and public discussion about environmental risks and the options for managing them, using both traditional and scientific knowledge.
- Encourage public reporting on the impact of human activities on fish stocks, forest areas, mineral supplies, and other natural resources.
- Conduct surveillance of contaminants in food safety.
- Support capacity building initiatives to address knowledge gaps in home maintenance and financial management.
- Ensure easy access to housing resources and information through expanded broadband connectivity.

# Chapter 6

## Health Services

This chapter provides information on health services utilization by the Aboriginal population in British Columbia. Where possible, data is provided on health services access and utilization, such as use of physician and hospital services, prescription drugs, and mental health follow-up services. Culturally appropriate services and traditional healing are also discussed.

The publicly-funded health care system provides a wide range of services designed to keep people healthy, treat illnesses and injuries, restore function, and care for the vulnerable. For Aboriginal people, ongoing federal/provincial jurisdictional and funding issues have created gaps and inadequacies in services. Some of the acknowledged needs are:

- Improved Aboriginal access to health programs and services.
- Greater Aboriginal control and involvement in decisions about health services.
- Improved working relationships with health authorities and service providers.

### Highlights

- Aboriginal people receive health services through a unique combination of federal, provincial, and Aboriginal-run programs and services. Responsibility for the delivery of health care to Aboriginal people in Canada has been the subject of considerable debate.
- The BC provincial government has direct responsibility to deliver all aspects of health care to all residents of British

Columbia, including Status and non-Status Indians living on- and off-reserve, the Inuit, and Métis.

- From 2004/2005–2006/2007, the most common reasons for hospitalization for the Status Indian population were diseases of the digestive system, pregnancy and childbirth, and external causes such as injuries and poisoning.
- Between 2004/2005–2006/2007, the Status Indian population was almost twice as likely to experience a fall as other residents. The rate of motor vehicle and pedal cycle hospitalizations was also significantly higher for Status Indians compared to other residents (21.5 per 10,000 versus 12.6 per 10,000).
- The largest gap between the two populations was in hospitalizations for HIV disease, with Status Indians being hospitalized at a rate nearly 7 times higher than the rate for other residents (9.5 per 10,000 versus 1.5 per 10,000).
- In 2006/2007, nearly 5 times as many Status Indians as other residents were hospitalized in BC due to attempted homicides (208 per 100,000 versus 41 per 100,000).
- In 2006/2007, nearly 5 times as many Status Indians were hospitalized due to attempted suicides as other residents (155.0 per 100,000 versus 32.5 per 100,000).
- Compared to other British Columbians, Status Indians are more likely to be admitted to hospital for preventable admissions, which are conditions that can usually be managed in the community, without the need for hospital admission (e.g., diabetes, asthma, hypertension, neurosis, depression, or abuse of alcohol or other drugs).

- Aboriginal people have often not had a positive experience receiving health care services. A study in a reserve community in BC found that Aboriginal patients felt that their concerns were not taken seriously and that health care providers had negative stereotypes and had no consideration for the personal circumstances of the patients.
- As many researchers have suggested, what is likely to help improve the health of the Aboriginal population is a return to what was forcibly taken away—their culture and traditions.

## Responsibility for Health Care

Aboriginal people receive health services through a unique combination of federal, provincial, and Aboriginal-run programs and services. Responsibility for the delivery of health care to Aboriginal people in Canada has been the subject of considerable debate. For many years, the lack of coordination between various levels of government and Aboriginal community agencies has resulted in fragmented services or a lack of services for Aboriginal people.

The BC provincial government has direct responsibility to deliver all aspects of health care to all residents of British Columbia, including Status and non-Status Indians living on- and off-reserve, the Inuit, and Métis. Health services are delivered through five regional health authorities, each serving a defined geographic area of the province, and the Nisga'a Valley Health Board, which serves residents of the Nass Valley. In 1998, the Nisga'a Valley Health Board became the first Aboriginal group in Canada to entirely administer their own health care program, with federal and provincial funding for services provided in the community. In addition, the Provincial Health Services Authority governs and manages provincial agencies and programs: BC Cancer Agency; BC Centre for Disease Control; BC Mental Health and Addiction Services; BC Women's Hospital and Health Centre; and BC Children's Hospital & Sunny Hill Health Centre for Children.

British Columbia's health authorities are required to create Aboriginal Health Plans that identify and address Aboriginal health priorities for their regions. These plans must address improving access to service and increasing Aboriginal

involvement in decision-making and planning for their population, and the plans must show that the health authority has established a meaningful working relationship with the Aboriginal community.

Historically, the federal government has recognized that a special relationship exists between the government and First Nations with respect to the provision of health care. However, this responsibility is largely defined as a matter of policy and goodwill and is not considered by the courts to be a legal obligation. The federal government has accepted responsibility for ensuring the provision of health care services to First Nations and Inuit on-reserve. In British Columbia, more than 50 per cent of First Nations manage their own health services on-reserve.

The federal government currently provides funding to the province for cost-shareable programs, contracted services, and Medical Services Plan premiums for Status Indians. Estimates of health care expenditures for Status Indians are calculated on a per capita basis and not actual utilization costs. First Nations and Inuit Health, Health Canada, also provides funding to First Nations and First Nations organizations for programs that address particular health needs such as:

- Nursing care, nutrition, dental health, mental health, environmental health, and communicable disease control on-reserve.
- The Aboriginal Diabetes Initiative (ADI), which ensures access to funding to support culturally sensitive diabetes programs and services for First Nations on-reserve. Essential elements of this initiative include screening, primary prevention, promotion, and surveillance. The ADI also provides funding for diabetes primary prevention and health promotion programs that are culturally appropriate to Métis and off-reserve and urban Aboriginals, coordinated through the First Nations and Inuit Health headquarters.
- The National Native Alcohol and Drug Abuse Program and Aboriginal Head Start (both available on-reserve), and the Canada Prenatal Nutrition Program (aimed at the general population).

In addition to the above noted programs, there is the Non-Insured Health Benefits program. The program provides a range of medically necessary goods and services to status

Indians and eligible Inuit that supplement benefits provided by private or provincial/territorial programs including dental and vision care, prescription drugs, medical supplies and equipment, transportation to medical services, short-term/crisis mental health counselling and payment of health insurance premiums in British Columbia.

For many years, in addition to supporting the delivery of public health and health promotion services on-reserve, First Nations and Inuit Health has provided direct health care services in remote and isolated areas. Over the past two decades, significant changes have occurred in the delivery and control of health services for First Nations communities, with government policies advocating for more direct control by First Nations communities of their own health services. The transfer of control of health services provides opportunities for local decision-making.

The federal government's transfer of control of health programs and services is recognized both nationally and internationally as a significant achievement in restructuring health services to First Nations communities. Launched in 1986, the health transfer initiative allows community health services to be transferred to First Nations-governed and managed health organizations. Community health services eligible for transfer include community health, treatment, prevention services, and facilities.

## The Tripartite First Nations Health Plan

On November 27, 2006, the Government of British Columbia and the First Nations Leadership Council released the bilateral Transformative Change Accord: First Nations Health Plan. The First Nations Health Plan sets into action BC's commitments under the Transformative Change Accord to close the health gap between First Nations and other British Columbians, and to improve the health outcomes of Aboriginal people across BC. The First Nations Health Plan is based on the BC First Nations Health Blueprint, the 2001 Report of the Provincial Health Officer, *The Health and Well-being of Aboriginal People in British Columbia*, and the Transformative Change Accord. It contains 29 actions in 4 categories where First Nations and the province will collaborate to close the health status gap.

### First Nations Health Plan

Examples of actions identified in the Plan include:

#### Governance, Relationships and Accountability

- Establish a Provincial First Nations Health Advisory Committee to review and monitor health authorities' Aboriginal health plans and recommend actions.
- The Provincial Health Officer will appoint an Aboriginal physician who will advise on Aboriginal health issues and report on the health of Aboriginal people in BC.

#### Health Promotion/Disease and Injury Prevention

- The Minister of State for ActNow BC will work with First Nations communities, the National Collaborating Centre for Aboriginal Health, and health authorities to develop an ActNow BC program specifically focused on Aboriginal people.
- Aboriginal people will have access to healing circles, cultural camps, and counselling programs to address adult mental health, substance abuse, and young adult suicide.

#### Health Services

- Build a health centre in Lytton, which will help integrate a number of services and better meet the needs of First Nations and other area residents.
- Create a fully integrated clinical telehealth network that will link remote First Nations' health centres to a comprehensive health authority telehealth network.

#### Performance Tracking

- The First Nations Leadership Council and the provincial government will improve data collection to help First Nations communities and health providers plan health services and monitor changes in health status.
- The Provincial Health Officer will issue Aboriginal Health status reports every five years with interim updates every two years.

Source: Ministry of Health, 2007; Office of the Premier, Ministry of Health, & First Nations Leadership Council, 2006.

The scope of the plan is broad-based and includes innovations in governance structure, health services delivery, health promotion and injury prevention, and performance tracking. This new approach impacts on and is being implemented at all levels of the health care system, from senior-level planning, data sharing, and performance tracking to frontline First Nations health care workers and health promotion initiatives.

A Memorandum of Understanding was also signed on November 27, 2006, by the Government of British Columbia, the First Nations Leadership Council, and the Government of Canada, to develop a tripartite agreement establishing and defining a collaborative and coordinated partnership for improving the health of First Nations people and their communities in British Columbia.

The Tripartite First Nations Health Plan, signed June 11, 2007, commits the federal government to the bilateral plan and is based on four key principles: respect and recognition, commitment to action, nurture the relationship, and transparency. It allows the federal, provincial, and First Nations partners to develop, test, and implement new priorities, structures, and processes over time, and recognizes the fundamental importance of community solutions and approaches. The role of Health Canada will continue to

evolve from designer and deliverer of First Nations health services to that of co-funder and governance partner. Federal and provincial support for First Nations-delivered services will be provided through flexible funding mechanisms with streamlined reporting requirements and accountability measures.

The Tripartite First Nations Health Plan aims to revolutionize how the health care system addresses the needs of First Nations communities. Health for First Nations encompasses the physical, spiritual, mental, economic, emotional, environmental, social, and cultural wellness of the individual, family, and community. The plan recognizes that closing the health gap must also include addressing conditions such as poverty, education, housing, employment, and economic opportunities affecting First Nations.

The Tripartite First Nations Health Plan also recognizes that developing capacity within the First Nations health sector will be paramount, through planned growth, knowledge, and skill transfer. Federal and provincial service delivery infrastructure will not be expanded or enhanced without consideration of viable First Nations alternatives. An association of health directors and other health professionals will create and implement a comprehensive capacity development plan for

### **Jordan's Principle**

Jordan's Principle is a child-first approach for resolving jurisdictional disputes within and between federal and provincial/territorial governments that applies to all government services available to Status Indians and Inuit children, youth, and their families. The Principle requires that the government department of first contact pay for the service to the child without delay and pursue repayment afterward through appropriate inter-governmental channels (First Nations Child and Family Caring Society of Canada, n.d.).

Jordan's Principle was developed in response to the case of a First Nations child who was born with complex medical needs in northern Manitoba in 1999. After two years of treatment in Winnipeg, medical staff determined Jordan was ready to be discharged to specialized foster care close to his reserve (MacDonald & Attaran, 2007). However, the federal and provincial governments could not agree on who was financially responsible for his at-home care. Jordan spent two more years in hospital and died there, before agreement could be reached (Cuthand, 2008).

In December 2007, the House of Commons unanimously passed a private member's bill endorsing Jordan's Principle. In the 2008 Speech from the Throne, the BC government expressed its support for Jordan's Principle and pledged to collaborate with the federal government on its implementation (Representative for Children and Youth, 2008).

Sources: Cuthand, 2008; First Nations Child and Family Caring Society of Canada, n.d.; MacDonald & Attaran, 2007; Representative for Children and Youth, 2008.

the management and delivery of community-based services, and will support First Nations and their mandated health organizations in training, program development, and knowledge transfer.

BC health authorities have been increasing their Aboriginal staffing and expertise. Health authorities are accountable for implementing an Aboriginal Health Plan consistent with the Tripartite First Nations Health Plan. Accountability measures include monitoring the gap between Status Indians and other British Columbians for life expectancy, mortality rates, infant mortality rates, youth suicide rates, and prevalence of diabetes. The Tripartite partners will also be developing indicators and an ongoing mechanism for collecting data on childhood obesity and practicing, certified First Nations health care professionals.

## Access to Services

Accessibility is one of the fundamental principles of Canada's health care system. Unfortunately, accessibility is difficult to define and measure with available data. Utilization rates—the proportion of the population who use specific services—provide one way of measuring accessibility.

### Human Papillomavirus (HPV)

HPV is one of the most common sexually transmitted infections. There are more than 100 types of HPV, some of which are linked to cervical cancer. Most HPV infections will go away on their own, but for some women, the infection does not clear and the infected cells can develop into cancer. Treatment exists for the types of HPV that cause genital warts, but these have not been shown to work on the types of HPV that are linked to cervical cancer. The Cervical Cancer Screening Program in BC is currently investigating the use of HPV testing in the province. The test may provide greater protection than the standard Pap test. HPV vaccines are also available. In fall 2008, a new HPV vaccine program began in BC, for girls entering grades 6 and 9.

Sources: BC Cancer Agency, n.d.; Ministry of Health, 2008.

## Cancer Screening

Aboriginal people<sup>1</sup> have lower or equal rates of nearly all types of cancers compared to other BC residents. In 2006, for all cancers combined, Status Indians and other British Columbians had roughly the same death rate (14.2 per 10,000 versus 14.9 per 10,000), although cancer claims younger lives in the Status Indian population. Death rates from certain types of cancers, such as cervical cancer, have historically been much higher for the Status Indian population.

### Cervical Cancer and Pap Tests

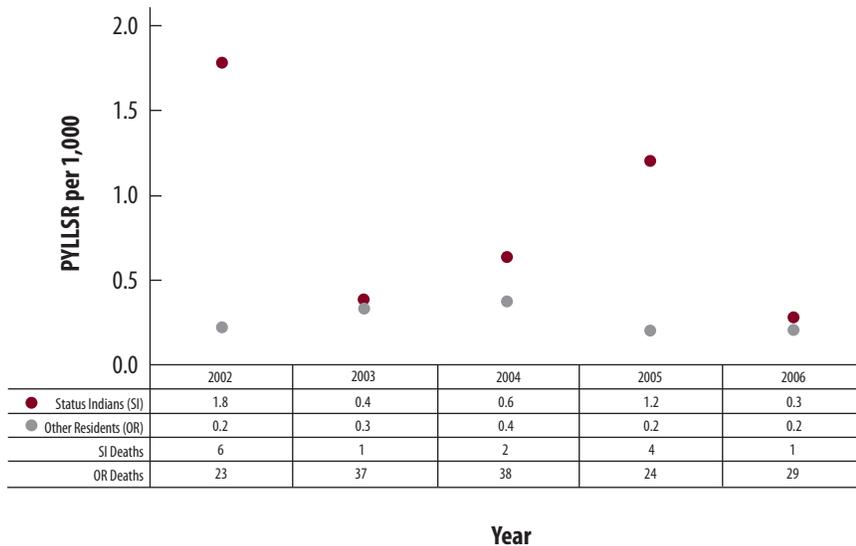
Cervical cancer is one of the most preventable types of cancers due to the availability of the Papanicolaou smear test (Pap test), which can detect pre-cancerous lesions before the cancer becomes invasive (Public Health Agency of Canada [PHAC], 2003, as cited in Pakula, 2006). In a review of the Cervical Cancer Screening Program, the BC Cancer Agency reported that over 50 per cent of invasive cervical cancers were diagnosed in women who did not have a Pap test in more than 7 years (BC Cancer Agency, 2004, as cited in Pakula, 2006). Therefore, screening is essential in preventing and controlling cervical cancer.

Research has consistently shown that First Nations women, particularly those with lower socio-economic status, continue to be at higher risk of developing cervical cancer. The increased rate of cancer in this population has been linked to a lower number of screenings (PHAC, 1998, as cited in Pakula, 2006). In addition, studies done by the BC Cancer Agency have shown that the participation of First Nations women in regular Pap testing was much less frequent and regular compared to other women. A 1992 BC Cancer Agency study involved matching records in the Pap smear registry against band membership lists. Study results showed that only half of First Nations women (age 18 to 69) had a Pap test within the last three years, while the figure for the BC population overall was 85 per cent. The proportion of Status Indian women who had regular Pap smears was lower in each age group, with an overall difference of approximately 30 per cent (Hislop, Deschamps, Band, Smith, & Clarke, 1992).

<sup>1</sup> The terms used in this report to describe the Aboriginal population will vary according to the data and the sources used. For consistency, material presented from a published study quote the exact terms and definitions used in that study.

**Figure 6.1**

**Cervical Cancer, Potential Years of Life Lost Standardized Rate, Status Indians and Other Residents, BC, 2002 to 2006**



Note: Potential years of life lost (age under 75 years) rate per 1,000 standard population (1991 Canada Census). ICD Code: C53.

Source: BC Vital Statistics Agency, 2008; prepared by Health Sector IM/IT Division, Ministry of Health Services, and Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2009.

**Aboriginal Health Program, BC Women’s Hospital and Health Centre**

The Aboriginal Health Program provides outreach services to improve the health of Aboriginal women and their families. The program offers support to Aboriginal communities (on- and off-reserve), including education about women’s health issues and screening clinics for cervical and breast cancer. The program works in partnership with community providers, particularly community health representatives (CHRs) and other health providers both on- and off-reserve. For the screening clinics, the program works with CHRs and local health providers to set up a temporary clinic. Women meet with a health clinic nurse, who goes over the patient’s medical history and readies the patient for the screening process, in a culturally sensitive and safe environment. More information about the Aboriginal Health Program can be found at <http://www.bcwomens.ca/Services/AboriginalHealth/default.htm>.

Sources: Barroetavena & Myles, 2005; BC Women’s Hospital and Health Centre, n.d.

Various studies conducted in BC regarding the lower level of participation of First Nations women in regular Pap testing identified barriers such as lack of knowledge about the test, feelings of embarrassment, and lack of continuity of care due to high turnover of physicians in First Nations communities (Hislop & Band, 1995, as cited in Pakula, 2006). Most studies concluded that in order to increase the proportion of First Nations women receiving regular pap tests, there should be effective strategies in place, including creating a safe and comfortable environment with a culturally appropriate level of care (Pakula, 2006). Efforts have since been made to increase the accessibility of this service to Aboriginal women. BC Women’s Hospital and Health Centre currently has an Aboriginal Health Program, with a major focus on delivering Pap testing to Aboriginal women throughout the province.

Mortality from cervical cancer remains high among Status Indian women compared to other women. Overall, for the period 2002 to 2006, the Status Indian rate for BC was 3 times higher than the rate for other residents, and the difference was statistically significant. In looking at potential years of life lost (PYLL), substantially more Status Indian women die from cervical cancer compared with other women, before they reach 75 years of age (Figure 6.1).

**Screening Mammography**

Status Indian women have lower death rates from breast cancer compared to other BC women. Since 1992, the age-standardized mortality rates (ASMR) for breast cancer have decreased for both populations, although the decrease

Figure 6.2

**Medical Services Plan Utilization,  
Age-Standardized Rate, Status Indians and Other Residents,  
BC, 1996/1997 to 2006/2007**



Year

Note: Includes all services for which payment is claimed from MSP. Data excludes third party agencies such as ICBC or WCB, form fees and incentives, payments for services under the Reciprocal Agreement, and claims in progress. Those people that did not have a region of residence identified were included in the provincial totals only. Prepared by Information Support (Project 2008\_029ay).

Source: Ministry of Health Services, MSP Claims Database; prepared by Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.

for Status Indian women has been more pronounced. Early and multiple pregnancies, which are more common among Aboriginal women, are factors that reduce the risk of breast cancer, and these may account for the slightly lower breast cancer rate among Status Indian women.

The BC Cancer Agency's Screening Mammography Program has a number of strategies to recruit Aboriginal women to the screening program. These include expanding access to sites with a large Aboriginal population, working with community health representatives to organize group appointments so that Aboriginal women can attend together at their nearest screening site, and working with community health representatives and public health nurses to promote the benefits of screening.

## Treatment and Support Services

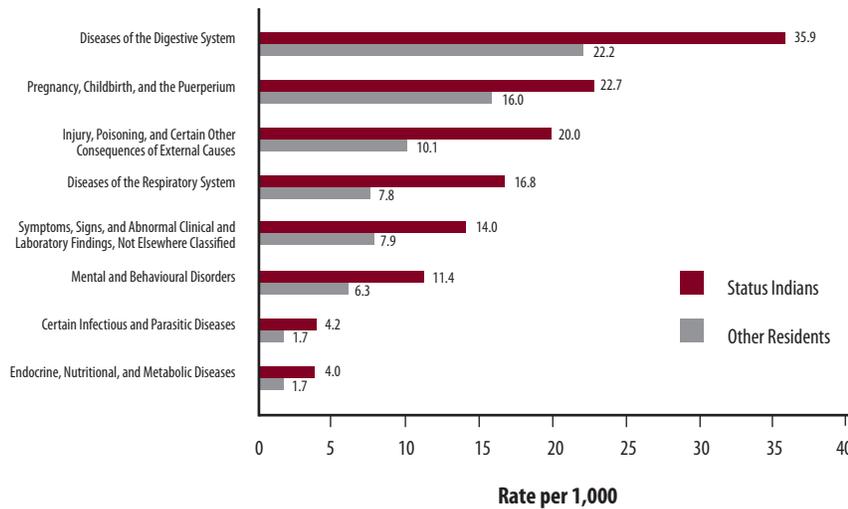
### Medical Services Plan Utilization

There are approximately 168,000 Status Indians in the Medical Services Plan (MSP) records. Those counted in the MSP database are registered Status Indians, who have their MSP premiums paid for by the federal government.

As shown in Figure 6.2, in 2006/2007, the age-standardized MSP utilization rate was 16 per cent lower for the Status Indian population compared to other residents (708.1 per 1,000 compared to 844.0 per 1,000). A trend of decreasing MSP utilization rates can be observed for both populations; however, the decrease was more significant for the Status Indian population. Between 1996/1997 and 2006/2007, the Status Indian MSP

Figure 6.3

**Top Eight Causes of Hospitalization,  
Age-Standardized Rate, Status Indians and Other Residents,  
BC, 2004/2005–2006/2007**



Note: Age-Standardized rate per 1,000 population (1991 Canada Census); based on ICD-10 codes.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

utilization rate decreased by almost 10 per cent, compared to 4.5 per cent for other residents.

It is important to note that not all MSP services used by the Status Indian population are included in the data. As a result, the utilization rate included in this report may underestimate (or under-report) the actual level of service utilization by Status Indians.<sup>2</sup>

No variation was seen between health authorities for MSP utilization for the Status Indian population. For more detailed data tables and additional regional data please refer to the website of the Office of the Provincial Health Officer at <http://www.hls.gov.bc.ca/pho>.

### Reasons for Hospitalization

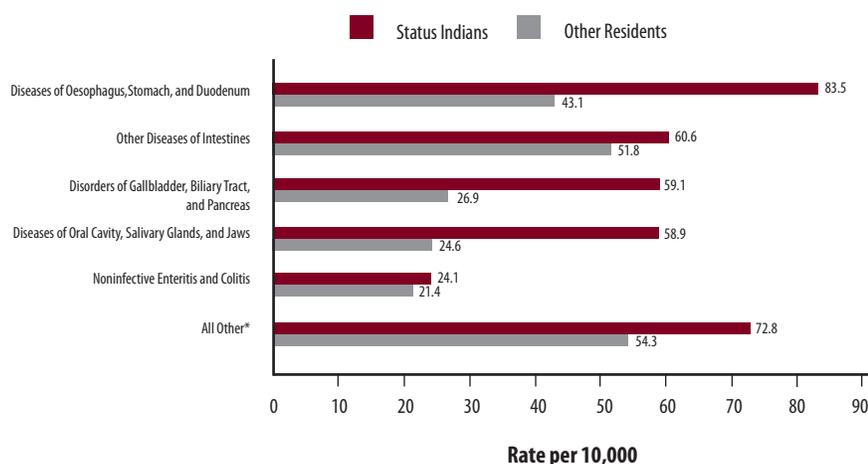
Figure 6.3 illustrates the top eight causes of hospitalization for Status Indians and other residents from 2004/2005–2006/2007. Status Indians had higher rates of hospitalization in all categories, and the most common reasons were diseases of the digestive system, pregnancy and childbirth, and external causes such as injuries and poisoning.

The rate for hospitalizations due to diseases of the digestive system was significantly higher for Status Indians than for other residents (35.9 per 1,000 versus 22.2 per 1,000). The hospitalization rate for both external causes and respiratory conditions was twice as high for Status Indians. While the rates for other causes of hospitalizations were lower for both Status Indians and other residents, the differences between the two populations were still significant.

<sup>2</sup> The MSP data in this report includes physician, laboratory, and diagnostic services that are paid on the basis of individually billed fees-for-service under the Medical Services Plan of BC. In many areas of the province, nearly all primary care services are funded through salary arrangements. This is the case for several small rural communities, such as Haida Gwaii, and also for high-need areas like the Downtown Eastside of Vancouver. In these circumstances, the individual services provided to patients cannot be easily reported and therefore are not included in the data in this report. Caution is therefore advised in the interpretation of population-based comparisons, both in a single year and over time (Kelly Barnard, personal communication, December, 2008).

Figure 6.4

### Hospitalization for Diseases of the Digestive System, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007



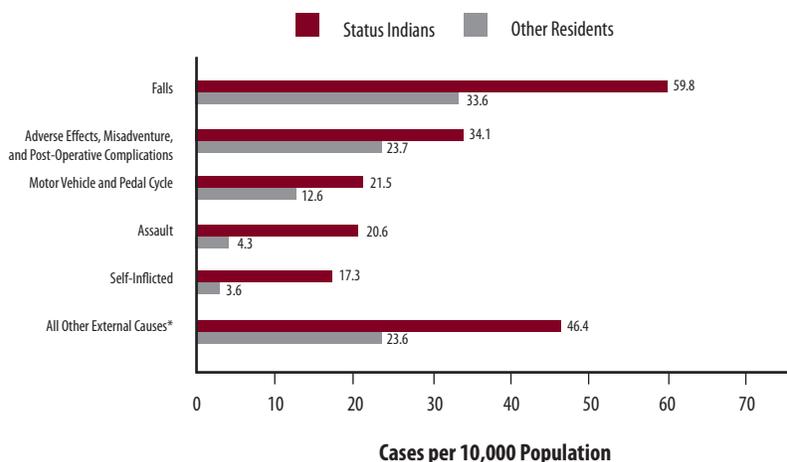
\* The category of All Other includes diseases of appendix (K35-K38), diseases of peritoneum (ICD-10 K65-K67), hernia (K40-K46), diseases of liver (K70-K77), and other diseases of the digestive system (K90-K93).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 6.5

### Hospitalization for External Causes, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007



\* The category of All Other External Causes includes poisoning (accidental), other transport, fire/flames and hot substances (burns), and drowning/submersion.

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on Harvard Codes.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

A more detailed analysis of hospitalizations for each of the categories listed is provided later in this chapter, with two exceptions. Hospitalizations for “pregnancy, childbirth and the puerperium” were not analyzed further since the higher Status Indian rate is mainly due to the higher Status Indian birth rate (approximately double that of other residents). Also, hospitalizations for “symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified” were not analyzed in more detail because it is not possible to definitively attribute the reason for the hospitalization to any one particular disease.

#### *Diseases of the Digestive System*

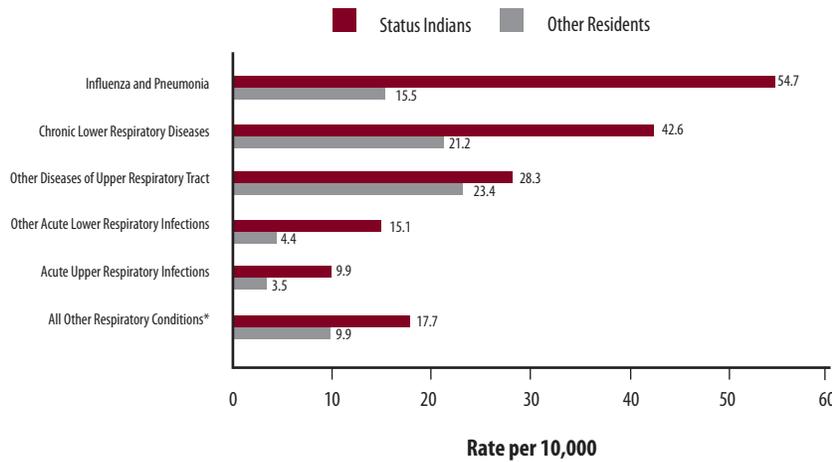
During 2004/2005–2006/2007, the Status Indian population had substantially higher rates of hospitalization for almost all diseases of the digestive system (Figure 6.4). The most significant differences between the Status Indian population and other residents were found in diseases of the oral cavity, salivary glands, and jaw (58.9 per 10,000 versus 24.6 per 10,000); disorders of the gallbladder, biliary tract, and pancreas (59.1 per 10,000 versus 26.9 per 10,000); and diseases of the oesophagus, stomach, and duodenum (83.5 per 10,000 versus 43.1 per 10,000).

#### *External Causes*

As shown in Figure 6.5, between 2004/2005–2006/2007, the Status Indian population had higher rates of hospitalization due to all external causes. The Status Indian population was almost twice as likely to experience a fall as other residents (59.8 per 10,000 versus 33.6 per 10,000). The hospitalization rate

**Figure 6.6**

**Hospitalization for Diseases of the Respiratory System, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007**



\* The category of All Other Respiratory Conditions includes lung diseases due to external agents (J60-J70), other respiratory diseases principally affecting the interstitium (J80-J84), suppurative and necrotic conditions of lower respiratory tract (J85-J86), other diseases of pleura (J90-J94), and other diseases of the respiratory system (J95-J99).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, August 2008.

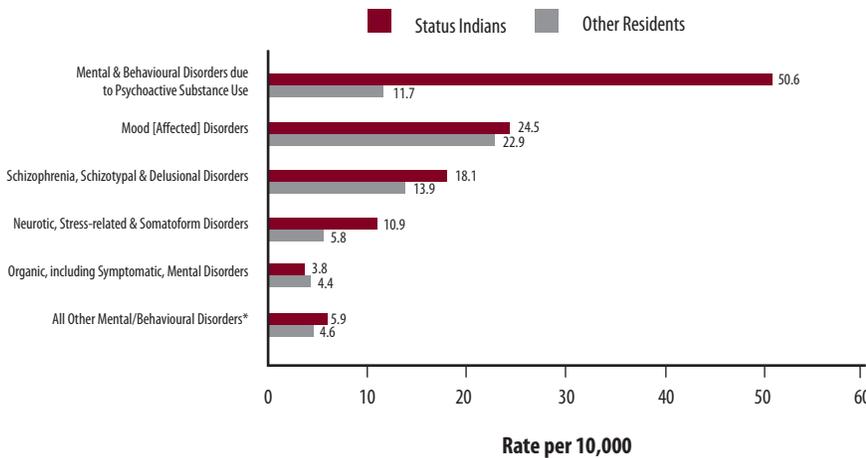
for Status Indians experiencing adverse effects, misadventure, and post-operative complications was also much higher compared to other residents, (34.1 per 10,000 versus 23.7 per 10,000). The rate of motor vehicle and pedal cycle hospitalizations was also significantly higher for Status Indians compared to other residents (21.5 per 10,000 versus 12.6 per 10,000). Status Indians were almost 5 times more likely as other residents to be hospitalized as a result of an assault (20.6 per 10,000 versus 4.3 per 10,000) or self-inflicted injury (17.3 per 10,000 versus 3.6 per 10,000).

**Diseases of the Respiratory System**

Figure 6.6 shows that during 2004/2005–2006/2007, the Status Indian population had higher rates of hospitalization due to diseases of the respiratory system. Status Indians were over 3 times more likely to be hospitalized for influenza or pneumonia compared to other residents (54.7 per 10,000 versus 15.5 per 10,000), and were twice as likely to be hospitalized for chronic lower respiratory diseases (42.6 per 10,000 versus 21.2 per 10,000).

**Figure 6.7**

**Hospitalization for Mental and Behavioural Disorders, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007**



\* The category of All Other Mental/Behavioural Disorders includes several other classifications with lower incidence (ICD-10 F50-F99).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

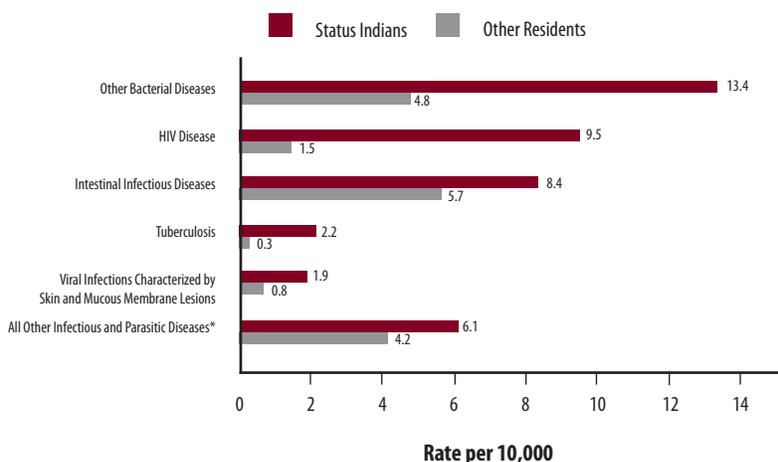
Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Mental and Behavioural Disorders**

As shown in Figure 6.7, during 2004/2005–2006/2007, the rate of hospitalizations for mental and behavioural disorders due to substance use was significantly higher for Status Indians than for other residents (50.6 per 10,000 versus 11.7 per 10,000). Rates of hospitalization due to schizophrenia, schizotypal, delusional disorders, and other neurotic, stress-related, and somatoform disorders were also higher for Status Indians compared to other residents.

Figure 6.8

### Hospitalization for Certain Infectious and Parasitic Diseases, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007



\* The category of All Other Infectious and Parasitic Diseases includes several other classifications with lower incidence (ICD-10 A20-A28, A50-A99, B15-B19, B35-B83, B85-B94, B90-B94, and B99).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

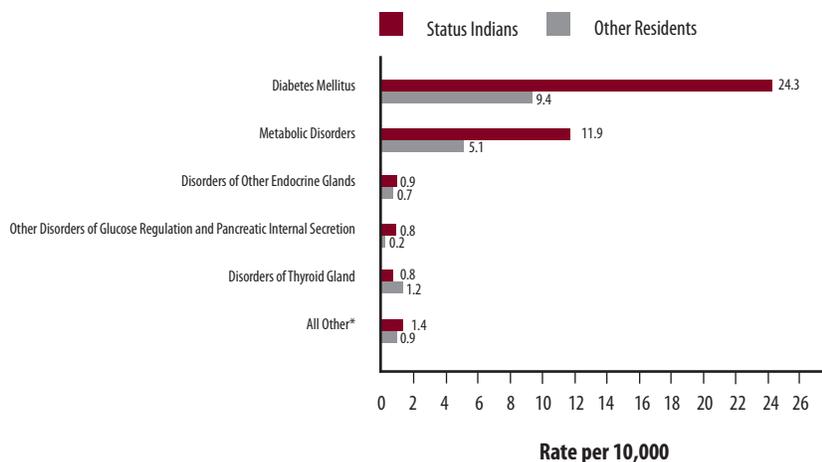
Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

### Infectious and Parasitic Diseases

Hospitalizations for infectious and parasitic diseases were significantly higher for Status Indians compared to other residents between 2004/2005–2006/2007, although the actual numbers of people represented in this disease classification were relatively low (Figure 6.8). The largest gap between the two populations was in hospitalizations for HIV disease, with Status Indians being hospitalized at a rate nearly 7 times higher than the rate for other residents (9.5 per 10,000 versus 1.5 per 10,000). The gap between the Status Indian population and other residents for hospitalization for other bacterial diseases was also considerable (13.4 per 10,000 versus 4.8 per 10,000). The hospitalization rate for tuberculosis was over 7 times higher for the Status Indian population compared to other residents (2.2 per 10,000 versus 0.3 per 10,000)

Figure 6.9

### Hospitalization for Endocrine, Nutritional, and Metabolic Diseases, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007



\* The category of All Other includes malnutrition (E40-E46), other nutritional deficiencies (E50-E64), and obesity and other hyperalimentation (E65-E68).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

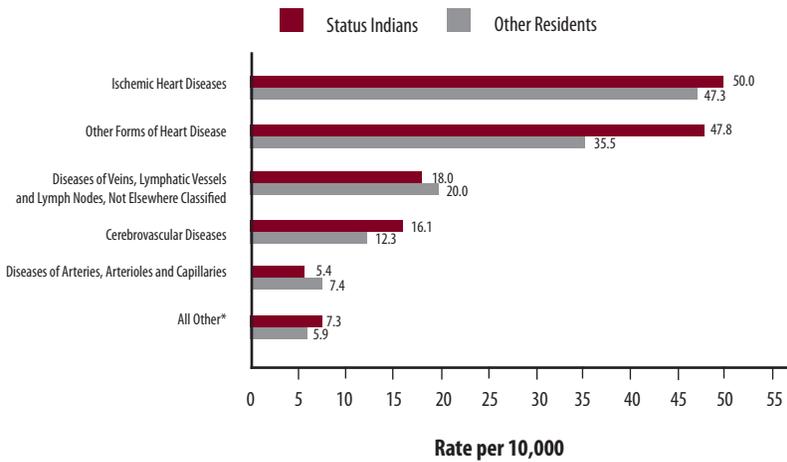
Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

### Endocrine, Nutritional, and Metabolic Diseases

Figure 6.9 illustrates the rates of hospitalization for endocrine, nutritional, and metabolic diseases for 2004/2005–2006/2007. For this time period, the highest rate of hospitalization for both populations was from diabetes mellitus, although the Status Indian rate was over twice the rate of other residents (24.3 per 10,000 versus 9.4 per 10,000). Status Indians were also hospitalized for metabolic disorders at more than twice the rate of other residents (11.9 per 10,000 versus 5.1 per 10,000). Even though other disorders of glucose regulation and pancreatic internal secretion represent a much smaller proportion of Status Indian

**Figure 6.10**

**Hospitalization for Diseases of the Circulatory System, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007**



\*The category of All Other includes acute rheumatic fever (I00-I02), chronic rheumatic heart diseases (I05-I09), hypertensive diseases (I10-I15), pulmonary heart disease and diseases of pulmonary circulation (I26-I28), and other and unspecified disorders of the circulatory system (I95-I99).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

hospitalizations, the rate was still four times higher for Status Indians than for other residents.

**Diseases of the Circulatory System**

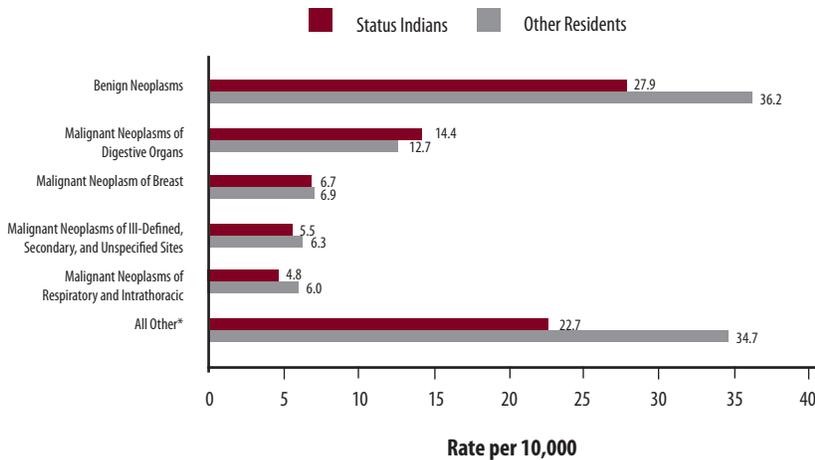
Hospitalization data for 2004/2005–2006/2007 show similar hospitalization rates for diseases of the circulatory system for both Status Indians and other residents, with the exception of other forms of heart disease; for that disease classification, the Status Indian population had a rate of 47.8 per 10,000, compared to 35.5 per 10,000 for other BC residents (Figure 6.10).

**Cancer**

Figure 6.11 shows that from 2004/2005–2006/2007, compared to other residents, Status Indians were less likely to be hospitalized due to benign cancers. The hospitalization rates for most types of cancers were similar between the two populations, and in some categories the Status Indian rates were slightly lower than the rates for other residents.

**Figure 6.11**

**Hospitalization Due to Cancers, Age-Standardized Rate, Status Indians and Other Residents, BC, 2004/2005–2006/2007**



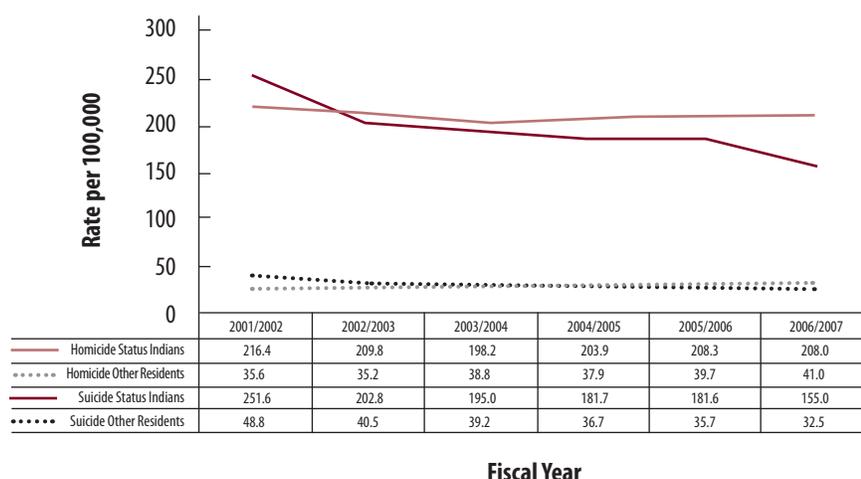
\*The category of All Other includes other forms of cancer with lower incidence (ICD-10 C00-C14, C40-C41, C43-C49, C51-C58, C60-C75, C81-C97, D00-D09, and D37-D48).

Note: Age-Standardized rate per 10,000 population (1991 Canada Census); based on ICD-10 codes.

Source: Discharge Abstract Database, HIMB, Health System Planning Division, Ministry of Health Services, April 2008; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 6.12

### Hospitalization Rates for Homicides and Suicides, Status Indians and Other Residents, BC, 2001/2002 to 2006/2007



Note: Homicides also include injuries purposely inflicted by another person with intent to kill or injure (assaults). Suicides include attempted suicides. Classification of homicide or suicide is determined by the receiving doctor in the emergency intake and/or ambulance personnel (paramedics). Data include Acute, Rehab. and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data for 2001/2002 and onwards are based on ICD-10-CA. For calculation of the incidence rates, individuals with unknown geographic event locations were excluded.

Source: Discharge Abstract Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

### Homicides and Suicides<sup>3</sup>

In 2006/2007, over 5 times as many Status Indians were hospitalized in BC due to attempted homicides<sup>4</sup> than other residents (208 per 100,000 versus 41 per 100,000).

The hospitalization pattern for attempted suicides (suicides/self-inflicted injuries) among Status Indians is similar to the pattern for homicides. In 2006/2007, nearly 5 times as many Status Indians were hospitalized due to attempted suicides as other BC residents (155 per 100,000 versus 32.5 per 100,000). Northern Health Authority had the highest number of Status Indian hospitalizations due to attempted suicides at 236 per 100,000; this rate was substantially higher than the provincial average for Status Indians. The hospitalization rate for other residents in Northern Health Authority was 48 per 100,000. Vancouver Island Health Authority also had significantly higher rates of hospitalization due to attempted homicides for the Status Indian population compared to other residents (178 per 100,000 versus 36 per 100,000).

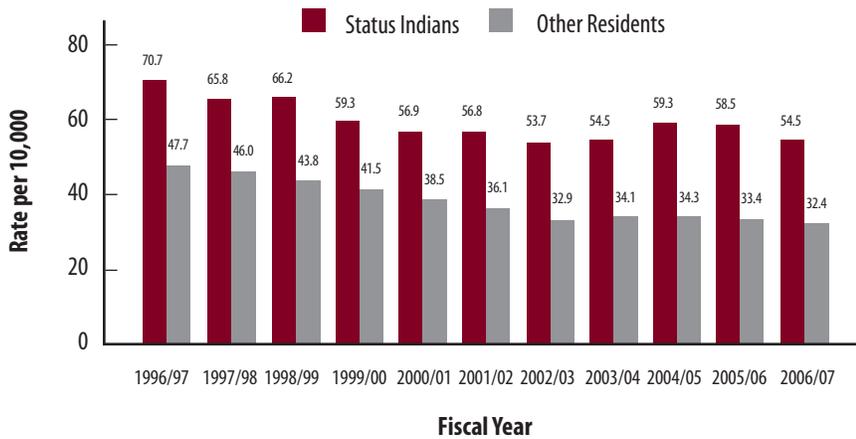
The suicide rate for the Status Indian population has shown a downward trend since 2000/2001. A significant gap exists between the Status Indian population and the other resident population for rates of hospitalization for both suicides and homicides (Figure 6.12).

<sup>3</sup> Due to small numbers, rates are not age-standardized.

<sup>4</sup> Homicides also include injuries purposely inflicted by other persons.

**Figure 6.13**

**Preventable Hospital Admissions, Under 75 Years, Status Indians and Other Residents, BC, 1996/1997 to 2006/2007**



Note: Preventable admissions are conditions that can usually be managed without the need for hospital admission. Data include Acute care level (including newborns). Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data for 2001/2002 and onwards are based on ICD-10-CA, and previous years are based on ICD-9. Differences between these two systems may have impacted this analysis. Age calculated as of December 31; as a result, figures in this chart do not match figures in other ACSC reports. In 2006/2007, 203 other resident cases with an unknown location of residence were included in the provincial total.

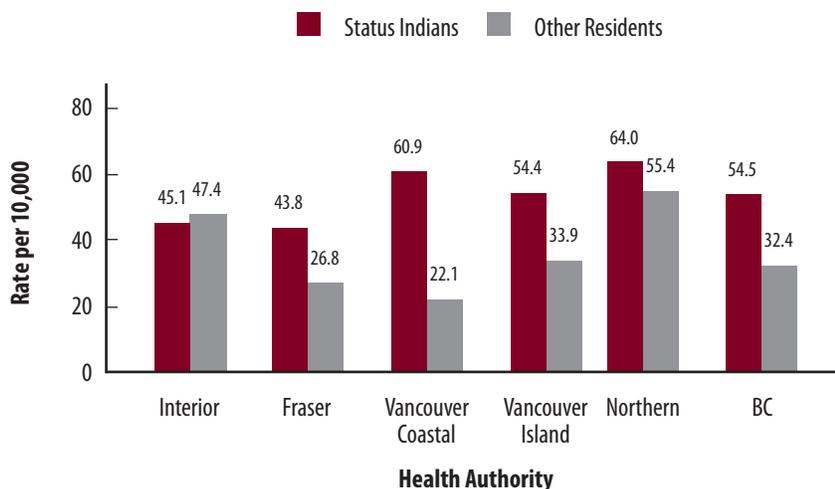
Source: Discharge Abstract Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

**Preventable Admissions**

Compared to other British Columbians, Status Indians are more likely to be admitted to hospital for preventable admissions, which are conditions that can usually be managed in the community, without the need for hospital admission (e.g., diabetes, asthma, hypertension, neurosis, depression, or abuse of alcohol or other drugs). Although there has been a decrease in the rate of preventable admissions for both Status Indians and other residents in the past decade, a gap still remains between the populations (Figure 6.13). In 2006/2007, the rate for the Status Indian population was 54.5 per 10,000, compared to 32.4 per 10,000 for the other resident population. One reason for the gap could be the lack of access to primary care for Status Indians in doctors' offices, clinics, or other community settings.

**Figure 6.14**

**Preventable Hospital Admissions, Under 75 Years, Status Indians and Other Residents, by Health Authority, BC, 2006/2007**



Note: Preventable admissions are conditions that can usually be managed without the need for hospital admission. Data include Acute care level (including newborns). Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data for 2001/2002 and onwards are based on ICD-10-CA, and previous years are based on ICD-9. Differences between these two systems may have impacted this analysis. Age calculated as of December 31; as a result, figures in this chart do not match figures in other ACSC reports. In 2006/2007, 203 other resident cases with an unknown location of residence were included in the provincial total.

Source: Discharge Abstract Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

In 2006/2007, the rates for preventable admissions were considerably higher for Status Indians than for other residents in all health authorities except Interior Health. Northern and Vancouver Coastal Health Authorities had the highest rates of preventable admissions in the Status Indian population (64.0 and 60.9 per 10,000 respectively). The largest gap between the Status Indian and other resident populations was seen in Vancouver Coastal Health Authority (60.9 per 10,000 versus 22.1 per 10,000) (Figure 6.14).

## The Use of Prescription Drugs in the Aboriginal Community

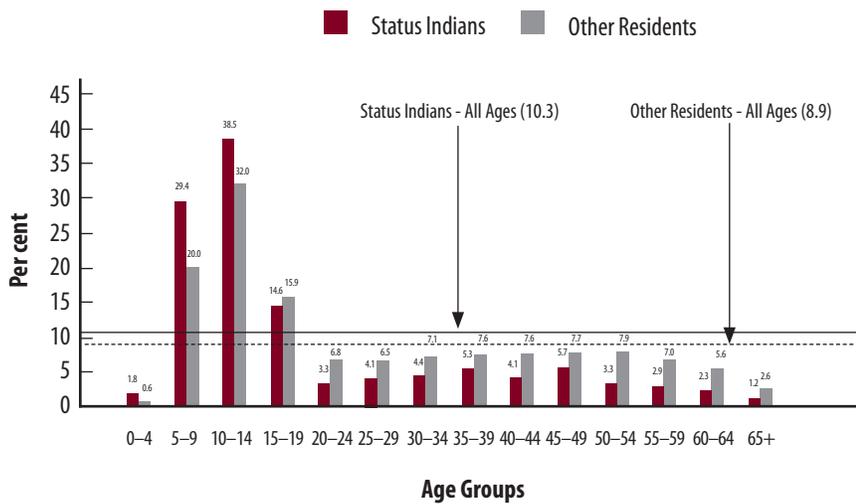
Through a special request to the PharmaNet Prescription Committee of the College of Pharmacists of British Columbia, the Office of the Provincial Health Officer obtained data to examine the different patterns of prescription drug use in the Status Indian and other resident populations for antimanic agents, anti-infectives, antidepressants, antipsychotics, anxiolytics, and cerebral (psychic) stimulants between 1998 and 2006.

The information provided in this analysis is based on unique personal health numbers (individuals receiving prescriptions) rather than numbers of prescriptions per patient for a given drug. Tracking the actual number of prescriptions per person and presenting it in a meaningful way would be difficult, since dosages vary considerably, as does the frequency of prescriptions. For the purpose of this analysis, the appearance of an individual in a drug category means that he/she received at least one prescription for that drug category; if the individual received several prescriptions within that same drug category, he/she is only counted once. Although this measure will not determine the degree to which people are using a particular prescription drug, it will provide insight on the group of individuals who received prescriptions for the drug.

The prescription drugs analysed in this report are the following:

- **Antimanic Agents** – An antimanic agent is a substance used to treat mood disorders such as bipolar disorder. The antimanic agent reduces the intensity of the mania and lessens the frequency of the mood swings (Canadian Pharmacists Association, 2004).
- **Antidepressants** – Antidepressants are psychiatric medications used for alleviating depression, and include drug groups known as monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants (TCAs), and selective serotonin reuptake inhibitors (SSRIs). These medications are now among the drugs most commonly prescribed by medical psychologists, psychiatrists, and general practitioners (Canadian Pharmacists Association, 2004).
- **Antipsychotics** – Antipsychotic drugs are used to treat psychotic disorders such as schizophrenia, manic depression, or paranoia (Canadian Pharmacists Association, 2004).
- **Anxiolytics** – Anxiolytics are prescribed for short-term relief of extreme anxiety as well as nervousness caused by psychological problems (Canadian Pharmacists Association, 2004).
- **Cerebral Stimulants** – Cerebral stimulants (nervous system stimulants) act on the central nervous system and provide a temporary sense of alertness and well-being as well as relief from fatigue. For example, Ritalin (methylphenidate) and Adderall (amphetamines), used for treating attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD) in children, are central nervous system stimulants that help the brain be more selective in the way it filters and responds to various stimuli (Canadian Pharmacists Association, 2004).
- **Anti-Infectives** – An anti-infective is something capable of acting against infection, and includes antibacterials, antibiotics, antifungals, antiprotozoans, and antivirals (Medicinenet.com). Antibiotics, one type of anti-infective, are one of the most commonly prescribed categories of drugs (Canadian Pharmacists Association, 2004).

**Figure 6.15** Individuals Receiving Prescriptions for Cerebral Stimulants, by Age Group, Status Indians and Other Residents, BC, 2006



Note: Cerebral stimulants act on the central nervous system and provide a temporary sense of alertness and well-being as well as relief from fatigue. For example, Ritalin (methylphenidate) and Adderall (amphetamines), used for treating attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD), are central nervous system stimulants that help the brain be more selective in the way it filters and responds to various stimuli. Use of such stimulants is usually followed by a degree of depression, which can become excessive and dangerous when the dosage is large.

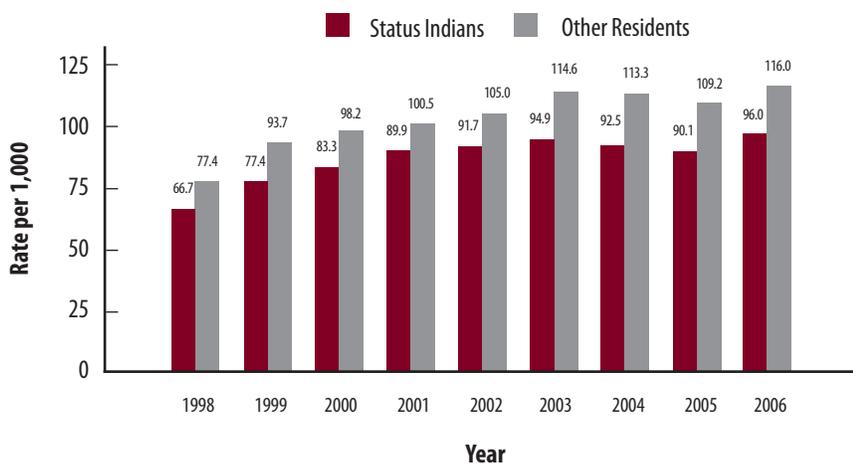
Source: BC PharmaNet data, provided by the BC College of Pharmacists; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

## Prescription Drug Use

The pattern of use for all the psychoactive prescriptions, with the exception of cerebral stimulants, was lower for Status Indians compared to other residents—a pattern that has been consistent since 1998. In 2006, rates of prescriptions for cerebral stimulants were higher for Status Indian children age 0–4 and 5–9 and youth age 10–14. In the other resident population, the use of cerebral stimulants was also noticeably higher in the 5–9 and 10–14 age groups, compared to other age groups (Figure 6.15).

In general, psychoactive prescriptions have remained stable from 1998 to 2006 for both Status Indians and other residents, with the exception of antidepressants, antipsychotics, and cerebral stimulants, which all show an increase (Figures 6.16, 6.17, and 6.18).

**Figure 6.16** Individuals Receiving Prescriptions for Antidepressants, Status Indians and Other Residents, BC, 1998 to 2006

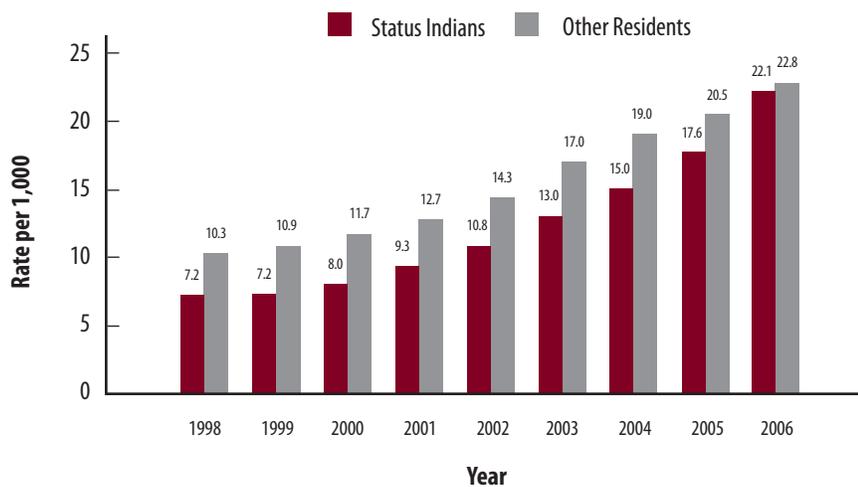


Notes: Antidepressants are psychiatric medications used for alleviating depression, and include drug groups known as monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants (TCAs), and selective serotonin reuptake inhibitors (SSRIs). These medications are now among the drugs most commonly prescribed by medical psychologists, psychiatrists, and general practitioners. There were a large number of non-Status Indian seniors (98,597 for age 65+) that received prescriptions for antidepressants in 2006, which has generated a provincial rate that is higher than that for Status Indians. The rates were actually higher in most other age categories for Status Indians.

Source: BC PharmaNet data, provided by the BC College of Pharmacists; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 6.17

### Individuals Receiving Prescriptions for Antipsychotics, Status Indians and Other Residents, BC, 1998 to 2006

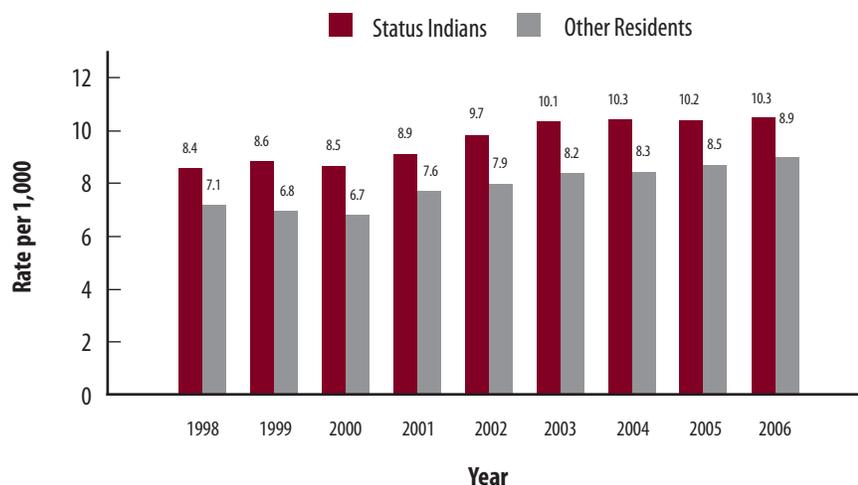


Notes: Antipsychotic drugs are used to treat psychotic disorders such as schizophrenia, manic depression, or paranoia.

Source: BC PharmaNet data, provided by the BC College of Pharmacists; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 6.18

### Individuals Receiving Prescriptions for Cerebral Stimulants, Status Indians and Other Residents, BC, 1998 to 2006



Notes: Cerebral stimulants (nervous system stimulants) act on the central nervous system and provide a temporary sense of alertness and well-being as well as relief from fatigue. For example, Ritalin (methylphenidate) and Adderall (amphetamines), used for treating attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD), are central nervous system stimulants that help the brain be more selective in the way it filters and responds to various stimuli.

Source: BC PharmaNet data, provided by the BC College of Pharmacists; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

#### Mission – Collaboration Between Health Care and the Native Housing Society

Improved relationships, trust, and a sense of community are some of the results of a collaborative project between Mission public health nurses and the Mission Native Housing Society. The clients come from the 83 units run by the Society, and are a mix of Status and non-Status First Nations, Métis, and non-Aboriginals. The project includes a full-time Health Liaison Worker (local First Nations) who functions as an urban community health representative for the clients.

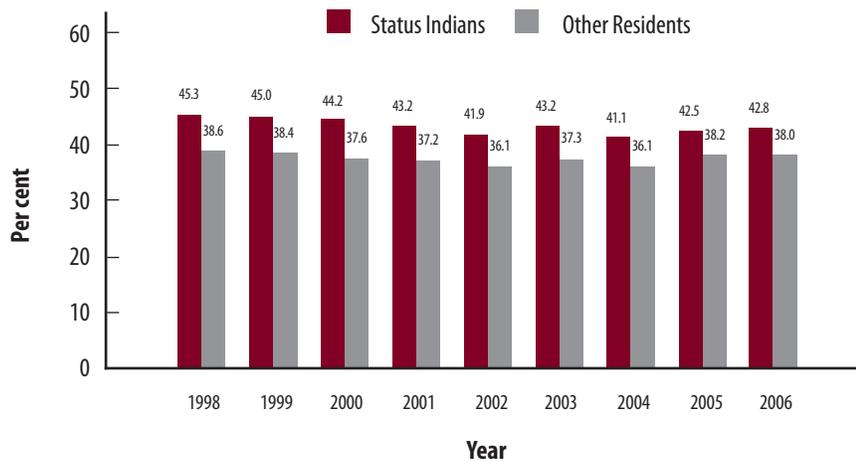
There is also a weekly on-site outreach clinic held by a public health nurse, in conjunction with the Liaison Worker and a First Nations Elder. The outreach clinic is run on a “non-task-oriented” model, which means that clients can drop-in, mingle with others, and build relationships and trust with the health care workers, prior to requesting assistance. The types of assistance sought by clients include immunizations; blood pressure monitoring; assistance with navigating the health care system; and referrals for home support workers, home care, pregnancy outreach, etc.

Overall, the project has resulted in improved access to and knowledge of available health care services for residents; an improved sense of community between residents through weekly meetings at the outreach clinic; and improved trust between the health care professionals and residents.

Source: Y. Sabo, personal communication, April 1, 2007.

Figure 6.19

### Individuals Receiving Prescriptions for Anti-Infectives, Status Indians and Other Residents, BC, 1998 to 2006



Note: An anti-infective is something capable of acting against infection, and includes antibacterials, antibiotics, antifungals, antiprotozoans, and antivirals (Medicinenet.com). Antibiotics, one type of anti-infective, are one of the most commonly prescribed categories of drugs.

Source: BC PharmaNet data, provided by the BC College of Pharmacists; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Since 1998, prescription rates for anti-infectives have been consistently higher for the Status Indian population (Figure 6.19). The Status Indian rate was highest in the 0–4 age group, which is consistent with highly reported rates of upper respiratory infections often associated with the adverse health effects of environmental toxins such as mould, second-hand smoke, and other environmental contaminants.

Participants in the 2008 consultations for this report expressed concern that many people use analgesic drugs in excess. While the analyses in this report do not verify this perception, it is a concern, and should be a topic for future review.

#### Səxʷ kənxit əlx “Those Who Help”

In October 2004, a tragic shooting on the Penticton Indian Band reserve left three Okanagan youth dead, two seriously injured, and a third incarcerated. That same year, on Vancouver Island, there were eight youth suicides in less than seven months. Funding for crisis counselling was made available from First Nations and Inuit Health (FNIH); however, the one-on-one counselling approach did not fit with First Nations values and principles.

The Inter Tribal Health Authority (ITHA) recognized the need to develop a response that addressed the collective values within First Nations communities. Through use of resources from FNIH and additional funding from Vancouver Island Health Authority, ITHA was able to train a team of people who could engage communities to mobilize around the issue of youth suicide and respond to crises. In the Okanagan, learning from the ITHA approach, a team was created called Səxʷ kənxit əlx “Those Who Help”.

“Those Who Help” is a team of paraprofessionals located within the community, who respond to crisis and deliver community education workshops on issues such as substance use and suicide. This approach builds community capacity and respects the work being done by local community workers. It provides skill development and training, and a network of peer supporters. The team is led by a qualified Master of Social Work with clinical experience. The team leader provides supervision, ensures the team stays connected between training sessions, and assesses team members’ readiness to take part in crisis response and community education.

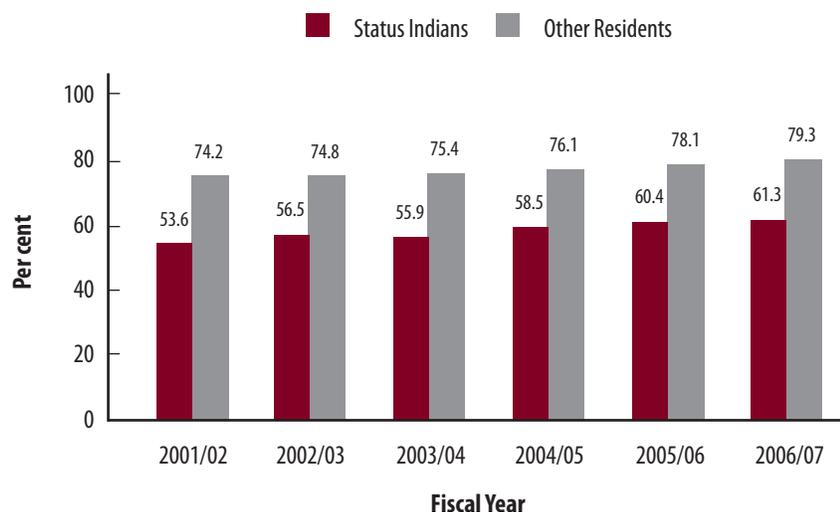
This approach works because it honours the collective nature of First Nations, and incorporates traditional culture. In addition, it builds community capacity by training the people already in the community and supporting them to be more effective in their jobs. As well, it works because the team is diverse; it includes youth, Elders, knowledge keepers, Okanagan speakers, and front-line workers. Finally, this approach recognizes and builds on the partnership between FNIH, the Tribal Councils, the bands, and the health authorities.

For more information on the Okanagan Nation Alliance and their programs, please refer to their website at <http://www.syilx.org/>.

Sources: Okanagan Nation Alliance, n.d.; 2007.

Figure 6.20

**Community Follow-up for Mental Health Clients (All Types),  
Status Indians and Other Residents,  
Age 15–64 Years, BC, 2001/2002 to 2006/2007**



Note: Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up at a community mental health centre, or from a general practitioner or psychiatrist (Medical Services Plan fee-for-service) within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442. Medical Services Plan (MSP) visits are restricted to those with a diagnosis of ICD-9 290-314, V61, V62, 04A, or 50B.

Source: Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

## Mental Health Patient Follow-Up

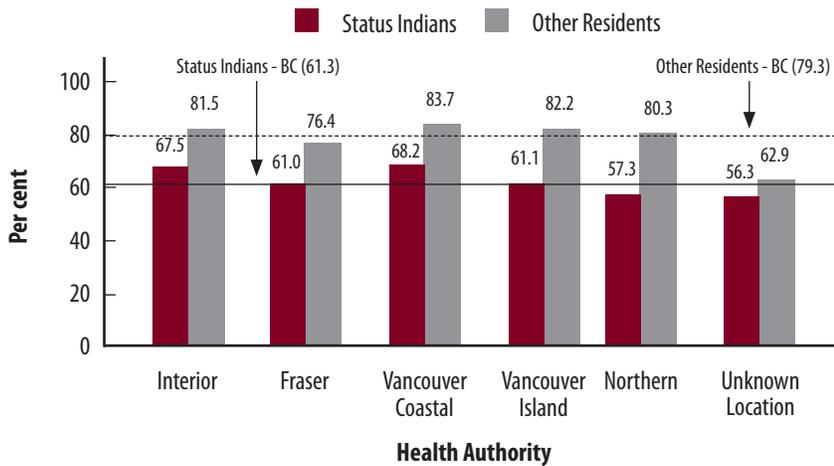
Based on Ministry of Health Services data, in 2006/2007, over twice as many Status Indians received a hospital discharge relating to a mental health condition than other residents. Early follow-up services are important for the recovery, stability, and continuing care of mental health patients who are discharged from the hospital, and these services are generally provided by physicians and community mental health centres. While some research supports the existence of a causal relationship between early post-discharge follow-up care (30-day follow-up) and lower rates of readmission, other findings suggest that the readmission rate increases with early follow-up, since those people who receive follow-up may be more ill than those who do not.

Since the release of the 2001 Provincial Health Officer's report, *The Health and Well-being of Aboriginal People in British Columbia*, there has been significant improvement in the quality of follow-up data for mental health. In addition, more Aboriginal people, particularly Status Indians, can now be accurately identified in the databases.

In 2006/2007, the data showed that 61.3 per cent of Status Indian mental health patients received community follow-up for mental health conditions once they had been discharged from the hospital for a period of 30 days, compared with 79.3 per cent of other residents. Since 2001/2002, there has been a gradual increase in community follow-up care for both populations (almost 8 per cent more for Status Indians and 5 per cent more for other residents) (Figure 6.20).

**Figure 6.21**

**Community Follow-up for Mental Health Clients, by Health Authority, Status Indians and Other Residents, Age 15–64 Years, BC, 2006/2007**



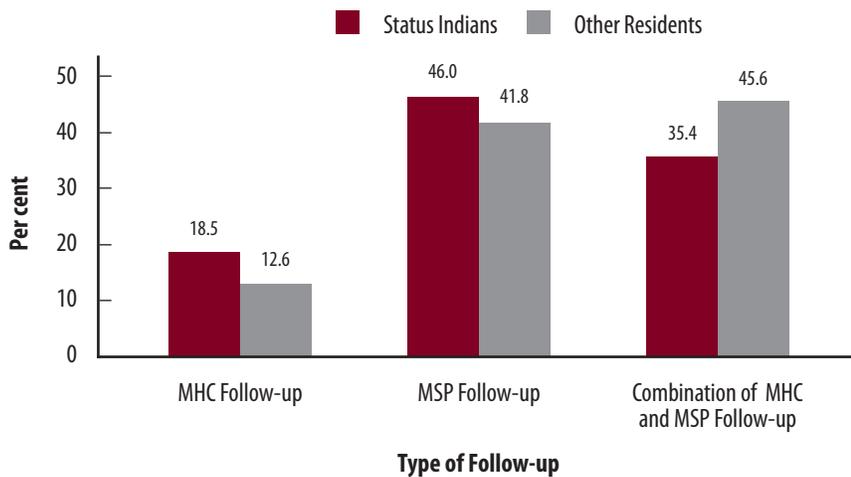
Note: Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up at a community mental health centre, or from a general practitioner or psychiatrist (Medical Services Plan fee-for-service) within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442. Medical Services Plan (MSP) visits are restricted to those with a diagnosis of ICD-9 290-314, V61, V62, 04A, or 50B.

Source: Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

In 2006/2007, the highest rates of mental health community follow-up for the Status Indian population were in Vancouver Coastal and Interior Health Authorities, with 30-day follow-up rates of 68.2 per cent and 67.5 per cent respectively (Figure 6.21). With the exception of those with unknown location, the region with the lowest follow-up rate for Status Indians was Northern Health Authority (57.3 per cent), and it also had the largest gap in the rates for the two populations, with Status Indians receiving 23.0 per cent less community follow-up care than other residents. Vancouver Island Health Authority also had a sizable gap between the two populations, with Status Indian mental health patients receiving 21.1 per cent less follow-up care than other residents in that region.

**Figure 6.22**

**Mental Health Follow-up (Distribution), by Type of Follow-up, Status Indians and Other Residents, Age 15–64 Years, BC, 2006/2007**



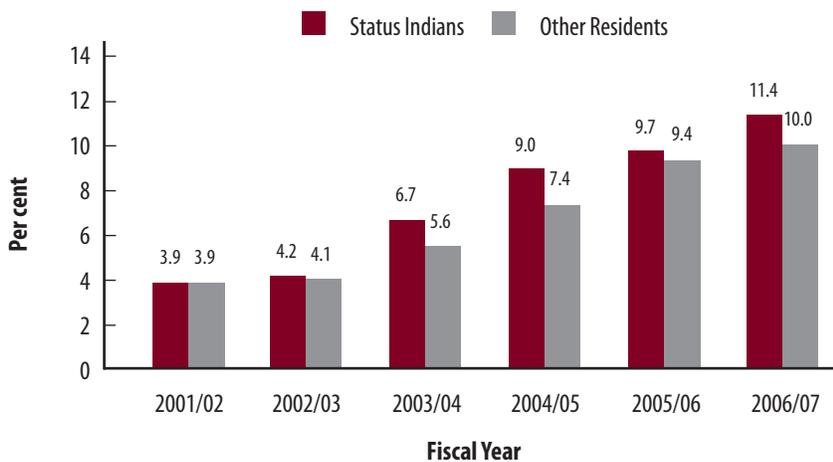
Note: This chart represents a percentage distribution of 30-day follow-ups for mental health patients and not the actual percentages of those who received follow-up. Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up at a community mental health centre (MHC), or from a general practitioner or psychiatrist (Medical Services Plan fee-for-service) within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442. Medical Services Plan (MSP) visits are restricted to those with a diagnosis of ICD-9 290-314, V61, V62, 04A, or 50B. Percentages may not add up to 100 per cent due to rounding.

Source: Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

The majority of mental health patients receive their 30-day follow-up through Medical Services Plan (MSP), although there has been a gradual shift towards receiving follow-up through mental health centres (MHCs). Other patients receive their follow-up examinations through a combination of MHCs and MSP. Figure 6.22 shows the distribution of mental health follow-up examinations, by each method, for both Status Indians and other residents. These percentages depict how all the follow-ups are distributed among the three methods (MHC, MSP, or a combination of both MHC and MSP follow-ups) and do not represent mental health follow-up rates. The percentages are therefore additive. In 2006/2007, 46.0 per cent of Status Indians and 41.8 per cent of other residents received follow-up through MSP, while 18.5 per cent of Status Indians and 12.6 per cent of other

Figure 6.23

**Mental Health Centre Follow-up for Mental Health Clients,  
Status Indians and Other Residents,  
Age 15–64 Years, BC, 2001/2002 to 2006/2007**



Note: Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up at a community mental health centre within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442.

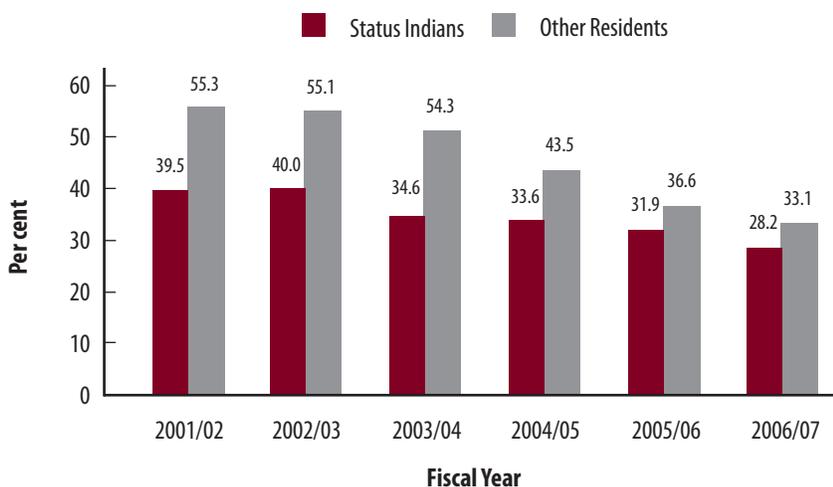
Source: Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

residents received follow-up through MHCs. There were 35.4 per cent of Status Indians who received their follow-up examinations through a combination of MSP and MHCs, compared to 45.6 per cent of other residents.

Figure 6.23 shows that since 2001/2002, the percentage of patients who obtained their 30-day follow-up through MHCs has increased for both the Status Indian and other resident populations, with slightly more Status Indians receiving follow-up through MHCs than other residents. Figure 6.24 shows that the percentage of patients receiving 30-day follow-up through MSP declined for both populations between 2001/2002 and 2006/2007. The decrease in MSP follow-up has been sharper for the other resident population than for the Status Indian population.

Figure 6.24

**Medical Services Plan Follow-up for Mental Health Clients,  
Status Indians and Other Residents,  
Age 15–64 Years, BC, 2001/2002 to 2006/2007**

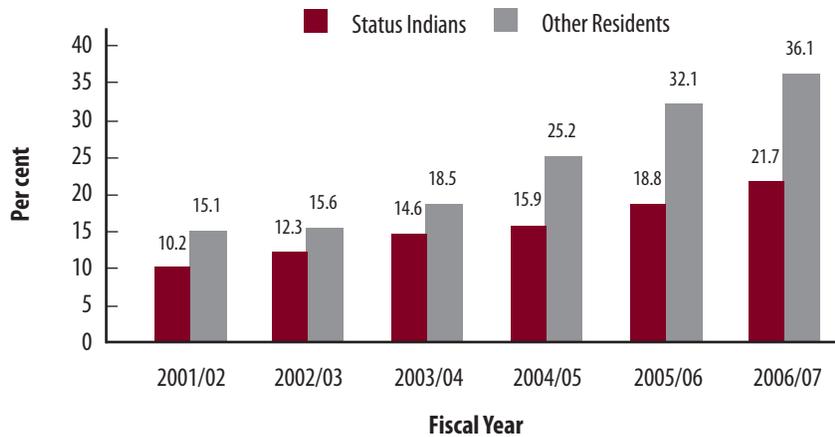


Note: Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up from a general practitioner or psychiatrist (Medical Services Plan fee-for-service) within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442. Medical Services Plan (MSP) visits are restricted to those with a diagnosis of ICD-9 290-314, V61, V62, 04A, or 50B.

Source: Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 6.25

**Mental Health Centre and Medical Services Plan  
Follow-up for Mental Health Clients,  
Status Indians and Other Residents, Age 15–64 Years,  
BC, 2001/2002 to 2006/2007**



Note: Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up at a community mental health centre, or from a general practitioner or psychiatrist (Medical Services Plan fee-for-service) within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442. Medical Services Plan (MSP) visits are restricted to those with a diagnosis of ICD-9 290-314, V61, V62, 04A, or 50B.

Source: Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.

Figure 6.25 shows that while the percentage of patients receiving follow-up through a combination of MHCs and MSP increased for both populations between 2001/2002 and 2006/2007, the increase was more significant for the other resident population (from 15.1 per cent to 36.1 per cent) than for the Status Indian population (10.2 per cent to 21.7 per cent).

### Aboriginal Health and Mental Health/Addictions Working Together

Alcohol, drug misuse, and suicide are important problems for Aboriginal people. The way in which services are delivered to combat these problems is critical to their effectiveness in Aboriginal communities. Vancouver Island Health Authority has developed an initiative for mental health/addictions that includes cultural knowledge and a holistic approach to the model of care, in order to better meet the needs of Aboriginal communities for mental health/addictions services.

The program involves a registered clinical psychologist with extensive experience in Aboriginal communities, providing access to cultural teachings from Elders and clinical cultural competency training to mental health and addictions counsellors in four pilot locations with high concentrations of Aboriginal people. The counsellors would become the designated mental health care providers for the Aboriginal communities in their catchment areas.

The training provided involves the psychologist working with the local community and a local Elder to educate the chosen mental health and addictions staff on the historical perspective of the First Nations in the area. The issues explored would include local history and traditional practices, residential school history, stereotyping, racism, colonialism, and decolonizing practices. The staff members then visit local communities to begin the relationship-building process with the local people and health care providers.

Sources: McGougan, D., and Bradfield, T., personal communication, March 26, 2007; Vancouver Island Health Authority, Aboriginal Health, n.d.

## Culturally Appropriate Services

Aboriginal people have often not had a positive experience receiving health care services. Many studies have examined and documented the experience of Aboriginal people with the health care system. For example, a study in a reserve community in BC found that Aboriginal patients felt that their concerns were not taken seriously and that health care providers had negative stereotypes and had no consideration for the personal circumstances of the patients (Browne, Fiske, & Thomas, 2000). In addition, a focus group study of women in the eastside of Vancouver showed the need for a non-judgmental, encouraging, safe, gender-sensitive environment for provision of health care services, with an assurance of anonymity. In this study, women also expressed the need for more culturally based programming, including traditional healing, and the need for formal and informal participation of Aboriginal women in the decision-making processes regarding provision of services (Benoit & Carroll, 2001).

In 2002, the Royal Commission on the Future of Health Care in Canada emphasized that non-Aboriginal health care providers needed training to learn to provide culturally appropriate services to Aboriginal people (Romanow, 2002, as cited in Browne & Varcoe, 2006). Other commission recommendations included the involvement of Aboriginal people in the design, planning, and delivery of programs and services; more health care training opportunities for Aboriginal people; and programs to address specific health issues.

Efforts are being made to improve services for Aboriginal people and to address some of these longstanding concerns. Some initiatives include Aboriginal-run clinics and services, efforts to increase Aboriginal

***“Traditional healing rebuilds balance, re-enforces the stronger aspects of self; begins developing weaker aspects of self; revives a sense of clarity, strength, vitality, desire for life, increased cultural pride, improved self-care, parenting and leadership.”***

**– Final Report of the Aboriginal Healing Foundation, 2006**

participation in health professions, and Aboriginal hospital liaison programs.

The Ministry of Healthy Living and Sport, Aboriginal Healthy Living Branch, in consultation with the health authorities, has secured approximately \$8.5 million in funding through the federal government’s Aboriginal Health Transition Fund: Adaptation Envelope. Funding is available over a 3-year period to support adaptation of existing health programs to the unique needs of Aboriginal people. Initiatives vary between regions and include cultural competency, curriculum development, circles of practice, Aboriginal patient navigators, and improved client transition strategies.

## Traditional Healing

After European settlement, the Aboriginal people of Canada had to adapt to the ways of life imposed by the new settlers. Aboriginal people were forced to abandon their own traditional health care practices, along with their other traditions. Health practices based on Aboriginal healing concepts that were passed down from generation to generation (often orally) were nearly lost (Letendre, 2002).

For Aboriginal people, health is based on the concept of balance and harmony with nature. There are four equal and interconnected parts (physical, emotional, mental, and spiritual) that determine the health and well-being of individuals. It is important that each of these parts be nourished in order to live a healthy and productive life.

An important element in traditional healing is the role of

***“Effective healing for First Nations people focuses on interconnectedness rather than on autonomy, which is a more common goal for Western therapy. For the First Nations people in our study, connecting with family, community, culture, nature, and spirituality all seem important in successful healing.”***

**– McCormick, 1997**

family members, friends, and the community. For Aboriginal people, traditional healing often involves the support of the whole community (Ross, 1992 and Torrey, 1972 as cited in McCormick, 2005). A study by McCormick (2005) that included 50 participants showed that over 80 per cent felt that a tendency to withdraw from their community would be problematic and that their healing could only take place through connectedness with their family and their community.

The sharing and mutual support provided by family and community is critical to helping Aboriginal people maintain a healthy and balanced life. The disruptions experienced by Aboriginal people as they were separated from their families and communities, through practices such as residential schooling, disturbed this support system, and may be the root of many of their health problems. The 1996 Royal Commission on Aboriginal Peoples stressed the importance of family in Aboriginal society. Many Aboriginal people told the commission that the solution to the problems in their communities lies in the reconnection of the family bonds that would give individuals, particularly the younger generation, a sense of stability and belonging.

A study that examined the facilitation of healing for Aboriginal people of British Columbia confirmed that reconnection to family, community, culture, nature, and spirituality was the primary source of healing for Aboriginal people. Connection to traditional Aboriginal culture and values means that a person must become connected to extended family, community, the natural world, the spirit world, and, in essence, all of creation (McCormick, 1995 as cited in McCormick, 2000).

Significant components of traditional healing are the Aboriginal ceremonies and healing practices that often take place as a collective approach to keeping the network of family, extended family, and community strong. Centuries-old traditions such as sweat lodges and pipe ceremonies are recognized as important forms of healing (Ross, 1992 as cited in McCormick, 2005).

In British Columbia, a number of Aboriginal communities have begun to revive their cultural and spiritual traditions, to aid in the healing of community members. For example, Alkali Lake has employed Aboriginal healers to reintroduce

### **Path to Healing**

A research study conducted by McCormick (2005) discussed a path to healing common to all Aboriginal ceremonies and healing journeys. A study of the stories showed four stages in the Aboriginal healing process:

1. Separating from the unhealthy life – Individuals remove themselves from the unhealthy way of being in order to determine, clarify, and make sense of the problem.
2. Obtaining social support and resources – Individuals seek help and support from others and establish social connections with them. The purpose is to provide encouragement, motivation, acceptance, validation, and reassurance. The individual feels socially connected when he/she is able to get beyond his/her own world through social interaction.
3. Experiencing a healthy life – Individuals learn how to live a fuller life by participating in ceremonies, learning from role models, establishing spiritual connections, establishing a connection with nature, and anchoring oneself in tradition. The feeling of integration with one's culture provides a strong sense of direction and belonging.
4. Living and maintaining a healthy life – The individual takes steps to ensure that he/she is able to live and maintain the new life experienced in the previous stage. Many feel optimistic and empowered by this new involvement in challenging activities and in a new sense of discipline.

Source: McCormick, 2005.

traditional dances, ceremonies, and spiritual practices to community members. Cultural activities such as traditional dancing, sweet grass smudging, sweat lodge ceremonies, and singing and drumming have helped the people to overcome illness and addictions. The treatment strategy used by the people of Alkali Lake has been adopted by other Aboriginal treatment programs such as Poundmaker and Round Lake. These programs have been very successful; for example, the Alkali Lake community has decreased its alcoholism rate from 95 per cent to 5 per cent in 10 years. The success of these and other programs is due to their strong emphasis on the cultural and spiritual elements of healing.

Overall, the cultural practices of traditional healing have been and continue to be an essential part of the life of Aboriginal people. Considering the gaps between the Aboriginal population and other residents in health-related indicators, particularly in alcohol and drug-related deaths, it is necessary to consider the value and contribution that traditional healing practices can make to improve the health of the Aboriginal population.

In essence, as many researchers have suggested, what is likely to help improve the health of the Aboriginal population is a return to what was forcibly taken away—their culture and traditions (Letendre, 2002).

## Summary of What We Know:

- Aboriginal people receive health services through a unique combination of federal, provincial, and Aboriginal-run programs and services. Responsibility for the delivery of health care to Aboriginal people in Canada has been the subject of considerable debate.
- The BC provincial government has direct responsibility to deliver all aspects of health care to all residents of British Columbia, including Status and non-Status Indians living on- and off-reserve, the Inuit, and Métis.
- Research has consistently shown that First Nations women, particularly those with lower socio-economic status, continue to be at higher risk of developing cervical cancer. The increased rate of cancer in this population has been linked to a lower number of screenings.
- From 2004/2005–2006/2007, the most common reasons for hospitalization for the Status Indian population were diseases of the digestive system, pregnancy and childbirth, and external causes such as injuries and poisoning.
- Between 2004/2005–2006/2007, the Status Indian population was almost twice as likely to experience a fall as other residents. The rate of motor vehicle and pedal cycle hospitalizations was significantly higher for Status Indians compared to other residents (21.5 per 10,000 versus 12.6 per 10,000).
- The largest gap between the two populations was in hospitalizations for HIV disease, with Status Indians being hospitalized at a rate nearly 7 times higher than the rate for other residents (9.5 per 10,000 versus 1.5 per 10,000).
- From 2004/2005–2006/2007, the hospitalization rates for most types of cancer were similar between the two populations, and in some categories—such as breast cancer and cancers of the respiratory system—the rates were slightly lower for Status Indians compared to other residents.
- In 2006/2007, nearly 5 times as many Status Indians as other residents were hospitalized in BC due to attempted homicides (208 per 100,000 versus 41 per 100,000).
- In 2006/2007, nearly 5 times as many Status Indians were hospitalized due to attempted suicides as other residents (155.0 per 100,000 versus 32.5 per 100,000).
- Compared to other British Columbians, Status Indians are more likely to be admitted to hospital for preventable admissions, which are conditions that can usually be managed in the community, without the need for hospital admission (e.g., diabetes, asthma, hypertension, neurosis, depression, or abuse of alcohol or other drugs).
- The Status Indian population is nearly 5 times more likely to be hospitalized for mental and behavioural disorders due to psychoactive substance use than other residents (50.6 per 10,000 and 11.7 per 10,000 respectively).
- In general, psychoactive prescriptions have remained stable from 1998 to 2006 for both Status Indians and other residents, with the exception of antidepressants, antipsychotics, and cerebral stimulants, which all show an increase.

- Since 1998, Status Indians have had a slightly higher rate of cerebral stimulant prescriptions (stimulants that act on the central nervous system and provide a temporary sense of alertness and well-being as well as relief from fatigue) than other residents.
- Based on Ministry of Health Services data, in 2006/2007, over twice as many Status Indians received a hospital discharge relating to a mental health condition than other residents.
- In 2006/2007, the Status Indian population had a significantly lower rate of 30-day community follow-up for mental health patients compared to other residents. The majority of mental health patients receive their 30-day follow-up through Medical Services Plan, although there has been a gradual shift towards receiving follow-up through mental health centres.
- Aboriginal people have often not had a positive experience receiving health care services. A study in a reserve community in BC found that Aboriginal patients felt that their concerns were not taken seriously and that health care providers had negative stereotypes and had no consideration for the personal circumstances of the patients.
- Overall, the cultural practices of traditional healing have been and continue to be an essential part of the life of Aboriginal people. Considering the gaps between the Aboriginal population and other residents in health-related indicators, particularly in alcohol and drug-related deaths, it is necessary to consider the value and contribution that traditional healing practices can make to improve the health of the Aboriginal population.
- As many researchers have suggested, what is likely to help improve the health of the Aboriginal population is a return to what was forcibly taken away—their culture and traditions.

## What Actions Can We Take?

### First Nations communities can:

- Participate in health governance structures and planning processes.
- Work towards increasing the participation of Aboriginal women in prevention and screening programs, such as Pap tests and screening mammography.

### The health system can:

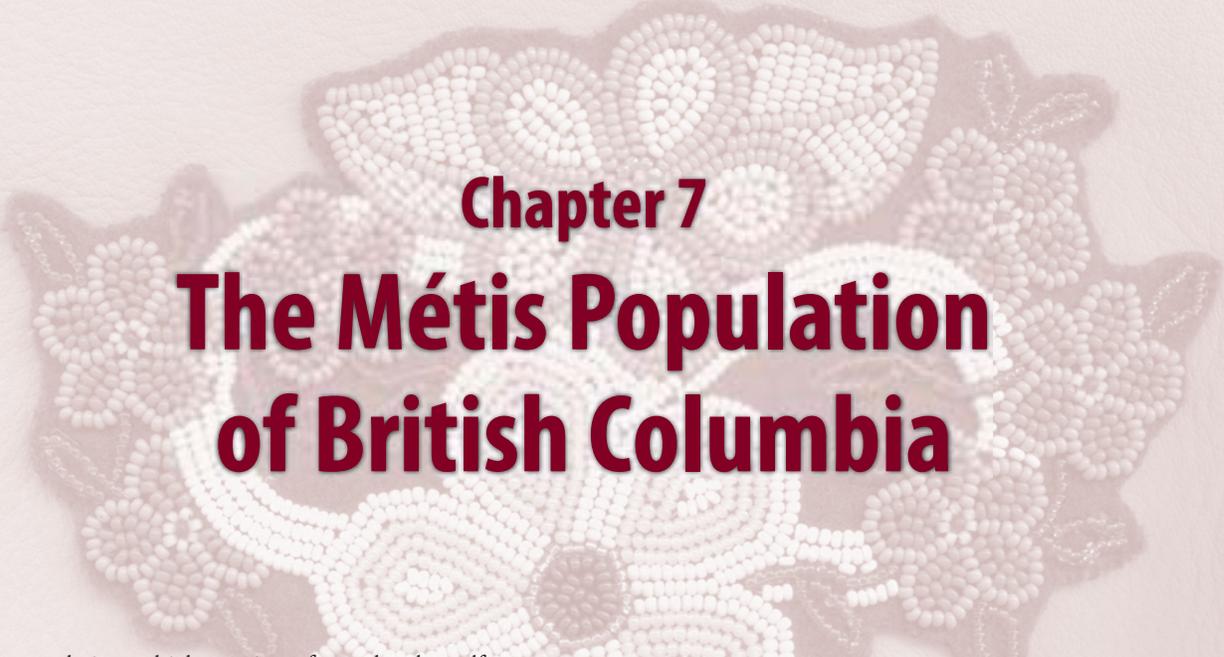
- Work with the Aboriginal community to develop performance expectations for Aboriginal health. Include performance measures and targets in health authority service plans.
- Make a comprehensive effort to respond to mental health problems and trauma in Aboriginal communities.
- Work with Aboriginal communities to increase the uptake of breast cancer screening and Pap tests by Aboriginal women.
- Encourage Aboriginal involvement in describing and capturing evidence about what works to promote health, treat illness, and care for the vulnerable. Support the use of traditional healing in conjunction with other primary health services.

### The College of Physicians and Surgeons can:

- Continue to monitor professional prescribing practices and deal with those professionals who are inappropriately prescribing medications.

### Government can:

- Work from the principle that Aboriginal people, like all British Columbians, have the right to receive services that will help them achieve and maintain good health and well-being. Jurisdictional issues should not negatively impact the delivery of health services.
- Continue to work on plans for routine record linkage to identify Status Indian records in health databases (e.g., hospital morbidity, physician claims, mental health database, BC Cancer Registry, BC Centre for Disease Control).



## Chapter 7

# The Métis Population of British Columbia

The Métis population, which consists of people who self-identify as Métis, is distinct from other Aboriginal peoples, is of historic nation ancestry, and is recognized by the Métis Nation British Columbia (MNBC). According to the MNBC, this definition reinforces that the Métis Nation is a unique nation with its own culture and deep roots in Canada. This definition was ratified in September 2003 at the MNBC Annual General Assembly. The contemporary Métis Nation is the continuation of a unique, historic Aboriginal people known as the Métis, who appeared as a distinct group as early as 1816.

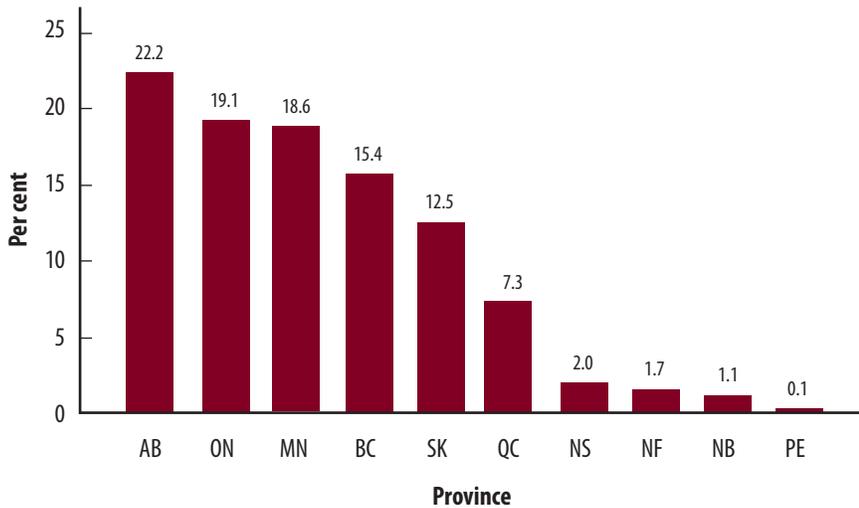
### Highlights

- According to the 2006 Census, approximately 59,445 Métis people live in British Columbia. The highest percentage of the Métis population lives in Alberta (22.2 per cent), with Ontario (19.1 per cent) and Manitoba (18.6 per cent) close behind. Prince Edward Island has the lowest percentage of Métis. A little over 15 per cent of Canada's Métis population lives in BC.
- The Métis Nation British Columbia Centralized Registry was established in October 2004. The Registry is a means to establish Métis citizenship, and arose as a result of the Powley decision by the Supreme Court of Canada in 2003.
- On May 12, 2006, the Métis Nation British Columbia and the Province of BC signed the Métis Nation Relationship Accord.
- In the fall of 2006, the MNBC conducted their first provincial survey. The survey was distributed to households through local MNBC affiliates, and collected data from those who self-identified as Métis.
- Arthritis was the most commonly reported chronic condition for the Métis people completing the survey, with over 54 per cent of households surveyed having at least one person in their household with the condition. This was followed closely by chronic back pain at 47.1 per cent and stomach/digestive problems at 41.8 per cent. Diabetes and heart disease also ranked high, at 40.7 per cent and 32.5 per cent respectively.
- Education and training appeared to be of greatest importance to the young Métis population. Nearly 81 per cent of households surveyed reported education and training as the most important issue. A little over 78 per cent considered Métis rights important. Seventy-five per cent identified employment opportunities as a major concern.
- Over 91 per cent of the Métis households surveyed reported drug addiction as the most important issue for Métis youth. A considerable percentage reported teen pregnancy and smoking as important issues (approximately 66 per cent and 63 per cent respectively). Suicide ranked as the fourth most important issue for Métis youth at 50 per cent.

*Photo courtesy of Kiwetin Consulting*

**Figure 7.1**

**Distribution of the Métis Population, by Province, 2006**



Note: This distribution excludes the Northwest Territories (population 3,580), the Yukon Territory (population 805), and Nunavut (population 130).

Source: Statistics Canada, Population Census Data, 2006.

The largest proportion of the Métis population lives in Alberta (22.2 per cent), with 19.1 per cent living in Ontario and 18.6 per cent living in Manitoba. Prince Edward Island has the smallest Métis population. A little over 15 per cent of the total Métis population lives in BC. Based on the 2006 Census, approximately 59,445 people who identified themselves as Métis live in BC (Figure 7.1).

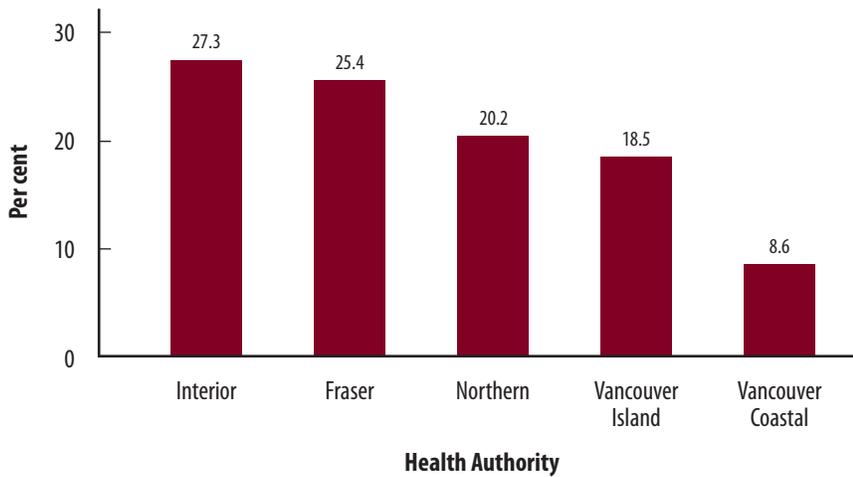
**Métis Community Projects**

Métis Nation British Columbia (MNBC) utilized ActNow BC funding to support community projects. Within a two-year period of funding, 33 out of 36 Chartered Métis Communities participated in health promotion activities/projects that were developed to meet the needs of their specific community. Women, youth, Elders, veterans, the BC Métis Assembly of Natural Resources, and the MNBC Senate also had specific targeted funds for health promotion.

To showcase the many successful projects, MNBC developed a DVD, “A Step at a Time”. The DVD includes projects under each of the four ActNow BC pillars. There were physical activity programs such as walking, jogging, swimming, hiking, skating, paddling, yoga, archery, and belly dancing. Nutritional projects such as “Cooking for Life” classes and nutritional tours of grocery stores that highlighted heart-smart and diabetic choices were also included. The DVD showcased a youth traditional camp that including promotion of a healthy lifestyle without tobacco misuse. Calendars and posters showcasing this message were created based on contest entries submitted by youth. Finally, the Métis Women of BC created a healthy messaging maternal/child poster campaign that will be broadly distributed throughout the Métis Chartered Communities.

The DVD “A Step at a Time” can be viewed on the MNBC website (<http://www.mnbc.ca>). Requests for copies of the DVD can be made by calling MNBC’s office at 1-800-940-1150 or 604-801-8583.

**Figure 7.2** Distribution of the Métis Population, by Health Authority, BC, 2006



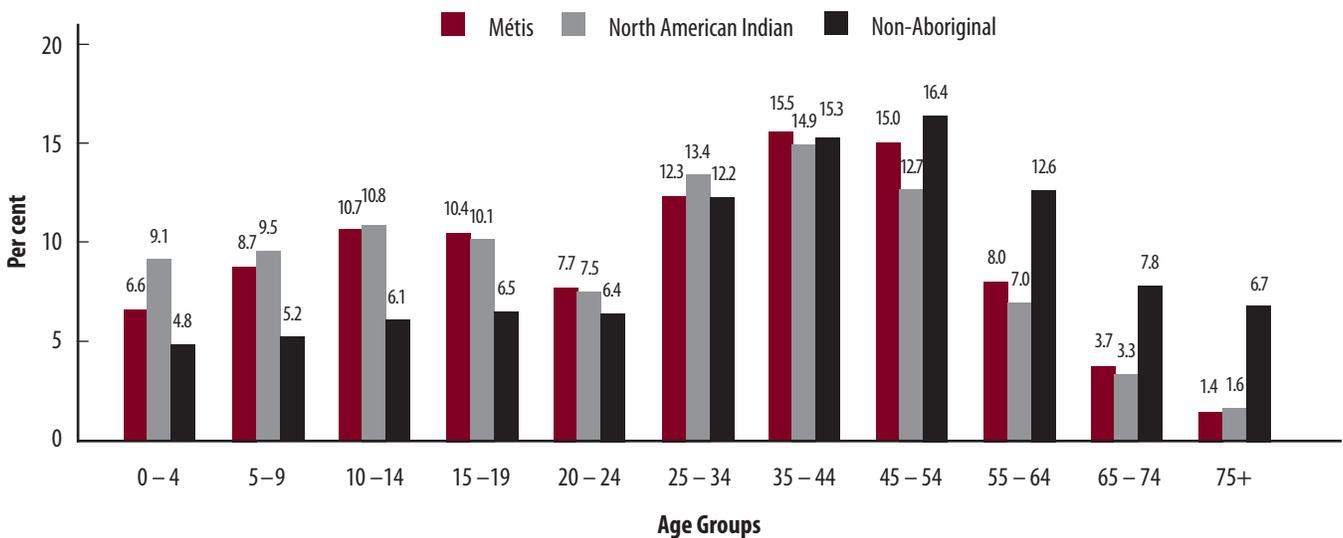
Note: This chart represents the distribution of the total BC Métis population across the health authorities, not the proportion of the Métis population within each health authority. Age-standardization has not been applied to this data.

Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2009.

In BC, approximately 72 per cent of the Métis population lives in the Interior, Fraser, and Northern Health Authorities (Figure 7.2). The vast majority of the Métis population is concentrated in urban centres such as Vancouver, Prince George, and Victoria (Statistics Canada 2006 Census data).

The Métis population is considerably younger than the non-Métis population. In 2006, around 45 per cent of the Métis population was under 25 years of age, compared to around 30 per cent of the non-Aboriginal population. Only 13 per cent of the Métis population is over 55 years of age, compared to approximately 27 per cent of the non-Aboriginal population (Figure 7.3).

**Figure 7.3** Métis, Aboriginal, and Non-Aboriginal Population, by Age Group, BC, 2006



Note: Inuit people (approximately 795) are not included in this distribution. North American Indian includes First Nations people who are not Métis, or Inuit and those who indicated multiple responses.

Source: Statistics Canada, 2006 Census data, provided by BC Stats; prepared by the Office of the Provincial Health Officer and Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2009.

## Métis Nation British Columbia Centralized Registry

The Métis Nation British Columbia Centralized Registry was established in October 2004. The Registry is a means to establish Métis citizenship, and arose as a result of the Powley decision by the Supreme Court of Canada in 2003. The Powley case involved “two Métis men, Steve and Roddy Powley, who killed a moose in 1993 and were charged with contravening Ontario hunting law. The men argued that Section 35 of the *Constitution Act* protects the right of Métis to hunt for food. The case was appealed up to the Supreme Court of Canada, which ruled in favour of the Powleys in September 2003” (Indian and Northern Affairs Canada, 2005).

The Supreme Court decision confirmed the existence of Métis communities in Canada, and constitutional protection of their Aboriginal rights. The Court included the Métis as one of the Aboriginal peoples of Canada under Section 35 of the *Constitution Act* (Métis Nation British Columbia [MNBC], 2004). The Court suggested the need for a standardized process of identifying members of the Métis that was “objectively verifiable”. The Centralized Registry is this objectively verifiable process. The Court also set out three factors to be used in identifying Métis: self-identification,

### The Métis Flag

The Métis Nation BC Flag displays the infinity symbol on a background of red and blue. The colours represent the coming together of two cultures (European and First Nations) to form a new group, and the infinity symbol signifies that the Métis will continue forever (MNBC, n.d.).

The remainder of the flag incorporates elements similar to the BC flag. The dark blue wavy lines symbolize the major rivers of the province. The sun and mountains reflect the province of BC, and the Red River Cart is a Métis symbol (the cart is a traditional vehicle from the Red River area in Manitoba, which is the birthplace of the Métis) (Flags of the World, 2007).

ancestral connection, and community acceptance (MNBC, 2007). These factors are included in the citizenship application to the Registry.

Since the implementation of the Registry, over 3,300 Métis Citizens have been registered (as of August 2008). Current projects include the development of an Historical Document Database in conjunction with the University of British Columbia. The database will be available via the Internet to Métis Citizens throughout the Métis Nation Homeland; they will be able to access and share documents that will help individuals and their families to understand their past (L. Katernick, personal communication, February 16, 2007). For further information on the Registry, please visit the MNBC website at <http://www.mnbc.ca>.

## Métis Nation British Columbia Survey Data (2006)

On May 12, 2006, the MNBC and the Province of BC signed the Métis Nation Relationship Accord. To fulfill one of the objectives of the Accord regarding data collection, the MNBC coordinated a three-step plan:

- 1) Gather baseline data by conducting a Métis Nation Provincial Survey.
- 2) Implement strategies for an annual data review process.
- 3) Conduct subsequent surveys to measure progress and take corrective measures when needed.

In the fall of 2006, MNBC conducted their first provincial survey.

### Survey Method and Limitations

The survey was distributed to households through local MNBC affiliates, and data was collected from those who self-identified themselves as Métis.<sup>1</sup> The 129 survey questions covered a variety of topics, including demographics, education, health, and other socio-economic indicators, as well as cultural awareness, Métis governance, and veterans issues.

<sup>1</sup> Since the questionnaire was applied to households, some of the people living in the household may not meet the formal definition of “Métis”.

There were some technical limitations that should be noted in reviewing the survey data. First, during the course of the survey, the questionnaire was revised and re-distributed. This affected the total sample size for some of the questions asked.

Second, it can be difficult to make the distinction between individuals within a household for some of the responses, as in some cases, one individual answered questions on behalf of the entire household. For example, if there were three people with different levels of educational attainment living in a household, it would not be possible to identify the age and gender of each person and their individual level of education.

In some instances, there were multiple answers where only one answer was required. In these instances, the data was left out. It should be noted that this involved very small numbers that could be deemed insignificant.

Finally, the sample in the MNBC survey cannot be classified as a “random sample”, as the survey was distributed to existing MNBC-member households. In a simple random sampling,

each member of the target population has the same chance of being selected for participation in the study. For a sample to truly be a simple random sample, a list or a sampling frame is developed, which includes almost all of the members of the population. From this list, names are chosen using a random method such as a random number table or a random number generator.<sup>2</sup> While it can be argued that the MNBC survey is not representative of all of BC, the sample is large enough relative to the actual size of the Métis population in BC to be useful.

In spite of these technical challenges, the MNBC survey has collected some valuable data that will provide very useful information and insight into health, social, and economic issues facing the Métis population in BC. A summary of the results and analysis are provided in the following section. Where applicable, other survey data, such as the Canadian Community Health Survey and the Aboriginal Peoples Survey, are used for further analysis and comparison purposes.

### **Métis Nation Relationship Accord**

On May 12, 2006, the Province of British Columbia and Métis Nation British Columbia signed the Métis Nation Relationship Accord. The Accord complements an existing 2003 agreement, signed between the Province of BC, the Government of Canada, and the Métis Provincial Council, to address Métis socio-economic challenges. The Accord also builds on the commitments outlined in the First Ministers' Meeting on Aboriginal Issues, held in Kelowna in November 2005.

The objectives of the Accord are to:

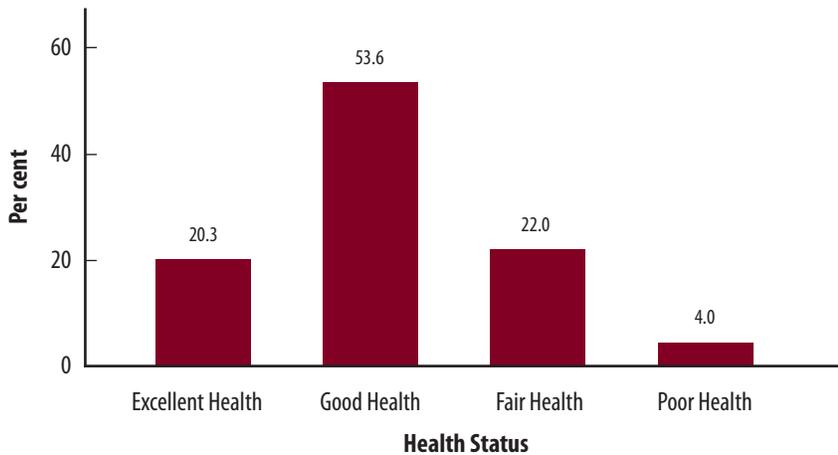
- Strengthen existing relationships.
- Improve engagement, coordination, information sharing, and collaboration.
- Follow through on commitments from the First Ministers' Meeting on Aboriginal Issues as they pertain to Métis people, to close the gap in the quality of life between Métis people and other British Columbians, particularly in the areas of health, housing, education, and economic development.
- Renew the collaborative process of the Métis tripartite agreements, Métis identification, and data collection.

Sources: Ministry of Aboriginal Relations and Reconciliation [MARR], n.d.; MARR & Métis Nation British Columbia, 2006.

<sup>2</sup> It is also possible to conduct a stratified random sample, in which the population is classified into “strata” or subgroups and then a random sample is pulled from each subgroup. Surveys such as the Canadian Community Health Survey (CCHS) take it a step further by selecting dwellings with clusters from which the people are finally selected (complex survey design). In such surveys, sampling weights are used to ensure that the demographic is representative of each geographic area. Sampling weights are used when the data are analyzed to correct for unequal probabilities of selection that occurred at any stage of sampling.

**Figure 7.4**

**Overall Self-Reported Health, BC, 2006**



Note: 1,486 out of 1,509 households surveyed answered this question. There were 23 non-responses that were excluded.  
 Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

**MNBC Survey Results**

**Overall Health**

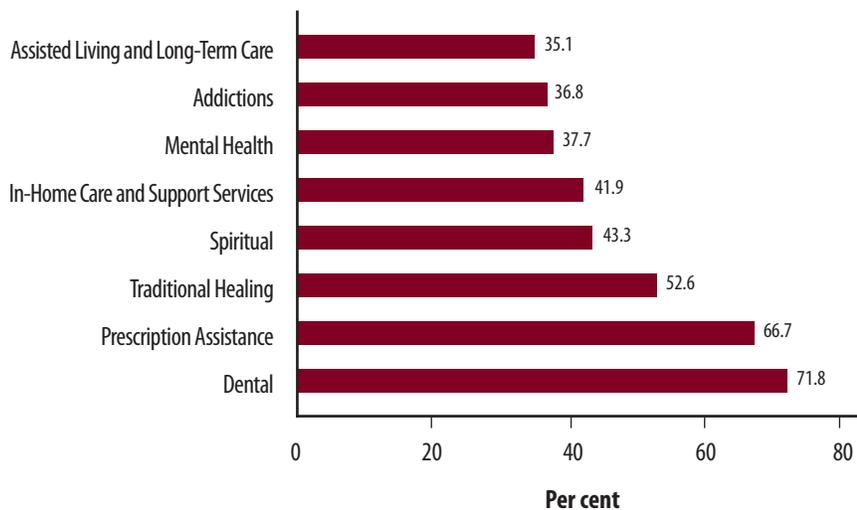
In terms of overall health, 74 per cent of survey participants reported good to excellent health (based on a response from 1,486 households out of a total of 1,509 households surveyed) (Figure 7.4).

When asked about areas of concern regarding health, 71.8 per cent of households surveyed ranked dental care highest. The need for assistance with prescriptions ranked second (66.7 per cent), with traditional healing (52.6 per cent) and spiritual concerns (43.3 per cent) being the third and fourth highest-ranked areas. In-Home care and support services, mental health, and addictions were also significant issues (Figure 7.5).

**Figure 7.5**

**Health Care Concerns, BC, 2006**

**Health Care Concerns**

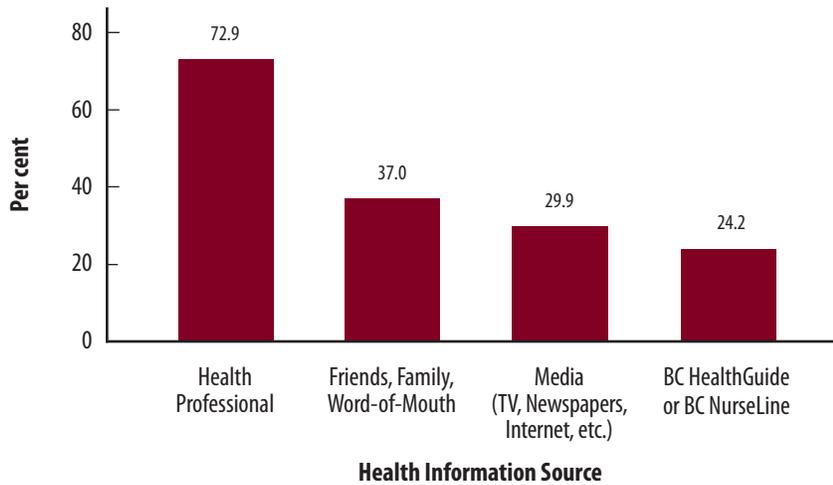


Note: 1,340 out of 1,509 households surveyed answered this question, with 5,170 responses across the different categories of health care concerns (one household could identify several areas of concern). There were 169 non-responding households that were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

Figure 7.6

## Access to Health Information, BC, 2006



Note: 1,404 out of 1,509 households surveyed answered this question. There were 105 non-responding households that were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

Being able to access health information is important for health care prevention and maintaining good health. Approximately 73 per cent of households reported that their major source of health care information came from health care professionals. The next largest source was friends, family, and word-of-mouth at 37 per cent, an indication of the strong connection of the Métis people with their community. Other sources of health information were the media, at almost 30 per cent, and the BC HealthGuide (or BC NurseLine) at just over 24 per cent (Figure 7.6).

### Métis Culture and Traditions – Beadwork and Sash

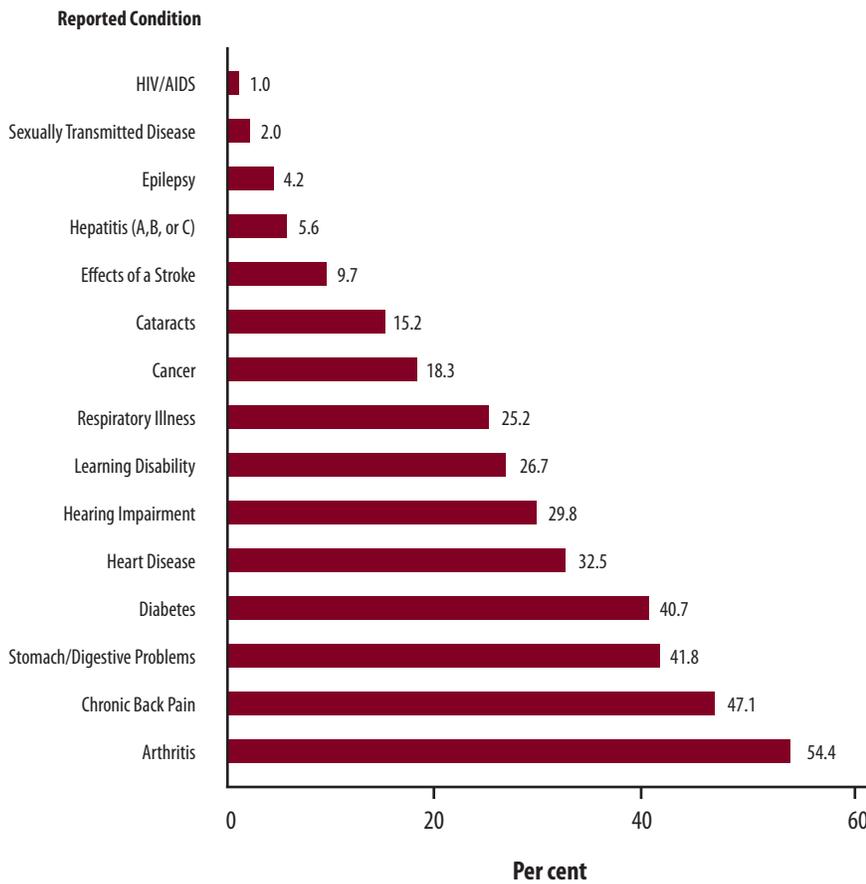
The Métis people have many traditions, including crafts such as beading and the Métis sash, as well as fiddle playing, folk songs, and dances.

Beading is one of most distinctive and important art forms for all Aboriginal people. For many years, Aboriginal women created beautiful intricate designs by first using porcupine quills and moose or caribou hair and later adding glass beads, which became available after the arrival of Europeans. The Métis women were the first to introduce the colourful beads to their designs on moccasins, jackets, bags, and other clothing. The designs and patterns in the beadwork incorporated the ideas of silk embroidery done by European women. The Métis women became well known, to the point of being called “Flower Beadwork people” by many Aboriginal people.

The Métis sash has been an integral part of Métis culture. Particularly familiar to those who settled in the Red River area, which is now Manitoba, the sash has served as a temporary tumpline (a strap to carry loads), key holder, first aid kit, towel, a sewing kit at times during a buffalo hunt, and as an emergency bridle or saddle blanket (MNBC, n.d.).

**Figure 7.7**

**Reported Physical Health Conditions, BC, 2006**



Note: 1,260 out of 1,509 households surveyed answered this question. There were 249 non-responding households that were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

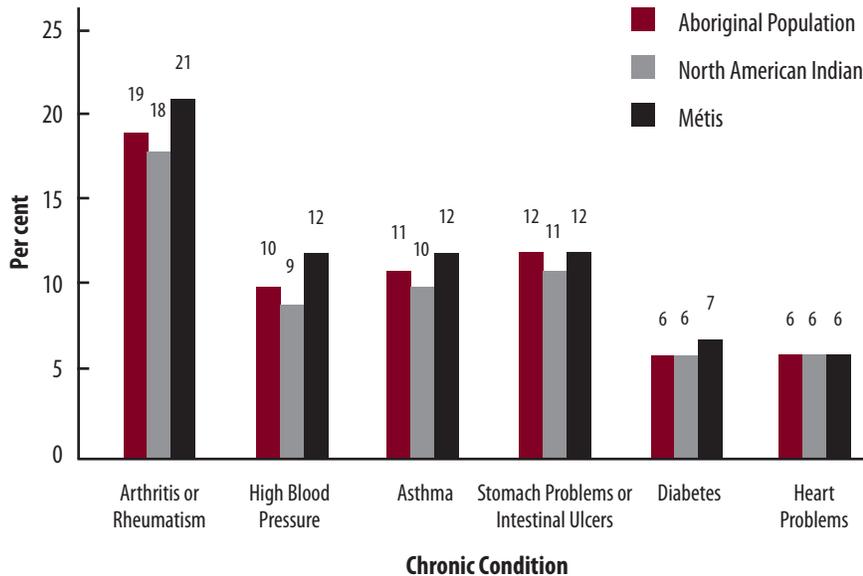
**Health Conditions**

**Chronic Conditions**

Of all chronic conditions, arthritis was the most commonly reported condition for the Métis people, with over 54 per cent of those surveyed having at least one person in their household with the condition. This was followed closely by chronic back pain at 47.1 per cent and stomach/digestive problems at 41.8 per cent. Diabetes and heart disease also ranked high, at 40.7 per cent and 32.5 per cent respectively (Figure 7.7).

Figure 7.8

### Aboriginal People with Selected Chronic Conditions, Age 15+, BC, 2001

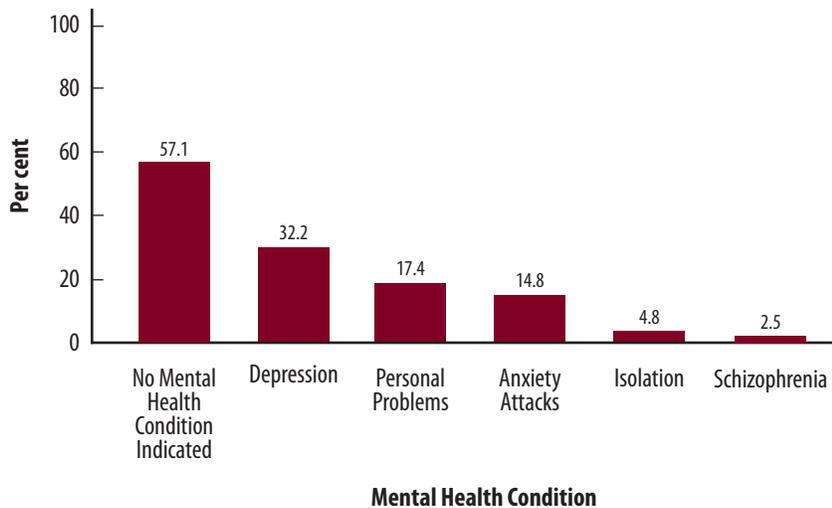


Source: Statistics Canada, Aboriginal Peoples Survey, 2001; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

While not directly comparable, it is interesting to look at the results of the Aboriginal Peoples Survey (APS) in terms of chronic conditions. While the two surveys did not ask the same questions in terms of chronic conditions, most of the same conditions appeared in their results. In 2001, the APS indicated that of all the Aboriginal groups who responded to the question, the Métis were more likely to report suffering from chronic conditions such as arthritis or rheumatism.<sup>3</sup> The APS identified 21 per cent of Métis people in BC with arthritis/rheumatism, 12 per cent with high blood pressure, asthma, and stomach problems/intestinal ulcers, and 7 per cent with diabetes. The proportion of Métis people with heart problems was the same as for other Aboriginal groups (Figure 7.8).

Figure 7.9

### Métis Reported Mental Health Conditions, BC, 2006



Note: 648 out of 1,509 households surveyed answered this question. The 861 households that did not respond were included in the denominator to determine the proportion of all Métis households with people suffering from the above mental health conditions. It is possible that a small portion of those who did not answer includes positive non-responses (those with a mental health condition that did not report it).

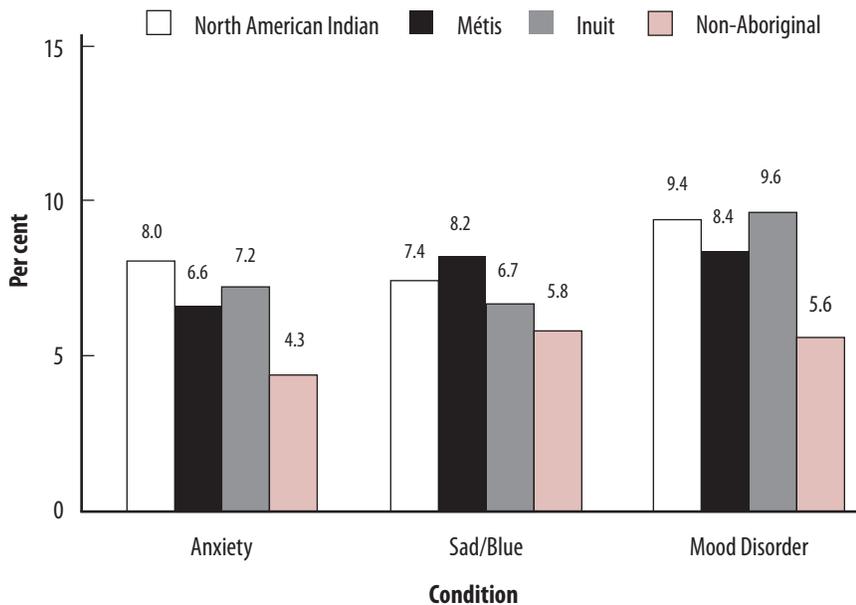
Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

### Mental Health

Of the 1,509 Métis households surveyed, 648 households indicated that at least one member of their family suffered from at least one of the mental health conditions listed in Figure 7.9. The MNBC survey results showed depression as the most significant problem (32.2 per cent), followed by personal problems and anxiety attacks at approximately 17.4 and 14.8 per cent respectively.

<sup>3</sup> The results of the Aboriginal Peoples Survey were based on responses from individuals rather than households, as was the case for the MNBC survey.

**Figure 7.10** Aboriginal Mental Health Indicators, Age 12+, Canada, 2005



Note: The indicators in this chart are based on the respondents experiencing the conditions for a period of 2 weeks or longer over the past 12 months.

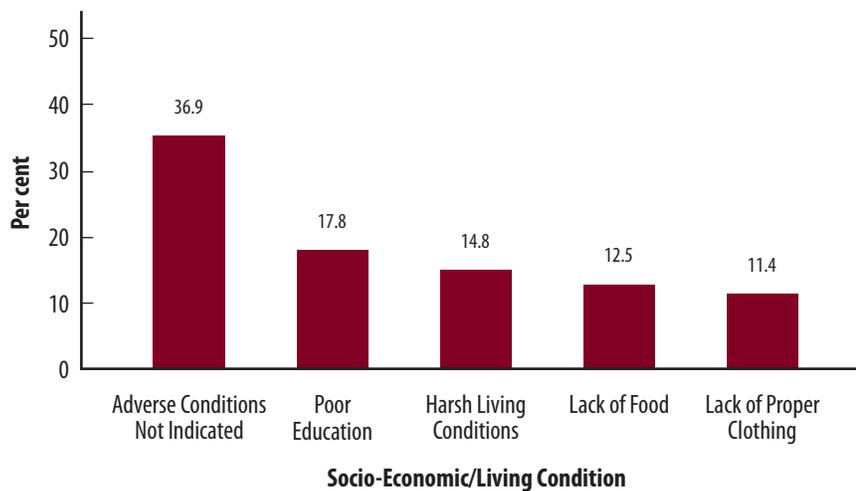
Source: Statistics Canada, Canadian Community Health Survey, Share File Cycle 3.1, 2005; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

Results from the 2005 Canadian Community Health Survey (CCHS) also show that depression could be a significant issue for the Métis population. Figure 7.10 illustrates the proportion of those people who were sad/blue for two continuous weeks or more, in the year prior to the survey. The Métis population had the highest rate of being sad/blue (8.2 per cent) compared to all other groups.<sup>4</sup> While the depression-related rates for indicators in Figure 7.10 seem lower in comparison to the results from the MNBC survey, it must be emphasized that the indicator for sad/blue in Figure 7.10 is based on the condition having occurred for 2 weeks continuously.

**Socio-Economic Determinants of Health**

The MNBC survey also included questions on socio-economic determinants of health such as education, living conditions, and food security. Approximately 18 per cent of households surveyed indicated poor education and almost 15 per cent reported harsh living conditions. Around 13 per cent of Métis households surveyed experienced a lack of food and around 11 per cent were in need of proper clothing (Figure 7.11). According to data from the CCHS (2005), 17 per cent of the Métis population age 12 and over surveyed stated that their food did not last and that they did not have enough money to buy more.

**Figure 7.11** Adverse Socio-Economic/Living Conditions, BC, 2006



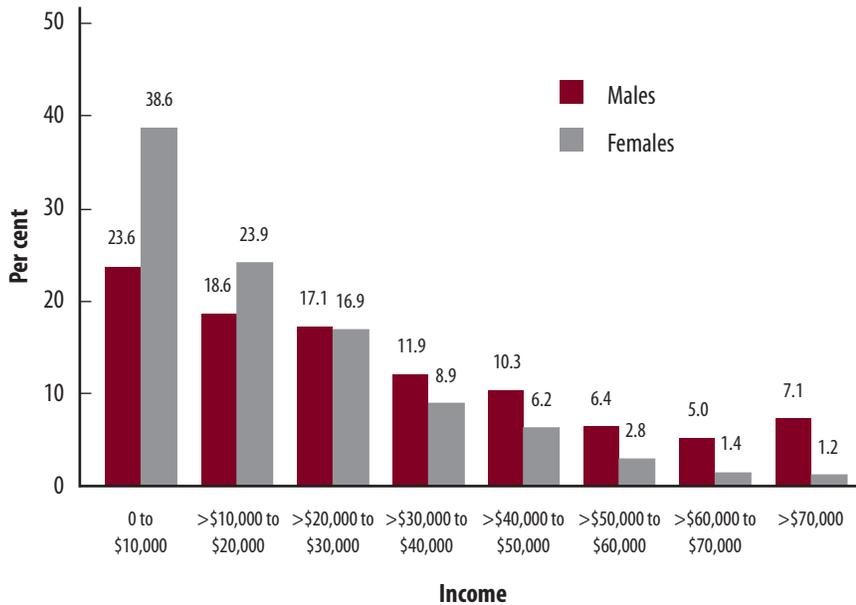
Note: 952 out of 1,509 households surveyed answered these questions. The 557 households that did not respond were included in the denominator to determine the proportion of all Métis households that were suffering from these conditions. While it is assumed that most of the non-responding households were not suffering from adverse conditions, it is possible that a small portion of those that did not answer includes positive non-responses (those suffering from a condition that did not report it).

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

<sup>4</sup>Data was not reportable for all of these groups and indicators at the BC level, as the CCHS survey sample size was too small.

Figure 7.12

## Total Household Income, BC, 2006



Note: The income represents the total household income for all males and females for the 1,521 households surveyed. Of total number of households surveyed, 1,008 identified the level of income for all women in the household and 1,092 identified the level of income for all men in the household (including no income). Non-responses have been excluded.

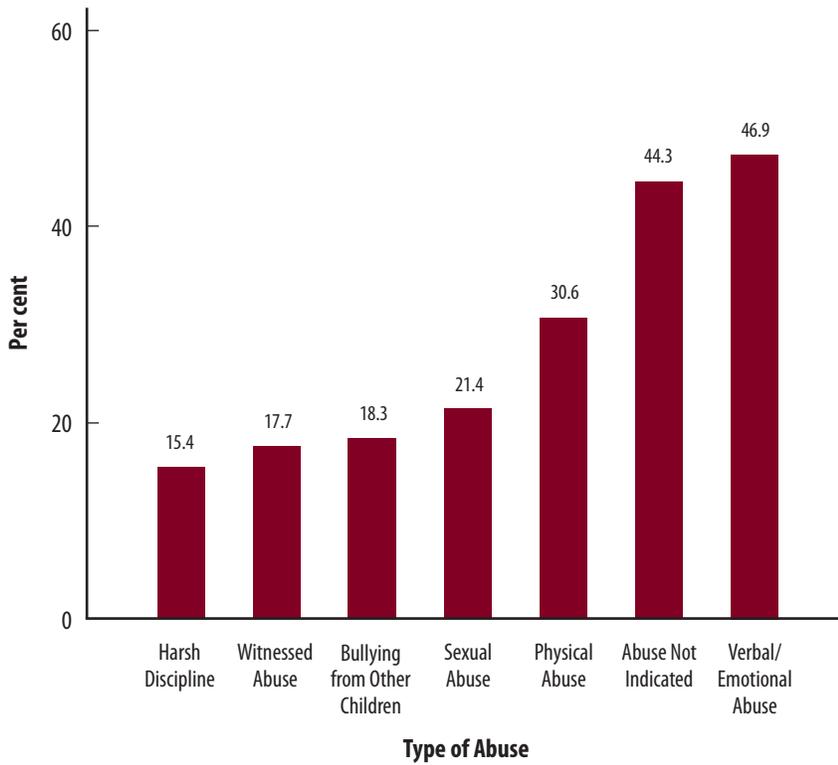
Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

## Income

The majority of households who responded to the MNBC survey indicated that they were in the lower income categories. Furthermore, data from the survey strongly suggest that there are more women in the lowest income group than men. Approximately 39 per cent of Métis women earned an annual income of \$10,000 or less, compared to 24 per cent of Métis men. The data further suggest that as income increases, there are disproportionately more men in the higher income categories compared to women, with the biggest inequality in the \$70,000 and over group. Approximately 7 per cent of men reported an income of \$70,000 or more, compared to 1.2 per cent of women (Figure 7.12).

**Figure 7.13**

**Experienced Abuse, BC, 2006**



Note: Abuse includes verbal, physical, and sexual abuse and bullying. 840 out of 1,509 households surveyed answered these questions. The 669 households that did not respond were included in the denominator to determine the proportion of all Métis households with people who have experienced abuse. While it is assumed that most of the people in the non-responding households did not experience abuse, it is possible that a small portion of those that did not answer includes positive non-responses (people who may have experienced abuse but did not report it).

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

**Social Issues**

The MNBC survey also included questions on verbal, physical, emotional, and sexual abuse. A large proportion of the Métis households surveyed reported experiencing abuse. Almost 47 per cent of those surveyed responded that they had been subject to verbal and/or emotional abuse, and almost 31 per cent of households identified the presence of physical abuse. Just over 21 per cent also reported sexual abuse. In addition, 18.3 per cent of those surveyed indicated that their household members had been bullied. A significant proportion of those surveyed were witness to various forms of abuse and were also exposed to harsh discipline. Nearly 45 per cent of households indicated that they had not experienced any types of abuse listed (Figure 7.13).

### **Métis Training Programs**

The construction and oil and gas booms in BC have resulted in a shortage of skilled workers across the province. Two training programs operated by the Métis Nation British Columbia look to address this shortage and improve the employment outlook for the Métis people.

#### **Core Training**

The Construction Orientation and Retention for Employment (CORE) training program was formed to address the need for skilled construction trades people in BC. The program, which began in May 2006, provides individuals with a hands-on introduction to the various construction trades. It focuses on basic work skills and safety, and students earn tickets in Level One First Aid, Workplace Hazardous Materials Information System (WHMIS), Traffic Control, and Confined Space Entry. Once students have completed the training, they can receive assistance in obtaining work in construction, or in getting an apprenticeship. As of December 2006, three classes had graduated from the CORE program.

#### **Métis Oil & Gas Roughneck Program**

A partnership between EnCana, a leading natural gas producer in North America, and the Métis Nation British Columbia (MNBC), aims to help fill the need for trained oil drillers by training 100 new drilling rig technicians over 3 years through the Pre-Employment Floorman (Roughneck) training program.

The program came out of an earlier pilot project between MNBC, Trinidad Drilling, and EnCana. In December 2005, MNBC and Trinidad Drilling submitted a proposal to EnCana to develop a pilot project for Métis roughneck oil field training. The first 24 participants in this pilot graduated in March 2006.

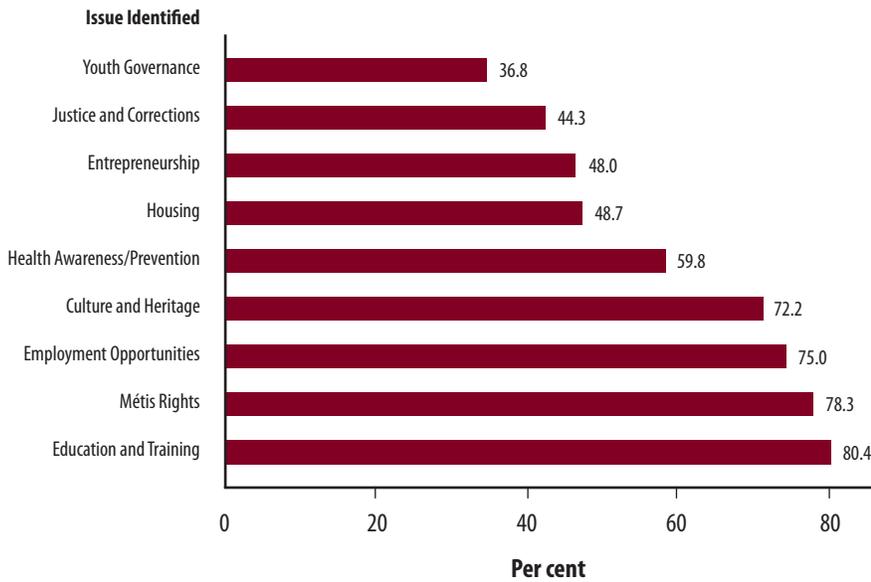
In June 2006, MNBC and EnCana formalized the pilot into a 3-year program to train 100 new drilling rig technicians. Together, they committed approximately \$1 million over 3 years for the training.

The 21-day program provides participants with hands-on training in the safe operation and maintenance of drilling equipment, the responsibilities of the drilling floor and deck crew operations, and the skills of a roustabout and lease hand. Students also participate in job readiness training and an oil field fitness program, and have access to industry assistance to gain employment. As of December 2006, 3 classes had graduated from the program (47 technicians out of the goal of 100), with a 100 per cent graduation rate, and an 85 per cent employment rate.

Sources: Aboriginal Human Resource Development Council of Canada, 2006; EnCana, 2006; Métis Nation British Columbia, 2006a, 2006b.

**Figure 7.14**

**Issues Important to Métis Youth, Age 14–29 Years, BC, 2006**



Note: 957 out of 1,298 households surveyed answered this question (identified at least one issue important to Métis youth). There were 341 non-responding households that were excluded; however, a small number of these households may have represented positive non-responses (had youth that had an issue but did not report it).

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

**Important Issues for Métis Youth**

When youth respondents (14–29 years of age) were asked about the importance of issues for youth, education and training appeared to be of greatest importance (80.4 per cent). Seventy-five per cent identified employment opportunities as a major concern. An interesting result was the high percentage (around 78 per cent) of those who considered Métis rights to be one of the most important issues for youth. This suggests a strong desire of the Métis population surveyed, specifically youth, to have greater control over their lives. The importance of preserving culture and heritage also ranked high with Métis youth at 72.2 per cent. Housing, entrepreneurship, justice and corrections, and youth governance were also of moderate importance (Figure 7.14).

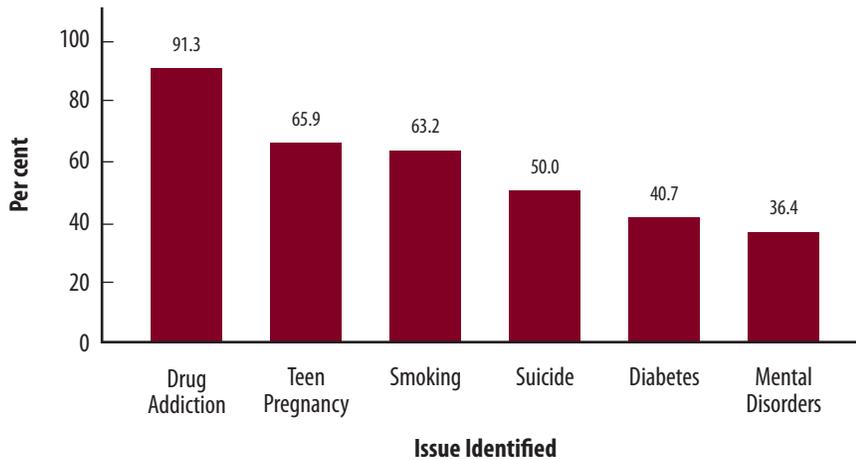
**Métis Rights**

Métis rights are identified as the ownership of the Métis Homeland, including the use of the land as well as surface and subsurface rights to resources. The Métis also seek the opportunity to develop the forests and minerals, and to exercise traditional practices (hunting, fishing, trapping, and gathering) on Crown lands and on other lands to which they are given access. Métis self-governance involves the right to establish local government on a Métis land base, as well as the right to self-governance of institutions off the land base. According to the Métis National Council, the Métis do not advocate sovereignty or separation from Canada; instead, they look for greater control over their own lives within Canada.

Source: Métis Nation of Alberta, n.d.

Figure 7.15

### Health Issues Affecting Métis Youth, Age 14 – 29 Years, BC, 2006



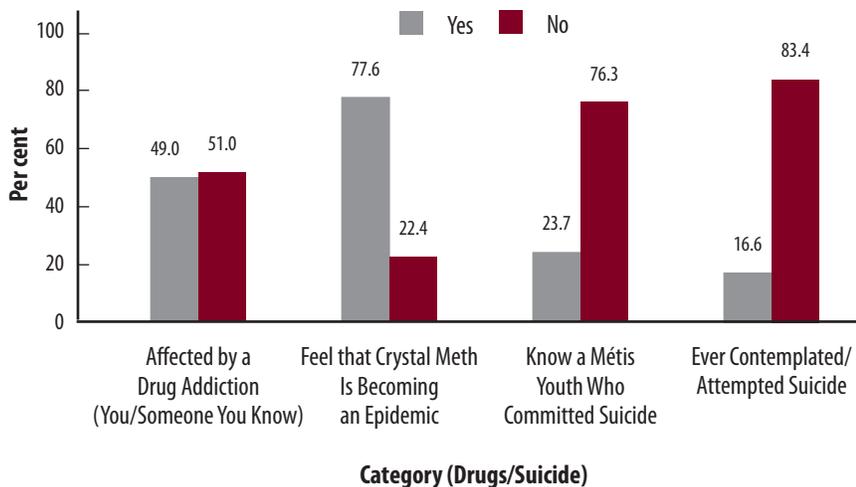
Note: 828 out of 1,298 households surveyed answered this question. There were 470 non-responding households that were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

In identifying health issues affecting youth (physical and mental), over 91 per cent of the Métis households that responded to the question reported drug addiction as the most important issue for Métis youth (Figure 7.15). A considerable percentage reported teen pregnancy and smoking as important issues (approximately 66 per cent and 63 per cent respectively). Suicide ranked as the fourth most important issue for Métis youth at 50 per cent. Youth suicide has been a concern for a number of Aboriginal communities, and its impacts are far-reaching for the families and communities. Approximately 41 per cent identified diabetes as an important issue for Métis youth, while just over 36 per cent of the responding households considered mental disorders to be important.

Figure 7.16

### Métis Youth Affected by Drug Addiction/Suicide, Age 14 – 29 Years, BC, 2006



Note: There were 1,298 households surveyed for questions on drugs and suicide, targeting youth from 14 to 29 years of age. Those households that did not identify any of these problems were excluded, although there may have been a small number of positive non-responses (youth who experienced the particular situation related to drug use or suicide but did not report it).

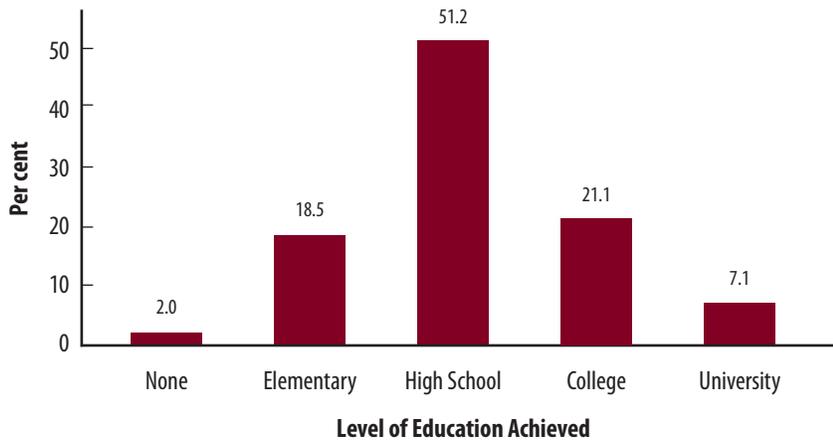
Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

#### Youth Drug Addiction and Suicide

The MNBC survey also suggests that almost half of the Métis youth surveyed have either been affected by drug addiction themselves or know someone who has been affected (49.0 per cent). Approximately 78 per cent of Métis youth feel that crystal meth is becoming an epidemic problem in their community. Nearly one-quarter of the Métis youth surveyed (23.7 per cent) knew another Métis youth who had committed suicide. In addition, 16.6 per cent of youth in responding households indicated that they had contemplated or attempted suicide at some point (Figure 7.16).

**Figure 7.17**

**Highest Level of Education for Métis Family Members, BC, 2006**

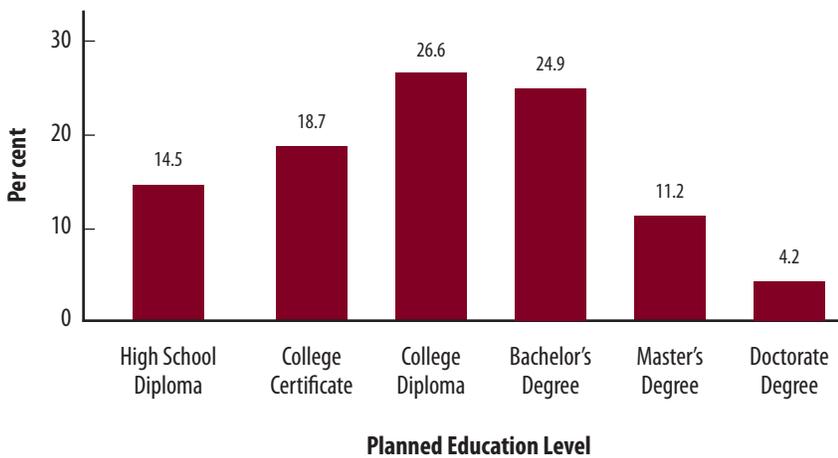


Note: This chart represents the responses of 3,025 people in 1,415 households. There were 108 non-responding households that were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

**Figure 7.18**

**Métis People Planning to Continue Studies, by Education Level, BC, 2006**



Note: This chart represents the responses of 1,245 people in 942 households. There were 581 non-responding households that were excluded. The denominator for this portrayal of highest planned level of education is represented by those who aspired to obtain at least a high school diploma. It cannot be assumed that the 581 non-responding households did not plan to achieve at least a high school education.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

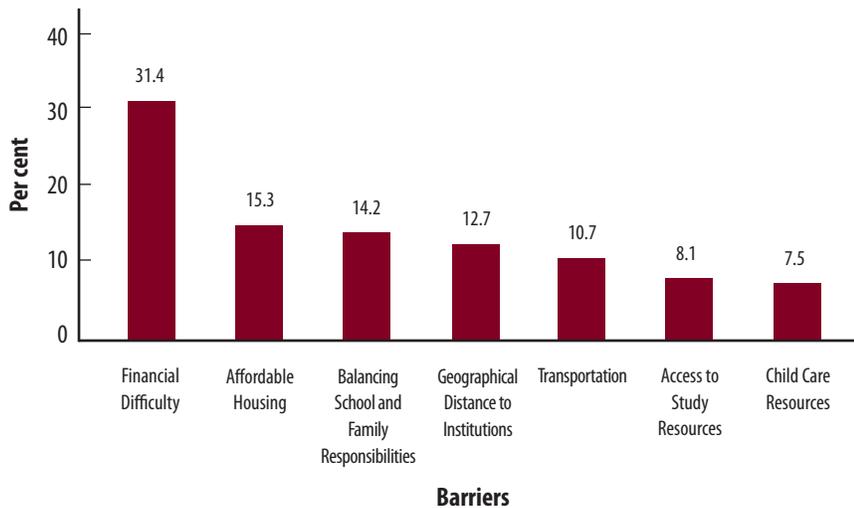
**Métis Education**

While the education component of the MNBC survey included 1,523 households, the number of households that actually responded to the questions on education varied depending on the nature of the question; some of the questions only applied to certain members of the household or specific age groups. There were 1,415 households out of a possible 1,523 who responded to the question on the highest level of education completed. The question was directed to adults who were currently not attending school. While only 2.0 per cent of the people in those households reported having no formal education, there were a considerable number with only elementary school education (18.5 per cent). Over half of the adults in these households had at least high school education (51.2 per cent), and 21.1 per cent had a college education. Approximately 7 per cent indicated that they had completed a university education (Figure 7.17).

For the question of continuing studies, there were 1,245 respondents in 942 households (out of a possible 1,523 households) who indicated that they would like to achieve a higher level of education. A little over 45 per cent indicated that they would like to have a college certificate or diploma (Figure 7.18). This is more than double what was indicated for actual academic achievement (Figure 7.17). As for obtaining a university education, 24.9 per cent of those who responded expressed their interest in pursuing a bachelor's degree and 11.2 per cent wanted to obtain their master's degree. Finally, 4.2 per cent indicated that they would consider pursuing their doctorate

Figure 7.19

## Barriers to Education, BC, 2006



Note: There were 2,867 responses from 971 households to this question. There were 552 non-responding households that were excluded. As one person can select multiple barriers to education, the responses do not necessarily represent single individuals.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

### Red River Rangers

The Red River Rangers are a Métis firefighting unit formed after the forest fires that swept through the BC Interior in 2003. The team is called the Red River Rangers after the Red River Valley in Manitoba, the birthplace of the Métis Nation.

The team is a 20-person firefighting unit. They are trained in wildland firefighting and the use of Urban Interface Sprinkler Protection Units, which create a buffer to keep wildfires at bay from urban areas. The Rangers are one of only five teams qualified to assess and protect communities from wildfires in this way.

In the Summer of 2005, the Rangers fought two large fires in central BC, around Vanderhoof. These fires burned over 10,000 hectares of land. In July 2006, the Rangers were sent in to protect the community of Tumbler Ridge in northeastern BC from a wildfire. The Rangers developed a community protection plan with the local fire department, to be put in place if fire reached the community. They also fought the Tuktekamen Mountain wildland fire, which threatened the Okanagan community of Falkland. At its peak, this fire involved 139 firefighters, 4 helicopters, and 14 pieces of heavy equipment.

The Rangers have received numerous commendations from the provincial government and industry. They also provide employment to Métis people in BC, and serve as positive role models for the Métis community.

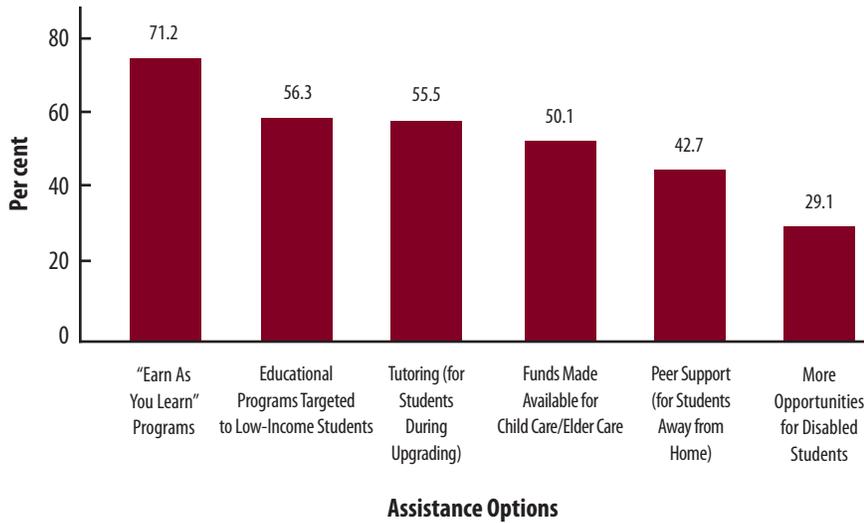
Source: Métis Nation British Columbia, 2006a.

degree. This suggests that over 40 per cent of Métis respondents would like to achieve a university education, in comparison to only 7 per cent of adults who had actually attained this level of schooling.

So why are the Métis people not achieving higher levels of education if in fact they desire to do so? The MNBC survey also asked respondents to identify their reasons for not being able to achieve their desired levels of education. Figure 7.19 identifies the main barriers.

The question was structured in such a way as to allow respondents to answer yes to any combination of barriers. Over 31 per cent indicated financial difficulty as the main barrier to achieving higher levels of education. Affordable housing and balancing school and family responsibilities were identified by approximately 15 per cent and 14 per cent respectively. Geographical distance to educational institutions, transportation, access to study resources, and child care were also identified as barriers to education. While these last three barriers ranked lower for the majority of participants, they can present significant difficulties for individuals who are faced with a combination of them.

**Figure 7.20 Supplemental Assistance for Returning to School/College, BC, 2006**

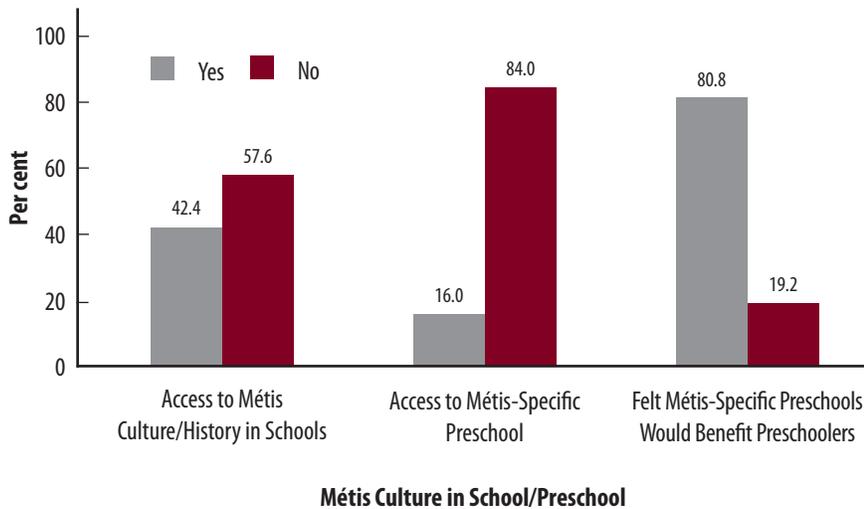


Note: There were 2,264 responses from 743 households to this question. There were 752 non-responding households that were excluded. As one person can select multiple types of desired supplemental assistance, the responses do not necessarily represent single individuals.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

The MNBC survey also asked a question on what supplemental assistance the Métis population desired to achieve their educational goals. Respondents had the option of choosing any combination of assistance measures. Approximately 71 per cent of respondents were in favour of "Earn As You Learn" programs to help them return to school. Educational programs targeted to low-income students and the availability of tutoring for upgrading were each selected by approximately 56 per cent of respondents. Just over 50 per cent indicated that making funds available for child care and elder care would assist in their academic pursuits. Almost 43 per cent selected peer support, and a little over 29 per cent thought that more opportunities for disabled students would be of value (Figure 7.20).

**Figure 7.21 Métis History/Culture in School and Preschool, BC, 2006**



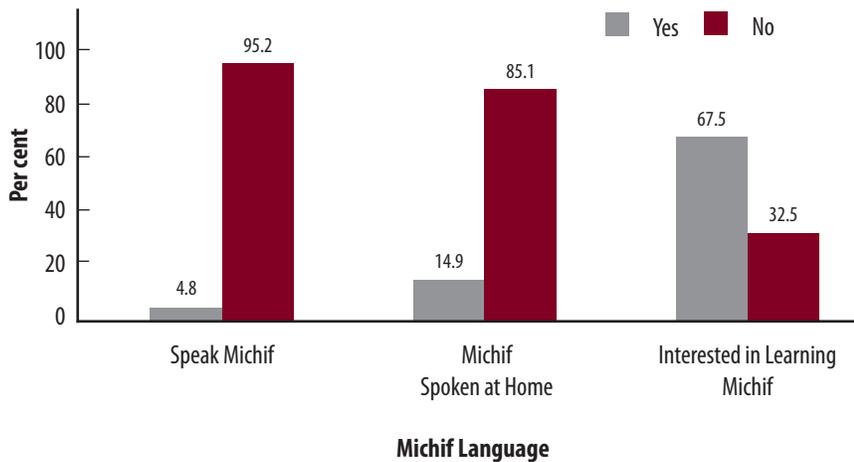
Note: The number of households that responded to questions regarding Métis culture, out of a possible 1,523 households, were as follows: Métis culture/history education in school (1,248), Métis-specific preschool (1,164), and Métis-specific preschool benefiting Métis preschoolers (1,298). Non-responding households were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

With respect to students learning about their own culture in the school system, the MNBC survey also included a question on the teaching of Métis history and culture in schools and preschools. As shown in Figure 7.21, almost 58 per cent of households that responded felt that their children do not have access to Métis culture and history in schools today. Furthermore, while almost 81 per cent of respondents indicated that Métis-specific preschools would be beneficial, only 16 per cent indicated that they have access to them.

Figure 7.22

## Michif Language, BC, 2006



Note: The number of households that responded to questions regarding the Michif language, out of a possible 1,525 households, were as follows: those who speak Michif (1,482), Michif is spoken at home (1,472), and those interested in learning Michif (1,435). Non-responding households were excluded.

Source: Métis Nation British Columbia, Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

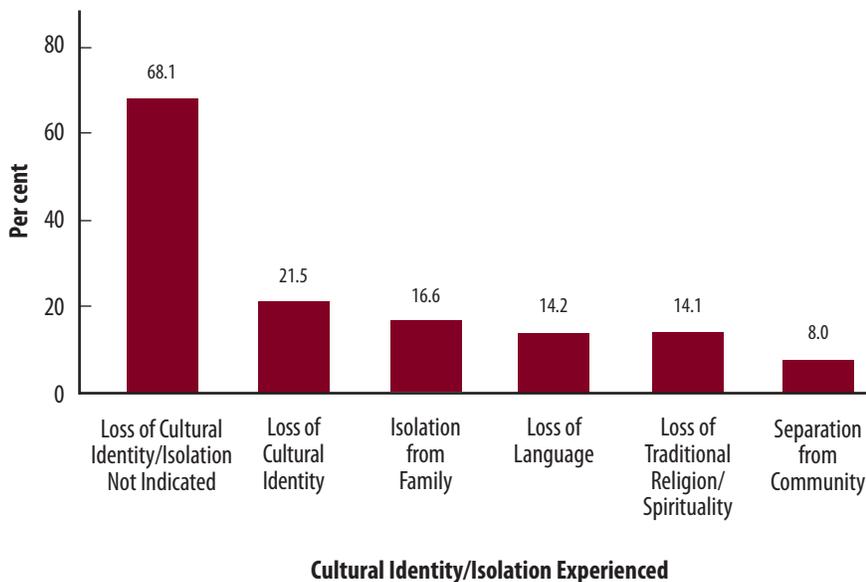
## Métis Culture and History

Michif is the traditional language of the Métis. Figure 7.22 shows that less than 5 per cent of the Métis population surveyed speak Michif themselves; almost 15 per cent indicated that Michif was spoken by someone in their home. Despite the fact that the language is not widely spoken, over two-thirds of the respondents indicated that they were interested in learning Michif.

The MNBC survey examined the possible loss of cultural identity by including a question on strength of culture and social isolation. Nearly 22 per cent of Métis households surveyed indicated a loss of cultural identity and almost 17 per cent experienced isolation from their families. In addition, 14.2 per cent of the respondents mentioned that they had lost their language and 14.1 per cent indicated a loss of their traditional religion and spirituality (Figure 7.23).

Figure 7.23

## Loss of Cultural Identity and Isolation, BC, 2006



Note: There were 1,123 responses from 482 households to this question. The 1,027 households that did not respond were included in the denominator to determine the proportion of all Métis households that were affected by loss of cultural identity and isolation. It is possible that a small portion of those that did not answer includes positive non-responses (those that experienced loss of cultural identity/isolation but did not report it).

Source: Métis Nation of British Columbia Provincial Survey, 2006; prepared by the Office of the Provincial Health Officer and Business Operations and Surveillance, Ministry of Health, 2007.

## Summary:

- The Métis population consists of people who self-identify as Métis, are distinct from other Aboriginal peoples, are of Historic Nation ancestry, and are accepted by the Métis Nation British Columbia (MNBC).
- According to the 2006 Census, approximately 59,445 Métis people live in British Columbia. The highest percentage of the Métis population lives in Alberta (22.2 per cent), with Ontario (19.1 per cent) and Manitoba (18.6 per cent) close behind. Prince Edward Island has the lowest percentage of Métis. A little over 15 per cent of Canada's Métis population lives in BC.
- The Métis population is considerably younger than the non-Métis population. In 2006, around 45 per cent of the Métis population was under 25 years of age, compared to around 30 per cent of the non-Aboriginal population. Only 13 per cent of the Métis population is over 55 years of age, compared to approximately 27 per cent of the non-Aboriginal population.
- The MNBC Centralized Registry was established in October 2004. The Registry is a means to establish Métis citizenship, and arose as a result of the Powley decision by the Supreme Court of Canada in 2003.
- On May 12, 2006, MNBC and the Province of BC signed the Métis Nation Relationship Accord.
- In the fall of 2006, MNBC conducted their first provincial survey. The survey was distributed to households through local MNBC affiliates, and collected data from those who self-identified as Métis.
- In terms of overall health, 74 per cent of survey participants reported good to excellent health, based on a response from 1,486 households out of a total of 1,509 households surveyed.
- When asked about areas of concern regarding health, 71.8 per cent of households surveyed ranked dental care the highest. The need for assistance with prescriptions ranked second (66.7 per cent) with traditional healing (52.6 per cent) and spiritual concerns (43.3 per cent) being the third and fourth highest-ranked areas. Mental health and addictions were also significant issues.
- Arthritis was the most commonly reported chronic condition for the Métis people completing the survey, with over 54 per cent of households surveyed having at least one person in their household with the condition. This was followed closely by chronic back pain at 47.1 per cent and stomach/digestive problems at 41.8 per cent. Diabetes and heart disease also ranked high, at 40.7 per cent and 32.5 per cent respectively.
- The MNBC survey results showed depression as the most significant mental condition identified (32.2 per cent), followed by personal problems and anxiety attacks at approximately 17.4 and 14.8 per cent respectively. Around 57 per cent did not respond to this question.
- Approximately 18 per cent of households surveyed indicated poor education and almost 15 per cent reported harsh living conditions. Around 13 per cent of Métis households surveyed experienced a lack of food and over 11 per cent were in need of proper clothing.
- The majority of households who responded to the MNBC survey indicated that they were in the lower income categories. Furthermore, data from the survey strongly suggests that there are more Métis women in the lowest income group than Métis men. Approximately 39 per cent of Métis women earned an annual income of \$10,000 or less, compared to nearly 24 per cent of Métis men.
- Education and training appeared to be of greatest importance to the young Métis population. Nearly 81 per cent of households surveyed reported education and training as the most important issue. A little over 78 per cent considered Métis rights important. Seventy-five per cent identified employment opportunities as a major concern.
- Over 91 per cent of the Métis households surveyed reported drug addiction as the most important issue for Métis youth. A considerable percentage reported teen pregnancy and smoking as important issues (approximately 66 per cent and 63 per cent respectively). Suicide ranked as the fourth most important issue for Métis youth at 50 per cent.

- Almost a quarter of Métis youth surveyed know another Métis youth who has committed suicide. In addition, approximately 17 per cent of Métis youth surveyed mentioned that they had contemplated or attempted suicide at some point.
- Almost 58 per cent of Métis households indicated that their children do not have access to Métis culture and history in schools today. Furthermore, while almost 81 per cent of responding households reported that Métis-specific preschools would be beneficial, only 16 per cent indicated that they have access to them.
- Michif is the traditional language of the Métis. Less than 5 per cent of the Métis population surveyed speak Michif themselves; almost 15 per cent indicated that Michif was spoken by someone in their home. Despite the fact that the language is not widely spoken, over two-thirds of the respondents indicated that they were interested in learning Michif.

### **Indian and Métis Education Development Program in Saskatchewan**

Established in 1984, the Indian and Métis Education Development Program (IMED) provides incentive grants to school divisions for providing innovative, responsive, and culturally-affirming supports to Aboriginal and Métis students. The program provides funding to school divisions to initiate actions that affirm, encourage, and value the history, culture, language, and other perspectives of Aboriginal and Métis peoples. Part of the IMED strategy is to build partnerships with various organizations. The goals of the IMED are to:

- Stimulate and support the development of innovative, responsive, and culturally-affirming Indian and Métis education programs, curricula, resources, language instruction, and extracurricular activities.
- Improve Indian and Métis student achievement.
- Increase Indian and Métis student attendance, retention, and graduation rates and facilitate transitions to employment or to post-secondary education.
- Increase Indian and Métis family and community involvement in education.
- Improve integrated, school-linked services for Indian and Métis students and their families.
- Encourage the employment of qualified Indian and Métis peoples within school divisions and schools.
- Encourage the development of comprehensive Education Equity Plans.
- Address issues of discrimination and racism, and provide professional development and in-service opportunities for educators, administrators, and trustees related to education equity in Saskatchewan.

Source: Saskatchewan Learning, n.d.

### Four Métis Women Honoured

In honour of Women's History Month in October 2006, ten Aboriginal women were honoured at the "Aboriginal Women: The Journey Forward" awards, including the following four Métis women:

- *Jean Peerless (Honouree, Public Service, Business and Entrepreneurship)*. An inspirational Métis leader and Métis Elder, Jean Peerless has been active as a community leader and Métis politician in the Peace Region for many years. One of the first women elected as a Métis leader, Jean is a tenacious and vocal advocate for Métis rights and recognition, a generous volunteer, a creative problem-solver and inspiration to all in her community. Always keeping her focus on the needs of the Elders, as well as those who struggle to meet basic needs, Jean is a true community hero. As one of her community members in Fort St. John stated, "She keeps our community together, where would we be without her!"
- *Rose Bortolon (Honourable Mention, Health, Sports and Science)*. Rose Bortolon is a resident of Prince George and Minister of Health for the Métis Nation BC. She has worked with the Métis as a volunteer since the 1970s. Rose works on behalf of the Elders in her community and in BC on many fronts, including housing, health, culture, and language. A volunteer for the 2005 Seniors Games, Rose was also a nominee for Citizen of the Year in Prince George. Rose is the mother of four daughters and grandmother of four. A woman of great strength and perseverance, she has risen above her own challenges and dedicated much of her life to ensuring the most vulnerable members of our communities have access to programs and services they need.
- *Jackie Finnie (Honourable Mention, Family and Community)*. Jackie Finnie is a Métis Elder who is active in many community programs; Friday's Child, a program for parents of Fetal Alcohol Syndrome children; Aboriginal Head Start; and the Na'aaltasi School. A former Board Elder for the Wachiay Friendship Centre, Jackie serves on the Board for the Courtenay Legion Auxiliary and also helps promote healthy living for the Korean Veterans. She works with various school districts in BC to promote Métis culture and is an active Elder for the MIKI'SIW Métis Association in the Comox Valley.
- *Kim Hodgson (Honourable Mention, Education)*. Kim Hodgson is a teacher and a tireless advocate for children in need of special education. She uses her creativity and enthusiasm to help students understand their cultural heritage and appreciate and respect each other. Kim is always quick to extend a helping hand to those in need. She is president of the Tri-River Métis Association and volunteers many hours promoting Métis culture and wellness. Kim organizes events and workshops for youth and Elders and has a kind word and a smile for everyone she meets.

As April McLean-Collart, chair of the Métis Women's Secretariat BC and Minister for Women of the Métis Nation BC, said: "As Métis, we value the contributions of our grandmothers in our culture and history. Women are the very heart and strength in supporting our children, our Elders, our families, communities and our Nation" (Ministry of Community Services & Ministry of Aboriginal Relations and Reconciliation, 2006).

Source: Biographical information on the four women honoured was taken directly from the Backgrounder document by the Ministry of Community Services and the Ministry of Aboriginal Relations and Reconciliation (2006).

**Preserving Michif—the Language of the Métis People**

An integral part of the Métis culture is their language. Michif, the official language of the Métis people, was a trade language that developed originally in the 1700s between the French/English fur traders and the Cree/Algonkian/Sioux speakers from what is now Ontario and Manitoba. As the fur trade spread north and west in the 1800s, the Michif language came to these new areas. The language itself stems from the grammatical rules of Cree (an Algonkian language) and adopts a large vocabulary of words from the French language. There are several dialects of Michif, with the most common one blending French and Cree words (Michif & Métis Cultural Site, n.d.). The Michif & Métis Cultural Site, based in Saskatchewan, is an organization that focuses on knowledge and preservation of the Michif language and the enhancement of student self-esteem and self awareness through knowledge and understanding of their own culture (For more information on Michif and the cultural organization, please visit their website at <http://michif.dev.kcdc.ca/>).

A recent partnership between the Métis Nation British Columbia and the BC United Métis Youth Circle resulted in a new initiative to connect the Métis people with their past and their future. This partnership resulted in the creation of the “learnmichif.com” website, which strongly advocates cultural identity and the use of Michif language, and provides online lessons to help preserve the language. Funding for this program was provided by the Canadian Culture Online Project, a division of the Department of Canadian Heritage. For more information on this program, please visit their website at <http://www.learnmichif.com/about>.



# Chapter 8

## Recommendations

This chapter summarizes the findings in this report as well as the improvements and actions to date on the recommendations from the 2001 annual report, *The Health and Well-being of Aboriginal People in British Columbia*. Specific recommendations for action are also provided on various indicators aimed at further improving the health and well-being of Aboriginal people in British Columbia.

As mentioned in Chapter 1, a special agreement was made in 2007 between the BC Ministry of Health, Indian and Northern Affairs Canada, and Health Canada, to create data linkages for the sole purpose of providing the most comprehensive data on the Status Indian population in British Columbia for this report. Through these linkages, data have been provided for 167,782 registered Status Indians in British Columbia. Although this figure includes only those with Status registrations, the health and socio-economic implications could also be relevant to the non-Status population, and to other Aboriginal populations (i.e., Métis and Inuit) in the province.

Overall, 64 indicators have been analyzed and are included in this report. For 57 of these indicators, we are able to report the progress since 2001. Of these 57 indicators, 18 have shown improvement, 10 have worsened, and 8 have shown increasing rates of chronic disease conditions. The remaining indicators have shown either not much change or a fluctuation in data with no trend. The improvements have generally been seen in the decline in overall mortality and increasing life expectancy due to a decline in external causes of death such as motor vehicle accidents, accidental poisoning, and drug-induced and alcohol-related deaths.

However, more effort is still necessary in these areas as the rates for the Aboriginal population were 2 to 4 times higher than the rates for other residents based on the latest data available in 2006. Cancer mortality was lower among the Status Indian population compared to other BC residents. Overall, prevalence of chronic disease is increasing and remains higher for the Status Indian population compared to other residents. The most concerning outlier is the widening gap between Status Indians and other residents for HIV/AIDS disease, which is clearly reflective of both increased vulnerability and a lack of access to Highly Active Antiretroviral Therapy (HAART).

Compared to other British Columbians, the Status Indian population is also twice as likely as other residents to be hospitalized for diseases of the digestive system and external causes such as injuries, and five times more likely to be hospitalized for mental and behavioural disorders due to psychoactive substance use. The Status Indian population is also more likely to be hospitalized for medically preventable conditions, which is likely a corollary of their lower utilization of MSP services. Based on data from the Ministry of Health Services, in 2006/2007, over twice as many Status Indians received a hospital discharge relating to a mental health condition than other residents.

The 2001 Provincial Health Officer's report suggested that Aboriginal people on average scored considerably lower on socio-economic ranking compared to other residents. This gap still persists, although for some communities it has narrowed considerably.

Evidence has shown that economic self-determination and educational achievements are critical determinants of health; therefore, the removal of structural impediments to First Nations community economic development and educational attainment should be a priority.

## Why is there a gap between the health of the Aboriginal population and other BC residents?

For many years, research has supported the influence of socio-economic factors on health. Community identity, employment, income, education, housing, and other societal factors all influence and determine the health of individuals.

The influence of socio-economic factors on the Aboriginal population has been shown in the data analysis presented in this report. The Aboriginal population in BC has a much higher unemployment rate, and for those who are employed, the jobs are generally lower paying and more hazardous compared to the rest of the BC population. Aboriginal students have a lower first-time graduation rate from high school compared to non-Aboriginal students. Data from Indian and Northern Affairs Canada showed that from 1994/1995 to 2005/2006, the percentage of Aboriginal housing units in need of major renovations in BC increased by 121 per cent. Survey results showed that many Aboriginal people experience a disproportionate level of food insecurity due to poverty. Those living on remote reserves also face additional challenges in obtaining fresh and healthy food that must be transported long distances. Food insecurity is a precursor to many health problems including malnutrition, low birth weight babies, unhealthy pregnancies, and sub-optimal child development, as well as poorer health in seniors, and greater rates of chronic disease. For infants and children, poor health is often associated with parental low income and low levels of education. Several studies have shown a strong link between a mother's income and education and her infant's health.

Many factors are responsible for the lower socio-economic status and the consequent lower health status of the Aboriginal population. A long history of colonization, systemic discrimination, the degrading experience of residential schools, and other experiences have led to adverse, multi-generational health effects on Aboriginal families.

An abundance of research and documentation, including the 1996 Royal Commission on Aboriginal Peoples, have shown how children in residential schools lost their culture, family, identity, and language, and suffered abuse (physical, sexual, psychological, and spiritual). These experiences have been the root of inequities in the health and well-being of the Aboriginal population, and the inequities have continued through the generations. Colonization and cultural deprivation have created an environment that has negatively impacted the social structures, personal psychology, and coping strategies of a majority of the Aboriginal population.

Many Aboriginal groups and researchers have argued that the key to improving the health of Aboriginal people lies in programs that involve the full participation of Aboriginal communities in their design, delivery, and evaluation. Efforts are being made to improve services for Aboriginal people and to address some of these longstanding concerns. In 2006, the bilateral First Nations Health Plan was signed to ensure that First Nations are integral partners in the design and delivery of health services. In 2007, the Tripartite First Nations Health Plan was signed. The intention of this plan is to deliver First Nations health services through a new governance structure that will lead to improved accountability and control of these health services by First Nations.

Under the Tripartite First Nations Health Plan, a new First Nations Health Governing Body will be established to provide for the effective participation of First Nations in enacting policies, setting targets, allocating resources, establishing service standards, implementing ongoing reciprocal accountability requirements, and other key functions of governance. Upcoming health governance negotiations between the province, First Nations, and the federal government will focus on the transfer of programs, services, and funding from First Nations and Inuit Health, BC Region, to the First Nations Health Governing Body. These negotiations will culminate in BC First Nations assuming control over the design, delivery, day-to-day management, and accountability of health programs and services for First Nations in BC.

The Ministry of Healthy Living and Sport, Aboriginal Healthy Living Branch, in partnership with the health authorities, has secured funding of approximately \$8.5 million through the federal government's Aboriginal Health Transition Fund:

Adaptation Envelope. Funding is available over a 3-year period to support adaptation of existing health programs to the unique needs of Aboriginal people. Initiatives vary between regions and include cultural competency curriculum development, circles of practice, Aboriginal patient navigators, and improved client transition strategies.

In addition, in British Columbia, a number of Aboriginal communities have revived their cultural and spiritual traditions, to aid in the healing of community members. For example, Alkali Lake has employed Aboriginal healers to reintroduce traditional dances, ceremonies, and spiritual practices to community members. Cultural activities such as traditional dancing, sweet grass smudging, and sweat lodge ceremonies, and singing and drumming have helped the people to overcome illness and addictions. The treatment strategy used by the people of Alkali Lake has been adopted by other Aboriginal treatment programs such as Poundmaker and Round Lake. These programs have been very successful; for example, the Alkali Lake community has decreased its alcoholism rate from 95 per cent to 5 per cent in 10 years. The success of these and other programs is due to their strong emphasis on the cultural and spiritual elements of healing.

## Progress on the General Recommendations from the 2001 Annual Report

The following section summarizes the recommendations in the 2001 Annual Report, *The Health and Well-being of Aboriginal People in British Columbia*, and gives examples of some achievements in these areas.

### Formal Commitments

Establish provincial and regional targets for achieving comparable health status between the Aboriginal population and other British Columbians or specific Aboriginal targets, where appropriate. Hold ministries and health authorities accountable for progress toward those targets and for coordination with agencies that serve the same populations.

### Achievements to Date

In November 2006, the Government of British Columbia and the First Nations Leadership Council released the bilateral

Transformative Change Accord: First Nations Health Plan to close the health gap between First Nations and other British Columbians. Details of the Transformative Change Accord: First Nations Health Plan are provided later in this chapter.

Within this framework, the health authorities have committed to improve Aboriginal health and wellness by ensuring Aboriginal people have meaningful input into the health authority Aboriginal Health Plan and other service planning and delivery activities, and that these activities clearly support the achievement of the measures, goals, and objectives articulated in the Transformative Change Accord: First Nations Health Plan and the Tripartite First Nations Health Plan. Health authority Aboriginal Health Plans will be reviewed and monitored by the Provincial Advisory Committee on First Nations Health. The Ministry of Health Services monitors health authority performance on Aboriginal health against targets established in the First Nations Health Plan.

### Improved Standard of Living

Work collaboratively to improve housing conditions and economic and educational opportunities for Aboriginal people.

### Achievements to Date

#### *Aboriginal Housing*

- The First Nations Leadership Council, the Government of Canada, and the Government of British Columbia signed a Memorandum of Understanding on May 21, 2008, to establish a partnership to improve housing and infrastructure for First Nations, individuals, and families and to set out an initial framework for on- and off-reserve housing strategies. The parties agreed to meaningful engagement of First Nations in the design, development, and decision-making concerning the provision of housing and infrastructure.
- The Office of Housing and Construction Standards, Ministry of Housing and Social Development, in collaboration with Aboriginal partners, other provincial ministries, and federal departments, is leading the development of a ten-year, off-reserve Aboriginal Housing Action Plan. The action plan will address the entire housing continuum as well as capacity within Aboriginal

communities and partner organizations in all aspects of housing off-reserve. A needs and capacity assessment has been prepared and community engagement sessions have been held across the province to assist in the development of the plan.

### **Homelessness**

- Non-profit societies in eight communities in BC have been selected to provide homeless Aboriginal people with access to housing and support services through a new \$500,000 Aboriginal Homeless Outreach Program. The new outreach program, which was developed following a series of Talking Circles with Aboriginal groups, is designed to recognize the unique cultural and social needs of Aboriginal people, and effectively address the disproportionate number of Aboriginal homeless people. The program will enable these people to regain their independence and overcome the barriers that prevent them from leaving the street. The Aboriginal Homeless Outreach Program builds on the very successful Homeless Outreach Program, which directly engages and connects homeless individuals living on the street to housing, income assistance, and community-based support services.

### **Aboriginal Enhancement Programs for Education**

- Aboriginal Enhancement Agreements are in place in many school districts throughout BC, to improve the educational achievement of Aboriginal students. The agreement is between a school district, the Ministry of Education, and the local Aboriginal communities, and focuses both on academic performance and the importance of Aboriginal culture in the development and success of Aboriginal students. As of November 2008, 43 of BC's 59 school districts had signed agreements.
- In July 2006, a federal/provincial/First Nations tripartite agreement was signed regarding the rights of First Nations communities in BC to have control over the education of their learners. The agreement will give First Nations communities legal authority to govern and control kindergarten to grade 12 education on-reserve, including curriculum, teacher and school certification, and standards development. In December 2006, the federal *First Nations Jurisdiction over Education Act* was passed,

allowing for the negotiation of individual agreements with interested First Nations. As of February 2009, 63 First Nations in BC had taken the first step in the agreement process.

- In April 2007, the BC government announced a \$65-million Aboriginal Post-Secondary Education Strategy to encourage greater participation and success of Aboriginal learners in post-secondary schooling. The strategy addresses the barriers to post-secondary education in a variety of ways, including increased access and participation through funding for scholarships and loan options for Aboriginal students; increased opportunities for institutions and communities to develop culturally relevant programs; and support for Aboriginal people to enter post-secondary education through adult basic education and upgrading.

### **More Recognition and Respect**

Increase awareness of the health status of Aboriginal people and the health issues and challenges that Aboriginal people face.

### **Achievements to Date**

- The Government of BC and the First Nations Leadership Council released the Transformative Change Accord: First Nations Health Plan in November 2006. This was followed by the signing of the Tripartite First Nations Health Plan in June 2007. The Tripartite Plan commits the federal government to the bilateral plan. Details of the Transformative Change Accord: First Nations Health Plan and the Tripartite Plan are provided later in this chapter. The Tripartite Plan revolutionizes how First Nations health policy, programs, and initiatives are developed and implemented through collaboration between First Nations, and the federal and provincial governments. A new governance structure is being developed to ensure First Nations participation in decisions relating to their health.
- On May 12, 2006, the Province of British Columbia and the Métis Nation British Columbia signed the Métis Nation Relationship Accord. The Accord complements an existing 2003 agreement, signed between the Province of BC, the Government of Canada, and the Métis Provincial

Council, to address Métis socio-economic challenges. The objectives of the Accord are to strengthen existing relationships; to improve engagement, coordination, information sharing, and collaboration; to follow through on commitments from the First Ministers' Meeting on Aboriginal Issues as they pertain to Métis people, to close the gap in the quality of life between Métis people and other British Columbians, particularly in the areas of health, housing, education, and economic development; and to renew the collaborative process of the Métis tripartite agreements, Métis identification, and data collection.

### More Holistic Approach

- a) Pay more attention to the non-medical, cultural, and spiritual determinants of health.

### Achievements to Date

- In partnership with the First Nations Health Council and in collaboration with provincially-funded health authorities, the provincial government and the health authorities are developing a cultural competency framework to guide mandatory training for all staff of health authorities and the Ministries of Health Services, and Healthy Living and Sport.
- The Tripartite First Nations Health Plan recognizes the importance of cultural knowledge and traditional practices for the health and well-being of First Nations in BC.
  - b) Encourage participatory research to gain a more clear understanding as to why some Aboriginal communities are “healthier” than others.
  - c) Identify and collect indicators that are meaningful and useful to Aboriginal communities. Perceived progress in a return to traditional ways, personal commitment to healing, housing quality, and employment opportunities are some examples from the BC Regional Longitudinal Health Survey that could be used as a starting point.

### Achievements to Date

- Since 2001, there has been a more collaborative approach to research and surveys undertaken by government, universities, and other organizations. Many of these

research projects and surveys are highlighted in this report.

- The Tripartite First Nations Health Plan commits partners to identify other indicators that are meaningful and useful to First Nations communities.

### More Autonomy

Support efforts by Aboriginal people to achieve self-determination and a collective sense of control over their futures, in both on- and off-reserve communities.

### Achievements to Date

- In March 2005, the Province of British Columbia and First Nations leaders agreed to enter into a New Relationship guided by principles of trust, recognition, and respect for Aboriginal rights and title. Efforts to reconcile rights and title include: settling an 150-year land claim by the Songhees and Esquimalt First Nations that included the grounds of the BC Legislature; reaching an Agreement in Principle with the Tsay Keh Dene and the Kwadacha Nation on the impacts of decades of flooding from the Williston Reservoir and Bennett Dam; providing \$100 million to the New Relationship Trust for First Nations capacity-building; and providing an additional \$1.2 million to preserve and promote Aboriginal languages.
- On May 12, 2006, the Province of British Columbia and the Métis Nation British Columbia signed the Métis Nation Relationship Accord. The Accord complements an existing 2003 agreement, signed between the Province of BC, the Government of Canada, and the Métis Provincial Council, to address Métis socio-economic challenges.

### More Representation

Encourage greater Aboriginal participation in health governance and in the design and delivery of culturally-appropriate health services.

### Achievements to Date

- The Office of the Provincial Health Officer has appointed Dr. Evan Adams to the position of Aboriginal Health Physician Advisor, to provide expert medical advice, support, and guidance regarding Aboriginal health, policy development, programs and other initiatives.

- Health authorities have dedicated staff to develop collaborative Aboriginal Health Plans, administer targeted funding, and pursue integration of Aboriginal health in the overall planning and delivery of provincially-funded services.
- The Tripartite First Nations Health Plan commits partners to the development of a new First Nations Health Governing Body.
- The provincial government has provided a \$6 million grant to the National Collaborating Centre for Aboriginal Health to develop an Aboriginal-specific ActNow BC program. Funding to support Aboriginal ActNow programming has been provided to the First Nations Health Council, Métis Nation BC, and the BC Association of Aboriginal Friendship Centres.
- Health authorities are accountable for implementing an Aboriginal Health Plan consistent with the Tripartite First Nations Health Plan. Accountability measures include monitoring the gap between Status Indians and other British Columbians for life expectancy, mortality rates, infant mortality rates, youth suicide rates, and prevalence of diabetes.

### Health Authority Action Plans

In addition to the above general recommendations, specific actions for health authorities were also recommended in the 2001 annual report.

### Specific Areas for Health Authority Action

In the 2001 annual report, the Provincial Health Officer suggested the following eight areas where the greatest health gains for the Aboriginal population could be achieved. It was further recommended that these gains could be accomplished by targeting strategic initiatives to build on the gradual improvements in Aboriginal health over past decades.

- Early childhood development
- Tobacco
- Alcohol and drugs
- HIV
- Diabetes

- Injuries (such as motor vehicle crashes, accidental poisoning, suicide, falls, fires, and drowning)
- Primary care
- Information

### Achievements to Date

Health authorities are responsible for improving the health outcomes for Aboriginal people through various program areas (e.g., tobacco reduction, mental health and addictions, HIV/AIDS, diabetes prevention, injury prevention, primary care). Aboriginal health departments within the health authorities are responsible for applying an “Aboriginal lens” to overall health authority policy development and program implementation in order to positively affect change for Aboriginal people.

Each regional health authority has an Aboriginal health plan that specifies actions on issues unique or specific to each region, targets the specific areas for health authority actions, and is aligned with relevant bilateral and tripartite plans. In addition to region-specific strategies, the health plan includes the following three components that will improve the health of Aboriginal people:

- Aboriginal Health Initiatives Program – Each regional health authority has a community-based funding program that supports and encourages Aboriginal communities to identify health promotion projects that are culturally meaningful.
- Cultural Competency – A provincially facilitated, online cultural competency training program is being developed for delivery to all health system staff in the province, to facilitate Aboriginal patient access to health services and ensure cultural safety. This provincial training will complement programs already being developed and delivered.
- Aboriginal Patient Liaisons/Navigators – These positions assist patients and families to navigate the health system and link to community-based services.

The following table is a summary of the 64 indicators and the progress to date:

## Progress Towards Aboriginal Health and Well-being

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
<b>Determinants of Health</b>		<i>For every indicator, outcomes are 2 to 3 times worse for Aboriginal people</i>
Unemployment Rate (25 years & over)	21%	Improving (14%) <sup>1</sup>
Occupations	Trend not available	Trend not available
Income (< \$20,000/year)	64%	Not much change
Education (First-time Graduate)	48%	Not much change
Children in Care (Aboriginal)	Worsening (2,901 in 1997)	Worsening (4,647 in 2009)
Youth in Justice Institution	Not much change (22.8 per 10,000)	Improving (17.7 per 10,000)
<b>Healthy Beginnings: Pregnancy, Infants, and Children</b>		<i>For every indicator, outcomes are 2 to 5 times worse for Aboriginal people</i>
Teen Pregnancy	6.3 vs. 2.1 per 100	Slight decline (5.8 vs. 1.6 per 100)
Preterm Births	Worsening (10.0 per 100)	Worsening (11.7 per 100)
Low Birth Weight	Not much change (5.5 per 100)	Worsening (6.1 per 100)
High Birth Weight	Not much change (4.2 per 100)	Improving (3.0 per 100)
Infant Mortality <sup>2</sup>	Improving (6.6 per 1,000)	Improving (5.3 per 1,000)
Neonatal Mortality	Improving (3.9 per 1,000)	Improving (2.8 per 1,000)
Post-Neonatal Mortality	Improving (2.7 per 1,000)	Not much change
Dental Surgeries (Age 0–4)	Worsening (43.9 per 1,000)	Improving (39.7) – Gap = 4 times
Dental Surgeries (Age 5–9)	Not much change	Not much change – Gap = 3 times
Childhood Immunization	Not much change	Not much change

<sup>1</sup> May be underreported due to non-participation.

<sup>2</sup> The Status Indian infant mortality rate is subject to fluctuation from year to year because it is derived from small numbers. Statistical testing shows that the recent decline in infant mortality in the Status Indian population was not statistically significant. During the last 11-year period, indicators of risk to infant health in the Status Indian population have not improved: preterm birth rates have been increasing, as well as low birth weight rates. Furthermore, the adequacy and timeliness of prenatal care for Status Indian mothers is much worse compared to other residents. For these reasons, it is believed that the decline in the Status Indian infant mortality rate in 2006, as in 1998, is merely another random fluctuation of an indicator that is prone to such year-to-year fluctuations.

## Progress Towards Aboriginal Health and Well-being continued

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
<b>Disease and Injuries</b>		
Life Expectancy	Males: Improving (71.4 yrs) Females: Not much change (77.1 yrs) (1997–2001 data)	Males: Improving (73.0 yrs) Females: Not much change (77.0 yrs) (2002–2006 data)
Mortality (All Causes)	81.5 per 10,000	Improving (73.6 per 10,000)
Food Security	Trend not available	Trend not available
Overweight and Obesity	Trend not available	Trend not available
Chronic Disease (Prevalence) <sup>3</sup> (since 2002/2003)		<i>Prevalence increasing as the population ages and grows</i>
Diabetes	5.8 vs. 4.1 per 100	Increasing (6.7 vs. 4.8 per 100)
Hypertension	9.7 vs. 11.2 per 100	Increasing (11.6 vs. 12.9 per 100)
Stroke	1.4 vs. 0.8 per 100	Increasing (1.6 vs. 0.9 per 100)
Ischemic Heart Disease	2.9 vs. 2.3 per 100	Increasing (3.1 vs. 2.5 per 100)
Congestive Heart Failure	2.1 vs. 1.2 per 100	Increasing (2.2 vs. 1.3 per 100)
COPD	2.1 vs. 1.3 per 100	Increasing (2.3 vs. 1.4 per 100)
Circulatory System Deaths (2001)	21.6 vs. 18.6 per 10,000	Improving (18.5 vs. 14.8 per 10,000)
Dementia	0.4 vs. 0.5 per 100	Increasing (0.6 vs. 0.6 per 100)
Osteoarthritis	7.8 vs. 4.9 per 100	Increasing (8.9 vs. 5.6 per 100)
Cancer (Mortality) <sup>4</sup>		<i>In general, cancer mortality is lower for Aboriginal people</i>
All Cancers	14.0 vs. 16.0 per 10,000	Fluctuating – No significant trend
Lung Cancer	2.1 vs. 4.2 per 10,000	Fluctuating – No significant trend
Female Breast Cancer	2.0 vs. 2.3 per 10,000	Fluctuating – No significant trend
Colorectal Cancer	2.0 vs. 1.4 per 10,000	Fluctuating – No significant trend
Cervical Cancer	0.1 vs. 0.2 per 10,000	Fluctuating – No significant trend
Prostate Cancer	3.5 vs. 2.6 per 10,000	Fluctuating – No significant trend
Digestive System Deaths	7.4 vs. 2.1 per 10,000	Fluctuating – No significant trend

<sup>3</sup> Prevalence of chronic disease has been increasing for both Status Indians and other residents.

<sup>4</sup> No significant trend was seen in the types of cancers analyzed (lung, female breast, colorectal, cervical, and prostate) for the Status Indian population. Mortality rates for these cancers were generally higher for other residents.

## Progress Towards Aboriginal Health and Well-being continued

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
External Causes of Death		<i>Rates are 2 to 5 times higher for Aboriginal people</i>
Motor Vehicle Accidents	Improving (2.9 vs. 0.9 per 10,000)	Improving (1.9 vs. 0.7 per 10,000)
Accidental Poisoning	Improving (2.9 vs. 0.7 per 10,000)	Improving (0.9 vs. 0.5 per 10,000)
Alcohol-Related Deaths	Improving (19.7 vs. 3.8 per 10,000)	Improving (15.1 vs. 3.4 per 10,000)
Medically Treatable Diseases	Improving (0.7 vs. 0.3 per 10,000)	Fluctuating – No significant trend
Drug-Induced Deaths	Improving (3.3 vs. 1.0 per 10,000)	Improving (1.2 vs. 0.7 per 10,000)
TB (Incidence)	Worsening On-Reserve (31.6 per 100,000) Improving Off-Reserve (32.5 per 100,000)	Improving (19.9 per 100,000) Worsening (38.1 per 100,000)
HIV/AIDS	Worsening (1.5 vs. 0.2 per 10,000)	Worsening (1.9 vs. 0.2 per 10,000)
Suicide	Improving (1.7 vs. 1.0 per 10,000)	Not much change
<b>Physical Environment</b>		
Housing	Improving	Worsening
Homelessness	Trend not available	Trend not available
Second-hand Smoke	1997 (32% vs. 18% all BC)	Trend not available
Mould	Trend not available	Trend not available
Drinking Water	Improving	Not much change
<b>Health Services</b>		
Pap Tests	No reliable data available	No reliable data available
Screening Mammography	No reliable data available	No reliable data available
MSP Utilization	756.9 vs. 877.5 per 1,000	708.1 vs. 844.0 per 1,000
Hospitalization for Homicides	216.4 vs. 35.6 per 100,000	Improving (208.0 vs. 41.0 per 100,000) – Gap > 5 times
Hospitalization for Suicides	251.6 vs. 48.8 per 100,000	Improving (155.0 vs. 32.5 per 100,000) – Gap > 4 times
Preventable Admissions	Improving (56.9 per 10,000)	Improving (54.5 per 10,000) – Gap = 1.5 times
The Use of Prescription Drugs in the Aboriginal Community		
Antimanic Agents	9.8 vs. 22.6 per 10,000	Worsening (14.7 vs. 27.6 per 10,000) – Gap = 2 times
Antidepressants	89.9 vs. 100.5 per 1,000	Worsening (96.0 vs. 116.0 per 1,000)
Antipsychotics	9.3 vs. 12.7 per 1,000	Worsening (22.1 vs. 22.8 per 1,000)
Anxiolytics	8.7 vs. 9.6 per 100	Not much change
Cerebral Stimulants	8.9 vs. 7.6 per 1,000	Worsening (10.3 vs. 8.9 per 1,000)
Anti-Infectives	43.2 vs. 37.2 per 100	Not much change
Mental Health Follow-Up After Hospital Separation	Not much change	Improving (61.3 vs. 79.3 per 100)

## Progress Towards Aboriginal Health and Well-being continued

Indicator	Trends in 2001 (or 2000/2001)	2006 (or 2006/2007) Update (Since 2001)
<b>The Métis Population of BC</b>		Data based on 2006 MNBC survey <i>54% of Métis households reported having arthritis and 41% reported having diabetes. 17% of the youth surveyed contemplated committing suicide. 91% regarded drug addiction as the most important issue facing youth.</i>
Overall Health	Data not available in 2001	<i>Overall, Métis health indicators appear to be closer to the indicators for the Status Indian population rather than other residents.</i>
Health Conditions	Data not available in 2001	
Chronic Conditions	Data not available in 2001	
Mental Health	Data not available in 2001	
Income	Data not available in 2001	
Social Issues	Data not available in 2001	
Youth Suicides and Drug Addiction	Data not available in 2001	

## Targets

In the 2001 annual report, a series of targets was suggested as a way to move towards reducing the health inequities for the Aboriginal population. Within this framework, the 2001 report suggested that each health authority set their own regional targets, depending on local needs and priorities. The following table updates the 2001 targets and suggests actions for further improvement in the future.

Targets in 2001	Achievements to Date (based on latest data)	What needs to be done?
Achieve and maintain infant mortality in the Status Indian population at a rate equal to the general population by 2005.	<ul style="list-style-type: none"> <li>Data from 1993 to 2006 show that Status Indian infant mortality is on a downward trend. In 2006, the Status Indian rate was 5.3 per 1,000 live births, compared to 3.9 per 1,000 for other residents. Based on 2006 data, the gap between the two populations was 23 per cent.</li> </ul>	In accordance with the Tripartite First Nations Health Plan, continue to work towards reducing the gap between the Status Indian population and other residents by 50 per cent by 2015.
Develop measures of success for early childhood growth and development by 2005.	<ul style="list-style-type: none"> <li>There has been a significant improvement in the post-neonatal mortality rate for the Status Indian population, from 7.8 per 1,000 live births in 1993 to 2.5 per 1,000 live births in 2006. The rate for other BC residents was 2.0 in 1993 and 1.1 in 2006.</li> <li>The neonatal mortality rate fluctuated from 1993 to 2006 and has shown no significant trend. In 2006, the neonatal mortality rate was the same for both populations, at 2.8 per 1,000.</li> <li>The 2006 <i>Joint Special Report, Health and Well-Being of Children in Care in British Columbia: Educational Experience and Outcomes</i> recommended the development of a strategy, action plan, and specific targets that would identify and address problem areas for Aboriginal children in care and work with other ministries and organizations to achieve higher levels of health and education for these children.</li> </ul>	<ul style="list-style-type: none"> <li>Improve prenatal care – From 1998 to 2004, twice as many Status Indians mothers had inadequate prenatal care compared to other mothers. For the same time period, infant mortality was significantly higher for all those who had inadequate prenatal care.</li> <li>Reduce post-neonatal deaths, through initiatives such as improving knowledge around preventing sudden infant death syndrome.</li> <li>Decrease substance use during pregnancy – From 1998 to 2004, Status Indian mothers had a higher percentage of substance use during pregnancy than other women. Infant mortality rates were higher for Status Indian mothers who indicated smoking, alcohol, or drug use during pregnancy, compared to those who did not.</li> </ul>
Increase immunization rates among 2-year-old children to 85 per cent by the year 2005.	<ul style="list-style-type: none"> <li>From 2003 to 2006, immunization coverage for 2-year-olds for the DTP, MMR, and Hib vaccines was fairly consistent, and was generally in the 80 to 82 per cent range.</li> </ul>	Develop better data on immunization of Aboriginal children.
Reduce Aboriginal smoking rates by 1 per cent per year in order to lower the current smoking rate of 45 per cent	<ul style="list-style-type: none"> <li>Latest available data from the 2005 Canadian Community Health Survey show that the smoking rate among the Aboriginal population was 38.4 per cent, compared to 17.2 per cent for other residents.</li> </ul>	Reduce the gap in smoking rates between Status Indians and other residents by 50 per cent by 2015.
Reduce Status Indian death rates due to HIV/AIDS to the 1991–2000 average rate of 1.2 per 10,000 by 2005, effectively halting the worsening trend (the 2000 rate was 1.4 per 10,000).	<ul style="list-style-type: none"> <li>Deaths due to HIV disease for the Status Indian population have more than doubled since 1993 (0.8 per 10,000 in 1993 to 1.9 per 10,000 in 2006), while the rate for other residents has decreased significantly in the same time period (0.8 per 10,000 population in 1993 to 0.2 per 10,000 in 2006).</li> </ul>	Reduce the gap in death rates due to HIV/AIDS between Status Indians and other residents and make HIV/AIDS prevention a priority.

Targets in 2001	Achievements to Date (based on latest data)	What needs to be done?
<p>Reduce the Status Indian injury death rate<sup>5</sup> by 50 per cent from the 1991–2000 baseline (17.7 per 10,000) by 2005.</p> <p>Status Indian Injury death rate for 1997–2001 (5-year aggregate) was 12.7 per 10,000.<sup>6</sup></p>	<ul style="list-style-type: none"> <li>The overall rate for external causes of death for Status Indians for 2002–2006 (5-year aggregate) was 9.8 per 10,000. From 1997–2001 to 2002–2006, there has been a decrease of 23 per cent.</li> </ul>	<p>Continue to reduce the gap in death rates due to external causes of death between the two populations.</p>
<p>Improve Aboriginal women's Pap smear and screening mammography participation to a rate equal to other women (specific targets to be set once information systems are in place to allow improvements to be tracked).</p>	<ul style="list-style-type: none"> <li>A 1992 BC Cancer Agency study involved matching records in the Pap smear registry against band membership lists. Only half of First Nations women (age 18 to 69) had a Pap test within the last three years, while the figure for the BC population overall was 85 per cent.</li> <li>For the 2002–2006 time period, age-standardized mortality rates (ASMRs) for cervical cancer were 0.5 and 0.2 per 10,000 for Status Indians and other residents respectively. The rate has not changed significantly since 1993–1997. Although the ASMRs for both populations are nearly the same, over three times more Status Indian women die of cervical cancer before age 75 compared to other women.</li> </ul>	<p>Continue to improve Aboriginal women's Pap smear and screening mammography participation to a rate equal to other women.</p>
<p>Decrease Status Indian preventable admissions to hospital by 25 per cent from the 1987–2000 baseline (12.3 cases per 1,000) by 2005.</p> <p>The rate of Status Indian preventable admissions for 1996/1997–2000/2001 (5-year aggregate) was 63.6 per 10,000.<sup>7</sup></p>	<ul style="list-style-type: none"> <li>The rate of Status Indian preventable admissions for 2001/2002–2005/2006 (5-year aggregate) was 56.1 per 10,000. From 1996/1997 to 2005/2006, there has been a decrease of 12 per cent in preventable admissions for Status Indian population.</li> </ul>	<p>Work to reduce the gap between Status Indians and other residents in the rate of preventable admissions to hospital by achieving equal rates in 2015.</p>
<p>Improve continuity of care for mental health patients by 3 per cent per year (from the baseline of 60 per cent in 2000–2001), as measured by the proportion of the Status Indian population hospitalized for a mental health diagnosis who receive community follow-up within 30 days of discharge.</p>	<ul style="list-style-type: none"> <li>In 2006/2007, 61.3 per cent of Status Indian mental health patients received community follow-up for mental health conditions once they had been discharged from the hospital for 30 days, compared to 79.3 per cent of other resident patients. Since 2001/2002, there has been a gradual and steady increase of almost 8 per cent for Status Indians and 5 per cent for other residents in community follow-up care.</li> </ul>	<p>Continue to improve the care for mental health patients and reduce the gap between Status Indians and other residents in community follow-up care.</p>

<sup>5</sup> The "injury death rate" as referenced in the 2001 annual report is called "external causes of death" in this report.

<sup>6</sup> For comparative purposes, 5-year aggregate rates based on the latest available death data are used.

<sup>7</sup> For comparative purposes, 5-year aggregate rates based on the latest available hospitalization data are used.

## What has been done since 2001?

In March 2005, the Province of British Columbia and First Nations leaders agreed to enter into a New Relationship guided by principles of trust, recognition, and respect for Aboriginal rights and title.

In November 2005, the Province of British Columbia, the First Nations Leadership Council, and the Government of Canada signed the Transformative Change Accord, which identified general actions to close the gaps in education, health, housing, and economic opportunities for First Nations peoples over the next ten years. Building on the Accord, a bilateral First Nations Health Plan was developed and released in November 2006. This plan identified 29 specific actions in 4 areas, with 7 key targets, to close the gap and improve the health of the First Nations population in BC. In June 2007, the Province, the First Nations Leadership Council, and the Government of Canada signed the Tripartite First Nations Health Plan, formally committing Health Canada to the bilateral plan and adding new tripartite governance requirements.

The Tripartite Plan is an enabling document that allows the federal, provincial, and First Nations partners to develop, test, and implement new priorities, structures, and processes over time. It recognizes the fundamental importance of community solutions and approaches and that cultural knowledge and traditional health practices and medicines will be respected as integral to the well-being of First Nations. The Tripartite Plan is based on the four key principles: respect and recognition; commitment to action; nurture the relationship; and transparency. The implementation of the commitments is ongoing and is being coordinated in partnership with the province, the First Nations Health Council, Health Canada, and health authorities. Upcoming negotiations between the province, First Nations, and the federal government will focus on the transfer of First Nations and Inuit Health programs and services to the First Nations Health Governing Body.

On May 12, 2006, the Province of British Columbia and the Métis Nation British Columbia signed the Métis Nation Relationship Accord. The Accord complements an existing 2003 agreement, signed between the Province of BC, the Government of Canada, and the Métis Provincial Council, to address Métis socio-economic challenges.

The following table lists the indicators and targets for the First Nations Health Plan.

## First Nations Health Plan Performance Indicators

Indicator and Baseline* Measure in 2005	Target by 2015	Baseline Measure (2001)**	Reduction in Gap 2006 (Since 2001)
Life Expectancy Status Indians: nearly 75 yrs Other Residents: 82 yrs	Decrease the gap in life expectancy between Status Indians and other British Columbians by 35 per cent to less than 3 years difference	Status Indians: 74.1 yrs Other Residents: 80.1 yrs <i>(based on five year aggregate data 1997–2001)</i>	Status Indians: 74.9 yrs Other Residents: 80.7 yrs <i>(based on five year aggregate data 2002–2006)</i>  Gap: ↓ 3%
Age-Standardized Mortality Rate (deaths due to all causes) ASMR 1.5 times greater for Status Indians than for other residents	Reduce the gap in mortality rates between Status Indians and other British Columbians by 35 per cent	Status Indians: 83.8/10,000 Other Residents: 57.8/10,000 <i>(based on five year aggregate data 1997–2001)</i>	Status Indians: 73.9/10,000 Other Residents: 52.7/10,000 <i>(based on five year aggregate data 2002–2006)</i>  Gap: ↓ 19%
Status Indian Youth Suicide Rate Status Indian youth suicides approximately 5 times higher than for other youth.	Reduce the gap in youth suicide rates between Status Indians and other British Columbians by 50 per cent	Status Indians: 4.1/10,000 Other Residents: 0.7/10,000 <i>(based on three year aggregate data 2001–2003)</i>	Status Indians: 2.9/10,000 Other Residents: 0.7/10,000 <i>(based on three year aggregate data 2004–2006)</i>  Gap: ↓ 35%
Infant Mortality Rate Status Indians: 8/1,000 Other Residents: 4/1,000	Reduce the gap in infant mortality between First Nations and other British Columbians by 50 per cent	Status Indians: 7.7/1,000 Other Residents: 3.8/1,000 <i>(based on five year aggregate data 1997–2001)</i>	Status Indian infants die in their first year over 2 times more often than other infants. <i>(based on five year aggregate data 2002–2006)</i>  Status Indians: 8.7/1,000 Other Residents: 3.9/1,000  Gap: ↑ 23%
Prevalence of Diabetes Status Indians: 6.0% Other Residents: 4.5%	Reduce the gap in the prevalence of diabetes between First Nations and other British Columbians by 33 per cent	Status Indians: 5.6% Other Residents: 3.8% <i>(2001/2002 data)</i>	Status Indians: 6.7% Other Residents: 4.8% <i>(2006/2007)</i>  Gap: ↑ 6%
Childhood Obesity	Not yet available	Not yet available	Not yet available
Practicing, Certified First Nations Health Care Professionals	Not yet available	Not yet available	Not yet available

\* Data obtained from The Transformative Change Accord: First Nations Health Plan, 2006.

\*\* Data obtained from this Provincial Health Officer's Annual Report.

## Recommendations from Current Report

### Determinants of Health

#### Individuals and families can:

- Actively oppose racism.
- Find out more about self-governance and other self-determination issues.

#### Aboriginal communities and organizations can:

- Work together to overcome disadvantages of small community size, for example, they can form institutional cooperatives to achieve economies of scale.

#### Employers can:

- Examine hiring practices to ensure equality of opportunity.

#### Schools can:

- Provide strategies that will incorporate the factors that are linked to success in school. These factors fit into six categories: Leadership, school climate, staff, funding and resources, community, and programs.

#### Governments and communities can:

- Continue to honour and support principles in the First Nations Health Plan.
- Facilitate the removal of structural impediments to economic development in First Nations communities.
- Set clear, measurable goals for employment, income, and education levels of Aboriginal people equal to those within the general population, along with methods for public reporting of results.
- Support efforts by Aboriginal people to achieve self-determination and a collective sense of control over their futures, in both on- and off-reserve communities.
- Invest in adult education opportunities, skills upgrading, training, job preparation, financial assistance for finding work and work clothing, child care, and stable, affordable housing.

- Ensure that effective, culturally appropriate programs are in place to support those who have suffered abuse.
- Encourage participatory research to gain a more clear understanding of the relationship between socio-economic conditions and the health of Aboriginal communities.

### Healthy Beginnings: Pregnancy, Infants, and Children

#### The health system can:

- Work with Aboriginal communities to develop culturally appropriate reproductive care programs, including better prenatal access, outreach, and nutrition programs for mothers and infants.
- Continue to monitor the birth weights of Status Indian infants, to better understand the factors that affect it.
- Develop better methods for preventing, diagnosing, and tracking the occurrence of fetal alcohol spectrum disorder.
- Support Aboriginal communities in motivating community members to reduce tobacco misuse.
- Develop culturally sensitive and supportive programs to address the root cause of alcohol and substance use and to help achieve better health outcomes for mothers and their infants.
- Continue to promote awareness of how to prevent sudden infant death syndrome.
- Continue to improve immunization coverage.
- Promote car safety including appropriate child seats.

#### Government and community organizations can:

- Tackle the larger issues that affect children's health and development: Poverty, food security, and social conditions.
- Implement community programs (such as the Four Pillars Approach in Vancouver) to prevent, treat, and reduce harms from substance abuse, with a focus on culturally based services specific to the Aboriginal population.

## Disease and Injuries

### The health and social services systems can:

- Work on Aboriginal control, planning, governance, and delivery of services (especially primary care services) and enhance these services in ways that meet the needs of Aboriginal people, in order to reduce the gap in medically treatable and other diseases.
- Develop services to assist Aboriginal people with chronic illnesses and disability-related activity limitations.
- Work with communities to develop prevention programs for diabetes in order to improve treatment outcomes.
- Continue to improve data collection systems, in order to get comparative regional data about the occurrence of diabetes, arthritis, and other chronic conditions in the Aboriginal population.
- Expand arthritis services to include all health professionals important in arthritis care (e.g., physiotherapists, occupational therapists) and provide these services to the areas of the province where care is needed.
- Develop a priority system for surgical intervention for Aboriginal people with severe arthritis to reduce surgical wait times.
- In consultation with Aboriginal communities, develop and deliver education programs to heighten awareness of arthritis, osteoporosis, exercise, weight control, and injury prevention. Expand prevention and treatment for alcohol and substance misuse.
- Focus on underlying factors that lead to illness, such as poverty, family distress, child abuse, inadequate housing, and untreated mental illness.
- Increase awareness and promotion of HIV disease prevention and develop more treatment options and increase uptake of HAART among Aboriginal patients.
- Collaborate with Aboriginal groups to review external causes of death data (e.g., motor vehicle accidental deaths and other injury deaths) and develop local strategies to reduce these causes of death in each community.

- Continue to develop a coordinated response to the health and social problems faced by injection drug users.
- Create a provincial Aboriginal mental health and wellness plan. One pillar of the plan would focus on vulnerable communities and youth suicide prevention.

## Physical Environment

### Individuals and families can:

- Maintain a smoke-free home, and encourage others to do so.
- Use newer, less polluting, wood-burning stoves.

### The health system can:

- Engage with Aboriginal organizations to actively improve on-reserve housing.
- Work with First Nations to ensure that housing conditions on-reserve are regularly monitored and tracked so that deficiencies may be addressed.
- Develop ways to monitor indoor air quality and study the health effects resulting from second-hand smoke, inadequate heating, and moisture control.
- Continue to provide training and certification for water system operators and make this mandatory, with subsidies to enable participation. Undertake monitoring to make sure water systems are adequately maintained and that they are providing health benefits.

### Governments can:

- Support Aboriginal communities to identify and address local housing needs; e.g., by supporting loan funds operated by First Nations organizations or by offering courses on technical or administrative subjects.
- Work with First Nations, on a priority basis, to make continued improvements to drinking water systems on-reserve.
- Encourage research and public discussion about environmental risks and the options for managing them, using both traditional and scientific knowledge.

- Encourage public reporting on the impact of human activities on fish stocks, forest areas, mineral supplies, and other natural resources.
- Conduct surveillance of contaminants in food safety.
- Support capacity building initiatives to address knowledge gaps in home maintenance and financial management.
- Ensure easy access to housing resources and information through expanded broadband connectivity.

## Health Services

### First Nations communities can:

- Participate in health governance structures and planning processes.
- Work towards increasing the participation of Aboriginal women in prevention and screening programs, such as Pap tests and screening mammography.

### The health system can:

- Work with the Aboriginal community to develop performance expectations for Aboriginal health. Include performance measures and targets in health authority service plans.
- Make a comprehensive effort to respond to mental health problems and trauma in Aboriginal communities.
- Work with Aboriginal communities to increase the uptake of breast cancer screening and Pap tests by Aboriginal women.
- Encourage Aboriginal involvement in describing and capturing evidence about what works to promote health, treat illness, and care for the vulnerable. Support the use of traditional healing in conjunction with other primary health services.

### The College of Physicians and Surgeons can:

- Continue to monitor professional prescribing practices and deal with those professionals who are inappropriately prescribing medication.

### Government can:

- Work from the principle that Aboriginal people, like all British Columbians, have the right to receive services that will help them achieve and maintain good health and well-being. Jurisdictional issues should not negatively impact the delivery of health services.
- Continue to work on plans for routine record linkage to identify Status Indian records in health databases (e.g., hospital morbidity, physician claims, mental health database, BC Cancer Registry, BC Centre for Disease Control).

## What more needs to be done?

- Commit to making self-determination for the Aboriginal population in the province a reality.
- Examine and review systemic barriers to economic development and make it a priority.
- Continue to improve the socio-economic status of the Aboriginal population by creating more educational and job opportunities.
- Focus on implementing demonstrated best practices so that Aboriginal children can fully benefit from educational opportunities.
- Improve housing and the physical environment for the Aboriginal population.
- Continue to work on Aboriginal health plans for health authorities.
- Recommit to achieving stated goals.
- Make issues underlying HIV/AIDS a priority.
- Create a provincial Aboriginal Mental Health and Wellness Plan.

### **2009 Federal Budget Highlights**

In its 2009 budget, the federal government committed to investing an extra \$1.4 billion over the next two years to address Aboriginal priority issues, most of it targeted to the on-reserve population. Budget items covered a wide range of concerns including:

- \$305 million over the next two years to improve health outcomes for First Nations and Inuit individuals by strengthening current programs (Non-Insured Health Benefits and primary care services), and supporting greater integration with provincial health systems.
- \$20 million over the next two years to extend partnerships with provinces to further improve child and family services on reserves.
- \$400 million over two years to address on-reserve housing issues through construction of new social housing projects, remediation of existing social housing stock, and complementary activities, such as lot servicing.
- \$515 million over two years for “ready-to-go” First Nations projects in three priority areas: Schools, water, and critical community services, such as health and policing. More than 40 new projects and approximately 230 remediation projects are expected to be completed over the next two years.
- \$200 million over three years to support the Aboriginal skills, training, and employment partnership programs to improve labour market outcomes for Aboriginal peoples.

Sources: Curry, 2009; Department of Finance Canada, 2009.

# Appendix A

## Technical Terms, Methods, and Statistical Computations

### Age Standardization

Age standardization is a method of calculation that adjusts a statistical measure for differences in the age/gender structures between populations. With standardized measures, more meaningful comparisons can be made between genders, different time periods, or geographic areas, because the age-standardized statistic is calculated as if all populations had the same age/gender population distribution.

### Age-Standardized Mortality Rate (ASMR)

A summary of age-adjusted death rates by age and gender, which have been standardized to a “standard” population (1991 Canada Census) for the purpose of rate comparisons between genders, different time periods, or different geographic locations. The ASMR is the theoretical number of deaths that would occur per 10,000 population, if the specific population had the same age structure as the standard population.

### Incidence

Incidence is the number or rate of new cases of a disease or condition occurring each year in the population. New cases arise sporadically and create volatility in the rates for small populations, so a five-year period is used to smooth out the fluctuation in the age-specific rates.

Incidence is calculated as: (total number of people with a case date for the disease or condition in the current fiscal year) ÷ (total population count for the current fiscal year without the disease or condition minus previously prevalent cases).

The denominator uses the count for the entire year rather than the mid-year estimate. It includes persons who migrate or die during the year, since they are included in the numerator. Age-standardizing adjusts for differences in population age structure over time.

### Prevalence

Prevalence is the number or rate of cases of a disease or condition existing within a population during the fiscal year (April 1–March 31).

Prevalence is calculated as: (total number of people with a disease/condition case date prior to and including March 31 of the current fiscal year) ÷ (total population count for the current fiscal year).

The denominator uses the count of persons for the entire year rather than the mid-year estimate. It includes persons who migrate or die during the year, since they are included in the numerator. Age-standardizing adjusts for differences in population age structure over time.

### Potential Years of Life Lost (PYLL)

The number of years of life lost when a person dies before a specified age (75 years).

## Standard Population

A reference population of known age distribution used in the calculation of standardized indicators, in order to adjust for variations in population age structures in different geographic areas or time periods. For Standard Mortality Ratios and Potential Years of Life Lost calculations the standard population is the British Columbia population for the year(s) concerned. The 1991 Canadian Census is used as the standard population in the calculation of ASMR and PYLL Standardized Rate.

## Statistical Computations

The following provides the reader with computational examples of how various measures are calculated. In the examples, Local Health Areas (LHAs) have been employed as the geographic unit of analysis. All data shown in the examples are hypothetical.

### Age-Standardized Mortality Rate (ASMR)

Age Group	Standard Population	LHA		
		Estimated Population	Death Rate/10,000	Observed Deaths
(i)	( $\pi_i$ )	( $p_i$ )	( $m_i$ )	( $d_i$ )
<1	403,061	1,339	22.4	3
1-4	1,550,285	5,483	1.8	1
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
80-84	382,303	1,198	701.2	84
85+	287,877	908	1596.9	145
<b>TOTAL</b>	28,120,065	81,016		561

### For the Local Health Area:

$$ASMR = \frac{\sum m_i \times \pi_i}{\Pi} = \frac{22.4 \times 403,061 + \dots + 1,596.9 \times 287,877}{28,120,065} = 46.2$$

Where:  $p_i$  = area population in age group i;

$\pi_i$  = standard population in age group i;

$\Pi = \sum \pi_i$  = total standard population;

$d_i$  = deaths in LHA population in age group i; and

$m_i = d_i / p_i \times 10,000$  = mortality rate per 10,000 LHA population in age group i.

$$\text{e.g., } m_i = \frac{3 \times 10,000}{1,339} = 22.4, \text{ for age group i.}$$

**Potential Years of Life Lost (PYLL) and Standardized Rate (PYLLSR)**

Age Group (i)	Age Factor (75-Y <sub>i</sub> )	Standard Population (π <sub>i</sub> )	LHA			
			Estimated Population (p <sub>i</sub> )	Death Rate/10,000 (m <sub>i</sub> )	Observed Deaths (d <sub>i</sub> )	Observed PYLL (d <sub>i</sub> (75-Y <sub>i</sub> ))
<1	74.5	403,061	1,339	2.2	3	223.5
1–4	72.0	1,550,285	5,483	0.2	1	72.0
5–9	67.5	1,953,045	6,553	0.2	1	67.5
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
65–69	7.5	1,084,588	3,538	18.7	66	495.0
70–74	2.5	834,024	2,779	28.8	80	200.0
<b>TOTAL 0-74</b>		28,120,065	79,140		239	3,183.0

**For the Local Health Area:**

$$PYLL = \sum d_i \times (75 - Y_i)$$

Where: d<sub>i</sub> = number of deaths in age group i;

Y<sub>i</sub> = age at midpoint of age group i; and

Σ = summation.

$$PYLLSR = \frac{\sum m_i \times \pi_i \times (75 - Y_i)}{\Pi} = \frac{22 \times 403,061 \times 74.5 \dots + 28.8 \times 834,024 \times 2.5}{28,120,065} = 37.0$$

Where: p<sub>i</sub> = LHA population in age group i;

π<sub>i</sub> = standard population in age group i;

Π = Σπ<sub>i</sub> = total standard population;

d<sub>i</sub> = deaths in LHA population in age group i;

Y<sub>i</sub> = age at midpoint of age group i; and

m<sub>i</sub> = (d<sub>i</sub> / p<sub>i</sub>) × 1,000 = mortality rate per 1,000 LHA population in age group i.

## Age-Standardized Incidence Rates

Let  $\Sigma_i$  denote the summation over the range of age groups of interest. Let  $p_i$  denote population of the standard population (1991 Canada Census) and define  $w_i = p_i / \Sigma_i p_i$ , which is the proportion of the standard population implied by the symbol  $\Sigma_i$ , then  $PR$  represents the age-standardized prevalence rate for that age group and is defined below:

$$IR_j = \Sigma_i w_i IR_{ij} = \Sigma_i w_i I_{ij} / PY_{ij}$$

$$var[IR_j] = \Sigma_i w_i^2 var[IR_{ij}] = \Sigma_i w_i^2 I_{ij} / PY_{ij}^2$$

$$Lower\ Bound = var[IR_j] * invgamma(1-a/2, IR_j^2 / var[IR_j]) / IR_j$$

$$Upper\ Bound = var[IR_j] * invgamma(1-a/2, IR_j^2 / var[IR_j] + 1) / IR_j$$

## Age-Standardized Prevalence Rates

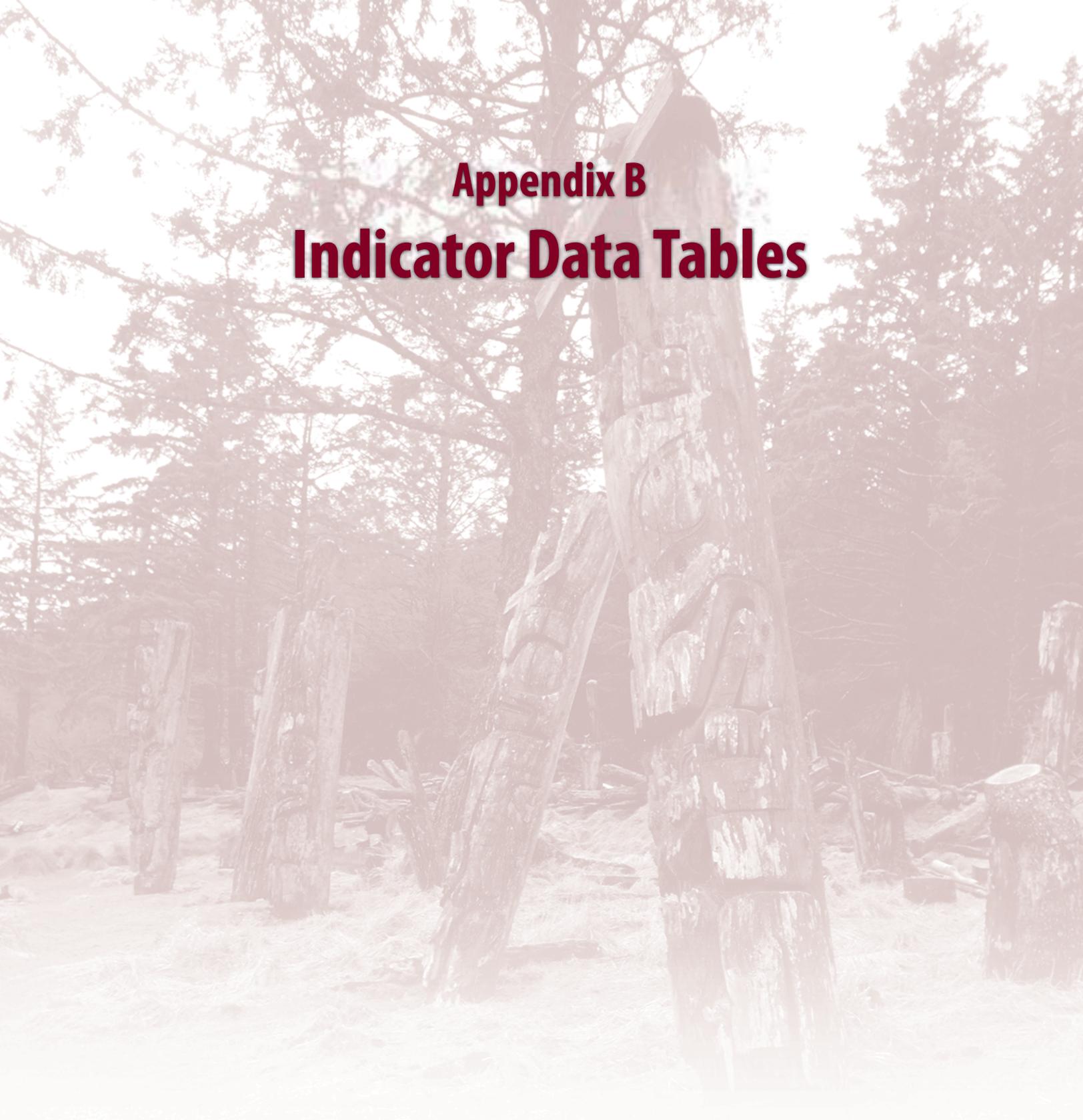
Let  $\Sigma_i$  denote the summation over the range of age groups of interest. Let  $p_i$  denote population of the standard population (1991 Canada Census) and define  $w_i = p_i / \Sigma_i p_i$ , which is the proportion of the standard population implied by the symbol  $\Sigma_i$ , then  $PR$  represents the age-standardized prevalence rate for that age group and is defined below:

$$PR = \Sigma_i w_i PR_i = \Sigma_i w_i P_i / N_i$$

$$var[PR] = \Sigma_i w_i^2 var[PR_i] = \Sigma_i w_i^2 P_i / N_i^2$$

$$Lower\ Bound = var[PR] * invgamma(1-a/2, PR^2 / var[PR]) / PR$$

$$Upper\ Bound = var[PR] * invgamma(1-a/2, PR^2 / var[PR] + 1) / PR$$



# Appendix B

# Indicator Data Tables

## Indicators for Determinants of Health—Health Authorities

Health Indicators Regional Data, 2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>1. Population*</b>						
Total population by Aboriginal and non-Aboriginal identity (Distr.)	16.4%	34.8%	25.0%	17.1%	6.7%	100%
Total population by Aboriginal and non-Aboriginal identity (Count)	669,380	1,416,640	1,016,710	697,145	274,510	4,074,385
Aboriginal identity as proportion of region's population	6.7%	2.7%	2.4%	5.8%	17.5%	4.8%
Aboriginal identity (Distr.)	22.9%	19.4%	12.5%	20.7%	24.5%	100%
Aboriginal identity (Count)	44,900	38,105	24,470	40,550	48,050	196,070
On-reserve Aboriginal (Distr.)	23.9%	9.0%	14.8%	22.8%	29.6%	100%
On-reserve Aboriginal (Count)	12,190	4,590	7,560	11,625	15,090	51,055
Off-reserve Aboriginal (Distr.)	22.6%	23.1%	11.7%	19.9%	22.7%	100%
Off-reserve Aboriginal (Count)	32,715	33,515	16,910	28,920	32,955	145,015
North American Indian Single responses (Distr.)	21.2%	16.5%	14.3%	21.7%	26.3%	100%
North American Indian Single responses (Count)	27,475	21,390	18,510	28,100	34,095	129,575
Métis, 2006 Census (Distr.)	27.3%	25.4%	8.6%	18.5%	20.2%	100%
Métis, 2006 Census (Count)	16,200	15,110	5,140	10,980	12,015	59,445
Inuit, 2006 Census (Distr.)	15.1%	28.3%	11.9%	28.3%	16.4%	100%
Inuit, 2006 Census (Count)	120	225	95	225	130	795
Aboriginal multiple responses (Distr.)	23.3%	31.4%	13.0%	18.4%	13.9%	100%
Aboriginal multiple responses (Count)	385	520	215	305	230	1,655
Aboriginal responses not included elsewhere (Distr.)	15.5%	18.8%	11.2%	20.3%	34.2%	100%
Aboriginal responses not included elsewhere (Count)	715	865	515	935	1,575	4,600
Registered Indian (Distr.)	20.6%	14.1%	14.5%	21.8%	29.0%	100%
Registered Indian (Count)	22,810	15,640	15,980	24,100	32,015	110,550
Not a Registered Indian (Distr.)	16.3%	35.3%	25.2%	17.0%	6.1%	100%
Not a Registered Indian (Count)	646,570	1,400,995	1,000,730	673,045	242,500	3,963,835

\* May not add up to 100% due to random rounding and possible data suppression.

## Indicators for Determinants of Health—Health Authorities (Continued)

Health Indicators Regional Data, 2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>2. Educational Attainment for Aboriginal People</b>						
No certificate, diploma, or degree	27.5%	23.5%	27.5%	32.3%	39.7%	30.6%
Certificate, diploma, or degree	72.6%	76.4%	72.5%	67.7%	60.3%	69.4%
High school certificate or equivalent	26.4%	25.2%	23.8%	22.6%	23.6%	24.4%
Apprenticeship or trades certificate or diploma	15.2%	18.4%	14.8%	14.8%	14.1%	15.4%
College, CEGEP, or other non-university certificate or diploma	19.3%	20.6%	19.0%	17.9%	15.3%	18.3%
University certificate, diploma, or degree	11.6%	12.1%	14.9%	12.3%	7.3%	11.3%
University certificate or diploma below bachelor level	5.3%	5.2%	3.8%	4.3%	2.6%	4.2%
University certificate or degree	6.3%	6.9%	11.0%	8.1%	4.7%	7.1%
Bachelor's degree	4.6%	4.2%	7.1%	5.6%	3.3%	4.8%
University certificate or diploma above bachelor level	0.6%	1.2%	1.0%	0.7%	0.7%	0.8%
Degree in medicine, dentistry, veterinary medicine, or optometry	0.2%	0.1%	0.2%	0.1%	0.1%	0.1%
Master's degree	0.9%	1.0%	1.9%	1.5%	0.5%	1.1%
Earned doctorate	0.1%	0.3%	0.8%	0.2%	0.1%	0.3%
<b>3. Unemployment Rate</b>						
Aboriginal Males 15+, 2006 Census	14.8%	10.6%	14.9%	14.9%	23.1%	16.1%
Aboriginal Females 15+, 2006 Census	11.7%	11.6%	13.5%	12.1%	19.8%	13.8%
Total Aboriginal 15+, 2006 Census	13.2%	11.1%	14.3%	13.5%	21.6%	15.0%
Aboriginal Males 25+, 2006 Census	13.7%	8.7%	13.2%	13.2%	22.4%	14.7%
Aboriginal Females 25+, 2006 Census	10.6%	9.9%	13.1%	11.1%	18.1%	12.6%
Total Aboriginal Population 25+, 2006 Census	12.1%	9.4%	13.2%	12.1%	20.3%	13.7%

## Indicators for Determinants of Health—Health Authorities (Continued)

Health Indicators Regional Data, 2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>4. Labour Force Participation Rate</b>						
Aboriginal Males 15+, 2006 Census	70.5%	74.3%	65.5%	68.3%	68.5%	69.5%
Aboriginal Females 15+, 2006 Census	60.7%	65.5%	58.2%	60.9%	58.9%	60.9%
Total Aboriginal 15+, 2006 Census	65.3%	69.5%	61.8%	64.3%	63.6%	65.0%
Aboriginal Males 25+, 2006 Census	73.7%	79.4%	68.2%	71.6%	74.1%	73.6%
Aboriginal Females 25+, 2006 Census	61.8%	68.5%	59.5%	62.5%	61.8%	62.9%
Total Aboriginal 25+, 2006 Census	67.2%	73.3%	63.8%	66.7%	67.7%	67.9%
<b>5. Income &lt; \$20,000 in 2005</b>						
Aboriginal Males 15+, 2006 Census	56.8%	50.3%	62.0%	59.8%	58.6%	57.5%
Aboriginal Females 15+, 2006 Census	68.2%	60.0%	65.4%	66.3%	67.8%	65.7%
Total Aboriginal Population 15+, 2006 Census	62.9%	55.6%	63.7%	63.3%	63.4%	61.8%
<b>6. Children in Care (CIC)</b>						
Aboriginal CIC as proportion of all children in care	46.9%	46.9%	57.2%	50.1%	78.8%	52.6%
Non-Aboriginal CIC as proportion of all children in care	53.1%	53.1%	42.8%	49.9%	21.2%	47.4%
Number of children in care	1,910	2,931	1,110	1,828	1,050	8,829
Aboriginal CIC as % of Aboriginal population (<19 years) in region	5.4%	9.4%	8.9%	6.1%	4.5%	6.5%
Non-Aboriginal CIC as % of non-Aboriginal population (<19 years) in region	0.8%	0.5%	0.3%	0.7%	0.4%	0.5%
Percentage of all CIC as % of total population (<19 years) in region	1.3%	0.8%	0.6%	1.3%	1.4%	1.0%
Aboriginal CIC as % of total BC Aboriginal population (<19 years)	1.2%	1.9%	0.9%	1.3%	1.2%	6.5%
Non-Aboriginal CIC as % of total BC non-Aboriginal population (<19 years)	0.1%	0.2%	0.1%	0.1%	0.0%	0.5%
Total CIC as % of total BC population (<19 years)	0.2%	0.3%	0.1%	0.2%	0.1%	1.0%

## Notes and Sources

- 1 Population data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 2 Educational attainment data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 3 Unemployment data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 4 Labour force participation data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 5 Income data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 6 BC total excludes 131 BC children in care that are living out of province (65 Aboriginal and 66 non-Aboriginal children). Ministry of Children and Family Development, data as of January 31, 2009.

## Indicators for Determinants of Health—Health Service Delivery Areas

Health Indicators Regional Data, 2006	Health Service Delivery Areas													British Columbia			
	East Kootenay	Kootenay Boundary	Okanagan	Thompson Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island		Northwest	Northern Interior	Northeast
<b>1. Population*</b>																	
Total population by Aboriginal and non-Aboriginal identity (Distr.)	1.8%	1.8%	7.7%	5.1%	6.2%	13.2%	15.3%	4.3%	14.3%	6.4%	8.3%	6.0%	2.8%	1.8%	3.4%	1.6%	100.0%
Total population by Aboriginal and non-Aboriginal identity (Count)	73,440	73,975	315,250	206,710	253,640	538,480	624,515	173,565	583,695	259,450	340,055	244,420	112,665	73,905	136,765	63,840	4,074,385
Aboriginal identity as proportion of region's population*	5.7%	4.1%	4.6%	11.3%	5.7%	1.9%	2.1%	0.7%	2.0%	4.4%	3.3%	7.8%	8.9%	30.0%	13.1%	12.4%	4.8%
Aboriginal identity (Distr.)	2.1%	1.5%	7.4%	11.9%	7.3%	5.3%	6.8%	0.7%	6.0%	5.8%	5.8%	9.8%	5.1%	11.3%	9.2%	4.0%	100%
Aboriginal identity (Count)	4,160	3,030	14,420	23,295	14,400	10,325	13,375	1,275	11,810	11,385	11,365	19,185	9,995	22,185	17,975	7,885	196,070
On-reserve (Distr.)	1.0%	0.0%	6.1%	16.8%	7.6%	0.5%	0.9%	0.0%	1.2%	13.6%	4.1%	12.3%	6.3%	19.7%	7.4%	2.5%	100%
On-reserve (Count)	500	0	3,095	8,595	3,880	250	455	0	610	6,950	2,085	6,300	3,235	10,070	3,770	1,255	51,055
Off-reserve (Distr.)	2.5%	2.1%	7.8%	10.1%	7.3%	6.9%	8.9%	0.9%	7.7%	3.1%	6.4%	8.9%	4.7%	8.4%	9.8%	4.6%	100%
Off-reserve (Count)	3,660	3,030	11,320	14,695	10,520	10,070	12,920	1,275	11,200	4,435	9,280	12,885	6,755	12,110	14,210	6,635	145,015
North American Indian Single responses (Distr.)	1.2%	0.9%	6.0%	13.1%	7.4%	4.1%	5.1%	0.5%	6.3%	7.4%	5.4%	10.4%	5.9%	15.0%	8.3%	3.1%	100%
North American Indian Single responses (Count)	1,565	1,175	7,830	16,915	9,530	5,295	6,570	705	8,170	9,640	7,015	13,475	7,605	19,425	10,720	3,955	129,575
Métis, 2006 Census (Distr.)	4.1%	3.0%	10.2%	9.9%	7.4%	7.4%	10.6%	0.8%	5.5%	2.4%	6.5%	8.6%	3.4%	3.0%	11.1%	6.1%	100%
Métis, 2006 Census (Count)	2,460	1,800	6,065	5,870	4,405	4,415	6,285	495	3,240	1,410	3,835	5,105	2,045	1,790	6,625	3,600	59,445
Inuit, 2006 Census (Distr.)	0.0%	1.3%	6.3%	7.5%	8.2%	10.1%	9.4%	1.3%	5.0%	5.0%	17.0%	6.9%	4.4%	5.0%	2.5%	8.8%	100%
Inuit, 2006 Census (Count)	0	10	50	60	65	80	75	10	40	40	135	55	35	40	20	70	795
Aboriginal multiple responses (Distr.)	5.7%	1.2%	5.7%	10.6%	10.3%	10.9%	10.0%	0.6%	8.8%	3.6%	8.8%	6.9%	2.7%	1.5%	7.3%	4.8%	100%
Aboriginal multiple responses (Count)	95	20	95	175	170	180	165	10	145	60	145	115	45	25	120	80	1,655
Aboriginal responses not included elsewhere (Distr.)	0.7%	0.7%	8.2%	6.1%	5.0%	7.5%	6.2%	1.3%	4.7%	5.2%	5.1%	9.6%	5.7%	19.7%	10.4%	4.0%	100%
Aboriginal responses not included elsewhere (Count)	30	30	375	280	230	345	285	60	215	240	235	440	260	905	480	185	4,600
Registered Indian (Distr.)	1.1%	0.6%	5.3%	13.6%	6.7%	3.5%	4.0%	0.4%	6.1%	7.9%	5.1%	10.9%	5.8%	16.8%	8.9%	3.2%	100%
Registered Indian (Count)	1,210	705	5,870	15,025	7,405	3,865	4,370	450	6,775	8,760	5,635	12,035	6,430	18,610	9,850	3,555	110,550
Not a Registered Indian (Distr.)	1.8%	1.8%	7.8%	4.8%	6.2%	13.5%	15.6%	4.4%	14.6%	6.3%	8.4%	5.9%	2.7%	1.4%	3.2%	1.5%	100%
Not a Registered Indian (Count)	72,230	73,280	309,385	191,680	246,235	534,615	620,145	173,120	576,915	250,690	334,420	232,385	106,240	55,295	126,915	60,285	3,963,835

\* May not add up to 100% due to random rounding and possible data suppression.

Indicators for Determinants of Health—Health Service Delivery Areas (Continued)

Health Indicators Regional Data, 2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>2. Educational Attainment for Aboriginal People</b>																	
No certificate, diploma, or degree	27.8%	17.1%	24.2%	30.6%	28.7%	19.6%	21.7%	10.6%	26.0%	31.4%	26.1%	34.2%	36.4%	42.3%	37.0%	38.6%	30.6%
Certificate, diploma, or degree	72.5%	82.6%	75.7%	69.4%	71.1%	80.4%	78.6%	89.4%	74.0%	68.7%	73.9%	65.8%	63.5%	57.7%	63.0%	61.4%	69.4%
High school certificate or equivalent	31.3%	32.8%	26.7%	24.5%	22.3%	25.7%	27.6%	31.1%	23.9%	23.0%	22.9%	22.2%	23.0%	21.3%	25.5%	26.0%	24.4%
Apprenticeship or trades certificate or diploma	14.1%	17.4%	16.8%	14.2%	19.2%	18.9%	17.2%	23.5%	13.0%	16.1%	13.5%	16.1%	14.2%	13.3%	15.0%	13.7%	15.4%
College, CEGEP, or other non-university certificate or diploma	18.2%	20.1%	21.4%	18.2%	18.5%	22.8%	21.0%	24.2%	19.1%	18.2%	20.2%	15.5%	19.5%	15.4%	14.9%	15.6%	18.3%
University certificate, diploma, or degree	9.1%	12.6%	10.8%	12.4%	11.0%	12.8%	12.6%	10.6%	18.0%	11.4%	17.4%	11.8%	6.8%	7.5%	7.6%	6.0%	11.3%
University certificate or diploma below bachelor level	4.5%	4.4%	4.6%	6.0%	5.8%	3.8%	5.9%	4.5%	3.4%	4.2%	4.6%	4.8%	3.0%	3.2%	2.3%	1.5%	4.2%
University certificate or degree	4.8%	7.8%	6.1%	6.5%	5.2%	9.1%	6.8%	6.1%	14.6%	7.0%	12.8%	7.1%	3.9%	4.3%	5.2%	4.4%	7.1%
Bachelor's degree	3.3%	6.1%	4.5%	4.8%	3.4%	5.5%	4.0%	3.8%	9.4%	4.4%	9.0%	5.0%	2.6%	2.9%	3.8%	3.4%	4.8%
University certificate or diploma above bachelor level	0.8%	0.0%	0.5%	0.7%	0.7%	1.4%	1.5%	0.0%	1.2%	0.8%	0.8%	0.7%	0.7%	0.7%	0.6%	0.8%	0.8%
Degree in medicine, dentistry, veterinary medicine, or optometry	0.8%	0.0%	0.0%	0.2%	0.2%	0.2%	0.0%	0.0%	0.3%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Master's degree	0.5%	1.7%	1.0%	1.0%	0.9%	1.2%	0.9%	1.5%	2.4%	1.5%	2.6%	1.4%	0.6%	0.6%	0.6%	0.0%	1.1%
Earned doctorate	0.0%	0.0%	0.1%	0.1%	0.2%	0.7%	0.3%	1.5%	1.1%	0.3%	0.4%	0.2%	0.0%	0.2%	0.1%	0.3%	0.3%
<b>3. Unemployment Rate</b>																	
Aboriginal Males 15+, 2006 Census	10.6%	14.3%	11.8%	17.5%	14.6%	9.0%	7.8%	5.3%	13.9%	17.5%	8.6%	15.8%	21.1%	30.1%	19.0%	14.3%	16.1%
Aboriginal Females 15+, 2006 Census	7.8%	11.7%	8.3%	14.7%	13.9%	12.1%	8.6%	3.8%	15.5%	12.2%	9.0%	13.3%	13.8%	24.5%	18.4%	10.7%	13.8%
Total Aboriginal 15+, 2006 Census	9.7%	13.1%	10.1%	16.1%	14.2%	10.6%	8.4%	4.7%	14.6%	15.0%	9.0%	14.6%	17.4%	27.4%	18.7%	12.8%	15.0%
Aboriginal Males 25+, 2006 Census	10.6%	7.0%	10.4%	17.3%	13.0%	7.2%	5.6%	3.2%	12.9%	15.3%	7.7%	13.4%	19.6%	28.4%	18.3%	15.1%	14.7%
Aboriginal Females 25+, 2006 Census	7.2%	9.2%	7.5%	13.1%	11.2%	10.2%	8.4%	4.5%	15.0%	11.5%	8.3%	11.4%	14.3%	22.1%	16.5%	10.2%	12.6%
Total Aboriginal 25+, 2006 Census	8.9%	8.0%	9.0%	15.3%	12.0%	9.0%	7.1%	2.8%	14.0%	13.6%	8.0%	12.4%	17.1%	25.4%	17.5%	12.5%	13.7%

## Indicators for Determinants of Health—Health Service Delivery Areas (Continued)

Health Indicators Regional Data, 2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>4. Labour Force Participation Rate</b>																	
Aboriginal Males 15+, 2006 Census	75.5%	70.3%	74.6%	67.2%	71.5%	75.7%	76.2%	81.5%	64.9%	64.4%	73.1%	67.1%	65.0%	64.6%	70.4%	75.3%	69.5%
Aboriginal Females 15+, 2006 Census	65.2%	66.2%	63.0%	57.7%	63.4%	66.7%	66.5%	55.9%	59.4%	56.9%	65.8%	58.5%	59.2%	57.1%	58.3%	65.4%	60.9%
Total Aboriginal 15+, 2006 Census	69.8%	68.0%	68.3%	62.2%	67.1%	70.9%	70.7%	69.2%	62.2%	60.5%	69.3%	62.6%	61.9%	60.8%	64.2%	70.4%	65.0%
Aboriginal Males 25+, 2006 Census	78.4%	72.8%	76.5%	70.9%	76.4%	81.8%	80.6%	86.3%	66.7%	68.5%	74.5%	70.7%	69.8%	71.2%	76.1%	78.5%	73.6%
Aboriginal Females 25+, 2006 Census	64.7%	63.7%	64.3%	59.5%	66.4%	70.3%	68.9%	59.5%	58.9%	60.0%	67.6%	59.9%	61.2%	0.0%	61.5%	65.3%	62.9%
Total Aboriginal 25+, 2006 Census	71.6%	68.3%	69.9%	64.7%	70.9%	75.6%	74.0%	73.5%	62.7%	64.0%	70.7%	64.9%	65.0%	65.8%	68.4%	71.7%	67.9%
<b>5. Income &lt; \$20,000 in 2005</b>																	
Aboriginal Males 15+, 2006 Census	53.5%	45.2%	52.7%	61.2%	55.8%	46.3%	47.4%	42.4%	63.2%	62.7%	54.5%	60.8%	64.4%	67.8%	53.9%	43.0%	57.5%
Aboriginal Females 15+, 2006 Census	71.5%	62.1%	65.8%	69.7%	66.0%	59.7%	53.6%	58.7%	63.4%	68.2%	59.3%	68.8%	69.6%	68.7%	69.7%	60.7%	65.7%
Total Aboriginal Population 15+, 2006 Census	63.2%	54.4%	59.9%	65.8%	61.4%	53.8%	51.0%	49.7%	63.4%	65.6%	57.0%	64.9%	67.2%	68.3%	62.3%	51.5%	61.8%
<b>6. Children in Care (CIC)</b>																	
Aboriginal CIC as proportion of all children in care	46.2%	37.5%	37.8%	57.3%	51.8%	41.6%	45.7%	48.8%	57.9%	60.0%	36.5%	58.1%	60.7%	88.4%	76.9%	65.2%	52.6%
Non-Aboriginal CIC as proportion of all children in care	53.8%	62.5%	62.2%	42.7%	48.2%	58.4%	54.3%	51.2%	42.1%	40.0%	63.5%	41.9%	39.3%	11.6%	23.1%	34.8%	47.4%
Number of children in care	182	136	777	815	1,035	683	1,213	162	623	325	710	818	300	335	554	161	8,829
Aboriginal CIC as % of Aboriginal population (<19 years) in region	5.3%	4.8%	5.4%	5.5%	9.1%	8.2%	10.8%	17.6%	12.6%	5.1%	6.9%	6.4%	4.8%	3.6%	6.1%	3.4%	6.5%
Non-Aboriginal CIC as % of non-Aboriginal population (<19 years) in region	0.7%	0.6%	0.8%	0.9%	0.8%	0.3%	0.4%	0.2%	0.3%	0.2%	0.7%	0.8%	0.5%	0.3%	0.4%	0.4%	0.5%
Percentage of all CIC as % of total population (<19 years) in region	1.1%	0.9%	1.2%	1.7%	1.5%	0.6%	0.7%	0.4%	0.6%	0.6%	1.1%	1.6%	1.2%	1.6%	1.5%	0.9%	1.0%
Aboriginal CIC as % of total BC Aboriginal population (<19 years)	0.1%	0.1%	0.4%	0.6%	0.7%	0.4%	0.8%	0.1%	0.5%	0.3%	0.4%	0.7%	0.3%	0.4%	0.6%	0.1%	6.5%
Non-Aboriginal CIC as % of total BC non-Aboriginal population (<19 years)	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
Total CIC as % of total BC population (<19 years)	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	1.0%

**Notes and Sources**

- 1 Population data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 2 Educational attainment data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 3 Unemployment data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 4 Labour force participation data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 5 Income data is based on the Statistics Canada 2006 Census; provided by BC Stats, 2008.
- 6 BC total excludes 131 BC children in care that are living out of province (65 Aboriginal and 66 non-Aboriginal children). Ministry of Children and Family Development, data as of January 31, 2009.

## Indicators for Healthy Beginnings: Pregnancy, Infants, and Children—Health Authorities

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>1. Infant Mortality Rate</b>						
Status Indians	8.6	6.2	9.4	11.9	6.9	8.7
Other Residents	4.1	3.6	3.9	4.5	4.1	3.9
Ratio: Status Indians/Other Residents	2.1	1.7	2.4	2.6	1.7	2.2
<b>2. Neonatal Mortality Rate</b>						
Status Indians	5.7	3.1	7.3	5.8	3.2	4.8
Other Residents	2.9	2.7	2.9	3.2	3.2	2.9
Ratio: Status Indians/Other Residents	2.0	1.2	2.6	1.8	1.0	1.7
<b>3. Post-Neonatal Mortality Rate</b>						
Status Indians	2.9	3.1	2.1	6.1	3.7	3.8
Other Residents	1.2	0.9	1.0	1.4	1.0	1.0
Ratio: Status Indians/Other Residents	2.3	3.4	2.1	4.5	3.8	3.7
<b>4. Low Birth Weight Rate</b>						
Status Indians	6.4	6.2	8.0	6.9	4.7	6.2
Other Residents	5.3	5.6	5.5	5.1	4.8	5.4
Ratio: Status Indians/Other Residents	1.2	1.1	1.4	1.4	1.0	1.2
<b>5. Preterm Birth Rate</b>						
Status Indians	9.4	12.1	13.6	13.1	8.6	11.1
Other Residents	7.4	7.1	7.2	7.5	5.9	7.1
Ratio: Status Indians/Other Residents	1.3	1.7	1.9	1.7	1.5	1.6
<b>6. Stillbirth Rate</b>						
Status Indians	9.0	11.9	12.4	10.8	7.9	10.1
Other BC Residents	6.8	7.3	7.9	6.3	8.8	7.4
Ratio: Status Indians/Other Residents	1.3	1.6	1.6	1.7	0.9	1.4

## Indicators for Healthy Beginnings: Pregnancy, Infants, and Children—Health Authorities (Continued)

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>7. Teen Pregnancy Rate – Ages 12–19 Years (2006)</b>						
Status Indians	3.7	4.7	5.8	7.7	6.4	5.8
Other Residents	1.8	1.5	1.1	1.6	2.3	1.6
Ratio: Status Indians/Other Residents	2.0	3.1	5.1	4.7	2.8	3.7
<b>8. Dental Surgery Rate – Ages 0–4 Years (2006/2007)</b>						
Status Indians	47.2	14.3	31.6	43.4	47.2	39.7
Other Residents	10.8	7.2	9.2	13.0	10.0	10.5
Ratio: Status Indians/Other Residents	4.4	2.0	3.4	3.3	4.7	3.8
<b>9. Dental Surgery Rate – Ages 5–9 Years (2006/2007)</b>						
Status Indians	20.6	9.4	10.6	21.8	33.4	21.8
Other Residents	7.9	4.8	4.1	11.7	7.7	7.2
Ratio: Status Indians/Other Residents	2.6	2.0	2.6	1.9	4.3	3.0
<b>10. Dental Surgery Rate – Ages 0–14 Years (2006/2007)</b>						
Status Indians	21.5	7.8	14.5	24.0	27.4	21.0
Other Residents	6.1	4.4	4.6	8.6	6.0	6.1
Ratio: Status Indians/Other Residents	3.6	1.8	3.2	2.8	4.6	3.4

## Notes and Sources

- 1 Infant mortality rate (infant deaths per 1,000 live births). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 2 Neonatal mortality rate per 1,000 live births (death of an infant aged 0 to 27 days). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 3 Post-Neonatal mortality rate per 1,000 live births (death of an infant aged 28 to 364 days). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 4 Proportion of live births with a birth weight less than 2,500 grams. BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 5 Proportion of live births that were premature (gestational age of less than 37 weeks). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 6 Stillbirth rates per 1,000 total births (live births plus stillbirths). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 7 Estimated proportion of teen pregnancies, based on the number of pregnancies resulting in a live birth, stillbirth, induced abortion, or hospitalization due to miscarriage in 2006. Discharge Abstract Database, HIMB, Health System Planning Division and BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 8-10 Produced using data for Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data are based on ICD-10-CA. Children with an unknown geographical region are included at the provincial level. Hospital Discharge Abstract Database, Ministry of Health Services, 2008.

## Indicators for Healthy Beginnings: Pregnancy, Infants, and Children—Health Service Delivery Areas

Health Indicators Regional Data, 2002–2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>1. Infant Mortality Rate</b>																	
Status Indians	5.0	8.7	9.1	4.8	5.4	9.2	19.2	9.2	9.1	14.6	9.9	13.6	6.7	9.0	2.1	8.7	
Other Residents	3.8	3.9	4.8	3.9	3.1	3.9	3.0	4.4	3.2	4.3	5.0	4.2	5.6	3.8	3.7	3.9	
Ratio: Status Indians/Other Residents	1.3	2.2	1.9	1.2	1.8	2.4	6.5	2.1	2.9	3.4	2.0	3.2	1.2	2.4	0.6	2.2	
<b>2. Neonatal Mortality Rate</b>																	
Status Indians	0.0	5.8	6.5	2.9	0.0	6.2	19.2	5.7	8.1	6.1	5.2	6.8	3.1	3.7	2.1	4.8	
Other Residents	2.6	2.9	3.1	2.8	2.4	2.9	1.9	3.4	2.2	2.9	3.4	3.5	4.4	2.7	3.0	2.9	
Ratio: Status Indians/Other Residents	0.0	2.0	2.1	1.0	0.0	2.1	9.9	1.7	3.6	2.1	1.6	1.9	0.7	1.4	0.7	1.7	
<b>3. Post-Neonatal Mortality Rate</b>																	
Status Indians	5.0	2.9	2.6	1.9	5.4	3.1	0.0	3.4	1.0	8.5	4.6	6.8	3.6	5.2	0.0	3.8	
Other Residents	1.2	1.0	1.7	1.2	0.7	1.0	1.0	1.0	0.9	1.4	1.7	0.7	1.1	1.1	0.7	1.0	
Ratio: Status Indians/Other Residents	4.3	2.9	1.5	1.6	7.8	3.1	0.0	3.5	1.1	6.3	2.8	9.6	3.2	4.9	0.0	3.7	
<b>4. Low Birth Weight Rate</b>																	
Status Indians	7.4	5.1	6.8	6.2	6.4	6.0	9.6	11.0	5.2	7.6	7.0	6.0	4.3	6.1	2.1	6.2	
Other Residents	4.7	5.5	5.4	4.9	5.7	5.8	5.4	5.8	4.7	5.4	5.0	4.6	4.5	5.3	4.1	5.4	
Ratio: Status Indians/Other Residents	1.6	0.9	1.3	1.3	1.1	1.0	1.8	1.9	1.1	1.4	1.4	1.3	1.0	1.2	0.5	1.2	
<b>5. Preterm Birth Rate</b>																	
Status Indians	9.4	7.5	10.3	13.8	10.9	10.6	13.5	18.0	9.8	14.6	13.9	9.5	9.9	8.5	3.4	11.1	
Other Residents	6.4	7.9	7.4	6.7	7.5	7.1	6.6	7.5	6.8	7.8	7.5	6.5	6.2	6.6	4.4	7.1	
Ratio: Status Indians/Other Residents	1.5	0.9	1.4	2.1	1.5	1.5	2.0	2.4	1.4	1.9	1.9	1.5	1.6	1.3	0.8	1.6	
<b>6. Stillbirth Rate</b>																	
Status Indians	0.0	10.0	9.6	12.3	14.1	9.2	0.0	13.6	12.0	10.8	12.0	8.1	5.1	11.9	8.5	10.1	
Other BC Residents	6.5	7.3	6.3	7.8	7.2	7.2	8.4	8.5	6.2	5.8	7.4	5.9	9.9	9.8	6.4	7.4	
Ratio: Status Indians/Other Residents	0.0	1.4	1.5	1.6	2.0	1.3	0.0	1.6	1.9	1.9	1.6	1.4	0.5	1.2	1.3	1.4	

## Indicators for Healthy Beginnings: Pregnancy, Infants, and Children—Health Service Delivery Areas (Continued)

Health Indicators Regional Data, 2002–2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>7. Teen Pregnancy Rate – Ages 12–19 Years (2006)</b>																	
Status Indians	3.9	2.7	4.2	5.2	5.1	3.7	1.4	4.5	7.6	7.7	8.4	6.3	7.5	5.5	4.3	5.8	
Other Residents	1.6	1.8	3.9	1.8	1.4	1.4	1.3	1.2	1.0	1.7	1.6	1.7	1.4	2.3	3.0	1.6	
Ratio: Status Indians/Other Residents	2.4	1.5	1.1	2.9	3.7	2.6	1.1	3.9	7.8	4.6	5.3	3.7	5.4	2.4	1.5	3.7	
<b>8. Dental Surgery Rate – Ages 0–4 Years (2006/2007)</b>																	
Status Indians	12.2	42.6	54.5	15.6	17.3	9.9	0.0	31.9	33.3	59.0	48.7	15.0	64.6	36.8	9.4	39.7	
Other Residents	10.5	11.1	10.6	7.2	9.6	5.3	5.0	12.1	5.9	10.1	17.2	13.5	15.1	10.3	6.5	10.5	
Ratio: Status Indians/Other Residents	1.2	3.8	5.2	2.2	1.8	1.9	0.0	2.6	5.7	5.8	2.8	1.1	4.3	3.6	1.5	3.8	
<b>9. Dental Surgery Rate – Ages 5–9 Years (2006/2007)</b>																	
Status Indians	1.6	16.8	44.5	12.9	5.6	2.9	3.3	104.5	14.2	453.3	18.0	8.2	476.6	49.7	1.4	21.8	
Other Residents	3.0	7.6	5.8	8.0	6.6	45.1	6.0	13.3	1.1	35.0	16.6	5.3	6.5	2.1	3.6	7.2	
Ratio: Status Indians/Other Residents	0.5	2.2	7.6	1.6	0.8	0.1	0.5	7.8	12.6	13.0	1.1	1.5	72.8	23.9	0.4	3.0	
<b>10. Dental Surgery Rate – Ages 0–14 Years (2006/2007)</b>																	
Status Indians	7.7	19.3	25.0	8.8	8.7	5.8	9.7	12.1	17.3	35.8	24.8	9.6	39.3	20.7	3.7	21.0	
Other Residents	5.5	5.9	6.7	5.0	5.3	3.4	2.5	6.0	3.3	6.5	10.9	9.6	7.3	6.1	4.7	6.1	
Ratio: Status Indians/Other Residents	1.4	3.2	3.7	1.8	1.6	1.7	3.8	2.0	5.3	5.5	2.3	1.0	5.4	3.4	0.8	3.4	

## Notes and Sources

- 1 Infant mortality rate (infant deaths per 1,000 live births). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 2 Neonatal mortality rate per 1,000 live births (death of an infant aged 0 to 27 days). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 3 Post-Neonatal mortality rate per 1,000 live births (death of an infant aged 28 to 364 days). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 4 Proportion of live births with a birth weight less than 2,500 grams. BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 5 Proportion of live births that were premature (gestational age of less than 37 weeks). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 6 Stillbirth rates per 1,000 total births (live births plus stillbirths). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 7 Estimated proportion of teen pregnancies, based on the number of pregnancies resulting in a live birth, stillbirth, induced abortion, or hospitalization due to miscarriage in 2006. Discharge Abstract Database, HIMS, Health System Planning Division and BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 8-10 Produced using data for Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data are based on ICD-10-CA. Children with an unknown geographical region are included at the provincial level. Hospital Discharge Abstract Database, Ministry of Health Services, 2008.

## Indicators for Disease and Injuries – Health Authorities

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>1. Mortality Rates (ASMR)</b>						
HIV Disease						
Status Indians	0.6	0.5	4.2	0.9	0.7	1.3
Other Residents	0.1	0.1	0.5	0.1	0.1	0.2
Ratio: Status Indians/Other Residents	5.3	4.2	8.3	6.3	7.4	6.0
All Cancers						
Status Indians	14.4	14.5	11.6	15.1	14.9	14.2
Other Residents	16.7	15.3	13.3	16.4	19.4	15.5
Ratio: Status Indians/Other Residents	0.9	0.9	0.9	0.9	0.8	0.9
Lung Cancer						
Status Indians	3.0	3.4	2.5	2.5	2.5	2.7
Other Residents	4.7	4.0	3.4	4.3	5.8	4.1
Ratio: Status Indians/Other Residents	0.6	0.8	0.7	0.6	0.4	0.7
Female Breast Cancer						
Status Indians	0.7	2.5	0.8	2.6	1.0	1.4
Other Residents	2.1	2.1	1.8	2.3	2.5	2.1
Ratio: Status Indians/Other Residents	0.3	1.2	0.4	1.1	0.4	0.7
Colorectal Cancer						
Status Indians	2.4	2.4	2.2	2.1	2.1	2.2
Other Residents	1.5	1.5	1.4	1.6	1.9	1.5
Ratio: Status Indians/Other Residents	1.6	1.6	1.5	1.3	1.1	1.5
Cervical Cancer						
Status Indians	1.2	0.0	0.5	0.6	0.0	0.5
Other Residents	0.2	0.2	0.1	0.1	0.2	0.2
Ratio: Status Indians/Other Residents	5.2	0.0	4.1	4.4	0.0	3.0

## Indicators for Disease and Injuries – Health Authorities (Continued)

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>Mortality Rates (ASMR) – continued</b>						
Prostate Cancer						
Status Indians	1.4	0.8	1.4	0.5	3.1	1.7
Other Residents	2.4	2.3	1.5	2.0	2.6	2.1
Ratio: Status Indians/Other Residents	0.6	0.4	0.9	0.2	1.2	0.8
Endocrine/Nutritional/Metabolic						
Status Indians	2.8	4.4	4.9	4.0	3.8	3.9
Other Residents	2.4	2.3	1.8	2.1	3.6	2.2
Ratio: Status Indians/Other Residents	1.2	1.9	2.7	2.0	1.1	1.8
Diabetes						
Status Indians	2.4	3.6	4.4	3.3	3.1	3.3
Other Residents	1.9	1.8	1.4	1.6	2.9	1.7
Ratio: Status Indians/Other Residents	1.3	2.0	3.1	2.1	1.1	1.9
Circulatory System Diseases						
Status Indians	18.6	14.4	19.4	19.9	18.0	18.4
Other Residents	17.5	17.7	14.3	16.0	19.5	16.5
Ratio: Status Indians/Other Residents	1.1	0.8	1.4	1.2	0.9	1.1
Ischemic Heart Disease						
Status Indians	7.0	5.2	8.7	9.2	7.3	7.6
Other Residents	7.9	9.3	6.3	7.4	8.5	7.8
Ratio: Status Indians/Other Residents	0.9	0.6	1.4	1.3	0.9	1.0
Cerebrovascular Diseases						
Status Indians	5.2	6.1	5.6	4.8	3.8	4.8
Other Residents	3.7	3.8	3.6	3.7	3.8	3.7
Ratio: Status Indians/Other Residents	1.4	1.6	1.5	1.3	1.0	1.3

## Indicators for Disease and Injuries – Health Authorities (Continued)

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>Mortality Rates (ASMR) – continued</b>						
<b>Respiratory Diseases</b>						
Status Indians	7.8	6.9	6.4	7.6	8.1	7.6
Other Residents	5.3	5.7	4.7	4.9	6.8	5.2
Ratio: Status Indians/Other Residents	1.5	1.2	1.4	1.6	1.2	1.5
<b>Pneumonia and Influenza</b>						
Status Indians	3.0	3.1	3.5	2.6	3.3	3.2
Other Residents	1.9	2.5	2.2	1.7	2.3	2.1
Ratio: Status Indians/Other Residents	1.6	1.2	1.6	1.6	1.4	1.5
<b>Chronic Lung Disease</b>						
Status Indians	2.7	2.7	1.6	2.7	3.5	2.8
Other Residents	2.7	2.4	1.7	2.4	3.6	2.3
Ratio: Status Indians/Other Residents	1.0	1.1	0.9	1.1	1.0	1.2
<b>Digestive System Diseases</b>						
Status Indians	6.4	4.9	7.7	6.7	4.0	5.8
Other Residents	2.2	1.9	1.8	1.9	2.4	2.0
Ratio: Status Indians/Other Residents	2.9	2.5	4.2	3.4	1.7	2.9
<b>External Causes</b>						
Status Indians	11.2	8.8	9.5	9.0	9.7	9.8
Other Residents	5.0	3.4	3.0	4.0	5.3	3.7
Ratio: Status Indians/Other Residents	2.2	2.6	3.2	2.3	1.8	2.6
<b>Unintentional Injuries</b>						
Status Indians	8.8	6.7	7.2	6.1	7.2	7.3
Other Residents	3.6	2.3	1.9	2.7	4.1	2.6
Ratio: Status Indians/Other Residents	2.4	2.9	3.7	2.3	1.7	2.8

## Indicators for Disease and Injuries – Health Authorities (Continued)

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>Mortality Rates (ASMR) – continued</b>						
Motor Vehicle Accidents						
Status Indians	3.6	2.0	1.9	1.8	2.6	2.5
Other Residents	1.6	0.8	0.5	0.7	2.1	0.9
Ratio: Status Indians/Other Residents	2.3	2.4	3.5	2.6	1.3	2.7
Accidental Poisoning						
Status Indians	1.1	2.6	3.1	1.5	0.8	1.7
Other Residents	0.7	0.5	0.6	0.7	0.4	0.6
Ratio: Status Indians/Other Residents	1.5	4.7	5.4	2.1	1.8	2.8
Suicide						
Status Indians	1.6	1.6	1.9	2.3	1.9	1.9
Other Residents	1.2	0.9	0.9	1.1	1.0	1.0
Ratio: Status Indians/Other Residents	1.3	1.8	2.2	2.0	2.0	2.0
All Causes of Death						
Status Indians	74.5	64.8	78.7	76.0	71.9	73.9
Other Residents	57.6	53.6	46.1	53.0	65.9	52.7
Ratio: Status Indians/Other Residents	1.3	1.2	1.7	1.4	1.1	1.4
Alcohol-Related Deaths						
Status Indians	19.0	11.8	21.0	15.1	16.6	17.1
Other Residents	4.7	3.0	2.8	4.0	5.2	3.5
Ratio: Status Indians/Other Residents	4.1	4.0	7.4	3.7	3.2	4.8
Medically Treatable Diseases						
Status Indians	0.9	0.9	1.6	1.5	1.0	1.2
Other Residents	0.4	0.3	0.3	0.3	0.4	0.3
Ratio: Status Indians/Other Residents	2.2	3.4	5.5	5.9	2.7	3.9

## Indicators for Disease and Injuries – Health Authorities (Continued)

Health Indicators Regional Data, 2002–2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>Mortality Rates (ASMR) – continued</b>						
Drug-Induced Deaths						
Status Indians	1.4	2.9	3.5	1.9	0.9	2.0
Other Residents	1.0	0.8	0.8	1.0	0.5	0.8
Ratio: Status Indians/Other Residents	1.4	3.7	4.2	1.9	1.7	2.4
Smoking-Attributable Mortality						
Status Indians	11.1	8.8	9.8	10.1	11.5	10.6
Other Residents	11.9	10.8	9.0	10.8	14.5	10.7
Ratio: Status Indians/Other Residents	0.9	0.8	1.1	0.9	0.8	1.0
<b>2. Life Expectancy</b>						
Status Indians	75.2	76.0	73.7	74.4	75.6	74.9
Other Residents	79.8	80.9	81.5	80.5	79.2	80.7
Ratio: Status Indians/Other Residents	0.9	0.9	0.9	0.9	1.0	0.9

**Notes and Sources**

- 1 Age-standardized mortality rate (ASMR) per 10,000 standard population (1991 Canada Census). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 2 Life expectancy at birth (years). BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.

## Indicators for Disease and Injuries – Health Services Delivery Areas

Health Indicators Regional Data, 2002–2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>1. Mortality Rates (ASMR)</b>																	
<b>HIV Disease</b>																	
Status Indians	0.6	0.7	0.6	0.4	0.5	0.7	0.0	6.4	1.2	1.3	1.1	0.0	0.2	1.7	0.3	1.3	
Other Residents	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8	0.1	0.2	0.1	0.1	0.0	0.1	0.0	0.2	
Ratio: Status Indians/Other Residents	8.5	4.8	4.7	2.9	3.9	6.4	0.0	8.0	11.3	6.8	13.1	0.0	6.5	11.6	8.8	6.0	
<b>All Cancers</b>																	
Status Indians	8.8	18.7	12.7	15.1	8.3	17.8	6.1	10.6	13.0	14.6	13.8	17.8	15.4	16.3	8.7	14.2	
Other Residents	16.3	16.5	17.5	17.0	14.9	15.1	12.5	13.2	14.2	15.5	17.1	18.1	17.9	20.2	18.7	15.5	
Ratio: Status Indians/Other Residents	0.5	1.1	0.7	0.9	0.6	1.2	0.5	0.8	0.9	0.9	0.8	1.0	0.9	0.8	0.5	0.9	
<b>Lung Cancer</b>																	
Status Indians	4.7	4.8	1.8	3.9	0.6	4.6	0.0	3.1	2.1	4.4	1.8	2.1	2.5	2.4	2.4	2.7	
Other Residents	4.3	4.7	5.1	4.5	4.2	3.6	3.4	3.4	3.3	3.7	4.7	5.5	5.5	6.0	5.3	4.1	
Ratio: Status Indians/Other Residents	1.1	1.0	0.4	0.9	0.1	1.3	0.0	0.9	0.6	1.2	0.4	0.4	0.5	0.4	0.4	0.7	
<b>Female Breast Cancer</b>																	
Status Indians	0.0	0.0	1.1	1.8	2.6	3.5	0.0	0.3	1.5	0.8	2.8	4.2	1.1	0.9	0.6	1.4	
Other Residents	1.8	2.1	2.1	2.2	2.0	2.1	1.7	1.6	2.3	2.4	2.3	2.0	2.3	2.3	3.3	2.1	
Ratio: Status Indians/Other Residents	0.0	0.0	0.5	0.8	1.3	1.7	0.0	0.2	0.7	0.3	1.2	2.1	0.5	0.4	0.2	0.7	
<b>Colorectal Cancer</b>																	
Status Indians	1.5	3.2	2.1	1.9	0.3	4.8	0.0	2.4	2.0	1.4	1.6	3.7	2.4	2.2	0.4	2.2	
Other Residents	1.3	1.5	1.6	1.7	1.5	1.5	1.4	1.4	1.4	1.4	1.7	1.6	2.0	1.9	1.6	1.5	
Ratio: Status Indians/Other Residents	1.2	2.1	1.3	1.1	0.2	3.3	0.0	1.7	1.4	1.0	0.9	2.3	1.2	1.1	0.3	1.5	
<b>Cervical Cancer</b>																	
Status Indians	0.0	0.8	1.5	0.0	0.0	0.0	0.0	0.7	0.3	1.4	0.2	0.6	0.0	0.0	0.0	0.5	
Other Residents	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	
Ratio: Status Indians/Other Residents	0.0	3.3	7.6	0.0	0.0	0.0	0.0	5.6	2.2	9.7	1.5	6.8	0.0	0.0	0.0	3.0	

Indicators for Disease and Injuries – Health Services Delivery Areas (Continued)

Health Indicators Regional Data, 2002–2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>Mortality Rates (ASMR) - Continued</b>																	
Prostate Cancer																	
Status Indians	0.0	1.2	1.5	0.9	0.0	1.4	0.0	2.6	0.0	2.6	0.0	0.0	2.1	3.0	4.4	0.0	1.7
Other Residents	2.6	2.4	2.3	2.0	2.2	2.6	1.4	1.9	2.0	1.9	2.0	1.9	2.5	2.4	2.6	3.0	2.1
Ratio: Status Indians/Other Residents	0.0	0.5	0.7	0.5	0.0	0.5	0.0	1.4	0.0	1.4	0.0	0.0	0.9	1.3	1.7	0.0	0.8
Endocrine/Nutritional/Metabolic																	
Status Indians	0.0	3.4	2.9	4.4	2.1	6.0	0.0	7.2	2.7	7.2	2.5	5.0	3.4	3.7	4.7	2.6	3.9
Other Residents	2.6	2.2	2.8	2.6	2.1	2.3	1.6	1.9	1.8	1.8	1.8	2.4	2.2	3.5	3.6	3.8	2.2
Ratio: Status Indians/Other Residents	0.0	1.6	1.0	1.7	1.0	2.6	0.0	4.0	1.4	4.0	1.4	2.1	1.5	1.1	1.3	0.7	1.8
Diabetes																	
Status Indians	0.0	3.1	2.4	3.7	1.0	5.2	0.0	6.1	2.7	6.1	1.9	4.3	2.5	3.0	3.7	2.6	3.3
Other Residents	2.1	1.6	2.2	2.1	1.7	1.8	1.3	1.4	1.4	1.4	1.4	1.9	1.7	3.0	2.7	3.2	1.7
Ratio: Status Indians/Other Residents	0.0	1.9	1.1	1.7	0.6	2.9	0.0	4.2	1.9	4.2	1.4	2.3	1.4	1.0	1.3	0.8	1.9
Circulatory System Diseases																	
Status Indians	18.8	14.8	20.5	18.7	7.6	11.4	2.8	12.1	12.1	26.9	15.8	20.1	23.0	18.8	16.1	18.0	18.4
Other Residents	18.2	16.8	18.6	17.9	16.9	18.5	11.7	14.4	14.4	15.9	14.9	17.2	16.8	21.0	18.6	20.3	16.5
Ratio: Status Indians/Other Residents	1.0	0.9	1.1	1.0	0.5	0.6	0.2	0.8	0.8	1.7	1.1	1.2	1.4	0.9	0.9	0.9	1.1
Ischemic Heart Disease																	
Status Indians	5.8	4.2	8.6	7.6	2.2	3.1	0.0	6.4	6.4	11.4	7.0	8.9	11.8	7.9	6.2	6.3	7.6
Other Residents	8.4	7.4	8.4	9.3	9.1	9.5	5.4	6.3	6.3	7.1	6.7	8.3	7.6	8.7	7.7	10.1	7.8
Ratio: Status Indians/Other Residents	0.7	0.6	1.0	0.8	0.2	0.3	0.0	1.0	1.0	1.6	1.0	1.1	1.5	0.9	0.8	0.6	1.0
Cerebrovascular Diseases																	
Status Indians	10.0	3.7	5.3	7.2	3.3	6.0	0.0	2.3	2.3	8.6	3.0	4.6	6.8	3.7	3.7	5.2	4.8
Other Residents	3.7	3.7	3.8	3.8	3.5	4.0	2.9	3.6	3.6	4.0	3.8	3.6	4.0	3.6	3.9	4.0	3.7
Ratio: Status Indians/Other Residents	2.7	1.0	1.4	1.9	0.9	1.5	0.0	0.6	0.6	2.1	0.8	1.3	1.7	1.0	0.9	1.3	1.3

## Indicators for Disease and Injuries – Health Services Delivery Areas (Continued)

Health Indicators Regional Data, 2002–2006	East Kootenay/ Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>Mortality Rates (ASMR) - Continued</b>																
<b>Respiratory Diseases</b>																
Status Indians	4.8	5.2	9.5	9.3	4.6	4.4	0.0	5.4	7.1	5.8	7.8	9.6	7.3	9.5	8.7	7.6
Other Residents	4.9	5.2	5.8	6.0	5.5	5.8	3.7	5.0	4.8	4.5	5.2	5.4	6.6	2.3	2.1	5.2
Ratio: Status Indians/Other Residents	1.0	1.0	1.6	1.5	0.8	0.8	0.0	1.1	1.5	1.3	1.5	1.8	1.1	4.1	4.1	1.5
<b>Pneumonia and Influenza</b>																
Status Indians	2.6	1.9	3.6	4.6	1.0	1.9	0.0	3.2	3.6	1.8	3.6	1.5	2.8	3.9	4.8	3.2
Other Residents	1.7	2.0	1.8	2.4	2.4	2.7	1.5	2.4	2.3	1.6	1.8	1.5	2.5	3.8	3.6	2.1
Ratio: Status Indians/Other Residents	1.6	1.0	2.1	1.9	0.4	0.7	0.0	1.3	1.6	1.1	2.0	1.0	1.1	1.0	1.4	1.5
<b>Chronic Lung Disease</b>																
Status Indians	1.5	1.4	3.5	3.2	3.0	1.9	0.0	1.2	2.0	2.7	2.0	4.4	3.3	4.0	3.2	2.8
Other Residents	2.6	2.5	3.2	2.8	2.3	2.2	1.5	1.8	1.8	2.1	2.6	2.9	3.2	0.4	0.3	2.3
Ratio: Status Indians/Other Residents	0.6	0.6	1.1	1.1	1.3	0.8	0.0	0.7	1.1	1.3	0.8	1.5	1.0	10.3	10.2	1.2
<b>Digestive System Diseases</b>																
Status Indians	3.2	4.1	8.0	5.6	5.4	4.1	4.7	9.0	5.7	3.0	6.9	9.9	4.4	3.9	1.7	5.8
Other Residents	2.1	2.1	2.6	2.1	1.9	2.0	1.4	2.0	1.8	1.8	2.0	2.3	2.5	2.4	2.0	2.0
Ratio: Status Indians/Other Residents	1.5	1.9	3.1	2.7	2.9	2.1	3.4	4.6	3.2	1.6	3.5	4.2	1.7	1.6	0.8	2.9
<b>External Causes</b>																
Status Indians	6.5	8.1	13.4	8.3	10.9	7.7	2.8	9.6	10.8	8.2	9.4	9.5	8.2	11.1	13.3	9.8
Other Residents	5.3	4.6	5.5	4.1	3.1	3.5	1.9	3.3	3.0	3.4	4.5	4.8	4.9	5.5	5.2	3.7
Ratio: Status Indians/Other Residents	1.2	1.8	2.4	2.0	3.6	2.2	1.5	2.9	3.6	2.4	2.1	2.0	1.7	2.0	2.6	2.6

## Indicators for Disease and Injuries – Health Services Delivery Areas (Continued)

Health Indicators Regional Data, 2002–2006	East Kootenay/ Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>Mortality Rates (ASMR) - Continued</b>																
<b>Unintentional Injuries</b>																
Status Indians	2.7	6.4	10.8	6.7	8.9	4.4	2.8	7.6	7.6	6.1	5.6	7.4	5.4	8.5	12.7	7.3
Other Residents	4.1	3.2	4.1	2.8	2.0	2.4	1.3	2.1	2.1	2.3	3.0	3.2	3.6	4.2	4.3	2.6
Ratio: Status Indians/Other Residents	0.6	2.0	2.6	2.4	4.4	1.9	2.1	3.6	3.6	2.6	1.9	2.3	1.5	2.0	3.0	2.8
<b>Motor Vehicle Accidents</b>																
Status Indians	0.6	3.3	4.2	2.2	2.1	1.7	2.8	1.7	2.6	1.2	2.4	1.4	1.1	3.4	7.3	2.5
Other Residents	1.8	1.2	1.9	1.2	0.7	0.8	0.5	0.4	0.8	0.5	0.9	1.0	1.7	2.1	2.4	0.9
Ratio: Status Indians/Other Residents	0.3	2.7	2.2	1.9	3.0	2.0	5.3	4.0	3.2	2.4	2.7	1.4	0.7	1.7	3.1	2.7
<b>Accidental Poisoning</b>																
Status Indians	0.6	0.9	1.3	1.5	4.9	2.1	0.0	4.1	1.9	2.0	0.9	2.2	0.3	1.2	1.5	1.7
Other Residents	0.6	0.8	0.8	0.6	0.4	0.6	0.1	0.8	0.4	0.8	0.7	0.7	0.4	0.5	0.4	0.6
Ratio: Status Indians/Other Residents	1.0	1.1	1.7	2.5	11.9	3.2	0.0	5.0	5.2	2.5	1.4	3.4	0.8	2.7	3.6	2.8
<b>Suicide</b>																
Status Indians	2.2	1.2	1.6	1.6	1.4	2.0	0.0	1.6	2.7	1.7	3.2	1.3	2.7	1.4	0.7	1.9
Other Residents	1.0	1.2	1.2	1.0	0.8	0.8	0.5	1.0	0.8	1.0	1.3	1.4	1.0	1.0	0.7	1.0
Ratio: Status Indians/Other Residents	2.2	1.0	1.3	1.6	1.6	2.3	0.0	1.6	3.5	1.7	2.5	0.9	2.7	1.3	0.9	2.0
<b>All Causes of Death</b>																
Status Indians	53.1	67.9	80.4	72.3	46.9	64.6	20.6	68.4	89.3	63.6	77.3	85.9	69.4	80.7	60.8	73.9
Other Residents	57.5	55.6	61.8	57.3	51.2	54.8	37.5	47.8	48.2	49.7	56.0	57.9	65.5	66.2	65.7	52.7
Ratio: Status Indians/Other Residents	0.9	1.2	1.3	1.3	0.9	1.2	0.5	1.4	1.9	1.3	1.4	1.5	1.1	1.2	0.9	1.4

## Indicators for Disease and Injuries – Health Services Delivery Areas (Continued)

Health Indicators Regional Data, 2002–2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>Mortality Rates (ASMR) - Continued</b>																	
Alcohol-Related Deaths																	
Status Indians	19.8	13.9	21.6	16.8	10.7	4.5	0.0	18.8	24.6	12.4	12.7	22.6	13.7	23.6	14.4	17.1	
Other Residents	5.7	4.2	4.8	3.1	3.1	2.8	1.6	3.3	2.8	3.6	4.2	5.3	5.7	4.8	5.6	3.5	
Ratio: Status Indians/Other Residents	3.5	3.3	4.5	5.5	3.4	1.6	0.0	5.7	8.7	3.5	3.0	4.3	2.4	4.9	2.6	4.8	
Medically Treatable Diseases																	
Status Indians	0.0	0.7	1.1	0.6	0.5	1.7	0.0	2.0	1.2	1.6	1.5	1.4	0.4	1.7	1.7	1.2	
Other Residents	0.3	0.4	0.4	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.3	0.3	
Ratio: Status Indians/Other Residents	0.0	1.8	2.6	2.4	2.2	5.7	0.0	5.7	4.3	6.8	6.2	4.2	1.0	4.4	6.2	3.9	
Drug-Induced Deaths																	
Status Indians	0.6	1.6	1.4	1.7	4.8	2.9	0.0	4.8	1.6	2.8	1.0	2.6	0.6	1.2	1.1	2.0	
Other Residents	0.7	1.1	1.0	0.8	0.7	0.9	0.2	1.1	0.5	1.1	0.9	0.8	0.5	0.6	0.3	0.8	
Ratio: Status Indians/Other Residents	0.9	1.4	1.5	2.0	7.1	3.3	0.0	4.2	3.2	2.7	1.1	3.3	1.1	2.1	4.0	2.4	
Smoking-Attributable Mortality																	
Status Indians	11.6	10.4	11.2	10.8	5.2	8.2	2.7	8.6	11.3	10.7	8.8	12.5	11.6	11.2	11.5	10.6	
Other Residents	11.6	11.4	13.0	11.9	10.5	10.7	8.0	9.2	9.3	9.7	11.7	12.5	13.9	14.8	14.3	10.7	
Ratio: Status Indians/Other Residents	1.0	0.9	0.9	0.9	0.5	0.8	0.3	0.9	1.2	1.1	0.8	1.0	0.8	0.8	0.8	1.0	
<b>2. Life Expectancy</b>																	
Status Indians	77.1	76.1	74.4	75.4	76.3	76.8	81.8	73.4	73.9	75.4	74.1	74.0	76.1	74.1	77.6	74.9	
Other Residents	80.0	80.1	79.3	79.8	81.2	81.0	82.7	81.0	81.7	81.0	80.0	79.9	79.4	79.1	79.2	80.7	
Ratio: Status Indians/Other Residents	1.0	1.0	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	1.0	0.9	1.0	0.9	

**Notes and Sources**

- 1 Age-standardized mortality rate (ASMR) per 10,000 standard population (1991 Canada Census), BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.
- 2 Life expectancy at birth (years), BC Vital Statistics Agency, 2008; prepared by IM/IT Division, Ministry of Health Services, 2008.

Indicators for Physical Environment—Health Service Delivery Areas

Health Indicators Regional Data, 2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>1. Housing Quality Assessment</b>																	
Adequate	60.8%	n/a	86.1%	73.5%	67.1%	62.9%	72.5%	n/a	85.8%	55.4%	76.6%	62.5%	69.5%	75.8%	62.1%	73.2%	70.6%
Major Renovations	31.3%	n/a	11.0%	19.7%	28.0%	27.6%	19.6%	n/a	10.8%	35.7%	17.7%	29.8%	21.5%	18.6%	25.7%	22.7%	22.5%
Repair	7.9%	n/a	2.9%	6.7%	4.8%	9.5%	7.8%	n/a	3.4%	8.8%	5.7%	7.7%	9.0%	5.1%	12.2%	4.1%	6.8%
Renovation or Repair	39.2%	n/a	13.9%	26.5%	32.9%	37.1%	27.5%	n/a	14.2%	44.6%	23.4%	37.5%	30.5%	23.8%	37.9%	26.8%	29.3%

Notes and Sources

1 Housing and Structural Assets data, Indian and Northern Affairs Canada, 2006.

## Indicators for Health Services—Health Authorities

Health Indicators Regional Data, 2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>1. Medical Services Plan Utilization – Rate per 1,000 (2006/2007)</b>						
Status Indians	703.1	662.5	654.9	753.7	713.0	708.1
Other Residents	844.2	840.6	827.3	815.5	835.6	844.0
Ratio: Status Indians/Other Residents	0.8	0.8	0.8	0.9	0.9	0.8
<b>2. Preventable Admissions to Hospital – Rate per 100,000 (2006/2007)</b>						
Status Indians	45.1	43.8	60.9	54.4	64.0	54.5
Other Residents	47.4	26.8	22.1	33.9	55.4	32.4
Ratio: Status Indians/Other Residents	1.0	1.6	2.8	1.6	1.2	1.7
<b>3. Prescriptions for Antimanic Agents – Rate per 10,000 (2006)</b>						
Status Indians	12.3	18.8	18.5	8.0	13.9	14.7
Other Residents	29.5	23.7	25.1	25.5	30.3	27.6
Ratio: Status Indians/Other Residents	0.4	0.8	0.7	0.3	0.5	0.5
<b>4. Prescriptions for Anti-Infectives – Percentage (2006)</b>						
Status Indians	36.9	37.0	40.6	42.7	43.5	42.8
Other Residents	34.2	36.8	35.2	33.2	37.8	38.0
Ratio: Status Indians/Other Residents	1.1	1.0	1.2	1.3	1.2	1.1
<b>5. Prescriptions for Antidepressants – Rate per 1,000 (2006)</b>						
Status Indians	79.5	88.6	99.6	91.7	93.7	96.0
Other Residents	125.3	97.9	87.5	124.0	117.1	116.0
Ratio: Status Indians/Other Residents	0.6	0.9	1.1	0.7	0.8	0.8
<b>6. Prescriptions for Antipsychotics – Rate per 1,000 (2006)</b>						
Status Indians	18.1	24.5	32.7	15.6	18.4	22.1
Other Residents	23.4	18.7	22.7	23.4	19.3	22.8
Ratio: Status Indians/Other Residents	0.8	1.3	1.4	0.7	1.0	1.0

## Indicators for Health Services—Health Authorities (Continued)

Health Indicators Regional Data, 2006	Interior	Fraser	Vancouver Coastal	Vancouver Island	Northern	British Columbia
<b>7. Prescriptions for Anxiolytics – Percentage (2006)</b>						
Status Indians	7.0	7.7	9.2	8.0	9.5	8.8
Other Residents	10.8	8.9	9.3	10.9	8.6	10.2
Ratio: Status Indians/Other Residents	0.6	0.9	1.0	0.7	1.1	0.9
<b>8. Prescriptions for Cerebral Stimulants – Rate per 1,000 (2006)</b>						
Status Indians	10.1	12.7	9.6	7.2	10.3	10.3
Other Residents	10.3	8.0	7.4	8.0	10.4	8.9
Ratio: Status Indians/Other Residents	1.0	1.6	1.3	0.9	1.0	1.2
<b>9. Hospitalization Rates – Suicide/Attempted Suicide – Rate per 100,000 (2006/2007)</b>						
Status Indians	93.6	80.4	85.5	189.1	236.1	155.0
Other Residents	35.7	33.6	20.3	34.2	47.8	32.5
Ratio: Status Indians/Other Residents	2.6	2.4	4.2	5.5	4.9	4.8
<b>10. Hospitalization Rates – Homicide/Attempted Homicide – Rate per 100,000 (2006/2007)</b>						
Status Indians	137.5	103.3	192.4	177.6	299.0	208.0
Other Residents	41.0	41.4	27.6	36.4	56.0	41.0
Ratio: Status Indians/Other Residents	3.4	2.5	7.0	4.9	5.3	5.1
<b>11. Community Follow-up for Mental Health Clients – Rate per 100 (2006/2007)</b>						
Status Indians	67.5	61.0	68.2	61.1	57.3	61.3
Other Residents	81.5	76.4	83.7	82.2	80.3	79.3
Ratio: Status Indians/Other Residents	0.8	0.8	0.8	0.7	0.7	0.8

### Notes and Sources

- 1 Includes all services for which payment is claimed from Medical Services Plan (MSP). Data excludes third-party agencies such as (CBC or WCB, form fees and incentives; payments for services under the Reciprocal Agreement, and claims in progress. Those people that did not have a region of residence identified were included in the provincial totals only. Prepared by Information Support (Project 2008\_029ay). Ministry of Health Services, MSP Claims Database; prepared by Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.
- 2 Preventable admissions are health conditions that can usually be managed in the community, without the need for hospital admission. Data include Acute care level (including newborns). Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data based on ICD-10-CA. Age calculated as of December 31 (<75 years). People without a region of residence identified (203 other resident cases) were only included in provincial totals. Ministry of Health Services, Hospital Discharge Abstract Database.
- 3 An antimanic agent is a substance used to treat mood disorders such as bipolar disorder. The antimanic agent reduces the intensity of the mania and lessens the frequency of the mood swings (Canadian Pharmacists Association, 2004). People without a region of residence identified (13 Status Indians and 760 other residents) were only included in provincial totals. BC PharmaNet data, provided by the BC College of Pharmacists.
- 4 An anti-infective is something capable of acting against infection, and includes antibacterials, antibiotics, antifungals, antiprotazoans, and antivirals (Medicinenet.com). People without a region of residence identified (3,910 Status Indians and 106,220 other residents) were only included in provincial totals. BC PharmaNet data, provided by the BC College of Pharmacists.
- 5 Antidepressants are psychiatric medications used for alleviating depression. They include drug groups known as monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants (TCAs), and selective serotonin reuptake inhibitors (SSRIs). These medications are now among the drugs most commonly prescribed by medical psychologists, psychiatrists, and general practitioners (Canadian Pharmacists Association, 2004). People without a region of residence identified (910 Status Indians and 44,262 other residents) were only included in provincial totals. BC PharmaNet data, provided by the BC College of Pharmacists.
- 6 Antipsychotic drugs are used to treat psychotic disorders such as schizophrenia, manic depression, or paranoia (Canadian Pharmacists Association, 2004). People without a region of residence identified (171 Status Indians and 6,268 other residents) were only included in provincial totals. BC PharmaNet data, provided by the BC College of Pharmacists.
- 7 Anxiolytics are prescribed for short-term relief of extreme anxiety as well as nervousness caused by psychological problems (Canadian Pharmacists Association, 2004). People without a region of residence identified (748 Status Indians and 26,372 other residents) were only included in provincial totals. BC PharmaNet data, provided by the BC College of Pharmacists.
- 8 Cerebral stimulants (nervous system stimulants) act on the central nervous system and provide a temporary sense of alertness and well-being as well as relief from fatigue. For example, Ritalin (methylphenidate) and Adderal (amphetamine) used for treating attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD), are central nervous system stimulants that help the brain be more selective in the way it filters and responds to various stimuli (Canadian Pharmacists Association, 2004). People without a region of residence identified (81 Status Indians and 2,112 other residents) were only included in provincial totals. BC PharmaNet data, provided by the BC College of Pharmacists.
- 9 Suicides also include attempted suicides. The classification of suicide is determined by the receiving doctor in the emergency intake and/or ambulance personnel (paramedics). Data include Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data based on ICD-10-CA. People without a region of residence identified (12 Status Indians and 40 other residents) were only included in provincial totals. Data was extracted from the Discharge Abstract Database (DAD), Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.
- 10 Homicides also include injuries purposely inflicted by another person with intent to kill or injure (assaults). The classification of homicide is determined by the receiving doctor in the emergency intake and/or ambulance personnel (paramedics). Produced using data for Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data based on ICD-10-CA. People without a region of residence identified (26 Status Indians and 129 other residents) were only included in provincial totals. Data was extracted from the Discharge Abstract Database (DAD), Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.
- 11 Acute or rehabilitation mental health clients, aged 15–64, who received at least one follow-up at a community mental health centre, or from a general practitioner or psychiatrist (Medical Services Plan fee-for-service) within 30 days from hospital discharge. Includes all locations except inpatient locations. Clients whose length of stay at Riverview Hospital is 180 days or more are excluded. MH Hospital Separations include those with a diagnosis of ICD-10 F50-F52, F55, F59, F530, F531, F840, F841, F843-F845, F848, F849, Z55-Z57, Z60-Z63, Z65, Z72, Z73, Z281, Z640, Z641, Z644, R410, G312, and G442. Medical Services Plan (MSP) visits are restricted to those with a diagnosis of ICD-9 290-314, V61, V62, 04A, or 50B. People without a region of residence identified (128 Status Indians and 1,263 other residents) were only included in provincial totals. Mental Health Data Warehouse and MSP Claims Database, Ministry of Health Services.

Indicators for Health Services—Health Service Delivery Areas

Health Indicators Regional Data	East Kootenay	Kootenay Boundary	Okanagan	Thompson Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>1. Medical Services Plan Utilization – Rate per 1,000 (2006/2007)</b>																	
Status Indians	551.6	480.5	683.4	741.8	694.8	636.6	642.2	625.2	581.9	757.8	693.9	769.5	787.9	743.7	722.1	576.5	708.1
Other Residents	807.7	830.7	857.9	841.8	834.2	831.5	851.4	840.2	822.5	839.7	807.7	818.5	840.8	857.7	838.0	815.1	844.0
Ratio: Status Indians/Other Residents	0.7	0.6	0.8	0.9	0.8	0.8	0.8	0.7	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.8
<b>2. Preventable Admissions to Hospital – Rate per 100,000 (2006/2007)</b>																	
Status Indians	32.2	66.9	43.8	46.1	41.2	46.7	44.9	0.0	63.1	62.9	42.1	45.0	88.5	78.4	45.6	56.0	54.5
Other Residents	61.7	49.2	41.6	50.6	35.1	22.7	27.1	21.8	21.0	25.0	25.7	41.4	43.2	56.7	58.0	48.8	32.4
Ratio: Status Indians/Other Residents	0.5	1.4	1.1	0.9	1.2	2.1	1.7	0.0	3.0	2.5	1.6	1.1	2.0	1.4	0.8	1.1	1.7
<b>3. Prescriptions for Antimanic Agents – Rate per 10,000 (2006)</b>																	
Status Indians	11.9	28.3	19.4	8.2	14.4	25.2	19.0	10.4	25.7	9.5	13.1	6.8	4.9	8.7	21.4	15.4	14.7
Other Residents	19.1	24.0	30.7	33.7	20.6	27.2	22.0	16.1	27.9	25.2	30.9	20.2	20.0	24.7	36.2	22.8	27.6
Ratio: Status Indians/Other Residents	0.6	1.2	0.6	0.2	0.7	0.9	0.9	0.6	0.9	0.4	0.4	0.3	0.2	0.4	0.6	0.7	0.5
<b>4. Prescriptions for Anti-infectives – Percentage (2006)</b>																	
Status Indians	29.2	25.2	35.7	38.9	38.8	37.0	34.7	30.9	38.3	44.7	37.0	43.3	47.8	44.6	43.5	39.6	42.8
Other Residents	33.9	34.5	33.8	34.7	36.7	35.5	37.9	32.2	34.9	37.9	33.5	32.4	34.0	40.2	35.7	40.0	38.0
Ratio: Status Indians/Other Residents	0.9	0.7	1.1	1.1	1.1	1.0	0.9	1.0	1.1	1.2	1.1	1.3	1.4	1.1	1.2	1.0	1.1
<b>5. Prescriptions for Antidepressants – Rate per 1,000 (2006)</b>																	
Status Indians	65.8	92.5	85.5	77.7	83.8	90.0	94.0	85.1	113.0	82.7	88.6	83.5	112.8	97.1	95.5	77.1	96.0
Other Residents	112.3	126.7	127.0	127.1	118.7	89.2	97.1	65.6	87.0	103.8	126.7	120.8	122.8	119.1	122.7	103.5	116.0
Ratio: Status Indians/Other Residents	0.6	0.7	0.7	0.6	0.7	1.0	1.0	1.3	1.3	0.8	0.7	0.7	0.9	0.8	0.8	0.7	0.8
<b>6. Prescriptions for Antipsychotics – Rate per 1,000 (2006)</b>																	
Status Indians	12.3	18.9	20.5	17.6	21.2	28.3	25.6	20.7	45.6	16.4	21.8	11.7	17.1	16.7	24.7	9.8	22.1
Other Residents	18.8	23.3	25.3	22.2	21.5	19.1	17.3	13.1	27.1	19.3	26.5	20.3	20.1	20.3	21.2	14.2	22.8
Ratio: Status Indians/Other Residents	0.7	0.8	0.8	0.8	1.0	1.5	1.5	1.6	1.7	0.9	0.8	0.6	0.9	0.8	1.2	0.7	1.0

## Indicators for Health Services—Health Service Delivery Areas (Continued)

Health Indicators Regional Data, 2006	East Kootenay	Kootenay Boundary	Okanagan	Thompson Shuswap	Fraser East	Fraser North	Fraser South	Richmond	Vancouver	North Shore/ Coast Garibaldi	South Vancouver Island	Central Vancouver Island	North Vancouver Island	Northwest	Northern Interior	Northeast	British Columbia
<b>7. Prescriptions for Anxiolytics – Percentage (2006)</b>																	
Status Indians	5.2	6.1	7.5	7.0	7.6	7.8	7.6	8.8	9.9	8.5	7.8	7.1	10.0	8.6	10.8	9.9	8.8
Other Residents	9.1	10.4	11.6	10.3	9.2	8.3	9.2	8.0	9.2	10.3	11.1	11.0	10.0	9.2	8.3	8.7	10.2
Ratio: Status Indians/Other Residents	0.6	0.6	0.6	0.7	0.8	0.9	0.8	1.1	1.1	0.8	0.7	0.7	1.0	0.9	1.3	1.1	0.9
<b>8. Prescriptions for Cerebral Stimulants – Rate per 1,000 (2006)</b>																	
Status Indians	5.5	11.3	12.7	9.4	10.0	12.0	17.0	16.6	11.4	6.7	8.7	5.3	9.6	8.0	15.3	6.6	10.3
Other Residents	8.5	6.7	11.1	10.9	8.4	6.9	8.7	7.3	6.8	8.9	8.5	7.1	8.7	11.1	11.3	8.0	8.9
Ratio: Status Indians/Other Residents	0.7	1.7	1.1	0.9	1.2	1.7	2.0	2.3	1.7	0.8	1.0	0.7	1.1	0.7	1.4	0.8	1.2
<b>9. Hospitalization Rates – Suicide/Attempted Suicide – Rate per 100,000 (2006/2007)</b>																	
Status Indians	79.3	94.3	122.5	81.7	18.0	84.0	164.7	103.7	38.5	147.5	87.3	210.1	258.1	290.8	207.7	107.5	155.0
Other Residents	42.2	41.7	35.1	31.8	37.3	38.0	28.2	20.9	19.6	21.7	28.4	41.5	37.1	68.1	52.5	19.7	32.5
Ratio: Status Indians/Other Residents	1.9	2.3	3.5	2.6	0.5	2.2	5.8	5.0	2.0	6.8	3.1	5.1	7.0	4.3	4.0	5.5	4.8
<b>10. Hospitalization Rates – Homicide/Attempted Homicide – Rate per 100,000 (2006/2007)</b>																	
Status Indians	237.8	283.0	112.3	129.7	99.1	111.9	101.4	207.5	205.4	173.5	131.0	210.1	159.8	342.9	308.2	122.9	208.0
Other Residents	48.8	40.4	41.3	37.9	37.3	41.2	43.1	14.3	34.7	20.6	35.5	36.6	38.9	51.5	58.7	54.2	41.0
Ratio: Status Indians/Other Residents	4.9	7.0	2.7	3.4	2.7	2.7	2.4	14.5	5.9	8.4	3.7	5.7	4.1	6.7	5.2	2.3	5.1
<b>11. Community Follow-up for Mental Health Clients – Rate per 100 (2006/2007)</b>																	
Status Indians	60.0	68.4	72.7	65.6	55.7	67.9	65.4	75.0	74.0	60.2	71.4	62.0	54.9	57.7	57.8	55.2	61.3
Other Residents	79.1	83.4	81.5	81.8	72.5	79.7	75.7	82.4	82.4	88.0	82.0	83.6	77.9	82.0	83.0	74.5	79.3
Ratio: Status Indians/Other Residents	0.8	0.8	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.7	0.9	0.7	0.7	0.7	0.7	0.7	0.8

## Notes and Sources

- 1 Includes all services for which payment is claimed from Medical Services Plan (MSP). Data excludes third-party agencies such as (CBC or WCB, form fees and incentives; payments for services under the Reciprocal Agreement, and claims in progress. Those people that did not have a region of residence identified were included in the provincial totals only. Prepared by Information Support (Project 2008\_029ay). Ministry of Health Services, MSP Claims Database; prepared by Corporate Support, Planning and Legislation, Ministry of Healthy Living and Sport, 2008.
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- 9 Suicides also include attempted suicides. The classification of suicide is determined by the receiving doctor in the emergency intake and/or ambulance personnel (paramedics). Data include Acute, Rehab, and Day Surgery care levels, including newborns. Residents of BC treated out of province are included and non-BC residents are excluded. Riverview Hospital cases with length of stay greater than 180 days are excluded. Data based on ICD-10-CA. People without a region of residence identified (12 Status Indians and 40 other residents) were only included in provincial totals. Data was extracted from the Discharge Abstract Database (DAD), Ministry of Health Services; prepared by Population Health Surveillance and Epidemiology, Ministry of Healthy Living and Sport, 2008.
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# Appendix C

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### Chapter 1

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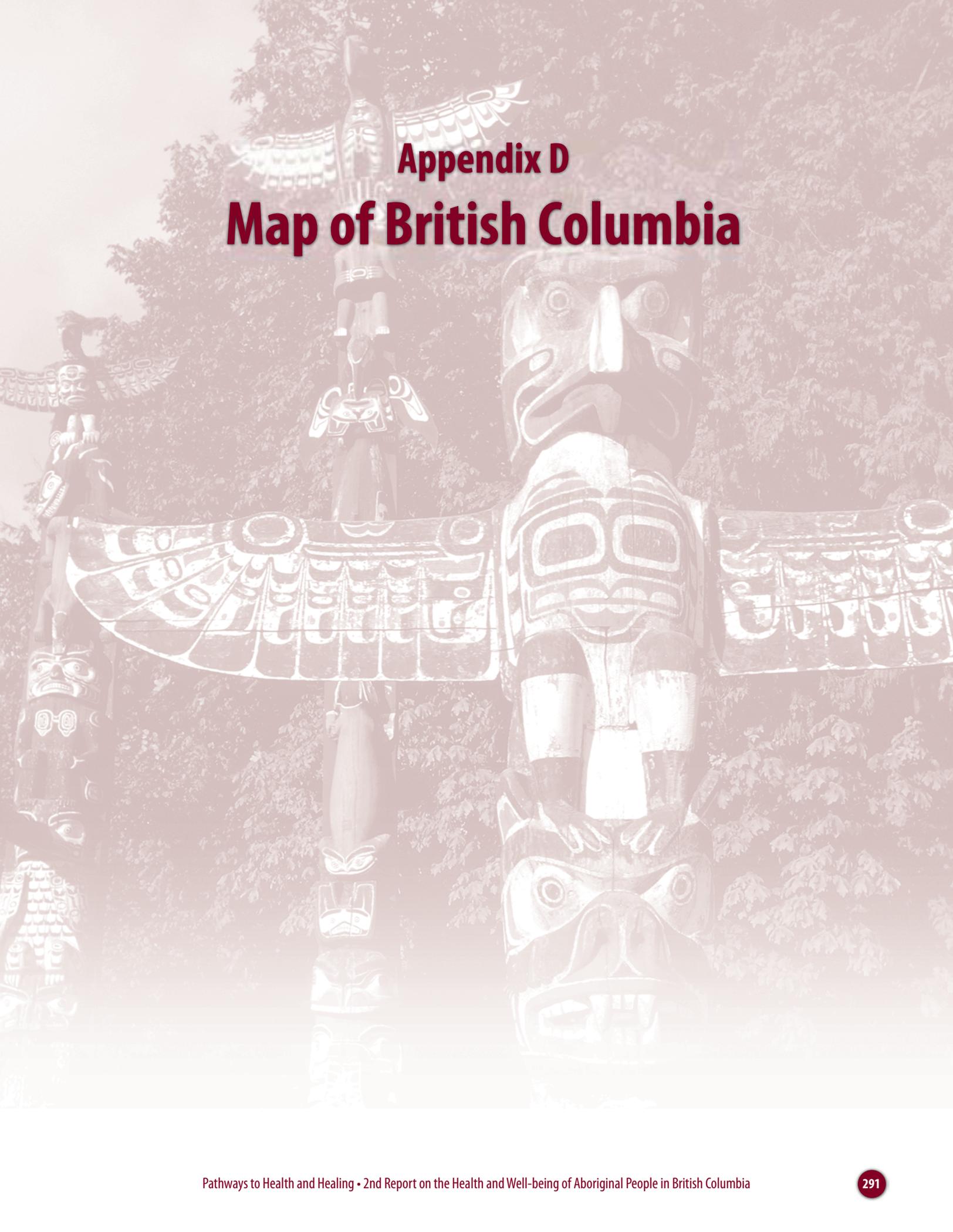
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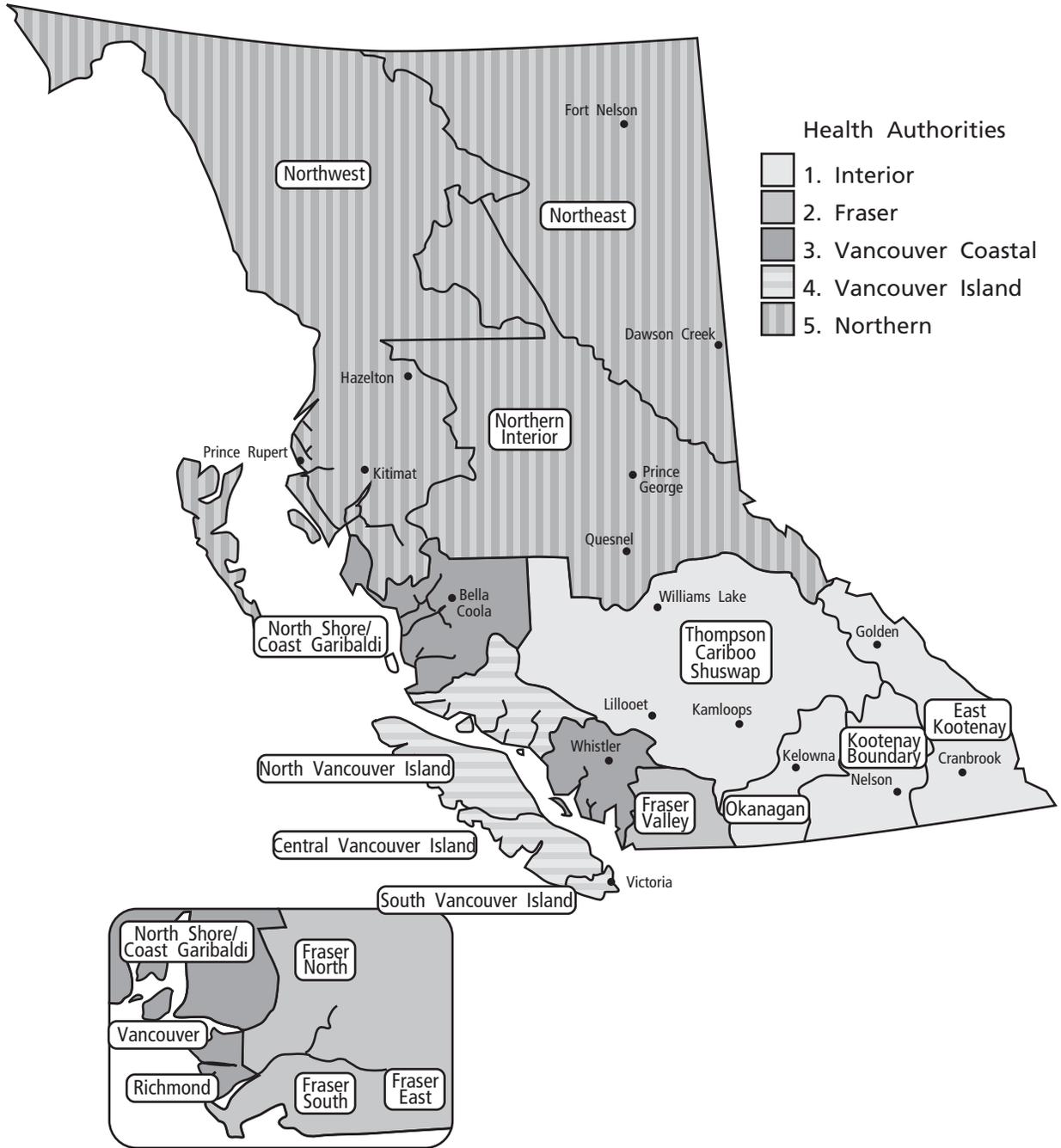
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