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A Statistical Profile on the Health of First Nations in Canada



Self-rated Health and Selected Conditions, 2002 to 2005



Canada 

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A Statistical Profile on the Health of First Nations in Canada: Self-rated Health and Selected Conditions, 2002 to 2005 is available on the Internet at the following address: <http://www.hc-sc.gc.ca/fniah-spnia/pubs/aborig-autoch/index-eng.php>

Également disponible en français sous le titre :

Profil statistique de la santé des Premières nations au Canada : Auto-évaluation de la santé et affections choisies, de 2002 à 2005

This publication can be made available on request on diskette, large print, audio-cassette and Braille.

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HC Pub.: 3556
Cat.: H34-193/2-2008

ISBN: 978-0-662-05796-3

TABLE OF CONTENTS

| | |
|--|-----|
| List of Figures..... | ii |
| Highlights | iii |
| Introduction | 1 |
| Data Sources and Limitations..... | 5 |
| Results and Discussion | 11 |
| Self-rated Health, and Mental Health and Well-being..... | 11 |
| Prevalence of Disability..... | 13 |
| Prevalence and/or Incidence of Disease..... | 15 |
| Selected Health Conditions | 15 |
| Diabetes..... | 16 |
| Tuberculosis..... | 18 |
| Human Immunodeficiency Virus..... | 20 |
| Tuberculosis-Human Immunodeficiency Virus Co-infection | 23 |
| Hepatitis C Virus..... | 23 |
| Sexually Transmitted Infections | 24 |
| Conclusion | 25 |
| References..... | 26 |
| Glossary | 30 |
| Acronyms Used in this Report..... | 34 |
| Acknowledgements | 35 |
| Additional Resources | 36 |
| Feedback Form | 39 |



LIST OF FIGURES

| | | |
|------------|--|----|
| Figure 1. | Age Distribution of First Nations and Canadian Populations, 2002..... | 4 |
| Figure 2. | Self-rated Health, First Nations On-reserve (2002-03) and General Canadian Population (2003), Aged 18 Years and Over..... | 11 |
| Figure 3. | Prevalence of Disability, First Nations On-reserve, by Age Group, 2002-03, Aged 18 Years and Over | 13 |
| Figure 4. | Age-standardized Disability, First Nations On-reserve (2002-03) and General Canadian Population (2003), Adults | 14 |
| Figure 5. | Age-standardized Prevalence of Selected Health Conditions, First Nations On-reserve (2002-03) and General Canadian Population (2003), Adults..... | 15 |
| Figure 6. | Prevalence of Diabetes among First Nations On-reserve (2002-03) and General Canadian Population (2003), Aged 25 Years and Over..... | 17 |
| Figure 7. | Proportion of Total Tuberculosis Cases in Canada, by Origin, 2004..... | 18 |
| Figure 8. | Crude Tuberculosis Incidence Rate in Canada, by Origin, 1994-2004..... | 19 |
| Figure 9. | Distribution of Exposure Category for Estimated Incident HIV Infections among Aboriginal Persons and the General Canadian Population, 2005 | 20 |
| Figure 10. | Distribution of Positive HIV Test Reports among Aboriginal Persons and the General Canadian Population, by Age Group, 1998 to December 31, 2006..... | 21 |
| Figure 11. | Proportion of First Nations Adults having undergone a Test for HIV in their Lifetime, by Age Group, 2002-03, Aged 18 Years and Over..... | 22 |

HIGHLIGHTS

- Overall, 79.7% of First Nations on-reserve report “good” to “excellent” health compared to 88.0% of the general Canadian population.
- The age-standardized prevalence of disability among First Nations adults on-reserve (28.5%) is similar to the prevalence among the general Canadian population (25.8%).
- The age-standardized prevalence of diabetes among First Nations adults on-reserve is higher than that in the general Canadian population (19.7% vs. 5.2%, respectively).
- In 2004, the tuberculosis incidence rate among Registered Indians is considerably higher than the overall Canadian rate (27.5 vs. 5.0 per 100,000 population, respectively).
- It is estimated that approximately 9% of all new human immunodeficiency virus infections in Canada in 2005 occurred in Aboriginal persons. The overall infection rate among Aboriginal persons is estimated to be about 2.8 times higher than among non-Aboriginal persons.
- In 2005 injecting drug users accounted for a higher proportion of new human immunodeficiency virus infections among Aboriginal Canadians than among all Canadians (53% vs. 14%, respectively).
- Findings from the enhanced surveillance of hepatitis C virus (Enhanced Hepatitis Strain Surveillance System) show that Canadian-born Aboriginal people are 5.8 times more likely than Canadian-born non-Aboriginal people to have newly acquired hepatitis C virus infection.
- Overall, ethnicity data are included for approximately one-fifth to one-quarter of all sexually transmitted infection cases reported to the Public Health Agency of Canada. Among cases with ethnicity data, in 2005, Aboriginal persons accounted for 15.5% of reported chlamydia cases, 25.2% of reported gonorrhoea cases and 21.9% of reported infectious syphilis cases.

INTRODUCTION

This report presents a national description of the health status of First Nations people on-reserve in Canada. It differs from previous editions of *A Statistical Profile on the Health of First Nations in Canada*, as each chapter is being published as a stand-alone report.

The publication of this report would not be possible without the contribution of Health Canada's First Nations and Inuit Health Branch (FNIHB), the Assembly of First Nations (AFN), the Public Health Agency of Canada (PHAC), and the Health Data Technical Working Group. Their hard work and dedication is gratefully acknowledged and further listed in the **Acknowledgements** section of this report.

Background

Analysis of the health of a population encompasses the assessment of typical health indicators such as death and prevalence of disease, as well as other factors that may influence health, including mental well-being, quality of life, and life satisfaction. Not only does monitoring the health status of a population allow a better understanding of the conditions that determine the health of a population, it also allows the evaluation of the effects of current interventions and programs.¹

The following indicators pertaining to health status are discussed in this report:

1. Self-rated Health, and Mental Health and Well-being
2. Prevalence of Disability
3. Prevalence and/or Incidence of:
 - Selected Health Conditions
 - Diabetes
 - Tuberculosis
 - Human Immunodeficiency Virus

- Tuberculosis-Human Immunodeficiency Virus Co-infection
- Hepatitis C Virus
- Sexually Transmitted Infections

The First Nations and Inuit Health Branch has a role in protecting the health of First Nations people and supports delivery of public health programs/services in First Nations communities. However, due to several factors including lack of federal legislative authority for public health, and other historical, legal and political factors, accessing comprehensive health information for First Nations people is a challenge.

Population health assessment and health surveillance are two of the five core functions of a public health system and are the foundation for essential public health activities including:

- Interpretation of disease/injury trends;
- Recognition of emerging diseases;
- Supporting evidence-based public health actions;
- Evaluation of programs/policies and interventions; and,
- Setting priorities and guiding resource allocation.

It is well recognized that there are major gaps in health information of First Nations people. While some progress has been made to address known gaps in First Nations health information, such as the First Nations Regional Longitudinal Health Survey (RHS), sources of data and data coverage remain highly fragmented. The continuing health disparities between First Nations and other Canadians underline the need to work collaboratively with stakeholders and partners to develop models, which will close existing gaps in First Nations health information and allow for evidence-based public health decision-making.

Health Canada Activities

The First Nations and Inuit Health Branch (FNIHB) of Health Canada supports the delivery of public health and health promotion services on-reserve and in Inuit communities, and provides some targeted services off-reserve and in urban centres. It provides drug, dental and ancillary health services, regardless of residence. FNIHB also provides primary care services on-reserve in remote and isolated areas, where there are no provincial services readily available. As of May 2008, FNIHB funded over 500 health facilities across the country, including 74 nursing stations, 222 health centres, 41 alcohol and drug treatment centres, and nine solvent abuse centres. Home and community care were provided in 600 communities, and primary health care was provided in approximately 200 remote communities.

First Nations and Inuit health programs are delivered across the country through the collaborative efforts of headquarters and regional employees working in partnership with First Nations and Inuit communities. Regional offices are located in every province, with the exception of the Atlantic Provinces, which are represented by the Atlantic Region located in Halifax, Nova Scotia. The Northern Region (formerly the Northern Secretariat) – located in Ottawa and Whitehorse – is responsible for programs in the Northwest Territories, the Yukon and Nunavut. Each region has its own unique characteristics. First Nations and Inuit Health regional staff (members of the Regions and Programs Branch) play a critical role in ensuring that programs and services effectively respond to the needs of communities within their jurisdiction.

In order to effectively carry out its role, FNIHB, as with First Nations and Inuit communities, needs information on population health status, health determinants and risk factors. To this end,

the regional offices collect and report information from various sources. Territories are not required to report vital statistics as they have responsibility for primary health care; however, mandatory reporting requirements are in place for FNIHB-funded programs including communicable disease control and environmental health initiatives.

Communicable disease control includes reporting on immunization levels (by age, sex and antigen). This reporting may be required by provincial regulations. For diseases with epidemic potential, the provincial, territorial and regional offices require notification within 24 hours. It should be noted that legislation to support communicable disease control is under the domain of provincial and territorial governments.

Environmental health information, in relation to FNIHB programs, includes the total number and percentage of facilities meeting provincial, territorial or federal health and environmental standards for food services, water supply, sewage and garbage, pollution and hazardous substances. Within 24 hours, communities must also notify Health Canada of any environmental hazards or conditions that may have significant environmental impacts, including the steps taken to remedy the particular situation.

Further information on the past and present role of Health Canada in delivering services to First Nations and Inuit can be found on the Branch website at http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/fnihb-dgspni/services_e.html.

Provincial and Territorial Activities

Health care in Canada is largely under provincial and territorial jurisdiction. As such, First Nations and Inuit individuals obtain much of their care from the provincial and/or territorial health systems, including hospitals or physicians in private practice. Data relating to these individuals are held in provincial/territorial databases. Other health services (such as dental care, prescriptions and medical supplies), as well as allied health services situated outside of hospitals (such as mental health services, community-based prevention and home care) are generally not provided by provincial governments to First Nations on-reserve. The costs of these additional health services fall to the federal jurisdiction, under the policy of Health Canada. For example, the federal government pays for health professionals such as dentists, dental therapists and optometrists who provide services to remote and isolated communities on a visiting basis, or for First Nations and Inuit travelling to larger centres for specialized/emergency treatments.

Population Trends by Age and Sex

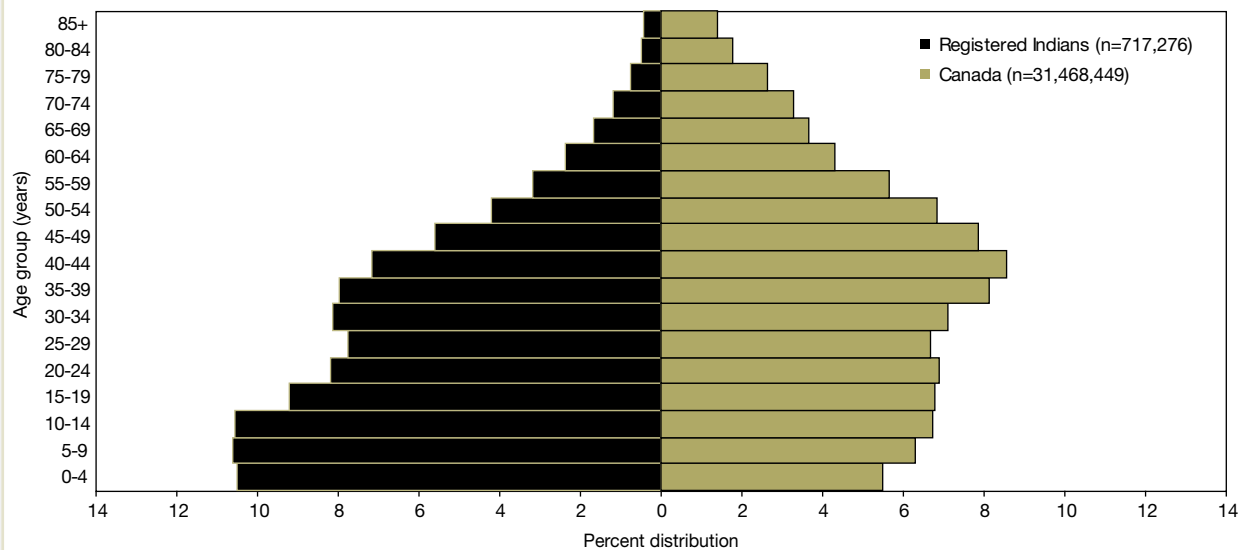
In monitoring the health of First Nations and making comparisons to the general Canadian population, it is necessary to consider the differences in population composition. As such, the distributions of both the First Nations and the total Canadian populations are presented below (Figure 1).

Indian and Northern Affairs Canada (INAC), produces an estimate of the Registered Indian population based on the Indian Register. The Indian Register is a list of all persons registered under the *Indian Act*. In 2002, the estimated population of Registered Indians both on- and off-reserve numbered 717,276*. The estimated proportion of Registered Indians living on-reserve (60.3%) was greater than that living off-reserve (39.7%). The gender split was nearly equal, consisting of 50.8% females and 49.2% males. Nearly half (49.1%) of the population

was under the age of 25 years. Males outnumbered females in all age groups 29 years of age or younger.

The Registered Indian population was younger than the general Canadian population. A peak was observed in the age distribution of the Registered Indian population between the ages of 0 and 14 years, accounting for 31.7% of the total population, whereas the age distribution of the general Canadian population peaked between the ages of 35 and 49 years, representing 24.5% of the total population. The greatest difference in the population distribution occurred for the youngest age group (0 to 4 years) where the proportion within the Registered Indian population was nearly double that of the general Canadian population (10.5% vs. 5.5%).

Figure 1. Age Distribution of First Nations and Canadian Populations, 2002



Source: Population Projections of Registered Indians, 2000-2021, INAC, 2002; Statistics Canada, CANSIM Table 051-0001.

* Indian and Northern Affairs Canada. 2004. Basic Departmental Data, 2003. Ottawa: Public Works and Government Services Canada. Catalogue no. R12-7/2003E.

DATA SOURCES AND LIMITATIONS

It should be noted that in this report, data on self-rated health, mental health and well-being, disability, and selected health conditions came from the RHS and are reported for the First Nations on-reserve population. Data on tuberculosis, human immunodeficiency virus, tuberculosis-human immunodeficiency virus co-infection, hepatitis C virus and sexually transmitted infections came from PHAC, and are, for the most part, reported for the Aboriginal population, which includes First Nations (Status and non-Status), Inuit, and Métis.

Survey Data

Data from two surveys were used in the analyses of this chapter: the 2002-03 RHS and the Canadian Community Health Survey (CCHS). The RHS, which is under the direction of the First Nations Information Governance Committee (FNIGC), was determined to be an appropriate data source due to its target population (First Nations living on-reserve) and comprehensive survey content. National RHS data are housed at the Assembly of First Nations (AFN). The CCHS is conducted by Statistics Canada and was used in this report as a source of data on the general population to facilitate comparisons to data from the 2002-03 RHS.

First Nations Regional Longitudinal Health Survey

Data on self-rated health, mental health and well-being, and the prevalence of disability and disease were obtained from the 2002-03 RHS. Data use was limited to the Adult survey (18 years and over) and results were taken directly from data compiled and/or presented in the *Results for Adults, Youth and Children Living in First Nations Communities* report.²

The RHS is the only First Nations-governed national health survey in Canada. The survey collects detailed data on the health and well-being of First Nations in Canada. As such, the RHS questionnaire includes content on social determinants of health, health behaviours, physical health, and personal and community wellness. The RHS began as a pilot survey in 1997 with its first cycle conducted in 2002-03. Sampling estimates were based on the Indian and Northern Affairs Canada (INAC) Indian Register counts of those living on-reserve or on Crown Land. Given that the survey's sampling estimates were based on the Indian Register, an official record of Status/Registered Indians in Canada, it is important to note that wherever the term "First Nations on-reserve" is used in this report, it refers to the Registered Indian population living on-reserve. Sampling targets were adopted to ensure reliable estimation of specific gender/age groups for longitudinal coverage at the regional level and cross-sectional coverage at the sub-regional level.

The overall design of the survey employed a stratified two-stage sampling method:

- 1) selection of a sample of communities with equal probability within each size class within each sub-region, then
- 2) stratification of each community by gender/age group and random sampling of individuals within gender/age groups.³ For each sub-region, cross-sectional estimates were derived for each gender/age group. An over sampling of adults aged 55 years and over was incorporated to increase the population representation of the group within the over 18 age group from 5% to 10%. This sampling method ensured reliable representation of varying community sizes (large, medium and small). Communities with less than 75 persons were excluded (approximately 11% of all communities). A national questionnaire, comprising three instruments - Adult, Youth, and Child - was administered as the common, core

component. Regional modules were developed for seven out of 10 provinces. These modules were administered immediately following the national questionnaire. Individual responses were weighted to reflect, with greater accuracy, the representation of the population by the sample.

Overall, 238 First Nations communities participated in the RHS.³ A total of 22,602 questionnaires were completed, which includes 10,962 adults, 4,983 youth and 6,657 children. All three surveys combined accounted for 5.9% of First Nations living in First Nations communities in Canada, with coverage rates ranging from 2.1% in Ontario to 53.8% in Newfoundland. The final sample (N=22,602) represents 80.2% of the intended target sample (N=28,178). It includes First Nations living in private dwellings in First Nations communities in 10 provinces and two territories, but excludes Nunavut and residents of collective dwellings. An off-reserve sample estimated at less than 1% of the total sample was included. This inclusion took into account First Nations living temporarily off-reserve and those living close to reserve boundaries who accessed reserve-based services. There was non-participation of two First Nations sub-regions, specifically the James Bay Cree of Northern Quebec and the Innu of Labrador. Together, these sub-regions represent 10 out of 607 target communities.

Potential limitations of the 2002-03 RHS, identified in the Harvard independent review,⁴ include exclusion of First Nations living in off-reserve communities and communities with less than 75 persons, insufficient sample size for data analysis among smaller communities, and regional variation in the degree of representation of First Nations communities.

A more detailed description of the methodology used and the limitations of the 2002-03 RHS can be found in the *Report on Process and Methods*.³

Canadian Community Health Survey

The CCHS is a cross-sectional survey conducted by Statistics Canada that collects information related to health status (e.g., disease prevalence), health care utilization and health determinants (e.g., smoking status, heavy drinking, sexual health practices) for the Canadian population.⁵ The survey cycle is two years. The first year of the cycle is a large sample, general population health survey, while the second year is a smaller survey designed to provide provincial level results on specific health topics. This report uses data from cycle 1.2 (small survey) on Mental Health and Well-being conducted in 2002, and cycle 2.1 (general survey) conducted in 2003.

Cycle 1.2 of the CCHS collected information on persons aged 15 years and older, living in private occupied dwellings in 10 provinces. Cycle 2.1 of the CCHS collected information on persons aged 12 and older, living in private occupied dwellings, covering all provinces and territories. The sampling frame for both cycles excluded individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces, and residents of certain remote regions. Additionally, cycle 1.2 excluded residents of the three territories.^{5,6}

Comparison of RHS and CCHS

To better understand the health of First Nations populations, health status indicators (e.g., prevalence, incidence) are often compared to equivalent indicators in the Canadian population. As such, information taken from the CCHS was used in this report as general population comparisons to data from the 2002-03 RHS. For the purposes of this report, this population is referred to as the general Canadian population.

The results used in this report were taken from data compiled and/or presented in the *Results for*

Adults, Youth and Children Living in First Nations Communities report.² No additional manipulation or analyses of the RHS data were conducted. The RHS adult survey instrument collects information on persons aged 18 years and over. As cycle 2.1 of the CCHS targets persons aged 12 years and older and cycle 1.2 targets persons 15 years and older, CCHS data (with the exception of data on disability) were restricted to the 18 years and older population to enable direct comparison with RHS data on First Nations adults.

In general, questions on health status were similar enough between the CCHS and the RHS to allow direct comparison between the surveys. In some cases, however, recoding of CCHS response categories was necessary to enable such comparisons.

Data on disability for both the First Nations and general Canadian population were taken directly from the *Results for Adults, Youth and Children Living in First Nations Communities* report.² When interpreting these data, it is important to note that the definition of disability differed slightly between the CCHS and the RHS, which

is further outlined below. As well, the age of the respondents included in this analysis differed. Specifically, the CCHS data included adults aged 20 years of age or older while the RHS data included adults aged 18 years or older. Caution should be used when comparing the prevalence of disability between these two surveys.

In addition to slight differences in the definition of disability, other adjustments were made in order to make meaningful comparisons between the First Nations and the general Canadian population. Specifically, the prevalence of disability and selected health conditions were age-standardized using the direct method of standardization as presented in the *Results for Adults, Youth and Children Living in First Nations Communities* report.² Age-standardized totals were calculated by multiplying the age-specific prevalence rates for First Nations adults by the total number of people of those ages in the general population in 2001 to establish the number of people in the general population expected to have these selected health conditions in the age categories based on First Nations' rates. The age group 18 to 19 years was the youngest age

Comparison of Disability Definitions: CCHS and RHS

The CCHS defined respondents as having a disability if they indicated that the amount or kind of activities they can do at home, work or school, or other activities (such as leisure or travelling) has been reduced because of a long-term health condition or problem. The RHS defined respondents as having a disability if they indicated that, because of a physical or mental condition or health problem, they are limited in the kinds or amount of activity they can do at home, work or school, or in

other activities such as leisure or travelling. Caution should be taken not to confuse the term *disability* with the terms *impairment* and *handicap*. *Disability* concerns limitations in the ability to carry out daily activities, while *impairment* indicates an anatomical or physiological abnormality (which may or may not cause disability), and *handicap* indicates limitation in the ability to carry out the usual social role for people of an individual's age and sex.

Source: International Classification of Impairments, Disabilities and Handicaps. A Manual of Classification Relating to the Consequences of Disease. Geneva: World Health Organization, 1980.

group used. Subsequently, five-year age groups were used. The expected figures were then added to arrive at the total number of people expected to have selected health conditions in the general population if the rates for First Nations adults prevailed. That total was divided by the total adult population 20 years and older.

In the CCHS public use microdata file (PUMF), respondents were grouped into 5-year age groups starting at 15 years. The PUMF did not facilitate the disaggregation of 18 to 19 year-olds from the 15 to 19 age group and hence, 20 to 24 years was selected as the youngest age group. Apart from this exception, the direct standardization approach used for the CCHS data was the same as that used for the RHS data. However, it should be noted that standardizing to the First Nations population might provide a better estimate of the excess relative burden of disease on the First Nations population in comparison to the general Canadian population.

Other Sources

Tuberculosis

Information on tuberculosis (TB) and tuberculosis-human immunodeficiency virus (TB-HIV) co-infection was adapted from *Tuberculosis in Canada, 2004*, a publication of Tuberculosis Prevention and Control (TBPC), PHAC.⁷ This publication provides information on new active and relapsed tuberculosis cases that are reported to TBPC by all the provinces and territories through the Canadian Tuberculosis Reporting System (CTBRS). The report contains information on the overall TB case counts and case rates for selected demographic (e.g., origin, sex, age) and clinical (e.g., diagnostic site) characteristics. Reported cases are divided into the following groups: Canadian-born Aboriginal peoples (Status/Registered Indians, non-Status Indians, Inuit and Métis), Canadian-born

non-Aboriginal, and foreign-born. From 2000 to 2004, 8,397 new and relapsed cases were reported to the CTBRS; origin or ethnicity data were available for 98% of these cases.

The CTBRS also collects information on HIV co-infection for all reported TB cases. However, in 2004, the HIV status was known for only 23.2% of the reported TB cases.⁷ As such, the reported prevalence of TB-HIV co-infection is likely overestimated with a bias towards testing those with co-existing risk factors for HIV infection.

Human Immunodeficiency Virus

PHAC uses two sources to characterize the human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) epidemic in Canada:

- calculated estimates of HIV prevalence and incidence and,
- HIV surveillance data from positive HIV test reports.

Estimates of national incidence and prevalence of HIV represent both undiagnosed and diagnosed persons, while national level HIV surveillance data represent diagnosed persons only.

Estimates of HIV prevalence and incidence among Aboriginal persons in Canada were obtained from a study by Boulos, et al.⁸ The numbers of prevalent and incident cases of HIV were estimated using a complex methodology that incorporated several sources of data including HIV surveillance data, and combined multiple modelling methods. These modelling methods included the multiplication of an estimated prevalence or incidence rate by an estimated population size, back-calculations of HIV incidence estimates by relating the timing of HIV positive testing with timing of

HIV infection and testing behaviour, and a combination of these two methods. Estimates for Aboriginal persons were derived from information on Aboriginal identity included in national surveillance data. As with all statistical procedures and methodologies, there is a level of uncertainty surrounding the resultant estimates, but it was determined that these estimates depict a plausible picture of the state of the epidemic in Canada. Specific details about the methodology and its limitations are discussed in-depth in the publication. (<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/06vol32/dr3215ea.html>)

National level HIV surveillance data are collected by PHAC and are based on positive HIV test reports submitted by each province and territory. Some of this information is analyzed and summarized in an annual PHAC surveillance report, with *HIV/AIDS Epi Updates*, that update current information on the status of the HIV/AIDS epidemic among Canadians, including Aboriginal persons.⁹ It should be noted that when national HIV/AIDS surveillance data are summarized by PHAC, a pan-Aboriginal reporting convention is used such that First Nations, Inuit and Métis populations are collapsed. As well, it is important to note that the information contained in the surveillance report is based on reports of those who have been diagnosed with HIV in Canada; ethnicity was included for only 29.2% of positive HIV tests reported to PHAC between 1998 and 2006. As such, the magnitude of the HIV epidemic among Aboriginal persons is underestimated. The *HIV/AIDS Epi Updates* can be found on the PHAC website: <http://www.phac-aspc.gc.ca/aids-sida/publication/index-eng.php#er>.

Hepatitis C Virus

Data on hepatitis C virus (HCV) infections have been previously presented¹⁰ and originate from PHAC's Enhanced Hepatitis Strain Surveillance

System (EHSSS). This enhanced surveillance program is an ongoing activity that is aimed at better understanding the pattern of HCV infection among Canadians. Detailed information about the EHSSS can be found on the PHAC website: <http://www.phac-aspc.gc.ca/hcai-iamss/bbp-pts/sys-eng.php#ehsss>.

The HCV infection data¹⁰ cover the period 1999 to 2004 and were collected from six sentinel sites across the country: the Ottawa-Carleton Health Department (Ontario); the Edmonton Capital Health Region (Alberta); the Calgary Regional Health Authority (Alberta); the Winnipeg Regional Health Authority (Manitoba); the Vancouver Coastal Health Authority (British Columbia); and, the Department of Health and Wellness (New Brunswick). These sites covered approximately 15.7% of the Canadian population. Based on data from the 2001 Census of Population, the proportion of Aboriginal people (First Nations, Inuit and Métis) in these six sites was approximately 4.2%ⁱ.

A consensus protocol and standardized case definitions were developed and used by all participating sites, who notified all physicians and private and public health laboratories in their jurisdiction of the EHSSS. Site investigators from each location then received information on all newly identified hepatitis C cases from these laboratories. Patients with newly acquired HCV

i This figure is likely an underestimate due to non-participating or incompletely enumerated reserves and under coverage of the Census of Population. There were 22 and 30 incompletely enumerated communities in the 2006 and 2001 Censuses, respectively.¹¹ Incomplete enumeration has the greatest impact on data for First Nations and for persons registered under the *Indian Act*. This and other methodological factors¹² lead to differences between Census counts of Registered Indians (623,870¹³ for year 2006 and 558,175¹⁴ for year 2001) and the projected Indian Register count (703,800¹⁵ for year 2001) as produced by INAC.

infection were asked to participate in the study through an interview process.

Potential limitations of these data include the underestimation of the true incidence of HCV, since it has been reported that the majority of acute hepatitis C patients are asymptomatic; possible underestimation of some risk behaviour among patients with newly acquired HCV; sizeable non-participation in the risk factor interview; and possible misclassification errors.

Sexually Transmitted Infections

To characterize the burden of sexually transmitted infections (STIs) in Canada, PHAC performs routine and enhanced surveillance. Routine surveillance data for nationally reportable STIs (chlamydia, gonorrhoea, and infectious syphilis) are based on reports of laboratory-confirmed diagnoses submitted by the provinces and territories. In addition to the ability to estimate the burden of STIs in Canada, temporal trends can be assessed using routine surveillance data as a result of the longstanding partnerships between PHAC and its provincial and territorial stakeholders. Potential limitations of these data include the likely underestimation of the true burden of infection, instability of rates based on small numbers of cases, possible variations of case definitions and laboratory testing algorithms between jurisdictions, and the inconsistent collection or reporting of certain data elements to PHAC by all provinces and territories. For example, information on Aboriginal identity is reported by only four jurisdictionsⁱⁱ, and the Aboriginal identity breakdowns are different and therefore not directly comparable among these jurisdictions. As a result, routine surveillance data should be interpreted with caution. Detailed information

on enhanced surveillance among street-involved youth can be found on the PHAC website: <http://www.phac-aspc.gc.ca/sti-its-surv-epi/youth-jeunes-eng.php>.

Comparisons

Health status indicators for the First Nations population are compared to the general Canadian population where applicable. When interpreting measures, it is important to note that the age structure of the First Nations population differs from that of the general Canadian population, in that the First Nations population is younger. When available, the age-standardized prevalence of health status indicators is presented.

In general, First Nations and general Canadian health status indicators were compared using both differences and ratios. Differences incorporate the *absolute* prevalence of the health status indicator, while ratios present only the *relative* prevalence. Suppose the prevalence of disease A was 4% in First Nations and 1% in the general population. The prevalence ratio of four seems notable, but the prevalence difference shows us that the gap (excess prevalence in First Nations) is only three percentage points. Contrast this with a prevalence of disease B of 40% in First Nations but 20% in the general population. Here, the prevalence ratio is only two, but the difference shows us that 20% more of the First Nations population than of the general population has disease B, and provides a basis for estimating the magnitude of any intervention that is indicated.

ii To ensure confidentiality, these jurisdictions are not identified.

RESULTS AND DISCUSSION

Limitations of the data sources used for indicators on self-rated health, mental health and well-being, disability, and prevalence and/or incidence of disease are presented in the **Data Sources and Limitations** section.

Self-rated Health, and Mental Health and Well-being

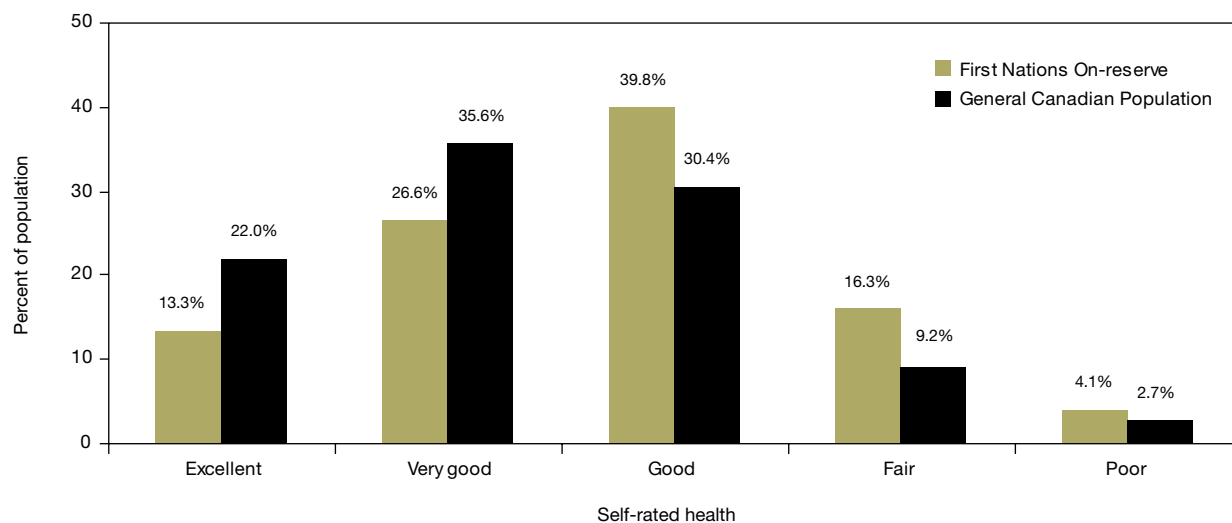
Self-rated Health

Self-rated health or self-perceived health is an indicator of well-being frequently used in health surveys. It is an individual's perception of their global health on a scale from excellent to poor.¹⁶

As shown in **Figure 2**, a lower proportion of First Nations on-reserve report “excellent” or “very good” health compared to the general Canadian population. Overall, 79.7% of First Nations on-reserve reported “good” to “excellent” health, compared to 88.0% of the general Canadian population. The percentage of adults in the general population reporting “excellent” health is 8.7 percentage points higher than the equivalent percentage of First Nations adults on-reserve (22.0% vs. 13.3%).

While self-rated health is a subjective measure of health and may differ from individual to individual, it is useful when measuring quality of life because it provides a good summary of overall health. Aside from its role as an indicator of general health, self-rated health also reflects

Figure 2. Self-rated Health, First Nations On-reserve (2002-03) and General Canadian Population¹ (2003), Aged 18 Years and Over



¹ The sampling frame of the CCHS excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces, and residents of certain remote regions.⁵

Notes:

- a) RHS and CCHS data based on self-reporting of the respondent.
- b) Totals may not add to 100% due to rounding.

Source: First Nations Information Governance Committee (FNIGC). First Nations Regional Longitudinal Health Survey (RHS) 2002-03; Results for Adults, Youth and Children Living in First Nations Communities. Assembly of First Nations (AFN), November 2005; Statistics Canada, Canadian Community Health Survey (CCHS) 2003.

aspects of health that are not captured in other measures such as: early stage disease, disease severity, aspects of positive health status, physiological and psychological reserves, and social and mental function.¹⁶ The emerging pattern shows that there is a higher proportion of First Nations in the three least healthy categories (Good, Fair, Poor) while there is a higher proportion of Canadians in the two most healthy categories (Excellent, Very good). This pattern is notable, given that the First Nations population is younger, and prevalence of disease or ill health generally increases with age. This pattern may reflect the higher prevalence of other indicators of health status among First Nations presented below (e.g., mental health and well-being, disability, and chronic and infectious diseases).

Previous studies have suggested that poor self-rated health is correlated with subsequent hospitalization and mortality.^{17,18} In a report from this series, hospital separation rates among First Nations were generally higher than the comparative Canadian population for many conditions.¹⁹ Additionally, previous data indicate that mortality rates among First Nations are higher than comparative mortality rates in other Canadians.²⁰ Despite these findings, data indicate that some aspects of First Nations health are improving over time, such as life expectancy and mortality rates.²¹

Mental Health and Well-being

One of the most important principles within a First Nations cultural paradigm is vision, or ways of seeing.² Visioning First Nations' well-being entails exploring the complete picture of health, which includes physical, mental, emotional and spiritual well-being. Findings from the RHS show that a large proportion of First Nations on-reserve report that they feel in balance in these four aspects of their lives – 70.9% report feeling physically balanced, 71.0% report feeling

emotionally balanced, 75.0% mentally balanced, and 69.0% spiritually balanced (data not shown).² Despite reports of balance, 30.1% of RHS respondents report experiencing a period in their lifetime where they felt sad, blue or depressed for two or more consecutive weeks. Furthermore, 30.9% of First Nations adults on-reserve report ever having suicidal thoughts, while 15.8% report having attempted suicide at least once in their lifetime. The prevalence of ever having suicidal thoughts or ever having attempted suicide was lower in the general Canadian population, 13.4% and 3.2%, respectively (data not shown).⁶ Gender differences with respect to suicide were apparent within the First Nations population, with a greater proportion of females reporting that they have attempted suicide at least once in their lifetime in comparison to males (18.5% vs. 13.1%).² Though suicide attempts were shown to occur more often in First Nations females, male suicide attempts were found to more likely result in death.²²

Mental health and well-being are influenced by several factors, including education, employment, personal support and relationships.²³ Additionally, historical factors, such as the legacy of residential schools, are thought to have shaped the mental health of Aboriginal people.²⁴ Data suggest that suicide rates in First Nations are higher than in the general Canadian population.^{25,26} For example, data from 2000 indicate that the suicide rate among First Nations was two times that of the general Canadian population (24 vs. 12 per 100,000 population).²⁶ However, it is important to note that there is great variability in these rates, depending on the community. Suicides may occur in clusters, by either time or geographic area, resulting in higher national rates.²⁷ Some communities may experience much higher rates of suicide while others may experience little to none. Investigating community-specific factors related

to suicide may help to provide a more accurate picture of suicide prevalence.²⁷ Health Canada has several programs in place aimed at improving mental health and well-being. Information on these programs can be found at <http://www.hc-sc.gc.ca/fniah-spnia/pubs/aborig-autoch/2007/compendium/index-eng.php>.

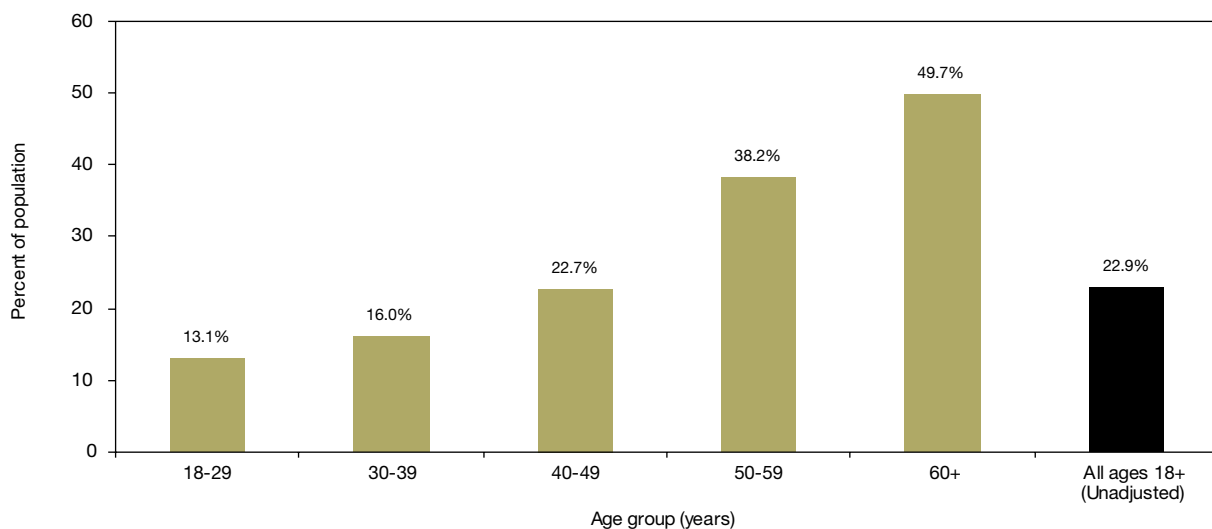
Prevalence of Disability

This section explores the prevalence of disability (unadjusted and age-adjusted) among First Nations adults on-reserve (aged 18 years and over), with comparisons to the general Canadian population (aged 20 years and over). The RHS defines respondents as having a disability if they indicated that, because of a physical or mental condition or health problem, they are limited in the kinds or amount of activity they can do at home, work or school, or in other

activities such as leisure or travelling. The CCHS defines respondents as having a disability if they indicated that the amount or kind of activities they can do at home, work or school, or other activities (such as leisure or travelling) has been reduced because of a long-term health condition or problem. Thus, respondents were identified as having a disability if they indicated that a condition limited or reduced their activity levels.

Nearly one-quarter (22.9%) of adult First Nations living on-reserve reported having at least one disability (Figure 3). Furthermore, among First Nations adults on-reserve, the proportion of individuals who reported having disabilities increased consistently with age. Specifically, respondents aged 18 to 29 years reported the lowest prevalence of disability (13.1%), while respondents aged 60 years and older reported the highest prevalence of disability (49.7%).

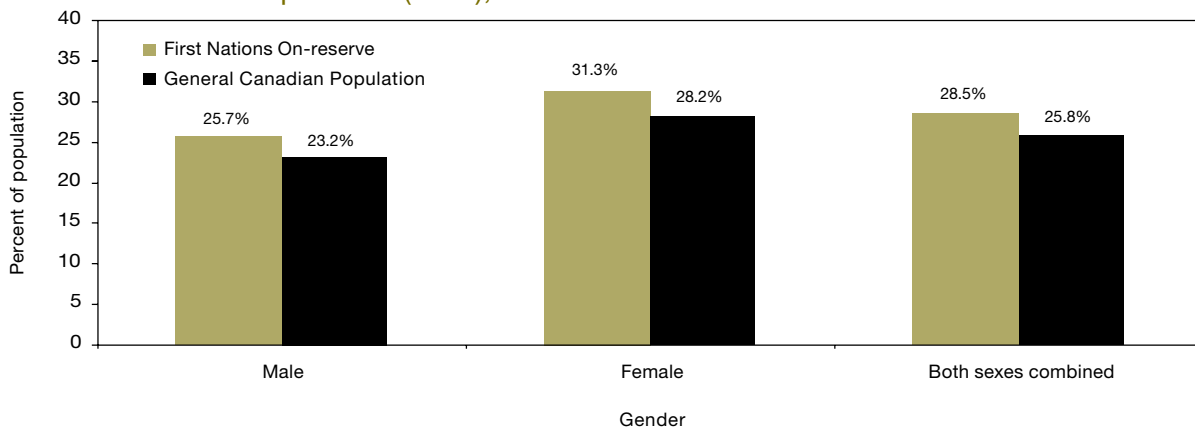
Figure 3. Prevalence of Disability, First Nations On-reserve, by Age Group, 2002-03, Aged 18 Years and Over



Note: RHS data based on self-reporting of the respondent.

Source: First Nations Information Governance Committee (FNIGC). First Nations Regional Longitudinal Health Survey (RHS) 2002-03; Results for Adults, Youth and Children Living in First Nations Communities. Assembly of First Nations (AFN), November 2005.

Figure 4. Age-standardized Disability¹, First Nations On-reserve² (2002-03) and General Canadian Population³ (2003), Adults



¹ The 2001 population for Canada was used as the standard population in the calculation of age-standardized rates.

² Includes respondents 18 years of age and older.

³ The sampling frame of the CCHS excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces, and residents of certain remote regions.⁵ Includes respondents 20 years of age and older.

Notes:

a) RHS and CCHS data based on self-reporting of the respondent.

b) Caution should be exercised when comparing the prevalence of disability between populations due to survey and methodological differences.

Source: First Nations Information Governance Committee (FNIGC). First Nations Regional Longitudinal Health Survey (RHS) 2002-03; Results for Adults, Youth and Children Living in First Nations Communities. Assembly of First Nations (AFN), November 2005; Statistics Canada, Canadian Community Health Survey (CCHS) 2003, as cited in FNIGC 2005.

Since the First Nations population is younger than the general Canadian population, the age-standardized prevalence of disability was calculated to allow for meaningful comparisons.² The age-standardized prevalence of disability reported among First Nations adults on-reserve (28.5%) was similar to the prevalence among the general Canadian population (25.8%) (Figure 4). The observed pattern was consistent across genders; First Nations males and females (25.7% and 31.3%, respectively) reported similar prevalences of age-standardized disability as compared to males and females in the general Canadian population (23.2% and 28.2%, respectively).

Measures of disability presented in this report have the advantage of being diagnosis-free (i.e., a person does not have to report disabilities

diagnosed by a physician), leading to a more sensitive estimate. The definition used also integrates the effects of the various conditions that an individual may have. In expressing an individual's ability to carry out the activities of daily living, the data address independence and health-related quality of life. In agreement with reports of disability in the Canadian population, the prevalence of disability among First Nations living on-reserve increased with age, most likely due to factors related to aging, such as heightened prevalence of many illnesses and chronic conditions, and the increased risk of accidents.^{2,28} However, further evidence from the RHS suggests that, in general, First Nations adults with disabilities report lower levels of health, income and employment.²

Prevalence and/or Incidence of Disease

Selected Health Conditions

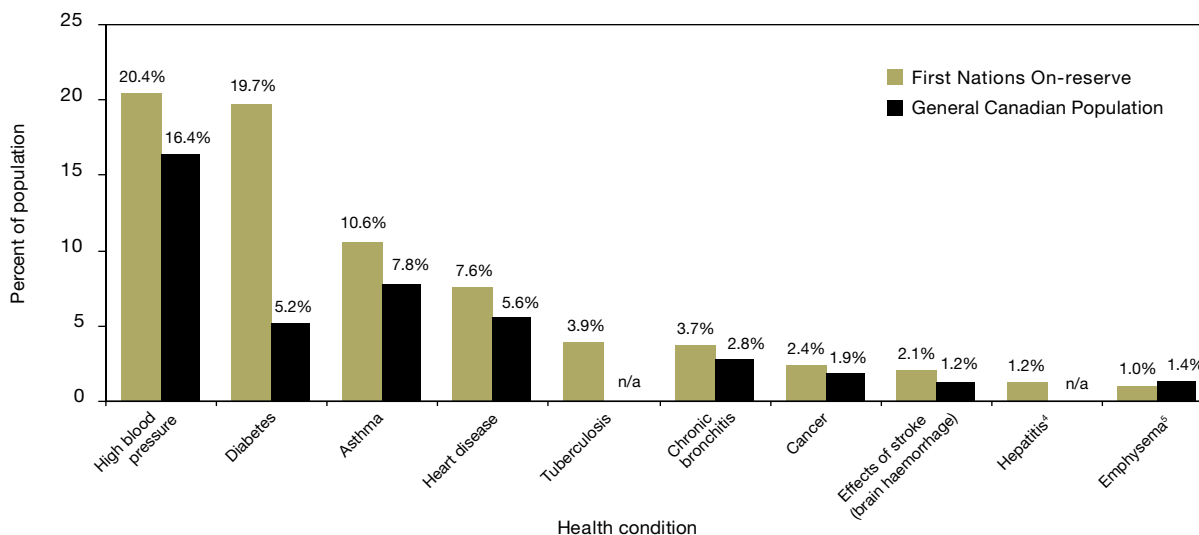
This section examines the self-reported prevalence (unadjusted and age-adjusted) of health conditions facing First Nations on-reserve, with comparisons to the general Canadian population. Results for selected long-term health conditions are presented briefly while diabetes, TB, HIV, HCV, and STIs are discussed in more detail.

Data from the RHS showed that a low proportion of First Nations adults on-reserve

(less than 5%) reported being diagnosed with chronic bronchitis, cancer, effects of stroke, or emphysema. The conditions reported most frequently (5 to 25%) were asthma, diabetes, heart disease, and high blood pressure.²

In general, the reported age-standardized prevalence of selected health conditions for which comparative data are available is higher among First Nations on-reserve adults than among adults in the general Canadian population (Figure 5). Small differences are seen for heart disease, asthma, and high blood pressure while a larger difference is observed for diabetes.

Figure 5. Age-standardized Prevalence of Selected Health Conditions¹, First Nations On-reserve² (2002-03) and General Canadian Population³ (2003), Adults



¹ The 2001 population for Canada was used as the standard population in the calculation of age-standardized rates.

² Includes respondents 18 years of age and older.

³ The sampling frame of the CCHS excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces, and residents of certain remote regions.⁵ (see [References](#)) Includes respondents 20 years of age and older.

⁴ Includes hepatitis types A, B, and C.

⁵ For the general Canadian population in the CCHS, emphysema and chronic obstructive pulmonary disease (COPD) were asked in the same question. COPD includes chronic bronchitis and emphysema.

Notes:

a) RHS and CCHS data on prevalence of disease based on self-reporting of the respondent.

b) General Canadian population figures for tuberculosis and hepatitis are not available and are denoted as n/a.

Source: First Nations Information Governance Committee (FNIGC). First Nations Regional Longitudinal Health Survey (RHS) 2002-03; Results for Adults, Youth and Children Living in First Nations Communities. Assembly of First Nations (AFN), November 2005; Statistics Canada, Canadian Community Health Survey (CCHS) 2003, as cited in FNIGC 2005.

The higher age-standardized prevalence of all the selected health conditions among the First Nations population may be the result of higher prevalence of risk factors.²⁹ Most of these chronic conditions have similar risk factors (e.g., smoking, obesity), and in general, these risk factors were found to be more prevalent in the First Nations population than in the general Canadian population.²⁹ For example, obesity is increasingly recognized as a major problem in Canada, and its prevalence is also observed to be particularly high in the First Nations population. Obesity is a risk factor for high blood pressure, coronary heart disease and certain cancers, and its presence increases the risk of diabetes and the associated complications of diabetes.³⁰ In addition to individual risk factors such as smoking and obesity, social and economic factors and environmental factors may also be at play, as one report in this series suggests.²⁹ Data from this series indicate that First Nations people experience lower educational attainment, lower income, and poorer housing conditions than the general Canadian population.

Diabetes

Diabetes has been identified as a significant health problem among Aboriginal populations, especially First Nations, since the 1980s.³⁰ It continues to be a major and growing challenge for these populations.

The crude, or unadjusted, prevalence of First Nations adults on-reserve who have been diagnosed with diabetes is 14.5%.² As noted above, results from the RHS show that the age-standardized self-reported prevalence of diabetes among First Nations adults living on-reserve was 19.7%. This is 14.5 percentage points higher than the age-standardized prevalence in the general Canadian population (5.2%).

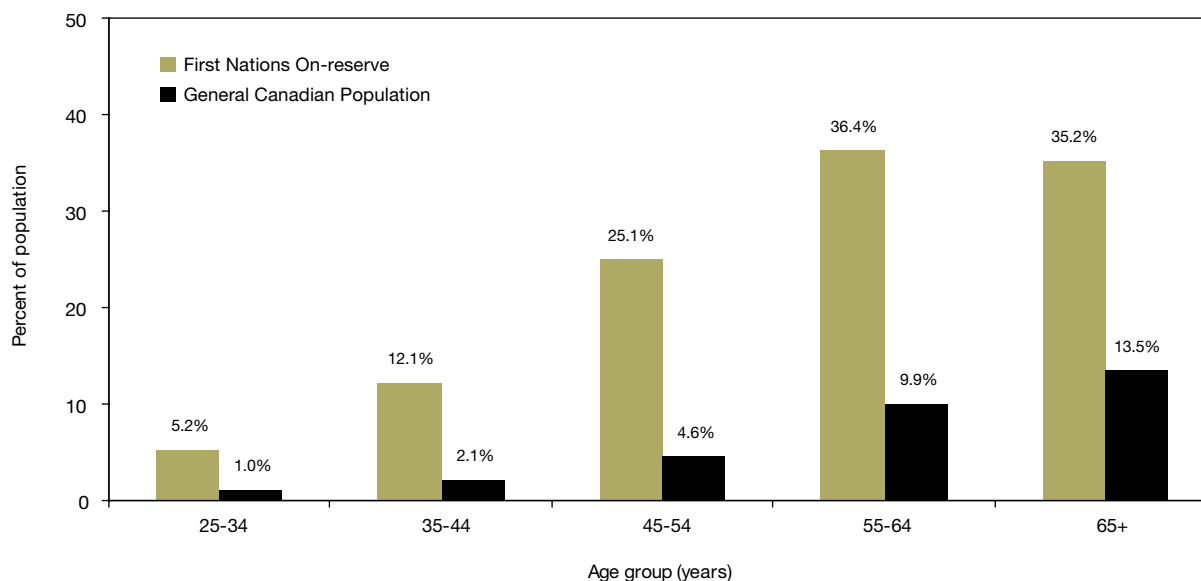
Of First Nations people living on-reserve who have been diagnosed with diabetes in their lifetime, the greatest proportion (78.2%) have been diagnosed with type 2 diabetes. A lower proportion of those diagnosed have been told that they have type 1 diabetes (9.9%). In addition, one in eight First Nations women living on-reserve (11.9%) reported having gestational diabetes. It should be noted that these categories are not exclusive as an individual can be diagnosed with one or more types of diabetes in their lifetime. For example, a woman could be diagnosed with both gestational diabetes and type 2 diabetes at two different time points.

As shown in **Figure 6**, the prevalence of diabetes is higher among First Nations on-reserve adults than among adults in the general Canadian population, for all age groupings. The prevalence of diabetes among First Nations on-reserve increases steadily and peaks at the 55 to 64 age group. For adults in the general Canadian population, the prevalence also increases with increasing age. The largest difference occurs in the 55 to 64 age group where the percentage of First Nations on-reserve adults who reported having diabetes was 26.5 percentage points higher than the equivalent value in the general Canadian population (36.4% vs. 9.9%).

Diabetes is a major health issue for Canadians, and its prevalence is observed at even higher levels in the First Nations population. A high prevalence, along with an early age at onset has the potential to lead to a high future incidence of diabetic complications including blindness, kidney disease, heart disease and stroke.³¹

In the general population, when children are diagnosed with diabetes, it is primarily type 1. However, diagnoses of type 2 diabetes are becoming more frequent in younger generations of First Nations.³²⁻³⁴ In addition, a genetic predisposition to the development

Figure 6. Prevalence of Diabetes among First Nations On-reserve (2002-03) and General Canadian Population¹ (2003), Aged 25 Years and Over



¹ The sampling frame of the CCHS excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Armed Forces, and residents of certain remote regions.⁵

Notes:

- a) RHS and CCHS data on prevalence of diabetes based on self-reporting of the respondents to the question “Have you been told by a health care professional that you have diabetes?”.
- b) RHS data on the prevalence of diabetes for adults aged 18 to 24 years contained insufficient sample size and/or unweighted counts and/or high coefficients of variation. Furthermore, the CCHS public use microdata file did not facilitate disaggregating 18 to 19 year-olds from the 15 to 20 age group. Therefore, prevalence data for the 18 to 24 age group were excluded for both the First Nations on-reserve and the general Canadian populations.

Source: First Nations Information Governance Committee (FNIGC). First Nations Regional Longitudinal Health Survey (RHS) 2002-03; Results for Adults, Youth and Children Living in First Nations Communities. Assembly of First Nations (AFN), November 2005; Statistics Canada, Canadian Community Health Survey (CCHS) 2003.

of type 2 diabetes, the ‘hefty fetal phenotype’ hypothesis, has implications for the First Nations population. This hypothesis attempts to explain how an ancient survival mechanism, which may have evolved to produce well-nourished infants, has become a modern liability leading to increased rates of gestational and type 2 diabetes in susceptible populations.³⁵⁻³⁸ However, it is generally thought that good dietary habits combined with increasing physical activity may help in reducing the burden of disease.³⁰ Obtaining good dietary habits are difficult, however, given the replacement of traditional

foods with market foods, many of which are of low nutritional value.³⁹ Income, food costs, food contamination and the interaction between these factors influence food choice and healthy eating patterns. The high cost, poor quality, lack of variety and availability of perishable foods make healthy eating even more challenging for those living in remote and northern communities.³⁹

The shift away from traditional lifestyles, along with decreased physical activity, resulting in increased rates of overweight and obesity, may contribute to higher rates of diabetes.³⁰

Encouraging and supporting the consumption of traditional foods as part of a healthy eating pattern, along with increased physical activity is a means to prevent diabetes. Information on Health Canada's Aboriginal Diabetes Initiative, whose main goal is to reduce type 2 diabetes among Aboriginal peoples through a range of health promotion and disease prevention services can be found at <http://www.hc-sc.gc.ca/fniah-spnia/diseases-maladies/diabete/index-eng.php>.

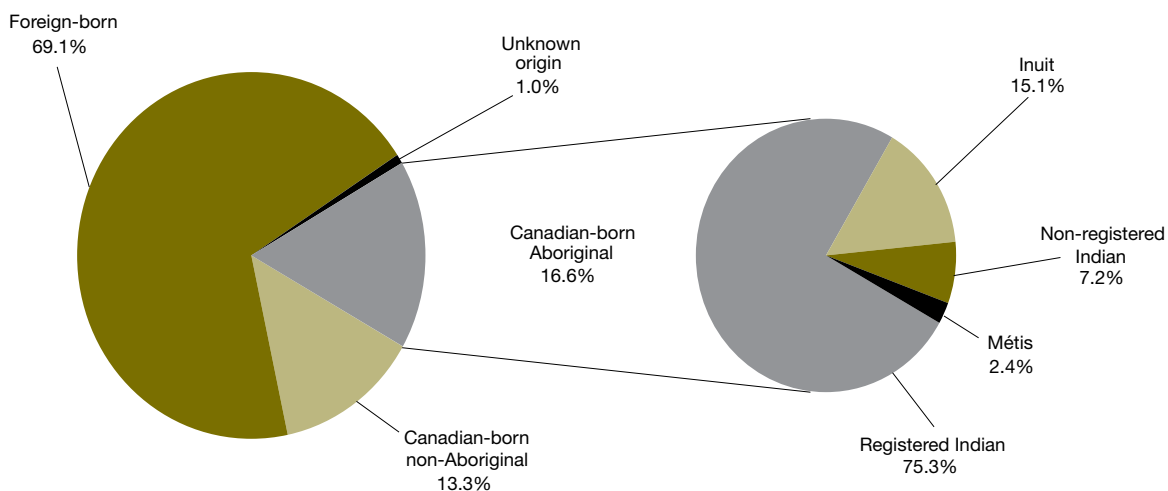
Tuberculosis

With the development of antibiotic treatment in the 1940s and improvements in basic living conditions and hygiene, infectious disease rates, including rates of TB, have declined throughout Canada. Tuberculosis is no longer a leading cause of death overall, but tends to be concentrated in specific population groups: low-income households, the elderly, the foreign-born population, and the Aboriginal population.⁴⁰

In 2004, 1,613 cases of new active and relapsed TB were reported to the Canadian Tuberculosis Reporting System (CTBRS).⁷ Canadian-born non-Aboriginal peoples and Canadian-born Aboriginal peoples (Status/Registered Indians, non-Status Indians, Inuit and Métis) made up 13.3% and 16.6% of all reported TB cases, respectively (Figure 7), although Aboriginal people comprise only about 3.8%ⁱⁱⁱ of the Canadian population according to the 2006

iii This figure is likely an underestimate due to non-participating or incompletely enumerated reserves and under coverage of the Census of Population. There were 22 and 30 incompletely enumerated communities in the 2006 and 2001 Censuses, respectively.¹¹ Incomplete enumeration has the greatest impact on data for First Nations and for persons registered under the *Indian Act*. This and other methodological factors¹² lead to differences between Census counts of Registered Indians (623,870¹³ for year 2006 and 558,175¹⁴ for year 2001) and the projected Indian Register count (703,800¹⁵ for year 2001) as produced by INAC.

Figure 7. Proportion of Total Tuberculosis Cases in Canada, by Origin, 2004



N = 1,613 cases

Source: Public Health Agency of Canada (PHAC). Tuberculosis in Canada, 2004: Special Report of the Canadian Tuberculosis Committee – Tuberculosis among the Aboriginal Peoples of Canada, 2000 to 2004, 2007.

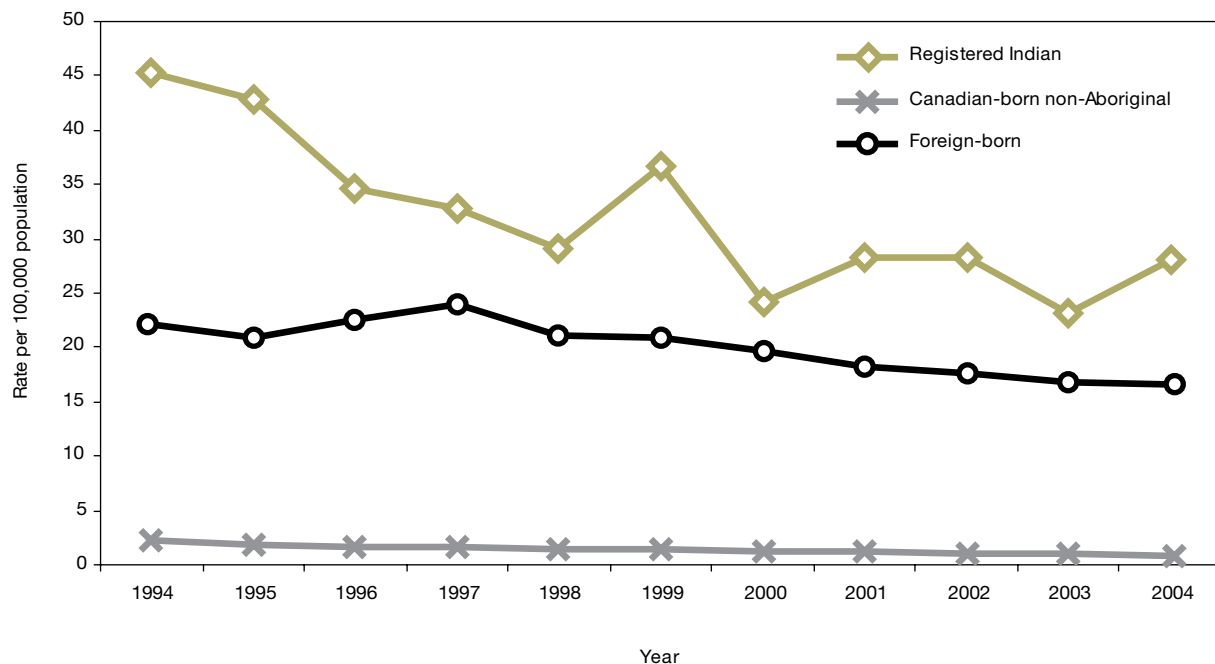
Census of Population.⁴¹ This reflects a disproportionate burden of TB infection in Canadian-born Aboriginal people. Moreover, Canadian-born Aboriginal TB cases were younger (median age 34 years) than Canadian-born non-Aboriginal cases (median age 55 years), perhaps reflecting the age difference between the Aboriginal and Canadian populations, but possibly also reflecting different modes or probabilities of transmission (e.g., overcrowding and poor housing conditions). Males accounted for just over half (54%) of reported Aboriginal cases.⁷

Over the past decade, TB rates among Registered Indians have remained consistently higher than among other population groups (Figure 8). In 2004, the TB incidence rate among Registered Indians (27.5 per 100,000 population) was 5.5

times greater than the Canadian rate (5.0 per 100,000 population) and 30.6 times greater than the rate of Canadian-born non-Aboriginals (0.9 per 100,000 population).⁷ Figure 8 shows that since 1994, the incidence rate has been the highest for the Registered Indian population. Although the incidence rate among this population has decreased over time, gaps remain between the Registered Indian population and the Canadian-born non-Aboriginal and foreign-born populations.

Despite major gains in the control of TB in Canada, the incidence rate among Registered Indians remains approximately 30 times higher than the rate among Canadian-born non-Aboriginals. It has been suggested that improvements in socio-economic conditions,

Figure 8. Crude Tuberculosis Incidence Rate in Canada, by Origin, 1994-2004



Note: Does not include cases with unknown origin.

Source: Public Health Agency of Canada (PHAC). Tuberculosis in Canada, 2004: Special Report of the Canadian Tuberculosis Committee – Tuberculosis among the Aboriginal Peoples of Canada, 2000 to 2004, 2007.

improved early detection of cases, improved TB knowledge and vigilance in primary healthcare workers, appropriate and complete treatment, and the availability of adequate resources can help to further decrease the burden of TB among Status/Registered Indians, non-Status Indians, Inuit and Métis.⁷

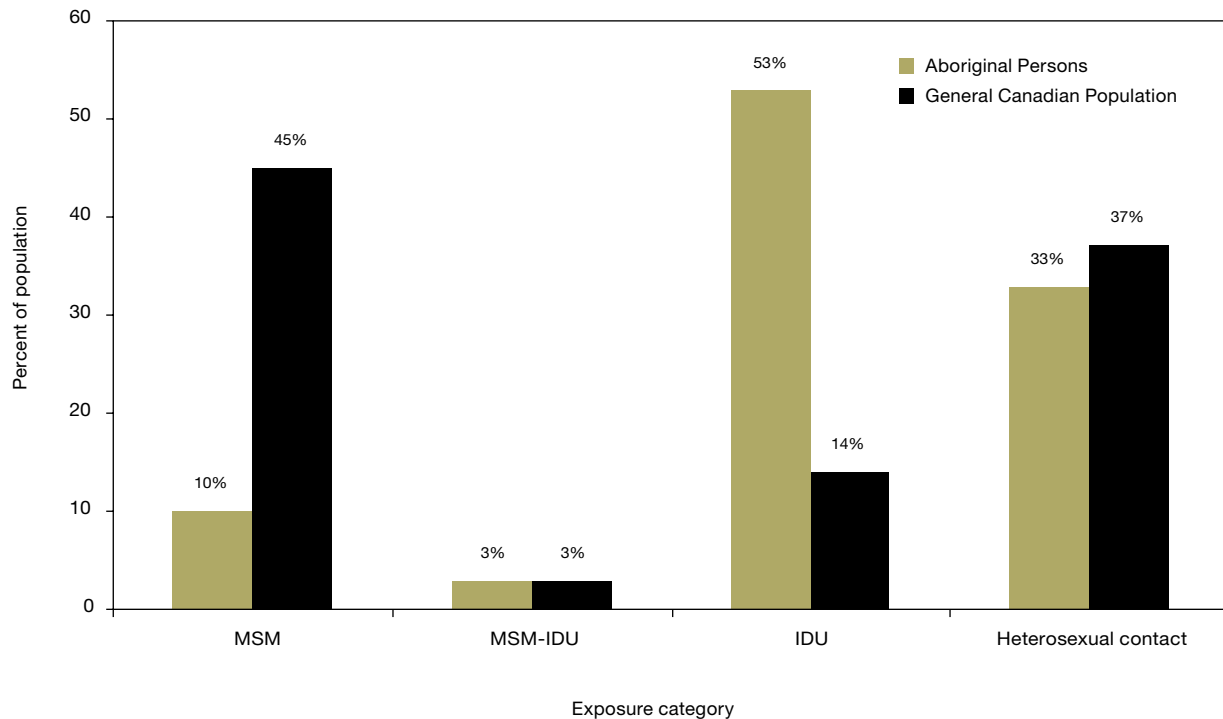
Human Immunodeficiency Virus

An analysis conducted by PHAC demonstrates that Aboriginal persons (defined as First Nations, Inuit and Métis) continue to be over-represented in the HIV epidemic in Canada. According to the 2006 Census of Population, Aboriginal persons

make up 3.8%^{iv} of the Canadian population,⁴¹ but account for about 7.5% of all prevalent HIV infections (in 2005, an estimated 3,600 to 5,100 Aboriginal persons were living with HIV in Canada). This figure is higher than

iv This figure is likely an underestimate due to non-participating or incompletely enumerated reserves and under coverage of the Census of Population. There were 22 and 30 incompletely enumerated communities in the 2006 and 2001 Censuses, respectively.¹¹ Incomplete enumeration has the greatest impact on data for First Nations and for persons registered under the *Indian Act*. This and other methodological factors¹² lead to differences between Census counts of Registered Indians (623,870¹³ for year 2006 and 558,175¹⁴ for year 2001) and the projected Indian Register count (703,800¹⁵ for year 2001) as produced by INAC.

Figure 9. Distribution of Exposure Category for Estimated Incident HIV Infections among Aboriginal Persons and the General Canadian Population, 2005



Source: Public Health Agency of Canada (PHAC). HIV/AIDS Epi Updates, November 2007, Surveillance and Risk Assessment Division, Centre for Infectious Disease Prevention and Control, PHAC, 2007.

the 2002 estimate of 3,100 to 4,400 Aboriginal persons living with HIV, but represents the same proportion (7.5%) of prevalent infections.⁸

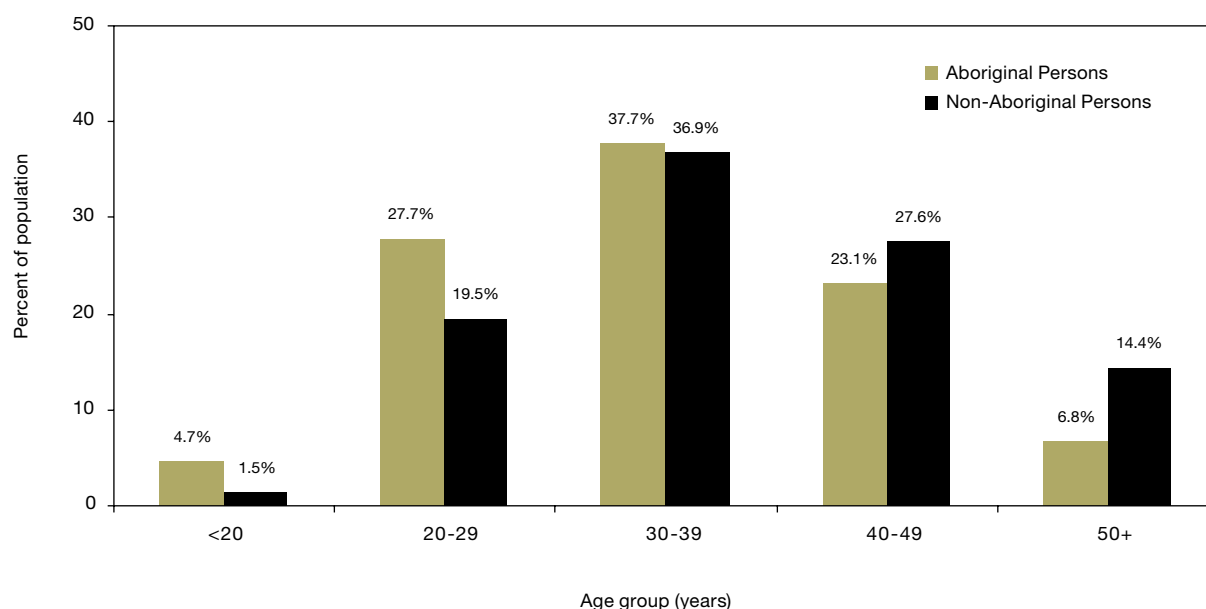
It is also estimated that approximately 10% and 9% of new HIV infections in 2002 and 2005 occurred in Aboriginal persons.⁸ The overall infection rate among Aboriginal persons is about 2.8 times higher than among non-Aboriginal persons.

Examining the estimates by HIV exposure category shows that among Aboriginal persons, injecting drug users (IDU) accounted for the greatest proportion of new HIV infections (53%), followed by heterosexual contact (33%), men who have sex with men (MSM) (10%) and MSM-IDU or people who report both categories (3%) (Figure 9). Among all Canadians, however,

MSM made up the greatest proportion of new HIV infections (45%), followed by heterosexual contact (37%), IDU (14%) and MSM-IDU (3%).^{8,9}

According to HIV case reporting, Aboriginal persons receive a diagnosis of HIV at a younger age than non-Aboriginal peoples.⁹ However, it should be noted that ethnicity was included for only 29.2% of positive HIV tests reported to PHAC between 1998 and 2006, with regional variation. Those aged less than 40 years accounted for 70.1% of HIV test reports among Aboriginal persons from 1998 to the end of 2006 (Figure 10). In contrast, during the same time period, 57.9% of positive HIV test reports among non-Aboriginal persons were aged less than 40 years. The greatest difference, 8.2 percentage points, occurred in the 20 to 29 year age group, where a greater proportion of HIV tests were

Figure 10. Distribution of Positive HIV Test Reports among Aboriginal Persons and the General Canadian Population, by Age Group, 1998 to December 31, 2006



Note:

Totals may not add to 100% due to rounding.

Source: Public Health Agency of Canada (PHAC). HIV/AIDS Epi Updates, November 2007, Surveillance and Risk Assessment Division, Centre for Infectious Disease Prevention and Control, PHAC, 2007.

reported among Aboriginal persons than among non-Aboriginal persons (27.7% vs. 19.5%). Conversely, for the 50 years and over age group, a greater proportion of positive tests were reported among non-Aboriginal persons than among Aboriginal persons (14.4% vs. 6.8%).

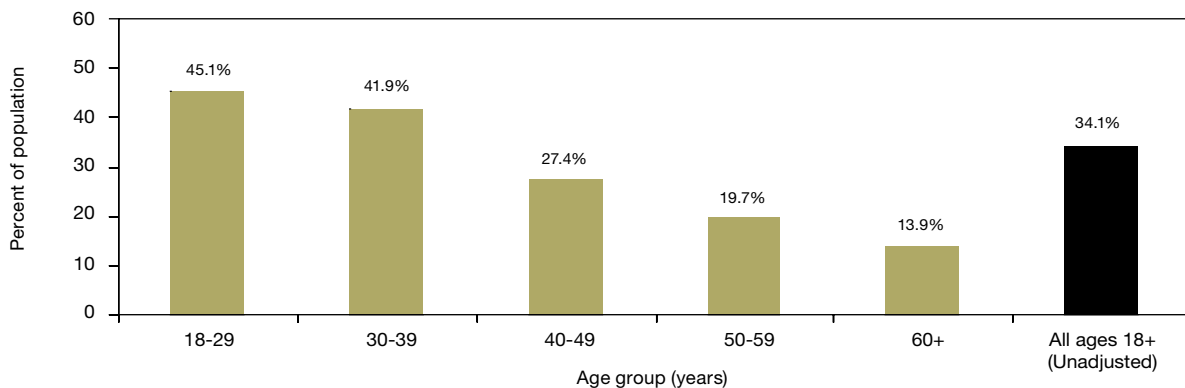
While HIV affects men and women in the Aboriginal population,⁹ gender differences are important when comparing prevalent HIV infections between the Aboriginal and non-Aboriginal populations. Between 1998 and 2006, non-Aboriginal women accounted for 20.7% of all positive HIV test reports. In the Aboriginal population, however, women accounted for nearly half (48.1%) of all positive HIV test reports.

Data from the RHS show that in 2002-03, just over one-third (34.1%) of all First Nations adults reported ever having undergone HIV testing in their lifetime.² The proportion of those ever receiving testing decreased steadily with age, falling from 45.1% for those aged 18 to 29 years to 13.9% for those aged 60 years and over (Figure 11).

First Nations adult females aged 18 years and over were more likely than adult males to be tested for HIV (39.0% vs. 29.5%).² This gender gap compares to the results of a 2003 general Canadian population survey of 2,004 Canadians aged 16 years and over, which reported that 29.1% of women and 23.8% of men had undergone HIV testing in their lifetime.⁴²

There is a disproportionate burden of HIV infection in the Aboriginal population. Furthermore, there is a striking difference in HIV modes of transmission, with IDU explaining 53% of new cases among Aboriginal people but only 14% of new cases in the general Canadian population. The difference is almost exactly balanced by MSM, which explains 45% of new cases in the general population but only 10% in Aboriginal people. The observed age distribution of positive test reports is most likely due to the age difference between the two populations. Other factors are also likely involved, such as the notable difference in the modes of transmission. The observation that men comprise the vast majority of infected individuals in the general

Figure 11. Proportion of First Nations Adults having undergone a Test for HIV in their Lifetime, by Age Group, 2002-03, Aged 18 Years and Over



Note: RHS data based on self-reporting of the respondent.

Source: First Nations Information Governance Committee (FNIGC). First Nations Regional Longitudinal Health Survey (RHS) 2002-03; Results for Adults, Youth and Children Living in First Nations Communities. Assembly of First Nations (AFN), November 2005.

population is consistent with MSM being the major mode of transmission. However, among Aboriginal persons, women account for a large proportion of those infected. These observed patterns suggest the need for population-focused HIV prevention programs that specifically take into consideration the observed difference in modes of transmission and characteristics of those infected.

Among First Nations, the prevalence of ever undertaking an HIV test decreased with age. The observed age distribution is most likely a result of HIV screening guidelines, that identify sexually active individuals 25 years of age or younger as *at risk*.⁴³ Other factors that may influence testing patterns include the heightened incidence of other STIs among individuals of younger age and the engagement in other HIV risk behaviours.⁴⁴ The observed gender gap in testing is likely an artefact of screening females during routine physical and prenatal examinations and other circumstances built into screening guidelines.⁴³

Overall, approximately one-third of all First Nations adults reported having undergone HIV testing in their lifetime. Despite this observation, and consistent with the Canadian population, HIV testing rates are still low.⁴² Increasing knowledge and awareness of HIV among First Nations may be appropriate in order to increase access to and uptake of HIV testing, education and prevention tools.

Tuberculosis-Human Immunodeficiency Virus Co-infection

Tuberculosis rates have been greatly impacted by the HIV epidemic.⁴⁵ Since HIV status of TB cases is largely underreported in Canada, it is difficult to make an accurate determination of TB-HIV co-infection rates. Between 2000 and 2004, HIV status was known in only 30% of the Canadian-born Aboriginal TB cases, 15% of the

Canadian-born non-Aboriginal cases and 15% of the foreign-born cases. These limited data suggest that the proportion of TB cases that were HIV seropositive was 16% in Canadian-born Aboriginal cases, 24% of the Canadian-born non-Aboriginal cases and 8% of the foreign-born cases.

Hepatitis C Virus

Between 1999 and 2004, 637 cases of newly acquired hepatitis C virus (HCV) were reported to the Canadian Enhanced Hepatitis Strain Surveillance System (EHSSS). These cases were in those aged 15 years and over and met the EHSSS case definition.¹⁰ Ninety-seven cases (15.2%) occurred in Aboriginal participants and 527 (82.7%) occurred in non-Aboriginal participants; for the remaining 13 (2.0%) cases, there was no available information on Aboriginal identity or ethnic status.

The study conducted by Wu, et al.¹⁰ identified statistically significant differences between the age and gender of Aboriginal HCV participants and non-Aboriginal participants. The median age of Aboriginal people with HCV infection was significantly younger than that of non-Aboriginals (median age 31 vs. 34 years), and more than half (54.6%) of Aboriginal participants with HCV were female compared to 37.6% of non-Aboriginal participants.

The overall incidence of HCV infection among Aboriginal participants aged 15 years and older was 18.9 per 100,000. This is much higher than the overall incidence of 2.8 per 100,000 in non-Aboriginal participants. After controlling for confounders and the inclusion of interaction terms^v, Aboriginal participants were found to

v Adjusted confounding factors include: age group, year, ethnic group, gender, and health regions. Interactions between gender and age group, and between gender and ethnic group were also included in the model.

be 5.8 times more likely than non-Aboriginal people to have newly acquired HCV infection. No gender difference in HCV incidence was found among Aboriginal participants.

Aboriginal participants were also more likely than non-Aboriginal participants to report behaviours that were identified as risk factors for HCV infection. Significantly higher proportions of Aboriginal participants than non-Aboriginal participants reported injecting drug use (77.1% vs. 64.0%), high-risk sexual behaviours (48.6% vs. 34.1%), and drug snorting (45.7% vs. 32.7%).

The analysis conducted by Wu, et al.¹⁰ suggested that there might be a disproportionate burden of HCV infection among Aboriginal populations. In 2001, the primary mode of HCV transmission in Canada (including among Aboriginal participants) was through the shared use of needles and injecting equipment.⁴⁶ Prevention programs that address the risks associated with HCV infection including injecting drugs and sharing equipment may help to decrease the burden of HCV.

Sexually Transmitted Infections

In Canada, STIs are an increasing public health concern and challenge.⁴⁷ Moreover, Canada has recently witnessed steadily increasing rates of all three notifiable bacterial STIs – chlamydia, gonorrhea and infectious syphilis. Overall, ethnicity data are included for one-fifth to one-quarter of all bacterial STI cases reported to the PHAC. Among the four jurisdictions that routinely report ethnicity data, in 2005, 22.8% of chlamydia cases, 29.1% of gonorrhea cases and 33.9% of infectious syphilis cases contained ethnicity data. Of these, Aboriginal persons accounted for 15.5% of reported chlamydia cases, 25.2% of reported gonorrhea cases and 21.9% of reported infectious syphilis cases in

2005.⁴⁸ Yet, only 6.9%^{vi} of the total population in these jurisdictions identified themselves as Aboriginal.⁴⁹

Sexually transmitted infections are responsible for significant morbidity. If unrecognized or untreated, infections can lead to serious complications such as infertility.⁵⁰ Bacterial STIs have been reported to increase transmission and acquisition of HIV.^{51,52} Furthermore, data from the RHS, as cited in another report of this series,²⁹ show that more First Nations living on-reserve report a greater number of sexual partners than what is observed for the general Canadian population, which may facilitate the spread of STIs.

As previously stated, the reported risk factors for a large proportion of reported HIV cases are injecting drug use and intercourse. Similar to the prevention and control of HIV, increasing knowledge and awareness of STI among First Nations may help to increase access to and uptake of STI testing, education and prevention tools. In addition, population-specific STI prevention programs may also aid in decreasing the burden of STIs in Canada, and among the First Nations population.

vi This figure is likely an underestimate due to non-participating or incompletely enumerated reserves and under coverage of the Census of Population. There were 22 and 30 incompletely enumerated communities in the 2006 and 2001 Censuses, respectively.¹¹ Incomplete enumeration has the greatest impact on data for First Nations and for persons registered under the *Indian Act*. This and other methodological factors¹² lead to differences between Census counts of Registered Indians (623,870¹³ for year 2006 and 558,175¹⁴ for year 2001) and the projected Indian Register count (703,800¹⁵ for year 2001) as produced by INAC.

CONCLUSION

The disproportionate burden of mortality that First Nations people experience is well known, and is documented in the previous edition of this report.²¹ This report suggests that First Nations people also experience a greater burden of morbidity during their lives. Mortality differences can be explained by differences in the frequency of disease, differences in the case-fatality from those diseases, or both. The data in this report show that at least part of the mortality difference may be explained by differences in the frequency of disease. The most striking gaps between First Nations and the general Canadian population concern suicide contemplation and attempts, the prevalence of diabetes, the incidence of tuberculosis, and HIV risk factors. Furthermore, the differences in self-rated health, mental health and well-being, and self-reported disability indicate that First Nations people may also experience poorer health-related quality of life. Finally, the differences in social determinants of health, such as education attainment, physical

environment, and access to health services, presented in another report of this series,²⁹ must also be considered as they have been shown to be associated with health status and, in some cases, act as contributing factors that increase the risk of developing certain conditions.

In attempts to decrease the overall burden of disease among this population, prevention programs aimed at individuals free from disease, individuals who are unaware of their disease status, and those suffering from disease, may help to close the gap between First Nations and the general Canadian population. Advances in administrative data, such as moving away from pan-Aboriginal reporting of communicable disease to specific reporting on First Nations, Inuit and Métis, will help generate information unique to these culturally distinct groups so that more targeted programs and initiatives can be developed. In addition, addressing the determinants of health at all stages of life will likely have a positive influence on health.

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GLOSSARY

Aboriginal Peoples: The descendants of the original inhabitants of North America. The Constitution of Canada recognizes three groups of Aboriginal peoples—Indians, Métis and Inuit. These three separate peoples have unique heritages, languages, cultural practices and spiritual beliefs.

Census: An enumeration of a population, originally intended for purposes of taxation and military service. Census enumeration of a population usually records identities of all persons in every place of residence, with age, or birth date, sex, occupation, national origin, language, marital status, income, and relationship to head of household in addition to information on the dwelling place.¹ The national Census of Population provides dwelling and population counts for Canada every five years, but it also provides a variety of demographic, social and economic information about the population of Canada. The most recent census was on May 16, 2006.

Confounder: A variable that can cause or prevent the outcome of interest, is not an intermediate variable, and is associated with the factor under investigation. Unless it is possible to adjust for confounding variables, their effects cannot be distinguished from those of factor(s) being studied.¹

Crown Land: Crown Land is land where title is held by Her Majesty (the Crown), but has not been officially set aside for the use and benefit of a band (or bands).

Determinant: Any factor, whether event, characteristic, or other definable entity, that brings about change in a health condition or other defined characteristic.¹

Diabetes: Diabetes is a chronic condition that stems from the body's inability to sufficiently produce and/or properly use insulin. Diabetes can lead to serious complications and premature death. *Type 1 diabetes* occurs when the beta cells of the pancreas

are destroyed by the immune system and no longer produce insulin. *Type 2 diabetes* occurs when the body does not make enough insulin and/or does not respond well to the insulin it makes. *Gestational diabetes* is a form of diabetes that develops in women during pregnancy and disappears after delivery. *Pre-diabetes* is a key risk factor for type 2 diabetes. It is a risk condition where blood glucose levels are elevated, but not high enough for a diagnosis of diabetes.²

Difference: The value obtained by subtracting one quantity by another.

Direct Method: A method of rate adjustment used when the specific rates (e.g., age-specific rates) in each population being compared are stable and available.¹

First Nation: A term that came into common usage in the 1970s to replace the word 'Indian,' which many people found offensive. Although the term 'First Nation' is widely used, no legal definition of it exists. Many Indian people have also adopted the term 'First Nation' to replace the word 'Band' in the name of their community. Both Status and non-Status Indians in Canada are referred to as 'First Nations people(s)'. In the Canadian Census of Population, 'North American Indian' is the term used for both Status and non-Status Indians.

HCV: Hepatitis C is an infection of the liver caused by the hepatitis C virus (HCV). The virus is spread by direct exposure to the blood of those infected with HCV. People who inject drugs are particularly at risk of exposure to HCV. Symptoms include loss of appetite, nausea and vomiting, stomach pain, extreme fatigue and a yellowing of the skin and eyes (jaundice).³

Health Indicator: A variable, susceptible to direct measurement, that reflects the state of health of persons in a community. Examples include infant mortality rates, incidence rates based on notified cases of disease, disability days.¹

Health Status: An overall evaluation of the health of an individual, with many indicators such as quality of life and functionality contributing to the assessment.

HIV/AIDS: HIV - the human immunodeficiency virus - is a virus that attacks the immune system, resulting in a chronic, progressive illness that leaves people vulnerable to opportunistic infections and cancers. When the body can no longer fight infection, the disease is known as AIDS, which stands for acquired immunodeficiency syndrome. On average, it takes more than 10 years to progress from initial HIV infection to AIDS.⁴

HIV Exposure Category: HIV cases are assigned to a single exposure category according to a hierarchy of risk factors (behaviours that are associated with HIV). If more than one risk factor is reported, a case is classified as the exposure category listed first (or highest) in the hierarchy. HIV exposure categories include: men who have had sex with men (MSM), injecting drug users (IDU), MSM/IDU, blood/blood products, heterosexual contact, occupational exposure, perinatal transmission, other, and no identified risk.

Incidence: The number of new events, e.g., new cases of a disease in a defined population, within a specified period of time.¹

Incidence Rate: The rate at which new events occur in a population. The numerator is the number of new events that occur in a defined period; the denominator is the population at risk of experiencing the event during this period, sometimes expressed as person-time.¹

Indian: A term that describes all the Aboriginal people in Canada who are neither Inuit nor Métis. Indian peoples are one of three groups recognized as Aboriginal in the *Constitution Act* of 1982. The Act specifies that Aboriginal people in Canada comprise Indians, Inuit and Métis people. In addition, there are

three legal definitions that apply to Indians in Canada: Status Indians, non-Status Indians and Treaty Indians. In the Canadian Census of Population, 'North American Indian' is the term used for this population.

Indian Act: Canadian federal legislation that sets out certain obligations of the federal government toward First Nations people. It also regulates the management of Indian reserve lands. The Act has been amended several times, most recently in 1985.

Indian Register: The Indian Register is the official record kept by Indian and Northern Affairs Canada of all Status/Registered Indians in Canada.

Indian Status: An individual's legal status as an Indian, as defined by the *Indian Act*.

Innu: Naskapi and Montagnais First Nations (Indian) people who live in Eastern Quebec and Labrador, distinct from Inuit.

Interaction: Differences in the effects of one or more factors according to the level of the remaining factor(s).¹

Inuit: Aboriginal people in northern Canada who live above the tree line in Nunavut, the Northwest Territories, northern Quebec and Labrador. The word means 'people' in Inuktitut, the Inuit language. The singular of Inuit is Inuk.

Median: The simplest division of a set of measurements into two parts – the lower and upper half. The point on the scale that divides the group in this way is called the 'median'.¹

Non-Status Indian: An Indian person who is not registered as an Indian under the *Indian Act*. This may be because his or her ancestors were never registered, or because he or she lost Indian status under former provisions of the *Indian Act*.

Off-Reserve: A term used to describe people, services or objects that are not part of a reserve but that relate to a First Nation.

On-Reserve: A term used to describe First Nations people that live on a reserve, land set aside by the Federal Government for the use and occupancy of an Indian group or band.

Prevalence: The number of cases of a given disease or other attribute (e.g., drug use, obesity) that exists in a defined population at a specified time. It is also sometimes referred to as the prevalence number.⁵

Prevalence “Rate”: The total number of all individuals who have an attribute or disease at a particular time (or during a particular period) divided by the population at risk of having the attribute or disease at this point in time or midway through the period. This is a proportion, not a rate.

Rate: A rate is an expression of the frequency with which an event occurs in a defined population in a specified period of time. The components of a rate are the numerator, the denominator, the specified time in which events occur, and usually a multiplier, a power of 10, that converts the rate from an awkward fraction or decimal to a whole number. In epidemiology, the denominator is usually person-time.¹ Person-time units are units of measure that combine the number of persons at risk of a specified outcome with their time at risk (e.g., person-years). Total person-time units are calculated by summing each individual’s time at risk in a population and comprise the denominators used in calculating person-time incidence rates.¹

Region: A First Nations and Inuit Health Branch administrative area that in most cases, corresponds to a province. Newfoundland and Labrador, Nova Scotia, New Brunswick and Prince Edward Island are grouped under the Atlantic Region. Similarly the Yukon, the Northwest Territories and Nunavut are grouped under the Northern Region (formerly the Northern Secretariat). British Columbia has historically been referred to as the Pacific Region.

Registered Indian: See *Status Indian*.

Reserve: Land set aside by the Federal Government for the use and occupancy of an Indian group or band.

Risk Factor: A risk factor is a factor associated with an increased chance of getting a disease; it may be a cause or simply a risk marker. Factors associated with decreased risk are known as protective factors.

Seropositive: The result of a blood test. The serostatus or blood test result of an individual tested for HIV can be HIV negative or HIV positive. A person who tests positive for HIV through a blood test is considered to be seropositive for HIV. If that person tests negative, he or she is seronegative.⁶

Status (Registered) Indian: An Indian person who is registered under the *Indian Act*. The Act sets out requirements for determining who is a Status Indian.

Surveillance: Surveillance includes the collection of data, as well as the review, analysis and dissemination of findings on incidence (new cases), prevalence, morbidity, survival and mortality. Surveillance also serves to collect information on the knowledge, attitudes and behaviours of the public with respect to practices that prevent cancer, facilitate screening, extend survival and improve quality of life. Surveillance based on selected population samples chosen to represent the relevant experience of particular groups is referred to as *sentinel surveillance*.¹

Tuberculosis: Tuberculosis (TB) is an infectious disease caused by a group of bacteria, which includes *Mycobacterium tuberculosis*, *M. bovis* and *M. africanum*. In most cases the initial infection in the lung goes unnoticed and the lesion heals, leaving little or no residual damage. Approximately 90% to 95% of these infected individuals enter a latent phase during which there is a lifelong risk of the disease reactivating. The most important form of the disease is pulmonary TB, in which the bacteria can

be transmitted from person to person through the air. TB continues to be an important worldwide cause of disability and death.³

Vital Statistics: Systematically tabulated information concerning births, marriages, divorces, separations, and deaths based on registrations of these vital events.¹

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ACRONYMS USED IN THIS REPORT

| | |
|---------------|--|
| AFN | Assembly of First Nations |
| AIDS | Acquired Immunodeficiency Syndrome |
| CANSIM | Canadian Socio-economic Information Management System |
| CCHS | Canadian Community Health Survey |
| COPD | Chronic Obstructive Pulmonary Disease |
| CTBRS | Canadian Tuberculosis Reporting System |
| EHSSS | Enhanced Hepatitis Strain Surveillance System |
| FNIGC | First Nations Information Governance Committee |
| FNIHB | First Nations and Inuit Health Branch |
| HCV | Hepatitis C Virus |
| HIV | Human Immunodeficiency Virus |
| IDU | Injecting Drug Users |
| INAC | Indian and Northern Affairs Canada |
| MSM | Men Who Have Sex with Men |
| PHAC | Public Health Agency of Canada |
| PUMF | Public Use Microdata File |
| RAPB | Regions and Program Branch |
| RHS | First Nations Regional Longitudinal Health Survey |
| STI | Sexually Transmitted Infection |
| TB | Tuberculosis |
| TB-HIV | Tuberculosis and Human Immunodeficiency Virus Co-Infection |
| TBPC | Tuberculosis Prevention and Control |

ACKNOWLEDGEMENTS

This report is the result of the hard work and dedication of First Nations and Inuit Health Branch (FNIHB), Regions and Programs Branch (RAPB), the Assembly of First Nations (AFN), Indian and Northern Affairs Canada (INAC), the Public Health Agency of Canada (PHAC), and the Health Data Technical Working Group, which is comprised of the organizations listed below.

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ADDITIONAL RESOURCES

Federal Government

First Nations and Inuit Health Branch:
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/fnihb-dgspni/index-eng.php

Non-insured Health Benefits Program:
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/fnihb-dgspni/nihbd-dssna/index-eng.php

Population Health, Public Health Agency of Canada: www.phac-aspc.gc.ca/ph-sp/index-eng.php

Maternal and Infant Health Section:
www.phac-aspc.gc.ca/rhs-ssg/index.html

Disease Surveillance on-line:
www.phac-aspc.gc.ca/surveillance-eng.php

Health Care System (Reports and Publications):
www.hc-sc.gc.ca/hcs-sss/pubs/index-eng.php

Aboriginal Canada portal (Health and Social Services):
www.aboriginalcanada.gc.ca/acp/site.nsf/en/ao20017.html

Indian and Northern Affairs Canada (Publications): <http://www.ainc-inac.gc.ca/ai/pubs/index-eng.asp>

Statistics Canada: www.statcan.gc.ca

2001 Census (Aboriginal tables):
www12.statcan.ca/english/census01/Products/standard/themes/ListProducts.cfm?Temporal=2001&APATH=3&THEME=45&FREE=0

2006 Census (Aboriginal tables):
www.statcan.gc.ca/bsolc/olc-cel?catno=97-558-x&chprog=1&lang=eng

Health Indicators (Canada):
www.statcan.gc.ca/pub/82-221-x/82-221-x2006001-eng.html

Provincial Reports

British Columbia Vital Statistics:
www.vs.gov.bc.ca/stats/indian/index.html

Northwest Territories Health and Social Services:
www.hlthss.gov.nt.ca/

Manitoba Centre for Health Policy (Publications):
mchp-appserv.cpe.umanitoba.ca/deliverablesList.html

Aboriginal Organizations

National Aboriginal Health Organization:
www.naho.ca/english/

Assembly of First Nations:
www.afn.ca

Inuit Tapiriit Kanatami:
www.itk.ca/index.html

International

Indian Health Service Annual Report (United States—American Indian and Alaska Natives):
www.ihs.gov/NonMedicalPrograms/IHS_Stats/index.cfm?module=hqPub&option=index

Australia Indigenous HealthInfoNet:
www.healthinonet.ecu.edu.au

New Zealand Ministry of Health, Maori Health:
www.maorihealth.govt.nz/

Health Canada, Regions and Programs Branch

British Columbia Region

Federal Building, Suite 540
Sinclair Centre
757 West Hastings Street
Vancouver, BC V6C 1A1
Tel: (604) 666-2083
Fax: (604) 666-2258
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/rapb-dgrp/reg/bc-cb-eng.php

Alberta Region

Canada Place, Suite 730
9700 Jasper Avenue
Edmonton, AB T5J 4C3
Tel: (780) 495-2651
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www.hc-sc.gc.ca/ahc-asc/branch-dirgen/rapb-dgrp/reg/al-eng.php

Manitoba Region

391 York Avenue, Suite 300
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Ontario Region

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Tel: (613) 952-0088
Fax: (613) 952-5748
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/rapb-dgrp/reg/on-eng.php

Quebec Region

Complexe Guy-Favreau, East Tower
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Montréal, QC H2Z 1X4
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Fax: (514) 283-7392
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/rapb-dgrp/reg/qc-eng.php

Atlantic Region

1505 Barrington Street, Suite 1525
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Tel: (902) 426-2038
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www.hc-sc.gc.ca/ahc-asc/branch-dirgen/rapb-dgrp/reg/atlant-eng.php

Northern Region

60 Queen Street, Suite 1400
Ottawa, ON K1A 0K9
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Statistical Profile on the Health of First Nations in Canada - Self-rated Health and Selected Conditions, 2002 to 2005
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