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A Statistical Profile on the Health of First Nations in Canada



Health Services Utilization in Western Canada, 2000



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A Statistical Profile on the Health of First Nations in Canada —
Health Services Utilization in Western Canada, 2000

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HIGHLIGHTS

- This report presents information on health service utilization in the year 2000 by the First Nations on- and off-reserve population as identified in the British Columbia, Alberta, Saskatchewan and Manitoba provincial hospital administrative databases. Hospital separation data from the other provinces and territories were not available. As such, caution should be used when interpreting the data.
- The leading causes (as categorized by the International Classification of Diseases, Version 9 (ICD-9) codes) of hospital separations for First Nations were 'Complications of Pregnancy, Childbirth and the Puerperium', 'Respiratory Diseases' and 'Injury and Poisoning'.
- First Nations hospital separation rates were higher than the Western population rates for all causes except for 'Perinatal Conditions' and 'Congenital Anomalies'.
- First Nations hospital separation rates were higher than the Western population rates for all pregnancies, childbirth and the puerperium; ischemic heart disease; cerebrovascular disease; diabetes; chronic obstructive pulmonary disease; pneumonia and influenza; external causes of injury; and lung, colorectal and cervical cancers.
- Hospital separation rates for asthma and bronchitis in the First Nations population were higher compared to the Western population. The highest rates were seen in the less than one year age group.
- Hospital separation rates for diabetes in the First Nations population were higher than the Western population from age 20 years onward, with rates in the First Nations female 55 to 59 year age group being 15 times higher.
- Rates for both pneumonia and influenza were approximately four times higher in the First Nations population than in the comparative Western population.
- Rates of intentional and unintentional injuries among First Nations were five and four times higher, respectively, than the rates in the comparative Western population.
- The leading causes of hospital separations due to injury among First Nations males were falls, assault, motor/road vehicle collisions, and surgical complications. For First Nations females, the leading causes were falls, suicide/self-injury, surgical complications and motor/road vehicle collisions.

INTRODUCTION

This report presents information on health service utilization in the year 2000 by the First Nations on- and off-reserve population as identified in the British Columbia, Alberta, Saskatchewan and Manitoba provincial hospital administrative databases. Data for the other provinces and territories are not included in this report as they were not able to identify First Nations populations in their databases. Health service utilization is reported in terms of hospital separation rates and average length of stay. Hospital separations and average length of stay provide an idea of which diseases or disorders place the greatest demand on the health care system.¹ Health service utilization data provide some insight into the health of a population and may be used to determine where prevention efforts should be concentrated to avert illness with the goal of reducing burden on the health care system. These data, however, cannot provide accurate estimates of the prevalence of a particular disease or disorder within that population.¹ This report focuses on the health conditions that are the most common causes of hospital separations in the First Nations population: pregnancies, childbirth and the puerperium with or without complications; chronic diseases such as circulatory disease, cancer and diabetes; respiratory diseases; and injury and poisoning.

This report differs from previous editions of *A Statistical Profile on the Health of First Nations in Canada*, as each chapter is now being published as a stand-alone report. As such, it is not a continuation of the previous edition of the series containing 1997 statistics. It should be noted that the population base used in this report and the method of rate calculation differs from previous reports and thus, should not be compared to previously published results.

The publication of this report would not be possible without the contribution of First Nations and Inuit Health Branch (FNIHB), Regions and Programs Branch (RAPB), 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.

Health Canada Activities

The First Nations and Inuit Health Branch 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 9 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) have a critical role to play 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 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/fniah-spnia/services/index-eng.php>.

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, and these data 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 or emergency treatments.

DATA SOURCES

First Nations Hospitalizations

Hospitalization data among First Nations included in this report originate from the provincial hospital administrative databases of the four western provinces: Manitoba, Saskatchewan, Alberta and British Columbia, accounting for 60% of the total Canadian First Nations population.² Each provincial database uses different methods to identify First Nations populations. At the time of data collection, some provinces could identify First Nations from their health card registration numbers while others relied on previous data linkages to files such as Provincial Health Premium lists, Health Canada's Status Verification System (SVS), or Indian and Northern Affairs Canada's (INAC) Indian Registry.

Provincial and territorial governments also have varying capacities to extract and analyze First Nations and Inuit data from their hospital databases. Two provinces, British Columbia and Alberta, identify First Nations clients in their databases through unique health card numbers or First Nations health premium lists. Using this method, Alberta estimates that their hospital registration files have 25 to 35% greater numbers of First Nations than INAC reports for the Alberta population.³ While Manitoba Health has a First Nations identifier within the Manitoba Health Services Commission registry, the identifier is missing from approximately 35% of the First Nations population of whom the majority are Bill C-31 reinstatements. Saskatchewan uses self-identification and address information to determine status. Other criteria come into play in identifying First Nations from health premium files, or based on postal or geographic identifiers that can affect the completeness of the reported data. Files derived from linkages are

limited to the latest updated files as well as the selection criteria and accuracy of the files.

It should be noted that data received from the provinces were for the calendar year 2000 rather than the conventional fiscal year, therefore, only hospital stays that ended during 2000 were included in the analysis. As well, there were differences in data collection methods and completeness; thus, comparisons between regions could not be made with the First Nations data.

The hospital separation data from Alberta originate from a database developed specifically for another project and not the complete provincial hospital administrative database. For this reason, analysis of certain indicators does not include Alberta data, as it was not possible to identify specific ICD-9 codes below the ICD-9 chapter level. In addition, Saskatchewan excluded the majority of live births from their hospitalization data.

Hospital separation data for other regions could not be obtained, thus the data reported are the best estimates that we have for this time period.

Canadian Hospitalizations

Hospitalizations for the Western population originate from the Hospital Morbidity Database (HMDB), a national data holding managed by the Canadian Institute for Health Information (CIHI). The HMDB captures administrative (e.g., admission and discharge dates), clinical (e.g., most responsible diagnosis) and demographic (e.g., patient age) information on hospital in-patient events and provides national discharge statistics from Canadian health care facilities by diagnoses and procedures. Discharge data are received from acute care facilities and select chronic care and rehabilitation facilities across Canada. Discharge data from psychiatric facilities as well as day procedures (e.g., day surgeries) and

Emergency Department visits are not captured in this database.

The HMDB is populated by a subset of data from the Discharge Abstract Database (DAD), also managed by CIHI. The DAD contains data from over 75% of Canadian hospitals, and focuses on in-patient care and day surgery. The HMDB differs from the DAD in that it appends data from non-DAD jurisdictions so that it is nationally comprehensive.

The HMDB captures up to five diagnoses, however, in this analysis, only the primary diagnosis is examined. Using only the primary diagnosis for hospital separations in the rate calculation creates an underestimate, which is most notable in the least serious conditions such as skin diseases and nervous system diseases.⁴ However, overestimation due to more than one hospitalization in a given year is more notable for chronic diseases.

Hospital separation data are affected by many factors other than health status. These factors include the availability of care, physical and financial accessibility, administrative decisions and hospital specialization.⁴

METHODS AND LIMITATIONS

This report uses information on health service utilization in the year 2000 by the First Nations on- and off-reserve population as identified in the British Columbia, Alberta, Saskatchewan and Manitoba provincial hospital administrative databases. Hospital separation data from the other provinces and territories were not available. As such, caution should be used when interpreting the data.

Hospital Separations

Hospital separations, or discharge statistics, are recorded whenever an individual is discharged from a hospital, either alive (including return to residence or transfers) or deceased. Since a person can be discharged a number of times in a single year, these data describe hospital separations (discharges), not individuals. As a result, hospital separations cannot be used to measure the prevalence of a disease or disorder. Hospital separations do not include out-patient, same-day services, or procedures conducted in a hospital without admission.

Hospital separation data can be analysed in several ways, such as by primary diagnosis, procedure performed, or length of stay in hospital. For the purposes of this report, hospital separation data have been analysed using the primary diagnosis, which is defined as the main cause of the hospitalization, and external causes (E-codes) for select injury and poisoning data.

Classification of Diagnoses

In this report, hospital separations are classified using ICD-9 coding. Details of codes and adapted terminology are provided in [Appendix 1](#).

The ICD-9 hospital separations for infectious diseases were only analyzed at the chapter level. The majority of individuals are not hospitalized for communicable diseases; as such the inclusion of hospital separation data for such diseases could present a skewed picture of the incidence of communicable disease in Canada. Separate data are presented for pneumonia and influenza, as these diseases have an important impact on health care utilization among First Nations, including hospitalizations.

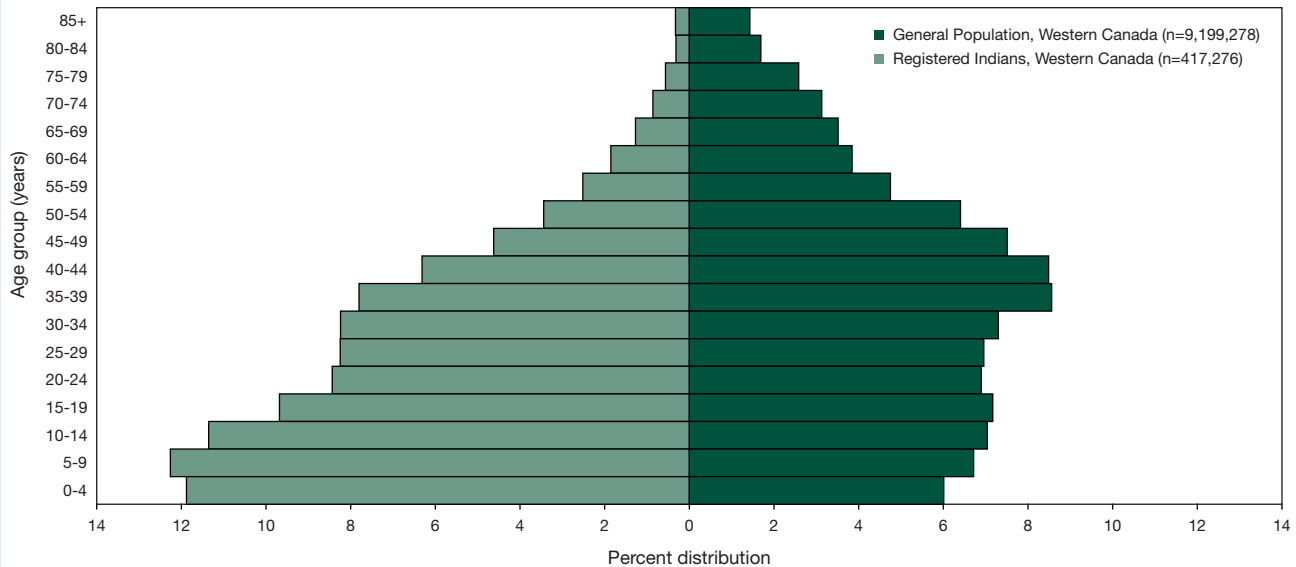
Rates of Hospitalization

Hospital separation rates were calculated for the First Nations population and compared to the Western population (identified in the HMDB), where applicable. In this report, hospital separations are reported as crude, age-specific or age-standardized rates (described in detail as part of this section and depicted in the [Method of Rate Calculation](#) box). When interpreting rates, it is important to note that the age structure of the First Nations population differs from that of the Western population in that the First Nations population is younger ([Figure 1](#)). It was necessary to adjust for the effect of age in order to be able to make meaningful comparisons between First Nations and the Western population.

Population (Denominator)

To calculate valid rates, it is necessary to use numerator and denominator data that relate to the same populations. For this report, there were several populations that could be used for the denominator but only one for the numerator (hospital separations); accordingly, each region provided a denominator that best corresponded to the numerator provided. This resulted in four different denominators being used, with varying levels of population coverage. Since this report is intended to provide an overall picture,

Figure 1. Age Distribution of First Nations and General Population, Western Canada¹, 2000



¹Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Note:

Includes Registered Indians living on- and off-reserve.

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

it was necessary to combine the data from the four regions. To ensure a common denominator consistent across the regions, the populations from all four were adjusted to a standard population – the Status/Registered First Nations on- and off- reserve population as of December 31, 2000.⁵ The Indian Register is the official record kept by INAC of all Status/Registered Indians in Canada and is adjusted for late and under-reported births and deaths by Statistics Canada.⁵ Our adjustment procedure decreases the population for British Columbia and Alberta and increases the population for Saskatchewan and Manitoba.

This adjusted population was stratified by age, sex, and region in order to obtain the appropriate denominator for each health condition in this report.

Rate Calculation

Calculations used in this report are defined as follows:

- **Crude rate:** divides the estimated total number of hospital separations by the total population, expressed as hospital separations per 100,000 population.
- **Age-specific rate:** divides the total number of hospital separations for a specified age group by the resident population of the same age group, expressed as hospital separations per 100,000 population.
- **Age-standardized rate:** multiplies the age-specific separation rate by the standard population of the same age group, expressed as hospital separations per 100,000 population.

Age-standardized separation rates were calculated to allow for comparisons between the two populations (i.e., hospital separations for First Nations vs. hospital separations for the Western population). The age-standardized separation rate represents what the crude rate would have been in the study population if that population had the same age distribution as the standard population, which in this report is the 1991 Western Canadian population.⁶

Method of Rate Calculation

The formulae used for the rate calculations are found in the **Method of Rate Calculation** box. For each region, age-specific separation rates were calculated using the regional number of hospitalizations in each age group divided by the age-specific regional population (provided by the region). Next, these rates were multiplied by the INAC population to estimate the number of hospitalizations for each age group that would have occurred in the region if the regional population were identical to the INAC population. This method assumes that the First Nations population as defined by the provincial Department of Health is a representative sample of the entire INAC population for the province. This calculation was done for each region. The estimated number of hospitalizations was then summed for each age group across each region. The summed total for each age group was then divided by the respective summed age-specific INAC population for the four regions (British Columbia, Alberta, Saskatchewan, Manitoba), to get the age-specific separation rate. To calculate the age-standardized separation rate, these age-specific rates were then multiplied by the corresponding age group of the 1991 Western Canadian population, added together, and divided by the total 1991 Western Canadian population. The calculated rates were rounded to the nearest 10 to reflect that the calculation method produces

an estimated number only. (See **Appendix 2** for a rate calculation example.)

Comparisons

In this report, health services utilization among First Nations is compared to utilization in the Western population of Western Canada (Western population). The latter includes only those provinces for which comparable First Nations data were available (i.e. British Columbia, Alberta (when available), Saskatchewan and Manitoba). Ratios (relative comparisons) and differences (absolute comparisons) were calculated to enable a single figure comparison of health services utilization of the two separate population groups (First Nations and Western population), and are defined as follows:

- **Rate ratio:** divides the age-standardized separation rate of the First Nations population by the age-standardized rate for the Western population. A rate ratio of 1.0 indicates that the First Nations and Western population both experience the same hospital separation rate. A rate ratio greater than 1.0 indicates that First Nations people are more likely to be hospitalized, while a rate ratio less than 1.0 indicates that First Nations people are less likely to be hospitalized compared to the Western population.
- **Rate difference:** subtracts the age-standardized separation rate for the Western population from the age-standardized separation rate for the First Nations population. A positive rate difference indicates the excess separation rate in the First Nations population.

METHOD OF RATE CALCULATION FOR FIRST NATIONS POPULATION

I. REGIONAL AGE-SPECIFIC CALCULATION

For each region, regional age-specific rates were calculated using the following formula:

$$a_i = b_i/c_i$$

Where a = regional age-specific rate
 b = number of regional hospital separations
 c = regional population
 i = age group (<1, 1-4, 5-9, ..., 85+)

II. ESTIMATED NUMBER OF REGIONAL HOSPITAL SEPARATIONS USING THE INAC POPULATION

The estimated number of hospital separations in each region by age group, had the regional population been the same as the INAC population for each region, was calculated using the following formula:

$$e_i = a_i*d_i$$

Where e = estimated number of hospital separations, by region, using the INAC population
 a = regional age-specific rate
 d = INAC regional population
 i = age group (<1, 1-4, 5-9, ..., 85+)

III. WESTERN CANADIAN AGE-SPECIFIC RATES

The estimated number of regional hospital separations calculated in step II were summed across the four regions for each age group and used to calculate the Western Canadian age-specific rates using the following formula:

$$f_i = (\sum e_i / \sum d_i) * 100,000$$

Where f = Western Canadian age-specific rate
 e = estimated number of hospital separations, by region, using the INAC population
 d = INAC regional population
 i = age group (<1, 1-4, 5-9, ..., 85+)

IV. WESTERN CANADIAN AGE-STANDARDIZED RATE

The Western Canadian age-standardized rate was calculated using the following formula:

$$g = [\sum (f_i * h_i) / \sum h_i] * 100,000$$

Where g = Western Canadian age-standardized rate
 f = Western Canadian age-specific rate
 h = 1991 Western Canadian population
 i = age group (<1, 1-4, 5-9, ..., 85+)

Average Length of Stay

Data on Average Length of Stay (ALOS), in combination with data on hospital separations, provide an idea of which diseases or disorders place the most demand on the health care system.¹ It also an indirect indicator of health in a population; while it may also reflect the efficiency of a health care system.¹ Generally, ALOS is calculated by dividing the total number of days spent in hospital by the number of hospital separations.¹

Regional age-specific bed-day rates were calculated and multiplied by the regional INAC population to estimate the total regional bed-days (method similar to regional age-specific hospital separation rates). These were then summed across the four regions and divided by the INAC population for those regions to yield Western Canadian age-specific bed-day rates. The Western Canadian age-specific bed-day rates were weighted by the corresponding age groups of the 1991 Western population to yield the Western Canadian age-standardized bed-day rate. This rate was divided by the Western Canadian age-standardized separation rate (calculated above), to yield the age-standardized ALOS for First Nations in Western Canada.

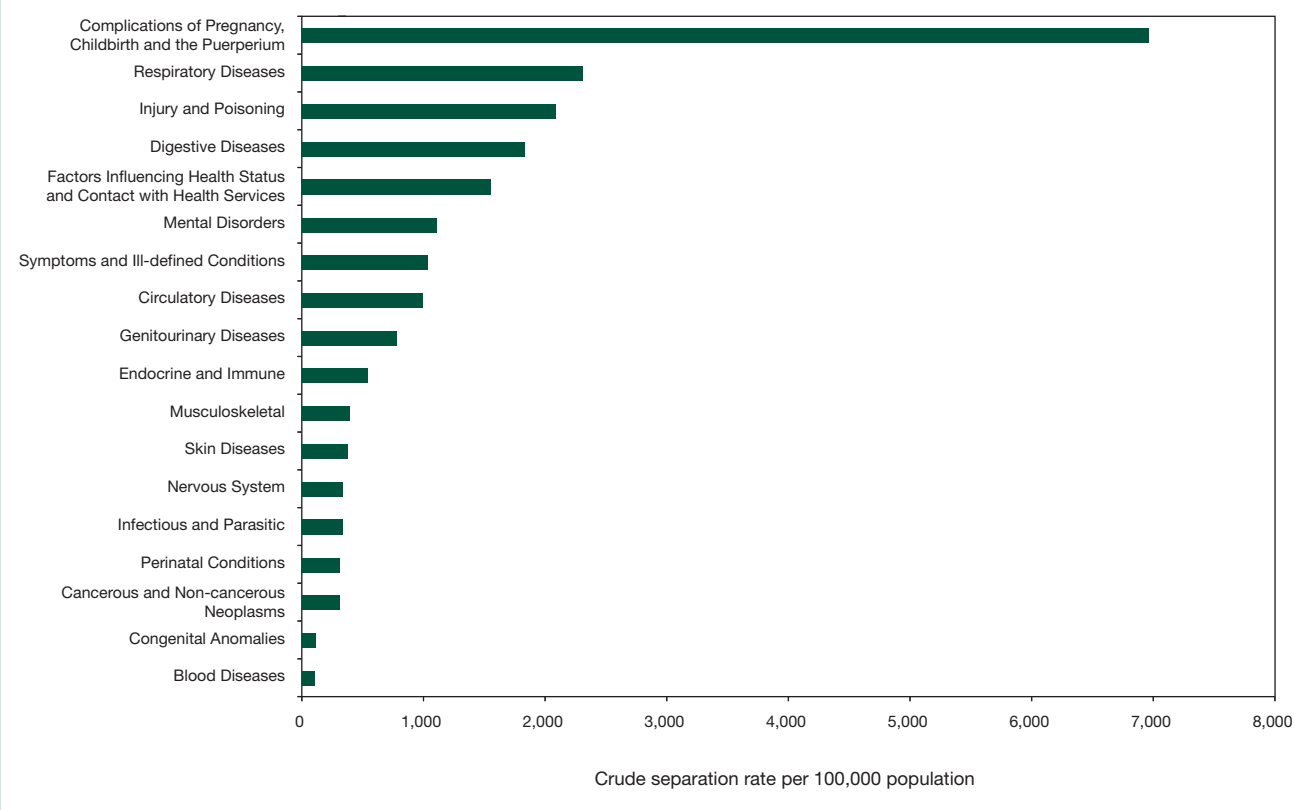
RESULTS AND DISCUSSION

This report uses information on health service utilization in the year 2000 by the First Nations on- and off-reserve population as identified in British Columbia, Alberta, Saskatchewan and Manitoba provincial hospital administrative databases. Hospital separation data from the other provinces and territories were not available. As such, caution should be used when interpreting the data.

All Causes of Hospitalizations

The leading causes of hospital separations for First Nations were ‘Complications of Pregnancy, Childbirth and the Puerperium’, with a crude separation rate of 6,960 hospital separations per 100,000 population, followed by ‘Respiratory Diseases’ and ‘Injury and Poisoning’, with crude separation rates of 2,310 and 2,090 hospital separations per 100,000 population respectively (Figure 2).

Figure 2. Crude Hospital Separation Rates for Individual Causes by ICD-9 Chapter¹, First Nations², Western Canada, 2000



¹ICD-9 chapter titles and associated codes can be found in [Appendix 1](#).

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba only.

Notes:

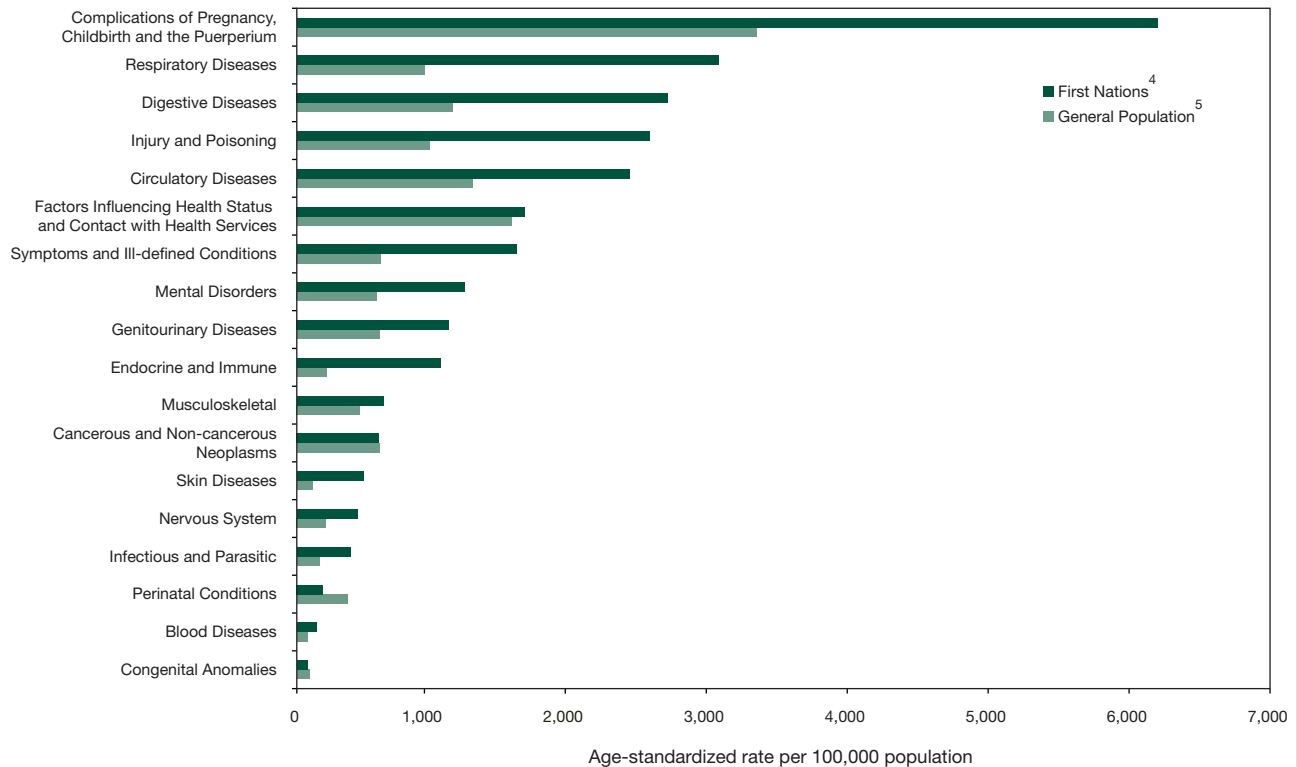
- a) For Complications of Pregnancy, Childbirth and the Puerperium, the female population was used as the denominator instead of the total population in the calculation of rates.
- b) Detailed rates can be found in [Appendix 3](#).

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health.

As shown in **Figure 3**, age-standardized hospital separation rates for First Nations were higher than the Western population separation rates for all causes except for ‘Perinatal Conditions’ and ‘Congenital Anomalies’. Of all primary diagnoses, ‘Complications of Pregnancy, Childbirth and the Puerperium’ had the highest age-standardized separation rate (6,190 hospital separations per 100,000 population). This separation rate was

approximately two times higher than the Western population separation rate (3,310 hospital separations per 100,000 population). The next three age-standardized separation rates, ‘Respiratory Diseases’, ‘Digestive Diseases’ and ‘Injury and Poisoning’, were approximately three times higher than the corresponding Western population separation rates. The largest First Nations to Western population ratio was seen in the

Figure 3. Age-standardized Hospital Separation Rates^{1,2} by ICD-9 Chapter³, First Nations⁴ and General Population⁵, Western Canada, 2000



¹The 1991 populations for British Columbia, Alberta, Saskatchewan, and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Nineteen First Nations separations with unknown age group, twenty-seven Western population separations with unknown separation date, and sixteen Western population separations with unknown age were not included in the totals for the calculation of rates.

³ICD-9 chapter titles and associated codes can be found in **Appendix 1**.

⁴Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

⁵Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- a) For Complications of Pregnancy, Childbirth and the Puerperium, the female population was used as the denominator instead of the total population in the calculation of rates.
- b) Detailed rates can be found in **Appendix 3**.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

‘Endocrine and Immune’ category with a First Nations separation rate almost five times higher than the Western population separation rate.

The absolute difference between the First Nations and Western population separation rates was examined. The top three causes of hospital separations for First Nations adding to the burden of health were ‘Complications of Pregnancy, Childbirth and the Puerperium’, ‘Respiratory Diseases’ and ‘Injury and Poisoning’ with an estimated 1,580 – 2,890 more hospital separations per 100,000 population per year compared to the Western population.

Age-standardized Average Length of Stay

The age-standardized ALOS for the First Nations population was similar to the age-standardized ALOS for the Western population. On average, First Nations spent 7 days in hospital compared to 6.6 days for the Western population. This small difference in ALOS may be attributed to the type and severity of the condition, distance from the hospital, and/or the restricted availability of other resources in the community (e.g., rehabilitation and home care services). As previously stated, First Nations had higher hospital separation rates for all causes except ‘Perinatal Conditions’ and ‘Congenital Anomalies’; thus, for selected diseases and injuries, if resources were not available within the community, the patient would have to stay in the hospital to receive additional care before returning to their community and home. It should be noted that the ALOS includes only the number of days a patient stays in the hospital. It does not include travel and/or time spent in a boarding home, or patients seen on an out-patient basis.

All Causes of Hospitalizations Excluding Complications of Pregnancy

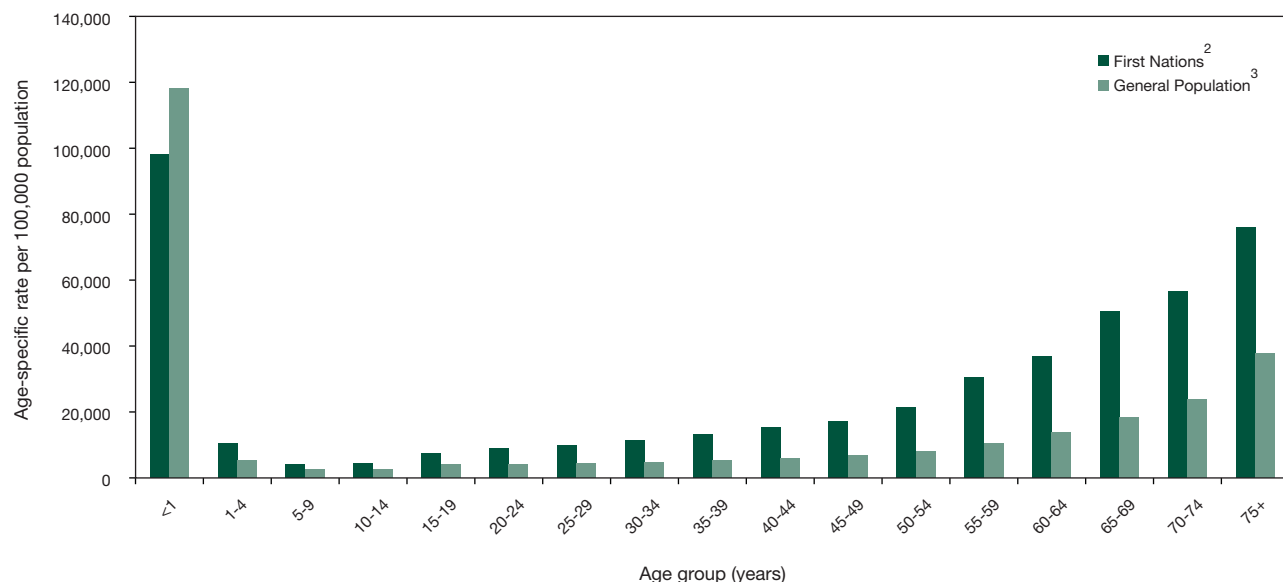
With the exception of those under one year of age, the age-specific hospital separation rates (excluding complications of pregnancy) were higher for the First Nations population compared to the Western population (**Figure 4**). Within the First Nations population, infants less than one year of age had the highest hospital separation rate (98,000 hospital separations per 100,000 population). This rate was approximately 20% lower than the Western population separation rate (118,100 hospital separations per 100,000 population). After infants, First Nations seniors (aged 65 years and over) had the largest hospital separation rates, with age-specific separation rates ranging from two to three times higher than the corresponding Western population separation rates. The largest First Nations to Western population ratio was in the 55 to 59 year age category, with a First Nations separation rate three times higher than the Western population separation rate.

Between the ages of one and 19 years, First Nations hospital separation rates were 50 to 100% higher than the Western population separation rates. After age 19, the First Nations hospital separation rates were even higher, with rates two to three times the Western population separation rates.

With the exception of those under one year of age, health services utilization by the First Nations population was highest in the 75 and over, 70 to 74, and 65 to 69 year age groups. Within these three age groups, First Nations experienced between 32,030 and 38,180 more hospital separations per 100,000 population compared to the Western population.

Injury and poisoning, and diabetes were major contributors to the considerable difference

Figure 4. Age-specific Hospital Separation Rates¹ for All Causes (Excluding Complications of Pregnancy), by Age Group, First Nations² and General Population³, Western Canada, 2000



¹Ninety-eight First Nations separations with unknown age, twenty-seven Western population separations with unknown separation date, and seventeen Western population separations with unknown age were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- a) Detailed rates can be found in [Appendix 3](#).
- b) All Causes (Excluding Complications of Pregnancy) refers to ICD-9 codes 001-629, 680-999, V01-V82.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI 2007.

between the First Nations and the Western population hospital separation rates in the older age groups. For those under one year of age, the Western population separation rate was higher than the First Nations rate, largely due to the higher hospital separation rate observed for perinatal conditions.

Pregnancies, Childbirth and Puerperium with and without Complications

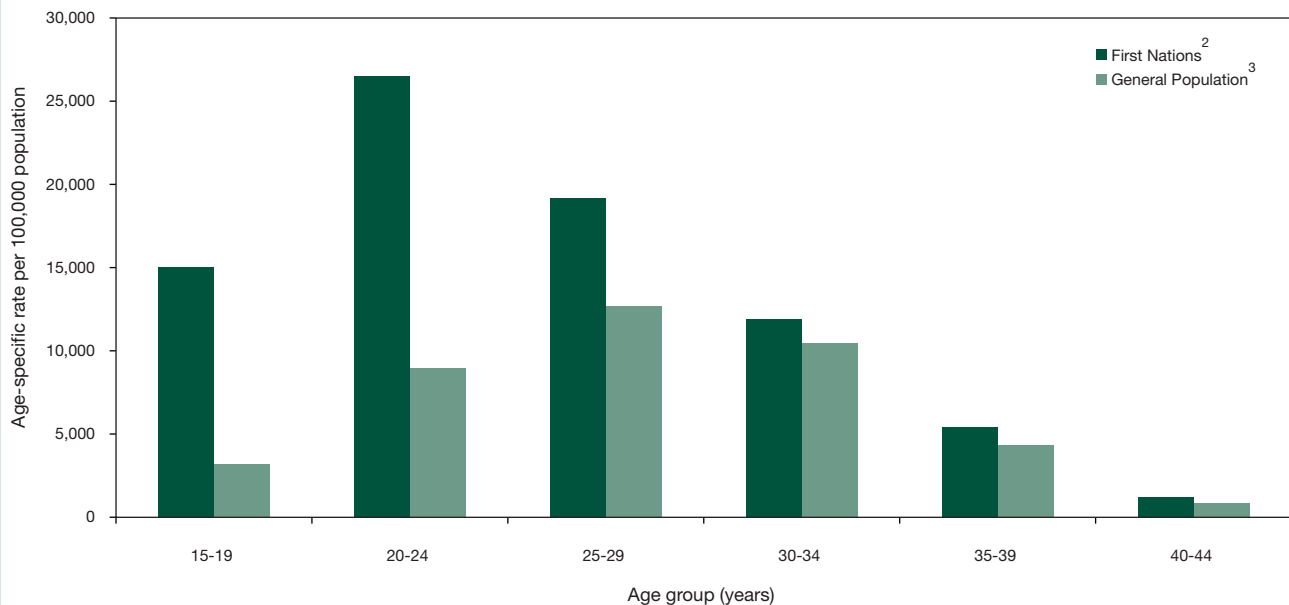
As shown in [Figure 5](#), age-specific hospital separation rates for the First Nations female population were higher than those of the Western

female population in all age groups from 15 to 44 years of age. The highest separation rate for First Nations women of childbearing age was seen in the 20 to 24 year age group (26,500 hospital separations per 100,000 population).

The largest absolute rate difference between the First Nations population and the Western population was seen in the 20 to 24 year age group. The First Nations population had 17,550 more hospital separations per 100,000 population compared to the Western population.

Teenage pregnancies as well as pregnancies in women over the age of 35, greatly increase the risk of fetal complications such as low birth

Figure 5. Age-specific Hospital Separation Rates¹ for All Pregnancies, Childbirth and Puerperium, by Age Group, First Nations² and General Population³, Western Canada, 2000



¹Only the female population was used in the rate calculation.

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- a) Detailed rates can be found in [Appendix 3](#).
- b) All Pregnancies, Childbirth and Puerperium refers to ICD-9 codes 630-676.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI 2007.

weight and prematurity.⁷ These complications increase the infant’s risk of poor health and death. These infants are more likely to develop significant disabilities, and are more likely to have a longer period of hospitalization after birth.⁸

Chronic Diseases

In 2000, the First Nations hospital separation rates were higher than the Western population for each of the following chronic diseases: ischemic heart disease (IHD), cerebrovascular disease, diabetes and chronic obstructive pulmonary disease (COPD).

As shown in [Figure 6](#), diabetes and IHD had the highest age-standardized hospital separation

rates among First Nations. The age-standardized separation rate for diabetes was seven times higher in the First Nations population than in the Western population (780 vs. 110 hospital separations per 100,000 population), whereas the separation rate for IHD was approximately two times higher. COPD and cerebrovascular disease separation rates in the First Nations population were two and a half and two times higher, respectively, than the corresponding Western population separation rates.

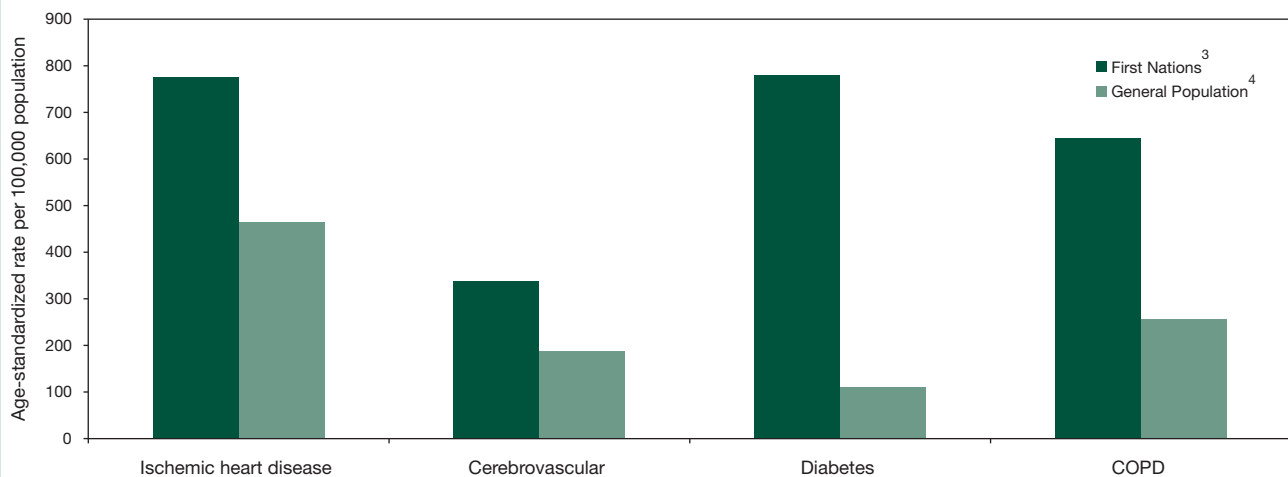
Diabetes and COPD were the top two causes adding to the burden of First Nations health, with 670 and 390 more hospital separations per 100,000 population, respectively, compared to the Western population.

IHD is a major cause of illness, disability and death in Canada. The prevalence of risk factors such as smoking, obesity and diabetes in the First Nations population are higher than in the Western population.⁹ The overall age-standardized hospital separation rate for IHD in the First Nations population was two times higher than the Western population separation rate. Modifying the risk behaviours listed previously may help to prevent not only circulatory diseases such as heart disease, but also many other chronic diseases that share the same risk factors.

A more detailed examination of COPD shows that the highest age-specific separation rates for asthma and bronchitis were seen in the youngest

(less than 10 years) and the oldest (65 years and over) age groups for both the First Nations and the Western population (**Figure 7**). However, in each age group (excluding the 10 to 19 year age group for asthma), the hospital separation rates were higher in the First Nations population than in the Western population. In the First Nations population, the highest hospital separation rate for asthma was seen in the less than one year age group with a separation rate of 1,840 hospital separations per 100,000 population, three times higher than its corresponding Western population separation rate. However, the highest hospital separation rate for bronchitis in the First Nations population was seen in the 65 years and over age group with a separation rate of 1,230 hospital

Figure 6. Age-standardized Hospital Separation Rates^{1,2} for Selected Chronic Conditions, First Nations³ and General Population⁴, Western Canada, 2000



¹The 1991 populations for British Columbia, Alberta, Saskatchewan and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Fifty-two First Nations separations with unknown age, seven Western population separations with unknown separation date, and three general population separations with a discharge date of 2001 were not included in the totals for the calculation of rates.

³Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

⁴Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

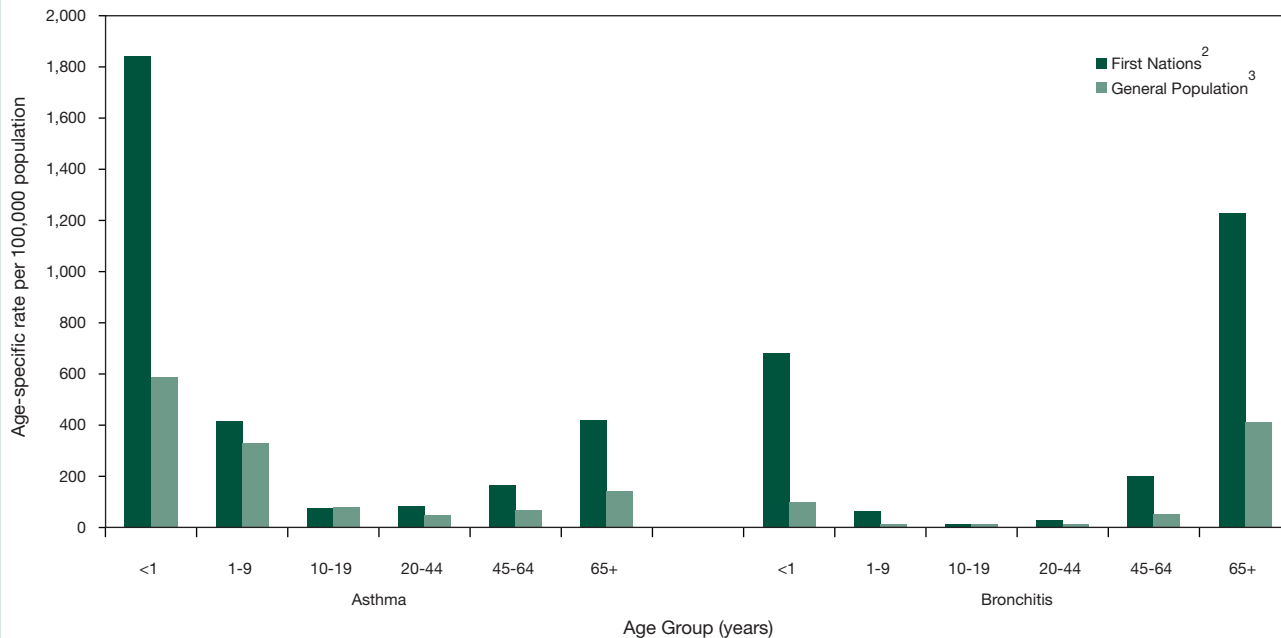
- a) Detailed rates can be found in **Appendix 3**.
- b) Ischemic heart disease refers to ICD-9 codes 410-414.
- c) Cerebrovascular refers to ICD-9 codes 430-438.
- d) Diabetes refers to ICD-9 code 250.
- e) COPD refers to ICD-9 codes 490-493.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

separations per 100,000 population, also three times higher than the corresponding Western population separation rate. Despite the 65 years and over age group having the highest hospital separation rate and largest absolute difference between rates (820 more hospital separations per 100,000 population for First Nations population compared to the Western population) for bronchitis, the largest First Nations to Western population ratio was seen in the less than one year age group with the First Nations separation rate being seven times higher than the Western population separation rate (680 vs. 100 hospital separations per 100,000 population).

Next to ‘Complications of Pregnancy, Childbirth and the Puerperium’, the second most common cause of hospital separation rates for First Nations in 2000 was ‘Respiratory Diseases’ (Figure 3). As with heart disease, risk factors for respiratory diseases are more prevalent in the First Nations population than in the Western population. Risk factors for respiratory diseases include smoking, both active personal smoking and passive (second-hand) exposure to environmental tobacco smoke, indoor and outdoor air quality, and the presence of in-house mould. It has been estimated that approximately three-quarters of COPD mortality in Canada, and other high-income countries, is associated with cigarette

Figure 7. Age-specific Hospital Separation Rates¹ for Asthma and Bronchitis, First Nations² and General Population³, Western Canada, 2000



¹Two Western population separations with unknown age were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Alberta (asthma only), Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta (asthma only), Saskatchewan and Manitoba.

Notes:

- a) Detailed rates can be found in [Appendix 3](#).
- b) Asthma refers to ICD-9 code 493.
- c) Bronchitis refers to ICD-9 codes 491-492.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

smoking.^{10,11} Additionally, smoking also increases an individual's risk of developing other diseases and adverse health effects.¹² For individuals with COPD and asthma, exposure to environmental tobacco smoke can make symptoms worse.¹³ Those who reduce or quit smoking may greatly reduce their risk of developing respiratory diseases.¹³

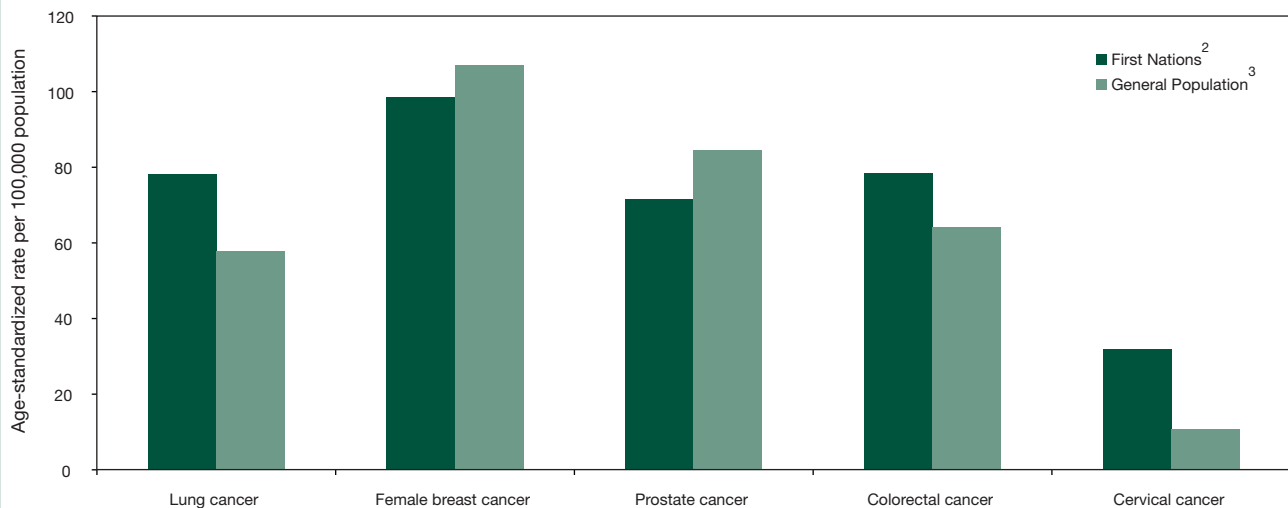
The presence of in-house mould, which has been identified as a problem in many First Nations communities, may also increase the risk for respiratory diseases.¹⁴ Inadequate housing (housing with circulation and moisture issues)

can lead to mould growth, which in turn can lead to a number of health problems, including allergic complications such as asthma attacks, non-allergic reactions such as headaches, as well as coughing and wheezing.¹⁵

Cancer

The age-standardized hospital separation rates for cancerous and non-cancerous neoplasms were identical in the First Nations and Western populations (590 hospital separations per 100,000 population). In examining selected cancers, the First Nations hospital separation rates were found to be higher than the Western population

Figure 8. Age-standardized Hospital Separation Rates¹ for Selected Cancers, First Nations² and General Population³, Western Canada, 2000



¹The 1991 populations for British Columbia, Saskatchewan, and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- a) Detailed rates can be found in [Appendix 3](#).
- b) For Female breast cancer and Cervical cancer, only the female population was used in the rate calculation.
- c) For Prostate cancer, only the male population was used in the rate calculation.
- d) Lung cancer refers ICD-9 code 162.
- e) Female breast cancer refers to ICD-9 code 174.
- f) Prostate cancer refers to ICD-9 code 185.
- g) Colorectal cancer refers to ICD-9 codes 153-154.
- h) Cervical cancer refers to ICD-9 code 180.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

separation rates for lung cancer, colorectal cancer, and cervical cancer (**Figure 8**). Female breast cancer and prostate cancer were 10 to 20% higher in the Western population.

The hospital separation rate for cervical cancer was three times higher in the First Nations population than in the Western population. Cervical cancer also had the largest absolute rate difference with First Nations experiencing 20 more hospital separations per 100,000 population compared to the Western population. Nearly all (70%) cervical cancers are caused by persistent high-risk human papillomavirus (HPV) infection.¹⁶ Access to cervical screening services, HPV vaccination programs and education programs targeting safe sexual health

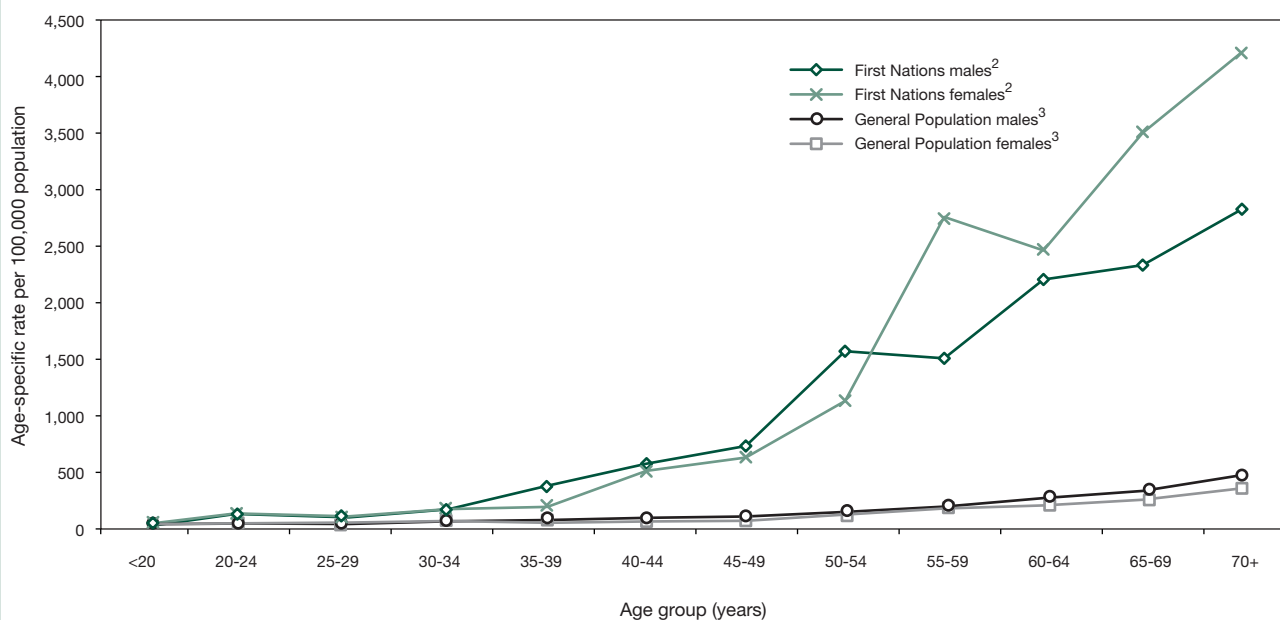
practices may assist in the prevention and early detection of cervical cancer.

The overall age-standardized rate of hospital separations for cancer in the First Nations population was similar to the separation rate in the Western population. In Canada, it has been estimated that a large proportion of fatal cancers are associated with the use of tobacco and poor diet.¹⁷ Other factors, including socio-economic status and environmental pollution, are also thought to be causes of cancers.¹⁸

Diabetes

The age-specific hospital separation rates for diabetes increased with age for both the First Nations and Western populations (**Figure 9**).

Figure 9. Age-specific Hospital Separation Rates¹ for Diabetes, by Sex and Age Group, First Nations² and General Population³, Western Canada, 2000



¹Sixteen First Nations separations with unknown age were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- Detailed rates can be found in **Appendix 3**.
- Diabetes refers to ICD-9 code 250.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

The increase for First Nations, however, was at a greater rate. When comparing the age-specific hospital separation rates for diabetes between First Nations males and females, similar rates were observed in the younger age groups (less than 20 years of age until the 30 to 34 year age group). However, starting from the 35 to 39 year age group and ending in the 50 to 54 year age group, First Nations males had consistently higher hospital separation rates. This observed trend was reversed in the older age groups (55 years and older), with First Nations females exhibiting higher hospital separation rates for diabetes.

Expressed as ratios, the largest ratio in age-specific separation rates between First Nations males and females was seen in the 35 to 39 year age group. Within this age group, the First Nations male separation rate was two times higher than the First Nations female separation rate (380 vs. 190 hospital separations per 100,000 population). In terms of additional burden on health, the largest absolute difference in separation rates was seen in the 70 years and over age group where First Nations females experienced 1,390 more hospital separations per 100,000 population compared to First Nations males.

For both sexes in the First Nations and Western populations, the highest hospital separation rates for diabetes were found in the 70 years and over age group. The largest First Nations to Western population ratio was seen in the 50 to 54 year age group for males with a First Nations separation rate approximately 10 times higher than the Western population separation rate (1,570 vs. 150 hospital separations per 100,000 separation). For females, the largest First Nations to Western population ratio was seen in the 55 to 59 year age group with a First Nations separation rate 15 times higher than the Western population separation rate (2,760 vs. 180 hospital separations per 100,000 population).

As with the differences between First Nations males and females, the largest absolute rate difference was seen between First Nations and the Western population males and females in the 70 years and over age group. First Nations males experienced 2,350 more hospital separations per 100,000 population compared to the Western male population, and First Nations females experienced 3,860 more hospital separations per 100,000 population compared to the Western female population.

Starting at 40 years of age, First Nations females had an eight to 15 times higher rate of hospital separations for diabetes than the Western female population. First Nations males had a six to 10 times higher rate of hospital separations for diabetes than the Western male population starting at 40 years of age.

Diabetes is a major health issue for the Aboriginal (First Nations, Inuit and Métis) population. Modifiable risk factors such as sedentary lifestyle and dietary habits, both of which have an impact on obesity, are significant in the prevention of diabetes. Other concerns related to diabetes in the Aboriginal population include early disease onset, greater severity at diagnosis, high rates of complications (e.g., heart disease, stroke, lower limb amputations), lack of accessible services, and increasing prevalence of diabetes and its associated risk factors.¹⁹ Based on these concerns, increases in access to services and education programs could aid in the early detection, treatment and control of diabetes, which are essential to reduce the personal and public health burden of diabetes in First Nations communities.²⁰

Communicable Diseases

Upon examination of specific communicable diseases, namely pneumonia and influenza, separation rates for both communicable diseases

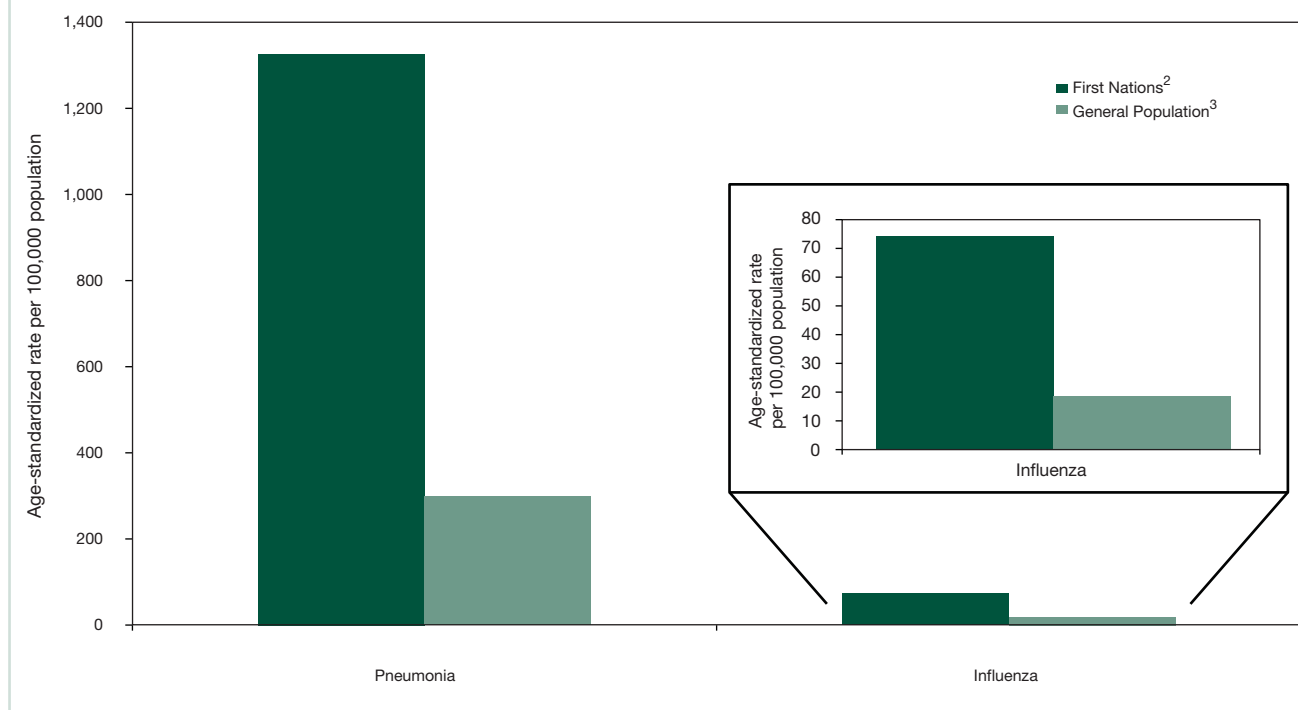
were higher in the First Nations population than in the Western population. The First Nations age-standardized hospital separation rate for pneumonia was more than four times higher than the Western population separation rate (1,330 vs. 300 hospital separations per 100,000 population). Similarly, the separation rate for influenza among the First Nations population was four times higher than the separation rate in the Western population (70 vs. 20 hospital separations per 100,000 population) (Figure 10).

In terms of the burden on health, First Nations had 1,030 more hospital separations per 100,000

population compared to the Western population for pneumonia and 60 more hospital separations per 100,000 population compared to the Western population for influenza.

Influenza is an acute respiratory illness, with the most common complication being pneumonia. The hospital separation rates for influenza and pneumonia were higher in the First Nations population than in the Western population. Reasons for these higher separation rates may include the higher rates of heart and respiratory diseases in the First Nations population since individuals with these diseases have an increased

Figure 10. Age-standardized Hospital Separation Rates¹ for Selected Communicable Diseases, First Nations² and General Population³, Western Canada, 2000



¹The 1991 populations for British Columbia, Alberta (pneumonia only), Saskatchewan and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Alberta (pneumonia only), Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta (pneumonia only), Saskatchewan and Manitoba.

Notes:

- a) Detailed rates can be found in [Appendix 3](#).
- b) Pneumonia disease refers to ICD-9 codes 480-486.
- c) Influenza disease refers to ICD-9 code 487.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

risk of contracting influenza and pneumonia.²¹ Over-crowded housing conditions may increase the risk of contracting influenza and pneumonia. If just one individual develops influenza, there is an increased risk that other family members living in the house will also catch the virus. Increased up-take of the influenza vaccine, especially amongst the young, the elderly, and those with heart and respiratory conditions, may help reduce the spread of influenza.²¹

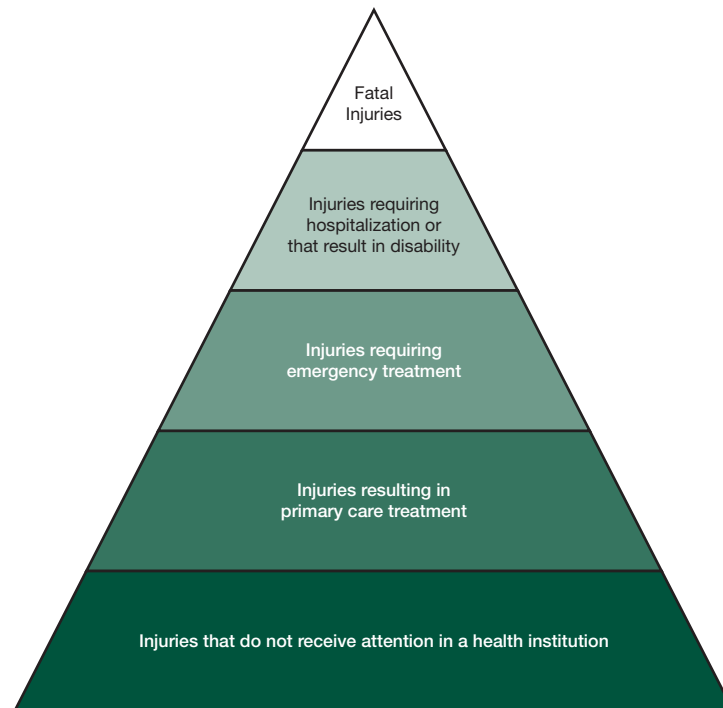
Injury and Poisoning

Injury is a leading cause of death among First Nations people.²² As well, injury tends to kill people at comparatively young ages, making it by far the leading cause of Potential Years of Life Lost (PYLL). This topic will be discussed in a

forthcoming report from this series. Aside from fatal injuries, however, there are many non-fatal ones that result in hospitalizations, emergency department or general practitioner treatment, or treatment at home/school/work.²³ Information on these injuries is not always reported or available, resulting in a potential misrepresentation of the true incidence of injuries. The injury pyramid shown in **Figure 11** helps to illustrate this fact.²³

Hospital separation data for reported injuries and poisonings can be analyzed in several ways, such as at the ICD-9 chapter level, or through the use of Nature of Injury diagnosis codes or External Causes of Injury codes (E-codes). Nature of Injury codes broadly indicate the type of injury such as a fracture or burn, while E-codes categorize the mechanism and intent of injury.

Figure 11. Injury pyramid



Source: Espitia-Hardeman V, Paulozzi L. Injury Surveillance Training Manual. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2005.

E-codes consist of a comprehensive range of injury categories which include intentional and unintentional injuries as well as injuries of unknown intent.

This report presents data at the ICD-9 chapter level (by population, sex and age), and further by E-codes, which are deemed to be more relevant to health promotion and injury prevention.

E-code data are presented by intent (intentional or unintentional injury), and then by mechanism of injury. (See list of injury groupings in [Appendix 1.](#))

At the chapter level, based on age-standardized separation rates, 'Injury and Poisoning' was the fourth leading cause of all hospital separations in the First Nations population, and approximately three times higher than the corresponding Western population separation rate (2,540 vs. 960 hospital separations per 100,000 population). When examining the crude separation rates, 'Injury and Poisoning' was the third leading cause of all hospital separations in the First Nations population. By age-standardizing the First Nations population so that it has the same age distribution as the Western population, 'Injury and Poisoning' loses some prominence among other causes of hospitalizations, but still represents a significant portion of health care utilization by First Nations.

For all age groups, age-specific hospital separation rates were higher in the First Nations population than in the Western population ([Figure 12](#)). The highest rate of hospital separations for First Nations males was seen in the 70 to 74 year age group with an age-specific separation rate of 4,840 hospital separations per 100,000 population, whereas for the Western male population, the highest separation rate was in the 75 years and over age group with an age-specific separation rate of 2,980 hospital separations per

100,000 population. The highest rates of hospital separations for First Nations females and the general Western female population were seen in the 75 years and over age group with age-specific separation rates of 7,410 hospital separations per 100,000 population for First Nations females and 3,970 hospital separations per 100,000 population for the general Western female population.

When comparing the age-specific hospital separation rates for all injuries and poisonings between First Nations males and females, First Nations males had consistently higher hospital separation rates, starting in the less than one year age group until the 50 to 54 year age group. This observed trend was reversed in the older age groups (55 years and older), with First Nations females exhibiting higher hospital separation rates for all injuries and poisonings, with the exception of the 70 to 74 year age group.

The largest First Nations male to female ratio was observed in both the under one year, and the 20 to 24 year age groups, in which males had twice as many hospital separations than females. In terms of additional burden on health, the largest difference between First Nations males and females was seen in the 75 years and over age group where First Nations females experienced 3,290 more hospital separations per 100,000 population compared to First Nations males.

The largest ratio in age-specific separation rates between the First Nations population and the Western population was seen in the 30 to 34 year age group for males, with a First Nations separation rate three times higher than the Western population separation rate (3,150 vs. 980 hospital separations per 100,000 population). For females the largest ratio in age-specific separation rates was seen in the 25 to 29 year age group, with a First Nations separation rate four times higher than the Western population separation rate

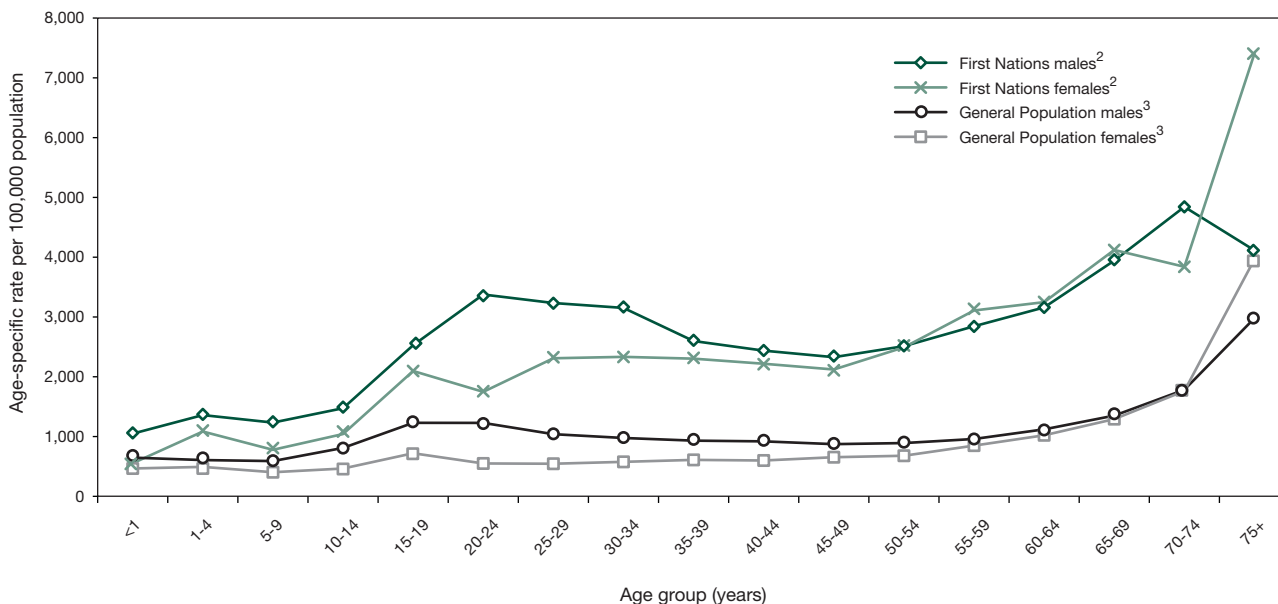
(2,310 vs. 550 hospital separations per 100,000 population). The largest absolute rate difference seen between First Nations males and the Western male population was in the 70 to 74 year age group. First Nations males experienced 3,060 more hospital separations per 100,000 population compared to the Western male population. For females, the largest absolute rate difference was seen in the 75 years and over age group with First Nations females experiencing 3,440 more hospital separations per 100,000 population compared to the Western female population. The next largest absolute rate difference between First Nations and the Western population, for both males and females was seen in the 65 to 69 year age group.

External Causes of Injury

As previously mentioned, using E-code data, injuries have been categorized into two groups:

- **Intentional injuries:** include self-inflicted injuries (suicide or self-harm) and those inflicted by someone else (homicide or assault).
- **Unintentional injuries:** are those for which there is no intent to harm (e.g., falls, motor vehicle collisions).

Figure 12. Age-specific Hospital Separation Rates¹ for All Injuries and Poisonings, by Sex and Age Group, First Nations² and General Population³, Western Canada, 2000



¹One Western population separation with unknown sex, and five Western population separations with unknown separation date were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- Detailed rates can be found in [Appendix 3](#).
- All Injuries and Poisonings refers to ICD-9 codes 800-999.

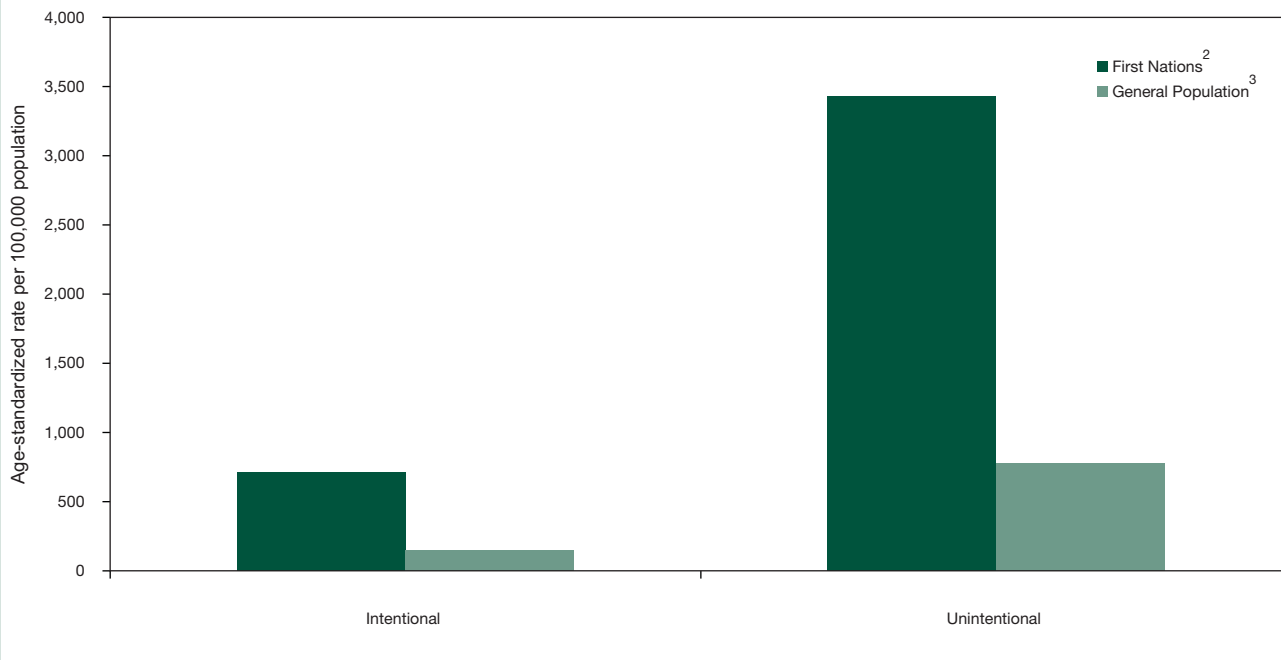
Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

The First Nations population had a hospital separation rate for unintentional injuries that was four times higher than the Western population separation rate, and the hospital separation rate of intentional injuries was five times higher than the Western population separation rate (as demonstrated in **Figure 13**). Although the First Nations to Western population ratio for intentional injuries was higher than for unintentional injuries, the absolute rate difference between the First Nations population and the Western population for unintentional injuries

was higher than the difference for intentional injuries. First Nations experienced 2,650 more hospital separations per 100,000 population for unintentional injuries compared to the Western population. In terms of intentional injuries, First Nations experienced 570 more hospital separations per 100,000 population compared to the Western population.

E-code data were further categorized into 14 groupings based on the mechanism of the injury (see **Appendix 1** for a detailed listing of groups).

Figure 13. Age-standardized Hospital Separation Rates¹ for Intentional and Unintentional Injuries, First Nations² and General Population³, Western Canada, 2000



¹The 1991 populations for British Columbia, Saskatchewan, and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

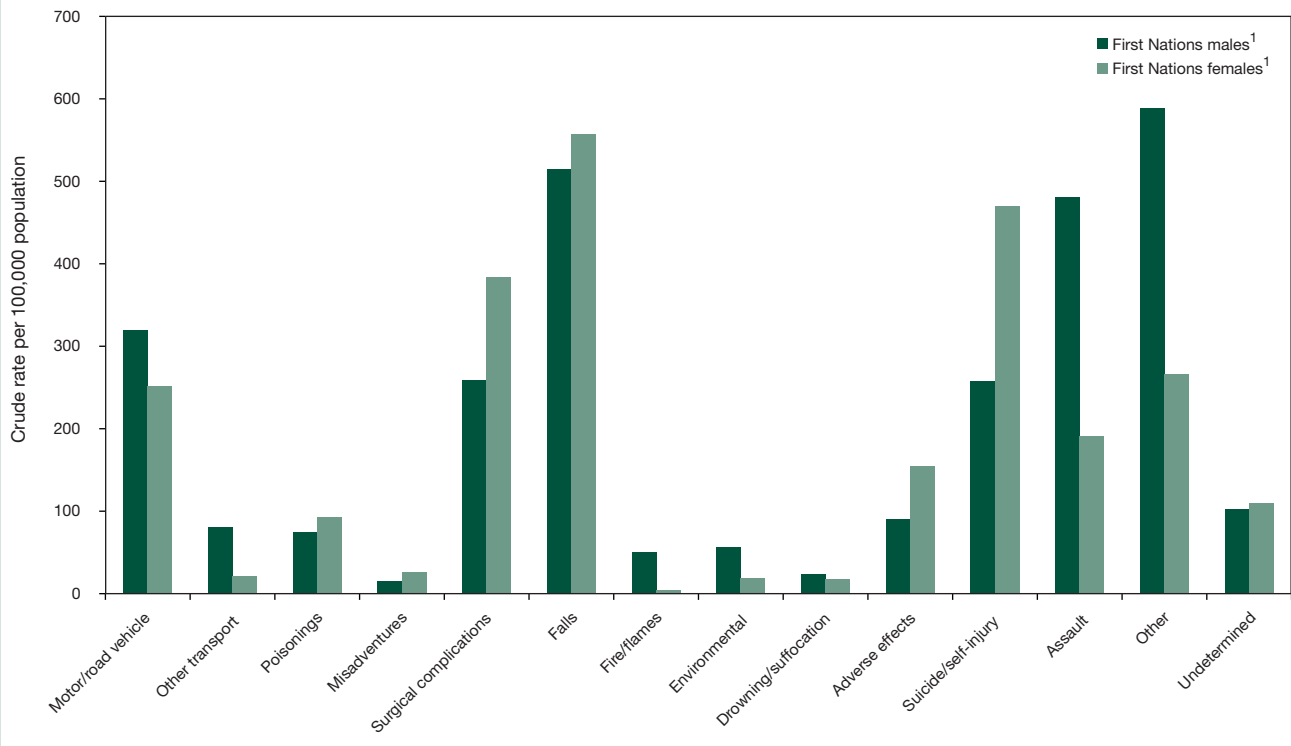
- a) Detailed rates can be found in **Appendix 3**.
- b) Intentional injuries refers to ICD-9 codes E950-E958, E960-E968.
- c) Unintentional injuries refers to ICD-9 codes E800-E848, E850-E869, E880-E886, E888, E890-E928.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

As shown in **Figure 14**, the hospital separation rate for injuries in the First Nations male population was higher than the female population for half of the selected injury categories (separation rates are found in **Table 12** in **Appendix 3**). These categories include:

- Motor/road vehicle collisions
- Other transport
- Fire/flames
- Environmental
- Drowning/suffocation
- Assault
- Other

Figure 14. Crude Hospital Separation Rates for Selected Injuries, by Sex, First Nations¹, Western Canada, 2000



¹Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

Notes:

- a) Detailed rates can be found in **Appendix 3**.
- b) Motor/road vehicle refers to ICD-9 codes E810-E825.
- c) Other transport refers to ICD-9 codes E800-E807, E826-E838, E840-E848.
- d) Poisonings refers to ICD-9 codes E850-E858, E860-E869.
- e) Misadventures refers to ICD-9 codes E870-E876.
- f) Surgical complications refers to ICD-9 codes E878-E879.
- g) Falls refers to ICD-9 codes E880-E886, E888.
- h) Fire/flames refers to ICD-9 codes E890-E899.
- i) Environmental refers to ICD-9 codes E900-E909.
- j) Drowning/suffocation refers to ICD-9 codes E910-E915.
- k) Adverse effects refers to ICD-9 codes E930-E949.
- l) Suicide/self-injury refers to ICD-9 codes E950-E958.
- m) Assault refers to ICD-9 codes E960-E968.
- n) Other refers to ICD-9 codes E887, E916-929, E959, E969-978, E989-E999.
- o) Undetermined refers to ICD-9 codes E980-E988.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

The leading cause of hospital separations among First Nations males, excluding other and undetermined categories, was falls with a rate of 510 hospital separations per 100,000 population. This was followed by assault, motor/road vehicle collisions and surgical complications, with hospital separation rates of 480, 320 and 260 per 100,000 population, respectively.

Among First Nations females, falls were the leading cause of hospital separations with a rate of 560 hospital separations per 100,000 population. This was followed by suicide/self-injury, surgical complications and motor/road vehicle collisions, with hospital separation rates of 470, 380, and 250 per 100,000 population, respectively, excluding the other category.

The largest male to female ratio in the First Nations population was for the fire/flame category, where the First Nations male hospital separation rate was seven and a half times higher than the female separation rate. However, the largest difference between the First Nations male and female populations, excluding the other category was observed in the assault category where First Nations males experienced 290 more hospital separations per 100,000 population compared to the First Nations female population. Following assault, suicide/self-injury and surgical complications had the second and third largest hospital separation rate differences between First Nations males and females, with females experiencing higher hospital separation rates.

The four largest age-standardized hospital separation rates due to injuries among First Nations were falls, surgical complications, suicide/self-injury and motor/road vehicle collisions (**Figure 15**). The hospital separation rate for falls was two times higher than the corresponding Western population separation rate, suicide/self-injury was four times higher and motor/road vehicle collisions were two times higher than

their corresponding Western population separation rates.

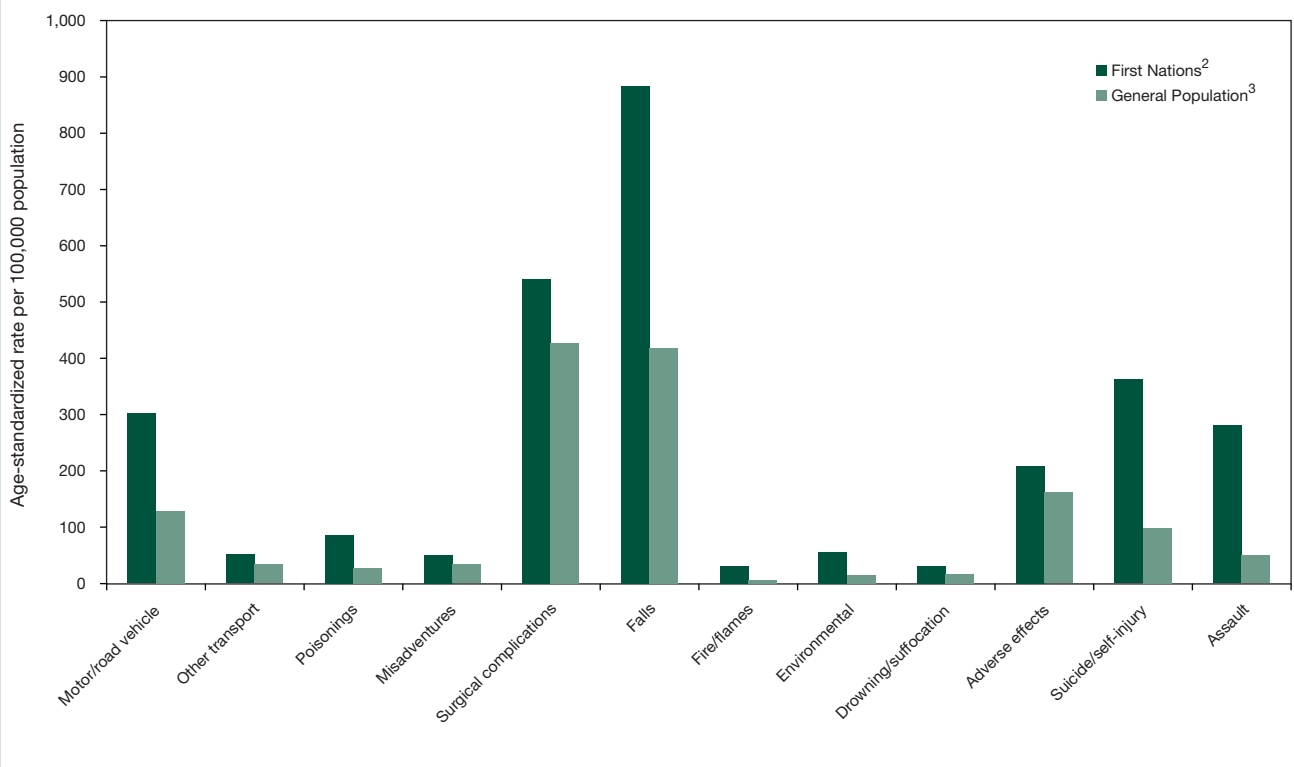
The age-standardized hospital separation rate for all injuries in the First Nations population was higher than the equivalent rate in the Western population (separation rates can be found in **Table 13** in **Appendix 3**). The largest First Nations to Western population ratio was seen in the assault category, where the First Nations hospital separation rate was six times higher than the Western population separation rate. The largest difference between the First Nations population and the Western population was seen in the falls category. First Nations experienced 470 more hospital separations per 100,000 population compared to the Western population. Following falls, suicide/self-injury and assault had the second and third largest absolute rate differences between the First Nations population and the Western population.

Injuries are a serious public health problem in Canada, and even more so in the First Nations population. Injuries occurring in the First Nations population tend to follow a similar pattern to that found in the Western population, but at much higher rates. Possible reasons for higher injury hospital separation rates among the First Nations population are their often isolated residences, their physical environment, crowded and dilapidated housing conditions, lifestyle, and poor social and economic conditions.²² Other factors that contribute to an increased risk of sustaining an injury include: being a young adult, being male, and individuals who are suffering from depression and/or substance abuse.²⁰ Preventing injuries is likely to require action at several levels: attacking the root causes (e.g., reducing social inequities, strengthening families); modifying the environment or equipment use (e.g., increased seatbelt use); and introducing programs to modify lifestyles (e.g., education on risks, treatment for substance abuse).²⁰

It is important to keep in mind that in-patient hospitalization data provide only one part of the picture regarding injuries, as no data have been provided on emergency visits, out-patient treatment or from nursing stations. The number

of emergency visits is thought to greatly exceed hospital admissions; one estimate places emergency visits at almost 30 times greater than hospital admissions.²⁴

Figure 15. Age-standardized Hospital Separation Rates¹ for Selected Injuries, First Nations² and General Population³, Western Canada, 2000



¹The 1991 populations for British Columbia, Saskatchewan and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- a) Detailed rates can be found in [Appendix 3](#).
- b) Motor/road vehicle refers to ICD-9 codes E810-E825.
- c) Other transport refers to ICD-9 codes E800-E807, E826-E838, E840-E848.
- d) Poisonings refers to ICD-9 codes E850-E858, E860-E869.
- e) Misadventures refers to ICD-9 codes E870-E876.
- f) Surgical complications refers to ICD-9 codes E878-E879.
- g) Falls refers to ICD-9 codes E880-886, E888.
- h) Fire/flames refers to ICD-9 codes E890-E899.
- i) Environmental refers to ICD-9 codes E900-E909.
- j) Drowning/suffocation refers to ICD-9 codes E910-E915.
- k) Adverse effects refers to ICD-9 codes E930-E949.
- l) Suicide/self-injury refers to ICD-9 codes E950-E958.
- m) Assault refers to ICD-9 codes E960-E968.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

CONCLUSION

The data presented in this report represent only four FNIHB regions: British Columbia, Alberta, Saskatchewan and Manitoba, accounting for 60% of the total Canadian First Nations population. It is therefore important to keep in mind that: (1) the data do not provide full coverage of all First Nations in Canada so utilization rates may not be representative of all First Nations in Canada; (2) adjustments were made to the data for the purposes of comparisons, the remaining error in generalizing to the INAC population is unpredictable; and (3) the hospital separation data from Alberta originate from a database developed specifically for another project and not the complete provincial hospital administrative database. The results in this report should be interpreted with caution. As a result of these limitations, there is a need to improve national data; particularly to identify First Nations in hospital data, or at least to access First Nations hospital data that already exist in administrative databases.

Hospital utilization data provide some insight into the health of a population, but cannot provide accurate estimates of the prevalence of a disease or disorder within that population. Hospital separations are limited to information about the reasons for which people are hospitalized and the procedures they undergo in hospital and do not include information on those who access other health services, such as general practitioners, community health clinics and out-patient hospital services, or those who have not accessed health care at all.²⁵

Hospital separation data are affected by many factors other than health status. Factors such as proximity of the service, and availability of, and access to, other medical services may influence hospital utilization, as may social factors relating

to culture, socioeconomic status of patients, and transport availability. This is particularly true for remote and isolated communities. In addition, language and transportation barriers may contribute to overall hospital separation rates. Consequently the data reported do not necessarily describe actual levels of need or ill health in the First Nations and Canadian populations. A high rate of hospital separations, for example, could mean that health status is deteriorating or that access to hospitals has improved.²⁶ Regardless, the information presented here indicates higher rates of health care utilization by First Nations than the Western population.

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GLOSSARY

Age-Specific Rate: The number of cases per 100,000 persons per year for a specific, narrow age range. Five-year age groups are commonly used.

Age-Standardized Rate: A statistical method that allows comparisons of groups of people from different backgrounds and age structures.

Average Length Of Stay (ALOS): Average length of stay in hospitals is calculated by taking the total number of days spent in hospitals and dividing it by the number of hospital separations.

Bill C-31: Bill C-31 is the pre-legislation name of a 1985 amendment to the *Indian Act*. The amendment was designed to eliminate several discriminatory provisions from the *Indian Act* concerning the unjust removal of First Nations people from the Indian Register, such as the removal of a First Nations woman and her children if she were to marry a non-Indian. The major impact of Bill C-31 has been the restoration of Indian status to people who lost it under the Act's unjust provisions. Approximately 105,000 people have regained or acquired Indian Status since the passage of the bill in 1985. For further information please see www.ainc-inac.gc.ca/ai/rs/pubs/re/sab/sab-eng.pdf

Crude Rate: The rate of incidence of an event or quality in an entire population.

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

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

External Causes Of Injury (E-Codes): The World Health Organization's manual of the international classifications of diseases, injuries and causes of death includes a separate classification of external causes of injury and poisoning. E-codes categorize the mechanism and intent of injury and consist of a broad range of injury categories which include intentional and unintentional injuries as well as injuries of unknown intent.

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 Indian people in Canada are referred to as 'First Nations people(s)'. In the Canadian Census of Population, 'North American Indian' is the term used for this population.

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.

Hospital Separation: People who leave hospitals through a completed procedure, discharge or death. The number of hospital separations is often used to examine the trends in morbidity of a disease. In this context, hospital separations do not include any out-patient procedures.

Indian: Indian is a term that describes all 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.

In-Patient Care: Treatment received as a bed-patient in a hospital, a skilled nursing facility, a rehabilitation hospital, or a substance abuse treatment facility, usually for a period of more than 24 hours.

International Classification Of Diseases, Version 9: The World Health Organization's manual of the international classifications of diseases, injuries and causes of death. It is the international standard for determining the cause of mortality and morbidity, and is used in this report. In addition to the classification of different diseases, there is a separate classification of external causes of injury and poisoning.

Inuit: An 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.

Non-Status Indian: The *Indian Act* defines a non-Status Indian as an Indian person who is not registered 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.

Out-Patient: A patient who does not require hospitalization and is not a bed-patient is referred to as an out-patient. Treatment can be ongoing or short-term.

Population: People who inhabit a territory, state, country, province or otherwise defined geographic area.

Primary Diagnosis: The main condition treated or investigated during the relevant episode of health care is referred to as primary diagnosis.

Rate: The proportion of a group affected over a period of time such as a year. It is usually expressed as cases (or deaths, separations, etc.) per 100,000 population per year.

Rate Ratio: The rate ratio is obtained by dividing the quantity of one rate by another rate. Ratios are relative comparisons; e.g. dividing the age-standardized hospital separation rate of the First Nations population by the age-standardized hospital separation rate of the Western population. A rate ratio of 1.0 indicates that First Nations people are more likely to be hospitalized, while a rate ratio less than 1.0 indicates that First Nations people are less likely to be hospitalized compared to the Western population.

Ratio: The value obtained by dividing one quantity by another; a general term of which rate, proportion, percentage, etc., are subsets.¹

Region: Defined as 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 often grouped as 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 Difference: The risk difference is obtained by subtracting the quantity of one rate from the quantity of another rate. Differences are absolute comparisons; e.g. subtracting the age-standardized separation rate for the Western population from the age-standardized separation rate for the First Nations population. A positive rate difference indicates the excess separation rate in the First Nations population.

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.

Socio-Economic Status: Refers to a person or group's position within a social hierarchy. Socio-economic status is determined by such indicators as education, income, occupation, wealth and place of residence, among others.

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

¹Last JM. A dictionary of epidemiology. 4th ed. New York: Oxford University Press; 2001.

ACRONYMS USED IN THIS REPORT

ALOS	Average Length of Stay
CANSIM	Canadian Socio-economic Information Management System
CIHI	Canadian Institute for Health Information
COPD	Chronic Obstructive Pulmonary Disease
DAD	Discharge Abstract Database
E-codes	External Causes of Injury Codes
FNIHB	First Nations and Inuit Health Branch
HMDB	Hospital Morbidity Database
HPV	Human Papillomavirus
ICD-9	International Classification of Diseases, Version 9
IHD	Ischemic Heart Disease
INAC	Indian and Northern Affairs Canada
PYLL	Potential Years of Life Lost
RAPB	Regions and Programs Branch
SVS	Status Verification System

APPENDIX 1: ICD-9 CHAPTERS AND CODES

The three-part table below provides code groupings for ICD-9 chapters, external causes of injury and poisoning, and frequently tabulated medical conditions, to be used as a guide when reading this report.

ICD-9 Chapter	ICD-9 Chapter Title (Note: When space is limited in the report, the text in parenthesis is used)	ICD-9 Codes
1	Infectious and Parasitic Diseases (Infectious and Parasitic)	001-139
2	Cancerous and Non-cancerous Neoplasms	140-239
3	Endocrine, Nutritional and Metabolic Diseases and Immunity Disorders (Endocrine and Immune)	240-279
4	Diseases of Blood and Blood-forming Organs (Blood Diseases)	280-289
5	Mental Disorders	290-319
6	Diseases of the Nervous System and Sense Organs (Nervous System)	320-389
7	Diseases of the Circulatory System (Circulatory Diseases)	390-459
8	Diseases of the Respiratory System (Respiratory Diseases)	460-519
9	Diseases of the Digestive System (Digestive Diseases)	520-579
10	Diseases of the Genitourinary System (Genitourinary Diseases)	580-629
11	Complications of Pregnancy, Childbirth and the Puerperium	630-676
12	Diseases of the Skin and Subcutaneous Tissue (Skin Diseases)	680-709
13	Diseases of the Musculoskeletal System and Connective Tissue (Musculoskeletal)	710-739
14	Congenital Anomalies	740-759
15	Certain Conditions Originating in the Perinatal Period (Perinatal Conditions)	760-779
16	Symptoms, Signs and Ill-defined Conditions (Symptoms and Ill-defined Conditions)	780-799
17	Injury and Poisoning	800-999
Supplementary	Factors Influencing Health Status and Contact with Health Services (this includes when a person who is not currently sick encounters the health services for some specific purpose or when some circumstance or problem is present which influences the person's health status but is not in itself a current illness or injury). (Factors Influencing Health Status and Contact with Health Services)	V01-V19
Supplementary	External Causes of Injury and Poisoning	E800-E999



External Cause (E-Code) of Injury and Poisoning Major Groupings		
Groupings used in report (Note: When space is limited in the report, the text in parenthesis is used)	ICD-9 Groupings	E-Codes
Motor/road vehicle collisions (Motor/road vehicle)	Motor vehicle traffic accidents	E810-E819
	Motor vehicle non-traffic accidents	E820-E825
Other transport	Railway accidents	E800-E807
	Other road vehicle accidents	E826-E829
	Water transport accidents	E830-E838
	Air and space transport accidents	E840-E845
	Vehicle accidents not elsewhere classifiable	E846-E848
Accidental poisonings (Poisonings)	Accidental poisoning by drugs, medicaments and biologicals	E850-E858
	Accidental poisoning by other solid and liquid substances, gases and vapours	E860-E869
Misadventures during surgical and medical care (Misadventures)	Misadventures to patients during surgical and medical care	E870-E876
Complications of surgical and medical care (Surgical complications)	Surgical and medical procedures as the cause of abnormal reaction of patient, or of later complication, without mention of misadventure at the time of procedure	E878-E879
Falls	Accidental falls	E880-E886, E888
Fire/flames	Accidents caused by fire and flames	E890-E899
Environmental accidents (Environmental)	Accidents due to natural and environmental factors (such as exposure to adverse weather conditions, animal bites)	E900-E909
Drowning/suffocation	Accidents caused by submersion, suffocation and foreign bodies	E910-E915
Adverse effects in therapeutic use (Adverse effects)	Drugs, medicaments and biological substances causing adverse effects in therapeutic use	E930-E949
Suicide/self-injury	Suicide and self-inflicted injury	E950-E958
Assault	Homicide and injury purposely inflicted by other persons	E960-E968
Other	Fracture, cause unspecified	E887
	Other accidents	E916-E928
	Late effects of accidental injury	E929
	Late effects of self-inflicted injury	E959
	Late effects of injury purposely inflicted by other person	E969
	Legal intervention	E970-E978
	Late effects of injury, undetermined whether accidentally or purposely inflicted	E989
	Injury resulting from operations of war	E990-E999
Undetermined	Injury undetermined whether accidentally or purposely inflicted	E980-E988

Specific Conditions	ICD-9 Codes
Asthma	493
Cancers - all malignant neoplasms	140-208
Cancers of specific sites:	
Cancer of trachea, bronchus, lung and pleura	162, 163
Female breast cancer	174
Prostate cancer	185
Cancer of colon, rectum, rectosigmoid junction and anus	153, 154
Chronic obstructive pulmonary disease (COPD)	490-496
Delivery in a completely normal pregnancy, labour and delivery	650
Diabetes	250
External causes of injury by intent:	
Intentionally inflicted injuries, suicide and homicide	E950-E958, E960-E968
Unintentional injuries	E800-E848, E850-E869, E880-E886, E888, E890-E928
Falls	E880-E886, E888
Infectious diseases by frequently tabulated groupings:	
Croup	464.4
Epiglottitis, acute	464.3
HIV/AIDS	042-044
Measles, mumps and rubella	055, 072, 056
Meningitis due to Haemophilus influenza	320.0
Meningococcal meningitis	036.0
Pertussis	033.0
Pneumococcal diseases	038.2, 320.1, 481, 041.2
Syphilis and other venereal diseases	090-099
Tuberculosis	010-018
Viral hepatitis, type A	070.0-070.1
Viral hepatitis, type B	070.3, 070.2
Viral hepatitis, other than types A and B	070.6, 070.9
Motor vehicle traffic accidents	E810-E819
Newborns – healthy liveborn infants	V30-V39
Pneumonia and influenza	480-487
Sudden infant death syndrome (SIDS)	798.0

APPENDIX 2: RATE CALCULATION EXAMPLE

Region W

Age Group (i)	No. of Separations (b)	Regional Population (c)	Age-specific Rate ($a_i=(b/c)$)
<1	8	2,310	0.0035
1-4	3	8,355	0.0004
5-9	5	11,963	0.0004
10-14	5	10,656	0.0005
~	~	~	~
65-69	122	1,026	0.1189
70-74	99	653	0.1516
75+	153	172	0.8895

Age Group (i)	Age-specific Rate (a)	INAC Regional Population (d)	Estimated Number of Hospital Separations ($e_i=(a_i*d_i)$)
<1	0.0035	2,686	9
1-4	0.0004	11,120	4
5-9	0.0004	13,587	5
10-14	0.0005	10,632	5
~	~	~	~
65-69	0.1189	1,250	149
70-74	0.1516	963	146
75+	0.8895	1,064	946

Age Group (i)	Estimated Number of Hospital Separations				Total ($W e_i + X e_i + Y e_i + Z e_i$) A	INAC Population ($W d_i + X d_i + Y d_i + Z d_i$) B	Age-specific rate per 100,000 ($f_i = (A/B) * 100,000$)
	Region W (e_i)	Region X (e_i)	Region Y (e_i)	Region Z (e_i)			
<1	9	10	11	8	38	9,865	385.2
1-4	4	6	8	10	28	38,236	73.2
5-9	5	9	13	17	44	52,417	83.9
10-14	5	19	15	11	50	47,632	105
~	~	~	~	~	~	~	~
65-69	149	150	138	163	600	5,246	11,437.3
70-74	146	153	176	197	672	3,765	17,848.6
75+	946	1056	888	1123	4013	5,162	77,741.2

Age Group (i)	Age-specific rate (f)	1991 Population (h)	Estimated Number of Hospital Separations ($f_i * h_i$)	Age-standardized rate per 100,000 ($g = (\sum f_i * h_i) / \sum h_i * 100,000$)
<1	0.003852	482,952	1,860.3	
1-4	0.000732	452,683	331.4	
5-9	0.000839	410,315	344.3	
10-14	0.00105	314,363	330.1	
~	~	~	~	
65-69	0.114373	256,397	29,324.9	
70-74	0.178486	238,850	42,631.4	
75+	0.777412	237,711	184,799.4	
		$\sum h_i = 3,739,221$	$\sum (f_i * h_i) = 264,884.7$	7,084.0

APPENDIX 3: HEALTH SERVICES UTILIZATION TABLES

This report presents information on health services utilization in the year 2000 by the First Nations on- and off-reserve populations as identified in the British Columbia, Alberta, Saskatchewan and Manitoba provincial hospital administrative databases. Hospital separation data from the other provinces and territories were not available. As such, caution should be used when interpreting the data. Additionally, since all of the rates for First Nations have been estimated by adjusting regional rates to the INAC population using methods described earlier in this report, all rate calculations are rounded to the nearest 10.

Table 1. Crude Hospital Separation Rates by ICD-9 Chapter¹, First Nations², Western Canada, 2000

ICD-9 Chapter	Crude Rate per 100,000 population
	First Nations, Western Canada ² (2000)
Infectious and Parasitic	340
Cancerous and Non-cancerous Neoplasms	310
Endocrine and Immune	540
Blood Diseases	100
Mental Disorders	1,110
Nervous System	340
Circulatory Diseases	1,000
Respiratory Diseases	2,310
Digestive Diseases	1,840
Genitourinary Diseases	780
Complications of Pregnancy, Childbirth and the Puerperium	6,960
Skin Diseases	380
Musculoskeletal	400
Congenital Anomalies	120
Perinatal Conditions	310
Symptoms and Ill-defined Conditions	1,040
Injury and Poisoning	2,090
Factors Influencing Health Status and Contact with Health Services	1,560
Total	18,080

¹ICD-9 chapter titles and associated codes can be found in [Appendix 1](#).

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- For Complications of Pregnancy, Childbirth and the Puerperium, the female population was used as the denominator instead of the total population in the calculation of rates.
- Due to rounding, columns may not add to total.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health.

Table 2. Age-standardized Hospital Separation Rates^{1,2} by ICD-9 Chapter³, First Nations⁴ and General Population⁵, Western Canada, 2000

ICD-9 Chapter	Age-standardized Rate per 100,000 population					
	First Nations ⁴ (2000)	Western population ⁵ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
Infectious and Parasitic	390	160	220	12	2.4	5
Cancerous and Non-cancerous Neoplasms	590	590	0	16	1.0	11
Endocrine and Immune	1,030	220	820	7	4.8	1
Blood Diseases	140	80	70	15	1.9	7
Mental Disorders	1,210	580	630	8	2.1	6
Nervous System	430	210	220	11	2.1	6
Circulatory Diseases	2,390	1,270	1,130	5	1.9	7
Respiratory Diseases	3,040	920	2,110	2	3.3	3
Digestive Diseases	2,670	1,120	1,550	4	2.4	5
Genitourinary Diseases	1,090	590	500	9	1.8	8
Complications of Pregnancy, Childbirth and the Puerperium	6,190	3,310	2,890	1	1.9	7
Skin Diseases	480	110	370	10	4.3	2
Musculoskeletal	620	460	170	13	1.4	9
Congenital Anomalies	80	90	-10	17	0.8	12
Perinatal Conditions	190	370	-180	18	0.5	13
Symptoms and Ill-defined Conditions	1,580	600	970	6	2.6	4
Injury and Poisoning	2,540	960	1,580	3	2.6	4
Factors Influencing Health Status and Contact with Health Services	1,640	1,550	100	14	1.1	10
Total²	26,300	13,170	13,130			

¹The 1991 populations for British Columbia, Alberta, Saskatchewan, and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Nineteen First Nations separations with unknown age group, twenty-seven Western population separations with unknown separation date, and sixteen Western population separations with unknown age were not included in the totals for the calculation of rates.

³ICD-9 chapter titles and associated codes can be found in [Appendix 1](#).

⁴Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

⁵Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- For Complications of Pregnancy, Childbirth and the Puerperium, the female population was used as the denominator instead of the total population in the calculation of rates.
- Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 3. Age-specific Hospital Separation Rates¹ for All Causes (Excluding Complications of Pregnancy), by Age Group, First Nations² and General Population³, Western Canada, 2000

Age Group	Age-specific Rate per 100,000 population		ARD	Rank	Ratio (FN vs. Cdn)	Rank
	First Nations ² (2000)	Western population ³ (2000)				
<1	98,000	118,100	-20,090	17	0.8	12
1-4	10,540	5,350	5,190	12	2.0	8
5-9	3,980	2,670	1,310	16	1.5	11
10-14	4,520	2,710	1,810	15	1.7	10
15-19	7,460	4,130	3,340	14	1.8	9
20-24	8,910	4,020	4,890	13	2.2	7
25-29	9,990	4,400	5,600	11	2.3	6
30-34	11,330	4,800	6,530	10	2.4	5
35-39	13,150	5,430	7,730	9	2.4	5
40-44	15,430	6,040	9,390	8	2.6	3
45-49	17,150	6,850	10,300	7	2.5	4
50-54	21,300	8,150	13,150	6	2.6	3
55-59	30,630	10,520	20,110	5	2.9	1
60-64	36,950	13,840	23,110	4	2.7	2
65-69	50,370	18,340	32,030	3	2.7	2
70-74	56,560	23,900	32,670	2	2.4	5
75+	75,950	37,770	38,180	1	2.0	8
Total¹	472,240	277,000	195,240			

¹Ninety-eight First Nations separations with unknown age, twenty-seven Western population separations with unknown separation date, and seventeen Western population separations with unknown age were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- All Causes (excluding complications of pregnancy) refers to ICD-9 codes 001-629, 680-999, V01-V82.
- Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 4. Age-specific Hospital Separation Rates¹ for All Pregnancies, Childbirth and Puerperium, by Age Group, First Nations² and General Population³, Western Canada, 2000

Age Group	Age-specific Rate per 100,000 population					
	First Nations ² (2000)	Western population ³ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
15-19	15,010	3,170	11,840	2	4.7	1
20-24	26,500	8,940	17,550	1	3.0	2
25-29	19,160	12,650	6,510	3	1.5	3
30-34	11,890	10,460	1,440	4	1.1	5
35-39	5,380	4,330	1,050	5	1.2	4
40-44	1,190	810	380	6	1.5	3
Total	79,130	40,350	38,770			

¹Only the female population was used in the rate calculation.

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- a) All Pregnancies, Childbirth and Puerperium refers to ICD-9 codes 630-676.
- b) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- c) ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 5. Age-standardized Hospital Separation Rates^{1, 2} for Selected Chronic Conditions, First Nations³ and General Population⁴, Western Canada, 2000

Selected Chronic Conditions	Age-standardized Rate per 100,000 population					
	First Nations ³ (2000)	Western population ⁴ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
Ischemic heart disease	780	470	310	3	1.7	4
Cerebrovascular	340	190	150	4	1.8	3
Diabetes	780	110	670	1	7.1	1
Chronic Obstructive Pulmonary Disease (COPD)	640	260	390	2	2.5	2
Total	2,540	1,020	1,520			

¹The 1991 populations for British Columbia, Alberta, Saskatchewan and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Fifty-two First Nations separations with unknown age, seven Western population separations with unknown separation date, and three general population separations with a discharge date of 2001 were not included in the totals for the calculation of rates.

³Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

⁴Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- Ischemic heart disease refers to ICD-9 codes 410-414.
- Cerebrovascular refers to ICD-9 codes 430-438.
- Diabetes refers to ICD-9 code 250.
- COPD refers to ICD-9 codes 490-493.
- Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Tables 6(a) and (b). Age-specific Hospital Separation Rates¹ for Asthma (a) and Bronchitis (b), First Nations² and General Population³, Western Canada, 2000

(a)	Age-specific Asthma Rate per 100,000 population						
	Age Group	First Nations ² (2000)	Western population ³ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
	<1	1,840	590	1,260	1	3.1	1
	1-9	410	330	80	4	1.3	5
	10-19	70	80	0	6	1.0	6
	20-44	80	50	30	5	1.7	4
	45-64	160	70	100	3	2.4	3
	65+	420	140	280	2	2.9	2
	Total	2,990	1,250	1,740			

(b)	Age-specific Bronchitis Rate per 100,000 population						
	Age Group	First Nations ² (2000)	Western population ³ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
	<1	680	100	580	2	7.0	1
	1-9	60	10	50	4	5.0	2
	10-19	10	0	10	6	3.1	5
	20-44	30	10	20	5	3.9	4
	45-64	200	50	150	3	4.0	3
	65+	1,230	410	820	1	3.0	6
	Total	2,200	580	1,630			

¹Two Western population separations with unknown age were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Alberta (asthma only), Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta (asthma only), Saskatchewan and Manitoba.

Notes:

a) Asthma refers to ICD-9 code 493.

b) Bronchitis refers to ICD-9 codes 491-492.

c) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.

d) ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 7. Age-standardized Hospital Separation Rates¹ for Selected Cancers, First Nations² and General Population³, Western Canada, 2000

Selected Cancers	Age-standardized Rate per 100,000 population					
	First Nations ² (2000)	Western population ³ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
Lung cancer	80	60	20	2	1.3	2
Female breast cancer	100	110	-10	4	0.9	4
Prostate cancer	70	80	-10	5	0.8	5
Colorectal cancer	80	60	10	3	1.2	3
Cervical cancer	30	10	20	1	3.0	1
Total	360	320	30			

¹The 1991 populations for British Columbia, Saskatchewan, and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- For female breast cancer and cervical cancer, only the female population was used in the rate calculation.
- For prostate cancer, only the male population was used in the rate calculation.
- Lung cancer refers to ICD-9 code 162.
- Female breast cancer refers to ICD-9 code 174.
- Prostate cancer refers to ICD-9 code 185.
- Colorectal cancer refers to ICD-9 codes 153-154.
- Cervical cancer refers to ICD-9 code 180.
- Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 8. Age-specific Hospital Separation Rates¹ for Diabetes, by Sex and Age Group, First Nations² and General Population³, Western Canada, 2000

Age Group	Age-specific Rate per 100,000 population				First Nations ² and General Population ³ , Western Canada								First Nations ² (males and females)				
	First Nations ² (2000)		General Population ³ (2000)		ARD		Rank		Ratio		Rank						
	M	F	M	F	M	F	M	F	M	F	M	F	ARD	Rank	Ratio	Rank	
<20	30	50	40	40	-20	0	12	12	0.6	1.1	11	12	-20	8	0.6	8	
20-24	130	140	50	50	80	90	10	10	2.7	2.7	8	9	0	6	1.0	5	
25-29	100	110	40	60	60	60	11	11	2.3	2.0	10	11	-10	7	0.9	6	
30-34	170	180	70	70	110	110	9	9	2.6	2.5	9	10	0	5	1.0	5	
35-39	380	190	80	50	300	140	8	8	4.9	3.6	7	8	190	2	2.0	1	
40-44	580	510	100	70	480	450	7	7	5.9	7.8	6	7	60	4	1.1	4	
45-49	730	630	110	70	620	560	6	6	6.7	8.8	5	6	100	3	1.2	3	
50-54	1,570	1,130	150	130	1,420	1,000	4	5	10.5	8.9	1	5	440	1	1.4	2	
55-59	1,510	2,760	200	180	1,310	2,580	5	3	7.7	15.3	3	1	-1,250	11	0.5	9	
60-64	2,210	2,460	270	210	1,930	2,250	3	4	8.1	11.8	2	3	-260	9	0.9	6	
65-69	2,330	3,500	340	260	2,000	3,240	2	2	6.9	13.6	4	2	-1,170	10	0.7	7	
70+	2,830	4,220	480	360	2,350	3,860	1	1	5.9	11.7	6	4	-1,390	12	0.7	7	
Total	12,570	15,880	1,920	1,540	10,650	14,340											-3,310

¹Sixteen First Nations separations with unknown age were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- a) Diabetes refers to ICD-9 code 250.
- b) All rate calculations are rounded to the nearest ten. Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- c) M refers to males; F refers to females; ARD refers to absolute rate difference.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 9. Age-standardized Hospital Separation Rates¹ for Selected Communicable Diseases, First Nations² and General Population³, Western Canada, 2000

Selected Communicable Diseases	Age-standardized Rate per 100,000 population			
	First Nations ² (2000)	Western population ³ (2000)	ARD	Ratio (FN vs. Cdn)
Pneumonia	1,330	300	1,030	4.4
Influenza	70	20	60	4.0
Total	1,400	320	1,080	

¹The 1991 populations for British Columbia, Alberta (pneumonia only), Saskatchewan and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Alberta (pneumonia only), Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta (pneumonia only), Saskatchewan and Manitoba.

Notes:

a) Pneumonia refers to ICD-9 codes 480-486.

b) Influenza refers to ICD-9 code 487.

c) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.

d) ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 10. Age-specific Hospital Separation Rates¹ for All Injuries and Poisonings, by Sex and Age Group, First Nations² and General Population³, Western Canada, 2000

Age Group	Age-specific Rate per 100,000 population				First Nations ² and General Population ³ , Western Canada								First Nations ² (males and females)			
	First Nations ² (2000)		General Population ³ (2000)		ARD		Rank		Ratio		Rank					
	M	F	M	F	M	F	M	F	M	F	M	F	ARD	Rank	Ratio	Rank
<1	1,050	550	650	470	400	90	17	17	1.6	1.2	10	9	500	5	1.9	1
1-4	1,360	1,080	610	490	750	590	14	14	2.2	2.2	7	7	280	10	1.3	4
5-9	1,230	780	590	400	640	380	16	16	2.1	1.9	8	8	460	6	1.6	2
10-14	1,470	1,040	810	470	660	580	15	15	1.8	2.2	9	7	430	7	1.4	3
15-19	2,530	2,100	1,230	720	1,300	1,380	12	12	2.1	2.9	8	6	430	8	1.2	5
20-24	3,380	1,750	1,230	550	2,150	1,200	5	13	2.7	3.2	6	5	1,630	1	1.9	1
25-29	3,230	2,310	1,040	550	2,190	1,760	3	7	3.1	4.2	2	1	920	3	1.4	3
30-34	3,150	2,330	980	580	2,180	1,760	4	8	3.2	4.0	1	2	820	4	1.4	3
35-39	2,600	2,300	930	610	1,670	1,690	8	9	2.8	3.8	5	3	290	9	1.1	6
40-44	2,440	2,220	920	600	1,520	1,620	10	10	2.7	3.7	6	4	220	11	1.1	6
45-49	2,330	2,120	870	650	1,450	1,470	11	11	2.7	3.2	6	5	210	12	1.1	6
50-54	2,510	2,490	890	680	1,620	1,810	9	6	2.8	3.7	5	4	20	13	1.0	7
55-59	2,840	3,110	960	850	1,890	2,260	7	3	3.0	3.7	3	4	-260	16	0.9	8
60-64	3,160	3,250	1,120	1,020	2,040	2,230	6	4	2.8	3.2	5	5	-90	14	1.0	7
65-69	3,940	4,120	1,350	1,290	2,590	2,830	2	2	2.9	3.2	4	5	-180	15	1.0	7
70-74	4,840	3,840	1,780	1,760	3,060	2,080	1	5	2.7	2.2	6	7	1,000	2	1.3	4
75+	4,110	7,410	2,980	3,970	1,130	3,440	13	1	1.4	1.9	11	8	-3,290	17	0.6	9
Total	46,180	42,800	18,940	15,650	27,250	27,150							3,380			

¹One Western population separation with unknown sex and five Western population separations with unknown separation date were not included in the totals for the calculation of rates.

²Includes on- and off-reserve populations from British Columbia, Alberta, Saskatchewan and Manitoba.

³Includes the provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

Notes:

- a) All Injuries and Poisonings refer to ICD-9 codes 800-999.
- b) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- c) M refers to males; F refers to females; ARD refers to absolute rate difference.

Source: British Columbia Ministry of Health, Alberta Health and Wellness, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

Table 11. Age-standardized Hospital Separation Rates¹ for Intentional and Unintentional Injuries, First Nations² and General Population³, Western Canada, 2000

	Age-standardized Rate per 100,000 population			Ratio (FN vs. Cdn)
	First Nations ² (2000)	Western population ³ (2000)	ARD	
Intentional	710	150	570	4.8
Unintentional	3,430	780	2,650	4.4
Total	4,150	930	3,220	

¹The 1991 populations for British Columbia, Saskatchewan, and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- a) Intentional injuries refers to ICD-9 codes E950-E958, E960-E968.
- b) Unintentional injuries refers to ICD-9 codes E800-E848, E850-E869, E880-E886, E888, E890-E928.
- c) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- d) ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health, HMDB, CIHI, 2007.

Table 12. Crude Hospital Separation Rates for Selected Injuries, by Sex, First Nations¹, Western Canada, 2000

External Causes of Injury	First Nations ¹ (2000)					
	Crude Rate per 100,000 population		ARD	Rank	Ratio (male vs. female)	Rank
Males	Females					
Motor/road vehicle	320	250	70	3	1.3	7
Other transport	80	30	50	4	2.6	2
Poisonings	70	90	-20	10	0.8	9
Misadventures	20	40	-20	9	0.6	11
Surgical complications	260	380	-120	13	0.7	10
Falls	510	560	-40	11	0.9	8
Fire/flames	50	10	40	5	7.5	1
Environmental	60	30	30	6	2.1	5
Drowning/suffocation	30	20	10	7	1.4	6
Adverse effects	90	150	-60	12	0.6	11
Suicide/self-Injury	260	470	-210	14	0.5	12
Assault	480	190	290	2	2.5	3
Other	590	270	320	1	2.2	4
Undetermined	100	110	-10	8	0.9	8
Total	2,930	2,610	330			

¹Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

Notes:

- a) Motor/road vehicle refers to ICD-9 codes E810-E825.
- b) Other transport refers to ICD-9 codes E800-E807, E826-E838, E840-E848.
- c) Poisonings refers to ICD-9 codes E850-E858, E860-E869.
- d) Misadventures refers to ICD-9 codes E870-E876.
- e) Surgical complications refers to ICD-9 codes E878-E879.
- f) Falls refers to ICD-9 codes E880-886, E888.
- g) Fire/flames refers to ICD-9 codes E890-E899.
- h) Environmental refers to ICD-9 codes E900-E909.
- i) Drowning/suffocation refers to ICD-9 codes E910-E915.
- j) Adverse effects refers to ICD-9 codes E930-E949.
- k) Suicide/self-injury refers to ICD-9 codes E950-E958.
- l) Assault refers to ICD-9 codes E960-E968.
- m) Other refers to ICD-9 codes E887, E916-929, E959, E969-978, E989-E999.
- n) Undetermined refers to ICD-9 codes E980-E988.
- o) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- p) ARD refers to absolute rate difference.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health.

Table 13. Age-standardized Hospital Separation Rates¹ for Selected Injuries, First Nations² and General Population³, Western Canada, 2000

External Causes of Injury	Age-standardized Rate per 100,000 population					
	First Nations ² (2000)	Western population ³ (2000)	ARD	Rank	Ratio (FN vs. Cdn)	Rank
Motor/road vehicle	300	130	170	4	2.4	6
Other transport	50	30	20	10	1.5	9
Poisonings	90	30	60	6	3.1	5
Misadventures	50	30	20	11	1.5	9
Surgical complications	540	430	110	5	1.3	10
Falls	880	420	470	1	2.1	7
Fire/Flames	30	10	30	9	5.6	2
Environmental	60	10	40	8	3.8	3
Drowning/suffocation	30	20	10	12	1.8	8
Adverse effects	210	160	50	7	1.3	10
Suicide/self-injury	360	100	260	2	3.7	4
Assault	280	50	230	3	5.7	1
Total	2,880	1,420	1,470			

¹The 1991 populations for British Columbia, Saskatchewan and Manitoba were used as the standard population in the calculation of age-standardized rates.

²Includes on- and off-reserve populations from British Columbia, Saskatchewan and Manitoba only. Alberta was excluded from the analysis due to grouping differences.

³Includes the provinces of British Columbia, Saskatchewan and Manitoba.

Notes:

- a) Motor/road vehicle refers to ICD-9 codes E810-E825.
- b) Other transport refers to ICD-9 codes E800-E807, E826-E838, E840-E848.
- c) Poisonings refers to ICD-9 codes E850-E858, E860-E869.
- d) Misadventures refers to ICD-9 codes E870-E876.
- e) Surgical complications refers to ICD-9 codes E878-E879.
- f) Falls refers to ICD-9 codes E880-886, E888.
- g) Fire/flames refers to ICD-9 codes E890-E899.
- h) Environmental refers to ICD-9 codes E900-E909.
- i) Drowning/suffocation refers to ICD-9 codes E910-E915.
- j) Adverse effects refers to ICD-9 codes E930-E949.
- k) Suicide/self-injury refers to ICD-9 codes E950-E958.
- l) Assault refers to ICD-9 codes E960-E968.
- m) Due to rounding, columns may not add to total, and row differences may not equal absolute rate difference.
- n) ARD refers to absolute rate difference; FN refers to the First Nations population in Western Canada; Cdn refers to the general Western population.

Source: British Columbia Ministry of Health, Saskatchewan Health, Manitoba Health; HMDB, CIHI, 2007.

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ADDITIONAL RESOURCES

Federal Government

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

Non-insured Health Benefits Program:
www.hc-sc.gc.ca/ahc-asc/branch-dirigen/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

Health Indicators (Canada):
www.statcan.ca/english/freepub/82-221-XIE/01002/toc.htm

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.healthinfonet.ecu.edu.au

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

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Fax: (780) 495-3285
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/rapb-dgrp/reg/al-eng.php

Manitoba Region

391 York Avenue, Suite 300
Winnipeg, MB R3C 4W1
Tel: (204) 983-2508
Fax: (204) 983-3972

Saskatchewan Region

2045 Broad Street, 1st Floor
South Broad Plaza
Regina, SK S4P 3T7
Tel: (306) 780-7661
Fax: (306) 780-7137

Ontario Region

Emerald Plaza
1547 Merivale Road
Nepean, ON K1A 0L3
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
200 René Lévesque Boulevard West, Room 218
Montréal, QC H2Z 1X4
Tel: 1-800-561-3350
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
Halifax, NS B3J 3Y6
Tel: (902) 426-2038
Fax: (902) 426-3758
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
Tel: (613) 946-8081
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