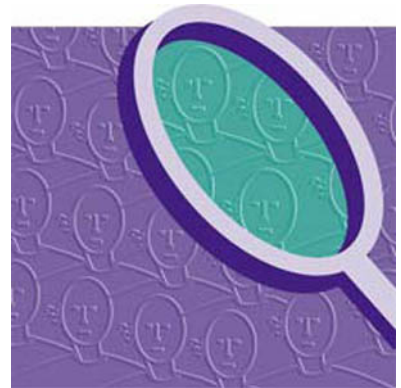




Catalogue no. 82-221-XIE

# Health Indicators

2007



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Statistics Canada  
Health Statistics Division

# Health Indicators

2007

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## Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

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## Introduction

### **Providing the latest readings on the health of Canadians - region by region**

This publication, produced jointly by Statistics Canada and the Canadian Institute for Health Information (CIHI), is a compilation of over 80 indicators measuring health status, non-medical determinants of health, health-system performance and community and health-system characteristics.

These indicators are produced at the health region level, as well as at provincial, territorial and Canada levels. Data used to calculate the indicators are the most recently available and represent a wide range of sources including the Census, surveys and administrative records. Definitions, data quality, concepts and methodology notes provide information necessary to interpret the indicators.

Maps are available for selected indicators.

## About health indicators

### Background

In 1998, over 500 people -- health administrators, researchers, caregivers, government officials, health advocacy groups, and consumers -- were brought together to identify health information needs. One of their priorities was comparable quality data on key health indicators for health and health services. In response, Canadian Institute for Health Information (CIHI) and Statistics Canada launched a collaborative process to identify what measures should be used to report on health and the health system. As a first step, and in order to gain a better understanding of the types of indicators to develop and report, the first Consensus Conference on Population Health Indicators was convened in May 1999. This conference resulted in an initial core set of indicators, as well as a list of indicators that could be considered for future development (see **National Consensus Conference on Population Health Indicators** available from [www.cihi.ca](http://www.cihi.ca)).

Five years on, priorities and directions for the health indicator project were broadly revisited at a second consensus conference held in March 2004 (see **The Health Indicators Project: The Next Five Years** available from [www.cihi.ca](http://www.cihi.ca)).

### Health indicators are :

- relevant to established health goals;
- based on standard (comparable) definitions and methods;
- broadly available - disseminated electronically across Canada at the regional, provincial and national level.

The primary goal of the Health Indicators project is to support health regions in monitoring progress in improving and maintaining the health of the population and the functioning of the health system for which they are responsible through the provision of quality, comparative information on

- the overall health of the population served, how it compares with other regions in the province and country, and how it is changing over time;
- the major non-medical determinants of health in the region;
- the health services received by the region's residents; and
- characteristics of the community or the health system.

Consultations continue with provincial and regional health authorities to ensure relevant data and consistent methods.

## What's new in this issue

Changes to the electronic publication have been made. Statistics Canada has modified the look and feel of pages within the Data tables section, with the aim to improve usability, as well as meet new guidelines for improving accessibility.

CIHI recently launched a new and improved online tool for accessing indicator data ([www.cihi.ca](http://www.cihi.ca)). A user-friendly interface makes querying data easier and more straightforward and now includes a graphing function.

Coinciding with this issue, CIHI and Statistics Canada are releasing *Health Indicators 2007* print publication ([http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=indicators\\_f](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=indicators_f)) that represents the latest in a series of reports highlighting the most recently available information about the health system and the health of the population in Canada's health regions, provinces and territories. In addition, a selection of measures of health status and the non-medical determinants of health are included in this report. For the first time this year, this publication also includes interpretive analyses of selected indicators. These analyses are aimed to assist in the use and interpretation of the data by highlighting key patient characteristics and processes of care that relate to variation in the rates. This year in focus are hip fracture hospitalization rates and wait times for hip fracture surgery.

## New data tables

CIHI is adding two new indicators for fiscal year 2005/06 i.e. Wait time for hip fracture surgery and inflow/outflow ratio for percutaneous coronary intervention (PCI).

Beginning with 2005/06 rates, CIHI's hip and knee replacement indicators are calculated for the population aged 20 years and over. These indicators are not comparable with the rates reported for previous years. Rates for the previous years, calculated using the new definition, are presented to enable comparisons over time.

- Wait time for hip fracture surgery rate 2005/2006 (CIHI)
- Inflow/outflow ratio- percutaneous coronary intervention (PCI) 2005/2006 (CIHI)

## Updated data tables

The following tables have been updated for this issue.

### Health status

- Changes over time in self-rated health between 1994/1995 and 2004/2005
- Changes over time in body mass index (BMI) between 1994/1995 and 2004/2005
- Injury hospitalization rate, 2005/2006 (CIHI)

### Non-medical determinants of health

- Changes over time in physical activity level between 1994/1995 and 2004/2005
- Changes over time in smoking between 1994/1995 and 2004/2005
- Adult and youth unemployment, 2006
- Crime incidents, 2005
- Adults and youth charged, 2005

#### **Health system performance**

- Ambulatory care sensitive conditions hospitalization rate, 2005/2006 (CIHI)
- 30-day in-hospital mortality rates for Acute Myocardial Infarction (AMI) and Stroke, 3-year averages of 2003/2004-2005/2006 (CIHI)
- Readmission rates for Acute Myocardial Infarction (AMI), asthma, hysterectomy, and prostatectomy, 3-year average of 2003/2004-2005/2006 (CIHI)
- Caesarean section rate 2005/2006 (CIHI)
- Hip fracture hospitalization rate, 2005/2006 (CIHI)
- In-hospital hip fracture rate, 3-year average of 2003/2004-2005/2006 (CIHI)

#### **Community and health system characteristics**

- Population estimates, 2004 and 2005
- Dependency ratio, 2005 (note new definition)
- Inflow/outflow ratios, 2005/2006 (CIHI)
- Coronary artery bypass graft (CABG) rate, 2005/2006 (CIHI)
- Percutaneous coronary intervention rate 2005/2006 (CIHI)
- Hip and knee replacement rates, 2005/2006 (CIHI)
- Hysterectomy rate 2005/2006 (CIHI)
- Doctors rates, 2005 (CIHI)

## Data tables and maps

Data tables and maps are presented below according to the Health Indicator Framework. To view tables, go to [www.statcan.ca/english/freepub/82-221-xie/2007001/tbl-fram.htm](http://www.statcan.ca/english/freepub/82-221-xie/2007001/tbl-fram.htm)

### Health Indicator Framework

Health status			
Well-being	Health conditions	Human function	Deaths
<ul style="list-style-type: none"> <li>• Self-rated health</li> <li>• Changes over time in self-rated health<sup>1</sup></li> <li>• Self-esteem<sup>1</sup></li> <li>• Self-rated mental health</li> </ul>	<ul style="list-style-type: none"> <li>• Adult body mass index (BMI)</li> <li>• Youth body mass index (BMI)</li> <li>• Changes over time in body mass index (BMI)</li> <li>• Arthritis/rheumatism</li> <li>• Diabetes</li> <li>• Asthma</li> <li>• High blood pressure</li> <li>• Pain or discomfort that affects activities<sup>1</sup></li> <li>• Pain or discomfort by severity<sup>1</sup></li> <li>• Depression<sup>2</sup></li> <li>• Low birth weight</li> <li>• Cancer incidence</li> <li>• Injury hospitalization (CIHI)</li> <li>• Injuries</li> </ul>	<ul style="list-style-type: none"> <li>• Functional health<sup>1</sup></li> <li>• Two-week disability days</li> <li>• Participation and activity limitation</li> <li>• Disability-free life expectancy (DFLE)</li> <li>• Disability-adjusted life expectancy (DALE)</li> </ul>	<ul style="list-style-type: none"> <li>• Infant mortality</li> <li>• Perinatal mortality</li> <li>• Life expectancy</li> <li>• Mortality by selected causes</li> <li>• Potential years of life lost (PYLL)</li> </ul>
Non-medical determinants of health			
Health behaviours	Living and working conditions	Personal resources	Environmental factors
<ul style="list-style-type: none"> <li>• Type of smoker</li> <li>• Smoking initiation</li> <li>• Changes over time in smoking behaviour<sup>1</sup></li> <li>• Frequency of drinking</li> <li>• Leisure-time physical activity</li> <li>• Changes over time in physical activity level</li> <li>• Breastfeeding practices<sup>1</sup></li> <li>• Fruit and vegetable consumption<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>• High school graduates</li> <li>• Post-secondary graduates</li> <li>• Adult and youth unemployment rate</li> <li>• Long-term unemployment rate</li> <li>• Low income rate</li> <li>• Children in low income families</li> <li>• Average personal income</li> <li>• Median share of income</li> <li>• Government transfer income</li> <li>• Housing affordability</li> <li>• Decision latitude at work<sup>1</sup></li> <li>• Crime</li> <li>• Adults and youths charged<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Sense of community belonging</li> <li>• Social support<sup>1</sup></li> <li>• Life stress</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure to second-hand smoke at home</li> <li>• Exposure to second-hand smoke in vehicles and public places</li> </ul>
Health system performance			
Acceptability	Accessibility	Appropriateness	Competence

<ul style="list-style-type: none"> <li>• Patient satisfaction<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Influenza immunization</li> <li>• Screening mammography</li> <li>• Pap smear</li> <li>• Regular medical doctor</li> <li>• Wait time for hip fracture surgery (CIHI)</li> </ul>	<ul style="list-style-type: none"> <li>• Caesarean section (CIHI)</li> </ul>	
<b>Continuity</b>	<b>Effectiveness</b>	<b>Efficiency</b>	<b>Safety</b>
	<ul style="list-style-type: none"> <li>• Ambulatory care sensitive conditions (CIHI)</li> <li>• 30-day in-hospital mortality (CIHI)</li> </ul>		<ul style="list-style-type: none"> <li>• Hip fracture hospitalization (CIHI)</li> <li>• In-hospital hip fracture (CIHI)</li> </ul>
<b>Community and health system characteristics</b>			
<b>Community</b>	<b>Health system</b>	<b>Resources</b>	
<ul style="list-style-type: none"> <li>• Population estimates</li> <li>• Population density</li> <li>• Dependency ratio</li> <li>• Urban and rural population</li> <li>• Aboriginal population</li> <li>• Immigrant population</li> <li>• Internal migrant mobility</li> <li>• Metropolitan Influenced Zones (MIZ)</li> <li>• Lone-parent families</li> <li>• Visible minority population</li> <li>• Teen pregnancy<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Inflow/outflow ratios (CIHI)</li> <li>• Coronary artery bypass graft (CABG) (CIHI)</li> <li>• Percutaneous coronary intervention (PCI) (CIHI)</li> <li>• Hip replacement (CIHI)</li> <li>• Knee replacement (CIHI)</li> <li>• Hysterectomy (CIHI)</li> <li>• Contact with alternative health care providers</li> <li>• Contact with medical doctors</li> <li>• Contact with health professionals about mental health<sup>1</sup></li> <li>• Contact with dental professionals</li> </ul>	<ul style="list-style-type: none"> <li>• Doctors rate (CIHI)</li> </ul>	
<p><b>Notes:</b></p> <p>1. Data are available at the provincial/territorial level or for a limited number of health regions only.</p> <p>2. Indicator currently not produced due to data quality issues.</p>			
<p><b>Source:</b> Statistics Canada, Canadian Institute for Health Information</p>			

## List of maps

To view the maps, go to [www.statcan.ca/english/freepub/82-221-xie/2007001/maps/maps.htm](http://www.statcan.ca/english/freepub/82-221-xie/2007001/maps/maps.htm)

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## Health region profiles

Health region profiles are CANSIM tables designed to produce summary reports for a selected health region, or regions, based on a series of indicators from the Canadian Community Health Survey (CCHS) and Census.

To view health region profiles by source, go to <http://www.statcan.ca/english/freepub/82-221-XIE/2007001/profiles.htm>.

## Health regions and peer groups

"Health region" refers to administrative areas defined by the provincial ministries of health. For complete Canadian coverage, each of the northern territories also represents a health region.

See [Table 1 Health regions in Canada – reference maps by province and territory](#).

See [Map 21 Health regions and peer groups in Canada, 2005](#).

## Health region boundary changes

Since June 2003, changes to health regions have occurred within selected provinces. These are noted in the above table. However, many data tables within this publication continue to reflect the boundaries in effect as of 2003. These will be updated as new data tables are produced with future issues. See [Table 2 Summary of changes to health regions, 2003 and 2005/2007](#) and [Table 3 Summary of changes to health regions, 2000 and 2003](#) in the appendices for details. Between June 2005 and the time of publication a small boundary change in New Brunswick has occurred.

## Health region peer groups

In order to effectively compare health regions with similar socio-economic characteristics, health regions have been grouped into 'peer groups'. Statistics Canada used a statistical method to achieve maximum statistical differentiation between health regions. Twenty-four variables were chosen to cover as many of the social and economic determinants of health as possible, using data collected at the health region level mostly from the Census of Canada. Concepts covered include:

- basic demographics (for example, population change and demographic structure),
- living conditions (for example, socio-economic characteristics, housing, and income inequality), and
- working conditions (for example, labour market conditions)

Peer groups based on 2005 health region boundaries and 2001 Census data are now available. There are currently nine peer groups identified by letters A through I.

See [Table 4 Health regions 2005 by peer group](#).

See [Table 5 Summary table of peer groups and principal characteristics](#)

A more detailed discussion on the rationale and methods involved in the development of peer groups is available in the *Health Region (2000) Peer Groups Working Paper* and *Health Region (2003) Peer Groups Working Paper* available at <http://www.statcan.ca/english/freepub/82-221-XIE/2007001/regions.htm>.

Since the 2003 peer groups were established, there have been relatively few geographic changes to the component health regions. The most significant development was the establishment of Regional Integrated Health Authorities in Newfoundland, reducing the number of health regions from 6 to 4.

Another important change to health region boundaries has been the creation of the Local Health Integration Networks (LHIN) in Ontario, replacing the District Health Councils. This development, however, does not impact the peer groups because public health units, which are also recognized as health regions, were used to form the peer group classification.

For more details on the geographic, code and name changes affecting health regions between 2003 and 2005, see health regions and peer groups section <http://www.statcan.ca/english/freepub/82-221-XIE/2007001/regions.htm>.

To maintain comparability and minimize changes to the classification, the latest health regions have, for the most part, been refit to the current peer groups. Since there were so few changes, reconstruction of peer groups using the original cluster analysis method was not practical, especially since the census data required for this work were also not available. Instead, regions with significant boundary changes were analysed individually to determine best fit.

In Alberta, the December 2003 boundary change between Calgary health region (peer group B) and David Thompson RHA (peer group E) resulted in a population shift which decreased the population of David Thompson by 4.4% and increased that of Calgary by 1.2%. Since the relative population affected is small, the peer group assignments remain appropriate.

In Ontario, Muskoka-Parry Sound Health Unit (3545) was dissolved, and the territory split into current health regions North Bay Parry Sound District Health Unit (3547) and Simcoe Muskoka District Health Unit (3560). The receiving health regions retain their peer group classification, although this represents a shift from peer group “E” to peer group “C” for the municipality of Parry Sound.

For this peer group update, the recent boundary changes in Newfoundland and Labrador were the most problematic. Even though this was a simple aggregation of health regions, they represented a merge of regions with similar population size, from different peer groups. Census data available for these areas were examined to determine whether the population characteristics were affected enough to change the associated peer group.

The two changes in NL requiring further analysis were:

1. Health and Community Services St. John’s Region (1001 –in peer group “A”) and Health and Community Services Eastern Region (1002- peer group “I”) have been combined to form Eastern Regional Integrated Health Authority (1011). In this case, the aggregation especially impacts on the following characteristics:
  - urban-rural mix (now 65.6% urban and 34.4% rural),
  - population density (now 15.03 per square kilometre), and
  - total population change (represents a decline of 4.97%).

**As a result, this new health region is assigned to Peer Group “C”.**

2. Grenfell Regional Health Services Board (1005 - peer group “I”) and Health Labrador Corporation (1006 - peer group “H”) have been combined to form Labrador-Grenfell Regional Integrated Health Authority (1014). A high proportion of Aboriginal population is the significant characteristic of peer group “H”, setting it apart from “I”.

**The proportion of Aboriginal population for the combined region remains relatively high (26%). Consequently, this new region is assigned to peer group “H”.**

The other two Regional Integrated Health Authorities assume the same boundaries as before, and therefore represent a code and name change only. Hence, they keep the same peer group assignment (both remaining in peer group “I”.)

**Special notes:**

In Prince Edward Island, the four health regions were abolished in November 2005 as a result of health system restructuring. These boundaries have been maintained for the release of indicators from 2005 Canadian Community Health Survey, and remain the units for peer group assignment.

In Nova Scotia, the six zones were recognized as health regions although a smaller level of administrative regions exist, nine district health authorities (DHA). The province has requested that Statistics Canada begin to use these administrative units instead of the zones. Due to limits in generating data for the smaller units, both zones and DHA boundaries remain useful and will appear as two levels of the 2005 health regions. Zones, which for the most part represent aggregations of the DHAs, remain the unit for peer group assignment.

## Definitions and data sources

Statistics Canada obtains its health indicators data from various sources, as does the Canadian Institute for Health Information (CIHI).

Definitions are presented below according to the Health indicator framework.

### 1. Health status

#### 1.1 Well-being

##### Self-rated health

Definition:

Population (aged 12 and over for data from the Canadian Community Health Survey and National Population Health Survey, North component) who rate their own health status as being either excellent, very good, good, fair or poor.

Self-reported health is an indicator of overall health status. It can reflect aspects of health not captured in other measures, such as: incipient disease, disease severity, aspects of positive health status, physiological and psychological reserves and social and mental function.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component; Statistics Canada, National Longitudinal Survey of Children and Youth (0 to 11 years of age), 1994/95

##### Changes over time in self-rated health

Definition:

Changes over time in self-rated health (excellent, very good, good, fair or poor; improved, deteriorated or stayed the same) of the 1994/95 household population aged 12 and over, every two years, at each cycle of the National Population Health Survey. Population, age, sex and province are based on the first survey cycle (Cycle 1) in 1994/95.

Sources:

Statistics Canada, National Population Health Survey, longitudinal data files 1996/97, 1998/99, 2000/01, 2002/03 and 2004/05.

##### Self-esteem

Definition:

Level of perceived self-worth reported by persons aged 12 and over, based on their responses to six questions derived from the self-esteem Rosenberg scale (1969), which has been further factored into one dimension by Pearlin and Schooler (1978). In this publication, a score of 0 to 17 is classified as low self-esteem, 18 to 19 as moderate self-esteem, and 20 to 24 as high self-esteem.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, cross sectional sample, health file.

## **Self-rated mental health**

### Definition:

Population aged 12 and over who rate their own mental health status as being excellent, very good, good, fair or poor.

Self-reported mental health provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress, not necessarily reflected in self-reported (physical) health.

### Source:

Statistics Canada, Canadian Community Health Survey 2005, health file

## **1.2 Health conditions**

### **Adult body mass index (BMI)**

**Note:** Definition change was implemented in 2004 to conform with Health Canada guidelines for body weight classification.

### Definition:

Body Mass Index (BMI) is a method of classifying body weight according to health risk. According to World Health Organisation (WHO) and Health Canada guidelines, health risk levels are associated with each of the following BMI categories: normal weight = least health risk; underweight and overweight = increased health risk; obese class I = high health risk; obese class II = very high health risk; obese class III = extremely high health risk.

BMI is calculated as follows: weight in kilograms divided by height in metres squared.

The index is: under 18.5 (underweight); 18.5-24.9 (normal weight); 25.0-29.9 (overweight); 30.0-34.9 (obese-Class I); 35.0-39.9 (obese-Class II); 40 or greater (obese - Class III). The index is calculated for those aged 18 and over excluding pregnant women and persons less than 3 feet (0.914 metres) tall or greater than 6 feet 11 inches (2.108 metres).

### Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/2001, health file;  
Statistics Canada, National Population Health Survey, 1994/1995, 1996/1997 and 1998/1999 cross sectional sample, health file and North component.

### **Youth body mass index (BMI)**

### Definition:

Body mass index (BMI) is calculated by dividing the respondent's body weight (in kilograms) by their height (in metres) squared.

The index is: neither overweight nor obese; overweight; obese.

Body mass index (BMI) for youth is different from that of adults as they are still maturing. This variable classifies the measured BMI of children aged 12 to 17 as "obese" or "overweight" according to the age- and sex-specific BMI cut-off points as defined by Cole and others. The Cole cut-off points are based on pooled international data (Brazil, Great Britain, Hong Kong, Netherlands, Singapore and United States) for BMI and linked to the internationally accepted adult BMI cut-off points of 25 (overweight) and 30 (obese). Respondents who do not fall within the

categories of "obese" or "overweight" (as defined by Cole and others) have been classified by the Canadian Community Health Survey (CCHS) as "neither overweight nor obese".

Source:

Statistics Canada, Canadian Community Health Survey 2005, health file

### **Changes over time in body mass index (BMI)**

Definition:

Changes over time in body mass index (BMI) (obese, overweight, normal or overweight; increased BMI, same BMI or decreased BMI) of the 1994/95 household population aged 12 and over, every two years, at each cycle of the National Population Health Survey. Population, age, sex and province are based on the first survey cycle (Cycle 1) in 1994/95.

Sources:

Statistics Canada, National Population Health Survey, longitudinal data files 1996/97, 1998/99, 2000/01, 2002/03 and 2004/05

### **Arthritis and or rheumatism**

Definition:

Population aged 12 and over who report that they have been diagnosed by a health professional as having arthritis or rheumatism. Arthritis/ rheumatism include both rheumatoid arthritis and osteoarthritis, but excludes fibromyalgia.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component.

### **Diabetes**

Definition:

Population aged 12 and over who report that they have been diagnosed by a health professional as having diabetes.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component.

### **Asthma**

Definition:

Population aged 4 and over (or aged 12 and over for data from the Canadian Community Health Survey and National Population Health Survey, North component) who report that they have been diagnosed by a health professional as having asthma.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component; Statistics Canada, National Longitudinal Survey of Children and Youth (asthma for 4 to 11 years of age), 1994/95

### **High blood pressure**

**Definition:**

Population aged 12 and over who report that they have been diagnosed by a health professional as having high blood pressure.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

**Pain or discomfort that affects activities**

**Definition:**

Population aged 4 and over (or aged 12 and over for data from the Canadian Community Health Survey and National Population Health Survey, health file and North component) who report having pain or discomfort which prevents or limits activities on a continuing basis.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component; Statistics Canada, National Longitudinal Survey of Children and Youth (4 to 11 years of age), 1994/95

**Pain or discomfort by severity**

**Definition:**

Population aged 4 and over (or aged 12 and over for data from the Canadian Community Health Survey and National Population Health Survey, health file and North component) who answered “yes” or “no” when asked if they were usually free of pain or discomfort. Severity of pain is measured as severe, moderate or mild.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component; Statistics Canada, National Longitudinal Survey of Children and Youth (4 to 11 years of age), 1994/95

**Depression**

**Definition:**

Population aged 12 and over with the probability of 0.9 or greater of having experienced a major depressive episode in the past 12 months based on responses to the short-form Composite International Diagnostic Interview (CIDI). Respondents are classified according to the probability that they would have been diagnosed as having experienced a major depressive episode in the past 12 months, if they had completed the long-form CIDI.

**Sources:**

Statistics Canada, Canadian Community Health Survey, 2003, 2000/01, health file; Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file; Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, health file and North component

**Low birth weight**

**Definition:**

Live births less than 2,500 grams, expressed as a percentage of all live births (birth weight known).

Live births greater than 500 grams and less than 2,500 grams, expressed as a percentage of all live births (birth weight known). (Applies only to a subset of the provincial/territorial time-series data)

Low birth weight is a key determinant of infant survival, health, and development. Low birth weight infants are at a greater risk of having a disability and for diseases such as cerebral palsy, visual problems, learning disabilities and respiratory problems.

**Sources:**

Statistics Canada, Vital Statistics, Birth Database.

**Cancer incidence**

**Definition:**

Age-standardized rate of new primary sites of cancer (malignant neoplasms) per 100,000 population, for all cancers.

Specific site codes: colon/rectum (ICD-0-3 C18.0-C18.9, C19.9, C20.9, C26.0), lung (ICD-0-3 C34.0-C34.9), female breast (ICD-0-3 C50.0-C50.9), and prostate (ICD-0-3 C61.9).

**Sources:**

Statistics Canada , Vital Statistics, Cancer Database, Canadian Cancer Registry, and Demography Division (population estimates)

**Injury hospitalization**

**Definition:**

Age-standardized rate of acute care hospitalization due to injury resulting from the transfer of energy (excluding poisoning and other non-traumatic injuries), per 100,000 population.

Injury is identified by the first documented external cause of injury code with a diagnosis type of '9':

ICD-9 or ICD-9-CM

E800-E807, E810-E838, E840-E848, E880-E888, E890-E902, E906-E910, E913-E928, E953-E958, E960-E961, E963-E968, E970-E976, E978, E983-E988, E990-E998

ICD-10-CA

V01-V06, V09-V99, W00-W45, W49-W60, W64-W70, W73-W77, W81, W83-W94, W99, X00-X06, X08-X19, X30-X39, X50, X52, X58, X59, X70-X84, X86, X91-X99, Y00-Y05, Y07-Y09, Y20-Y36

This indicator contributes to an understanding of the adequacy and effectiveness of injury prevention efforts, including public education, product development and use, community and road design, and prevention and treatment resources.

**Source:**

Canadian Institute for Health Information, National Trauma Registry

**Injuries**

**Definition:**

Population aged 12 and over who sustained injuries in the past 12 months. Includes all injuries serious enough to limit one's normal activities, but does not include repetitive strain injury. For those with more than one injury in the past 12 months, refers to "the most serious injury" as identified by the respondent.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

## **1.3 Human function**

### **Functional health**

**Definition:**

Population aged 4 and over (or aged 12 and over for data from the Canadian Community Health Survey and National Population Health Survey) reporting measures of overall functional health, based on 8 dimensions of functioning (vision, hearing, speech, mobility, dexterity, feelings, cognition and pain). A score of 0.8 to 1.0 is considered to be very good or perfect health; scores below 0.8 are considered to indicate moderate or severe functional health problems.

Otherwise known as the Health Utility Index (HUI), this index, developed at McMaster University's Centre for Health Economics and Policy Analysis, is based on the Comprehensive Health Status Measurement System (CHSMS).

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component; Statistics Canada, National Longitudinal Survey of Children and Youth (4 to 11 years of age), 1994/95, 1996/97 and 1998/99

### **Two-week disability days**

**Definition:**

Population aged 12 and over who stayed in bed or cut down on normal activities because of illness or injury, on one or more days in the past two weeks.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

### **Participation and activity limitation (previously referred to as Activity limitation)**

**Note:** Activity limitation data from the National Population Health Survey and the Canadian Community Health Survey are not comparable due to differences in questions and response categories between the two surveys.

**Definition:**

Population aged 12 and over who report being limited in selected activities (home, school, work and other) because of a physical condition, mental condition, or health problem which has lasted or is expected to last six months or longer.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file

**Disability-free life expectancy (DFLE)**

Definition:

Life expectancy is the number of years a person would be expected to live, starting from birth (for life expectancy at birth) or at age 65 (for life expectancy at age 65), on the basis of the mortality statistics for a given observation period.

Disability-free life expectancy is a more comprehensive indicator than that of life expectancy because it introduces the concept of quality of life. It is used to distinguish between years of life free of any activity limitation and years experienced with at least one activity limitation. To that end, disability-free life expectancy establishes a threshold based on the nature of such limitations. Years of life lived in conditions above this threshold are counted in full. Those lived in conditions below the threshold are not counted. Thus, the emphasis is not exclusively on the length of life, as is the case for life expectancy, but also on the quality of life.

Sources:

Statistics Canada, Vital Statistics, Death Database, Demography Division (population estimates), and the 1996 Census (20% sample)

**Disability-adjusted life expectancy (DALE)**

Definition:

Life expectancy is the number of years a person would be expected to live, starting from birth (for life expectancy at birth) or at age 65 (for life expectancy at age 65), on the basis of the mortality statistics for a given observation period.

Disability-adjusted life expectancy (DALE) is a more comprehensive indicator than that of life expectancy because it introduces the concept of quality of life. DALE integrates data on mortality, long-term institutionalization and activity limitations in the population and represents a comprehensive index of population health status. Thus, the emphasis is not exclusively on the length of life, but also on the quality of life.

To calculate DALE, a set of weights (relative values) is assigned to four states of health. These states are, in order from greatest to least weight: no activity limitations, activity limitations in leisure activities or transportation, activity limitations at work, home and/or school and institutionalization in a health care facility in order to establish units of equal value. These units are summed to yield a type of “quality-adjusted” life expectancy.

Sources:

Statistics Canada, Vital Statistics, Death Database, Demography Division (population estimates), and the 1996 Census (20% sample)

## **1.4 Deaths**

### **Infant mortality**

Definition:

Infants who die in the first year of life, expressed as a count and a rate per 1,000 live births. A long-established measure, not only of child health, but also of the well-being of a society. Reflects the level of mortality, health status, and health care of a population, and the effectiveness of preventive care and the attention paid to maternal and child health.

Sources:  
Statistics Canada, Vital Statistics, Birth and Death Databases

### **Perinatal mortality**

Definition:  
Count and rate of stillbirths and early neonatal deaths (deaths in the first week of life) per 1,000 total births (includes stillbirths). Stillbirths are defined here as gestational age of 28 or more weeks. Stillbirths with unknown gestational age are excluded.

The probability that a viable fetus will be stillborn or will die before the end of the first week of life. Reflects standards of obstetric and pediatric care, as well as the effectiveness of public health initiatives.

Sources:  
Statistics Canada, Vital Statistics, Birth, Death and Stillbirth Databases

### **Life expectancy**

Definition:  
Life expectancy is the number of years a person would be expected to live, starting from birth (for life expectancy at birth) and similarly for other age groups, on the basis of the mortality statistics for a given observation period.

A widely used indicator of the health of a population. Life expectancy measures quantity rather than quality of life.

Sources:  
Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

### **Age-standardized mortality rate - (for provincial/territorial level time-series)**

Definition:  
Age-standardized rate of death for selected causes per 100,000 population.

From 1979 to 1999, causes of death were classified according to the International Classification of Disease, Ninth Revision (ICD-9). The year 2000 and subsequent years available are classified according to the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Selected causes are defined as follows: Colorectal cancer (ICD-10 C18-C21 or ICD-9 153-154), lung cancer (ICD-10 C33-C34 or ICD-9 162), female breast cancer (ICD-10 C50 females specified or ICD-9 174), prostate cancer (ICD-10 C61 or ICD-9 185), acute myocardial infarction (AMI) (ICD-10 I21-I22 or ICD-9 410), cerebrovascular diseases (ICD-10 I60-I69 or ICD-9 430-438), all stroke (selected cerebrovascular diseases) (ICD-10 I60-I66 or ICD-9 430-432, 434, 436).

Indicates the overall health of the population and is similar to what is measured by life expectancy.

Sources:  
Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

### **Total mortality**

Definition:  
Crude rate and age-standardized rate of death from all causes per 100,000 population.

Indicates the overall health of the population and is similar to what is measured by life expectancy.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**All diseases of the circulatory system deaths**

Definition:

Crude rate and age-standardized rate of death from diseases of the circulatory system per 100,000 population: for all diseases of the circulatory system (ICD-10 I00-I99), ischaemic heart disease (ICD-10 I20-I25), cerebrovascular diseases (ICD-10 I60-I69) and all other circulatory diseases (ICD-10 I00-I02, I05-I09, I10-I15, I26-I28, I30-I52, I70-I79, I80-I89, I95-I99).

Measures long-term success in reducing deaths due to circulatory disease, compared with other regions, provinces, and countries. Lower death rates indicate success in circulatory disease prevention, detection, and treatment.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**All malignant neoplasms (cancer) deaths**

Definition:

Crude rate and age-standardized rate of death from cancer per 100,000 population: for all cancers (ICD-10 C00-C97) and for specific sites: colorectal (ICD-10 C18-C21), lung (ICD-10 C33-C34), female breast (ICD-10 C50) female specified (ICD-9 174), and prostate cancer (ICD-10 C61).

Measures long-term success in reducing deaths due to cancer, compared with other regions, provinces, and countries. Lower death rates indicate success in cancer prevention, detection, and treatment.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**All diseases of the respiratory system deaths**

Definition:

Crude rate and age-standardized rate of death from diseases of the respiratory system per 100,000 population: for all respiratory diseases (ICD-10 J00-J99), pneumonia and influenza (ICD-10 J10-J18), bronchitis/ emphysema/asthma (ICD-10 J40-J43, J45-J46) and all other diseases of the respiratory system (ICD-10 J00-J06, J20-J22, J30- J39, J44, J47, J60-J70, J80-J84, J85-J86, J90-J94, J95-J99).

Measures long-term success in reducing deaths due to respiratory disease, compared with other regions, provinces, and countries. Lower death rates indicate success in respiratory disease prevention, detection, and treatment.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

## **Suicide**

### Definition:

Crude rate and age-standardized rate of suicide death (ICD-10 X60-X84, Y87.0) per 100,000 population.

Measures long-term success in reducing suicide, a social as well as a major public health concern.

### Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

## **Unintentional injury deaths**

### Definition:

Crude rate and age-standardized rate of death from unintentional injuries per 100,000 population. Unintentional ("accidental") injuries includes injuries due to causes such as motor vehicle collisions, falls, drowning, burns, and poisoning, but not medical misadventures/complications (ICD-10 V01-X59, Y85-Y86).

Measures long-term success in reducing deaths due to unintentional injuries, compared with other regions, provinces, and countries. Measures the adequacy and effectiveness of injury prevention efforts, including public education, community and road design, prevention, emergency care, and treatment resources.

### Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

## **AIDS deaths**

### Definition:

Crude rate and age-standardized rate of deaths due to AIDS and HIV infections (ICD-10 B20-B24) per 100,000 population.

Measures success in preventing and treating AIDS and HIV (Human Immunodeficiency Virus, the agent that causes AIDS). Information on deaths can be used to estimate the number of persons living with HIV/AIDS, as well as the impact of treatment.

### Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

## **Potential Years of Life Lost (PYLL) - for provincial/territorial level time-series**

### Definition:

Potential years of life lost (PYLL) is the number of years of life "lost" when a person dies "prematurely" from any cause - before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a standardized rate per 100,000 population. Causes of death are classified according to the International Classification of Disease (ICD-9) from 1979 to 1999. The year 2000 and subsequent years available are classified according to the Tenth

Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Provincial level PYLL was calculated only for suicide and unintentional injuries for the years 2000 and 2001 only. Selected causes are defined as follows: Colorectal cancer (ICD-9 153-154), lung cancer (ICD-9 162), female breast cancer (ICD-9 174), prostate cancer (ICD-9 185), acute myocardial infarction (AMI) (ICD-9 410), cerebrovascular diseases (ICD-9 430-438), all stroke (ICD-9 430-432, 434, 436), unintentional injuries (ICD-10 V01-X59, Y85-Y86 or ICD-9 E800-E929 excluding E870-E879), suicides (ICD-10 X60-X84, Y87 or ICD-9 E950-E959)

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**Total mortality Potential Years of Life Lost (PYLL)**

Definition:

Potential years of life lost (PYLL) for total mortality is the number of years of life "lost" when a person dies "prematurely" from any cause - before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**Cancer deaths Potential Years of Life Lost (PYLL)**

Definition:

Potential years of life lost (PYLL) for all malignant neoplasms (ICD-10 C00-C97) and for specific sites: colorectal (ICD-10 C18-C21), lung (ICD-10 C33-C34), female breast (ICD-10 C50), and prostate cancer (ICD-10 C61) is the number of years of life "lost" when a person dies "prematurely" from any cancer – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**Circulatory disease deaths Potential Years of Life Lost (PYLL)**

Definition:

Potential years of life lost (PYLL) for all circulatory disease deaths (ICD-10 I00-I99) and specific causes: ischaemic heart disease (ICD-10 I20-I25), cerebrovascular diseases (stroke) (ICD-10 I60-I69) and all other circulatory diseases (ICD-10 I00-I02, I05-I09, I10-I15, I26-I28, I30-I52, I70-I79, I80-I89, I95-I99) is the number of years of life "lost" when a person dies "prematurely" from any circulatory disease – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

**Sources:**

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**Respiratory disease deaths Potential Years of Life Lost (PYLL)**

**Definition:**

Potential years of life lost (PYLL) for all respiratory disease deaths (ICD-10 J00-J99) and for specific causes: pneumonia and influenza (ICD-10 J10-J18), bronchitis/emphysema/asthma (ICD-10 J40-J43, J45-J46) and all other respiratory diseases (ICD-10 J00-J06, J20-J22, J30-J39, J44, J47, J60-J70, J80- J84, J85-J86, J90-J94, J95-J99) is the number of years of life "lost" when a person dies "prematurely" from any respiratory disease – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

**Sources:**

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**Unintentional injury deaths Potential Years of Life Lost (PYLL)**

**Definition:**

Potential years of life lost (PYLL) for unintentional injuries (ICD-10 V01-X59, Y85-Y86) is the number of years of life "lost" when a person dies "prematurely" from unintentional injuries – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

**Sources:**

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

**Suicide Potential Years of Life Lost (PYLL)**

**Definition:**

Potential years of life lost (PYLL) for suicides (ICD-10 X60-X84, Y87.0) is the number of years of life "lost" when a person dies "prematurely" from suicide – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

**Sources:**

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

### **AIDS deaths Potential Years of Life Lost (PYLL)**

Definition:

Potential years of life lost (PYLL) for human immunodeficiency virus (HIV) infection deaths (ICD-10 B20-B24) is the number of years of life "lost" when a person dies "prematurely" from AIDS/HIV – before age 75. A person dying at age 25, for example, has lost 50 years of life.

Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a count (total PYLL) and as a rate per 100,000 population.

Sources:

Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

## **2. Non-medical determinants of health**

### **2.1 Health behaviours**

#### **Type of smoker (previously referred to as Smoking status)**

Definition:

Population aged 12 and over who reported being either a current smoker (daily or occasional) or a non-smoker (former or never smoked).

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

#### **Smoking initiation**

Definition:

Population aged 12 and over who reported being either a current or former smoker and who reported the age when they smoked their first cigarette.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file

#### **Changes over time in smoking behaviour**

Definition:

Changes over time in the smoking behaviour of the 1994/95 household population aged 12 and over, every two years, at each cycle of the National Population Health Survey Population, age, sex and province are based on the first survey cycle in 1994/95 (Cycle 1). Smokers are those who smoke on either a daily or an occasional basis.

Sources:

Statistics Canada, National Population Health Survey, longitudinal data files 1996/97, 1998/99, 2000/01, 2002/03 and 2004/05

### **Frequency of drinking**

**Definition:**

Population aged 12 and over who are current drinkers and who reported drinking 5 or more drinks on at least one occasion in the past 12 months. 'Heavy drinking' is defined as current drinkers who reported drinking 5 or more drinks on one occasion, 12 or more times a year.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file; Statistics Canada, National Population Health Survey, 1996/97 and 1998/99, North component

### **Leisure-time physical activity**

**Definition:**

Population aged 12 and over reporting level of physical activity, based on their responses to questions about the frequency, duration and intensity of their participation in leisure-time physical activity.

Respondents are classified as active, moderately active or inactive based on an index of average daily physical activity over the past 3 months. For each leisure time physical activity engaged in by the respondent, an average daily energy expenditure is calculated by multiplying the number of times the activity was performed by the average duration of the activity by the energy cost (kilocalories per kilogram of body weight per hour) of the activity. The index is calculated as the sum of the average daily energy expenditures of all activities. Respondents are classified as follows: 3.0 kcal/kg/day or more = physically active; 1.5 - 2.9 kcal/kg/day = moderately active; less than 1.5 kcal per day = inactive.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

### **Changes over time in physical activity level**

**Definition:**

Changes over time in the physical activity level of the 1994/95 household population aged 12 and over, every two years, at each cycle of the National Population Health Survey. Population, age, sex and province are based on the first survey cycle in 1994/95.

**Sources:**

Statistics Canada, National Population Health Survey, longitudinal data files 1996/97, 1998/99, 2000/01, 2002/03, and 2004/05

### **Breastfeeding practices**

Note: Definition change implemented in 2004 to conform with breastfeeding recommendations from Health Canada and the World Health Organization.

**Definition:**

The breastfeeding practices of women aged 15 to 55 who had a baby in the previous five years.

Categories include did not breastfeed, initiated breastfeeding, breastfed for at least four months, breastfed for at least four months exclusively, breastfed for six months, and breastfed for at least

six months exclusively. These benchmarks are former (four months exclusive breastfeeding) and current (six months exclusive breastfeeding) Health Canada recommendations.

Initiated breastfeeding refers to women who breastfed or tried to breastfeed their last child even if only for a short time.

Exclusive breastfeeding refers to an infant receiving only breast milk, without any additional liquid (even water) or solid food.

Sources:

Statistics Canada, Canadian Community Health Survey, 2003

### **Fruit and vegetable consumption (Previously referred to as Dietary practices)**

Definition:

Population aged 12 and over, by the average number of times per day that they consume fruits and vegetables.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file

## **2.2 Living and working conditions**

### **High school graduates**

Definition:

Population aged 25 to 29 who have a high school graduation certificate.

A measure of educational attainment and socio-economic status.

Source:

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Post-secondary graduates**

Definition:

Population aged 25 to 54 who have obtained a post-secondary certificate, diploma, or degree.

A measure of educational attainment and socio-economic status.

Source:

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Adult and youth unemployment rate**

Definition:

Labour force aged 15 and over (and for youths, aged 15 to 24 years) who did not have a job during the reference period.

The labour force consists of people who are currently employed and people who are unemployed but were available to work in the reference period and had looked for work in the past 4 weeks. The reference period refers to a one-week period (from Sunday to Saturday) that usually includes the 15th day of the month.

A traditional measure of the economy. Unemployed people tend to experience more health problems.

Source:  
Statistics Canada, Labour Force Survey (special tabulations)

### **Long-term unemployment rate**

Definition:  
Labour force aged 15 and over who did not have a job any time during the current or previous year (for example, the years 1995 and 1996 for the 1996 Census).

The labour force consists of people currently employed and people who are unemployed but were available to start work in the week prior to enumeration and looked for work in the past 4 weeks. Unemployed people tend to experience more health problems. Long-term unemployment could extend ones' susceptibility to poor health.

Source:  
Statistics Canada, 1996 and 2001 Census (20% sample)

### **Low income rate (income for the year prior to the Census)**

Definition:  
Population in economic families and unattached individuals with incomes below the Statistics Canada low-income cut-off (LICO). The cut-offs represent levels of income where people spend disproportionate amounts of money for food, shelter, and clothing. LICOs are based on family and community size; cut-offs are updated to account for changes in the consumer price index.

The term economic family refers to a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption.

A widely used measure of socio-economic status. Higher income is associated with better health.

Source:  
Statistics Canada, 1996 and 2001 Census (20% sample)

### **Children in low-income families (income for the year prior to the Census)**

Definition:  
Population of children aged 17 and under living in economic families with incomes below Statistics Canada's low-income cut-offs (LICO). The cut-offs represent levels of income where people spend disproportionate amounts of money for food, shelter, and clothing. LICOs are based on family and community size; cut-offs are updated to account for changes in the consumer price index.

The term economic family refers to a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption.

A widely used measure of children at risk.

Source:  
Statistics Canada, 1996 and 2001 Census (20% sample)

### **Average personal income (income for the year prior to the Census)**

Definition:

Average personal income (pre-tax, post-transfer) for persons aged 15 and over who reported income.

Higher income is associated with better health.

Source:

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Median share of income (income for the year prior to the Census)**

Definition:

Proportion of income (from all sources, pre-tax, post-transfer) held by households whose incomes fall below the median household income.

A proportion of 50% would represent no inequality.

Source:

Statistics Canada, 1996 and 2001 Census (20% sample), special tabulations

### **Government transfer income (income for the year prior to the Census)**

Definition:

Proportion of all income that came from government transfers (e.g., Canada or Quebec Pension Plan, Unemployment Insurance, etc.) for the population 15 years of age and over.

Source:

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Housing affordability (income for the year prior to the Census)**

Definition:

Households (renters, owners, and total) spending 30% or more of total household income on shelter expenses. Shelter expenses include payments for electricity, oil, gas, coal, wood or other fuels, water and other municipal services, monthly mortgage payments, property taxes, condominium fees and rent.

As a general rule, households are considered to have affordability problems if more than 30% of household income is spent on housing costs. At that level of spending, it is likely that inadequate funds will be available for other necessities such as food, clothing, and transportation. Housing affordability problems affect renters more than owners. Band housing on Indian reserves was not included in the calculation of housing affordability.

Source:

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Decision latitude at work**

Definition:

Degree of control that individuals have over their work circumstances (who agree or disagree with the statement "I have a lot to say about what happens in my job." and "My job allows me the freedom to decide how I do my job."). Refers to population aged 15 to 74 who worked at a job or business at any point in the past 12 months before the interview.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, cross sectional sample, health file

### **Crime incidents**

**Definition:**

The number and rate (per 100,000 population) of total Criminal Code offences, violent crimes, property crimes, and other crimes.

**Source:**

Statistics Canada, Canadian Centre for Justice Statistics, Uniform Crime Reporting Survey

### **Adults and youth charged**

**Definition:**

The number and rate (per 100,000 population) of youths, aged 12 to 17 years, or adults, aged 18 and over, charged with Criminal Code offences by type of offence.

**Source:**

Statistics Canada, Canadian Centre for Justice Statistics, Uniform Crime Reporting Survey

## **2.3 Personal resources**

### **Sense of community**

**Definition:**

Population aged 12 and over who describe their sense of belonging to their local community as very strong, somewhat strong, somewhat weak or very weak.

Research shows a high correlation of sense of community belonging with physical and mental health.

**Source:**

Statistics Canada, Canadian Community Health Survey 2005, health file

### **Social support (National Population Health Survey)**

**Definition:**

Level of perceived social support reported by population aged 12 and over, based on their responses to four questions about having someone to confide in, someone they can count on in a crisis, someone they can count on for advice, and someone who makes them feel loved and cared for. In this publication, a score of 0 was classified as low social support, 1 to 3 as medium social support and 4 as high social support.

**Source:**

Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, health file; Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, North component

### **Social support (Canadian Community Health Survey)**

**Definition:**

Level of perceived social support reported by population aged 12 and over, defined as having emotional or informational support when an individual needs someone to listen or needs to

confide in someone. It is based on a list of eight questions that ask people how often they receive certain types of support in certain circumstances. In this publication, a score of 0 to 10 was classified as low social support, 11 to 20 as medium social support and 21 to 32 as high social support.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file

### **Life stress (National Population Health Survey)**

Definition:

Level of chronic stress reported by the population aged 18 and over, based on their responses to a series of 17 questions about their personal situation. In this publication, a score of 0 or 1 was low life stress, 2 to 4 was moderate life stress and 5 to 16 was high life stress.

Source:

Statistics Canada, National Population Health Survey, 1994/95 cross sectional sample, health file

### **Life stress (Canadian Community Health Survey)**

Definition:

Population aged 18 and over who reported their level of life stress.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file

## **2.4 Environmental factors**

Note: Definition for exposure to second-hand smoke was changed in 2004 to reflect changes in questionnaire wording. Data from CCHS 2000/01 are therefore not comparable with data from CCHS 2003.

### **Exposure to second-hand smoke at home**

Definition:

Non-smoking population aged 12 and over who reported that at least one person smokes inside their home every day or almost every day.

Source:

Statistics Canada, Canadian Community Health Survey, 2003, health file

### **Exposure to second-hand smoke in vehicles and public places**

Definition:

Non-smoking population aged 12 and over who reported being exposed to second-hand smoke in private vehicles and/or public places everyday or almost every day during the past month.

Source:

Statistics Canada, Canadian Community Health Survey 2005, 2003, health file

### **3. Health system performance**

#### **3.1 Acceptability**

##### **Patient satisfaction (and quality rating of services received)**

**Definition:**

Population aged 15 and over receiving health services in the past 12 months who rate their level of satisfaction with those services as either “very satisfied” or “somewhat satisfied”. Perceived rating of the quality of services received rated as “excellent” or “good” is another component of this indicator. ‘Health services’ are broken down as follows: Overall health care services; hospital care; physician care, community-based care; and telephone health line or tele-health services.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file

#### **3.2 Accessibility**

##### **Influenza immunization**

**Definition:**

Population aged 12 and over (aged 65 and over for data from the National Population Health Survey) who reported when they had their last influenza immunization (flu shot).

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1996/97, cross sectional sample, health file

##### **Screening mammography**

**Definition:**

Women aged 50 to 69 who reported when they had their last mammogram for routine screening or other reasons.

Screening mammography is an important strategy for early detection of breast cancer.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1996/97, cross sectional sample, health file

##### **Pap smear**

**Definition:**

Women aged 18 to 69 who reported when they had their last Pap smear test.

Pap tests detect pre-malignant lesions before cancer of the cervix develops.

**Sources:**

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

### **Regular medical doctor**

**Definition:**

Population aged 12 and over were asked to report whether they had a regular medical doctor. Those who did not were asked to report why not.

Respondents were considered not to have looked for a regular medical doctor if their responses included "Have not tried to contact one" or "Other reasons". All other respondents without a regular medical doctor were considered to have been unable to find one. Their responses included various combinations of the following: "No medical doctors available in the area", "Medical doctors in the area are not taking new patients" and "Had a medical doctor who left or retired".

Establishing an ongoing relationship with a regular medical doctor is believed to be important in maintaining health and ensuring appropriate access to health services.

**Source:**

Statistics Canada, Canadian Community Health Survey 2005, health file

### **Wait time for hip fracture surgery (CIHI)**

**Definition:**

Risk-adjusted proportion of hip fracture patients aged 65 and older who received hip fracture surgery on the day of admission or the next day after being admitted to an acute care hospital.

Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca).

Wait time for surgery following hip fracture provides a measure of the access to care. While some hip fracture patients need medical treatment to stabilize their condition before surgery, research suggests patients typically benefit from timely surgery in terms of reduced morbidity, mortality, pain, length of stay in hospital, as well as improved rehabilitation.

**Source:**

Canadian Institute for Health Information, Discharge Abstract Database

## **3.3 Appropriateness**

### **Caesarean section**

**Definition:**

Proportion of women delivering babies in acute care hospitals by caesarean section.

**Method of calculation:**

$(\text{Number of caesarean sections} / \text{Number of deliveries (live births and stillbirths)}) * 100$

**Delivery:**

I. ICD-9

Any one diagnosis code of 640-676 and with a fifth digit of '1' or '2'; 650 or V27

II. ICD-10-CA

Any one diagnosis code of O10 - O16, O20, O21 - O29, O30 - O37, O40 - O46, O60 - O69, O70 - O75, O85 - O89, O90 - O92, O95, O98, O99 with a sixth digit of 1 or 2; or Z37

Deliveries in which an abortive procedure was provided are excluded:

I. CCP\*

Any one procedure code of 78.52, 86.3, 86.4, 87.0, 87.1, or 87.2

II. CCI\*

Any one procedure code of 5.CA.88, 5.CA.89, 5.CA.90, or 5.CA.93

Caesarean section (Caesarean section is a subset of deliveries):

I. CCP\*

Any one procedure of 86.0-86.2, 86.8, or 86.9

II. CCI\*

5.MD.60

\*Code may be recorded in any position with cancelled, previous, out-of-hospital, and "abandoned after onset" cases excluded.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database; Ministère de la Santé et des Services sociaux du Québec.

### 3.4 Effectiveness

#### Ambulatory care sensitive conditions (ACSC)

Definition:

Age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to hospital, per 100,000 population under age 75 years.

This definition of ACSC is based on the work of Billings et al (see Billings J, Zeital L, Lukomnik J, Carey TS, Blank AE, Newman L. Impact of socio-economic status on hospital use in New York City. Health Affairs 1993; Spring:162-173; Billings J, Anderson GM, Newman LS. Recent findings on preventable hospitalizations. Health Affairs 1996; 15(3):239-249.)

Inclusion criteria: Any one most responsible diagnosis code of:

- Grand mal status and other epileptic convulsions
- Chronic obstructive pulmonary disease
- Asthma
- Heart failure and pulmonary edema \*\*
- Hypertension\*\*
- Angina\*\*
- Diabetes

\*\* Excluding cases with a specific procedure recorded (refer to technical notes for details [www.cihi.ca](http://www.cihi.ca)).

Ambulatory Care Sensitive Conditions have been considered to be a measure of access to appropriate medical care. While not all admissions for ambulatory care sensitive conditions are avoidable, it is assumed that appropriate prior ambulatory care could prevent the onset of this type of illness or condition, control an acute episodic illness or condition, or manage a chronic disease or condition. A disproportionately high rate is presumed to reflect problems in obtaining access to primary care.

Rates are not comparable to those published by CIHI prior to June 2005 due to a change in the definition. See Definitions, Data sources and Rationale from June 2004 for information on how this indicator was previously defined.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database; Ministère de la Santé et des Services sociaux du Québec.

### **30-day Acute Myocardial Infarction (AMI) in-hospital mortality rate**

Definition:

The risk-adjusted rate of all-cause in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of AMI.

Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca)

To enable comparison across regions, a statistical model was used to adjust for differences in age, sex and co-morbidities. Inter-regional variation in 30-day in-hospital mortality rates may be due to jurisdictional and institutional differences in standards of care, as well as other factors that were not included in the adjustment. Effective with the 2004 rates, the case selection criteria for acute myocardial infarction (AMI) mortality rates were revised to include the increasing number of AMI patients who are undergoing revascularization procedures at the facility to which they are initially admitted (index admission). In these instances AMI may *not* have been coded as “most responsible diagnosis” and was previously excluded from the indicator. In addition, exclusion criteria have also been revised. Patients with a length of stay of less than 3 days who were discharged alive are no longer excluded. Therefore, comparison of 2004 rates with those of previous years should be made with caution.

Rates for Quebec are not available due to differences in coding of diagnosis type. Rate for Nunavut is not available due to incomplete data submission.

Sources:

Canadian Institute for Health Information, Hospital Morbidity Database, Discharge Abstract Database

### **30-day stroke in-hospital mortality rate**

Definition:

The risk-adjusted rate of all-cause in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of stroke.

Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca)

To enable comparison across regions, a statistical model was used to adjust for differences in age, sex and co-morbidities. Adjusted mortality rates following stroke may reflect, for example, the underlying effectiveness of treatment and quality of care. Inter-regional variations in rates may be due to jurisdictional and institutional differences in standards of care, as well as other factors that are not included in the adjustment. Beginning with 2004 rates, case selection criteria for stroke mortality rates were revised to include patients transferred to rehabilitation during their index admission. In this case, stroke may not be coded as “most responsible diagnosis” and was previously excluded from the indicator. In addition, stroke resulting from occlusion of pre-cerebral arteries is now included in the indicator. These cases were previously excluded because their identification was not possible in the ICD-9 coding system. Comparisons of 2004 rates with those of previous years should be made with caution.

Rates for Quebec are not available due to differences in coding of diagnosis type. Rate for Nunavut is not available due to incomplete data submission.

Sources:

Canadian Institute for Health Information, Hospital Morbidity Database, Discharge Abstract Database

### **Acute Myocardial Infarction (AMI) readmission rate**

Definition:

The risk-adjusted rate of unplanned readmission following discharge for Acute Myocardial Infarction (AMI). A case is counted as a readmission if it is for a relevant diagnosis and occurs within 28 days after the index AMI episode of care. An episode of care refers to all contiguous in-patient hospitalizations and same-day surgery visits.

To enable comparison across regions, a statistical model was used to adjust for differences in age, sex and co-morbidities. The risk of readmission following an AMI may be related to the type of drugs prescribed at discharge, patient compliance with post-discharge therapy, the quality of follow-up care in the community, or the availability of appropriate diagnostic or therapeutic technologies during the initial hospital stay. Although readmission for medical conditions can involve factors outside the direct control of the hospital, high rates of readmission act as a signal to hospitals to look more carefully at their practices, including the risk of discharging patients too early and the relationship with community physicians and community-based care. Effective with the 2004 rates, the case selection criteria for acute myocardial infarction (AMI) readmission rates were revised to include the increasing number of AMI patients who are undergoing revascularization procedures at the facility to which they are initially admitted (index admission). In these instances AMI may *not* have been coded as “most responsible diagnosis” and was previously excluded from the indicator. In addition, exclusion criteria have also been revised. Patients with a length of stay of less than 3 days who were discharged alive are no longer excluded. Comparisons of 2004 rates with those of previous years should be made with caution.

\*Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca).

Rates for Quebec and Manitoba are not available due to differences in data collection.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database, National Ambulatory Care Reporting System; Alberta Health and Wellness, Alberta Ambulatory Care Database.

### **Asthma readmission rate**

Definition:

The risk-adjusted rate of unplanned readmission following discharge for asthma. A case is counted as a readmission if it is for a relevant diagnosis and occurs within 28 days after the index episode of care. An episode of care refers to all contiguous in-patient hospitalizations and same-day surgery visits.

To enable comparison across regions, a statistical model was used to adjust for differences in age, sex and co-morbidities. Although readmission for medical conditions may involve factors outside the direct control of the hospital, high rates of readmission act as a signal to hospitals to look more carefully at their practices, including the risk of discharging patients too early and the relationship with community physicians and community-based care. These rates should be interpreted with caution due to potential differences in the coding of comorbid conditions across provinces and territories.

\*Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca).

Rates for Quebec and Manitoba are not available due to differences in data collection.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database, National Ambulatory Care Reporting System; Alberta Health and Wellness, Alberta Ambulatory Care Database.

### **Hysterectomy readmission rate**

Definition:

The risk-adjusted rate of unplanned readmission following discharge for hysterectomy. A case is counted as a readmission if it is for a relevant diagnosis and occurs within 7 or 28 days after the index episode of care. An episode of care refers to all contiguous in-patient hospitalizations and same-day surgery visits.

To enable comparison across regions, a statistical model was used to adjust for differences in age and co-morbidities. Although readmission for surgery may involve factors outside the direct control of the hospital, high rates of readmission act as a signal to hospitals to look more carefully at their practices, including the risk of discharging patients too early and the relationship with community physicians and community-based care. These rates should be interpreted with caution due to potential differences in the coding of comorbid conditions across provinces and territories.

\*Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca).

Rates for Quebec and Manitoba are not available due to differences in data collection.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database, National Ambulatory Care Reporting System; Alberta Health and Wellness, Alberta Ambulatory Care Database.

### **Prostatectomy readmission rate**

Definition:

The risk-adjusted rate of unplanned readmission following discharge for prostatectomy. A case is counted as a readmission if it is for a relevant diagnosis or procedure and occurs within 28 days after the index episode of care. An episode of care refers to all contiguous in-patient hospitalizations and same-day surgery visits.

To enable comparison across regions, a statistical model was used to adjust for differences in age and co-morbidities. Although readmission for surgery may involve factors outside the direct control of the hospital, high rates of readmission act as a signal to hospitals to look more carefully at their practices, including the risk of discharging patients too early and the relationship with community physicians and community-based care. These rates should be interpreted with caution due to potential differences in the coding of comorbid conditions across provinces and territories.

\*Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca).

Rates for Quebec and Manitoba are not available due to differences in data collection.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database, National Ambulatory Care Reporting System; Alberta Health and Wellness, Alberta Ambulatory Care Database.

## **3.5 Safety**

## **Hip fracture hospitalization**

### Definition:

Age-standardized acute care hospitalization rate for fracture of the hip, per 100,000 population age 65 and over.

(Most responsible diagnosis code of: ICD-9 820.0-820.3, 820.8, 820.9 or ICD-10-CA S72.0, S72.1, S72.2).

Hip fractures occur for various reasons including environmental hazards, the prescription of potentially inappropriate psychotropic medications to the ambulatory elderly, and safety issues in long-term care facilities. As well as causing disability or death, hip fractures can have a major impact on independence and quality of life. This measure is based on the number of cases admitted to hospital. Some cases may represent readmissions for additional treatments or transfers from one medical setting to another. Thus, the hospitalization rate may over-estimate the incidence of hip fractures.

### Sources:

Canadian Institute for Health Information, Discharge Abstract Database, Ministère de la Santé et des Services sociaux du Québec.

## **In-hospital hip fracture**

### Definition:

Risk-adjusted rate of in-hospital hip fracture among acute care inpatients age 65 years and over, per 1,000 discharges.

\*Refer to technical notes for details [www.cihi.ca](http://www.cihi.ca)

Proposed by the Agency for Healthcare Research and Quality (AHRQ) and based on the Complications Screening Program, this indicator represents a potentially preventable complication resulting from an inpatient stay in an acute care facility. Variation in the rates may be attributed to numerous factors, including hospital processes, environmental safety, and availability of nursing care. High rates may prompt investigation of potential quality of care deficiencies.

Rates for Quebec and Manitoba are not available due to differences in data collection.

### Source:

Canadian Institute for Health Information, Discharge Abstract Database

## **4. Community and health system characteristics**

### **4.1 Community**

#### **Population estimates**

##### Definition:

The number of people living in a geographic area by age and sex.

A population's size and age/sex composition impact the health status of a region and its need for health services. Population data also provide the "denominators" used to calculate rates for most health and social indicators.

Sources:

Statistics Canada, Demography Division. Data are derived from the Census and administrative sources on births, deaths, and migration. Population growth for Alberta and British Columbia were supplied by Alberta Health and Wellness and BC Stats respectively.

**Population density**

Definition:

Number of people per square kilometre. Calculated by dividing the total population by land area.

Sources:

Statistics Canada, 1996 and 2001 Census, and Geography Division (special tabulations)

**Dependency ratio**

Definition:

The ratio of the combined child population (aged 0 to 14) and elderly population (aged 65 and over) to the working age population (aged 15 to 64). This ratio is usually presented as the number of dependents for every 100 people in the working age population.

Canadians aged 65 and over and those under age 15 are more likely to be socially and/or economically dependent on working age Canadians, and they may also put certain additional demands on health services.

Sources:

Statistics Canada, Demography Division. Data are derived from the Census and administrative sources on births, deaths, and migration.

**Urban and rural population**

Definition:

People living in urban areas. An urban area is defined as having a minimum population of 1,000 and a population density of 400 people per square kilometre.

This community characteristic allows users to compare regions with similar proportions of urban/rural population.

Source:

Statistics Canada, 1996 and 2001 Census

**Aboriginal population**

Definition:

Aboriginal people living in a geographic area. Aboriginal people are those persons who reported identifying with at least one Aboriginal group (e.g. North American Indian, Métis or Inuit) and/or those who reported being a Treaty Indian or a Registered Indian as defined by the Indian Act and/or those who were members of an Indian Band or First Nation.

Health status characteristics and non-medical determinants of Aboriginal people differ from the non-Aboriginal population, for example, infant mortality, unintentional injury deaths, suicides and smoking rates. Knowing the proportion of Aboriginal people in a geographic area provides context to better interpret health indicators.

Sources:

Statistics Canada, 1996 and 2001 Census (20% sample), 1996 and 2001 Census Coverage Studies, and Demography Division (population estimates)

### **Immigrant population**

**Definition:**

All immigrants living in a geographic area, and those immigrants who came to Canada during the 15 years prior to Census Day.

Canadian, American and Australian studies have shown that immigrants, particularly non-European immigrants, generally have a longer life expectancy and lower risk of certain chronic conditions than the native-born population. However, the Canadian studies have also shown that as the immigrants' period of residence in Canada increases, so does the prevalence of chronic conditions, smoking and disability. Understanding the proportion of immigrants in a geographic area, along with the period of immigration, provides a context for interpreting health indicators.

**Source:**

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Internal migrant mobility**

**Definition:**

Percentage of people that lived in a different Canadian municipality at the time of the previous Census (5-year internal migrants) or one year before the current Census (1-year internal migrants). External migrants who were living outside Canada are excluded.

**Source:**

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Metropolitan Influenced Zones (MIZ)**

**Definition:**

Strong MIZ (Census **M**etropolitan Area and Census **A**gglomeration **I**nfluenced **Z**ones) represents the proportion of the population living in Census Metropolitan Areas (CMA), Census Agglomerations (CA) and communities that fall outside CMAs/CAs that have at least 30% of the employed labour force commuting to CMAs/CAs. The larger the proportion, the stronger the relationship between the specific community and a nearby CMA/CA.

The CMAs and CAs are large urban areas with adjacent urban and rural areas that have a high degree of economic and social integration. These CMAs and CAs are defined around urban areas that have attained certain population thresholds: 100,000 for CMAs and 10,000 for CAs.

**Sources:**

Statistics Canada, 1996 and 2001 Census (20% sample), Geography Division

### **Lone-parent families**

**Definition:**

Percentage of lone-parent families among all census families living in private households. A census family refers to married or common-law couple or lone parent with at least one never-married son or daughter living in the same household.

**Source:**

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Visible minority population**

**Definition:**

Population belonging to a visible minority group. As defined by the Employment Equity Act (1986), visible minorities are persons (other than Aboriginal people) who are non-caucasian in race or non-white in colour.

**Source:**

Statistics Canada, 1996 and 2001 Census (20% sample)

### **Teen pregnancy**

**Definition:**

Number and rate of pregnancies per 1,000 women aged 15 to 19.

Pregnancies are composed of live births, induced (therapeutic) abortions and fetal loss, including stillbirths (at least 20 weeks gestation or fetal weight of at least 500 grams) and cases of spontaneous abortion, illegally induced abortion, other and unspecified abortion treated in general and allied hospitals in Canada.

**Sources:**

Statistics Canada, Vital Statistics, Birth and Stillbirth Databases; Canadian Institute for Health Information, Hospital Morbidity Database, and Therapeutic Abortion Survey

## **4.2 Health system**

### **Inflow/outflow ratio**

**Definition:**

A ratio of the number of discharges from relevant facilities (acute care/same day surgery) within a given region divided by the number of discharges generated by residents of that region. An overall ratio is calculated for discharges associated with any diagnosis or procedure for acute care discharges only, and separately for hip replacement, knee replacement, hysterectomy, percutaneous coronary intervention and coronary artery bypass surgery procedures from all relevant facilities.

(CABG: CCP code 48.1, CCI code 1.IJ.76; PCI: CCP code 48.02, 48.03, CCI code 1.IJ.50, 1.IJ.57.GQ; Hip replacement: CCP code 93.51, 93.52, 93.53, or 93.59, CCI code 1.VA.53.LA-PN, 1.VA.53.PN-PN; Knee replacement: CCP code 93.40 or 93.41, CCI code 1.VG.53; Hysterectomy: CCP code 80.3-80.6, CCI code 1.RM.89, 1.RM.91)

This indicator reflects the balance between the quantity of hospital stays provided to both residents and non-residents by all acute care hospitals in a given region and the extent of acute care utilization by residents of that region, whether they receive care within or out of the region. A ratio less than one indicates that hospital stays utilized by residents of a region exceeded hospital care provided within that region, suggesting an outflow effect. A ratio greater than one indicates hospital stays provided by a region exceeded the quantity of stays utilized by its residents, suggesting an inflow effect. A ratio of one indicates that the volume of hospital discharges in the region is equivalent to that generated by its residents, suggesting that inflow and outflow activity, if it exists at all, is balanced.

**Sources:**

Canadian Institute for Health Information, Discharge Abstract Database; Ministère de la Santé et des Services sociaux du Québec; Alberta Health and Wellness, Alberta Acute Care Database, Alberta Ambulatory Care Database.

### **Coronary artery bypass graft (CABG)**

**Definition:**

Age-standardized rate of coronary artery bypass graft (CABG) surgery performed on inpatients in acute care hospitals per 100,000 population age 20 and over.

(CCP code 48.1, CCI code 1.IJ.76)

As with other types of surgical procedures, variations in CABG surgery rates can be attributed to numerous factors, including differences in population demographics, physician practice patterns, and availability of services. In some cases, percutaneous coronary intervention (an alternative intervention to improve blood flow to the heart muscle) may be used. Variations in the extent of the procedure may result in variations in bypass surgery.

**Sources:**

Canadian Institute for Health Information, Discharge Abstract Database, Ministère de la Santé et des Services sociaux du Québec.

### **Percutaneous coronary intervention (PCI)**

**Definition:**

Age-standardized rate of percutaneous coronary interventions (PCI) performed on patients in acute care hospitals, same day surgery facilities or catheterization laboratories, per 100,000 population age 20 years and over.

(CCP code 48.02, 48.03, CCI code 1.IJ.50, 1.IJ.57.GQ).

In many cases, PCI serves as a non-surgical alternative to coronary artery bypass graft (CABG) surgery and is undertaken for the purpose of opening obstructed coronary arteries. While PCI encompasses several techniques, angioplasty is the procedure most frequently provided. The choice of revascularization mode (i.e. PCI or CABG) depends on numerous factors including physician preferences, availability of services, referral patterns, as well as differences in population health and socio-economic status.

**Sources:**

Canadian Institute for Health Information, Discharge Abstract Database, National Ambulatory Care Reporting System; Alberta Health and Wellness, Alberta Ambulatory Care Database; Ministère de la Santé et des Services sociaux du Québec.

### **Hip replacement**

**Definition:**

Age-standardized rate of unilateral or bilateral hip replacement surgery performed on inpatients in acute care hospitals per 100,000 population age 20 years and over.

(CCP code 93.51, 93.52, 93.53 or 93.59, CCI code 1.VA.53.LA-PN or 1.VA.53.PN-PN).

Hip replacement surgery has the potential to result in considerable improvement in functional status, pain relief, as well as other gains in health-related quality of life. Over the past two decades, rates of surgery have increased substantially. Wide inter-regional variation in the hip replacement rate may be attributable to numerous factors including the availability of services, provider practice patterns, and patient preferences.

Beginning with 2005/06, this indicator is calculated for the population age 20 years and over and therefore is not comparable with rates reported for previous years. Rates for the previous years, calculated using the new definition, are presented to enable comparisons over time.

Sources:

Canadian Institute for Health Information, Hospital Morbidity Database, Discharge Abstract Database; Ministère de la Santé et des Services sociaux du Québec; Alberta Health and Wellness, Alberta Acute Care Database.

### **Knee replacement**

Definition:

Age-standardized rate of unilateral or bilateral knee replacement surgery performed on patients in acute care hospitals or same-day surgery facilities, per 100,000 population age 20 years and over.

(CCP code 93.40 or 93.41, CCI code 1.VG.53).

Knee replacement surgery has the potential to result in considerable improvement in functional status, pain relief, as well as other gains in health-related quality of life. Over the past two decades, rates of surgery have increased substantially. Wide inter-regional variation in the knee replacement rate may be attributable to numerous factors including the availability of services, provider practice patterns, and patient preferences.

Beginning with 2005/06, this indicator is calculated for the population aged 20 years and older and includes same day surgery procedures, and therefore is not comparable with rates reported for previous years. Rates for the previous years, calculated using the new definition, are presented to enable comparisons over time.

Sources:

Canadian Institute for Health Information, Hospital Morbidity Database, Discharge Abstract Database, National Ambulatory Care Reporting System; Ministère de la Santé et des Services sociaux du Québec; Alberta Health and Wellness, Alberta Acute Care Database, Alberta Ambulatory Care Database.

### **Hysterectomy**

Definition:

Age-standardized rate for hysterectomy provided to inpatients in acute care hospitals or same-day surgery facilities, per 100,000 women age 20 and over.

(CCP code 80.3-80.6 or CCI code 1.RM.89, 1.RM.91).

Utilization rates may reflect the level of uncertainty about the appropriate use of this surgical procedure. The "right" level of utilization is not known.

Sources:

Canadian Institute for Health Information, Discharge Abstract Database, National Ambulatory Care Reporting System; Ministère de la Santé et des Services sociaux du Québec; Alberta Health and Wellness, Alberta Ambulatory Care Database.

### **Contact with alternative health care providers**

Definition:

Population aged 12 and over who have consulted with alternative health care providers in the past 12 months.

Alternative health care providers include: massage therapists, acupuncturists, homeopaths or naturopaths, Feldenkrais or Alexander teachers, relaxation therapists, biofeedback teachers, rolfers, herbalists, reflexologists, spiritual healers, religious healers, etc.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

**Contact with medical doctors**

Definition:

Population aged 12 and over who have consulted with a medical doctor in the past 12 months.

Medical doctor includes family or general practitioners as well as specialists such as surgeons, allergists, orthopaedists, gynaecologists, or psychiatrists. For population aged 12 to 17 includes pediatrician.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

**Contact with health professionals about mental health**

Definition:

Population aged 12 and over who have consulted with a health professional about their mental health in the past 12 months.

Mental health professionals include: family doctors or general practitioners, psychiatrists, psychologists, nurses, social workers and counsellors.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file; Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, North component

**Contact with dental professionals**

Definition:

Population aged 12 and over who have consulted with a dental professional in the past 12 months.

Dental professionals include dentists or orthodontists.

Sources:

Statistics Canada, Canadian Community Health Survey 2005, 2003, 2000/01, health file;  
Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file and North component

## **4.3 Resources**

### **Doctors rate**

Definition:

Physician counts include all active general practitioners, family practitioners, and specialist physicians as of December 31 of the reference year. The data include physicians in clinical and

non-clinical practice and exclude residents and physicians who are not licensed to provide clinical practice and have requested that their information not be published in the Canadian Medical Directory.

For all jurisdictions and data years specialist physicians include certificants of the Royal College of Physicians and Surgeons of Canada (RCPSC) and/or the College des médecins du Québec (CMQ). As of 2004, Saskatchewan and Newfoundland and Labrador specialists also include physicians who are licensed as specialists but who are not certified by the RCPSC or the CMQ (i.e., non-certified specialists). For all other jurisdictions, and for Saskatchewan and Newfoundland and Labrador prior to 2004, non-certified specialists are counted as family practitioners. With the exception of the criteria just noted all other physicians are counted as family practitioners, including certificants of the College of Family Physicians of Canada (CCFP and CCFP-Emergency Medicine). For further information on physician count methodologies please see CIHI's reports on the "Supply, Distribution and Migration of Canadian Physicians" and "Certified and Non-Certified Specialists: Understanding the Numbers" ([www.cihi.ca](http://www.cihi.ca)).

It is recognized that physician specialty classification as noted above does not necessarily reflect the services provided by individual physicians. The range of services provided by a physician is subject to provincial licensure rules, medical service plan payment arrangements, and individual practice choices. Therefore, CIHI physician-to-population rates may differ from those published by other sources.

Physician-to-population ratios are used to support health human resource planning. While physician density ratios are useful indicators of changes in physician numbers relative to the population, inference from total numbers or ratios as to the adequacy of provider resources should not be made.

**Note:** Scott's Medical Database (SMDB) information may undercount physicians due to Provincial/Territorial licensing authority data supply interruptions. SMDB data does not reflect licensing authority updates for the following jurisdictions and years: British Columbia 2004; Québec 2003; Ontario 2002; Alberta and the Yukon 2000.

Source:

Canadian Institute for Health Information, Scott's Medical Database.

## **Data quality, concepts and methodology**

### **1. Regional health indicators**

The methodology used for these indicators was designed to maximize inter-regional and inter-provincial comparability given the characteristics of available national datasets. For this reason, there may be differences between definitions, data sources, and extraction procedures used in local, regional, or provincial/territorial reports when compared to those described here. In addition, discrepancies may exist due to on-going updates to databases.

Rates are standardized wherever possible to facilitate comparability across provinces/regions and over time.

Indicators in this release that are based on hospitalization records and produced by the Canadian Institute for Health Information (CIHI) are limited to health regions with population greater than 75,000.

For most data sources (with the exception of Census and Demographic population estimates), health region level data are not available for some northern health regions in Manitoba and Saskatchewan which have small populations. To avoid suppression in these areas where small numbers or sample size impact on data quality, data have been grouped with neighbouring regions, as follows:

In Manitoba, Burntwood Regional Health Authority (4680) is combined with Churchill Regional Health Authority (4690) and referred to as 'Burntwood/Churchill (4685).'

In Saskatchewan, Mamawetan Churchill River Regional Health Authority (4711) is combined with Keewatin Yatthé Regional Health Authority (4712) and Athabasca Health Authority (4713) and referred to as 'Athabasca/Keewatin/Mamawetan (4714).'

#### **1.1 Health region level population estimates**

Population estimates for health regions were produced by Statistics Canada (Demography Division) for all provinces, except Alberta and British Columbia. Alberta population estimates from Alberta Health and Wellness and British Columbia population estimates were provided by BC Stats. See the section on Population estimates for information on methodology.

### **2. Health status indicators based on vital statistics (Statistics Canada)**

Health region level rates are based on the boundaries in effect as of June 2003 unless otherwise noted.

#### **2.1 Provincial vital and cancer statistics**

Health indicators based on vital and cancer statistics are produced at the Canada, province and territorial level only, with long time series. These indicators may have different methodologies compared to the regional health indicators (refer to section 2.2). Data on provincial health and on regional health may be the same indicator, but the numbers or rates may differ because of their methodologies. One key difference is that the provincial indicators are based on single years of data, whereas regional level data are based on multiple year averages (refer to section 2.2). For

this reason, in addition to certain additional methodological differences, comparisons between these two sources are not recommended.

These provincial health indicators include the Canada/province/territory-only time series data for life expectancy, low birth weight, age-standardized mortality rates, infant mortality, potential years of life lost and cancer incidence.

Age-standardized mortality and cancer incidence rates were based on place of residence. The formula for age-standardization is presented in a later section entitled “Age-standardized mortality rates”. Cancer incidence data from 2001 to 2004 are estimates produced by Health Canada.

Life expectancy is calculated using the Greville method, a widely recognized method of constructing a life table<sup>1</sup>. These provincial/territorial life expectancy data were based on single years of mortality and population and were abridged life tables (i.e., 5 year age-sex groupings). Although their methodologies differ, the Greville, Chiang and Keyfitz methods of calculating life expectancy yield similar results<sup>2</sup>. There are no special notes for the provincial vital statistics indicators of low birth weight and infant mortality outside of what is described in the Definitions and Data Sources document.

Potential years of life lost (PYLL) was calculated in the same fashion as the regional-level indicators of the same name, as described in section 2.2.9.

## 2.2 Regional-level vital statistics indicators

Rates are based on place of residence for indicators derived from birth and death events.

Indicators presented in this product (with the exception of province-only indicators, described above) which were derived from vital statistics, are based on three years of data in both numerator and denominator. For low birth weight, three years of birth data are used in both the numerator and denominator. For infant and perinatal mortality, three years of death or stillbirth data are divided by the same three years of birth data. For mortality, three years of death data (e.g., 2000 to 2002) are divided by three times the mid-year (e.g., 2001) population estimate. In all vital statistics table titles, the year mentioned simply refers to the middle year.

### 2.2.1 Regional level data quality measures: Confidence Intervals

All data presented have an associated 95% confidence interval (CI). The confidence interval illustrates the degree of variability associated with a rate. Wide confidence intervals indicate high variability, thus, these rates should be interpreted and compared with due caution. Some age-standardized rates were suppressed due to both a very small underlying count plus extremely high variability. Confidence intervals can also be used to determine whether a rate in one health region is statistically below, above or no different than the rate for the same indicator in another health region.

The confidence intervals for the age-standardized rates were produced using the variance derived using the Spiegelman method.<sup>3</sup>

$$Variance = \sum_x \left( \frac{P_x^s}{P^s} \right)^2 \cdot \frac{m_x(1-m_x)}{P_x}$$

where  $P^s$  is the standard population (refer to section 2.2.2),  $P_x^s$  is the age-specific standard population,  $x$  is the age group (using 5-year age groups),  $P_x$  is the population estimate for the

corresponding age group,  $m_x$  is the mean age-specific crude mortality rate and  $n$  is the number of years of data used.

$$m_x = \frac{\sum_{i=1}^n d_{xi}}{nI_x^P}$$

**Note:** when using  $n$  years of data,  $d_{xi}$  is the number of deaths in age group  $x$  in year  $i$ .

The confidence intervals for the crude count, crude rate and birth-related data were produced via the Fleiss method<sup>4</sup>. Take note that the lower confidence interval (CI) in this formula is constrained by zero, which means the difference between the rate and the lower CI is not always equal to the difference between the rate and the upper CI.

for the lower limit and

$$P_L = \frac{(2np + c^2 - 1) - c\sqrt{c^2 - (2 + (1/n)) + 4p(nq + 1)}}{2(n + c^2)}$$

for the upper limit

$$P_U = \frac{(2np + c^2 + 1) + c\sqrt{c^2 + (2 - (1/n)) + 4p(nq - 1)}}{2(n + c^2)}$$

where  $n$  is the number of events,  $p$  is the proportion or rate,  $c$  is the standard error (1.96 at 95% confidence) and  $q = (1 - p)$ . Remember that  $n$  is comprised of three years worth of data, and  $p = n/pop$ , where  $pop$  is three years worth of life-years.

### 2.2.2 Age-standardized rates

Mortality rates, with the exception of crude rates, potential years of life lost (PYLL) and infant and perinatal mortality, as well as cancer incidence and certain CIHI-based data, are age-standardized using the direct method, and the 1991 Canadian Census population structure. The use of a standard population results in more meaningful rate comparisons, as it adjusts for variations in population age distributions over time and across different geographic areas.

Age (in years)	Standard population	Age (in years)	Standard population
Less than 1	403,061	45 to 49	1,674,153
1 to 4	1,550,285	50 to 54	1,339,902
5 to 9	1,953,045	55 to 59	1,238,441
10 to 14	1,913,115	60 to 64	1,190,217
15 to 19	1,926,090	65 to 69	1,084,588
20 to 24	2,109,452	70 to 74	834,024
25 to 29	2,529,239	75 to 79	622,221
30 to 34	2,598,289	80 to 84	382,303
35 to 39	2,344,872	85 to 89	192,410
40 to 44	2,138,891	90 and over	95,467

**Source:** Statistics Canada Cat. No. 84F0208XPB, Causes of Death 1997

The formula for age-standardized death rate  $r$  is:

$$r = \sum_{i=1}^{20} w_i \cdot \left( \frac{d_i}{p_i} \right)$$

Where for age group  $i$ ,  $d_i$  is the age-sex specific death count,  $p_i$  is the population size for a given cause of death and geographical area, and  $w_i$  is the weight for that group.

**Note:** the same weight is used for each sex. To yield a rate per 100,000 population,  $r$  is multiplied by 100,000.

### 2.2.3 Geographic coding (geo-coding) to health regions

Birth and death data have been linked to health regions using postal codes reported with place of residence and converted to census geography using the automated geo-coding system (PCCF Plus)<sup>5</sup> developed by the Health Statistics Division of Statistics Canada. These data were then aggregated to health region based on correspondence files<sup>6</sup> developed by the Health Statistics Division with the cooperation of provincial Ministries of Health, Alberta Treasury and BC Stats.

Where postal codes were not available or invalid, additional steps were taken to assign records to health regions using the census subdivision codes for place of residence recorded on the national birth and death database. Stillbirth data, used to calculate perinatal mortality, were linked to health regions solely using census subdivision codes.

### 2.2.4 Birth statistics

Birth data on the Vital Statistics Database for Ontario are underestimated due to incomplete files. Thus, birth-related indicators (low birth weight, infant mortality and perinatal mortality), particularly for Ontario, should be interpreted with caution.

### 2.2.5 Life expectancy

This variable was calculated using the Chiang methodology for abridged life tables. The estimates are based on three years (example, from 2000 to 2002) of mortality data and the mid-year population estimates, as described above. Abridged life tables use five-year age groupings of both population and mortality rate inputs (as opposed to single year age breakdown). Since there is more variability in the number of events by age in smaller geographic areas, abridged life tables are more suitable for the adaptation to a sub-provincial level (health region). Chiang's method in particular was chosen because it was relatively easy to adapt to the health region level data and included the calculation of standard error (in this case, addressing the variability of deaths from one year to the next).

### 2.2.6 Disability-free life expectancy

Estimates of disability-free life expectancy are calculated using Sullivan's method<sup>7</sup>. Essentially, the latter generalizes Chiang's method<sup>8</sup>.

Sullivan's method is based on activity limitation rates within a population, according to sex and age group, in the calculation of life expectancy with disability. In the case of people living in health institutions, it was assumed that everyone had at least one activity limitation. For people living in

other types of institutions, the hypothesis established is that the activity limitation rate by age group and sex was identical to the population in private households.

Disability-free life expectancy represents the difference between life expectancy and life expectancy with disability. The standard deviations of disability-free life expectancy estimates (and consequently the upper and lower limits of the confidence intervals associated with these estimates) are based on Colin Mathers' method<sup>9</sup>. This method takes into account both the stochastic fluctuations in the observed death rates and the sampling variability of the activity limitation rates.

**Note:** The disability data for DFLE came from the 1996 Census of Population. Questions on disability in the Census of Population are generally used to capture the sample of post-censal Health and Activity Limitations Survey. Because of the decision not to conduct this survey in 1996, data on disability from the Census of population of 1996 were neither verified nor imputed. More precisely, no validation was undertaken to check the completeness or consistency of the data, and as a result, no corrections to the data were made. In addition, the data were not adjusted to account for population undercounts.

DFLE estimates will vary according to both the concepts from which they are based and the surveys from which the data are extracted.

DFLE (Volume 2001, No's. 1 and 2): For these issues, disability was defined as "having any activity limitation or handicap".

DFLE (Volume 2001, No. 3 and beyond): Disability is defined as "having an activity limitation that affects activities at home, work or at school". This differs from previous Health Indicators issues by excluding limitations that only affect activities other than home, work or school as well as respondents who stated that they had some form of handicap other than an activity limitation.

### 2.2.7 Disability-adjusted life expectancy (DALE)

Disability-adjusted life expectancy (DALE) is similar to DFLE, in that they are both measures of quality of life lived and both are based on mortality and disability data. However, DALE is an expectation of life weighted to account for four health states defined in terms of disability. These health states are, in order of greatest to least weight:

- (1) having no activity limitations;
- (2) having activity limitations in leisure time activities and/or transportation;
- (3) having activity limitations at work, home and/or school; and
- (4) institutionalization in a health care facility. Specifically, state #1 has a weight of 1.0; state #2 has a weight of 0.8; state #3 has a weight of 0.65; and state #4 has a weight of 0.5. The sum of life expectancies of persons in a specific age group within a given geography, based on their health states, produces the value of DALE for that specific age group.

The calculation of the confidence intervals for DALE is based on Colin Mathers' method. Specifically, for any particular age group,

$$\sigma_{FVSA} = \sqrt{(1.0)^2 \cdot (\sigma_{LE_{state1}})^2 + (0.8)^2 \cdot (\sigma_{LE_{state2}})^2 + (0.65)^2 \cdot (\sigma_{LE_{state3}})^2 + (0.5)^2 \cdot (\sigma_{LE_{state4}})^2}$$

Where  $\sigma$  is the standard error,  $LE$  denotes life expectancy and 'state  $n$ ' refers to the specific health state.

### 2.2.8 Deaths due to medically treatable diseases

The definitions of medically treatable diseases were taken from a paper written by WW Holland<sup>10</sup>. This was based on earlier work from JRH Charlton<sup>11</sup>. The types of medically treatable diseases mentioned in Charlton originally came from a paper by DD Rutstein<sup>12</sup>.

All results were age-standardized according to the age group considered for reasonable odds of survival. These age-standardized rates per 100,000 reflect these age groups, not the total population.

The method of calculating confidence intervals was the Spiegelman method (refer to section 2.2.1).

### 2.2.9 Potential years of life lost

In this publication, death was considered premature if the person died before age 75. This is more reflective of life expectancies in recent years and is more reflective of international standards. Many previous Statistics Canada publications provide PYLL data based on death before age 70. Additionally, PYLL can be presented as an age-standardized rate or as a crude rate; in this publication, it is presented as a crude rate. As well, the denominator can be based on population aged 0 to 74 or for the total population. In this publication, the denominator is based on the former.

In this publication, a PYLL rate was produced, where the weights are taken as proportions of the years lost per death within each age group over the total years lost in all age groups. Each death event is multiplied by its age-specific weight. The sum of all these values represents the total PYLL. The PYLL rate is PYLL per 100,000 population aged 0 to 74. The use of weights allows for the calculation of confidence intervals. The confidence intervals for each PYLL rate were produced by the Spiegelman method (refer to section 2.2.1).

Age group	Years lost	Weight
Less than 1	74.9	74.9/636.9
1 to 4	72.0	72.0/636.9
5 to 9	67.5	67.5/636.9
10 to 14	62.5	62.5/636.9
15 to 19	57.5	57.5/636.9
20 to 24	52.5	52.5/636.9
25 to 29	47.5	47.5/636.9
30 to 34	42.5	42.5/636.9
35 to 39	37.5	37.5/636.9
40 to 44	32.5	32.5/636.9

45 to 49	27.5	27.5/636.9
50 to 54	22.5	22.5/636.9
55 to 59	17.5	17.5/636.9
60 to 64	12.5	12.5/636.9
65 to 69	7.5	7.5/636.9
70 to 74	2.5	2.5/636.9
<b>Sum</b>	<b>636.9</b>	<b>1.0</b>

This publication only presents PYLL rates based on the sum of all age groups. Thus, the rate is calculated as follows:

$$Taux = \frac{((\sum APVP) \cdot PD)}{3 \cdot POP}$$

Where  $\sum APVP$  is the sum of PYLL for ages 0 to 74 for the three years of data,  $w$  is a weight of 1, and 'POP' is the population aged 0 to 74 for the middle year of the three years.

To calculate the age-specific PYLL rates:

$$Taux_i = \frac{\sum (APVP_i \cdot PD_i)}{3 \cdot POP_i}$$

where  $i$  is the specific age group.

For more information on vital statistics you can go to [www.statcan.ca/english/sdds/index.htm](http://www.statcan.ca/english/sdds/index.htm) and enter 3231 for the birth database and 3233 for the death database.

### 3. Indicators based on Cancer Incidence (Statistics Canada)

Latest health region level rates are based on the boundaries in effect as of June 2005.

#### 3.1 Cancer Incidence

The Canadian Cancer Registry (CCR) is a central database located at Statistics Canada that contains patient-oriented information about diagnosis of cancers in Canada. Data on the incidence of cancer are collected by the provincial and territorial cancer registries. The information is used for descriptive and analytic epidemiological studies: to identify risk factors for the cancer; to plan, monitor and evaluate a broad range of cancer control programs (e.g., screening); and for health services and economic research and planning.

- Cancer incidence is based on place of residence at time of diagnosis.

- Rates contained in this publication have been tabulated using the July 2005 tabulation file, the International Classification of Diseases for Oncology 3rd Edition (ICD-O-3) from the World Health Organization, and the International Agency for Research on Cancer (IARC) rules for determining multiple primaries sites.
- Cancer incidence data in this product are based on three years of data (e.g., 1999 to 2001) averaged over the population estimate of the middle year (e.g., 2000). Table titles associated with these data reflect the mid-point of the three-year period being averaged (i.e., 2000).
- All data presented have an associated 95% confidence interval (CI). The confidence interval illustrates the degree of variability associated with a rate. Wide confidence intervals indicate high variability, thus, these rates should be interpreted and compared with due caution. Some age-standardized rates were suppressed due to both a very small underlying count plus extremely high variability. Confidence intervals can also be used to determine whether a rate in one health region is statistically below, above or no different than the rate for the same indicator in another health region.
- The confidence intervals for the age-standardized cancer incidence rates were produced via the Spiegelman method (refer to section 2.2.1).
- Cancer incidence rates are age-standardized using the direct method and the 1991 Canadian Census population structure. See “Age-standardized rates” section for details.
- Cancer incidence data were assigned to health regions using postal codes reported with place of residence and the automated geo-coding system (PCCF+) developed in Health Statistics Division. Where possible, remaining cancer incidence data (for which there were no postal codes available) were linked to health regions using the census subdivision (CSD) of residence.

For more information on the Canadian Cancer Registry (CCR) go to [www.statcan.ca/english/sdds/index.htm](http://www.statcan.ca/english/sdds/index.htm) and enter 3207.

## ***4. Indicators based on Statistics Canada (STC) surveys***

### **4.1 National Population Health Survey**

The National Population Health Survey (NPHS), which began in 1994/95, collects information about the health of the Canadian population every two years. It covers household and institutional residents in all provinces and territories, except persons living on Indian reserves, Canadian Forces bases, and in some remote areas. The NPHS has both a longitudinal and a cross-sectional component. Respondents who are part of the longitudinal component will be followed for up to 20 years.

The Health Indicators data are based on both the longitudinal and cross-sectional components for household residents (institutional excluded) living in the provinces (territories excluded). Data are available for the first three cycles (1994/95, 1996/97 and 1998/99).

The 1994/95 and 1996/97 cross-sectional samples are made up of longitudinal respondents and their household members and individuals who were selected as part of supplemental samples, or "buy-ins", in some provinces. The 1998/99 cross-sectional sample is made up mostly of longitudinal respondents and their cohabitants. No buy-ins were added to 1998/99 data.

However, to keep the sample representative, infants born in 1995 and thereafter and immigrants who entered Canada since the beginning of 1995 were randomly selected and added to the NPHS sample.

The 1994/95 provincial, non-institutional cross-sectional sample consisted of 27,263 households, of which 88.7% agreed to participate in the survey. After application of a screening rule to maintain the representativeness of the sample, 20,725 households remained in scope. In 18,342 of these households, the selected person was aged 12 or older. Their response rate to the in-depth health questions was 96.1% or 17,626 respondents. In 1996/97, the overall response rate at the household level was 82.6%. The response rate for the randomly selected individuals aged 2 or older in these households was 95.6%. A total of 81,804 respondents answered the in depth health questions in 1996/97. In 1998/99, the overall response rate was 88.2% at the household level. The response rate for the randomly selected respondents 0 or older in these households was 98.5%. A total of 17,244 respondents answered the in depth health questions in 1998/99.

The 1994/95 provincial, non-institutional longitudinal sample consisted of 17,276 respondents. A response rate of 93.6% was achieved in 1996/97, and a response rate of 88.9% was achieved in 1998/99.

## **4.2 National Population Health Survey -- Northern Component**

Statistics Canada conducted the northern component of the NPHS in conjunction with the statistical bureaus in Yukon and NWT. Data were obtained through a separate survey due to the special challenges of survey taking in Canada's North.

The target population of the Yukon/NWT integrated NPHS/NLSCY survey included household residents living in private occupied dwellings located in the two territories, with the exclusion of populations on Indian Reserves, Canadian Forces Bases and in institutions. Moreover, persons living in unorganized areas in the Yukon (13% of the population) and persons living in unorganized areas, very small or extreme northern communities of the NWT (4.9% of the population) were also excluded from the target population.

Most of the core content from the 1994/95 NPHS main survey is included in the northern survey; however, special "focus content" on stress was excluded. In each selected household in the North, demographic information was collected from all household members, then one person, aged 12 years and over, was randomly selected for a more in-depth interview. The questionnaire included components on health status, use of health services, risk factors and demographic and socio-economic status. Some content changes were made in the 1996/97 NPHS North survey.

Collection operations ran from November 1994 to March 1995 (and again from November 1996 to March 1997). Computer-assisted personal interviewing (CAPI), used for the NPHS in the provinces, was not available in the territories at the time of the survey. A paper and pencil questionnaire designed to replicate the CAPI application was used instead. Telephone interviews were conducted where available, otherwise personal interviews were done.

The selected person response rate for the NPHS 1994/95 was 94.2% at the North level (2,020 respondents). For the Yukon this rate was 94.8%, while the rate for the NWT was 93.1%. The cross-sectional response rate at the North level (both territories) for the NPHS 1996/97 was 86.2% (1,499 respondents). For the Yukon, this rate was 83.9% while the rate for the NWT was 89.8%.

### **Data quality note on Heavy Drinking in the 1994/95 NPHS-North**

Due to a high proportion (42.8%) of refusals/non-stated responses to the question on frequency of heavy drinking in the 1994/95 NPHS-North, these data were deemed unreleasable/unreliable.

Heavy drinking has been defined as the number of times current drinkers drank 5 or more alcoholic beverages on one occasion.

For more information about the NPHS (Household or North component), see <http://www.statcan.ca/english/sdds/indexa.htm> and look for 3225 for the Household component and 5004 for the North component.

### **4.3 Canadian Community Health Survey**

Health region level rates from the latest survey cycle (2005) are based on the boundaries in effect as of June 2005.

Starting with data year 2000/01, the Canadian Community Health Survey (CCHS) replaces the cross-sectional aspect of the NPHS.

The primary objective of the CCHS is to provide timely cross-sectional estimates of health determinants, health status and health system utilization at a sub-provincial level (health region or combination of health regions).

The CCHS collects information from individuals aged 12 or older who are living in private dwellings. People living on Indian reserves or Crown lands, residents of institutions, full-time members of the Canadian Armed Forces, and residents of certain remote regions are excluded. The CCHS covers approximately 98% of the Canadian population aged 12 or older.

Each two-year collection cycle is comprised of two distinct surveys: a health region-level survey in the first year with a total sample of 130,000 and a provincial-level survey in the second year with a total sample of 30,000. Sample sizes in any particular month or year may increase due to provincial or health region-level sample buy-ins.

For more information about the CCHS (health region or provincial component), see <http://www.statcan.ca/english/sdds/indexa.htm> and look for 3226 for the health region component and 5015 or 5049 for the provincial components.

#### **Data quality note on probability of depression from CCHS:**

The depression module used in CCHS Cycle 3.1 (as well as in Cycles 1.1 and 2.1 and in the NPHS) is based on a long form of the Composite International Diagnostic Interview (CIDI) scale, which was developed in the late 1980s/early 1990s. This scale was never fully validated by the CIDI research team and its psychometric properties are therefore not well understood. Statistics Canada is currently exploring strategies to complete such a validation. At this time, Statistics Canada recommends that analysis of data from this module be restricted to examination of depression as a correlate of other health behaviours and characteristics. For now, use of the data as an indicator for the probability of depression or to calculate simple population prevalence is discouraged.

### **4.4 National Longitudinal Survey of Children and Youth**

The National Longitudinal Survey of Children and Youth (NLSCY), developed jointly by Human Resources Development Canada and Statistics Canada, is a comprehensive survey which follows the development of children in Canada and paints a picture of their lives. The survey monitors children's development and measures the incidence of various factors that influence their development, both positively and negatively.

The first cycle of the NLSCY, which was conducted in late 1994 and early 1995, interviewed parents of approximately 23,000 children up to the age of 11. They shared information not only about their children, but also about themselves and the children's families, schools and neighbourhoods.

The second cycle, carried out in winter and spring of 1996-97, interviewed parents of the same children and provides unique insights into the evolution of children and their family environments over a two-year period. A new sample of newborn and 1-year-old children was added to cycle 2 to allow for cross-sectional estimates.

Collection of cycle 3 began in the fall of 1998 and was carried until June 1999. In addition to the original sample of children, who were aged 2 to 13 years at the time of the second data collection, a new sample of newborn and 1-year-old children was added to cycle 3 to allow for cross-sectional estimates. An extra cross-sectional sample of children 5 years old was also added to allow some provincial estimates for that age group.

For more information on the NLSCY, see <http://www.statcan.ca/english/sdds/indexa.htm> and look for 4450.

## 4.5 Bootstrapping

To ensure high data quality for estimates from the NPHS, the CCHSCCHS and NLSCY, a weighted bootstrap resampling procedure (and for the NPHS-North, a modified bootstrap procedure) was used to calculate coefficients of variation (CVs) for totals and rates. If the CV was greater than 33.3% or the sample size was less than 10, the data were suppressed and an 'F' symbol appears in the data cell. If the CV is greater than 16.5% and no greater than 33.3%, the data should be interpreted with caution and an 'E' symbol appears in the same cell as the data. Data with CVs of 16.5% or less are presented without restrictions.

Sampling theory dictates that sample survey results of exactly 100% or 0% must have a coefficient of variation of exactly 0. In reality it is possible that in rare circumstances the true estimate may be lower than 100% or conversely greater than 0% and results should be interpreted as such.

## 5. Indicators based on crime data (Statistics Canada)

- Health region level data are not available for the crime-related indicators.
- Data on crime incidents that come to the attention of the police are captured and forwarded to the Canadian Centre for Justice Statistics (CCJS) via the Uniform Crime Reporting (UCR) Survey according to a nationally-approved set of common scoring rules, categories and definitions. The survey has been in operation since 1962 and has full national coverage.
- The URC is a summary or aggregate-based survey that records the number of criminal incidents reported to the police. The survey does not gather information on the victims, but does collect information on the number of persons charged by sex and by an adult/youth breakdown. For all violent crimes (except robbery), a separate incident is counted for each victim. For non-violent crimes, one incident is counted for each distinct occurrence. Incidents that involve more than one infraction are counted under the most serious violation. As a result, less serious offences are under-represented by the URC survey.

- The aggregate URC survey scores violent incidents (except robbery) differently from other types of crime. For violent crime, a separate incident is recorded for each victim (i.e. if one person assaults three people, then three incidents are recorded; but if three people assault one person, only one incident is recorded). Robbery, however, is counted as if it were a non-violent crime in order to avoid inflating the number of victims (e.g. for a bank robbery, counting everyone present in the bank would result in an over-counting of robbery incidents).
- The aggregate URC Survey records the total number of youths (aged 12 to 17) and adults (aged 18 and over) charged. When a person is charged with more than one offence, they are counted only once, under the most serious offence. The most serious offence is generally the offence that carries the longest maximum sentence under the Criminal Code of Canada. Violent offences always take precedence over non-violent offences.
- The comparison between youth and adult crime rates poses some difficulties. The entire youth population represents a high-risk group for becoming involved in criminal activity. By contrast, the level of risk among adults is not consistent across the entire age group. Almost half of the adult population is 45 years and older; this age group is affected by fewer risk factors and as a result, is rarely involved in crime. A more direct comparison would look at youths and young adults. Unfortunately, data are not currently available to make this comparison.
- With URC charge data it is possible for someone to be charged (and counted) more than once in a year. As a result, it is likely that the actual number of persons charged is less than the figure reported for a given time period.
- Rates are calculated on the basis of 100,000 population.

For more information on the UCR, see <http://www.statcan.ca/english/sdds/indexa.htm> and look for 3302.

## **6. Indicators based on labour force data (Statistics Canada)**

Latest health region level rates are based on the boundaries in effect as of June 2005.

- Regional unemployment rates and youth unemployment rates were calculated as annual averages from the Canadian Labour Force Survey (LFS). The estimates were derived by linking, at the enumeration area (EA) level, the LFS geography to health regions.
- The LFS is a monthly sample of approximately 52,000 households. The survey is designed to represent the Canadian population aged 15 years and older. The survey excludes Indian reserves, full time members of the Canadian Forces, and persons living in institutions. The survey also excludes the Territories.
- The areas that are excluded from the LFS affect estimates for Peer Groups F and H. Just over 40% of the population of Peer Group F is excluded, while less than 10% of Peer Group H is excluded. As a result, estimates for Peer Group F are not available.
- Some health regions could not be published as the estimated rate did not meet the minimum requirements for quality and confidentiality.
- The unemployment rate is the number of unemployed persons divided by the labour force population, expressed as a percentage.

- An unemployed person is someone who:
  - was without work and had looked for work; or
  - was on temporary layoff and available for work; or
  - had a new job to start in the future.
- The labour force population consists of the unemployed people plus the employed persons. To be employed, a person
  - worked at any job at all; or
  - had a job but was not at work during the reference week.

For more information on LFS, see <http://www.statcan.ca/english/sdds/indexa.htm> and look for 3701.

## 7. Indicators based on Census data (Statistics Canada)

Health region level rates are based on the boundaries in effect as of June 2003 unless otherwise noted.

- Regional data on non-medical determinants of health and certain community characteristics were extracted from the Census, based on enumeration areas (EA) (for the 1996 Census) and census blocks (CBs) and Dissemination Areas (DA) (for the 2001 Census). A correspondence file, linking the Census geography to current health regions has been developed by the Health Statistics Division of Statistics Canada with the cooperation of provincial Ministries of Health, Alberta Treasury and BC Stats.
- Income-related indicators from any Census are based on income from the previous year.
- Low income rate, children in low income families: Low income data were not derived for economic families or unattached individuals in the Territories or on Indian reserves. For health regions containing Indian reserves, analysis of low income data should only be done with this caveat explicitly noted.
- Housing affordability: Farm homes and band housing on Indian reserves were not included in the calculation of housing affordability. For health regions containing Indian reserves, analysis of housing affordability should only be done with this caveat explicitly noted.
- Proportion Aboriginal population: This variable is derived from three questions asked in the Census (20% sample). Aboriginal population refers to those persons who reported identifying with at least one Aboriginal group, i.e. North American Indian, Métis or Inuit and/or those who reported being a treaty Indian or a Registered Indian as defined by the Indian Act of Canada and/or who were members of an Indian Band or First Nation. Census coverage studies were used to adjust these data with the population estimates for incompletely enumerated Indian Bands or reserves. The STC demographic population estimates (which adjusts for census under coverage and refusal reserves) for the particular Census year were used as the denominator for these percentages.
- Owner-occupied dwellings: Band housing on Indian reserves and collective dwellings were not included. For health regions containing Indian reserves, analysis of owner-occupied dwellings should only be done with this caveat explicitly noted.
- Average expected dwelling values: The same exclusions for owner-occupied dwellings apply for this variable, in addition to farms.

For more information on census concepts, please refer to the 2001 Census Dictionary, 92-378-XIE.

## **8. Health System Indicators (Canadian Institute for Health Information - CIHI)**

CIHI's Privacy and Confidentiality policy does not permit the publication of data that might reasonably identify an individual, whether a patient or care provider, without consent. As a result, measures were taken to protect against residual disclosure from the dissemination of the regional rates including the suppression of small cell sizes. In addition, reporting data based on the region of the patient's residence (not hospitalization) reduces opportunities for identifying individual care providers.

### **8.1 Hospitalization data and rates (CIHI)**

- Data are reported based on the region of the patient's residence, not region of hospitalization. Consequently, these figures reflect the hospitalization experience of residents of the region wherever they are treated, as opposed to the comprehensive activity of the region's hospitals (who will also treat people from outside of the region).
- Regional rates for British Columbia were derived from the reported postal codes and a translation file developed by BC STATS, BC Ministry of Finance and Corporate Relations. Health region level data for the other provinces and territories were produced through a geo-coding process using correspondence files developed with input from each provincial and territorial health ministry and Alberta Treasury. The link between dissemination areas and health regions was first created to provide the best resolution to census geography, and a census subdivision link to health regions was derived from this file. The boundaries are those that were in effect as of June 2005.
- Records with invalid, missing, or partial postal codes are not included in the regional rates. For FY 2004/05 data the absence of complete postal codes from Quebec may affect rates for the Champlain LHIN (Ottawa area) and other border regions. For FY 2005/06 data due to incomplete submission by Palliser region in Alberta the rates are suppressed for all indicators except for CABG, PCI and Caesarean section
- Where possible, an all-Canada rate is provided for comparison purposes.
- At the Canada level and provincial levels, rates for health data that are based on a fiscal year (April to March) use October 1st population estimates. Unless otherwise specified, Canadian and provincial hospitalization rates are standardized using the same methodology as regional rates. Other rates are based on appropriate population figures. Standardized rates are age-adjusted using a direct method of standardization based on the July 1st, 1991 Canadian population. See section 2.2.2 for details.
- Unless otherwise specified, hospitalizations include discharges and deaths for inpatients in acute care hospitals for the reference period. Same day surgery (outpatient) cases and patients admitted to non-acute care hospitals (e.g. chronic care, psychiatric or rehabilitation facilities) are not included in the totals.

- Indicators based on the Discharge Abstract Database include only jurisdictions that submit comprehensively to the database. Therefore, data from Quebec and some parts of Manitoba are not available.
- CCI-10-CA and the Canadian Classification of Health Interventions (CCI) systems of coding diagnoses and procedures came into effect April 1, 2001, and were adopted by Newfoundland, PEI, Nova Scotia, parts of Saskatchewan, British Columbia and the Yukon Territory. Ontario, the remainder of Saskatchewan, Alberta, the NWT and Nunavut implemented ICD-10-CA/CCI on April 1, 2002 and New Brunswick on April 1, 2003. Indicator cases that were originally coded in ICD-10-CA or ICD have been extracted on the relevant codes and not the ICD-9 or CCP translations.
- New and revised coding standards introduced with the ICD-10-CA/CCI classification systems may affect the comparability of rates with those appearing in previous releases for some of the indicators.
- Beginning with data year 2002/03, stillbirths are included in the Caesarean section rate. This change may affect the comparability of rates with those appearing in previous releases. See Definitions for further information.
- The methodology for acute myocardial infarction (AMI) readmission /mortality as well as stroke mortality indicators have been revised. These changes may affect the comparability of rates with those appearing in previous releases. See Technical Notes for further information.
- The 30-day in-hospital mortality, in-hospital hip fracture, and readmission indicator rates are based on a three-year average. Due to differences in the way data are collected, these indicators are not available for all provinces and territories. Therefore, the average (Canada) rate does not include all provinces/territories. Technical notes and model specifications are available for AMI and Stroke 30-day mortality, in-hospital hip fracture, the readmission indicators (AMI, asthma, hysterectomy, and prostatectomy) as well as for wait time for hip fracture surgery.
- Where information is available, cancelled, previous, and “abandoned after onset” procedures are excluded from the calculations. For Quebec data, cancelled procedures are not reported and therefore have not been excluded.

## 8.2 Physician data (CIHI)

- Physician counts include all active general practitioners, family practitioners, and specialist physicians as of December 31 of the reference year. The data include physicians in clinical and non-clinical practice and exclude residents and physicians who are not licensed to provide clinical practice and have requested that their information not be published in the Canadian Medical Directory.
- For all jurisdictions and data years specialist physicians include certificants of the Royal College of Physicians and Surgeons of Canada (RCPSC) and/or the College des médecins du Québec (CMQ). As of 2004, Saskatchewan and Newfoundland and Labrador specialists also include physicians who are licensed as specialists but who are not certified by the RCPSC or the CMQ (i.e., non-certified specialists). For all other jurisdictions, and for Saskatchewan and Newfoundland and Labrador prior to 2004, non-certified specialists are counted as family practitioners. With the exception of the criteria just noted all other physicians are counted as family practitioners, including certificants of the College of Family Physicians of Canada (CCFP and CCFP-Emergency Medicine).

For further information on physician count methodologies please see CIHI's reports on the "Supply, Distribution and Migration of Canadian Physicians" and "Certified and Non-Certified Specialists: Understanding the Numbers" ([www.cihi.ca](http://www.cihi.ca)).

- It is recognized that physician specialty classification as noted above does not necessarily reflect the services provided by individual physicians. The range of services provided by a physician is subject to provincial licensure rules, medical service plan payment arrangements, and individual practice choices. Therefore, CIHI physician-to-population rates may differ from those published by other sources.
- Physician-to-population ratios are used to support health human resource planning. While physician density ratios are useful indicators of changes in physician numbers relative to the population, inference from total numbers or ratios as to the adequacy of provider resources should not be made.

**Note:** Scott's Medical Database (SMDB) information may undercount physicians due to Provincial/Territorial licensing authority data supply interruptions. SMDB data does not reflect licensing authority updates for the following jurisdictions and years: British Columbia 2004; Québec 2003; Ontario 2002; Alberta and the Yukon 2000.

Source: Canadian Institute for Health Information, Scott's Medical Database.

### 8.3 National Health Expenditure Database (CIHI)

- Expenditure figures include spending by both the public and private sectors. For further information, see National Health Expenditure Trends, 1975 to 2004.
- Provincial per capita figures are affected by numerous factors that will affect inter-provincial comparisons including, but not limited to, differing provincial inflation rates that are related to provincial differences in arbitration agreements between provincial governments and, for example, medical associations; different population distributions; geography; and differences in provincial purchasing power.

## Appendix

### Population estimates

In summary, the population estimates for the health regions in this publication were prepared as follows. First, the 2001 population estimates were based on the 2001 Census, adjusted for net undercoverage. Secondly, for non-census years, the Census-based population estimates were adjusted for changes in the population, primarily using administrative data. Lastly, subprovincial/subterritorial population estimates were controlled to sum to the population estimates at the provincial/territorial level prepared by Statistics Canada.

### Statistics Canada methodology

For health regions in all provinces/territories except for Alberta and British Columbia, the method is that of Statistics Canada, described below. These estimates are based on census data and on population estimates by census division (CD) produced by Demography Division.

- **Population universe**

The population included in these estimates is based on the 1996 and 2001 Census of Canada. The universe, therefore, corresponds to the census universe, which includes Canadian citizens and landed immigrants with a usual place of residence in Canada (or abroad on a Canadian Forces base, attached to a diplomatic mission or aboard merchant vessels) and non-permanent residents. For a complete description of the census universe, refer to the 2001 Census Dictionary, Statistics Canada Catalogue no 92-378-XPE.

Census data are adjusted to take into account net census undercoverage and incompletely enumerated Indian reserves. Components of population change occurring between census day and July 1, 1996 or 2001 were also taken into account.

- **Method for deriving demographic estimates by health regions**

Population estimates at the census division (CD) level are produced annually by Demography Division, using the component method, which accounts for changes in the number of births and deaths, as well as intra-provincial, inter-provincial and international migration. The CD population estimates are prorated to the provincial population estimates.

Demographic estimates by health region are derived from these estimates using the following steps:

**Calculation of conversion factors:**

Health Statistics Division has created a file linking dissemination areas (DAs), census subdivisions (CSDs) and census divisions (CDs) for each health region.

The 2001 Census population by CDs (DAs or CSDs in case of split CDs) was adjusted for late changes in geography and for partially enumerated Indian reserves to ensure DAs added up to the CD.

In cases where health regions split CDs, the proportion of population in each CD split is used to derive 'conversion factors' in order to allocate the CD level estimate to the appropriate health region.

**Application of conversion factors to CD demographic estimates:**

Conversion factors were applied to CD population estimates for 1996 to 2001 allowing conversion of CD population estimates into HR population estimates. The same approach used to obtain the total population estimates was used to establish age and sex estimates by HR.

- **Evaluation of the method**

To assess the quality of demographic estimates by HR, two evaluations were performed. First, an estimate was produced for July 1, 2001 with a postcensal CD demographic estimate based on the *2001 Census* which was compared with the 2001 Census counts. This comparison indicated that the conversion factors were providing results comparable with the census counts by HR.

Second, the same method was also used to generate estimates for 2001 by HR from a postcensal CD estimate based on the 1996 Census. The results were compared with the actual 2001 counts as derived from the 2001 Census, thereby allowing an evaluation of the accuracy of the method over a five-year period. The results indicated that the methodology adequately accounted for the demographic changes.

For more information on the method used to produce health region or CD estimates, contact Stephane Gilbert of the Demography Division of Statistics Canada at (613) 951-9233 or e-mail [stephane.gilbert@statcan.ca](mailto:stephane.gilbert@statcan.ca).

## Provincial methodologies

For health regions in Quebec, Alberta and British Columbia, the administrative files used for adjusting the 2001-based population estimates for non-census years differ from those used by Statistics Canada in the description above. For these provinces, the health region population estimates were supplied by Alberta Health and Wellness, and BC Stats.

- **Alberta**

Statistics Canada used population estimates by health regions prepared by the Alberta Health and Wellness department. These estimates are derived from the Alberta Stakeholder Register File containing information on individuals who are entitled to basic medical services under the Alberta Health Care Insurance Plan (AHCIP). Population growth as derived from this file for each of Alberta's health regions was then applied to Demography Division's estimates for 2001 to account for annual changes in the population. The estimates were further adjusted to correspond to the provincial estimates produced annually by Demography Division.

For more information on Alberta's estimates, refer to *Calculating Demographic and Epidemiological Quantities in Alberta by Geo-Political Areas, Health Surveillance, Alberta Health and Wellness, March 2001* or contact Donald Schopflocher of the Health Strategies Division, Health Surveillance in Alberta at (780)422-4630 or e-mail at [donald.schopflocher@health.gov.ab.ca](mailto:donald.schopflocher@health.gov.ab.ca).

- **British Columbia**

The methodology used by British Columbia to derive small area populations by gender and age group is divided into two parts.

A Regression Approach, specifically the **Difference-Correlation Method (DCM)**, is the primary method underlying the sub-provincial population estimates. A secondary method, known as **Proportional Allocation (PA)**, is also used to estimate the population for certain classes of areas. Both these methods use information derived from a set of indicators obtained from administrative files that are symptomatic of regional population changes.

In essence, the British Columbia small area population estimation model works as follows. Beginning with the most recent federal census (in this case the 2001 Census of Canada), each region's share of provincial population is adjusted up or down according to the current share of the provincial total of a weighted combination of residential hydro connections and/or Old Age Security recipients. Estimates of the population living in municipalities along with that portion of the population living outside the municipality but within the regional district (for example, unorganized area), are controlled at the

provincial level by a British Columbia population estimate prepared by Statistics Canada. Regional district population estimates are derived by summing the municipal and unorganized area population estimates. Local health areas are also controlled at the provincial level, and in order to ensure consistency, the local health area population estimates within each regional district are then tied to the regional district population estimates.

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## **About Statistics Canada**

Visit Statistics Canada's website at <http://www.statcan.ca/english/about/abtstc.htm>.

## **About the Canadian Institute for Health Information (CIHI)**

Since 1994, the Canadian Institute for Health Information (CIHI) has been working to improve the health of Canadians and the health system by providing quality health information.

CIHI is a national, not-for-profit organization with a mandate to coordinate the development and maintenance of an integrated approach to Canada's health information.

To this end, the Institute provides accurate and timely information that is needed to establish sound health policies, manage the Canadian health system effectively, and create public awareness of factors affecting good health.

Visit CIHI's website at [www.cihi.ca](http://www.cihi.ca).

## Appendices A - Tables

**Table 1**  
**Health regions in Canada – reference maps by province and territory**

Province	2003		2005	
	Health regions and maps	Units	Health regions and maps	Units
Newfoundland and Labrador <sup>1</sup>	<a href="#">Map 1</a> Community Health Regions	6	<a href="#">Map 2</a> Regional Integrated Health Authorities	4
Prince Edward Island <sup>2</sup>	Health Regions	4	<a href="#">Map 3</a> Health Regions	4
Nova Scotia <sup>3</sup>	Zones	6	<a href="#">Map 4</a> Zones	6
			<a href="#">Map 5</a> District Health Authorities (DHA)	9
New Brunswick	Health (Hospital) Regions	7	<a href="#">Map 6</a> Health (Hospital) Regions	7
Quebec	<a href="#">Map 7</a> Régions sociosanitaires (RSS)	18	<a href="#">Map 8</a> Régions sociosanitaires (RSS) (name changes only)	18
Ontario <sup>4</sup>	<a href="#">Map 9</a> Public Health Units Northern (PHU)	37	<a href="#">Map 12</a> Northern Public Health Units (PHU)	36
	<a href="#">Map 10</a> Southern (PHU)	16	<a href="#">Map 13</a> Southern (PHU)	14
	<a href="#">Map 11</a> District Health Councils (DHC)		<a href="#">Map 14</a> Local Health Integration Networks (LHIN)	
Manitoba <sup>5</sup>	Regional Health Authorities	11	<a href="#">Map 15</a> Regional Health Authorities	11

Saskatchewan <sup>5</sup>	Regional Health Authorities	13	<a href="#">Map 16</a> Regional Health Authorities	13
Alberta <sup>6</sup>	<a href="#">Map 17</a> Regional Health Authorities	9	<a href="#">Map 18</a> Regional Health Authorities	9
British Columbia	Health Service Delivery Areas	16	<a href="#">Map 19</a> Health Service Delivery Areas	16
Yukon Territory	Entire territory	1	<a href="#">Map 20</a> The Northern Territories health regions	1
Northwest Territories	Entire territory	1	<a href="#">Map 20</a> The Northern Territories health regions	1
Nunavut	Entire territory	1	<a href="#">Map 20</a> The Northern Territories health regions	1

1. Regional Integrated Health Authorities came into effect March 1, 2005.

2. In Prince Edward Island, the four health regions were abolished in November 2005 as a result of health system restructuring. These boundaries have been maintained for the release of indicators from 2005 Canadian Community Health Survey.

3. In Nova Scotia, health zones are aggregations of the nine District Health Authorities (DHA).

4. Public Health Units (PHU) administer health promotion and disease prevention programs. District health councils (DHC) were advisory, health planning organizations. The DHCs were dissolved as of March 31, 2005. The Ontario Ministry of Health and Long-Term Care announced the creation of Local Health Integration Networks (LHIN) on April 1, 2005. LHINs are responsible for planning, funding and administering health care programs and services across the province.

5. For most data sources (with the exception of Census and Demographic population estimates), health region level data are not available for some northern health regions in Manitoba and Saskatchewan which have small populations. To avoid suppression in these areas where small numbers or sample size impact on data quality, data have been grouped with neighbouring regions, as follows: Churchill Regional Health Authority, Manitoba (4690) is combined with Burntwood Regional Health Authority (4680) and referred to as 'Burntwood/Churchill' (4685); and, Athabasca Health Authority (4713) Saskatchewan is combined with Mamawetan Churchill River Regional Health

Authority (4711) and Keewatin Yatthé Regional Health Authority (4712) and referred to as 'Athabasca/Keewatin/Mamawetan' (4714)

6. In Alberta, a change effective December 2003, affected the boundary between Calgary Health Region and the David Thompson Regional Health Authority.

Source: Statistics Canada

**Table 2**  
**Summary of changes to health regions, 2003 and 2005/2007**

2003 HR	2003 HR NAME	2005/2007 HR	2005/2007 HR NAME
<b>Newfoundland and Labrador<sup>1</sup></b>			
1001	Health and Community Services St. John's Region	1011	<b>Eastern Regional Integrated Health Authority</b>
1002	Health and Community Services Eastern Region		
1003	Health and Community Services Central Region	1012	<b>Central Regional Integrated Health Authority</b>
1004	Health and Community Services Western Region	1013	<b>Western Regional Integrated Health Authority</b>
1005	Grenfell Regional Health Services Board	1014	<b>Labrador-Grenfell Regional Integrated Health Authority</b>
1006	Health Labrador Corporation		
<b>Prince Edward Island<sup>2</sup></b>			
1101	West Prince	1101	West Prince
1102	East Prince	1102	East Prince
1103	Queens	1103	Queens
1104	Kings	1104	Kings
<b>Nova Scotia<sup>3</sup></b>			
1201	Zone 1	1211	<b>DHA 1</b>
		1212	<b>DHA 2</b>
1202	Zone 2	1213	<b>DHA 3</b>
1203	Zone 3	1214	<b>DHA 4</b>
		1215	<b>DHA 5</b>
1204	Zone 4	1216	<b>DHA 6</b>
		1217	<b>DHA 7</b>
1205	Zone 5	1218	<b>DHA 8</b>
1206	Zone 6	1219	<b>DHA 9</b>
<b>New Brunswick<sup>4</sup></b>			
1301	Region 1	1301	Region 1
1302	Region 2	1302	Region 2

1. In Newfoundland and Labrador, six community health regions were reduced to four Regional Integrated Health Authorities (RIHAs). Boundaries are unchanged for two RIHAs and the other four have been collapsed into two. Name and code changes in effect as of March 1<sup>st</sup>, 2005.

2. In November 2005 Prince Edward Island officially disbanded the four health regions.

3. The previous six zones were aggregations of the nine District Health Authorities (DHA). Zones 1, 3 and 4 are each comprised of two DHAs. The remaining three zones change in name only with the following small exception. Mount Uniacke area, previously part of Zone 3 is cut-off by new DHA 4 boundary. Statistics for this area (population 1,114) will be included with DHA 9 (Halifax area). As a result, there is high comparability between Zone 6 and DHA 9 and between Zone 3 and DHA 4/5.

4. On February 14, 2006 Cambridge-Narrows Village (population 717) was reassigned from Region 2 to Region 3.

1303	Region 3	1303	Region 3
1304	Region 4	1304	Region 4
1305	Region 5	1305	Region 5
1306	Region 6	1306	Region 6
1307	Region 7	1307	Region 7
	<b>Quebec</b>		
2401	Région du Bas-Saint-Laurent	2401	Région du Bas-Saint-Laurent
2402	Région du Saguenay - Lac-Saint-Jean	2402	Région du Saguenay - Lac-Saint-Jean
2403	Région de Québec	2403	<b>Région de la Capitale-Nationale</b>
2404	Région de la Mauricie et Centre-du-Québec	2404	Région de la Mauricie et Centre-du-Québec
2405	Région de l'Estrie	2405	Région de l'Estrie
2406	Région de Montréal-Centre	2406	<b>Région de Montréal</b>
2407	Région de l'Outaouais	2407	Région de l'Outaouais
2408	Région de l'Abitibi-Témiscamingue	2408	Région de l'Abitibi-Témiscamingue
2409	Région de la Côte-Nord	2409	Région de la Côte-Nord
2410	Région du Nord-du-Québec	2410	Région du Nord-du-Québec
2411	Région de la Gaspésie-Îles-de-la-Madeleine	2411	Région de la Gaspésie-Îles-de-la-Madeleine
2412	Région de la Chaudière-Appalaches	2412	Région de la Chaudière-Appalaches
2413	Région de Laval	2413	Région de Laval
2414	Région de Lanaudière	2414	Région de Lanaudière
2415	Région de Laurentides	2415	Région de Laurentides
2416	Région de la Montérégie	2416	Région de la Montérégie
2417	Région du Nunavik	2417	Région du Nunavik
2418	Région des Terres-Cries-de-la-Baie-James	2418	Région des Terres-Cries-de-la-Baie-James
	<b>Ontario<sup>5</sup></b>		
3501	Champlain DHC		n/a
3502	Southeastern Ontario DHC		n/a
3503	Durham-Haliburton-Kawartha and Pine Ridge DHC		n/a
3504	Toronto DHC		n/a
3505	Simcoe York DHC		n/a
3506	Halton-Peel DHC		n/a
3507	Waterloo Region-Wellington-Dufferin DHC		n/a
3508	Hamilton DHC		n/a
3509	Niagara DHC		n/a
3510	Grand River DHC		n/a
3511	Thames Valley DHC		n/a
3512	Essex-Kent and Lambton DHC		n/a
3513	Grey Bruce Huron Perth DHC		n/a
3514	Northern Shores DHC		n/a
3515	Algoma-Cochrane-Manitoulin and Sudbury DHC		n/a
3516	Northwestern Ontario DHC		n/a

5. District health councils (DHC) were dissolved. 14 Local Health Integration Networks (LHINs) came into effect April 1<sup>st</sup>, 2005.

	n/a	<b>3501</b>	<b>Erie St. Clair</b>
	n/a	<b>3502</b>	<b>South West/Sud-Ouest</b>
	n/a	<b>3503</b>	<b>Waterloo Wellington</b>
	n/a	<b>3504</b>	<b>Hamilton Niagara Haldimand Brant</b>
	n/a	<b>3505</b>	<b>Central West/Centre-Ouest</b>
	n/a	<b>3506</b>	<b>Mississauga Halton</b>
	n/a	<b>3507</b>	<b>Toronto Central/Toronto-Centre</b>
	n/a	<b>3508</b>	<b>Central/Centre</b>
	n/a	<b>3509</b>	<b>Central East/Centre-Est</b>
	n/a	<b>3510</b>	<b>South East/Sud-Est</b>
	n/a	<b>3511</b>	<b>Champlain</b>
	n/a	<b>3512</b>	<b>North Simcoe Muskoka/Simcoe Nord Muskoka</b>
	n/a	<b>3513</b>	<b>North East/Nord-Est</b>
	n/a	<b>3514</b>	<b>North West/Nord-Ouest</b>
3526	The District of Algoma Health Unit	3526	The District of Algoma Health Unit
3527	Brant County Health Unit	3527	Brant County Health Unit
3530	Durham Regional Health Unit	3530	Durham Regional Health Unit
3531	Elgin-St Thomas Health Unit	3531	Elgin-St Thomas Health Unit
3533	Grey Bruce Health Unit	3533	Grey Bruce Health Unit
3534	Haldimand-Norfolk Health Unit	3534	Haldimand-Norfolk Health Unit
3535	Haliburton, Kawartha, Pine Ridge District Health Unit	3535	Haliburton, Kawartha, Pine Ridge District Health Unit
3536	Halton Regional Health Unit	3536	Halton Regional Health Unit
3537	City of Hamilton Health Unit	3537	City of Hamilton Health Unit
3538	Hastings and Prince Edward Counties Health Unit	3538	Hastings and Prince Edward Counties Health Unit
3539	Huron County Health Unit	3539	Huron County Health Unit
3540	Chatham-Kent Health Unit	3540	Chatham-Kent Health Unit
3541	Kingston, Frontenac and Lennox and Addington Health Unit	3541	Kingston, Frontenac and Lennox and Addington Health Unit
3542	Lambton Health Unit	3542	Lambton Health Unit
3543	Leeds, Grenville and Lanark District Health Unit	3543	Leeds, Grenville and Lanark District Health Unit
3544	Middlesex-London Health Unit	3544	Middlesex-London Health Unit
3545	Muskoka-Parry Sound Health Unit <sup>6</sup>		n/a
3546	Niagara Regional Area Health Unit	3546	Niagara Regional Area Health Unit
3547	North Bay and District Health Unit	3547	<b>North Bay Parry Sound District Health Unit</b>
3549	Northwestern Health Unit	3549	Northwestern Health Unit
3551	City of Ottawa Health Unit	3551	City of Ottawa Health Unit
3552	Oxford County Health Unit	3552	Oxford County Health Unit
3553	Peel Regional Health Unit	3553	Peel Regional Health Unit
3554	Perth District Health Unit	3554	Perth District Health Unit
3555	Peterborough County-City Health Unit	3555	Peterborough County-City Health Unit
3556	Porcupine Health Unit	3556	Porcupine Health Unit
3557	Renfrew County and District Health Unit	3557	Renfrew County and District Health Unit
3558	The Eastern Ontario Health Unit	3558	The Eastern Ontario Health Unit

6. As of April 1, 2005 Muskoka-Parry Sound Health Unit dissolved. The Muskoka part of this region was combined with Simcoe County District increasing the population by 14%, and the Parry Sound part joined North Bay and District, increasing the population by 30%.

3560	Simcoe County District Health Unit	3560	<b>Simcoe Muskoka District Health Unit</b>
3561	Sudbury and District Health Unit	3561	Sudbury and District Health Unit
3562	Thunder Bay District Health Unit	3562	Thunder Bay District Health Unit
3563	Timiskaming Health Unit	3563	Timiskaming Health Unit
3565	Waterloo Health Unit	3565	Waterloo Health Unit
3566	Wellington-Dufferin-Guelph Health Unit	3566	Wellington-Dufferin-Guelph Health Unit
3568	Windsor-Essex County Health Unit	3568	Windsor-Essex County Health Unit
3570	York Regional Health Unit	3570	York Regional Health Unit
3595	City of Toronto Health Unit	3595	City of Toronto Health Unit
<b>Manitoba</b>			
4610	Winnipeg	4610	Winnipeg
4615	Brandon	4615	Brandon
4620	North Eastman	4620	North Eastman
4625	South Eastman	4625	South Eastman
4630	Interlake	4630	Interlake
4640	Central	4640	Central
4645	Assiniboine	4645	Assiniboine
4660	Parkland	4660	Parkland
4670	Norman	4670	Norman
4685	Burntwood/Churchill	4685	Burntwood/Churchill
<b>Saskatchewan</b>			
4701	Sun Country	4701	Sun Country
4702	Five Hills	4702	Five Hills
4703	Cypress	4703	Cypress
4704	Regina Qu'Appelle	4704	Regina Qu'Appelle
4705	Sunrise	4705	Sunrise
4706	Saskatoon	4706	Saskatoon
4707	Heartland	4707	Heartland
4708	Kelsey Trail	4708	Kelsey Trail
4709	Prince Albert Parkland	4709	Prince Albert Parkland
4710	Prairie North	4710	Prairie North
4714	Mamawetan/Keewatin/Athabasca	4714	Mamawetan/Keewatin/Athabasca
<b>Alberta<sup>7,8</sup></b>			
4820	Chinook Regional Health Authority	4820	Chinook Regional Health Authority
4821	Palliser Health Region	4821	Palliser Health Region
4822	Calgary Health Region	4822	Calgary Health Region
4823	David Thompson Regional Health Authority	4823	David Thompson Regional Health Authority
4824	East Central Health	4824	East Central Health
4825	Capital Health	4825	Capital Health
4826	Aspen Regional Health Authority	4826	Aspen Regional Health Authority
4827	Peace Country Health	4827	Peace Country Health
4828	Northern Lights Health Region	4828	Northern Lights Health Region

7. Calgary Health Region gains population of approximately 13,000 (or 1.2%) from David Thompson Regional Health Authority which loses 4.4% total population.

8. Alberta Health and Wellness uses codes R1-R9 to identify the Health Regions.

<b>British Columbia</b>			
5911	East Kootenay	5911	East Kootenay
5912	Kootenay-Boundary	5912	Kootenay-Boundary
5913	Okanagan	5913	Okanagan
5914	Thompson/Cariboo	5914	Thompson/Cariboo
5921	Fraser East	5921	Fraser East
5922	Fraser North	5922	Fraser North
5923	Fraser South	5923	Fraser South
5931	Richmond	5931	Richmond
5932	Vancouver	5932	Vancouver
5933	North Shore/Coast Garibaldi	5933	North Shore/Coast Garibaldi
5941	South Vancouver Island	5941	South Vancouver Island
5942	Central Vancouver Island	5942	Central Vancouver Island
5943	North Vancouver Island	5943	North Vancouver Island
5951	Northwest	5951	Northwest
5952	Northern Interior	5952	Northern Interior
5953	Northeast	5953	Northeast
<b>Territories</b>			
6001	Yukon	6001	Yukon
6101	Northwest Territories	6101	Northwest Territories
6201	Nunavut	6201	Nunavut

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**Bold represents health region name change**

Shaded areas indicates where boundaries have changed, affecting data comparability in these regions

**Table 3**  
**Summary of changes to health regions, 2000 and 2003**

2000 Health region code and name	2003 Health region code and name
<b>Newfoundland and Labrador</b>	
1001, Health and Community Services St. John's Region	1001, Health and Community Services St. John's Region
1002, Health and Community Services Eastern Region	1002, Health and Community Services Eastern Region
1003, Health and Community Services Central Region	1003, Health and Community Services Central Region
1004, Health and Community Services Western Region	1004, Health and Community Services Western Region
1005, Grenfell Regional Health Services Board	1005, Grenfell Regional Health Services Board
1006, Health Labrador Corporation	1006, Health Labrador Corporation
<b>Prince Edward Island<sup>1</sup></b>	
1101, Urban Health Region <sup>2</sup>	n/a
1102, Rural Health Region <sup>2</sup>	n/a
n/a	1101, West Prince <sup>2</sup>
n/a	1102, East Prince <sup>2</sup>
n/a	1103, Queens <sup>2</sup>
n/a	1104, Kings <sup>2</sup>
<b>Nova Scotia</b>	
1201, Zone 1	1201, Zone 1
1202, Zone 2	1202, Zone 2
1203, Zone 3	1203, Zone 3
1204, Zone 4	1204, Zone 4
1205, Zone 5	1205, Zone 5
1206, Zone 6	1206, Zone 6
<b>New Brunswick</b>	
1301, Region 1	1301, Region 1
1302, Region 2	1302, Region 2
1303, Region 3	1303, Region 3
1304, Region 4	1304, Region 4
1305, Region 5	1305, Region 5
1306, Region 6	1306, Region 6
1307, Region 7	1307, Region 7
<b>Quebec</b>	
2401, Région du Bas-Saint-Laurent	2401, Région du Bas-Saint-Laurent
2402, Région du Saguenay - Lac-Saint-Jean	2402, Région du Saguenay - Lac-Saint-Jean
2403, Région de Québec	2403, Région de Québec
2404, Région de la Mauricie et Centre-du-Québec	2404, Région de la Mauricie et Centre-du-Québec
2405, Région de l'Estrie	2405, Région de l'Estrie
2406, Région de Montréal-Centre	2406, Région de Montréal-Centre
2407, Région de l'Outaouais	2407, Région de l'Outaouais
2408, Région de l'Abitibi-Témiscamingue	2408, Région de l'Abitibi-Témiscamingue

2409, Région de la Côte-Nord  
 2410, Région du Nord-du-Québec  
 2411, Région de la Gaspésie-Îles-de-la-Madeleine  
 2412, Région de la Chaudière-Appalaches  
 2413, Région de Laval  
 2414, Région de Lanaudière  
 2415, Région de Laurentides  
 2416, Région de la Montérégie  
 2417, Région du Nunavik  
 2418, Région des Terres-Cries-de-la-Baie-James

2409, Région de la Côte-Nord  
 2410, Région du Nord-du-Québec  
 2411, Région de la Gaspésie-Îles-de-la-Madeleine  
 2412, Région de la Chaudière-Appalaches  
 2413, Région de Laval  
 2414, Région de Lanaudière  
 2415, Région de Laurentides  
 2416, Région de la Montérégie  
 2417, Région du Nunavik  
 2418, Région des Terres-Cries-de-la-Baie-James

## Ontario

3501, Champlain District Health Council  
 3502, Quinte-Kingston and Rideau District Health Council  
 3503, Durham-Haliburton-Kawartha and Pine Ridge District Health Council  
 3504, Toronto District Health Council  
 3505, Simcoe-York District Health Council  
 3506, Halton-Peel District Health Council  
 3507, Waterloo-Wellington-Dufferin District Health Council  
 3508, Hamilton-Wentworth District Health Council  
 3509, Niagara District Health Council  
 3510, Grand River District Health Council  
 3511, Thames Valley District Health Council  
 3512, Essex-Kent and Lambton District Health Council  
 3513, Grey-Bruce-Huron and Perth District Health Council  
 3514, Muskoka-Nipissing and Parry Sound District Health Council  
 3515, Algoma-Cochrane-Manitoulin and Sudbury District Health Council  
 3516, Northwestern Ontario District Health Council  
 3526, Algoma Public Health Unit  
 3527, Brant Public Health Unit  
 3530, Durham Public Health Unit  
 3531, Elgin-St Thomas Public Health Unit  
 3533, Bruce-Grey-Owen Sound Public Health Unit  
 3534, Haldimand-Norfolk Public Health Unit  
 3535, Haliburton-Kawartha-Pine Ridge Public Health Unit  
 3536, Halton Public Health Unit  
 3537, Hamilton-Wentworth Public Health Unit  
 3538, Hastings and Prince Edward Public Health Unit  
 3539, Huron Public Health Unit  
 3540, Kent-Chatham Public Health Unit  
 3541, Kingston-Frontenac-Lennox and Addington Public Health Unit  
 3542, Lambton Public Health Unit  
 3543, Leeds-Grenville-Lanark Public Health Unit  
 3544, Middlesex-London Public Health Unit  
 3545, Muskoka-Parry Sound Public Health Unit

3501, Champlain District Health Council  
 3502, Southeastern Ontario District Health Council<sup>3</sup>  
 3503, Durham-Haliburton-Kawartha and Pine Ridge District Health Council  
 3504, Toronto District Health Council  
 3505, Simcoe York District Health Council<sup>3</sup>  
 3506, Halton-Peel District Health Council  
 3507, Waterloo Region-Wellington-Dufferin District Health Council<sup>3</sup>  
 3508, Hamilton District Health Council<sup>3</sup>  
 3509, Niagara District Health Council  
 3510, Grand River District Health Council  
 3511, Thames Valley District Health Council  
 3512, Essex-Kent and Lambton District Health Council  
 3513, Grey Bruce Huron Perth District Health Council<sup>3</sup>  
 3514, Northern Shores District Health Council<sup>3</sup>  
 3515, Algoma-Cochrane-Manitoulin and Sudbury District Health Council  
 3516, Northwestern Ontario District Health Council  
 3526, The District of Algoma Health Unit<sup>3</sup>  
 3527, Brant County Health Unit<sup>3</sup>  
 3530, Durham Regional Health Unit<sup>3</sup>  
 3531, Elgin-St Thomas Health Unit<sup>3</sup>  
 3533, Grey Bruce Health Unit<sup>3</sup>  
 3534, Haldimand-Norfolk Health Unit<sup>3</sup>  
 3535, Haliburton, Kawartha, Pine Ridge District Health Unit<sup>3</sup>  
 3536, Halton Regional Health Unit<sup>3</sup>  
 3537, City of Hamilton Health Unit<sup>3</sup>  
 3538, Hastings and Prince Edward Counties Health Unit<sup>3</sup>  
 3539, Huron County Health Unit<sup>3</sup>  
 3540, Chatham-Kent Health Unit<sup>3</sup>  
 3541, Kingston, Frontenac and Lennox and Addington Health Unit<sup>3</sup>  
 3542, Lambton Health Unit<sup>3</sup>  
 3543, Leeds, Grenville and Lanark District Health Unit<sup>3</sup>  
 3544, Middlesex-London Health Unit<sup>3</sup>  
 3545, Muskoka-Parry Sound Health Unit<sup>3</sup>

3546, Niagara Public Health Unit	3546, Niagara Regional Area Health Unit <sup>3</sup>
3547, North Bay Public Health Unit	3547, North Bay and District Health Unit <sup>3</sup>
3549, Northwestern Public Health Unit	3549, Northwestern Health Unit <sup>3</sup>
3551, Ottawa Carleton Public Health Unit	3551, City of Ottawa Health Unit <sup>2</sup>
3552, Oxford Public Health Unit	3552, Oxford County Health Unit <sup>3</sup>
3553, Peel Public Health Unit	3553, Peel Regional Health Unit <sup>3</sup>
3554, Perth Public Health Unit	3554, Perth District Health Unit <sup>3</sup>
3555, Peterborough Public Health Unit	3555, Peterborough County-City Health Unit <sup>3</sup>
3556, Porcupine Public Health Unit	3556, Porcupine Health Unit <sup>3</sup>
3557, Renfrew Public Health Unit	3557, Renfrew County and District Health Unit <sup>3</sup>
3558, Eastern Ontario Public Health Unit	3558, The Eastern Ontario Health Unit <sup>3</sup>
3560, Simcoe Public Health Unit	3560, Simcoe County District Health Unit <sup>3</sup>
3561, Sudbury Public Health Unit	3561, Sudbury and District Health Unit <sup>3</sup>
3562, Thunder Bay Public Health Unit	3562, Thunder Bay District Health Unit <sup>3</sup>
3563, Timiskaming Public Health Unit	3563, Timiskaming Health Unit <sup>3</sup>
3565, Waterloo Public Health Unit	3565, Waterloo Health Unit <sup>3</sup>
3566, Wellington-Dufferin-Guelph Public Health Unit	3566, Wellington-Dufferin-Guelph Health Unit <sup>3</sup>
3568, Windsor-Essex Public Health Unit	3568, Windsor-Essex County Health Unit <sup>3</sup>
3570, York Public Health Unit	3570, York Regional Health Unit <sup>2</sup>
3595, City of Toronto Public Health Unit	3595, City of Toronto Health Unit <sup>3</sup>

### Manitoba

4610, Winnipeg	4610, Winnipeg
4615, Brandon	4615, Brandon
4620, North Eastman	4620, North Eastman
4625, South Eastman	4625, South Eastman
4630, Interlake	4630, Interlake
4640, Central <sup>2</sup>	4640, Central <sup>2,4</sup>
4650, Marquette <sup>2</sup>	4645, Assiniboine <sup>2,3,5</sup>
4655, South Westman <sup>2</sup>	n/a
4660, Parkland <sup>2</sup>	4660, Parkland <sup>2</sup>
4670, Norman	4670, Norman
4685, Burntwood/Churchill	4685, Burntwood/Churchill

### Saskatchewan

4701, Weyburn (A) Service Area	4701, Sun Country <sup>3</sup>
4702, Moose Jaw (B) Service Area	4702, Five Hills <sup>3</sup>
4703, Swift Current (C) Service Area	4703, Cypress <sup>3</sup>
4704, Regina (D) Service Area	4704, Regina Qu'Appelle <sup>3</sup>
4705, Yorkton (E) Service Area	4705, Sunrise <sup>3</sup>
4706, Saskatoon (F) Service Area	4706, Saskatoon <sup>3</sup>
4707, Rosetown (G) Service Area	4707, Heartland <sup>3</sup>
4708, Melfort (H) Service Area	4708, Kelsey Trail <sup>3</sup>
4709, Prince Albert (I) Service Area	4709, Prince Albert Parkland <sup>3</sup>
4710, North Battleford (J) Service Area	4710, Prairie North <sup>3</sup>
4711, Northern Health Services Branch (K) Service Area	4714, Mamawetan/Keewatin/athabasca <sup>3</sup>

## Alberta<sup>6</sup>

4801, Chinook Regional Health Authority	4820, Chinook Regional Health Authority
4802, Palliser Health Authority <sup>2</sup>	4802, Palliser Health Authority
4803, Headwaters Health Authority <sup>2</sup>	n/a
4804, Calgary Regional Health Authority <sup>2</sup>	n/a
4805, Health Authority #5 <sup>2</sup>	n/a
4806, David Thompson Regional Health Authority <sup>2</sup>	n/a
4807, East Central Health Authority <sup>2</sup>	n/a
4808, WestView Regional Health Authority <sup>2</sup>	n/a
4809, Crossroads Regional Health Authority <sup>2</sup>	n/a
4810, Capital Health Authority <sup>2</sup>	n/a
4811, Aspen Regional Health Authority <sup>2</sup>	n/a
4812, Lakeland Regional Health Authority <sup>2</sup>	n/a
4813, Mistahia Regional Health Authority <sup>2</sup>	n/a
4814, Peace Regional Health Authority <sup>2</sup>	n/a
4815, Keeweenok Lakes Regional Health Authority <sup>2</sup>	n/a
n/a	4821, Palliser Health Region <sup>2</sup>
n/a	4822, Calgary Health Region <sup>2</sup>
n/a	4823, David Thompson Regional Health Authority <sup>2</sup>
n/a	4824, East Central Health Authority <sup>2</sup>
n/a	4825, Capital Health <sup>2</sup>
n/a	4826, Aspen Regional Health Authority <sup>2</sup>
n/a	4827, Peace Country Health <sup>2</sup>
4816, Northern Lights Regional Health Authority <sup>2</sup>	4828, Northern Lights Regional Health Authority <sup>2</sup>
4817, Northwestern Regional Health Authority <sup>2</sup>	n/a

## British Columbia<sup>7</sup>

5911, East Kootenay	5911, East Kootenay
5912, Kootenay-Boundary	5912, Kootenay-Boundary
5913, Okanagan	5913, Okanagan
5914, Thompson/Cariboo	5914, Thompson/Cariboo
5921, Fraser Valley	5921, Fraser East <sup>3</sup>
5922, Simon Fraser	5922, Fraser North <sup>3</sup>
5923, South Fraser	5923, Fraser South <sup>3</sup>
5931, Richmond	5931, Richmond
5932, Vancouver	5932, Vancouver
5933, North Shore/Coast Garibaldi	5933, North Shore/Coast Garibaldi
5941, South Vancouver Island	5941, South Vancouver Island
5942, Central Vancouver Island	5942, Central Vancouver Island
5943, North Vancouver Island	5943, North Vancouver Island
5951, North West	5951, Northwest <sup>3</sup>
5952, Northern Interior	5952, Northern Interior
5953, Northeast	5953, Northeast

## Territories

6001, Yukon	6001, Yukon
6101, Northwest Territories	6101, Northwest Territories
6201, Nunavut	6201, Nunavut

**Notes:**

1. In Prince Edward Island, two statistical areas (urban and rural) were replaced by the four administrative areas for 2003 .
2. Indicates where boundaries have changed, affecting data comparability in these regions
3. Health region name change
4. Central, Manitoba (4640) lost 449 or .5 per cent (1996 Census pop.) to Parkland (4660)
5. Assiniboine, Manitoba (4645) is comprised of the old regions of Marquette (4650) and South Westman (4655)
6. Complete restructuring of health region boundaries in Alberta , with the following exceptions: Chinook Regional Health Authority boundaries have not changed (code change only from 4801 to 4820); and Northern Lights (4816) and Northwestern (4817) regional health authorities combined to become the new Northern Lights Regional Health Authority (4828).
7. Boundary changes within the Vancouver Island Health Authority of British Columbia occurred in 2003 affecting the following regions: South Vancouver Island (5941) reduced by 56,313 population or 14.7% (1996 Census); Central Vancouver Island (5942) gained 999 pop. or 4 %, and; North Vancouver (5943) gained 55,314 population, an increase of 102.6%

**Data Source:** Health Indicators, 82-221

**Table 4**  
**Health regions 2005 by peer group**

**Peer group A**

1103	Queens	Prince Edward Island
1206	Zone 6	Nova Scotia
2403	Région de la Capitale Nationale	Quebec
2407	Région de l'Outaouais	Quebec
2413	Région de Laval	Quebec
2416	Région de la Montérégie	Quebec
3527	Brant County Health Unit	Ontario
3537	City of Hamilton Health Unit	Ontario
3538	Hastings and Prince Edward Counties Health Unit	Ontario
3540	Chatham-Kent Health Unit	Ontario
3541	Kingston, Frontenac and Lennox and Addington Health Unit	Ontario
3542	Lambton Health Unit	Ontario
3544	Middlesex-London Health Unit	Ontario
3546	Niagara Regional Area Health Unit	Ontario
3555	Peterborough County-City Health Unit	Ontario
4610	Winnipeg Regional Health Authority	Manitoba
4615	Brandon Regional Health Authority	Manitoba
4704	Regina Qu'Appelle Regional Health Authority	Saskatchewan
4706	Saskatoon Regional Health Authority	Saskatchewan
5913	Okanagan Health Service Delivery Area	British Columbia
5921	Fraser East Health Service Delivery Area	British Columbia
5941	South Vancouver Island Health Service Delivery Area	British Columbia
5942	Central Vancouver Island Health Service Delivery Area	British Columbia

**Peer group B**

3530	Durham Regional Health Unit	Ontario
3536	Halton Regional Health Unit	Ontario
3551	City of Ottawa Health Unit	Ontario
3553	Peel Regional Health Unit	Ontario
3565	Waterloo Health Unit	Ontario
3566	Wellington-Dufferin-Guelph Health Unit	Ontario
3568	Windsor-Essex County Health Unit	Ontario
3570	York Regional Health Unit	Ontario
4822	Calgary Health Region	Alberta
4825	Capital Health	Alberta
5922	Fraser North Health Service Delivery Area	British Columbia
5923	Fraser South Health Service Delivery Area	British Columbia
5931	Richmond Health Service Delivery Area	British Columbia
5933	North Shore/Coast Garibaldi Health Service Delivery Area	British Columbia

**Peer group C**

1011	Eastern Regional Integrated Health Authority	Newfoundland and Labrador
1102	East Prince	Prince Edward Island

1201	Zone 1	Nova Scotia
1202	Zone 2	Nova Scotia
1203	Zone 3	Nova Scotia
1204	Zone 4	Nova Scotia
1301	Region 1	New Brunswick
1302	Region 2	New Brunswick
1303	Region 3	New Brunswick
1304	Region 4	New Brunswick
2401	Région du Bas-Saint-Laurent	Quebec
2402	Région du Saguenay - Lac-Saint-Jean	Quebec
2404	Région de la Mauricie et du Centre-du-Québec	Quebec
2405	Région de l'Estrie	Quebec
2408	Région de l'Abitibi-Témiscamingue	Quebec
3526	District of Algoma Health Unit	Ontario
3547	North Bay Parry Sound District Health Unit	Ontario
3561	Sudbury and District Health Unit	Ontario
3562	Thunder Bay District Health Unit	Ontario
3563	Timiskaming Health Unit	Ontario
4709	Prince Albert Parkland Regional Health Authority	Saskatchewan
5912	Kootenay-Boundary Health Service Delivery Area	British Columbia
5914	Thompson/Cariboo Health Service Delivery Area	British Columbia
5943	North Vancouver Island Health Service Delivery Area	British Columbia

**Peer group D**

1104	Kings	Prince Edward Island
4640	Central Regional Health Authority	Manitoba
4645	Assiniboine Regional Health Authority	Manitoba
4660	Parkland Regional Health Authority	Manitoba
4701	Sun Country Regional Health Authority	Saskatchewan
4702	Five Hills Regional Health Authority	Saskatchewan
4703	Cypress Regional Health Authority	Saskatchewan
4705	Sunrise Regional Health Authority	Saskatchewan
4707	Heartland Regional Health Authority	Saskatchewan
4708	Kelsey Trail Regional Health Authority	Saskatchewan

**Peer group E**

2412	Région de la Chaudière-Appalaches	Quebec
2414	Région de Lanaudière	Quebec
2415	Région des Laurentides	Quebec
3531	Elgin-St Thomas Health Unit	Ontario
3533	Grey Bruce Health Unit	Ontario
3534	Haldimand-Norfolk Health Unit	Ontario
3535	Haliburton, Kawartha	Ontario
3539	Huron County Health Unit	Ontario
3543	Leeds, Grenville and Lanark District Health Unit	Ontario
3552	Oxford County Health Unit	Ontario
3554	Perth District Health Unit	Ontario
3557	Renfrew County and District Health Unit	Ontario
3558	Eastern Ontario Health Unit	Ontario
3560	Simcoe Muskoka District Health Unit	Ontario
4620	North Eastman Regional Health Authority	Manitoba
4625	South Eastman Regional Health Authority	Manitoba

4630	Interlake Regional Health Authority	Manitoba
4820	Chinook Regional Health Authority	Alberta
4821	Palliser Health Region	Alberta
4823	David Thompson Regional Health Authority	Alberta
4824	East Central Health	Alberta
4826	Aspen Regional Health Authority	Alberta
4827	Peace Country Health	Alberta
5911	East Kootenay Health Service Delivery Area	British Columbia

**Peer group F**

2417	Région du Nunavik	Quebec
2418	Région des Terres-Cries-de-la-Baie-James	Quebec
4685	Burntwood/Churchill	Manitoba
4714	Mamawetan/Keewatin/Athabasca	Saskatchewan
6201	Nunavut	Nunavut

**Peer group G**

2406	Région de Montréal	Quebec
3595	City of Toronto Health Unit	Ontario
5932	Vancouver Health Service Delivery Area	British Columbia

**Peer group H**

1014	Labrador-Grenfell Regional Integrated Health Authority	Newfoundland and Labrador
2409	Région de la Côte-Nord	Quebec
2410	Région du Nord-du-Québec	Quebec
3549	Northwestern Health Unit	Ontario
3556	Porcupine Health Unit	Ontario
4670	Norman Regional Health Authority	Manitoba
4710	Prairie North Regional Health Authority	Saskatchewan
4828	Northern Lights Health Region	Alberta
5951	Northwest Health Service Delivery Area	British Columbia
5952	Northern Interior Health Service Delivery Area	British Columbia
5953	Northeast Health Service Delivery Area	British Columbia
6001	Yukon Territory	Yukon Territory
6101	Northwest Territories	Northwest Territories

**Peer group I**

1012	Central Regional Integrated Health Authority	Newfoundland and Labrador
1013	Western Regional Integrated Health Authority	Newfoundland and Labrador
1101	West Prince	Prince Edward Island
1205	Zone 5	Nova Scotia
1305	Region 5	New Brunswick
1306	Region 6	New Brunswick
1307	Region 7	New Brunswick
2411	Région de la Gaspésie - Îles-de-la-Madeleine	Quebec

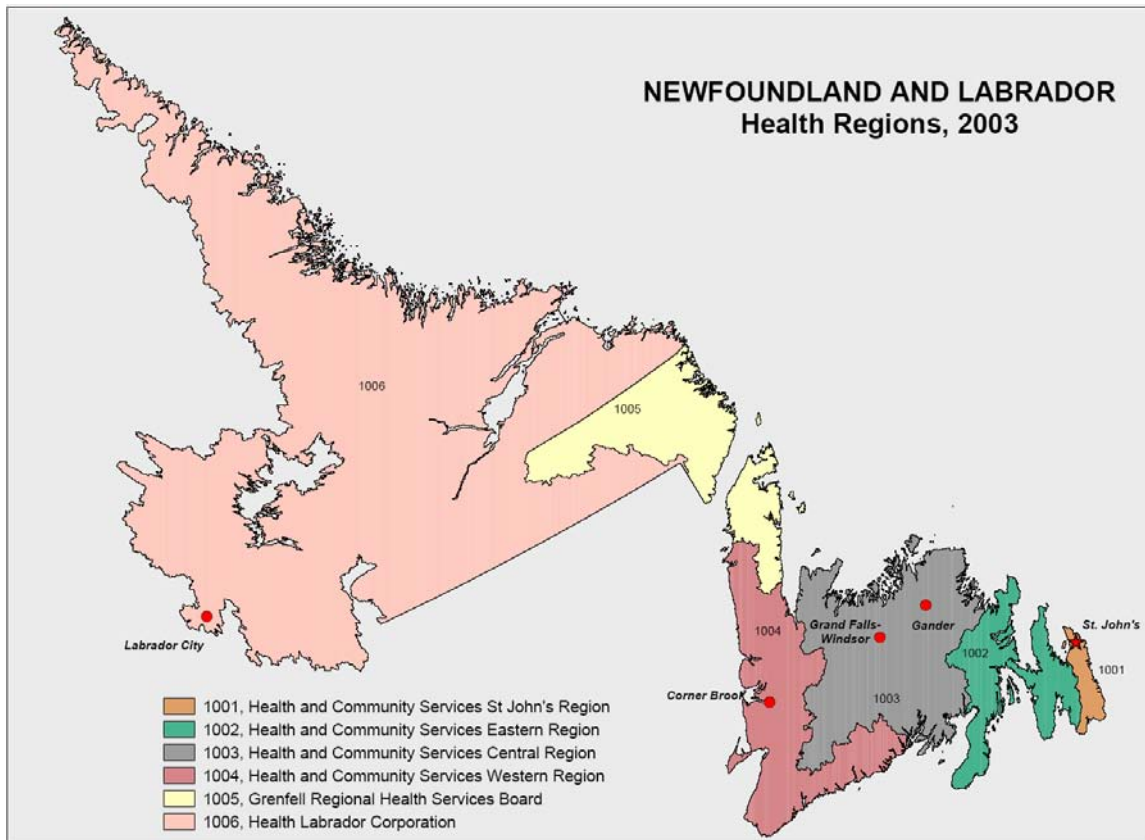
**Table 5**  
**Summary table of peer groups and principal**

Peer Group	Number of Health Regions	% Canadian Population	Principal characteristics
A	23	24.6%	<ul style="list-style-type: none"> <li>• Urban-rural mix from coast to coast</li> <li>• Average percentage of Aboriginal population</li> <li>• Low male population</li> <li>• Slow population growth from 1996-2001</li> </ul>
B	14	27.0%	<ul style="list-style-type: none"> <li>• Mainly urban centres with moderately high population density</li> <li>• Low percentage of government transfer income</li> <li>• Rapid population growth from 1996 to 2001</li> </ul>
C	24	12.3%	<ul style="list-style-type: none"> <li>• Sparsely populated urban-rural mix from coast to coast</li> <li>• Average percentage of Aboriginal population</li> <li>• Negative population growth</li> </ul>
D	10	1.7%	<ul style="list-style-type: none"> <li>• Rural regions mainly in the central Prairies</li> <li>• Moderate Aboriginal population</li> <li>• Moderately high percentage of government transfer income</li> <li>• Almost equal numbers of men and women</li> <li>• Negative population growth</li> </ul>
E	24	13.3%	<ul style="list-style-type: none"> <li>• Mainly rural regions in Quebec, Ontario and the Prairies</li> <li>• High proportion of people recently moved to or within these regions since 1996</li> <li>• Average percentage of Aboriginal population</li> <li>• Moderate population growth</li> </ul>
F	5	0.4%	<ul style="list-style-type: none"> <li>• Northern and remote regions</li> <li>• Very high Aboriginal population</li> <li>• Moderately high percentage of government transfer income</li> <li>• Slightly higher male population</li> <li>• Moderate population growth</li> </ul>
G	3	16.2%	<ul style="list-style-type: none"> <li>• Largest metro centres with an average population density of 3,934 people per square kilometre</li> <li>• Low Aboriginal population</li> <li>• Moderate percentage of government transfer income</li> <li>• High female population</li> </ul>
H	13	2.7%	<ul style="list-style-type: none"> <li>• Rural northern regions</li> <li>• High Aboriginal population</li> <li>• High male population</li> <li>• Negative population growth</li> </ul>
I	8	1.9%	<ul style="list-style-type: none"> <li>• Mainly rural Eastern regions</li> <li>• Very high percentage of government transfer income</li> </ul>

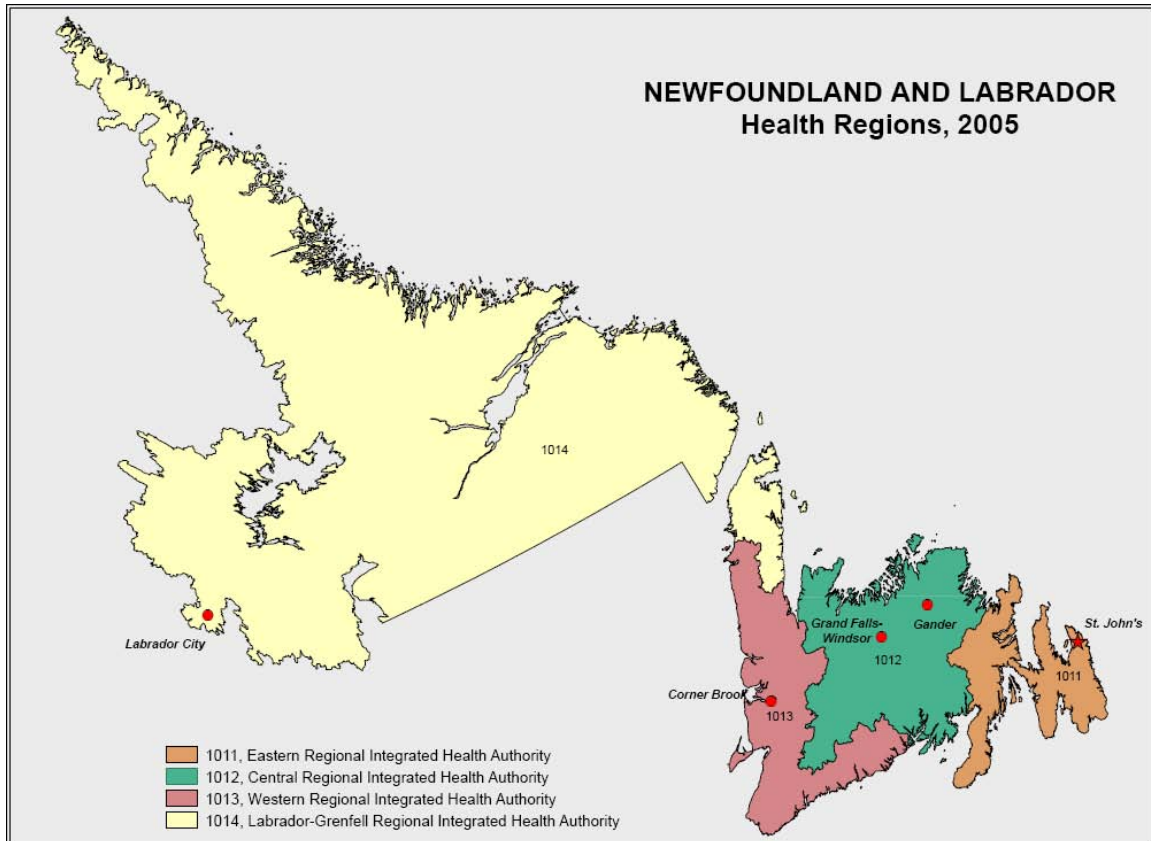
			<ul style="list-style-type: none"><li>• Negative population growth</li><li>• Low percentage of people having moved to or within these regions since 1996</li></ul>
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## Appendices B – Maps

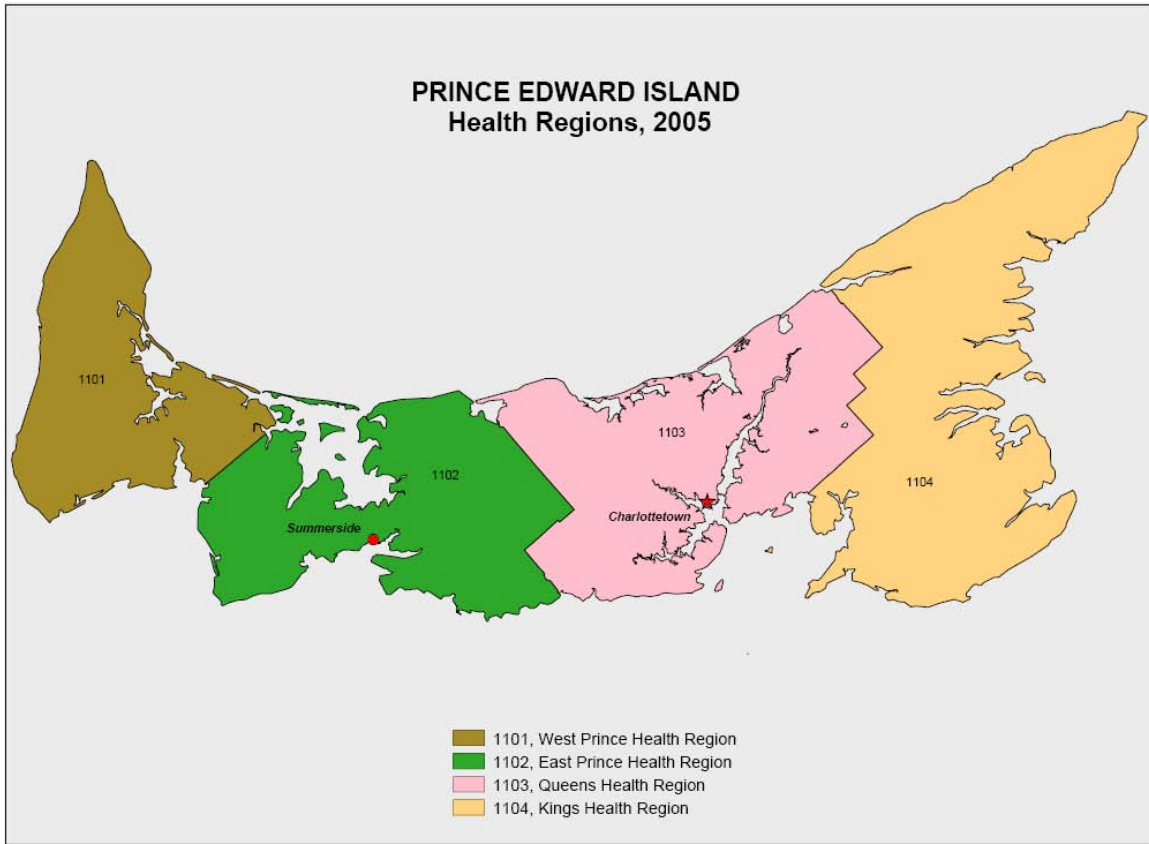
**Map 1**  
**Community Health Regions - Newfoundland and Labrador**  
**health regions, 2003**



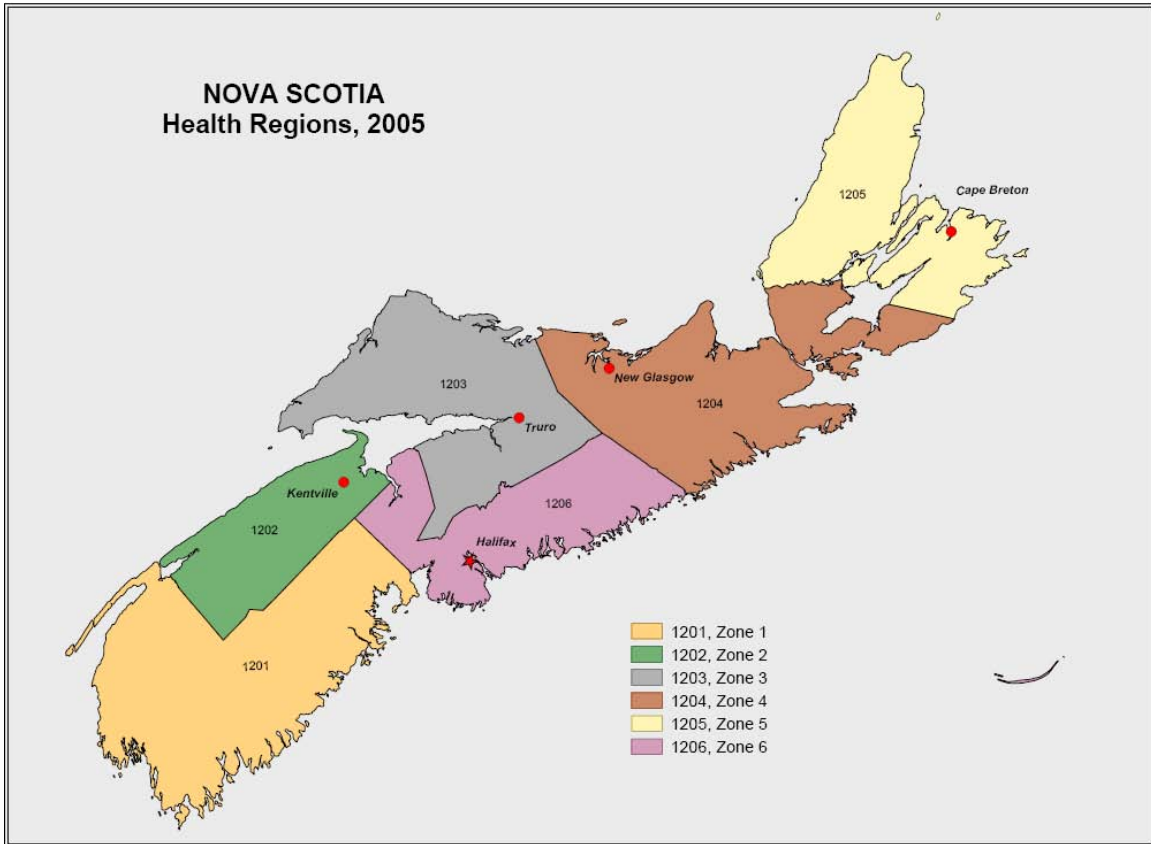
## Map 2 Regional Integrated Health Authorities – Newfoundland and Labrador health regions, 2005



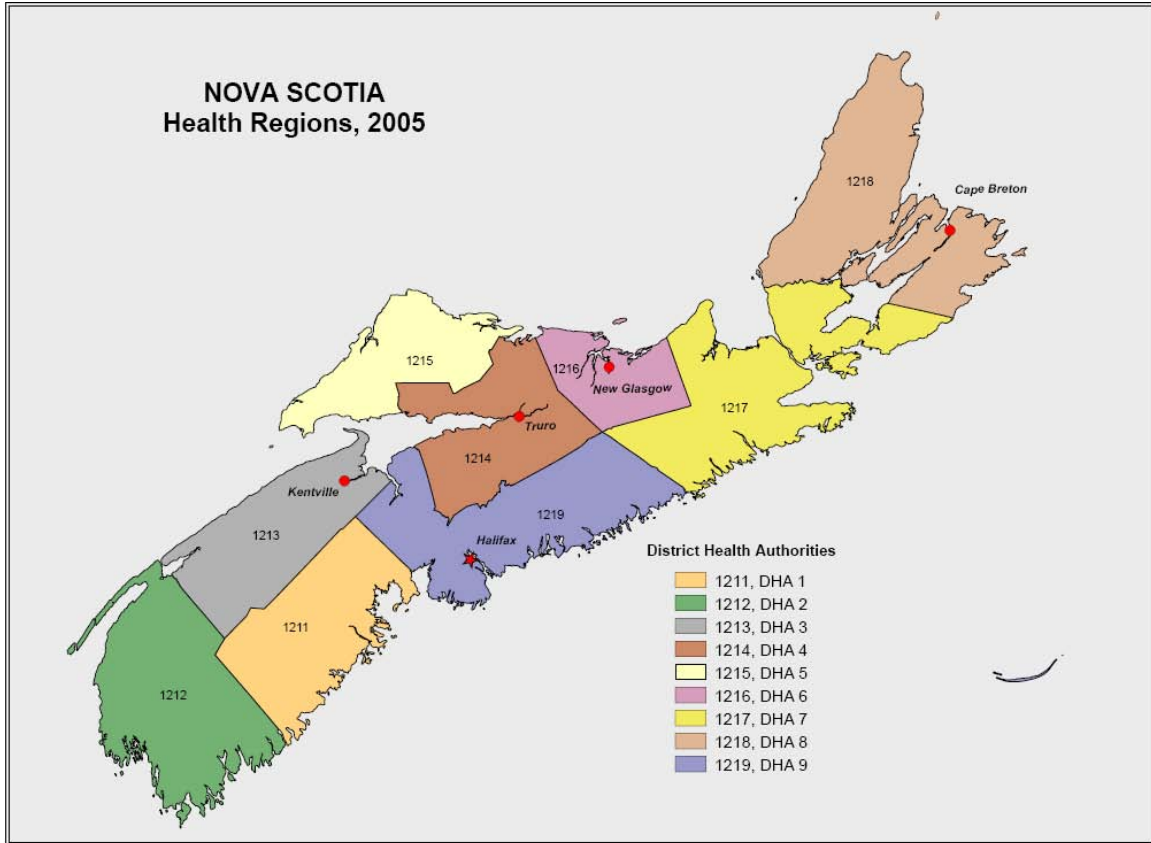
### Map 3 Health Regions – Prince Edward Island health regions, 2005



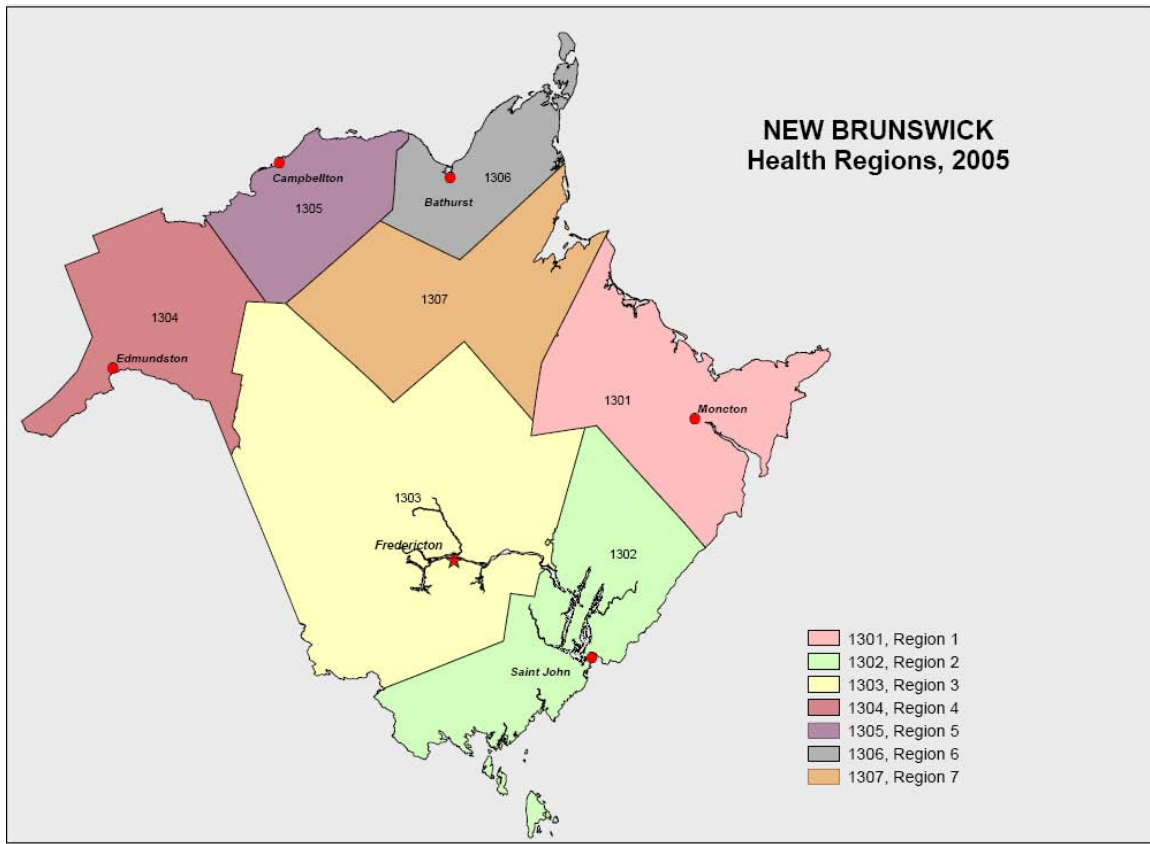
## Map 4 Zones – Nova Scotia health regions, 2005



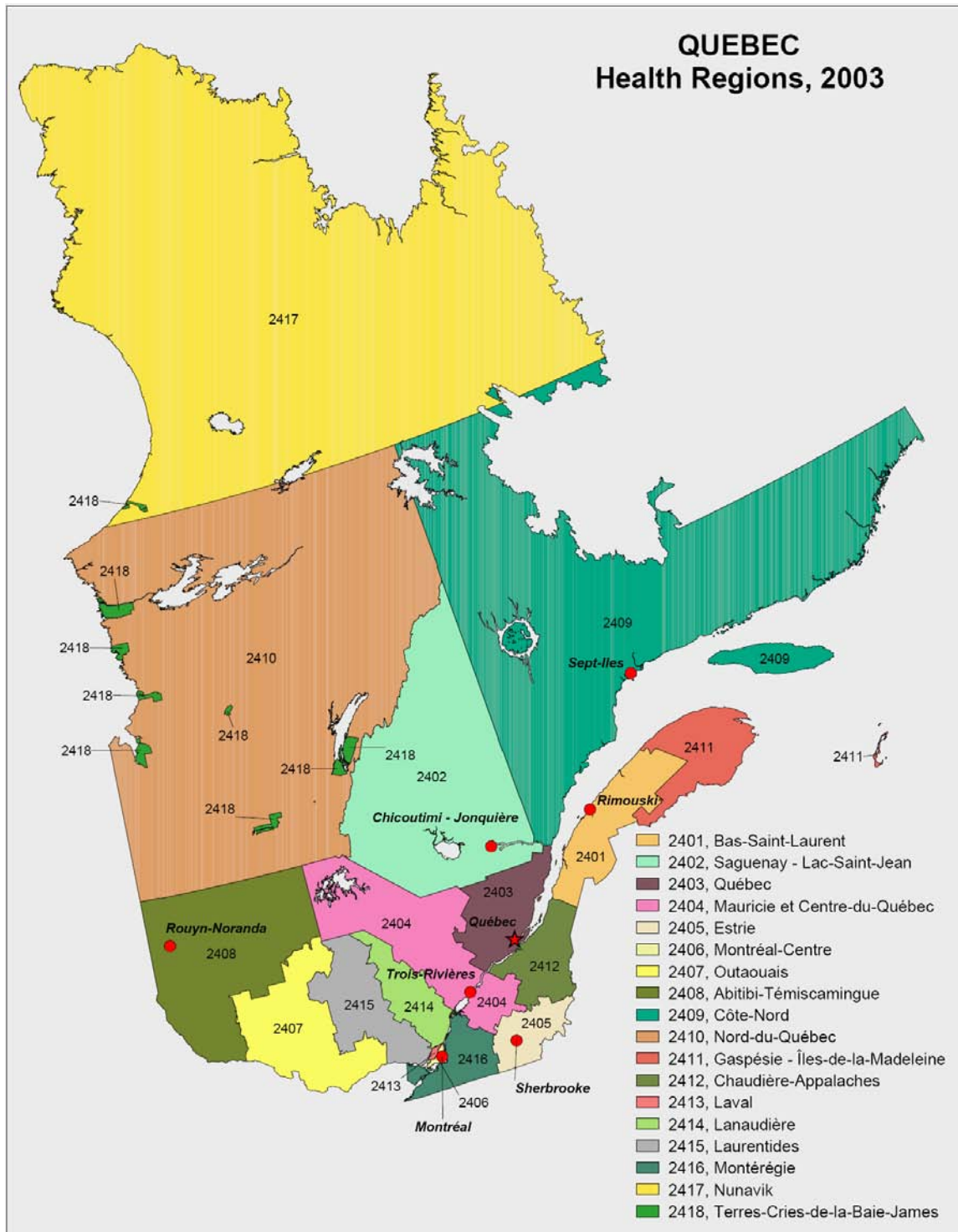
## Map 5 District Health Authorities (DHA) –Nova Scotia health regions, 2005



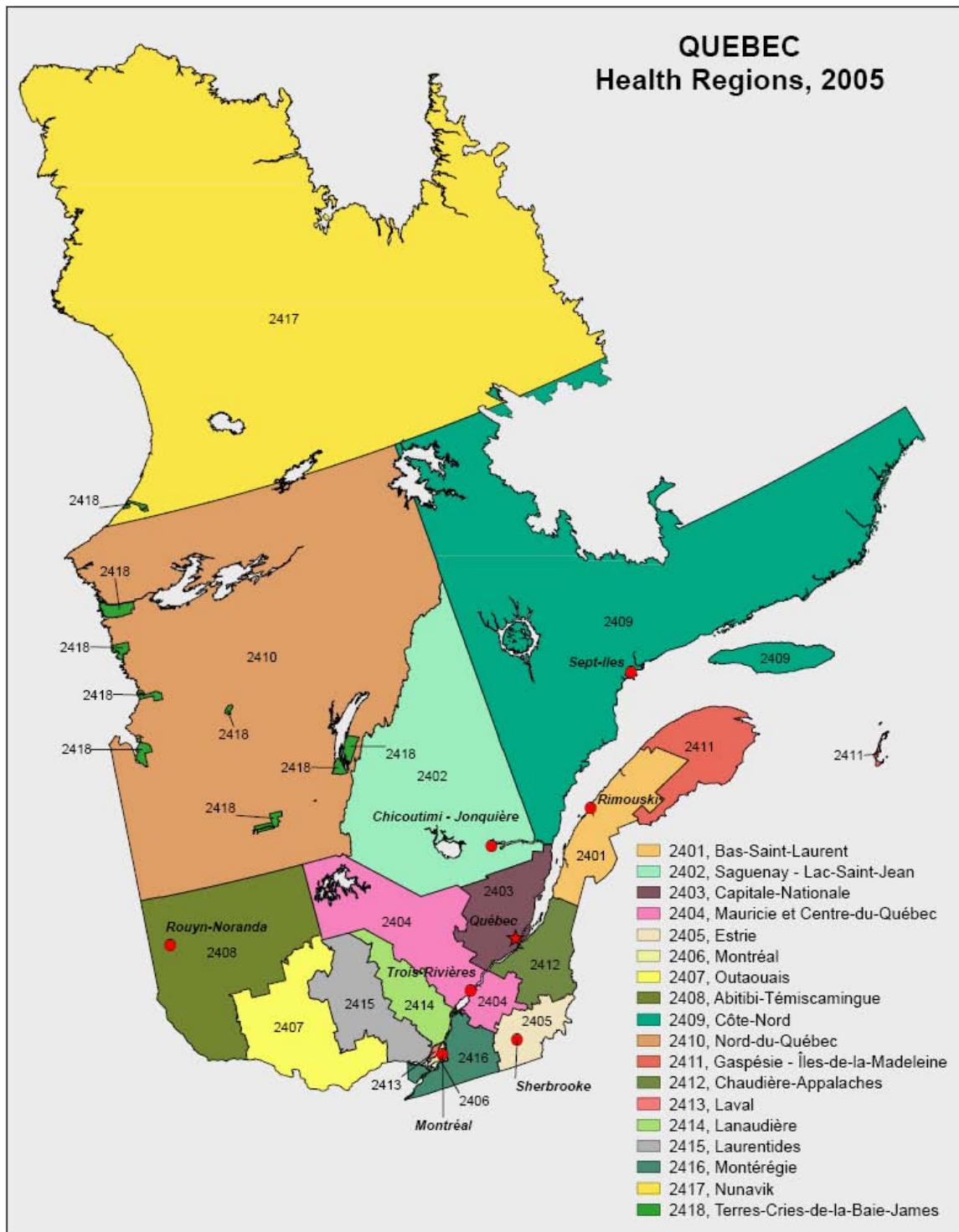
## Map 6 Health (Hospital) Regions – New Brunswick health regions, 2005



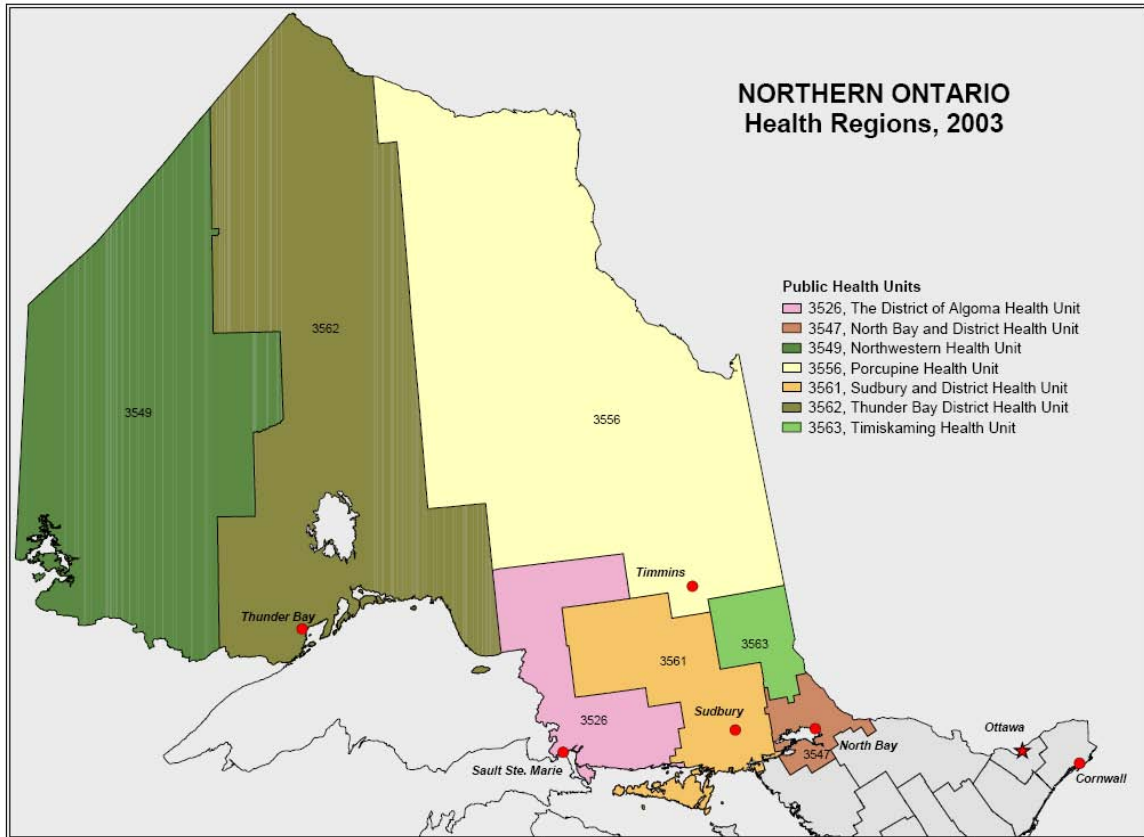
## Map 7 Régions sociosanitaires (RSS) - Quebec health regions, 2003



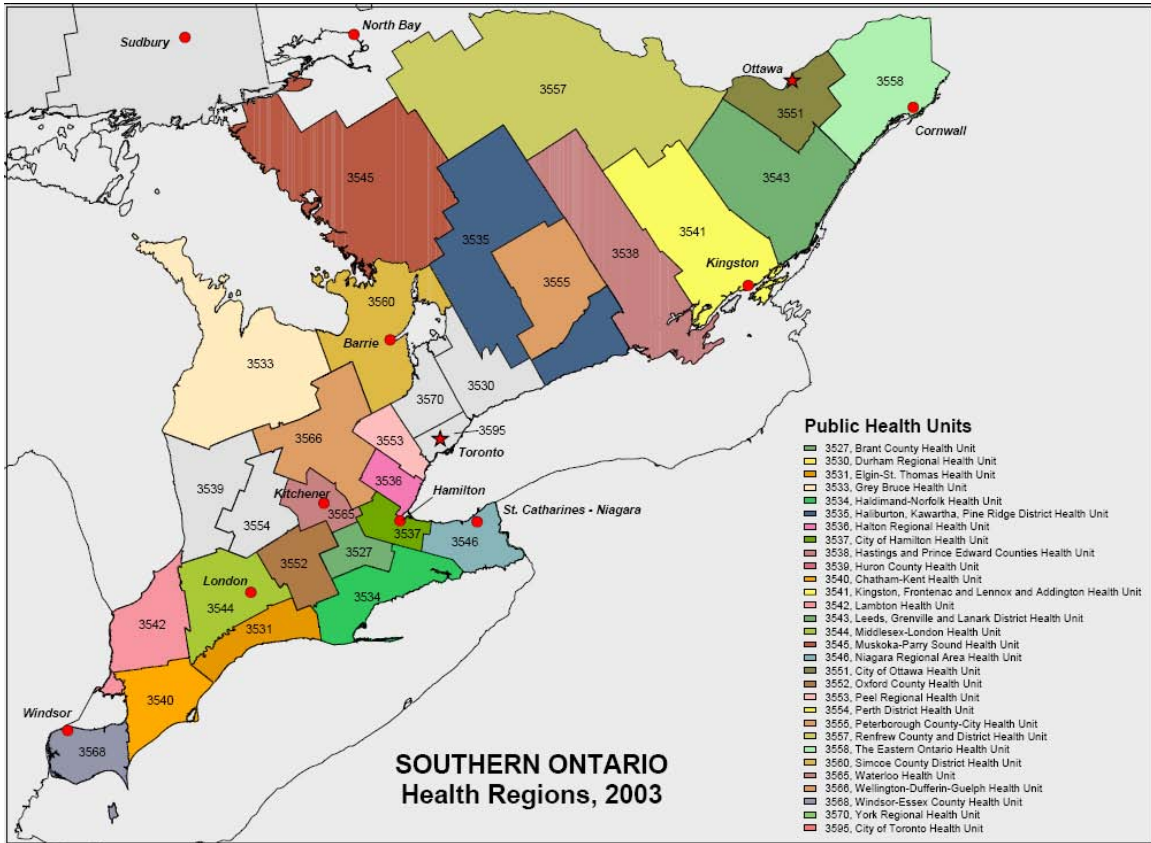
## Map 8 Régions sociosanitaires (RSS) – Quebec health regions, 2005



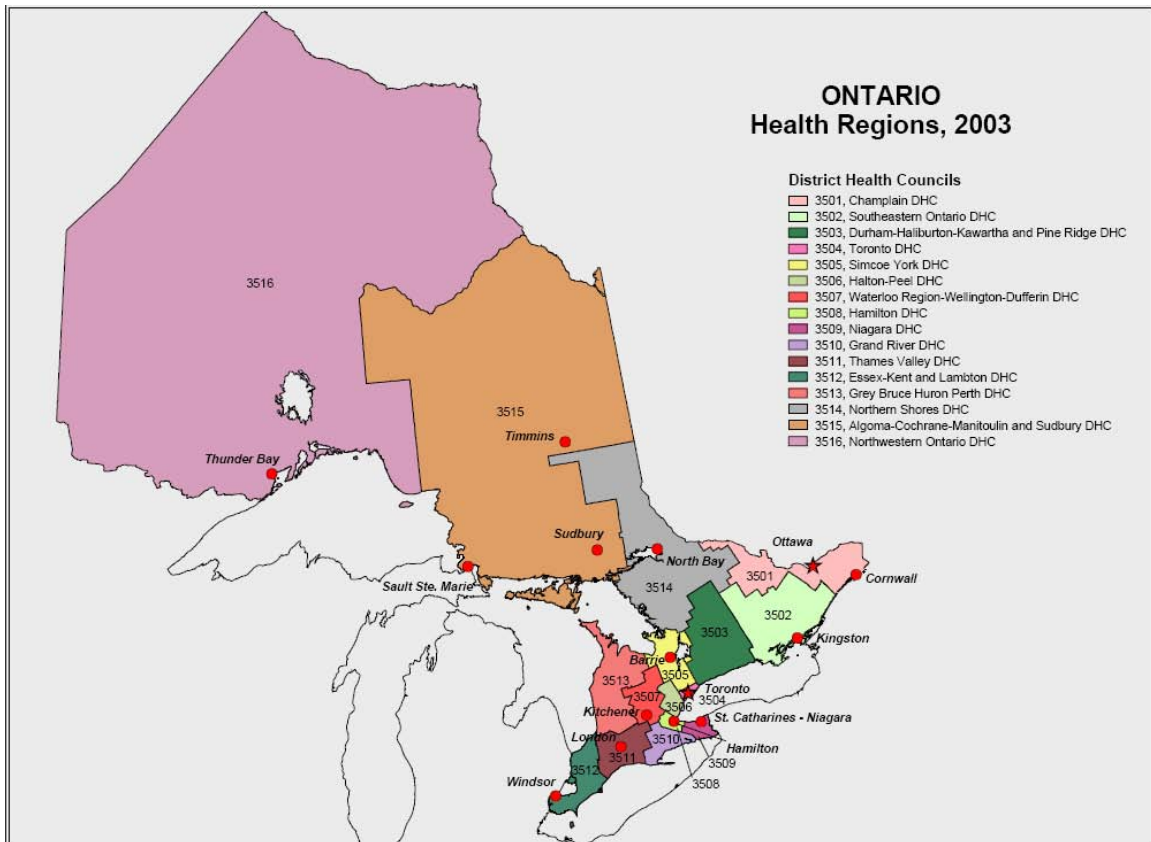
## Map 9 Public Health Units (PHU) - Northern Ontario health regions, 2003



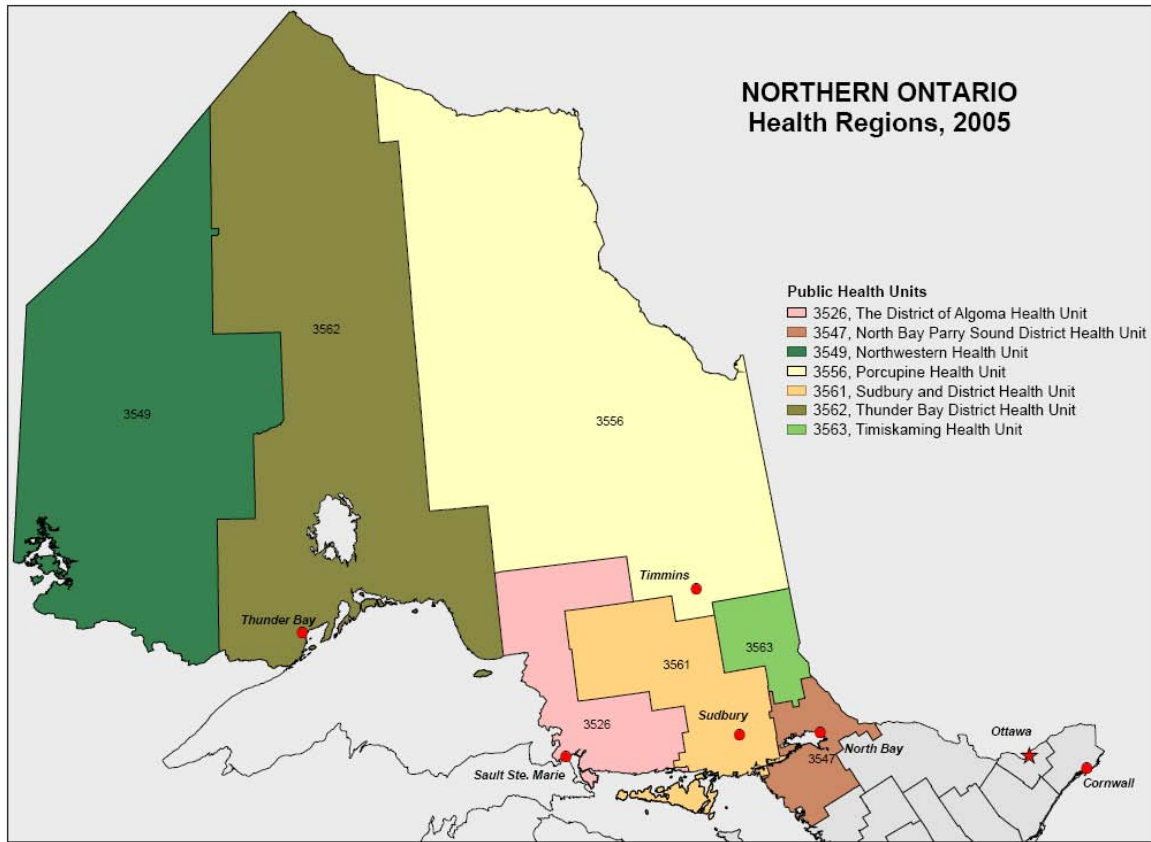
# Map 10 Public Health Units (PHU) – Southern Ontario health regions, 2003



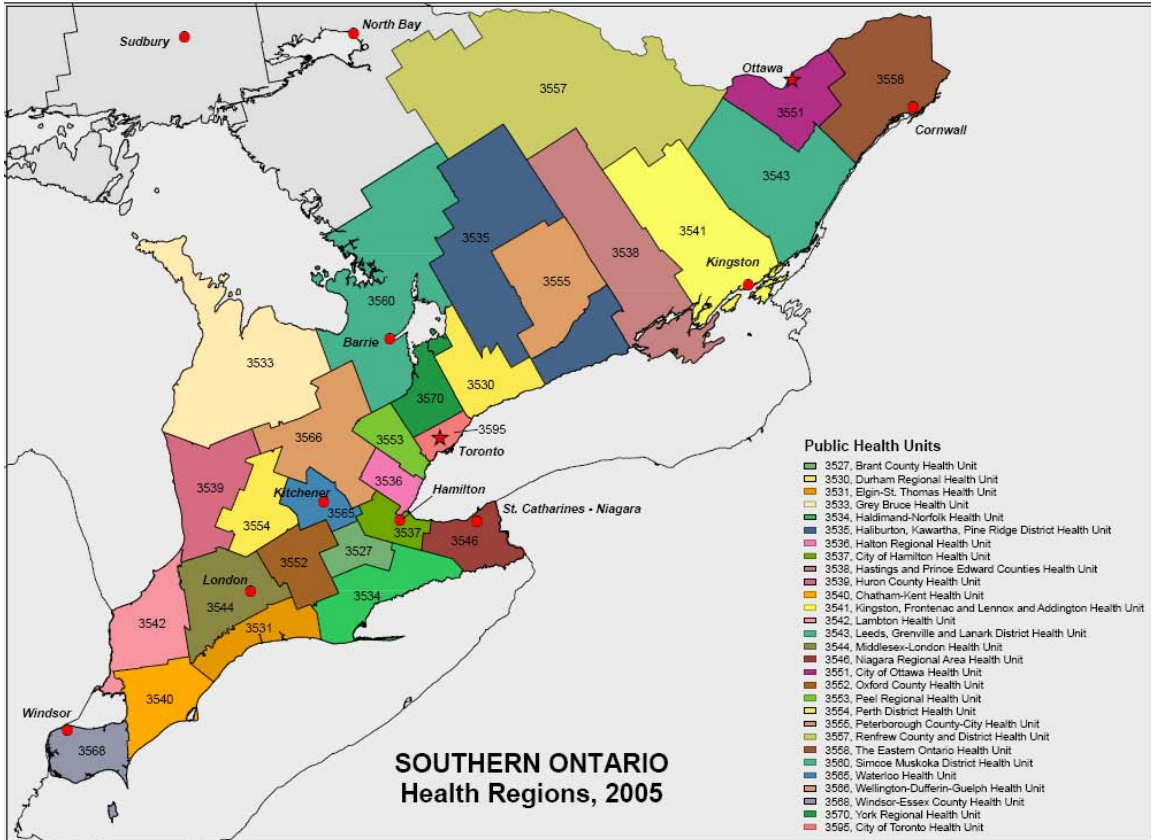
## Map 11 District Health Councils (DHC) – Ontario health regions, 2003



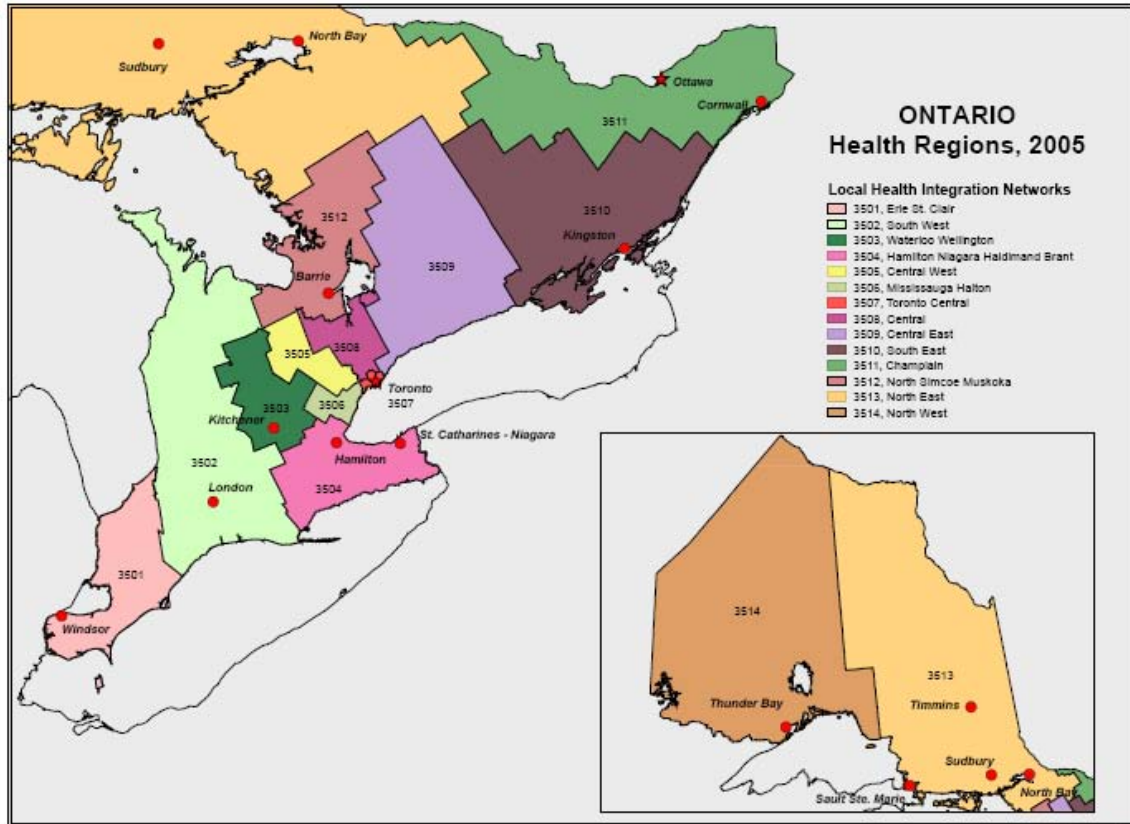
## Map 12 Public Health Units (PHU) Northern Ontario health regions, 2005



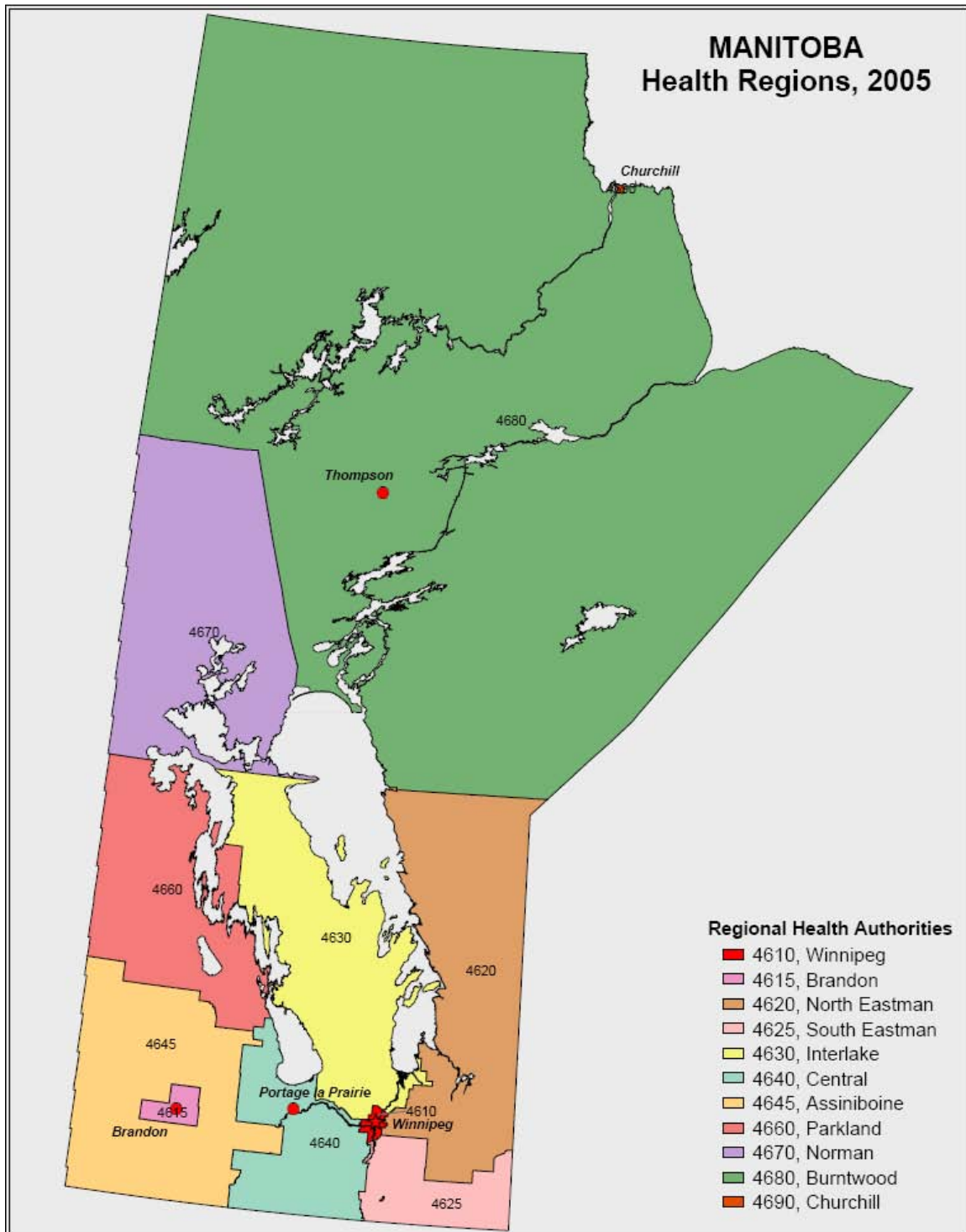
## Map 13 Public Health Units (PHU) – Southern Ontario health regions, 2005



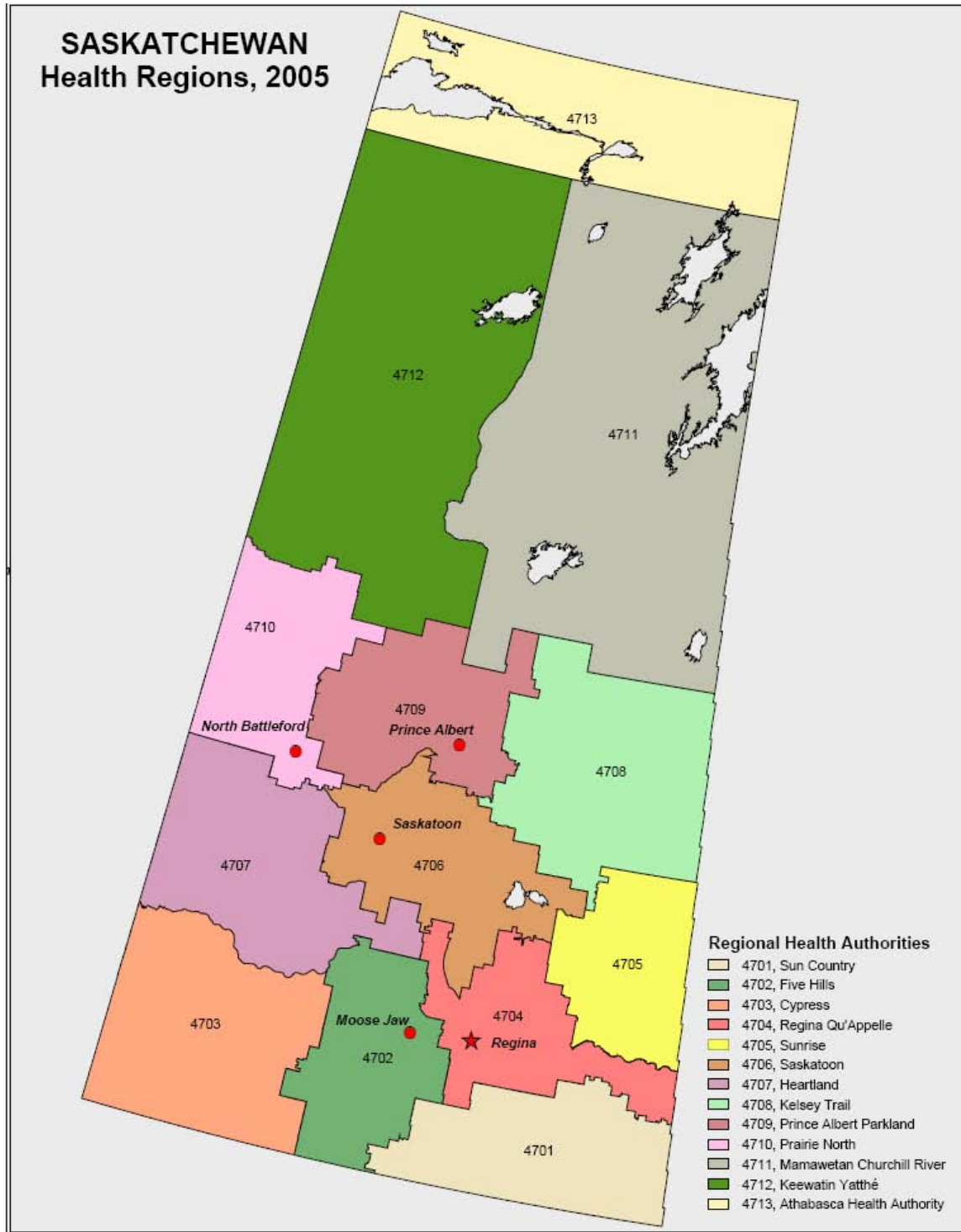
# Map 14 Local Health Integration Networks (LHIN) – Ontario health regions, 2005



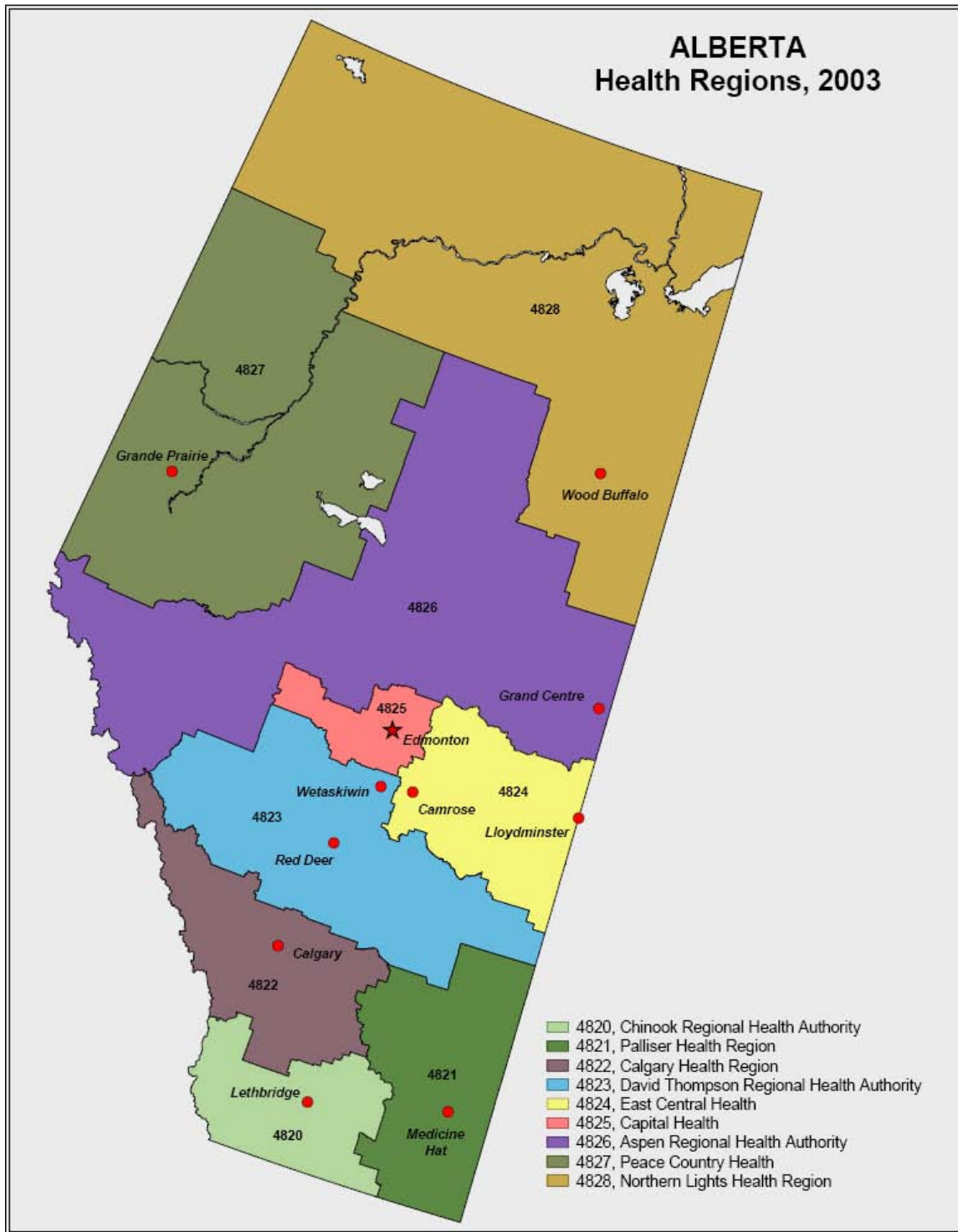
## Map 15 Regional Health Authorities – Manitoba health regions, 2005



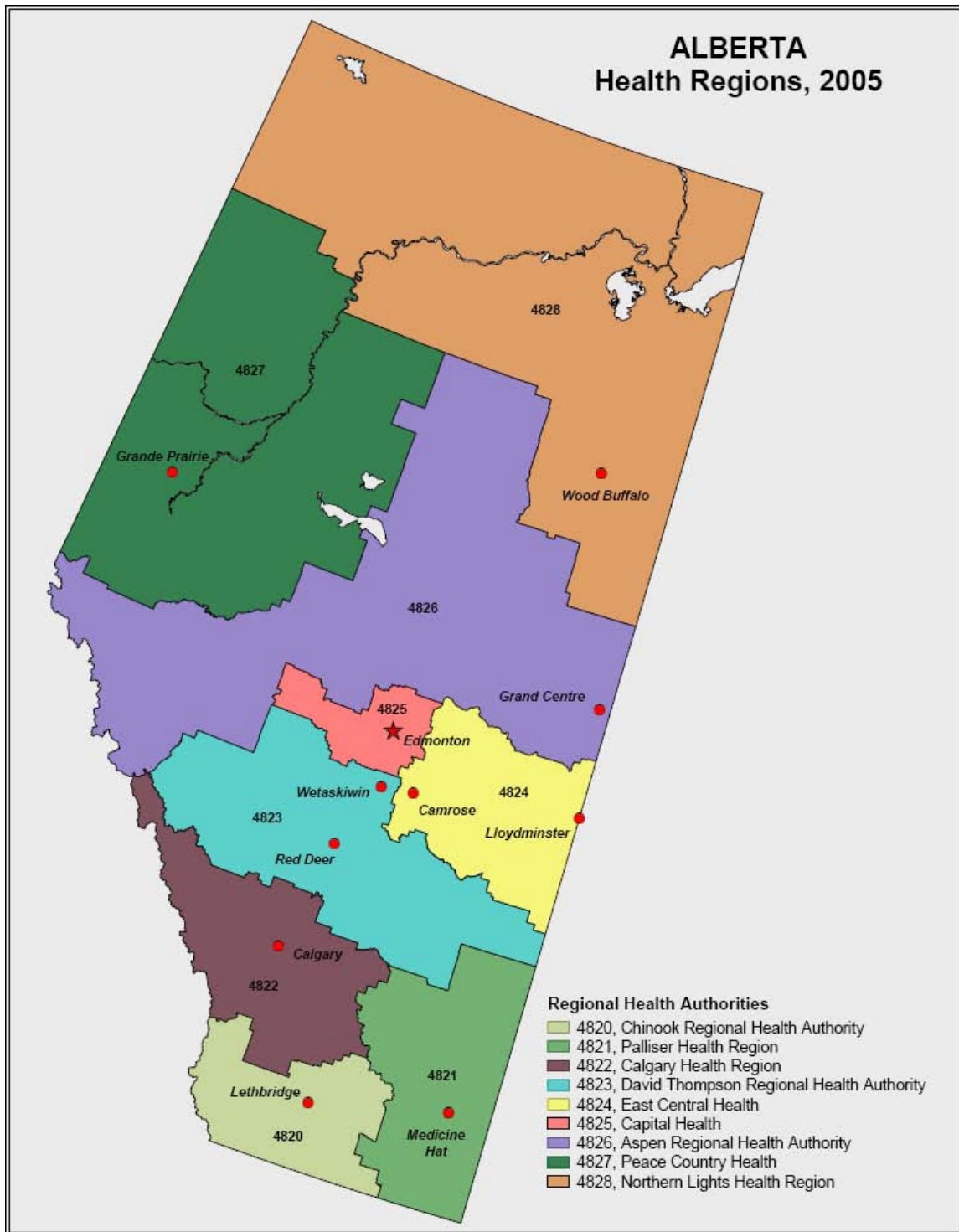
**Map 16**  
**Regional Health Authorities – Saskatchewan health regions, 2005**



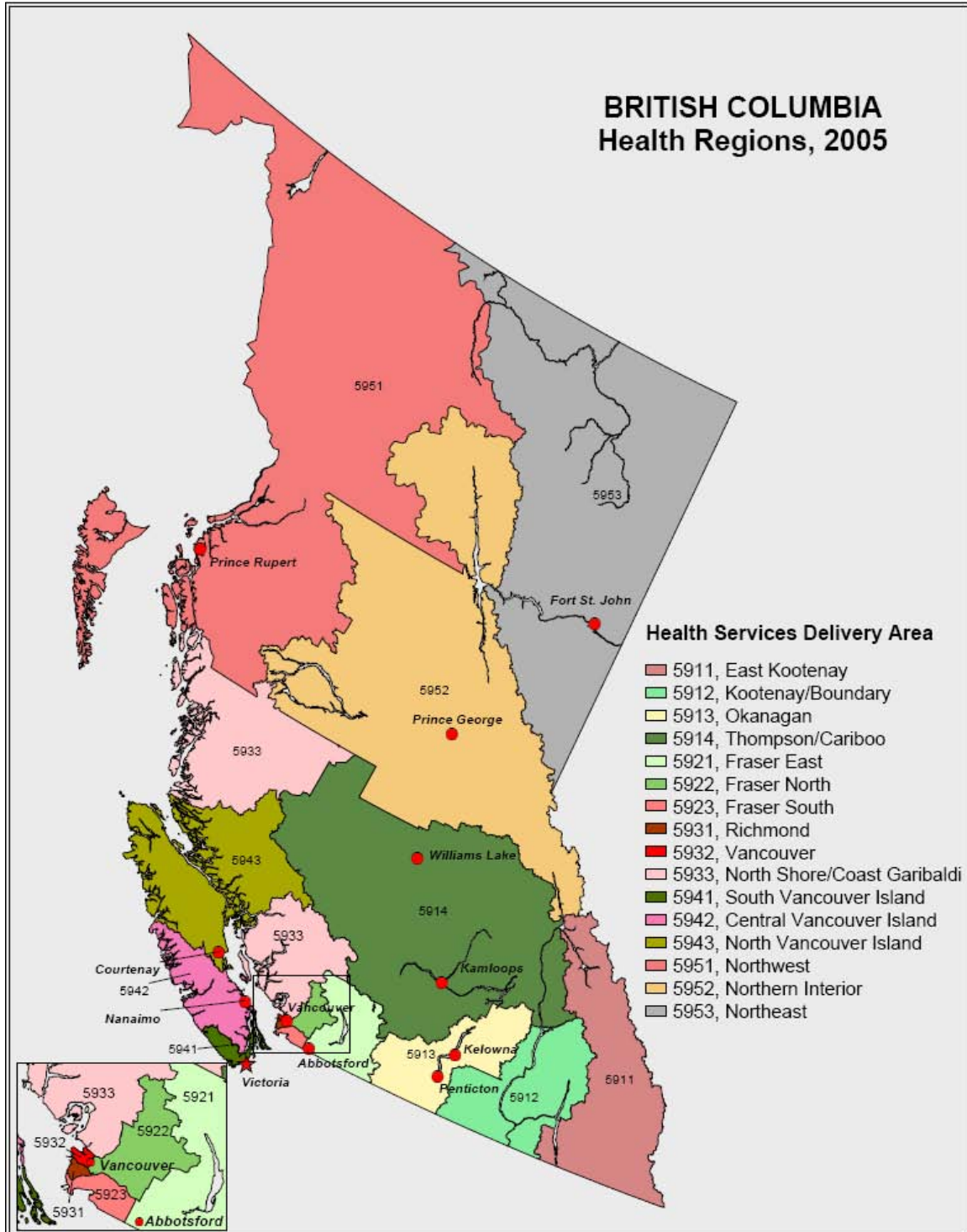
## Map 17 Regional Health Authorities – Alberta health regions, 2003



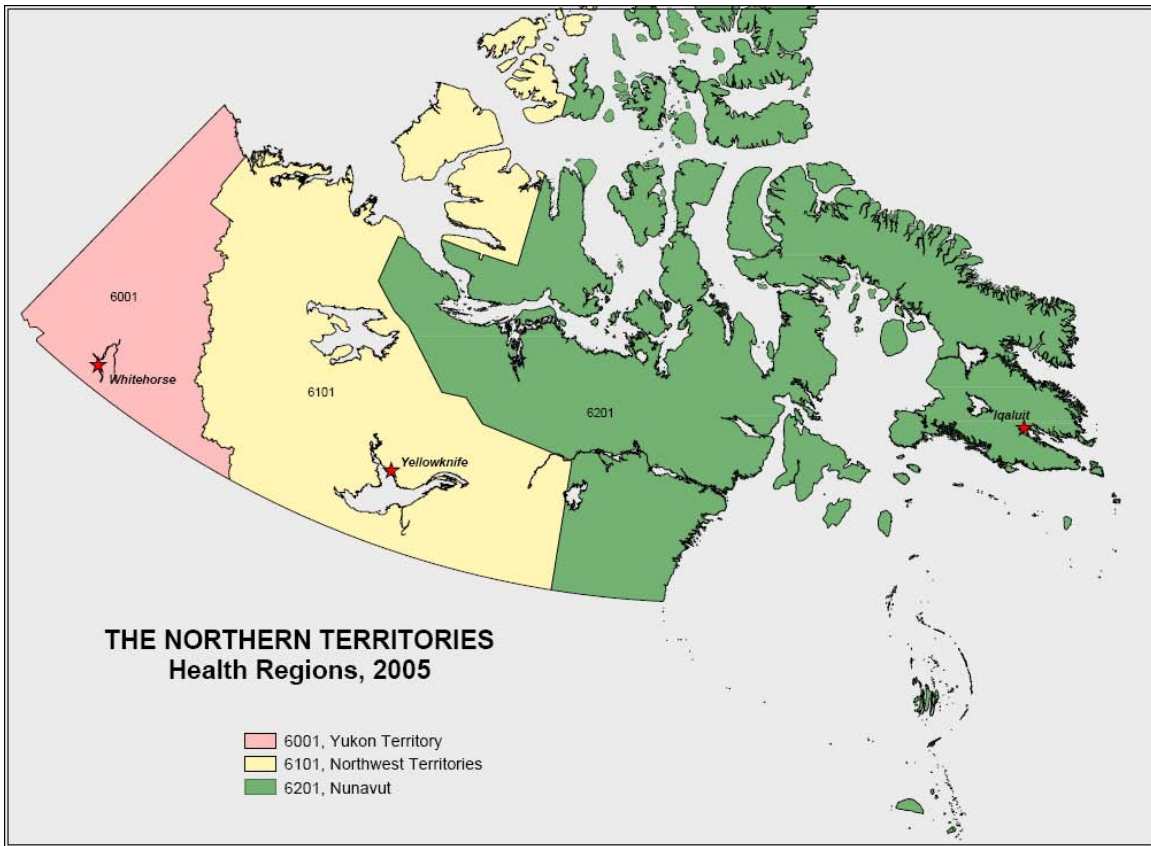
## Map 18 Regional Health Authorities – Alberta health regions, 2005



## Map 19 Health Service Delivery Areas – British Columbia health regions, 2005



## Map 20 The Northern Territories health regions, 2005



## Map 21 Health regions and peer groups in Canada, 2005

