Health Indicators 2011

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Institut canadien d'information sur la santé

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To help improve Canada's health system and the well-being of Canadians by being a leading source of unbiased, credible and comparable information that will enable health leaders to make better-informed decisions.

Bulletin

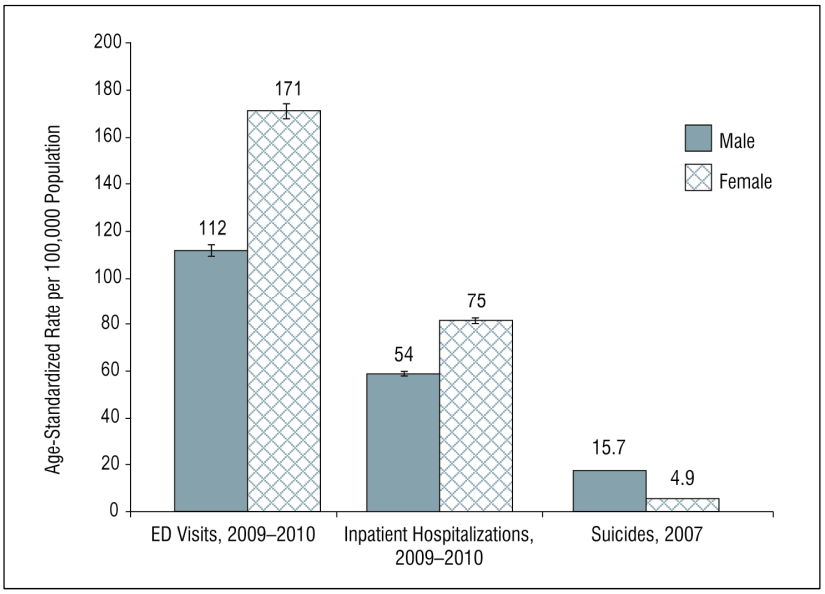
July 25, 2011

Correction—*Health Indicators 2011*

In *Health Indicators 2011*, Chapter 1: Self-Injury in Canada, there was an error in Figure 4: Outcomes Related to Self-Injury, by Sex (page 21).

The corrected figure is shown below:

Figure 4: Outcomes Related to Self-Injury, by Sex



Notes

I represents 95% confidence intervals.
ED Visits include Ontario, Alberta and the Yukon.

Sources

Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec; Statistics Canada, *Deaths and Mortality Rate, by Selected Grouped Causes, Age Group and Sex, Canada, Annual* (male rate, CANSIM Table 102-0551), last updated 2010, cited March 9, 2011, from <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&id=1020551&pattern=1020551&searchTypeByValue=1>, catalogue no. 84F0209X; Statistics Canada, *Deaths and Mortality Rate, by Selected Grouped Causes, Age Group and Sex, Canada, Annual* (female rate, CANSIM Table 102-0551), last updated 2010, cited March 9, 2011, from <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&id=1020551&pattern=1020551&searchTypeByValue=1>, catalogue no. 84F0209XI.

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Canadian Institute for Health Information

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It should be noted that the analyses and conclusions in this report do not necessarily reflect the opinions of the experts or their affiliated organizations.

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The health indicators project is a joint effort by CIHI and Statistics Canada that produces information on a broad range of health indicators. Statistics Canada contributed data and indicators on health status, non-medical determinants of health and community and health system characteristics for the *Heath Indicators 2011* report. Statistics Canada and CIHI also jointly produce the *Health Indicators* e-publication, which provides additional health indicator data. Special appreciation goes to **Brenda Wannell**, **Tim Johnston** and **Lawson Greenberg** at Statistics Canada for their contribution to this print report.

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Executive Summary

Health Indicators 2011, the 12th in a series of annual flagship reports, presents the most recent data from the Canadian Institute for Health Information (CIHI) and Statistics Canada on a broad range of measures. This report seeks to answer two fundamental questions: "How healthy are Canadians?" and "How healthy is the Canadian health system?"

The indicators were selected based on directions provided at three National Consensus Conferences on Health Indicators.[1–3] Each indicator falls into one of the five dimensions of the internationally recognized[4] Health Indicator Framework:

- **Health status—**provides insight into the health of Canadians, including well-being, human function and selected health conditions.
- **Non-medical determinants of health—**reflects factors outside of the health system that affect health.
- **Health system performance—**provides insight into the quality of health services, including accessibility, appropriateness, effectiveness and patient safety.
- **Community and health system characteristics—**provides useful contextual information, rather than direct measures of health status or quality of care.
- **Equity—**provides insight into health disparities.

In addition to presenting the latest indicator results, this year's report introduces three new indicators that are focused on **mental health**. In Canada, as in many countries, mental illnesses are among the 20 leading causes of disability[5] and are associated with death by suicide.[6–8] Seventy percent of mental illnesses develop at a young age, they often persist over time and they affect people of all cultures and socio-economic status.[8–11] They are also costly to the health system. In Canada, when taking into account costs associated with the reduction in health-related quality of life, loss of productivity in the workplace and direct costs of mental health services and supports, the economic impact of mental illnesses was estimated to be $52 billion in 2006 by the Institute of Health Economics.[12]

In 2001, the World Health Organization released a report calling attention to the global impact of mental disorders and gave several key policy recommendations, including the need to include mental health indicators in health information systems.[13] In Canada, large information gaps exist, and experts cited in the landmark *Out of the Shadows at Last* report contend that the mental health system is not sufficiently

integrated and that community mental health services should be further developed.[14] That report, as well as another published in 2006 by the Canadian Collaborative Mental Health Initiative, suggest that there remains substantial unmet need for services in the population.[14, 15] In 2009, the Third Consensus Conference on Health Indicators, hosted by Statistics Canada and CIHI, identified mental health as a priority for future indicator development.[3]

In response to these calls for information on mental health in Canada, CIHI developed **three new performance indicators** related to mental health services in Canada. Although these indicators are based on data from general hospitals, they are interpreted as being more closely related to outcomes associated with effective community-based care and supports in both treating persons age 15 and older who are living with mental illnesses and in reducing unnecessary or avoidable hospitalizations.[16–18] These indicators are

- Self-injury hospitalization rates, a partial measure of the extent to which community-based services are accessible and effective in minimizing self-injury;
- 30-day mental illness readmission rates, a proxy measure of coordination and continuity of services; and
- Repeat hospitalizations for mental illness, a proxy measure for aspects of appropriateness of services.

While we recognize that these new indicators do not provide a complete picture of the performance of the mental health system in Canada, they provide an initial glimpse of the patterns of mental health service use and of the performance of the mental health system. They shine a light on the services provided to individuals living with mental illnesses and poor mental health across the country.

Highlights From In Focus—Snapshot of the Performance of the Mental Health System

Self-Injury in Canada

- In 2009–2010, approximately 17,482 overnight hospitalizations occurred as a result of self-injuries among Canadians age 15 and older. About 7 out of 10 hospitalizations for self-injury also included a mental health–related diagnosis.[i]

i. Substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood/affective disorders; anxiety disorders; and selected disorders of adult personality and behaviour coded in any diagnosis position.

- Based on the most recent data from general hospitals, emergency departments (EDs) and vital statistics, a conservative estimate of the self-injury rate in Canada would be 140 per 100,000 population.
- Neighbourhood income is a strong predictor of self-injury. In 2009–2010, the rate of hospitalization for self-injury in the least affluent neighbourhoods was twice that of the most affluent neighbourhoods.
- Some of the most striking differences in the rates of ED visits, hospitalizations and mortality following a self-injury are those observed by sex. Females are far more likely to have ED visits and inpatient hospitalizations as a result of self-injury, and males are far more likely than females to die by suicide.
- In 2009–2010, the most frequent method of self-injury that resulted in hospitalizations or ED visits was poisoning. In contrast, the most frequent method of death by suicide was hanging, strangulation or suffocation.
- Decreased rates of self-injury over time are encouraging. At-risk populations include Canadians living in the territories, persons living with mental illnesses, persons living in less affluent neighbourhoods, young females and adults (mostly males) in their 40s.

30-Day Readmission Rates

- In 2009–2010, there were 12,618 30-day readmissions for selected mental illnesses[ii] in Canada; the 30-day readmission rate was 11.4%.
- Risk-adjusted readmission rates varied across provinces, from a low of 9.6% in Manitoba to a high of 12.9% in British Columbia.
- Readmission rates also varied by type of mental illness. Risk-adjusted rates were statistically highest for schizophrenia (13.2%) and personality disorders (13.1%) and lowest for substance-related disorders (10.1%) and anxiety disorders (8.9%).
- A variety of both individual (for example, age, discharge against medical advice) and system-level (for example, shorter length of stay) characteristics were associated with higher rates of readmission.
- Of the 12,618 30-day readmissions, 41% occurred within 7 days and 64% within 14 days.
- In Ontario, Alberta and the Yukon (where comprehensive ED data is available), in at least 7 out of 10 readmissions, the individuals had visited an ED prior to readmission, and more than one-quarter of 30-day readmissions were preceded by two or more ED visits.

ii. Most responsible diagnosis of substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood/affective disorders; anxiety disorders; or selected disorders of adult personality and behaviour.

Repeat Hospitalizations

- In Canada, just more than 10,000 individuals hospitalized in general hospitals in 2008–2009 with selected mental illnesses had repeat hospitalizations within one year. This represents 11% of all people hospitalized for mental illness in 2008–2009.
- Across the country, risk-adjusted percentages ranged from 10.2% in Quebec to 16.3% in the Northwest Territories. Three jurisdictions had percentages of repeat hospitalizations that were significantly higher than the overall percentage (Newfoundland and Labrador, British Columbia and the Northwest Territories) and three had percentages that were significantly lower (Quebec, Ontario and Alberta).
- Among individuals with repeat hospitalizations, schizophrenia and mood disorder were the most commonly recorded most responsible diagnoses for the first hospitalization, at 33% and 34%, respectively.
- Patients with schizophrenia as the most responsible diagnosis during their first hospitalization had the highest risk-adjusted percentage of repeat hospitalizations (15.4%) and patients with anxiety had the lowest (6.4%).
- There were 38,136 hospitalizations among individuals who were hospitalized at least three times with mental illness as the most responsible diagnosis over one year. This represented 28% of all hospitalizations for selected mental illnesses and just more than 591,600 days in the hospital, or 27% of the total number of patient days for these selected mental illnesses during the one-year follow-up period.

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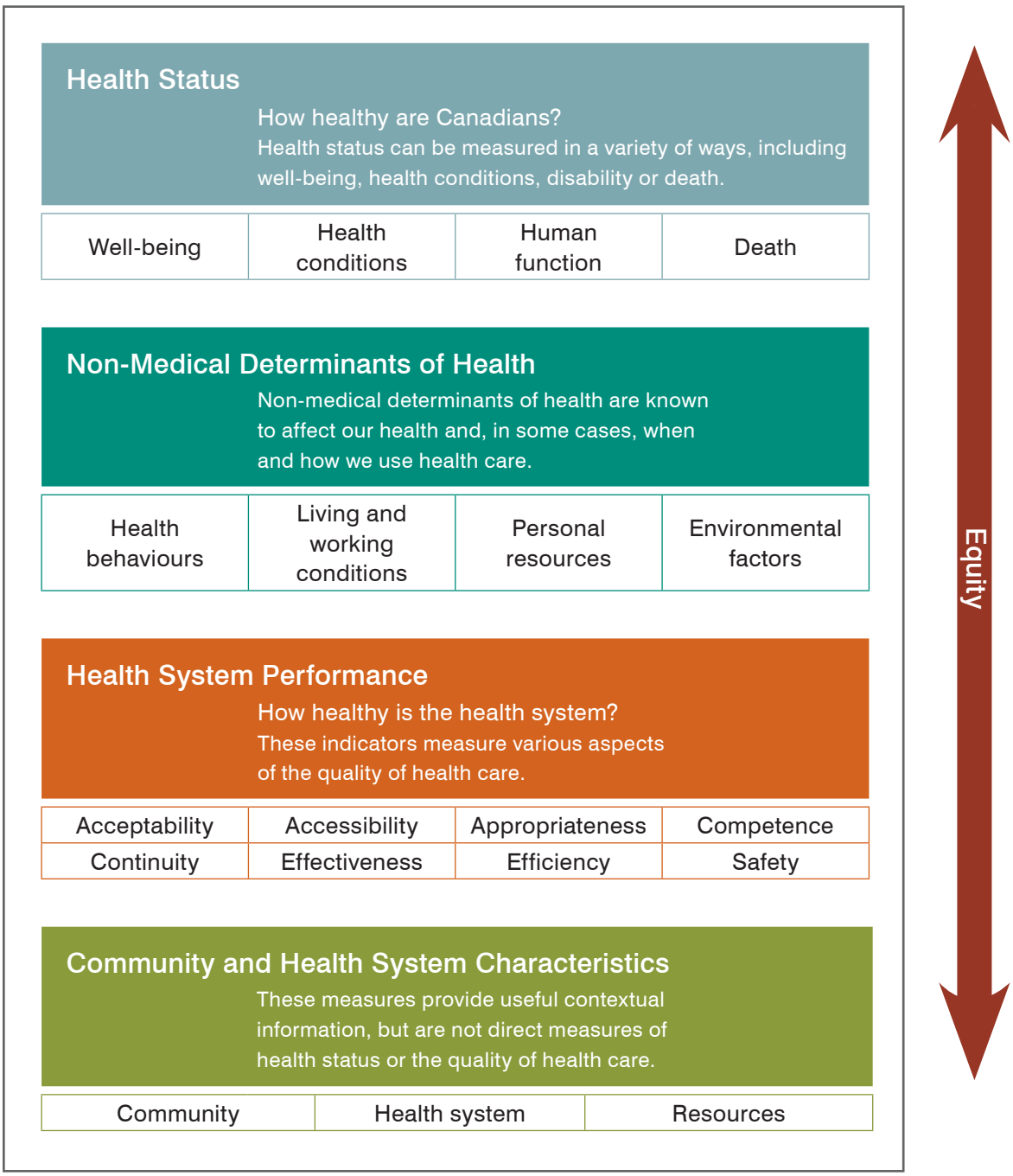
Health Indicator Framework



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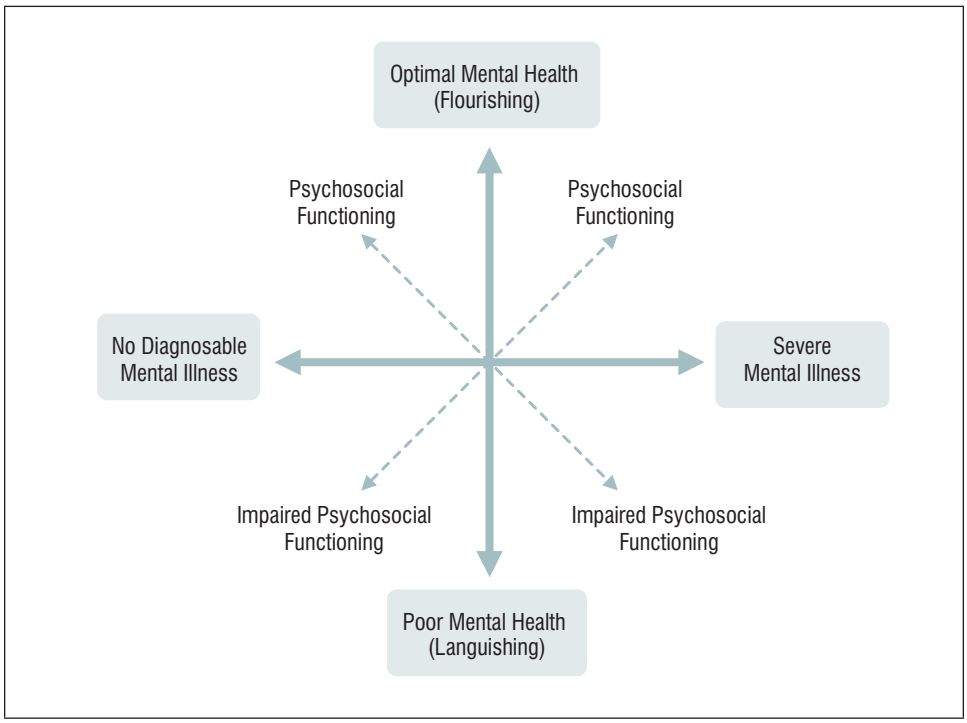
In Focus: Snapshot of the Performance of the Mental Health System

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[1]
—*World Health Organization*

Just as health involves more than the absence of a physical illness, mental health is not merely the absence of a mental illness.[2] Instead, mental health and mental illness constitute two distinct but related continua (see Figure 1). This means that people with and without mental illness can have varying degrees of mental health. Ultimately, mental health refers to an individual's capacity to maintain a positive sense of emotional well-being and psychosocial functioning, regardless of whether or not he or she has a mental illness.[3, 4]

Figure 1: Dual Continua Model of Mental Health and Mental Illness



Sources
Adapted from C. L. M. Keyes,[5] J. Parkinson,[6] Public Health Agency of Canada[7] and V. Kovess-Masfety.[8]

Poor mental health is a departure from a state of psychological well-being. Mental illness, on the other hand, refers to clinically recognized mental disorders.[3] Mental illnesses can be episodic or chronic,[3] and both mental illness and poor mental health can have complex origins in the interaction of social, economic, biological and genetic factors and life events.[3, 9] Poor mental health in the presence of mental illness may lead to alterations in behaviour, thinking or mood that are associated with psychological distress and impaired psychosocial functioning in one or more aspects of life, such as school, work, social and family interactions, or the ability to live independently.[3, 5, 9]

Most adult mental illnesses can be grouped into one of the following five categories:[10]

- Mood disorders, which affect how one feels (such as depression);
- Delusional disorders, which affect how one perceives the world (such as schizophrenia);
- Anxiety disorders, which affect how fearfully one perceives places, events and situations (such as social phobia);
- Personality disorders, which affect how one sees oneself in relation to others (such as anti-social personality disorder); and
- Substance-related disorders, which refer to psychoactive substance abuse and dependence (such as alcohol-related disorders). [11]

Social Impact of Mental Illnesses

In Canada and many other countries, mental illnesses have a significant impact on society because they are very prevalent; develop at a young age (70% of mental illnesses begin early in childhood and adolescence); often persist over time; and affect people of all ages, cultures and socio-economic status.[3, 9, 12, 13] In Canada, 10% of adults surveyed reported symptoms consistent with a mood, anxiety or substance-related disorder in a one-year period.[3] Worldwide, estimates for these disorders range from 15% to 25%.[14] Estimates of personality disorders in the United States range from 6% to 9%.[15] Lifetime prevalence estimates of these disorders are even more telling. Some suggest that by their early 30s, more than 40% of the adult population has experienced symptoms

consistent with an anxiety disorder (50%) or depression (41%) and just more than 30% report alcohol dependence (32%), though not all may be affected to a degree that requires intervention.[16] Schizophrenia is estimated to affect 0.6% of Canadians at some point in their lives.[17] Given that vulnerable populations such as the homeless, Aboriginals, inmates[18] and those in residential care[19] may not be included in general population surveys, these estimates likely underestimate the true prevalence of mental illnesses.

Worldwide, mental illnesses are among the 20 leading causes of disability[20] and have been associated with suicide.[3, 15, 21] Just more than 31% of years lived with disability have been attributed to mental illnesses. The four major contributors are unipolar depression, alcohol-use disorder, schizophrenia and bipolar disorder.[22] These illnesses are also considered to be risk factors for physical conditions, such as cardiovascular diseases.[23, 24] Depression, on the other hand, often accompanies chronic illnesses such as heart disease, stroke, diabetes, cancer and HIV/AIDS.[3]

The socio-economic impact of mental illnesses is considerable.[3, 25] For example, a number of socio-economic measures of disadvantage, including low income, low education and unemployment, have been associated with increased prevalence of mental illnesses.[12, 13] In Canada, when taking into account costs associated with reduced health-related quality of life, lost productivity in the workplace and the direct costs of mental health services, the economic impact of mental illnesses was estimated to be $52 billion in 2006 by the Institute of Health Economics.[26] Much less is known about the socio-economic impact of suboptimal mental health.

Mental Health Expenditures in Canada

Public expenditures for mental health services in Canada were estimated at $14.3 billion, or $543 per capita, in 2007–2008. This represented 7.2% of total government health expenditures.[25]

Table 1: Estimated Costs Related to Mental Health, by Service Category, 2007–2008

Service Category*	Billions of Dollars
Income Support and Disability	3.7
Pharmaceuticals—Public and Private	2.8
Community Mental Health and Addiction Services	2.1
Inpatients—General Hospitals	1.7
Physicians—General Practitioners and Specialists	1.4
Inpatients—Psychiatric Hospitals	1.0
Emergency Room Visits†	0.07
Other Services (e.g. Employment and Housing Support)	1.5

Notes

* Estimates are based on best available data for 2007–2008 and may underestimate total costs where data was not comprehensively available. Cost estimates are not standardized for population or adjusted for unreported data. All costs estimates exclude the territories. Public expenditures for mental health services are difficult to estimate given the diffuse and variable organization of mental health systems across Canadian provinces. Moreover, publicly funded service expenditures represent a large fraction of, but not all, costs of mental health services in Canada.[25]

† Data available for Ontario and Alberta only.

Source

Adapted from Institute of Health Economics, *The Cost of Mental Health and Substance Abuse Services in Canada* (Edmonton, Alta.: IHE, 2010).

The Mental Health System in Canada

Over the past half-century, health policies in most developed countries have encouraged a transition from a hospital-based model to a more community-based one, and many psychiatric facilities have been downsized or closed altogether.[27–29] This in part reflects the desire to decrease the cost of inpatient care and to provide people with more appropriate and client-centred services.[3, 18] Today, the mental health system consists of a variety of health and social services, all designed to

- Promote the mental health and well-being of the entire population;
- Prevent mental illnesses;
- Improve early recognition and diagnosis of mental illnesses;
- Treat acute episodes of mental illnesses; and
- Contribute to the recovery of individuals with mental illnesses and support their integration in the community.[9, 30]

How these services are combined and delivered varies across the country.[30]

The Kirby Report

The first national review of mental health, mental illness and addiction services in Canada was undertaken in 2003, under the leadership of Senator Michael Kirby.[18] From this review came the landmark report *Out of the Shadows at Last—Transforming Mental Health, Mental Illness and Addiction Services in Canada*. This report underscored the need for a coordinated approach to mental health services across Canada. In 2007, the Mental Health Commission of Canada (MHCC) was established to "promote mental health in Canada, and work with stakeholders to change the attitudes of Canadians toward mental health problems and to improve services and support." One of the MHCC's core initiatives[iii] is to build stakeholder consensus on a mental health strategy for Canada, for which a framework was developed in 2009. The framework has seven linked goals:[9]

1. People of all ages living with mental health problems and illnesses are actively engaged and supported in their journey of recovery and well-being.
2. Mental health is promoted and mental health problems and illnesses are prevented wherever possible.
3. The mental health system responds to the diverse needs of all people living in Canada.
4. The role of families in promoting well-being and providing care is recognized and their needs are supported.
5. People have equitable and timely access to appropriate and effective programs, treatments, services and supports that are seamlessly integrated around their needs.
6. Actions are informed by the best evidence based on multiple sources of knowledge, outcomes are measured and research is advanced.
7. People living with mental health problems and illnesses are fully included as valued members of society.

iii. Other initiatives of the MHCC are described on page 55.

Mental health care takes place in a variety of settings throughout the health care system:

- Primary care physician offices are usually the first point of contact, and most presentations for mental health concerns occur in this setting. From there, some individuals are referred to specialist secondary (psychiatrists) and tertiary care services.
- General hospitals provide ambulatory and acute care, including inpatient, outpatient, day treatment, emergency and consultation services.
- Psychiatric hospitals serve intermediate and long-term treatment needs of individuals living with more serious mental illnesses. Their role is mainly to provide tertiary care (such as specialized treatment and rehabilitation) and to serve those individuals who require supports and treatment interventions above and beyond those available in the community.
- Forensic hospitals provide services to individuals who have been deemed unfit to stand trial, those who have been ordered by the courts to have a psychiatric assessment and inmates who require hospitalization for a mental illness (that is, on temporary medical leave).
- Crisis/emergency services are provided, such as distress lines and mobile crisis teams.
- Other community care centres exist, such as publicly funded community mental health clinics and substance abuse treatment centres, and not-for-profit or private-sector counselling and treatment centres. [28]

Additional services that provide social support and aim to contribute to better mental health may include

- Multidisciplinary team treatment approaches, such as assertive community treatment;[28, 31]
- Community supports, such as shelter-based interventions;[32]
- Consultation and family education;[28]
- Supportive housing;[33]
- Supported employment;[34]
- Web-based programs;[35] and
- Educational/vocational programs.[36]

In the *Out of the Shadows at Last* report, experts contend that the mental health system is not sufficiently integrated and that community mental health services should be further developed.[18] That report, as well as another published in 2006 by the Canadian Collaborative Mental Health Initiative, suggest that there remains substantial unmet need for services in the population.[18, 37]

In 2001, the World Health Organization released a report calling for attention to be paid to the global impact of mental disorders and gave several key policy recommendations, including the need to support more research and to include mental health indicators in health information systems.[38] In 2009, the third Consensus Conference on Health Indicators, hosted by Statistics Canada and CIHI, identified mental health as a priority for future indicator development.[39]

In response to these calls for information on mental health in Canada, CIHI developed new performance indicators designed to inform planning, management and evaluation of the mental health system.

Measuring the Performance of the Mental Health System: Perspective From General Hospitals

There are unique challenges when considering mental health system performance measurement. Ideally, data from each of the above-listed services would be collected and combined to better understand the performance of the system in meeting the needs of individuals whose care and support crosses service settings. At this time, that data is not readily available at the national level. However, comprehensive data on the care that general hospitals provide to individuals hospitalized for mental illnesses, who are also most likely to have poor mental health, is available.

Pan-Canadian hospitalization data from general hospitals is routinely collected, and this data can provide insights on the performance of mental health services in Canada. Such insights include the extent to which community-based services are sufficient to minimize the number of hospitalizations required. Indeed, indicators based on this pan-Canadian data can provide a subset of health-related outcomes, given that a range of evidence-based care options in the community has been reported to be effective in both treating persons with mental illnesses and in reducing unnecessary or avoidable hospitalizations (such as readmissions). In addition, better chances of recovery and social (re)integration have been reported as successful outcomes of community treatment.[31, 40–42]

This report introduces three new performance indicators based on general hospital data that are focused on providing information about the performance of the mental health system for people age 15 and older living with mental illnesses and/or poor mental health. These indicators are self-injury hospitalization rates, 30-day mental illness readmissions and repeat hospitalizations for mental illnesses.

These new indicators reflect the relevant interactions that people living with mental illnesses and/or poor mental health have with general hospitals and may reflect aspects of performance of the health system outside the immediate hospital walls.

For example, **self-injury** is strongly associated with mental illnesses and/or poor mental health. A previous self-injury is the most important risk factor for suicide. Detecting and treating mental illnesses could prevent self-injury from beginning or continuing. By monitoring self-injury hospitalization rates, we may gain some insight into the effectiveness of the mental health system in reducing these types of injuries.

30-day readmission rates partially reflect coordination and continuity of services in the mental health system. Coordination and continuity of services are crucial to ensuring the optimal transition of individuals living with mental illness from the hospital to the community to prevent relapses and subsequent readmissions. If services are not coordinated and there is a lack of follow-up care and support after discharge, a readmission to hospital may be one result.

Finally, **repeat hospitalization rates** are a way to potentially understand the extent to which individuals are able to use and have access to appropriate community-based services. While repeat hospitalizations may occur for a variety of reasons, they sometimes reflect an inability or lack of availability of other non–hospital based services that might be used to reduce or prevent another hospitalization.

In-depth analyses of these three indicators and complementary information are presented in the following chapters. Contextual information about general hospitals, including rates of hospitalizations and patient days for mental illnesses, can be found in the appendix. Results for all indicators are provided at the pan-Canadian, provincial, territorial and regional levels in the section Region by Region. In this section, additional measures related to mental health are also reported (for example, rates per population of psychiatrists, psychologists and social workers).

While we recognize that these new indicators do not provide a complete picture of the mental health system in Canada or the mental health of adult Canadians, they provide an initial glimpse of the patterns of mental health service use and begin to shine a light on the services provided to adults living with mental illnesses and/or poor mental health across the country.

Chapter 1
Self-Injury in Canada

Self-injury is defined as a deliberate bodily injury that may or may not result in death.[43] This type of injury is the result of either suicidal or self-harming behaviours, or both. A previous self-injury, however, is the most important risk factor for completed suicide.[44–47] Half of those who die from suicide have a history of self-injury, and the risk of suicide among those who injure themselves is 100 times higher than for the general population.[48]

Suicidal and self-harming behaviours are complex, but they are thought to be largely preventable. Factors that predispose an individual to these behaviours include[3, 21, 49]

- A history of mental illness and/or poor mental health (such as hopelessness);
- A stressful life event or environment characterized by abuse and/or loss;
- Family or friends' histories of suicides or self-harming; and
- Difficulty with interpersonal relationships (such as social isolation).

Many self-injuries do not result in a hospitalization. For example, self-injuring individuals may not seek care or, if they do, they may go to an emergency department (ED) but may not be admitted to the hospital. Self-injury may also result in death before care can be sought. Hospital admission would most likely be required if there was a need for medical attention following a self-injury, for indications of acute psychosis or in the absence of suitable community-based supports to assist these individuals.[49, 50] For these and possibly other reasons, general hospital use captures only a portion of self-injuries.

Despite these limitations, the rate of hospitalizations for self-injury in a general hospital may represent a partial indicator of the extent to which community-based services are accessible and effective in minimizing self-injury.

In this chapter, we explore variations in self-injury rates by jurisdiction and by individual characteristics to better inform the design and targeting of intervention strategies. Although the hospitalization rate is the main indicator analyzed, complementary information is provided, including analyses of self-injury rates in the ED and suicide mortality rates.

Methodology

The primary measure of self-injury analyzed in this report is the rate of hospitalization in a general hospital. This rate is calculated as the total number of hospitalizations for self-injury among general hospital patients age 15 and older divided by the population age 15 and older. Self-injury hospitalizations have a diagnosis code of external cause of self-injury. Rates are expressed per 100,000 population and are either age-standardized to the 1991 Canadian population using the direct method of standardization or are presented by age group. Five-year age groups (starting with 15 to 19 and ending with an upper category of 90+) are used for standardization and age-specific presentation. Using the same methodology, rates of ED visits for self-injury were calculated for Ontario, Alberta and the Yukon (ED data is not available from other provinces and territories). Measures of self-injury that resulted in death are based on vital statistics data (suicide mortality) maintained at Statistics Canada and include rates per 100,000 for all ages combined, age-standardized to the 2001 Canadian population and age-specific rates.[51]

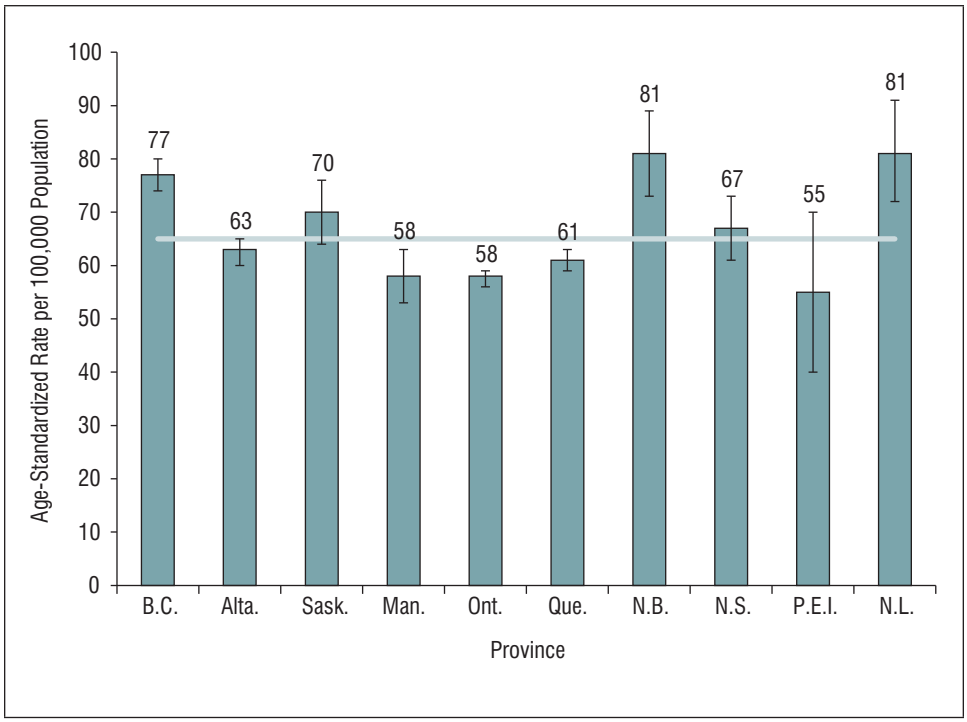
For more information on the methodology, please refer to the *Health Indicators Technical Notes* available at www.cihi.ca.

An Overview of Self-Injury in Canada

In 2009–2010, approximately 17,482 overnight hospitalizations—the equivalent of 135,333 hospital days—occurred as a result of self-injuries among Canadians age 15 and older. This represents 65 hospitalizations for every 100,000 Canadians age 15 and older. A portion of these patients was hospitalized multiple times over the course of six months. For example, 6% of these patients had two hospitalizations, and 1% had three or more hospitalizations within the same year. Very few hospitalizations (2%) for self-injury resulted in death during hospitalization.

There were marked variations in the rates of hospitalization for self-injury across Canada. Rates ranged from 58 per 100,000 in Ontario and Manitoba to 81 per 100,000 in both New Brunswick and Newfoundland and Labrador. Rates were significantly higher in the territories when compared with the national average ($p<0.05$), ranging from 192 hospitalizations per 100,000 in the Yukon to 379 per 100,000 in Nunavut.

Figure 2: Age-Standardized Self-Injury Hospitalization Rate, by Province, Canada, 2009–2010



Note

I represents 95% confidence intervals.

— represents Canada rate.

Sources

Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

EDs are major centres of care for self-injuries and are often the first place self-injury patients go to receive care. Based on data from Ontario, Alberta and the Yukon, there are two to three ED visits for every hospitalization for self-injury. In 2009–2010, the ED visit rate for self-injury was 124 per 100,000 population age 15 and older in Ontario, 191 per 100,000 in Alberta and 626 per 100,000 in the Yukon. Some of these individuals return to the ED several times. In Ontario, 2% of

ED patients with a self-injury had three or more visits in six months in 2009–2010, compared with 8% in both Alberta and the Yukon. Very few ED visits (less than 1% in Ontario, Alberta and the Yukon) for self-injury resulted in death during the visit.

In 2007, the rate of self-injury that resulted in death (suicide mortality) for both sexes and all ages was 10.2 per 100,000. By province, rates for both sexes and all ages ranged from 8 per 100,000 in Ontario to 13 per 100,000 in Quebec. Among the territories, rates ranged from 7.1 per 100,000 in the Yukon to 55.8 per 100,000 in Nunavut.[51]

Are We Underestimating the Self-Injuring Population?

ED rates for Ontario, Alberta and the Yukon suggest that hospitalization rates underestimate the rate of self-injury in the general population by at least 50%. In addition, very few hospitalizations and ED visits for self-injury resulted in in-hospital death (2% for inpatients, less than 1% in the ED), which suggests that the vast majority of self-injuries that result in death are not captured in hospital data. Considering the most recent estimates of self-injury rates from hospitalizations, ED data and vital statistics, a rough approximation (probably still underestimated) of the self-injury rate in Canada would be approximately 140 per 100,000 population.

This conservative estimate does not include variations across jurisdictions in the proportion of overlap between those who visit the ED and those who are hospitalized. Differences in service delivery and availability may lead to variation in the proportion of people admitted through the ED.

Reporting self-injury might also be underestimated because of the manner in which intent is captured in the data sources available: there may be uncertainty when differentiating between unintentional and intentional motives. Also, stigma associated with self-injury might cause bias in the reporting.

Self-Injury and Mental Illness

In Canada in 2009–2010, about 7 in 10 hospitalizations for self-injury also included a mental illness[iv] diagnosis on the hospital record. For these diagnoses

- Mood disorders were identified in 23% of hospitalizations for self-injury;
- Substance-related disorders were recorded for 12%;
- Anxiety disorders were indicated for 11%;
- Selected disorders of adult personality and behaviour were recorded in 6%;
- Schizophrenia was present in 3%; and
- Multiple mental health–related diagnoses were present in 14%.

There are many reasons why the remaining 31% of hospitalizations did not include a diagnosis code for mental illness. Some of these reasons may include under-reporting due to concerns of stigma or an inability to be certain about differentiating between unintentional and intentional motivations (see sidebar on previous page).

Mechanisms of Self-Injury

In Canada, the most frequent method of self-injury that resulted in hospitalization was poisoning. This includes overdosing on any prescription or non-prescription drug and ingesting chemicals or otherwise potentially toxic substances. In 2009–2010, poisoning was involved in 85% of all self-injury hospitalizations, and prescription and non-prescription medications were used in more than 90% of poisonings. The next most frequent mechanisms of self-injury that resulted in hospitalization were cutting or piercing (10%) and suffocation (2%). The remaining mechanisms were a variety of other causes.

The majority of visits to the ED were also for poisoning; however, compared with hospitalizations, the percentage was somewhat lower (more than 70% of ED visits for self-injury patients in both Ontario and Alberta and 53% in the Yukon). More visits were recorded for cutting and piercing (more than 20% in both Ontario and Alberta and 46% in the Yukon).

In contrast, poisoning was not the major cause of death by suicide in 2007. Instead, the most frequent method of death by suicide was hanging, strangulation or suffocation (43%). Poisoning accounted for 27% and discharge of firearms accounted for 15%.[52]

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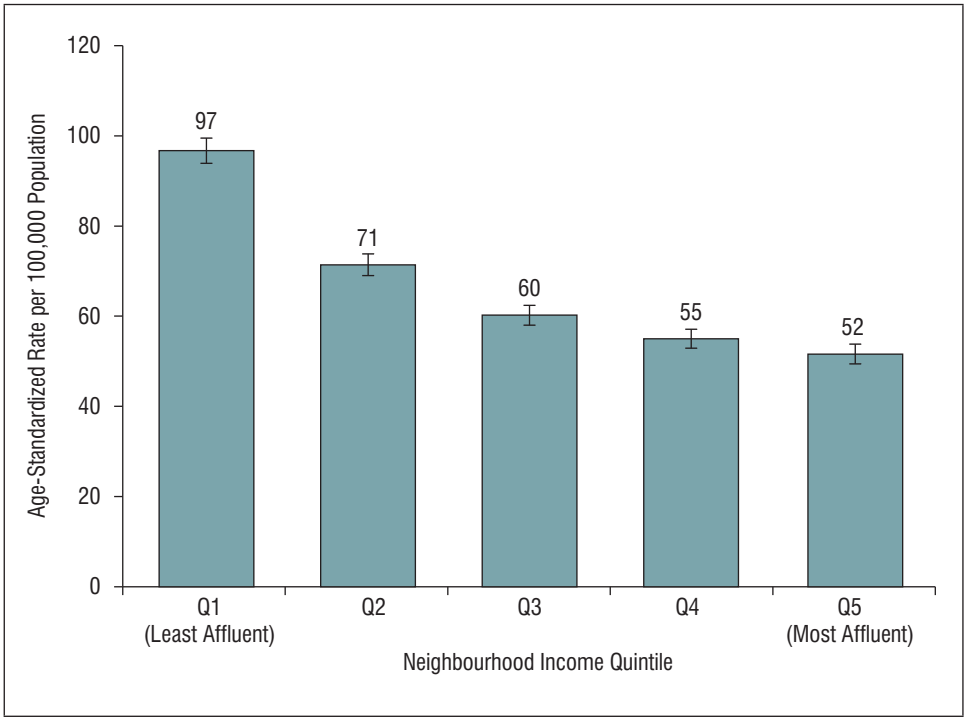
iv. Substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood/affective disorders; anxiety disorders; and selected disorders of adult personality and behaviour coded in any diagnosis position.

Socio-Economic Status Related to Self-Injury

Neighbourhood income is also a strong predictor of rates of self-injury. In 2009–2010, most provinces and territories showed a significant difference in the rates between the most and least affluent neighbourhoods. During this period, the rate of hospitalization for self-injury in the least affluent neighbourhoods was twice as high as the rate in the most affluent neighbourhoods ($p<0.05$). If all neighbourhoods in Canada (as defined by income quintiles) achieved the hospitalization rate associated with the most affluent neighbourhoods, the rate of hospitalization for self-injury would be 20% lower. This would result in approximately 4,100 fewer hospitalizations and 44,300 fewer hospital days.

ED visits also varied by neighbourhood income, with the same twofold difference seen in the rate of ED visits for self-injury between the least and most affluent neighbourhoods in Ontario and Alberta, and with an almost eightfold difference in the Yukon ($p<0.05$).

Figure 3: Age-Standardized Self-Injury Hospitalization Rate, by Neighbourhood Income Quintile, Canada, 2009–2010



Note

I represents 95% confidence intervals.

Sources

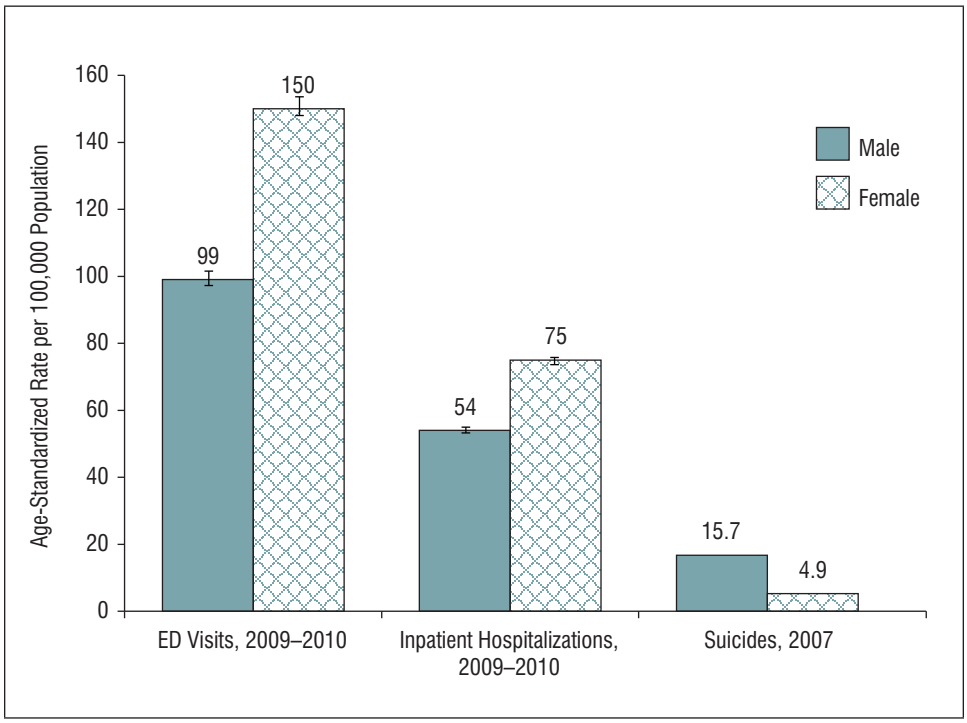
Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

The Sex Gap

Some of the most striking differences in hospitalizations, ED visits and suicide mortality rates are those observed by sex. These differences are observed in most Canadian jurisdictions. Females are far more likely to have inpatient hospitalizations and ED visits as a result of self-injury, and males are far more likely to die from their self-injury.

In 2009–2010, 58% of self-injury hospitalizations were for females, and the rate of hospitalization was 1.4 times higher for females than for males (75 per 100,000 for females, 54 per 100,000 for males) ($p<0.05$). Similar differences were observed across Canadian jurisdictions. For ED visits, similar female-to-male ratios were found, with visits being 1.6 times higher for females than for males in Ontario, Alberta and the Yukon ($p<0.05$). However, suicide mortality rates showed the opposite trend. In Canada, the 2007 rate of deaths due to suicide for all ages was more than three times higher for males, at 15.7 per 100,000, than for females, at 4.9 per 100,000.[53, 54]

Figure 4: Outcomes Related to Self-Injury, by Sex



Notes

I represents 95% confidence intervals.
ED Visits include Ontario, Alberta and the Yukon.

Sources

Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec; Statistics Canada.[53, 54]

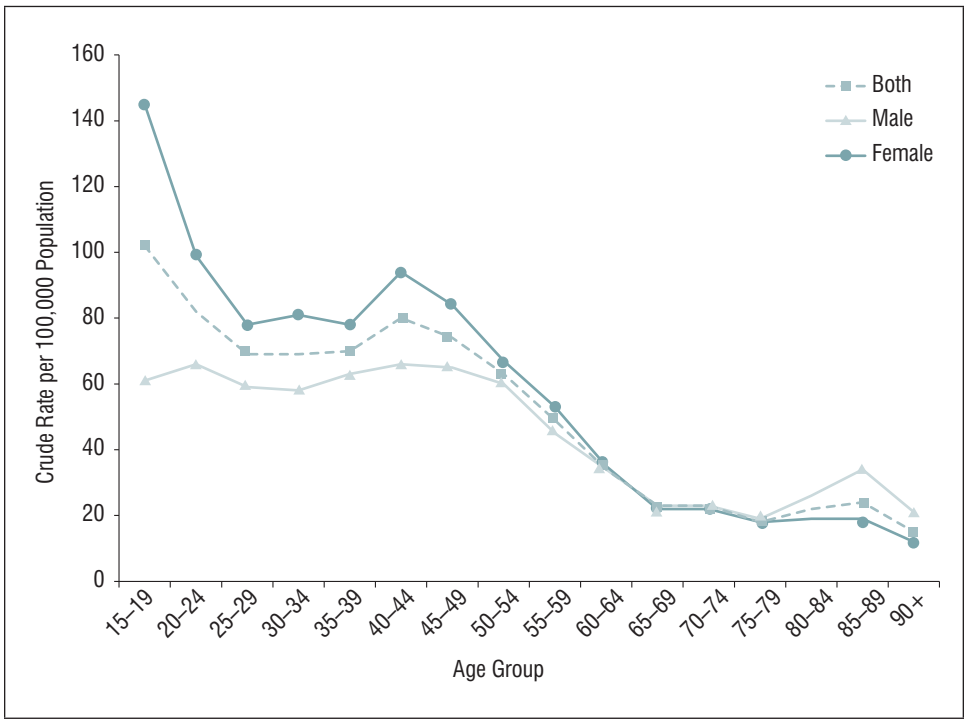
Sex and Age

When age and sex were analyzed together, rates of self-injury varied substantially.

For females, hospitalization rates for self-injury were the highest for those age 15 to 19 and more than twice the rate for males of the same age. This changed in the second decade; rates were relatively stable for females through their late 20s and early 30s. The rates rose again for women between the ages of 35 and 49, after which they continued to decline steadily. For males, hospitalization rates were stable between ages 15 and 50. They decreased after age 50, although a small peak was observed around age 85.

Visits to the ED by self-injury patients mirrored the patterns of hospitalization rates. In the Yukon, 1 in 71 females age 15 to 19 had an ED visit for self-injury, compared with 1 in 181 in Alberta and 1 in 258 in Ontario.

Figure 5: Self-Injury Hospitalization Rate, by Sex and Age Group, Canada, 2009–2010



Sources

Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Suicide rates peaked among adults age 45 to 49 for both sexes, with male rates reaching 27 per 100,000 in 2007 and female rates approaching 9 per 100,000. Among males, rates rose again for seniors age 75 and older, peaking at 24 per 100,000 for those age 85 to 89.[53, 54]

Self-Injuries Have Declined Over Time

Internationally, the rates of hospitalizations and ED visits for self-injury in Canada are slightly higher than those reported in the United States.[55, 56] Rates of suicide in Canada are comparable to rates in the U.S. but are higher than those in the U.K. Canada ranks 13th lowest among 28 countries in the Organisation for Economic Co-operation and Development (OECD) for suicide rate.[57] As reported by Statistics Canada, suicide is the 10th leading cause of death in Canada.[58] The number of lives lost to suicide is equivalent to one large aircraft crashing every month—about 300 people every 30 days.[59]

Despite being slightly higher than the U.S. rates, there is some indication that rates of hospitalization for self-injury have decreased in Canada over the last decade (by 16% according to some measures).[60] The rate of suicide in Canada has also decreased (by approximately 15%) since 1990;[57] more recent data indicates a 10% decrease for both sexes between 2000 and 2007.[51]

Decreasing rates of self-injury in Canada are encouraging. Lower rates are possible given our analyses by neighbourhood income, mechanism of injury and international comparisons. These analyses also point to at-risk populations, who include

- Canadians living in the territories;
- Persons living with mental illnesses;
- Persons living in less affluent neighbourhoods;
- Young females; and
- Adults (mostly males) in their 40s.

Many interventions exist to help reduce or prevent self-injury behaviours. Examples include education and awareness programs for the general public and primary care physicians, screening programs for individuals who have been identified as high risk, pharmacotherapy and psychotherapy in certain circumstances and follow-up care for persons who have previously self-harmed or attempted suicide. While it is difficult to evaluate the efficacy of specific strategies, some of the most promising interventions are those focusing on educating physicians about how to recognize and treat depression.[61] Depression is perhaps the most common form of mental illness in the community. Evidence shows that 25% of the severely depressed will attempt suicide, and 15% will die from suicide.[62]

Individuals who self-injure have high rates of health services utilization, including ED visits and hospitalizations. They also seek out services prior to the self-injury (such as visits to primary care physicians or hospitalizations for a mental illness).[63, 64] Half of those who die by suicide have a history of self-injury, and the risk of suicide among those who injure themselves is up to 100 times higher than that of the general population.[48] Each of these direct contacts with the health care system represents an important opportunity for screening and intervention. Since self-injury is strongly related to mental illness,[3, 15, 21] mental health assessment and treatment are appropriate for people with suicidal and self-harming behaviour.[65] These interventions may even prevent crises in many cases.[66–68]

As noted, in Canada, rates of self-injury vary by jurisdiction. This may be related to differences in mental health service delivery and prevention strategies, as well as to other underlying differences in the populations. Although strategies exist in several jurisdictions, and many have set percentage reduction targets for rates of self-injury, Canada is currently without a coordinated strategy to prevent self-injury. Such a strategy would likely include self-injury reduction targets as well as other types of targets that could be used to focus interventions necessary to improve the health and overall quality of life of those with mental health–related issues.

Chapter 2
30-Day Readmission Rate, an Indicator of Coordination and Continuity of Services

The aim of inpatient care in general hospitals for people with mental illnesses is to stabilize crises or acute symptoms, rather than provide long-term care. Once stabilized, individuals are discharged, and subsequent care and support are ideally provided through outpatient and community programs.[15, 27, 69] If individuals cannot find the services they need after discharge to cope with and potentially recover from their illnesses, relapses may occur that could lead to hospital readmissions.

The period of transition from hospital to community is one of high vulnerability for readmission and can be particularly challenging for some individuals. There is some evidence that post-discharge suicides tend to cluster in the first few weeks after discharge.[69, 70] If community-based services are not well-connected for individuals before and after hospital stays, they may be forced to form new trust and care relationships, which is not optimal for positive outcomes or health care system costs.[71–75]

Early readmissions may be a reflection of the functioning of mental health services rather than the quality of hospital care per se,[71, 72, 76] as readmissions are more likely to occur in conjunction with specific situations such as the following:[57]

1. **Suboptimal discharge planning:** If follow-up care and support have not been appropriately coordinated before discharge, individuals may be readmitted to hospital instead of accessing available services in the community. Service coordination is an attempt to ensure that all of an individual's needs post-discharge are coordinated with the assistance of a primary point of contact. This point of contact (such as a family physician in some cases) provides information to the individual and the individual's caregivers and works with the individual to make sure that he or she gets the most appropriate treatment and supports.
2. **Lack of continuity of services (such as follow-up visits) after discharge:**[72] The continuity of mental health services is the ability to provide uninterrupted coordinated care and support across programs, practitioners, organizations (including community-based ones) and levels of care over time. General hospitals need to be an integral part of the continuum of services.

The 30-day readmission rate was selected as a performance indicator because it may, among other things, give clues to the level of integration of general hospitals with other parts of the mental health system and, in turn, the functioning of mental health services in terms of providing coordinated care and support across the continuum.

In an ideal system, all individuals living with a mental illness would have access to comprehensive services provided when they needed them and where they needed them. While many people living with mental health issues spend the majority of their time in the community, some require periodic hospitalizations. Reducing the need for readmission by ensuring care and support are coordinated and provided following discharge is beneficial for individuals and caregivers and reduces costs.[75]

The purpose of this section is to describe 30-day readmission in general hospitals across Canada. Included in the analyses are some predictors of readmissions that may help us understand variations in readmission rates and ultimately help target improvements in the performance of the system that would enhance the mental health of Canadians living with a mental illness.

Methodology

For this report, mental illness readmissions are defined as inpatient hospitalizations[v] in a general hospital for any of five selected mental illnesses[vi] occurring within 30 days of discharge from a previous hospitalization (initial hospitalization) in a general hospital for any one of the five selected mental illnesses. Both planned and unplanned readmissions are included.[vii]

A 30-day time frame was chosen in lieu of a longer time frame to increase the probability that the readmission would be related to the previous hospitalization. This is consistent with readmission indicators reported elsewhere.[77] Readmission rates are interpreted as the proportion of hospitalizations for mental illness that are readmitted to hospital within 30 days of the previous hospitalization.

To facilitate provincial and regional comparisons, 30-day readmission rates were risk-adjusted to take into account factors identified in the literature and available in the data sources as potential predictors of readmission. These factors, identified on initial hospitalization, include age, sex, type of mental illness (most responsible diagnosis), discharge against medical advice (yes/no) and multiple hospitalizations for selected mental illnesses (two and more) within the past 12 months. Risk adjustment for these factors was carried out using logistic regression analysis. Where risk-adjusted rates are presented by one of the risk factors (such as risk-adjusted rates by age group), rates were adjusted for all remaining risk factors.

For more information on the methodology, please refer to the *Health Indicators Technical Notes* available at www.cihi.ca.

v. Hospitalizations are episodes of care, which include the first hospitalization to a general hospital and all consecutive transfers to other general hospitals.

vi. Most responsible diagnosis of substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood/affective disorders; anxiety disorders; or selected disorders of adult personality and behaviour.

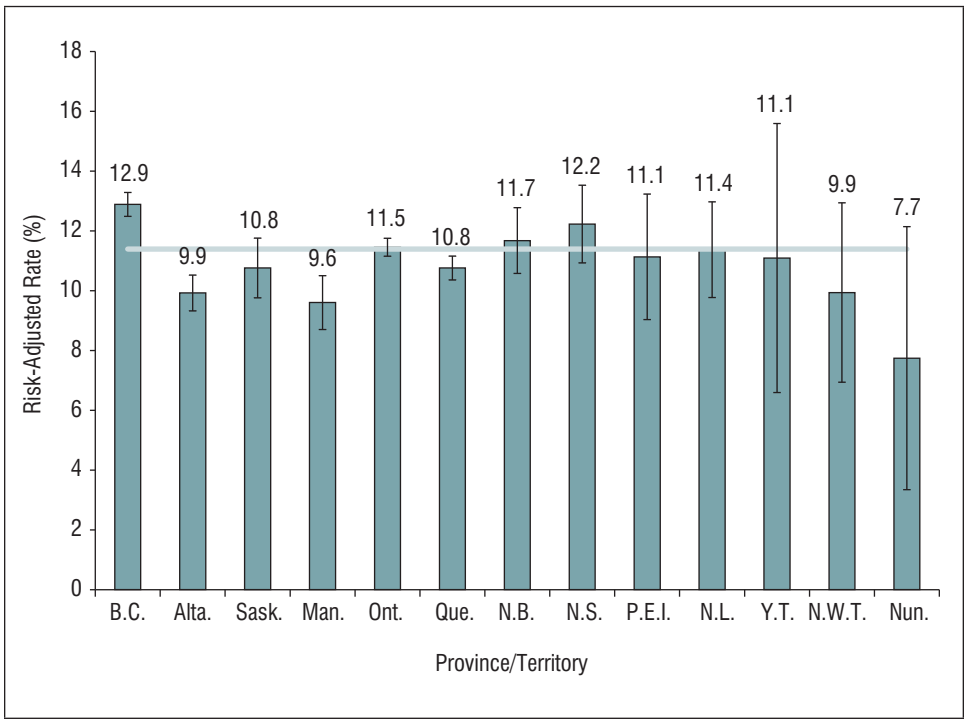
vii. Planned readmissions could not be excluded consistently across jurisdictions. For jurisdictions where comprehensive information was available, rates including all readmissions and only unplanned readmissions were compared; the findings were not statistically different.

A National Overview of Readmission Rates

In 2009–2010, there were 12,618 30-day readmissions for mental illness in Canada. The 30-day readmission rate was 11.4%.

Risk-adjusted readmission rates varied across provinces, ranging from a low of 9.6% in Manitoba to a high of 12.9% in British Columbia. Rates for Quebec, Manitoba and Alberta were significantly below the national average, while the rate for British Columbia was significantly higher than the national average.

Figure 6: Risk-Adjusted 30-Day Readmission Rates for Selected Mental Illnesses, by Province/Territory, Canada, 2009–2010



Note

I represents 95% confidence intervals.

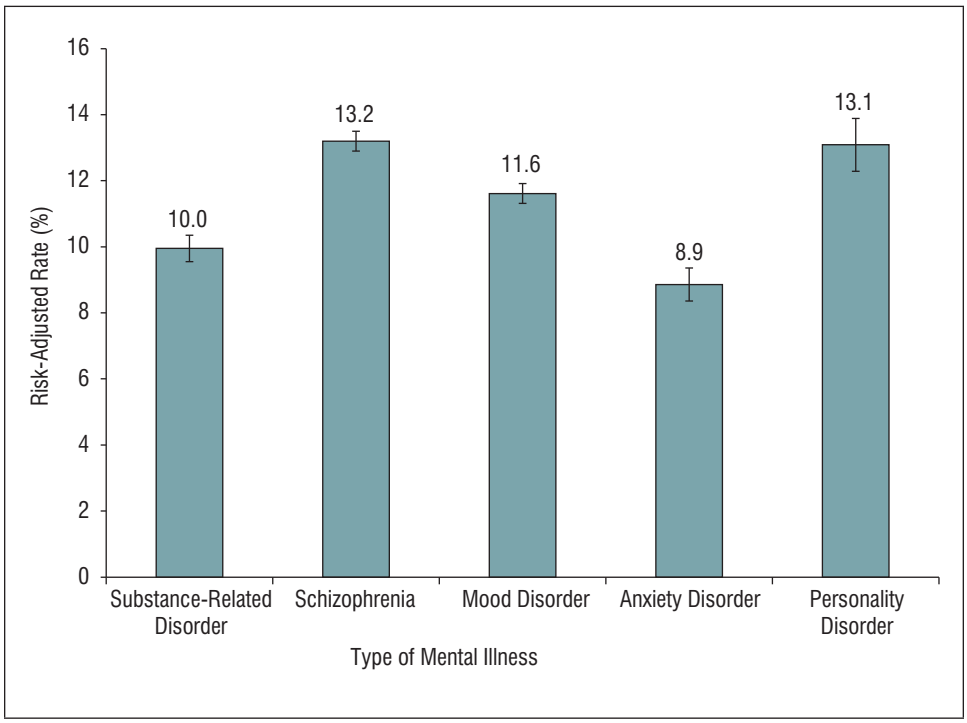
— represents Canada rate.

Sources

Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Risk-adjusted readmission rates also varied by type of mental illness. Rates were highest when the most responsible diagnosis on the initial hospitalization was a personality disorder (13.1%) or schizophrenia (13.2%) and lowest when the most responsible diagnosis was a substance-related disorder (10%) or an anxiety disorder (8.9%) ($p<0.05$). Similar patterns were observed across jurisdictions in Canada.

Figure 7: Risk-Adjusted 30-Day Readmission Rates, by Type of Mental Illness, Canada, 2009–2010



Note

I represents 95% confidence intervals.

Sources

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What Predicts 30-Day Readmissions?

To minimize readmissions we need to understand what predicts early readmissions after hospitalization for mental illnesses. There are three statistically significant and independent predictors: age, prior multiple hospitalizations for a mental illness and discharge against medical advice.

Age: There is an inverse relationship between age and readmissions; as age increases, readmission rates decrease. In 2009–2010, risk-adjusted rates for readmissions were highest for those age 20 to 34 (12.6%) and lowest for those age 50 and older (8.3%) ($p<0.05$).

Multiple hospitalizations for mental illness: In nearly one out of three (31.3%) hospitalizations preceding a readmission, patients had already been hospitalized multiple times. Overall, in our risk-adjusted model, multiple hospitalizations increased the odds of 30-day readmission by a factor of three ($p<0.05$).

Discharge against medical advice: Approximately 12.3% of readmissions were associated with a previous discharge that was against medical advice. In 18.6% of readmissions associated with a discharge against medical advice, the initial hospitalization was for substance-related disorders; in 8.3% it was for anxiety disorders. Overall, in our risk-adjusted model, the odds of being readmitted within 30 days were two times higher when the initial discharge was against medical advice, compared with conventional discharges ($p<0.05$). This suggests the absence of opportunities to prepare for transition from the hospital to the community.

Transition From General Hospitals to the Community

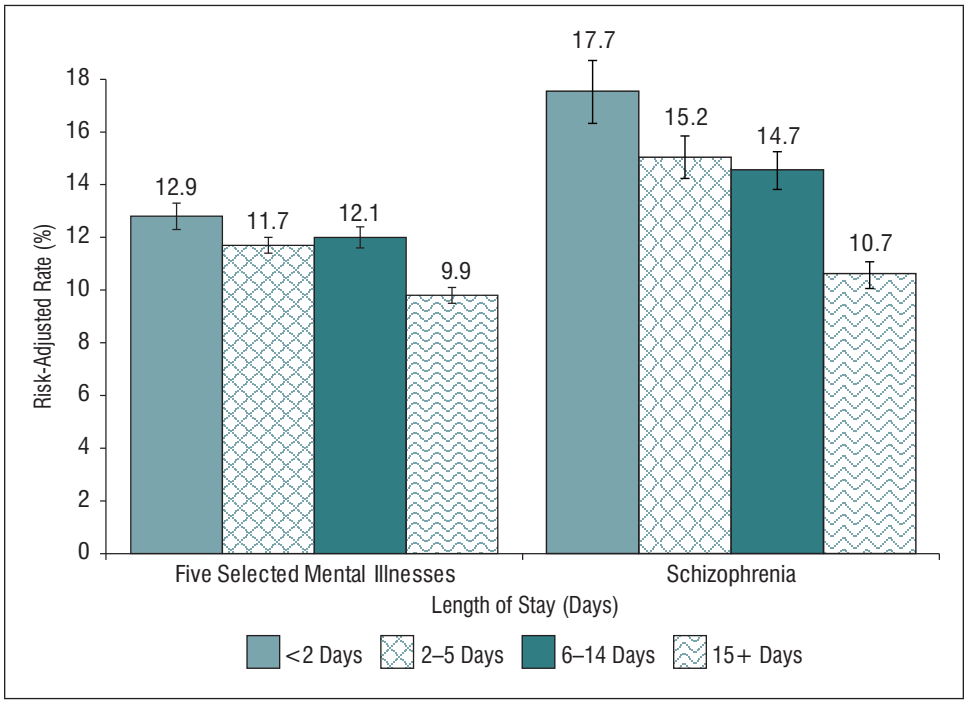
There are aspects of hospital care that may provide clues about successful transitions from hospital to community. They include the length of stay for patients, the time to readmission and whether or not individuals had ED visits before being readmitted.

Length of Stay

Overall, short lengths of stay (LOS) were significantly correlated with higher risk-adjusted rates of readmission. In 2009–2010, the highest risk-adjusted rate of readmission (12.9%) was observed after hospitalizations of two days or less. The lowest rate (9.9%) was observed after hospitalizations of 15 days or more ($p<0.05$). A shorter LOS was also associated with a higher percentage of discharges against medical advice (21% versus 7%; $p<0.05$).

The relationship between initial LOS and readmissions was particularly pronounced when the initial hospitalization was for schizophrenia and related disorders. For these hospitalizations, the risk-adjusted readmission rate was approximately 40% less if the LOS was 15 days or more compared with an LOS of less than two days ($p<0.05$). A shorter LOS might not give enough time to optimally prepare for transition from hospital to the community. Similarly, a shorter LOS was associated with a higher percentage of discharges against medical advice (15% versus 8%; $p<0.05$).

Figure 8: Risk-Adjusted 30-Day Readmission Rates, by Length of Stay, Canada, 2009–2010



Note

I represents 95% confidence intervals.

Sources

Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Time to Readmission

The majority of readmissions occurred within two weeks of an initial discharge. Of the 12,618 readmissions identified within 30 days of hospitalization, 41% occurred within 7 days and 64% within 14 days of initial discharge. Similar patterns were observed for the five mental illnesses considered.

In our analysis, LOS in hospital influenced time to readmission overall. When the initial LOS was less than two days, more than half (51.4%) of the readmissions occurred within one week of discharge. On the other hand, when initial LOS was greater than 15 days, 35% of readmissions occurred within a week of initial discharge. Similar patterns were observed for the five mental illnesses considered.

Emergency Department Visits Before 30-Day Readmissions

Our ability to consider ED visits as part of the interactions that individuals have with hospitals is limited to two provinces (Ontario and Alberta) and one territory (the Yukon). While limited, this data tells us that individuals who are discharged from hospital in these jurisdictions made several visits to the ED prior to being readmitted. It also tells us that ED visits occurred fairly soon following discharge, as most readmissions were observed within two weeks of discharge. This suggests that these individuals might not have accessed other services after the initial discharge.

In 2009–2010, in 7 out of 10 readmissions to hospital in Ontario, the individuals had visited an ED prior to readmission; two or more ED visits occurred before 27% of readmissions. In Alberta and the Yukon, nearly 8 out of 10 readmissions were preceded by an ED visit, and just more than 40% of readmissions were preceded by two or more ED visits. For these individuals in these jurisdictions, the ED represents a major point of contact prior to readmission.

Understanding Why 1 in 10 Hospitalizations for Mental Illness Are Followed by a Readmission Within 30 Days

In Canada in 2009–2010, 11.4% of hospitalizations with one of five selected mental illnesses were followed by a readmission within 30 days of discharge. Many readmissions (64%) occurred within the first two weeks, and possibly close to 70% of readmissions were preceded by an ED visit. Although 30-day readmission rates for most Canadian jurisdictions were no different than the Canadian average, there was some variation across the country. This variation could be explained by jurisdictional differences in the model of service delivery and reporting, the prevalence of acute symptoms in the population and the availability of resources and services.

High readmission rates may indicate poor coordination of services before discharge or poor continuity of services after individuals re-enter the community. While not all readmissions can be avoided and some may be clinically necessary, one of the goals of the mental health system is to support community living and prevent hospitalizations and readmissions through well-coordinated community services.

It is clear from the analyses presented in this chapter that readmissions are associated with both patient and system-level characteristics. The following factors were statistically associated with a higher rate of readmission:

- A younger age;
- A personality or a schizophrenia disorder;
- Multiple hospitalizations;
- A shorter length of stay; and
- A discharge against medical advice.

Most of these results are consistent with the literature.[71–78] Other factors, not available for this analysis, have also been described as strong predictors of early readmission. They include instability at discharge,[71, 79] medication management, absence of aftercare referrals for service and support[71] and high levels of self-care impairment.[76]

All of these factors indicate that readmission rates, to some degree, are influenced by the preparedness for discharge (at either or both the individual level and the hospital/community level) and speak to aspects of coordination of services.

What these numbers cannot tell us, however, is what happens to individuals between discharge and readmission to hospital within 30 days. We know that some individuals in some jurisdictions make repeat visits to the ED before being readmitted. But, for the majority of those readmitted, we lack an understanding of the care and support they access (or fail to access) during this short window of time. Some research has reported 30-day community follow-ups after discharge ranging from 41% to 96%, with lower rates for seven-day follow-up.[70] Despite limited ability to link follow-up in the community with early readmissions,[70–72] we know that the effect of community services on hospital admission has been widely researched, and evidence supports the benefits of a number of interventions (such as assertive community treatment) to reduce hospitalizations.[27, 73] This suggests that continuity of services after discharge might help prevent readmissions.

Readmission rates tell us that a portion of those hospitalized for mental illness are being readmitted within a reasonably short period of time. While not all of these readmissions are likely preventable, well-planned transitions (from hospital to community) and continuity in services would probably reduce these rates, improve clinical outcomes and ultimately affect the social functioning of individuals living with mental illnesses.

Chapter 3
Repeat Hospitalizations, an Indicator of Appropriateness of Services

As mentioned so far in this report, more community-based services and less hospital-based care are key steps toward attaining an ideal mental health system. Although the general hospital remains an important setting to stabilize crises, most services for mental illnesses are now provided in outpatient/community settings.[3] While individual needs vary, community-based services have been shown to be effective in treating even serious mental illness.[15, 27, 69] However, challenges in obtaining appropriate care and support in the community can often lead to hospitalization.[3]

Exploring hospital utilization patterns for individuals admitted with mental illness may be useful to highlight the use and availability (or lack thereof) of outpatient/community services. More specifically, identifying frequent users of inpatient services may help to raise questions about appropriateness of services, including where they are received, gaps in the system and opportunities for preventive efforts. It may also point to areas where there is a need to develop alternatives to hospitalization and to assist individuals living with mental illnesses in receiving care in the most appropriate setting.

This chapter provides information about individuals who have had frequent hospitalizations for mental illness over a **one-year** period and describes their patterns of hospital use.

Methodology

For this report, patients with repeat hospitalizations for mental illness are defined as individuals with at least three inpatient hospitalizations[viii] in a general hospital over a one-year period with any of the five selected mental illnesses[ix] as the most responsible diagnosis (that is, subsequent hospitalizations after the initial hospitalization do not have to be attributed to the same type of mental illness).

For each individual, the first hospitalization occurring in 2008–2009 and subsequent hospitalizations occurring within 365 days of the first discharge from hospital are included in the analysis. The percentage of patients with repeat hospitalizations is calculated as the number of individuals with repeat hospitalizations divided by the number of individuals with at least one hospitalization during the fiscal year of interest.

To facilitate provincial and regional comparisons, the percentages were risk-adjusted to take into account factors identified in the literature and available in the data sources as potential predictors of frequent hospitalization. These factors, identified on initial hospitalization, include age, sex, type of mental illness and discharge against medical advice (yes/no). Risk adjustment for these factors was carried out using logistic regression analysis. Where risk-adjusted rates are presented by one of the risk factors (such as risk-adjusted rates by type of mental illness), rates were adjusted for all remaining risk factors.

For more information on the methodology, please refer to the *Health Indicators Technical Notes* available at www.cihi.ca.

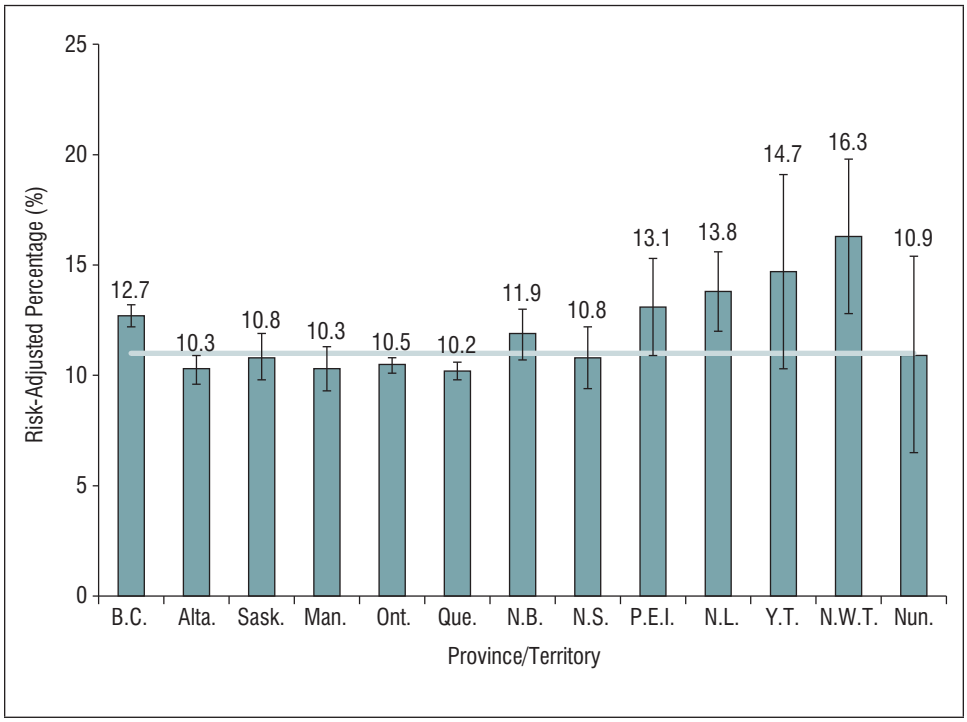
viii. Hospitalizations are episodes of care, which include the first hospitalization to a general hospital and all consecutive transfers to other general hospitals.

ix. Substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood/affective disorders; anxiety disorders; and selected disorders of adult personality and behaviour.

A National Overview of Repeat Hospitalizations for Mental Illness

In Canada, just more than 10,000 individuals who were hospitalized in general hospitals in 2008–2009 with selected mental illnesses had repeat hospitalizations within one year (that is, they had two or more hospitalizations following the first one). This represents 11% of all people hospitalized for mental illness in 2008–2009. Across the country, estimates ranged from 10.2% in Quebec to 16.3% in the Northwest Territories.

Figure 9: Risk-Adjusted Percentage of Individuals With Repeat Hospitalizations Within One Year, Canada



Note

I represents 95% confidence intervals.

— represents Canada rate.

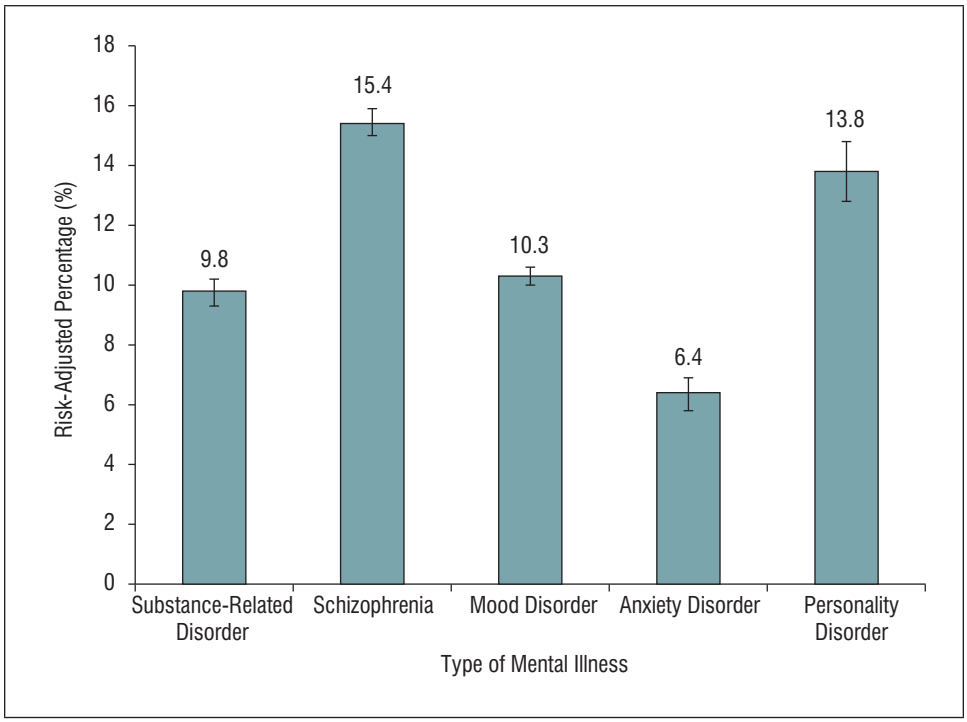
Sources

Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Among individuals with repeat hospitalizations, schizophrenia and mood disorder were the most commonly recorded most responsible diagnoses for the first hospitalization, at 33% and 34%, respectively. Twenty percent of individuals had a substance-related disorder as the most responsible diagnosis during the first hospitalization, while 8% had an anxiety disorder and 5% had a personality disorder.

Patients with schizophrenia as the most responsible diagnosis during their first hospitalization had the highest percentage of repeat hospitalizations, at 15.4%. This finding was similar across all jurisdictions.

Figure 10: Risk-Adjusted Percentage of Individuals With Repeat Hospitalizations Within One Year, by Type of Mental Illness (From First Hospitalization), Canada



Note

I represents 95% confidence intervals.

Sources

Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

What Predicts Frequent Hospitalizations?

In this analysis, four factors were identified as significant predictors for having repeat hospitalizations for mental illness over one year: type of illness (see previous page), age, sex and being discharged against medical advice.

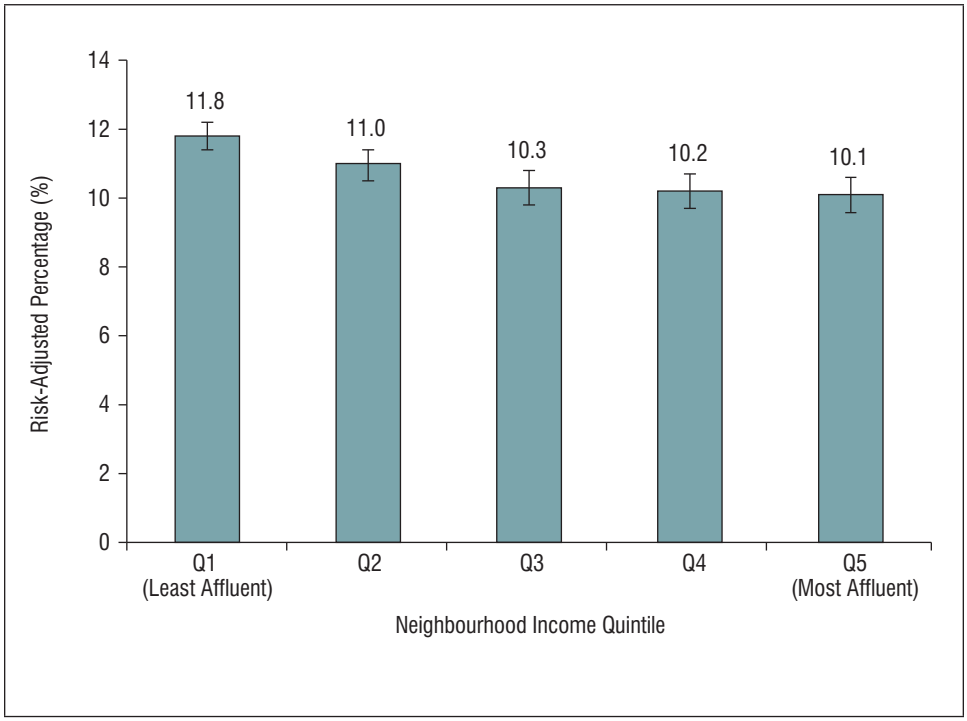
Age: Compared to patients age 65 and older, those in younger age groups had higher odds of having repeat hospitalizations for selected mental illnesses. Specifically, the odds of being a repeat inpatient were 1.6 times higher for patients age 15 to 20 ($p<0.05$), 2 times higher for patients age 21 to 50 ($p<0.05$) and 1.6 times higher for those age 51 to 64 ($p<0.05$).

Sex: When all risk factors were taken into account, males with mental illness had a lower risk of being hospitalized three or more times in one year than females with mental illness (odds ratio 0.93, $p<0.05$).

Leaving against medical advice: During their first visit for a selected mental illness, 9% of patients with repeat hospitalizations left the hospital against medical advice. These patients were 52% more likely to be admitted to the hospital at least two more times within a one-year period (for a total of at least three hospitalizations), compared with those patients who were discharged as per medical advice ($p<0.05$).

Additional analysis showed that repeat hospitalizations also varied by **socio-economic status**. The risk-adjusted percentage was 11.8% for the least affluent neighbourhood income quintile and 10.1% for the most affluent group.

Figure 11: Risk-Adjusted Percentage of Individuals With Repeat Hospitalizations Within One Year, by Socio-Economic Status, Canada



Note

I represents 95% confidence intervals.

Sources

Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Overall, the percentage of individuals with repeat hospitalizations living in the least affluent neighbourhood income quintile was 1.2 times higher than for those living in the most affluent neighbourhood income quintile ($p<0.05$). If all neighbourhood income quintiles had the same percentage of individuals with repeat hospitalizations as the most affluent quintile, the overall percentage of people with mental illness having repeat hospitalizations would be 7% lower. This would translate to almost 720 fewer individuals hospitalized at least three times with a selected mental illness diagnosis within a one-year period (equivalent to at least 2,160 hospitalizations).

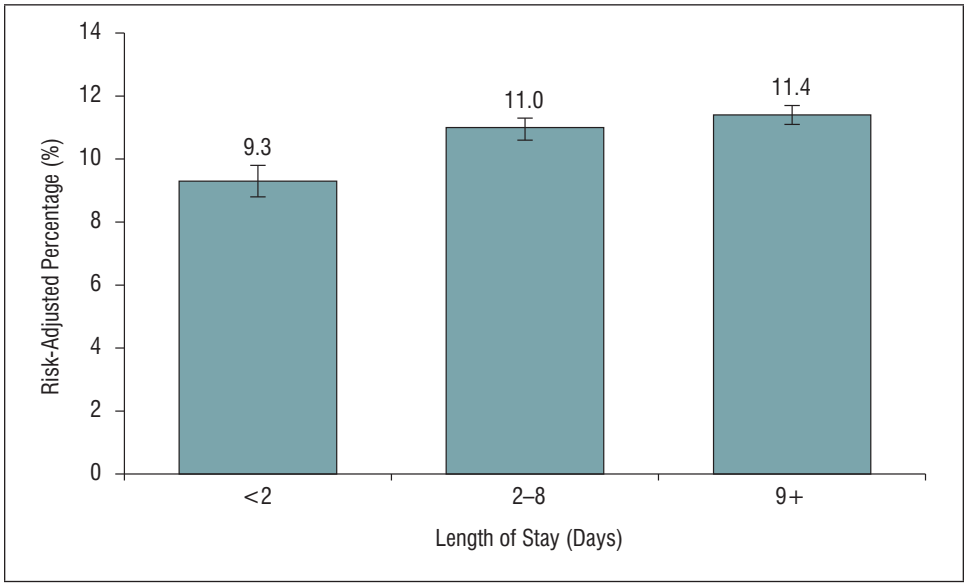
What Are the Patterns of Utilization?

Over the one-year follow-up period, there were 38,136 hospitalizations among individuals who were hospitalized at least three times with a selected mental illness as their most responsible diagnosis. This represented 28% of all hospitalizations for selected mental illnesses and just more than 591,600 days in the hospital, or 27% of the total number of patient days for these selected mental illnesses.

The overall median LOS for repeat patients was eight days. Among the provinces, the median LOS was very similar, ranging from seven to nine days. In the north, however, it was shorter: three days in the Yukon and Nunavut and two days in the Northwest Territories.

The longer a patient stayed during his or her first hospitalization, the more likely he or she was to have three or more hospitalizations within a year. The findings were similar by type of illness, except for schizophrenia and personality disorder, where the highest percentage of repeats occurred among those who stayed two to eight days during the first hospitalization.

Figure 12: Risk-Adjusted Percentage of Individuals With Repeat Hospitalizations Within One Year, by Length of Stay (of First Hospitalization), Canada



Note

I represents 95% confidence intervals.

Sources

Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Among individuals with repeat hospitalizations during one year, the median length of time between the first and second hospital stays was approximately 1.5 months. This is in contrast to the 30-day readmission rates for mental illness highlighted in the previous chapter, where the majority of readmissions (64%) occurred within two weeks of discharge from hospital. Once an individual has three hospitalizations, the time between hospitalizations decreases, but it does not come close to the 14 days seen for those readmitted within 30 days.[x] This pattern of use was consistent across the five selected mental illnesses.

Table 2: Time Between Hospitalizations Among Individuals With Repeat Hospitalizations Within One Year, Canada

	Median Number of Days
Between First and Second Hospitalization	52
Between Second and Third Hospitalization	53
Between Third and Fourth Hospitalization	37
Between Fourth and Fifth Hospitalization	29

LOS was also shorter for successive hospitalizations; the median LOS for the first hospitalization was eight days, while the median LOS for the fifth hospitalization was six days. This pattern was also consistent regardless of the type of illness.

Visits to the Emergency Department

For individuals repeatedly hospitalized with mental illness, the ED is often the point of entry. For example, 68% of all hospitalizations for repeat inpatients in Ontario were admitted through the ED. In Alberta it was 74%, and in the Yukon it was 88%.

In Ontario and Alberta, 93% visited the ED at least once within a year after their first hospitalization. Among those individuals, 41% of repeat inpatients visited the ED at least twice in the year after their first hospitalization, 29% visited the ED three or four times and 30% visited five times or more. In the Yukon, 96% returned to the ED within a year, and 48% of these people returned to the ED at least five times.

In Ontario and Alberta, 36% of first ED visits following the first hospitalization were for mood disorder and 33% were for schizophrenia. In the Yukon, however, 41% of first ED visits were for a substance-related disorder.

x. The denominator for readmission is based on hospitalizations, while the repeat hospitalization indicator is based on individuals. Therefore, individuals included in the readmission indicator represent only a small proportion of all hospitalizations considered in the repeat hospitalization indicator.

Identifying Repeat Inpatients Can Inform Gaps in Community and Outpatient Services

In Canada, 11 out of 100 individuals admitted to a general hospital once with selected mental illnesses were later hospitalized at least two more times within a one-year period. This translates to more than 10,000 patients and more than 38,000 hospitalizations. This subgroup of patients represented more than one-quarter of total hospitalizations with mental illness as their most responsible diagnosis and more than one-quarter of the total number of patient days spent in the hospital for mental illness. It has been suggested that between 50% and 80% of service resources and 75% and 80% of dollars spent on inpatient care for mental illness are attributable to about one-third of service recipients.[80, 81]

The analysis also showed variation across the provinces and territories. Jurisdictional variations may reflect differences in how the mental health system is organized within the jurisdiction, including differences in the health-related and social services that are available to help individuals with mental illness remain in the community.[25] Other factors include the role of the hospital within a particular community, a hospital's admission policies and/or community prevalence of different types of mental illness.[82, 72] Additionally, some hospitals have specific programs that allow extended leaves from the hospital or arrange specialized inpatient care for follow-up. Given these variations in how services are organized, it is not surprising that a number of characteristics have been related to frequent hospitalization, such as

- Preparedness for discharge;
- Coordination of in- and outpatient services;
- Challenges getting appropriate care/support in the community;
- Appropriate medication and adherence to medication; and
- Basic supports, such as housing and income.[72, 83, 84]

As well, some individuals with mental illness and their families see the hospital as a safe, familiar place and choose to return there to receive treatment.[82]

The results reported in this chapter identified several key subgroups of individuals who are frequently hospitalized for mental illness in general hospitals within one year. They include

- Individuals with schizophrenia;
- Females;
- People age 21 to 50;
- Those discharged against medical advice; and
- Persons living in less affluent neighbourhoods.

This report also reveals that LOS in hospital and its contribution to repeat hospitalizations is complex and likely the result of an interplay of factors. Unlike readmissions 30 days following discharge, longer initial patient stays were associated with higher risks of repeat hospitalizations (for readmissions, a longer LOS decreased the likelihood of a readmission; see page 33). It has been suggested that these patients may be kept in the hospital longer while waiting for specialized living arrangements to become available, or that they may have more challenges with adhering to treatment.[84] These hypotheses reinforce the importance of adequate and appropriate supports in the community.

This analysis provides a starting point for the discussion about the characteristics of individuals who are hospitalized in general hospitals multiple times for selected mental illnesses within one year. Learning which factors predict multiple admissions can aid in developing more targeted programs that may reduce the need for frequent hospitalization and could help inform strategies to better manage community/outpatient settings.

Issues on the Horizon

The three indicators and related analyses presented in this report provide some insight into how the mental health system performs in Canada. While these indicators are general hospital–based, they speak about a broader spectrum of health services that are provided to individuals living with mental illness and poor mental health.

Common system needs are implied by the findings for the three indicators (self-injury hospitalization, 30-day readmission rate and percentage of repeat hospitalizations). These are the need for early detection and treatment of mental illnesses and the need for optimal transitions from general hospitals to community services (which implies the need for good coordination and continuity of services among multiple service settings). These approaches are key to improving the performance of the mental health system and in turn assisting individuals living with mental illness to function successfully in society and to recover (including reaching optimal mental health).

To further assess the performance of the mental health system, more data is needed. For example, to complement our analyses and to better understand why these individuals are hospitalized for a mental illness or a self-injury, are readmitted or have multiple admissions, information on the services these individuals received in the community before and after a hospitalization would be necessary. From that perspective, the ability to link data related to health care and support services received in both hospital and community settings with both clinical and social functioning would be an important development.

Mental health services take place in a variety of settings, and the majority of individuals living with mental illnesses and/or poor mental health are not hospitalized. Further data from community settings would also be necessary to understand the services they received in those settings and the impact these services have on the lives of these individuals.

Specific data, indicators and analyses to measure the performance of mental health services for children and youth are also needed.

Selected Canadian Initiatives Providing Information on Mental Health

The Public Health Agency of Canada (PHAC) collects, analyzes and disseminates data on mental illness, self-inflicted injury and child maltreatment. Specific mental health conditions, such as mood disorders, anxiety disorders and suicidal behaviour, are investigated. Two comprehensive reports were published in 2002 and 2006. PHAC also explores new data sources and expansions of existing sources. For example, mental illness is one of the first expansion components of the Canadian Chronic Disease Surveillance System, which uses linked data from physician billing and hospital records. A first report on this data will be produced in 2011. The information gathered through mental illness surveillance is used to inform public health planning and to influence decisions about policies, programs, services, education and research relating to mental illness.

CIHI's Mental Health and Addictions program area continues to lead a wide range of initiatives relating to mental health and addictions data and information. These include annual activities relating to the Hospital Mental Health Database, which houses pan-Canadian clinical and administrative data for mental illness separations from general and psychiatric hospitals in all provinces and territories; the management and operation of the Ontario Mental Health Reporting System on behalf of the Ontario Ministry of Health and Long-Term Care, which includes rich clinical outcomes information for all designated adult inpatient mental health beds in the province; and an ongoing initiative to explore data and information needs and opportunities for the community mental health and addiction sector.

The Way Forward: Community-Based Mental Health Services

Community-based mental health services are an alternative to more expensive hospital-based care (see sidebar). Community-based programs are particularly important for the recovery of people with more serious mental illnesses.[85] There is evidence that even the most vulnerable clinical and socio-economic groups, such as the homeless, veterans and persons with complex, rare or unstable conditions, can be successfully treated and supported in the community.[85]

Core Community Mental Health Services

The following seven community mental health services have been identified as core evidence-based practices needed in a comprehensive mental health system for adults with more serious mental illness:[27]

- Case management, including assertive community treatment;
- Crisis response/emergency services;
- Supportive housing and community supports (such as shelter-based interventions);
- Inpatient/outpatient care;
- Consumer self-help and consumer initiatives;
- Family self-help (for example, education); and
- Vocational/educational services.

Other community-based health and social services are important to the recovery of persons with mental health conditions (for example, financial entitlements/social assistance, such as disability benefit payments).[27]

Research also shows that some community mental health programs are effective in reducing inpatient hospitalizations.[27, 85] In particular, crisis housing has been shown to provide a viable alternative to hospitalization for persons with serious mental illness.[27] Experimental research also supports the effectiveness of assertive community treatment in reducing hospitalizations, variously defined as the number of admissions, number of inpatient days and length of time to readmission, compared with both standard post-discharge aftercare and other models of case management.[27, 85]

"A Hospital Without Walls": Assertive Community Treatment

Assertive community treatment (ACT) teams are one type of intervention program in which multidisciplinary teams provide assertive outreach, individualized treatment and ongoing service coordination and monitoring. In recognition of its comprehensive service function, ACT has been described as a "hospital without walls"[85] and is particularly suited to consumers with complex service needs.[85, 86] For example, ACT is recommended by the Canadian Psychiatric Association for the care of individuals with schizophrenia who have a history of repeat admission, for whom usual care settings are a poor fit, and for those who are homeless.[15]

Early detection and intervention in psychosis programs have also been shown to improve health outcomes. These programs aim to reduce the duration of untreated diagnoses and minimize relapses and hospital admissions by providing evidence-based treatments for first-episode psychosis.[87] Clinical practice guidelines include other best practices, such as family psycho-education and supported employment.[87] Some studies have shown that early specialized treatment within six months of the first episode can both decrease psychopathology and reduce hospital readmission.[88, 89] Early intervention is also associated with improved quality of life.[90]

Initiatives of the Mental Health Commission of Canada to Improve the Performance of the Mental Health System

In addition to building a mental health strategy for Canada, the MHCC has several core initiatives, including a 10-year anti-stigma/anti-discrimination initiative (Opening Minds), a five-city research demonstration project on homelessness and mental health (the At Home / Chez Soi project) and a broad-based social movement to change attitudes and raise awareness (Partners for Mental Health). The MHCC also has initiatives aimed at improving the quality and availability of mental health information in Canada, including the development of a Knowledge Exchange Centre and more than 25 policy and research projects, including some that focus on the improvement of mental health system performance measurement and surveillance. The MHCC is also responsible for the Mental Health First Aid program in Canada and is working on developing standards for both peer support and psychological safety in the workplace.

Appendix: General Hospital Use by Those With Mental Illness—A Snapshot

General hospitals are an important component in the continuum of services of the mental health system. They have a specialized role in that they stabilize crises and coordinate transitions to the community through (ideally) tailored discharge plans. While the analyses in this report exclude data from free-standing psychiatric facilities, it is acknowledged that in some jurisdictions (for example, Alberta) direct substitution between general and psychiatric facilities exists; the extent of this practice and its impact on the analyses is unknown. As such, results presented here represent a partial view of hospital utilization for mental health issues in an acute setting.

In 2009–2010, more than 128,000 Canadians, or 465 per 100,000 population (age-standardized), were hospitalized in a general hospital for one of five types of mental illness.[xi] These hospitalizations accounted for an overall age-standardized patient-day rate of 672 per 10,000 population. Hospitalizations for mental illness represent a significant cost to the health system (refer to Table 1 on page 6).

Males were slightly more likely to be hospitalized in 2009–2010 for the selected mental illnesses (481 per 100,000) than females (447 per 100,000) ($p<0.05$). Patient-day rates were also higher among males (683 per 10,000) than females (657 per 10,000) ($p<0.05$). Hospitalizations for mental illness were most common among those age 20 to 34 for males (578 per 100,000 population) and those age 35 to 49 for females (524 per 100,000). Rates were lowest among those age 65 and older for both sexes, at 268 and 296 per 100,000 for males and females, respectively.

Mood disorders were the most common cause of mental illness hospitalizations in Canada (160 per 100,000 population); schizophrenia and substance-related disorders were the second and third most common diagnoses for hospitalizations.

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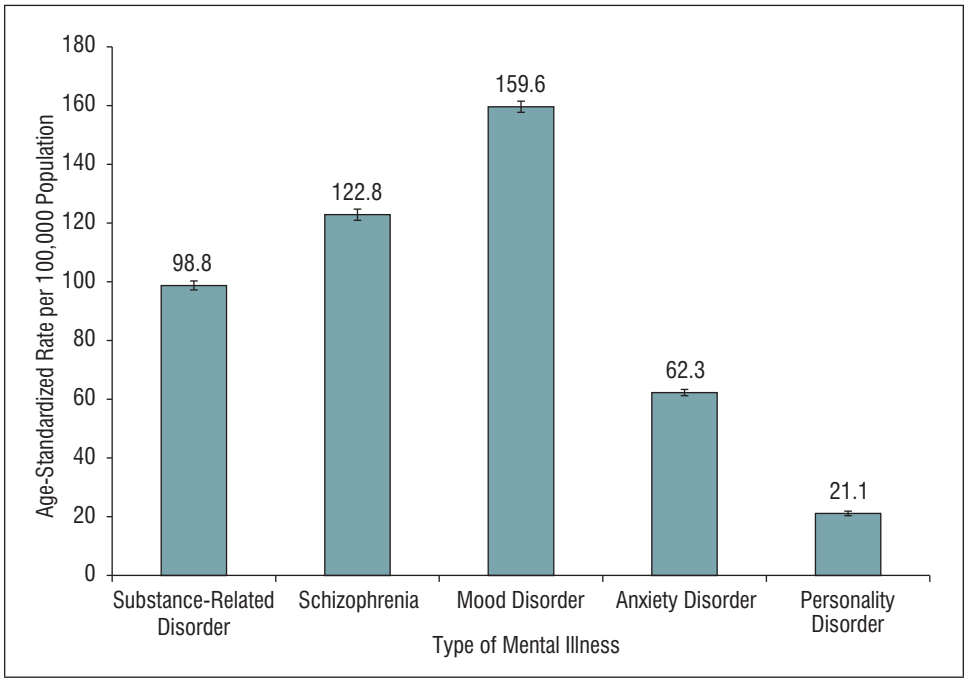
xi. Substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood/affective disorders; anxiety disorders; and selected disorders of adult personality and behaviour coded as a most responsible diagnosis.

Figure 13: Age-Standardized Hospitalization Rates, by Type of Mental Illness, Canada, 2009–2010



Note

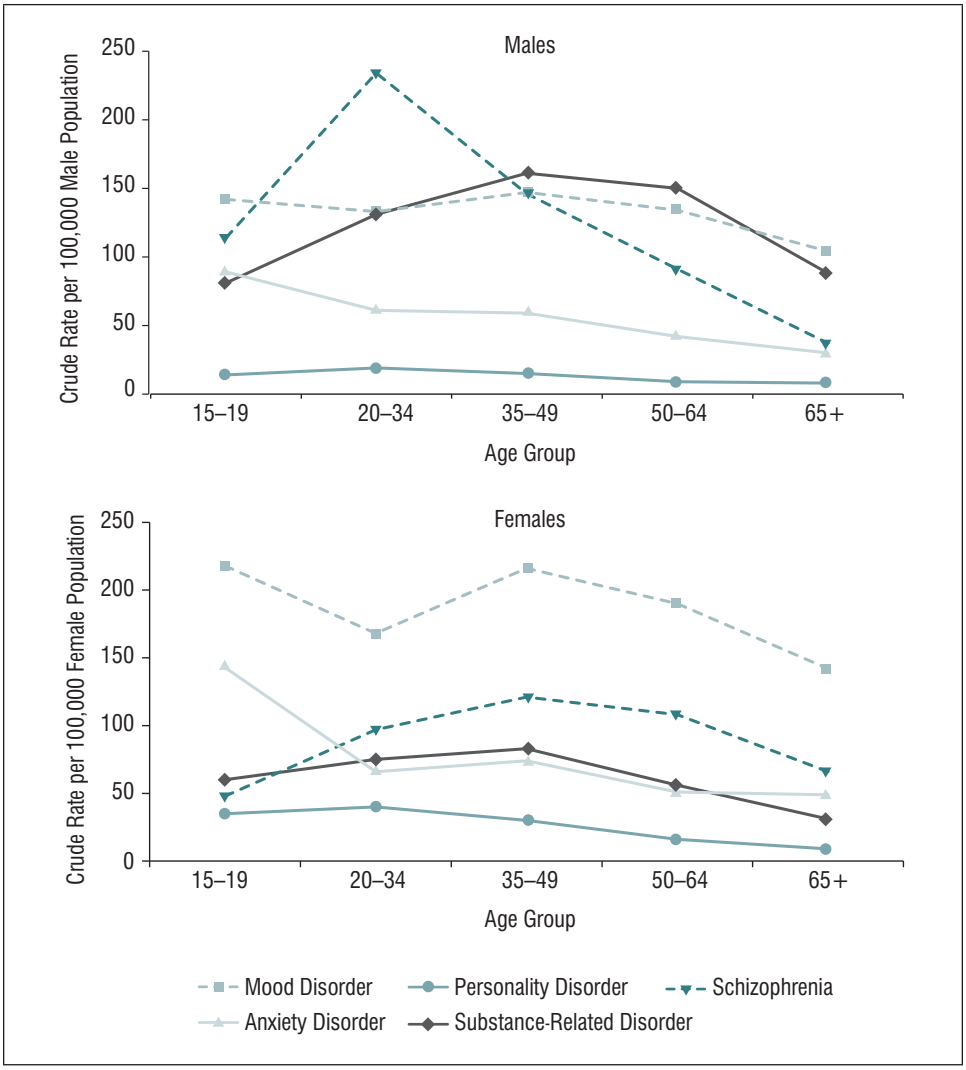
I represents 95% confidence intervals.

Sources

Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Among females, mood disorders were the most common cause of hospitalizations for mental illness across all age groups, ranging from 218 per 100,000 among those age 15 to 19 to 142 per 100,000 among those age 65 and older (Figure 14). Among males, mood disorder was the most common cause of hospitalization among the youngest (15 to 19) and the oldest (65 and older) only; for males age 20 to 34, schizophrenia was by far the most common cause of hospitalization, whereas substance-related disorders were most common among males age 35 to 64.

Figure 14: Hospitalization Rates, by Sex, Age and Type of Mental Illness, Canada, 2009–2010

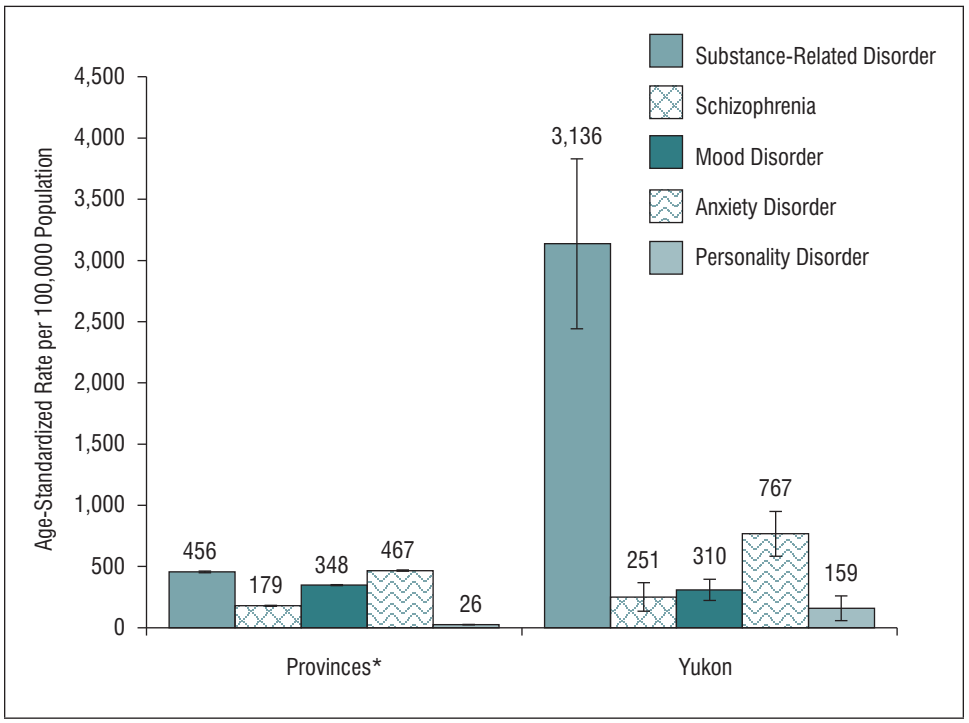


Sources
Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Hospital EDs remain important for mental illness crisis management, since they are often the first point of contact with the health care system, despite the notion that a more proactive and comprehensive crisis response system could reduce the need for ED and inpatient care.[91, 92]

As of the writing of this report, comparable data on ED visits was available for three jurisdictions in Canada. In 2009–2010, the age-standardized rate of ED visits for selected mental illnesses was 1,475 per 100,000 population for provinces with ED data (Ontario and Alberta) and 4,623 per 100,000 in the Yukon. In the Yukon, rates of ED visits were particularly high for substance-related disorders, followed by anxiety disorders.

Figure 15: Age-Standardized Emergency Department Visit Rates, by Type of Mental Illness, 2009–2010



Notes

* Ontario and Alberta only.

I represents 95% confidence intervals.

Source

National Ambulatory Care Reporting System, Canadian Institute for Health Information.

Individuals who use the ED often use it more than once. Twenty-one percent of those identified with a selected mental illness had two or more visits to the ED over six months. Slightly more than one-third (36%) of second visits occurred within a week of the first visit.

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Health Indicators
Region by Region

Health indicators are standardized measures of various aspects of health and health care that can be used to monitor the health status of the population and the performance and characteristics of the health system over time and across the country. As in previous years, the *Health Indicators* annual report provides up-to-date comparable information for health regions, provinces and territories. This information can be used by regions and governments to evaluate progress and identify areas for improvement.

There's More on the Web

CIHI and Statistics Canada jointly produce and maintain the *Health Indicators* e-publication. This free web-based product provides data for a broad range of health indicators from both CIHI and Statistics Canada in one integrated online publication. This interactive online resource provides easy access to the most recent health indicator results, as well as to data for all available years, maps, technical notes and other important information.

***Health Indicators* e-publication:** to find more information on the latest readings on the health of Canadians—region by region—please visit www.cihi.ca or www.statcan.ca.

What Are Health Regions?

Health regions are administrative bodies, legislated by the provincial ministries of health. They are defined by geographical areas and are responsible for providing health services to their residents. The role of health regions in determining how resources are allocated and their relationship with local hospitals vary by province.

For this report, data is provided for all regions with a population of at least 50,000. In addition, data for the smaller regions, as well as for Nova Scotia zones and Ontario public health units, is included in the *Health Indicators* e-publication (www.cihi.ca or www.statcan.ca). Please see page 120 for a map of all the health regions in Canada.

Interpreting the Indicators

Unless otherwise specified, health indicators are reported based on where a person lives, not where he or she was hospitalized. Consequently, these figures reflect the experience of residents of a region regardless of where they were treated, even if it was outside their own province, rather than showing the activity of hospitals in a given region. Confidence intervals are provided for most indicators to aid interpretation. The width of the confidence interval illustrates the degree of variability associated with the rate. Indicator values are estimated to be accurate within the upper and lower confidence interval 19 times out of 20 (95% confidence interval).

Symbols and Abbreviations

..	Figures not available
*	Figures suppressed due to small numbers or incomplete data
▼	Interpret with caution
95% CI	95% confidence interval
✦	Statistically significantly different from the national (Canada) rate ($p \leq 0.05$)
ASSS	Agence de la santé et des services sociaux
HSDA	Health service delivery area
LHIN	Local health integration network
RHA	Regional health authority

Map Code	Health Region	Legend Name	Population ('000) 2009	Population Age 65+ (%) 2009	Dependency Ratio 2009
Newfoundland and Labrador		**N.L.**	**510**	**14.9**	**56.2**
1011	Eastern Regional Integrated Health Authority	Eastern	301	13.8	53.7
1012	Central Regional Integrated Health Authority	Central	94	17.7	61.3
1013	Western Regional Integrated Health Authority	Western	78	17.2	60.8
Prince Edward Island		**P.E.I.**	**141**	**15.4**	**64.2**
Nova Scotia		**N.S.**	**940**	**15.8**	**59.5**
1211	South Shore District Health Authority	South Shore	59	20.3	63.3
1212	South West Nova District Health Authority	South West Nova	59	18.2	65.3
1213	Annapolis Valley District Health Authority	Annapolis Valley	82	17.8	67.6
1214	Colchester East Hants Health Authority	Colchester East Hants	74	16.2	64.6
1218	Cape Breton District Health Authority	Cape Breton	124	18.6	67.8
1219	Capital District Health Authority	Capital	418	12.6	51.8
New Brunswick		**N.B.**	**750**	**15.6**	**59.2**
1301	Zone 1	Zone 1 (Moncton area)	202	15.4	56.6
1302	Zone 2	Zone 2 (Saint John area)	175	15.1	62.4
1303	Zone 3	Zone 3 (Fredericton area)	173	14.1	59.0
1306	Zone 6	Zone 6 (Bathurst area)	78	17.2	56.4
Quebec		**Que.**	**7,857**	**15.0**	**59.2**
2401	ASSS du Bas-Saint-Laurent	Bas-Saint-Laurent	201	18.1	62.2
2402	ASSS du Saguenay–Lac-Saint-Jean	Saguenay–Lac-Saint-Jean	273	15.9	60.6
2403	ASSS de la Capitale-Nationale	Capitale-Nationale	688	16.4	56.2
2404	ASSS de la Mauricie et du Centre-du-Québec	Mauricie et Centre-du-Québec	493	17.4	63.3
2405	ASSS de l'Estrie	Estrie	307	16.1	62.4
2406	ASSS de Montréal	Montréal	1,907	15.8	55.1
2407	ASSS de l'Outaouais	Outaouais	359	11.8	55.6
2408	ASSS de l'Abitibi-Témiscamingue	Abitibi-Témiscamingue	146	13.8	61.6
2409	ASSS de la Côte-Nord	Côte-Nord	96	13.0	59.3
2411	ASSS de la Gaspésie–Îles-de-la-Madeleine	Gaspésie–Îles-de-la-Madeleine	94	18.9	60.5
2412	ASSS de Chaudière-Appalaches	Chaudière-Appalaches	403	15.2	61.1
2413	ASSS de Laval	Laval	392	14.8	63.8
2414	ASSS de Lanaudière	Lanaudière	458	12.9	60.3
2415	ASSS des Laurentides	Laurentides	542	13.1	60.4
2416	ASSS de la Montérégie	Montérégie	1,428	13.8	61.0
Ontario		**Ont.**	**13,119**	**13.7**	**59.8**
3501	Erie St. Clair LHIN	Erie St. Clair	646	15.0	65.0
3502	South West LHIN	South West	949	15.3	64.6
3503	Waterloo Wellington LHIN	Waterloo Wellington	741	12.3	59.2
3504	Hamilton Niagara Haldimand Brant LHIN	Hamilton Niagara Haldimand Brant	1,392	15.5	64.3
3505	Central West LHIN	Central West	827	10.4	57.3
3506	Mississauga Halton LHIN	Mississauga Halton	1,127	10.8	58.6
3507	Toronto Central LHIN	Toronto Central	1,178	13.6	53.2
3508	Central LHIN	Central	1,697	12.1	56.3
3509	Central East LHIN	Central East	1,535	13.9	58.9
3510	South East LHIN	South East	488	17.2	64.3
3511	Champlain LHIN	Champlain	1,231	13.6	57.6
3512	North Simcoe Muskoka LHIN	North Simcoe Muskoka	452	15.3	64.7
3513	North East LHIN	North East	568	17.0	63.6
3514	North West LHIN	North West	239	14.4	65.2
Manitoba		**Man.**	**1,226**	**13.8**	**66.8**
4610	Winnipeg RHA	Winnipeg	689	13.8	59.4
4615	Brandon RHA	Brandon	50	15.1	64.1
4625	South Eastman Health	South Eastman	66	10.6	75.9
4630	Interlake RHA	Interlake	83	15.6	71.6
4640	RHA—Central Manitoba Inc.	Central	107	13.4	80.5
4645	Assiniboine RHA	Assiniboine	70	18.7	80.4

Map Code	Health Region	Legend Name	Population ('000) 2009	Population Age 65+ (%) 2009	Dependency Ratio 2009
Saskatchewan		**Sask.**	**1,035**	**14.7**	**69.6**
4701	Sun Country Health Region	Sun Country	53	17.0	75.0
4702	Five Hills Health Region	Five Hills	53	18.9	75.1
4704	Regina Qu'Appelle Health Region	Regina	254	13.9	62.6
4705	Sunrise Health Region	Sunrise	54	21.9	84.2
4706	Saskatoon Health Region	Saskatoon	307	13.0	61.8
4709	Prince Albert Parkland RHA	Prince Albert	77	15.6	81.1
4710	Prairie North Health Region	Prairie North	71	12.5	77.8
Alberta		**Alta.**	**3,704**	**10.5**	**55.0**
4831	South Zone	South Zone	282	13.3	66.4
4832	Calgary Zone	Calgary Zone	1,373	9.4	50.5
4833	Central Zone	Central Zone	449	12.2	62.3
4834	Edmonton Zone	Edmonton Zone	1,157	10.9	53.2
4835	North Zone	North Zone	427	8.7	60.6
British Columbia		**B.C.**	**4,480**	**14.8**	**57.6**
5911	East Kootenay HSDA	East Kootenay	80	16.0	62.0
5912	Kootenay Boundary HSDA	Kootenay Boundary	79	18.0	64.1
5913	Okanagan HSDA	Okanagan	351	20.0	68.7
5914	Thompson Cariboo Shuswap HSDA	Thompson/Cariboo/Shuswap	223	16.6	63.1
5921	Fraser East HSDA	Fraser East	280	14.4	66.6
5922	Fraser North HSDA	Fraser North	597	11.8	51.4
5923	Fraser South HSDA	Fraser South	696	13.9	63.5
5931	Richmond HSDA	Richmond	193	13.0	52.1
5932	Vancouver HSDA	Vancouver	643	12.4	42.0
5933	North Shore/Coast Garibaldi HSDA	North Shore	278	15.5	59.3
5941	South Vancouver Island HSDA	South Vancouver Island	368	17.3	56.5
5942	Central Vancouver Island HSDA	Central Vancouver Island	261	19.9	68.0
5943	North Vancouver Island HSDA	North Vancouver Island	120	16.6	63.7
5951	Northwest HSDA	Northwest	75	11.2	63.4
5952	Northern Interior HSDA	Northern Interior	143	11.6	58.6
5953	Northeast HSDA	Northeast	68	8.6	59.3
Yukon		**Y.T.**	**34**	**8.1**	**47.5**
Northwest Territories		**N.W.T.**	**43**	**5.3**	**55.5**
Nunavut		**Nun.**	**32**	**3.0**	**82.5**
Canada		**Canada**	**33,873**	**13.9**	**59.3**

Population

The number of people living in a geographic area. A population's size and age–sex composition may affect the health status of a region and its need for health services. Population data also provides the denominators used to calculate rates for most health and social indicators.

Sources: Demography Division, Statistics Canada. Data is derived from the census and administrative sources on births, deaths and migration. Population estimates for health regions in B.C. were provided by BC Stats. Population estimates for health regions in Quebec were derived from census division population estimates provided by the Institut de la statistique du Québec.

Dependency ratio

The ratio of the combined population age 0 to 19 and the population age 65 and older to the population age 20 to 64. This ratio is presented as the number of dependants for every 100 people in the working-age population. Canadians age 65 and older and those younger than age 20 are more likely to be socially and/or economically dependent on working-age Canadians, and they may also put additional demands on health services.

Source: Demography Division, Statistics Canada.

	Self-Reported Conditions			
	Diabetes (Age 12+) 2009		High Blood Pressure (Age 12+) 2009	
	%	95% CI	%	95% CI
N.L.	8.1	(6.7–9.5)	21.6	(19.6–23.6)
P.E.I.	6.0	(4.4–7.6)	17.9	(15.3–20.6)
N.S.	7.7	(6.4–8.9)	21.5	(19.6–23.4)
N.B.	6.6	(5.4–7.7)	20.7	(18.8–22.6)
Que.	5.7	(5.2–6.3)	17.0	(16.1–18.0)
Ont.	6.4	(5.9–7.0)	17.2	(16.5–17.9)
Man.	5.6	(4.5–6.7)	17.1	(15.1–19.1)
Sask.	5.6	(4.7–6.5)	18.2	(16.6–19.7)
Alta.	4.8	(4.1–5.6)	14.6	(13.4–15.8)
B.C.	5.4	(4.7–6.1)	14.9	(13.9–15.9)
Y.T.	4.2▼	(1.9–6.5)	13.7	(9.3–18.1)
N.W.T.	5.2▼	(2.1–8.3)	12.3▼	(7.8–16.8)
Nun.	4.3▼	(2.1–6.5)	11.8	(8.2–15.4)
Canada	**6.0**	**(5.7–6.2)**	**16.9**	**(16.5–17.3)**

	Asthma (Age 14+) 2009		Chronic Obstructive Pulmonary Disease (Age 35+) 2009	
	%	95% CI	%	95% CI
N.L.	8.7	(7.2–10.2)	4.7	(3.2–6.2)
P.E.I.	8.2	(6.3–10.2)	3.2▼	(1.9–4.6)
N.S.	9.2	(7.5–11.0)	7.0	(5.4–8.5)
N.B.	7.6	(6.3–8.9)	5.4	(4.0–6.7)
Que.	7.3	(6.6–8.0)	4.8	(4.1–5.4)
Ont.	8.2	(7.6–8.9)	4.0	(3.6–4.4)
Man.	10.7	(8.5–12.8)	3.9	(2.9–4.8)
Sask.	9.0	(7.6–10.5)	4.3	(3.3–5.3)
Alta.	8.5	(7.4–9.7)	3.3	(2.6–4.1)
B.C.	7.5	(6.6–8.5)	3.8	(3.2–4.5)
Y.T.	10.4	(7.8–13.0)	*	**
N.W.T.	6.4▼	(3.6–9.1)	*	**
Nun.	3.5▼	(1.9–5.1)	*	**
Canada	**8.1**	**(7.7–8.5)**	**4.2**	**(4.0–4.5)**

	Arthritis (Age 12+) 2009		Adult Body Mass Index (Age 18+) (30 and Greater) 2009	
	%	95% CI	%	95% CI
N.L.	21.9	(19.4–24.4)	26.8	(24.0–29.6)
P.E.I.	18.2	(15.5–21.0)	23.8	(20.1–27.4)
N.S.	24.5	(22.4–26.5)	24.3	(21.4–27.2)
N.B.	17.8	(16.0–19.6)	28.5	(25.6–31.3)
Que.	10.6	(9.8–11.3)	16.9	(15.7–18.1)
Ont.	16.8	(16.0–17.6)	17.4	(16.6–18.3)
Man.	17.5	(15.5–19.5)	22.3	(19.7–24.8)
Sask.	18.1	(16.6–19.7)	22.2	(20.2–24.3)
Alta.	14.8	(13.4–16.1)	19.0	(17.2–20.9)
B.C.	14.4	(13.3–15.4)	13.6	(12.4–14.8)
Y.T.	14.9	(11.7–18.1)	22.1	(17.3–26.8)
N.W.T.	13.6	(10.3–16.9)	27.1	(20.6–33.5)
Nun.	7.7▼	(4.0–11.4)	25.4	(17.9–32.9)
Canada	**15.2**	**(14.8–15.6)**	**17.9**	**(17.4–18.4)**

The data presented here represents a sample of a wider range of the health status indicators that are available in the *Health Indicators* e-publication.

 www.cihi.ca or www.statcan.ca

Diabetes

Proportion of household population age 12 and older who reported being diagnosed by a health professional as having diabetes. This includes females 15 and older who reported being diagnosed with gestational diabetes.
Source: Canadian Community Health Survey, Statistics Canada.

High blood pressure

Proportion of household population age 12 and older who reported being diagnosed by a health professional as having high blood pressure.
Source: Canadian Community Health Survey, Statistics Canada.

Asthma

Proportion of household population age 14 and older who reported being diagnosed by a health professional as having asthma.
Source: Canadian Community Health Survey, Statistics Canada.

Chronic obstructive pulmonary disease

Proportion of household population age 35 and older who reported being diagnosed by a health professional with chronic bronchitis, emphysema or chronic obstructive pulmonary disease (COPD).
Source: Canadian Community Health Survey, Statistics Canada.

Arthritis

Proportion of household population age 12 and older who reported being diagnosed by a health professional as having arthritis. Arthritis includes both rheumatoid arthritis and osteoarthritis but excludes fibromyalgia.
Source: Canadian Community Health Survey, Statistics Canada.

Adult body mass index

Proportion of household population age 18 and older with a body mass index (BMI) of 30 or greater. According to the World Health Organization and Health Canada guidelines, a BMI of 30 or greater is classified as obesity and is associated with high health risk. BMI is calculated from weight and height collected from respondents by dividing body weight (in kilograms) by height (in metres) squared.
Source: Canadian Community Health Survey, Statistics Canada.

Self-Reported Conditions and Well-Being				
	Perceived Health (Age 12+) (Very Good or Excellent) 2009		Perceived Mental Health (Age 12+) (Very Good or Excellent) 2009	
	%	95% CI	%	95% CI
N.L.	57.5	(54.5–60.5)	74.1	(71.5–76.7)
P.E.I.	61.9	(58.0–65.8)	73.7	(70.2–77.3)
N.S.	59.3	(56.7–61.9)	74.5	(71.9–77.2)
N.B.	55.0	(52.4–57.6)	68.1	(65.6–70.6)
Que.	61.1	(59.8–62.5)	76.8	(75.6–78.0)
Ont.	61.2	(60.1–62.3)	74.0	(73.1–75.0)
Man.	60.2	(57.1–63.2)	71.1	(68.2–74.1)
Sask.	58.7	(56.6–60.9)	71.7	(69.7–73.7)
Alta.	61.4	(59.5–63.4)	73.8	(72.0–75.6)
B.C.	58.6	(56.8–60.4)	70.4	(68.7–72.0)
Y.T.	59.1	(53.4–64.7)	74.7	(69.0–80.4)
N.W.T.	51.8	(46.8–56.7)	64.3	(58.6–70.0)
Nun.	47.0	(39.8–54.1)	70.5	(62.8–78.1)
Canada	**60.5**	**(59.8–61.1)**	**73.9**	**(73.3–74.5)**

	Perceived Life Stress (Age 15+) (Quite a Bit or Extremely Stressful) 2009		Mood Disorder (Age 12+) 2009	
	%	95% CI	%	95% CI
N.L.	12.9	(10.8–15.0)	4.4	(3.1–5.7)
P.E.I.	13.7	(10.8–16.5)	5.8	(4.0–7.6)
N.S.	18.9	(16.6–21.2)	7.6	(6.1–9.0)
N.B.	21.0	(18.7–23.3)	6.8	(5.4–8.2)
Que.	26.1	(24.7–27.5)	4.6	(4.1–5.2)
Ont.	24.3	(23.3–25.3)	6.8	(6.3–7.4)
Man.	21.0	(18.7–23.3)	6.4	(4.9–7.9)
Sask.	19.0	(16.7–21.2)	7.1	(6.0–8.1)
Alta.	22.5	(20.6–24.4)	6.8	(5.9–7.8)
B.C.	20.0	(18.5–21.5)	7.3	(6.5–8.1)
Y.T.	20.5	(15.3–25.7)	10.6▼	(6.8–14.4)
N.W.T.	18.4	(13.6–23.2)	5.8▼	(2.5–9.0)
Nun.	18.1	(13.1–23.1)	4.9▼	(2.2–7.5)
Canada	**23.2**	**(22.6–23.8)**	**6.3**	**(6.1–6.6)**

Deaths						
	Suicide 2007			Potential Years of Life Lost to Suicide 2007		
	Both	Male	Female	Both	Male	Female
	Age-Standardized Rate per 100,000	Age-Standardized Rate per 100,000	Age-Standardized Rate per 100,000	Rate per 100,000	Rate per 100,000	Rate per 100,000
N.L.	10.0	19.3	1.0	340.6	655.5	29.3
P.E.I.	9.2	17.6	1.1	330.4	621.9	42.5
N.S.	8.6	13.2	4.5	281.6	393.0	173.0
N.B.	10.1	15.0	5.3	372.6	551.5	194.4
Que.	13.0	20.7	5.4	443.0	703.7	179.0
Ont.	8.0	12.3	3.9	269.0	399.7	138.2
Man.	10.4	15.4	5.4	369.5	542.9	192.0
Sask.	12.5	18.0	7.3	509.3	695.1	321.0
Alta.	12.4	17.5	7.1	433.1	607.0	248.7
B.C.	9.3	13.6	5.1	310.1	448.4	171.2
Y.T.	7.1	14.2	0.0	252.0▼	492.7▼	0.0▼
N.W.T.	21.0	31.3	10.5	929.5▼	1,357.9▼	463.7▼
Nun.	55.8	82.1	27.8	3,208.1▼	4,617.7▼	1,711.6▼
Canada	**10.2**	**15.7**	**4.9**	**351.4**	**527.8**	**173.1**

Perceived health

Proportion of household population age 12 and older who reported perceiving their own health status as being either excellent or very good. A measure of overall health status, this indicator 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.

Source: Canadian Community Health Survey, Statistics Canada.

Perceived mental health

Proportion of household population age 12 and older who reported perceiving their own mental health status as being either excellent or very good. Perceived mental health provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress, which is not necessarily reflected in self-reported (physical) health.

Source: Canadian Community Health Survey, Statistics Canada.

Perceived life stress

Proportion of household population age 15 and older who reported perceiving that most days in their life were quite a bit or extremely stressful. Perceived life stress refers to the amount of stress in the person's life on most days, as perceived by the person or, in the case of proxy response, by the person responding.

Source: Canadian Community Health Survey, Statistics Canada.

Mood disorder

Proportion of household population age 12 and older who reported being diagnosed by a health professional as having a mood disorder, such as depression, bipolar disorder, mania or dysthymia.

Source: Canadian Community Health Survey, Statistics Canada.

Suicide

Age-standardized rate of suicide deaths, per 100,000 population. This measure contributes to the understanding of the adequacy and effectiveness of preventing suicide—a major social and public health concern.

Source: Vital Statistics and Death Database, Statistics Canada.

Potential years of life lost to suicide

Potential years of life lost to suicide is the number of years of life lost when a person dies prematurely (before age 75) from suicide. For example, a person dying at age 25 has lost 50 years of life. This data is presented as a rate per 100,000 population.

Source: Vital Statistics and Death Database, Statistics Canada.

Map Code	Health Region	Injury Hospitalization 2009–2010 Age-Standardized Rate per 100,000	95% CI
Newfoundland and Labrador		**514**	**(494–533)**
1011	Eastern	ˆ465	(441–490)
1012	Central	ˆ389	(348–431)
1013	Western	ˆ599	(544–655)
Prince Edward Island		**ˆ630**	**(591–670)**
Nova Scotia		**504**	**(490–518)**
1211	South Shore	ˆ435	(386–484)
1212	South West Nova	522	(466–579)
1213	Annapolis Valley	535	(489–582)
1214	Colchester East Hants	ˆ578	(523–633)
1218	Cape Breton	ˆ597	(553–641)
1219	Capital	ˆ420	(400–439)
New Brunswick		**ˆ587**	**(570–604)**
1301	Zone 1 (Moncton area)	ˆ433	(405–461)
1302	Zone 2 (Saint John area)	500	(467–532)
1303	Zone 3 (Fredericton area)	ˆ640	(604–677)
1306	Zone 6 (Bathurst area)	ˆ606	(548–663)
Quebec		**ˆ505**	**(500–509)**
2401	Bas-Saint-Laurent	ˆ600	(568–633)
2402	Saguenay–Lac-Saint-Jean	ˆ688	(657–718)
2403	Capitale-Nationale	ˆ486	(470–502)
2404	Mauricie et Centre-du-Québec	ˆ626	(604–648)
2405	Estrie	ˆ616	(589–643)
2406	Montréal	ˆ394	(386–402)
2407	Outaouais	ˆ446	(424–467)
2408	Abitibi-Témiscamingue	ˆ767	(722–812)
2409	Côte-Nord	ˆ694	(641–747)
2411	Gaspésie–Îles-de-la-Madeleine	ˆ697	(642–751)
2412	Chaudière-Appalaches	535	(513–557)
2413	Laval	ˆ433	(414–453)
2414	Lanaudière	ˆ468	(448–488)
2415	Laurentides	ˆ561	(542–581)
2416	Montérégie	507	(496–519)
Ontario		**ˆ406**	**(403–409)**
3501	Erie St. Clair	ˆ428	(412–443)
3502	South West	518	(505–532)
3503	Waterloo Wellington	ˆ368	(354–381)
3504	Hamilton Niagara Haldimand Brant	ˆ498	(487–510)
3505	Central West	ˆ293	(282–305)
3506	Mississauga Halton	ˆ322	(312–332)
3507	Toronto Central	ˆ351	(341–361)
3508	Central	ˆ292	(284–299)
3509	Central East	ˆ347	(338–356)
3510	South East	ˆ412	(395–429)
3511	Champlain	ˆ393	(383–404)
3512	North Simcoe Muskoka	ˆ461	(442–479)
3513	North East	ˆ640	(619–661)
3514	North West	ˆ861	(823–898)
Manitoba		**ˆ639**	**(625–652)**
4610	Winnipeg	ˆ474	(459–490)
4615	Brandon	ˆ601	(536–667)
4625	South Eastman	ˆ641	(579–702)
4630	Interlake	ˆ737	(678–797)
4640	Central	ˆ722	(671–772)
4645	Assiniboine	ˆ786	(720–852)

Map Code	Health Region	Injury Hospitalization 2009–2010 Age-Standardized Rate per 100,000	95% CI
Saskatchewan		**784**	**(767–801)**
4701	Sun Country	1,075	(987–1,162)
4702	Five Hills	855	(778–933)
4704	Regina	740	(708–773)
4705	Sunrise	1,036	(949–1,123)
4706	Saskatoon	537	(512–562)
4709	Prince Albert	892	(824–960)
4710	Prairie North	932	(860–1,005)
Alberta		**711**	**(702–719)**
4831	South Zone	816	(784–849)
4832	Calgary Zone	554	(541–566)
4833	Central Zone	941	(913–968)
4834	Edmonton Zone	638	(623–652)
4835	North Zone	1,085	(1,053–1,117)
British Columbia		**567**	**(560–573)**
5911	East Kootenay	787	(725–849)
5912	Kootenay Boundary	743	(683–803)
5913	Okanagan	647	(620–674)
5914	Thompson/Cariboo/Shuswap	725	(689–760)
5921	Fraser East	661	(632–690)
5922	Fraser North	525	(507–542)
5923	Fraser South	540	(524–557)
5931	Richmond	377	(350–403)
5932	Vancouver	396	(381–410)
5933	North Shore	593	(565–621)
5941	South Vancouver Island	498	(477–520)
5942	Central Vancouver Island	607	(577–638)
5943	North Vancouver Island	761	(709–812)
5951	Northwest	1,078	(1,000–1,155)
5952	Northern Interior	793	(746–840)
5953	Northeast	761	(693–830)
Yukon		**1,216**	**(1,087–1,344)**
Northwest Territories		**1,176**	**(1,058–1,293)**
Nunavut		**1,624**	**(1,403–1,844)**
Canada		**517**	**(514–519)**

Injury hospitalization

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

Sources: National Trauma Registry, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Hospitalized Acute Myocardial Infarction Event 2009–2010		Hospitalized Stroke Event 2009–2010	
		Age-Standardized Rate per 100,000	95% CI	Age-Standardized Rate per 100,000	95% CI
Newfoundland and Labrador		**329**	**(313–344)**	**141**	**(131–152)**
1011	Eastern	344	(322–365)	136	(122–150)
1012	Central	331	(295–366)	141	(117–165)
1013	Western	280	(243–316)	143	(118–169)
Prince Edward Island		**269**	**(242–296)**	**140**	**(120–159)**
Nova Scotia		**265**	**(255–275)**	**116**	**(109–122)**
1211	South Shore	337	(295–379)	131	(105–156)
1212	South West Nova	321	(278–365)	141	(112–171)
1213	Annapolis Valley	266	(233–300)	122	(99–144)
1214	Colchester East Hants	314	(274–354)	129	(103–155)
1218	Cape Breton	346	(314–377)	106	(89–123)
1219	Capital	180	(166–194)	105	(94–115)
New Brunswick		**255**	**(244–266)**	**131**	**(123–139)**
1301	Zone 1 (Moncton area)	263	(241–285)	133	(117–148)
1302	Zone 2 (Saint John area)	231	(208–253)	114	(98–130)
1303	Zone 3 (Fredericton area)	320	(292–348)	133	(116–151)
1306	Zone 6 (Bathurst area)	191	(163–219)	106	(85–127)
Quebec		**214**	**(211–217)**	**. .**	**.. ..**
2401	Bas-Saint-Laurent	209	(190–228)	. .	.. ..
2402	Saguenay–Lac-Saint-Jean	218	(201–236)	. .	.. ..
2403	Capitale-Nationale	203	(193–213)	. .	.. ..
2404	Mauricie et Centre-du-Québec	246	(233–259)	. .	.. ..
2405	Estrie	261	(243–278)	. .	.. ..
2406	Montréal	195	(188–201)	. .	.. ..
2407	Outaouais	217	(201–234)	. .	.. ..
2408	Abitibi-Témiscamingue	298	(269–327)	. .	.. ..
2409	Côte-Nord	210	(179–241)	. .	.. ..
2411	Gaspésie–Îles-de-la-Madeleine	345	(311–380)	. .	.. ..
2412	Chaudière-Appalaches	192	(178–205)	. .	.. ..
2413	Laval	177	(164–190)	. .	.. ..
2414	Lanaudière	255	(239–270)	. .	.. ..
2415	Laurentides	192	(180–204)	. .	.. ..
2416	Montérégie	224	(216–232)	. .	.. ..
Ontario		**207**	**(205–210)**	**126**	**(124–128)**
3501	Erie St. Clair	249	(237–262)	161	(151–171)
3502	South West	211	(202–221)	133	(126–140)
3503	Waterloo Wellington	206	(195–217)	118	(110–127)
3504	Hamilton Niagara Haldimand Brant	248	(240–256)	127	(121–133)
3505	Central West	196	(185–207)	127	(118–136)
3506	Mississauga Halton	175	(166–184)	119	(112–126)
3507	Toronto Central	153	(146–160)	128	(121–134)
3508	Central	153	(147–160)	115	(109–120)
3509	Central East	204	(197–211)	120	(114–126)
3510	South East	230	(217–243)	125	(115–134)
3511	Champlain	191	(183–199)	104	(98–110)
3512	North Simcoe Muskoka	232	(218–246)	141	(130–152)
3513	North East	294	(280–307)	148	(138–157)
3514	North West	341	(317–364)	160	(143–176)
Manitoba		**253**	**(243–262)**	**127**	**(120–133)**
4610	Winnipeg	235	(223–247)	120	(112–129)
4615	Brandon	224	(181–266)	126	(94–159)
4625	South Eastman	252	(208–296)	144	(111–177)
4630	Interlake	266	(231–300)	126	(102–150)
4640	Central	285	(250–319)	136	(112–160)
4645	Assiniboine	257	(221–293)	116	(92–140)

Map Code	Health Region	Hospitalized Acute Myocardial Infarction Event 2009–2010 Age-Standardized Rate per 100,000	95% CI	Hospitalized Stroke Event 2009–2010 Age-Standardized Rate per 100,000	95% CI
Saskatchewan		**212**	**(202–221)**	**127**	**(120–134)**
4701	Sun Country	213	(173–252)	115	(87–143)
4702	Five Hills	193	(158–229)	115	(89–142)
4704	Regina	192	(174–210)	118	(104–132)
4705	Sunrise	216	(179–253)	151	(121–181)
4706	Saskatoon	211	(194–229)	125	(112–138)
4709	Prince Albert	227	(193–261)	146	(116–176)
4710	Prairie North	244	(204–284)	119	(91–146)
Alberta		**200**	**(195–205)**	**125**	**(121–129)**
4831	South Zone	237	(217–256)	124	(110–138)
4832	Calgary Zone	164	(156–172)	116	(109–123)
4833	Central Zone	262	(246–278)	138	(126–149)
4834	Edmonton Zone	189	(180–198)	128	(121–135)
4835	North Zone	245	(227–264)	133	(119–146)
British Columbia		**164**	**(160–168)**	**116**	**(113–119)**
5911	East Kootenay	310	(272–348)	123	(100–146)
5912	Kootenay Boundary	285	(251–319)	107	(85–129)
5913	Okanagan	195	(182–208)	136	(125–147)
5914	Thompson/Cariboo/Shuswap	220	(201–239)	129	(114–144)
5921	Fraser East	180	(163–196)	137	(123–151)
5922	Fraser North	126	(116–136)	123	(113–133)
5923	Fraser South	163	(153–173)	114	(106–123)
5931	Richmond	114	(98–130)	84	(71–98)
5932	Vancouver	134	(124–143)	110	(101–119)
5933	North Shore	161	(147–176)	121	(108–133)
5941	South Vancouver Island	114	(104–125)	89	(80–99)
5942	Central Vancouver Island	166	(151–180)	107	(95–118)
5943	North Vancouver Island	193	(168–217)	121	(102–141)
5951	Northwest	215	(179–252)	146	(115–178)
5952	Northern Interior	213	(187–239)	152	(129–176)
5953	Northeast	222	(177–266)	131	(96–167)
Yukon		**218**	**(153–284)**	**172**	(108–235)
Northwest Territories		**250**	**(174–325)**	**159**	**(99–218)**
Nunavut		**192**	**(88–296)**	**169**	**(73–264)**
Canada		**209**	**(208–211)**	**124**	**(123–126)**

Hospitalized acute myocardial infarction event

Age-standardized rate of new acute myocardial infarction (AMI) events admitted to an acute care hospital, per 100,000 population age 20 and older. New event is defined as a first-ever hospitalization for an AMI or a recurrent hospitalized AMI occurring more than 28 days after the admission for the previous event in the reference period. AMI is one of the leading causes of morbidity and death. This indicator is important for planning and evaluating preventive strategies, allocating health resources and estimating costs.

Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Hospitalized stroke event

Age-standardized rate of new stroke events admitted to an acute care hospital, per 100,000 population age 20 and older. New event is defined as a first-ever hospitalization for stroke or a recurrent hospitalized stroke occurring more than 28 days after the admission for the previous event in the reference period. Stroke is one of the leading causes of long-term disability and death. This indicator is important for planning and evaluating preventive strategies, allocating health resources and estimating costs.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

Source: Discharge Abstract Database, Canadian Institute for Health Information.

Hospitalized Acute Myocardial Infarction Event, 2009–2010							
	Neighbourhood Income Quintile†						
	Q1 95% CI	Q2 95% CI	Q3 95% CI	Q4 95% CI	Q5 95% CI	Disparity Rate Ratio 95% CI	Potential Rate Reduction (%) 95% CI
N.L.	335 *(300–370)*	343 *(307–378)*	316 *(282–351)*	338 *(301–374)*	267 *(233–300)*	††1.26 *(1.07–1.48)*	††16.6% *(6.8%–25.6%)*
P.E.I.	339 *(270–409)*	315 *(248–382)*	267 *(205–330)*	279 *(214–345)*	227 *(171–282)*	††1.50 *(1.09–2.06)*	††20.6% *(1.2%–36.9%)*
N.S.	328 *(302–354)*	293 *(269–317)*	253 *(230–276)*	239 *(217–261)*	231 *(208–254)*	††1.42 *(1.25–1.61)*	††14.2% *(6.2%–21.7%)*
N.B.	270 *(244–297)*	273 *(247–299)*	283 *(255–310)*	235 *(210–260)*	252 *(225–280)*	1.07 *(0.93–1.24)*	4.0% *(-5.7%–13.0%)*
Que.	242 *(234–249)*	231 *(223–238)*	213 *(205–220)*	211 *(204–219)*	188 *(180–195)*	††1.29 *(1.22–1.35)*	††13.7% *(10.6%–16.8%)*
Ont.	257 *(251–264)*	221 *(215–227)*	214 *(208–220)*	201 *(195–207)*	176 *(171–182)*	††1.46 *(1.40–1.52)*	††17.5% *(15.2%–19.8%)*
Man.	340 *(312–368)*	279 *(256–301)*	233 *(214–253)*	242 *(221–263)*	217 *(197–236)*	††1.57 *(1.39–1.77)*	††17.1% *(10.0%–23.7%)*
Sask.	278 *(252–304)*	204 *(184–224)*	214 *(194–235)*	196 *(176–216)*	187 *(167–207)*	††1.49 *(1.29–1.72)*	††13.3% *(4.5%–21.5%)*
Alta.	229 *(216–242)*	206 *(194–218)*	218 *(206–231)*	202 *(189–214)*	183 *(171–195)*	††1.25 *(1.15–1.36)*	††11.9% *(6.5%–17.0%)*
B.C.	184 *(175–193)*	188 *(179–198)*	171 *(162–180)*	156 *(148–165)*	144 *(136–153)*	††1.27 *(1.18–1.37)*	††14.6% *(10.1%–19.0%)*
Y.T.	*	*	*	*	*	*	*
N.W.T.	*	*	*	*	*	*	*
Nun.	*	*	*	*	*	*	*
Canada	**247** ***(243–251)***	**224** ***(221–228)***	**213** ***(210–217)***	**203** ***(199–206)***	**181** ***(178–184)***	††**1.36** ***(1.33–1.40)***	††**15.4%** ***(13.9%–16.8%)***

Injury Hospitalization, 2009–2010							
	Neighbourhood Income Quintile†						
	Q1 95% CI	Q2 95% CI	Q3 95% CI	Q4 95% CI	Q5 95% CI	Disparity Rate Ratio 95% CI	Potential Rate Reduction (%) 95% CI
N.L.	541 *(494–588)*	484 *(440–528)*	464 *(421–507)*	549 *(502–597)*	516 *(471–562)*	1.05 *(0.93–1.19)*	-1.1% *(-9.2%–6.6%)*
P.E.I.	770 *(667–873)*	633 *(544–722)*	730 *(629–832)*	529 *(444–614)*	671 *(567–775)*	1.15 *(0.93–1.41)*	-0.8% *(-15.2%–12.3%)*
N.S.	543 *(510–576)*	540 *(507–573)*	497 *(466–529)*	510 *(478–543)*	485 *(451–519)*	††1.12 *(1.02–1.23)*	5.8% *(-0.2%–11.6%)*
N.B.	662 *(620–705)*	633 *(593–674)*	605 *(565–645)*	576 *(536–615)*	546 *(508–585)*	††1.21 *(1.10–1.33)*	††9.7% *(3.8%–15.3%)*
Que.	560 *(549–571)*	528 *(517–539)*	512 *(501–523)*	521 *(509–532)*	482 *(471–494)*	††1.16 *(1.13–1.20)*	††7.4% *(5.4%–9.3%)*
Ont.	471 *(463–479)*	411 *(403–418)*	413 *(405–421)*	409 *(402–417)*	392 *(384–399)*	††1.20 *(1.17–1.24)*	††6.5% *(4.9%–8.1%)*
Man.	1,066 *(1,024–1,109)*	637 *(606–669)*	559 *(529–588)*	556 *(526–586)*	518 *(487–549)*	††2.06 *(1.92–2.21)*	††22.5% *(18.2%–26.6%)*
Sask.	1,165 *(1,116–1,214)*	748 *(710–786)*	702 *(666–738)*	741 *(703–780)*	753 *(713–793)*	††1.55 *(1.45–1.66)*	††8.4% *(3.9%–12.7%)*
Alta.	879 *(858–901)*	718 *(698–737)*	740 *(720–760)*	719 *(699–739)*	700 *(679–721)*	††1.26 *(1.21–1.31)*	††6.9% *(4.3%–9.3%)*
B.C.	661 *(645–678)*	598 *(582–614)*	598 *(582–614)*	577 *(560–593)*	554 *(537–571)*	††1.19 *(1.15–1.24)*	††7.3% *(4.8%–9.8%)*
Y.T.	*	*	*	*	*	*	*
N.W.T.	*	*	*	*	*	*	*
Nun.	*	*	*	*	*	*	*
Canada	**614** ***(608–619)***	**525** ***(520–531)***	**519** ***(513–524)***	**516** ***(510–521)***	**491** ***(485–496)***	††**1.25** ***(1.23–1.27)***	††**7.9%** ***(7.0%–8.8%)***

† Age-standardized rates per 100,000 population.

Neighbourhood income quintile

Small geographic areas divided into five roughly equal population groups. Quintile 1 refers to the least affluent neighbourhoods, while quintile 5 refers to the most affluent. The quintiles were constructed according to the methods developed at Statistics Canada.

Disparity rate ratio (RR)

Ratio of a health indicator rate for the least affluent neighbourhood income quintile (Q1) to the rate for the most affluent neighbourhood income quintile (Q5). It provides a summary measure of the magnitude of the socio-economic disparity for a health indicator in a jurisdiction. It should be evaluated together with other measures, such as the indicator rate for each neighbourhood income quintile as well as the potential rate reduction. The 95% confidence interval (CI) is provided to assist interpretation. When the 95% CI does not contain a value of 1, RR indicates a statistically significant disparity between Q1 and Q5 rates within the jurisdiction, as indicated by the ** symbol.

Potential rate reduction (PRR)

Reduction in a health indicator rate that would occur in the hypothetical scenario that each neighbourhood income group experienced the rate of the most affluent neighbourhood income quintile (Q5), expressed as a percentage. This measure is based on the concept of the excess morbidity or mortality that could be prevented and provides a summary measure of the overall effect of socio-economic disparities on a health indicator. It should be evaluated together with other measures, such as the indicator rate for each neighbourhood income quintile as well as the disparity rate ratio. The 95% CI is provided to assist interpretation. When the 95% CI does not contain a value of 0, PRR indicates a statistically significant potential reduction in the overall indicator rate within the jurisdiction, as indicated by the ** symbol.

Self-Reported Health Behaviours				
	Smoking (Age 12+) 2009		Heavy Drinking (Age 12+) 2009	
	%	95% CI	%	95% CI
N.L.	23.2	(20.7–25.7)	25.1	(22.3–27.8)
P.E.I.	20.4	(16.8–24.0)	21.0	(17.3–24.6)
N.S.	23.3	(20.8–25.7)	20.8	(18.5–23.0)
N.B.	22.0	(19.6–24.4)	19.2	(17.0–21.5)
Que.	22.5	(21.3–23.7)	18.6	(17.3–19.9)
Ont.	18.6	(17.7–19.4)	15.6	(14.9–16.4)
Man.	20.5	(18.2–22.7)	17.4	(15.2–19.6)
Sask.	21.6	(19.6–23.6)	18.7	(16.6–20.8)
Alta.	23.3	(21.2–25.4)	18.2	(16.7–19.8)
B.C.	16.0	(14.7–17.4)	16.1	(14.7–17.4)
Y.T.	35.5	(31.2–39.8)	28.4	(24.2–32.6)
N.W.T.	35.7	(31.2–40.3)	31.1	(27.0–35.2)
Nun.	61.3	(55.4–67.1)	19.7	(15.1–24.4)
Canada	**20.1**	**(19.6–20.7)**	**17.2**	**(16.8–17.7)**

	Fruit and Vegetable Consumption (Age 12+) (5+ per Day) 2009		Physical Activity During Leisure Time (Age 12+) (Active/Moderately Active) 2009	
	%	95% CI	%	95% CI
N.L.	29.9	(27.2–32.6)	47.1	(43.9–50.3)
P.E.I.	38.9	(34.6–43.1)	52.4	(48.2–56.6)
N.S.	38.3	(35.1–41.4)	51.8	(48.9–54.7)
N.B.	40.0	(37.3–42.6)	49.3	(46.6–52.0)
Que.	54.0	(52.5–55.5)	50.0	(48.6–51.5)
Ont.	44.1	(43.0–45.2)	50.7	(49.6–51.7)
Man.	38.5	(35.3–41.6)	53.0	(50.4–55.7)
Sask.	39.7	(37.2–42.1)	51.9	(49.1–54.7)
Alta.	42.7	(40.4–44.9)	56.5	(54.6–58.4)
B.C.	45.7	(43.8–47.6)	60.3	(58.5–62.1)
Y.T.	45.7	(39.5–51.9)	53.8	(49.1–58.5)
N.W.T.	26.4	(21.0–31.8)	41.3	(33.7–49.0)
Nun.	29.6	(20.6–38.5)	48.8	(40.3–57.4)
Canada	**45.6**	**(44.9–46.3)**	**52.5**	**(51.8–53.1)**

Self–Reported Personal Resources				
	Sense of Community Belonging (Very Strong or Somewhat Strong) 2009		Life Satisfaction (Satisfied or Very Satisfied) 2009	
	%	95% CI	%	95% CI
N.L.	81.1	(78.5–83.8)	91.5	(89.6–93.4)
P.E.I.	74.5	(71.1–77.9)	93.9	(92.0–95.7)
N.S.	71.1	(68.4–73.7)	91.7	(90.3–93.2)
N.B.	73.9	(71.5–76.2)	91.8	(90.5–93.2)
Que.	56.4	(54.9–58.0)	94.2	(93.6–94.9)
Ont.	67.1	(65.9–68.4)	91.5	(90.8–92.1)
Man.	68.6	(65.4–71.8)	91.4	(89.8–93.1)
Sask.	71.0	(68.8–73.2)	93.1	(92.0–94.3)
Alta.	65.2	(63.0–67.3)	91.3	(90.1–92.5)
B.C.	68.9	(67.1–70.6)	90.9	(90.0–91.9)
Y.T.	72.1	(67.5–76.6)	91.0	(88.3–93.8)
N.W.T.	81.4	(76.4–86.4)	92.8	(90.0–95.6)
Nun.	85.3	(79.4–91.3)	85.7	(82.0–89.4)
Canada	**65.4**	**(64.6–66.1)**	**92.1**	**(91.7–92.5)**

The data presented here represents a sample of a wider range of the non-medical determinants of health that are available in the *Health Indicators* e-publication.

 www.cihi.ca or www.statcan.ca

Smoking

Proportion of household population age 12 and older who reported being a current smoker on either a daily or occasional basis.
Source: Canadian Community Health Survey, Statistics Canada.

Heavy drinking

Proportion of household population age 12 and older who reported drinking five or more drinks on at least one occasion per month in the past 12 months.
Source: Canadian Community Health Survey, Statistics Canada.

Fruit and vegetable consumption

Proportion of household population age 12 and older who reported consuming fruits and vegetables five or more times per day, on average.
Source: Canadian Community Health Survey, Statistics Canada.

Physical activity during leisure time

Proportion of household population age 12 and older reporting active or moderately active levels of physical activity, based on their responses to questions about the frequency, duration and intensity of their participation in leisure-time physical activity over the past three months.
Source: Canadian Community Health Survey, Statistics Canada.

Sense of community belonging

Proportion of household population age 12 and older reporting their sense of belonging to their local community as being very strong or somewhat strong. Research shows a high correlation between sense of community belonging and physical and mental health.
Source: Canadian Community Health Survey, Statistics Canada.

Life satisfaction

Proportion of household population age 12 and older who reported being satisfied or very satisfied with their life in general.
Source: Canadian Community Health Survey, Statistics Canada.

Map Code	Health Region	30-Day Readmission for Mental Illness 2009–2010 Risk-Adjusted Rate (%)	95% CI	Patients With Repeat Hospitalizations for Mental Illness 2008–2009 Risk-Adjusted Percentage (%)	95% CI
Newfoundland and Labrador		**11.4**	**(9.8–13.0)**	**†13.8**	**(12.0–15.6)**
1011	Eastern	10.2	(7.2–13.3)	12.2	(8.9–15.5)
1012	Central	13.4	(10.0–16.7)	†16.0	(12.2–19.8)
1013	Western	11.5	(8.8–14.3)	†15.8	(12.5–19.1)
Prince Edward Island		**11.1**	**(9.1–13.2)**	**13.1**	**(10.9–15.3)**
Nova Scotia		**12.2**	**(11.0–13.5)**	**10.8**	**(9.4–12.2)**
1211	South Shore	10.7	(5.1–16.3)	12.3	(6.8–17.8)
1212	South West Nova	14.1	(10.0–18.1)	†16.5	(11.2–21.8)
1213	Annapolis Valley	11.0	(5.1–16.9)	*	**
1214	Colchester East Hants	9.1	(2.8–15.3)	*	**
1218	Cape Breton	12.4	(9.9–14.9)	13.3	(10.5–16.1)
1219	Capital	12.9	(10.7–15.2)	†7.5	(4.8–10.3)
New Brunswick		**11.7**	**(10.6–12.7)**	**11.9**	**(10.7–13.0)**
1301	Zone 1 (Moncton area)	11.9	(9.7–14.2)	8.9	(6.6–11.2)
1302	Zone 2 (Saint John area)	†6.2	(2.3–10.1)	†5.0	(1.6–8.4)
1303	Zone 3 (Fredericton area)	11.9	(9.5–14.4)	11.2	(8.5–13.8)
1306	Zone 6 (Bathurst area)	10.6	(7.9–13.4)	†15.9	(12.9–19.0)
Quebec		**†10.8**	**(10.4–11.2)**	**†10.2**	**(9.8–10.6)**
2401	Bas-Saint-Laurent	11.8	(9.7–13.9)	10.9	(8.8–13.1)
2402	Saguenay–Lac-Saint-Jean	12.7	(11.1–14.3)	†13.4	(11.5–15.2)
2403	Capitale-Nationale	†7.5	(6.0–9.0)	†8.0	(6.6–9.5)
2404	Mauricie et Centre-du-Québec	†13.4	(12.1–14.7)	†13.3	(11.8–14.7)
2405	Estrie	13.2	(11.4–14.9)	10.4	(8.5–12.4)
2406	Montréal	†8.7	(7.7–9.8)	†8.3	(7.3–9.4)
2407	Outaouais	†8.3	(6.1–10.5)	†6.5	(4.5–8.5)
2408	Abitibi-Témiscamingue	11.7	(9.1–14.2)	10.8	(8.2–13.5)
2409	Côte-Nord	9.4	(6.6–12.3)	9.2	(6.4–12.1)
2411	Gaspésie–Îles-de-la-Madeleine	12.7	(9.8–15.6)	12.8	(9.5–16.0)
2412	Chaudière-Appalaches	11.7	(10.3–13.1)	†13.3	(11.7–14.8)
2413	Laval	10.3	(8.1–12.5)	9.2	(6.9–11.6)
2414	Lanaudière	†13.1	(11.5–14.6)	11.1	(9.5–12.7)
2415	Laurentides	†9.1	(7.5–10.7)	9.6	(8.0–11.2)
2416	Montérégie	†10.4	(9.5–11.3)	†9.8	(8.8–10.7)
Ontario		**11.5**	**(11.1–11.8)**	**†10.5**	**(10.1–10.8)**
3501	Erie St. Clair	†9.0	(7.4–10.5)	†7.0	(5.4–8.5)
3502	South West	10.6	(9.3–11.8)	†9.6	(8.4–10.9)
3503	Waterloo Wellington	10.8	(9.4–12.3)	10.1	(8.5–11.6)
3504	Hamilton Niagara Haldimand Brant	†10.1	(9.1–11.1)	10.1	(9.1–11.2)
3505	Central West	10.6	(9.1–12.1)	10.6	(9.1–12.1)
3506	Mississauga Halton	12.1	(10.8–13.4)	9.9	(8.4–11.4)
3507	Toronto Central	†14.4	(13.3–15.4)	12.3	(11.0–13.7)
3508	Central	12.1	(11.0–13.1)	10.6	(9.4–11.8)
3509	Central East	11.3	(10.2–12.3)	10.3	(9.3–11.4)
3510	South East	10.8	(9.1–12.5)	9.1	(7.3–11.0)
3511	Champlain	11.6	(10.5–12.6)	10.4	(9.3–11.5)
3512	North Simcoe Muskoka	†9.4	(7.8–11.0)	†8.5	(6.8–10.3)
3513	North East	11.9	(10.9–13.0)	†14.0	(12.8–15.1)
3514	North West	12.2	(10.6–13.8)	10.4	(8.6–12.2)
Manitoba		**†9.6**	**(8.7–10.5)**	**10.3**	**(9.3–11.3)**
4610	Winnipeg	†8.7	(7.4–10.0)	†9.5	(8.2–10.8)
4615	Brandon	9.3	(5.4–13.2)	10.8	(6.5–15.1)
4625	South Eastman	8.0	(1.8–14.2)	6.1	(2.8–12.8)
4630	Interlake	9.7	(5.3–14.2)	11.6	(6.9–16.2)
4640	Central	10.3	(5.8–14.7)	8.7	(4.7–12.7)
4645	Assiniboine	9.8	(6.2–13.4)	14.6	(10.3–18.9)

Map Code	Health Region	30-Day Readmission for Mental Illness 2009–2010 Risk-Adjusted Rate (%)	95% CI	Patients With Repeat Hospitalizations for Mental Illness 2008–2009 Risk-Adjusted Percentage (%)	95% CI
Saskatchewan		**10.8**	**(9.8–11.7)**	**10.8**	**(9.8–11.9)**
4701	Sun Country	8.7	(3.2–14.1)	5.7	(2.8–11.4)
4702	Five Hills	12.8	(9.4–16.2)	⁺18.3	(14.2–22.5)
4704	Regina	11.4	(9.4–13.4)	10.4	(8.3–12.5)
4705	Sunrise	13.6	(9.9–17.3)	12.8	(8.6–17.0)
4706	Saskatoon	⁺8.8	(6.6–11.1)	⁺6.9	(4.6–9.2)
4709	Prince Albert	11.4	(8.4–14.4)	11.3	(8.1–14.5)
4710	Prairie North	11.6	(8.5–14.6)	⁺14.7	(11.3–18.0)
Alberta		**⁺9.9**	**(9.3–10.5)**	**⁺10.3**	**(9.6–10.9)**
4831	South Zone	12.4	(10.9–13.9)	⁺14.4	(12.7–16.0)
4832	Calgary Zone	⁺10.3	(9.3–11.3)	10.2	(9.1–11.3)
4833	Central Zone	⁺8.1	(6.4–9.8)	9.3	(7.6–11.1)
4834	Edmonton Zone	⁺9.0	(7.9–10.2)	⁺9.4	(8.2–10.6)
4835	North Zone	⁺9.7	(8.1–11.3)	⁺9.0	(7.3–10.6)
British Columbia		**⁺12.9**	**(12.5–13.3)**	**⁺12.7**	**(12.2–13.2)**
5911	East Kootenay	⁺15.7	(12.6–18.7)	11.7	(8.3–15.1)
5912	Kootenay Boundary	13.6	(10.6–16.6)	12.7	(9.2–16.1)
5913	Okanagan	⁺13.2	(11.8–14.6)	⁺13.1	(11.4–14.7)
5914	Thompson/Cariboo/Shuswap	12.2	(10.3–14.2)	10.2	(8.0–12.3)
5921	Fraser East	11.8	(10.3–13.2)	⁺13.5	(11.8–15.3)
5922	Fraser North	12.7	(11.4–14.1)	11.9	(10.3–13.4)
5923	Fraser South	12.5	(11.2–13.7)	12.1	(10.6–13.5)
5931	Richmond	14.1	(11.4–16.8)	⁺15.7	(12.4–18.9)
5932	Vancouver	⁺14.1	(13.0–15.2)	⁺13.9	(12.6–15.2)
5933	North Shore	⁺14.2	(12.4–16.0)	⁺15.4	(13.3–17.5)
5941	South Vancouver Island	12.6	(10.9–14.2)	12.0	(10.2–13.7)
5942	Central Vancouver Island	12.8	(10.9–14.8)	11.8	(9.6–14.0)
5943	North Vancouver Island	9.0	(5.6–12.4)	8.1	(4.7–11.4)
5951	Northwest	13.7	(11.3–16.0)	12.9	(9.9–16.0)
5952	Northern Interior	11.7	(9.9–13.6)	11.2	(9.1–13.4)
5953	Northeast	9.5	(6.2–12.7)	10.5	(7.2–13.8)
Yukon		**11.1**	**(6.5–15.6)**	**14.7**	**(10.3–19.1)**
Northwest Territories		**9.9**	**(6.9–13.0)**	**⁺16.3**	**(12.8–19.8)**
Nunavut		**7.7**	**(3.4–12.1)**	**10.9**	**(6.5–15.4)**
Canada		**11.4**		**11.0**	

30-day readmission for mental illness

Risk-adjusted rate of readmission following discharge for a mental illness. A case is counted as a readmission in a general hospital if it is for a selected mental illness diagnosis and if it occurs within 30 days of the index episode of inpatient care. High rates of 30-day readmission could be interpreted as being a direct outcome of poor coordination of services and/or an indirect outcome of poor continuity of services after discharge.

Sources: Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Patients with repeat hospitalizations for mental illness

Risk-adjusted percentage of individuals who had three or more episodes of care for a selected mental illness over all those who had at least one episode of care for a selected mental illness in general hospitals within a given year. This indicator is considered an indirect measure of appropriateness of care. Variations in this indicator across jurisdictions may reflect differences in the services that help individuals with mental illness remain in the community for a longer period of time without the need for hospitalization.

Sources: Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Self-Injury Hospitalization 2009–2010 Age-Standardized Rate per 100,000	95% CI	Ambulatory Care Sensitive Conditions 2009–2010 Age-Standardized Rate per 100,000	95% CI
Newfoundland and Labrador		**81**	**(72–91)**	**473**	**(454–491)**
1011	Eastern	69	(58–80)	431	(408–454)
1012	Central	86	(59–112)	494	(450–538)
1013	Western	107	(77–137)	469	(424–515)
Prince Edward Island		**55**	**(40–70)**	**497**	**(460–534)**
Nova Scotia		**67**	**(61–73)**	**334**	**(323–346)**
1211	South Shore	59	(34–85)	225	(188–261)
1212	South West Nova	41	(21–61)	458	(407–509)
1213	Annapolis Valley	48	(27–68)	287	(253–322)
1214	Colchester East Hants	43	(24–63)	363	(321–406)
1218	Cape Breton	105	(81–129)	469	(432–507)
1219	Capital	61	(52–70)	244	(229–260)
New Brunswick		**81**	**(73–89)**	**489**	**(473–504)**
1301	Zone 1 (Moncton area)	58	(46–70)	345	(320–370)
1302	Zone 2 (Saint John area)	82	(65–99)	421	(391–451)
1303	Zone 3 (Fredericton area)	71	(56–85)	551	(517–585)
1306	Zone 6 (Bathurst area)	88	(61–116)	519	(469–569)
Quebec		**61**	**(59–63)**	**290**	**(286–293)**
2401	Bas-Saint-Laurent	102	(85–119)	338	(314–362)
2402	Saguenay–Lac-Saint-Jean	98	(83–112)	435	(411–460)
2403	Capitale-Nationale	57	(50–63)	221	(210–232)
2404	Mauricie et Centre-du-Québec	96	(85–107)	311	(296–326)
2405	Estrie	74	(63–85)	335	(315–355)
2406	Montréal	27	(24–30)	245	(238–252)
2407	Outaouais	62	(52–71)	320	(302–339)
2408	Abitibi-Témiscamingue	157	(133–182)	460	(427–494)
2409	Côte-Nord	80	(59–101)	526	(482–570)
2411	Gaspésie–Îles-de-la-Madeleine	142	(112–172)	604	(559–649)
2412	Chaudière-Appalaches	92	(81–103)	254	(239–269)
2413	Laval	28	(22–34)	222	(207–237)
2414	Lanaudière	66	(57–75)	298	(282–313)
2415	Laurentides	52	(45–59)	292	(278–306)
2416	Montérégie	65	(61–70)	285	(277–294)
Ontario		**58**	**(56–59)**	**280**	**(278–283)**
3501	Erie St. Clair	49	(43–55)	341	(327–355)
3502	South West	66	(60–72)	302	(291–313)
3503	Waterloo Wellington	70	(63–77)	236	(224–247)
3504	Hamilton Niagara Haldimand Brant	72	(67–77)	330	(320–339)
3505	Central West	37	(33–42)	283	(271–295)
3506	Mississauga Halton	36	(32–40)	211	(202–220)
3507	Toronto Central	42	(38–46)	230	(221–239)
3508	Central	36	(33–40)	182	(175–188)
3509	Central East	46	(42–50)	260	(252–268)
3510	South East	74	(65–84)	327	(311–342)
3511	Champlain	48	(43–52)	244	(235–253)
3512	North Simcoe Muskoka	107	(96–118)	329	(313–346)
3513	North East	130	(119–141)	494	(476–512)
3514	North West	156	(136–175)	538	(509–567)
Manitoba		**58**	**(53–63)**	**348**	**(338–359)**
4610	Winnipeg	41	(35–46)	242	(230–254)
4615	Brandon	77	(49–106)	402	(345–459)
4625	South Eastman	49	(28–70)	240	(201–279)
4630	Interlake	27	(15–40)	398	(356–440)
4640	Central	42	(27–57)	395	(356–434)
4645	Assiniboine	70	(44–97)	565	(508–622)

Map Code	Health Region	Self-Injury Hospitalization 2009–2010 Age-Standardized Rate per 100,000	95% CI	Ambulatory Care Sensitive Conditions 2009–2010 Age-Standardized Rate per 100,000	95% CI
Saskatchewan		**70**	**(64–76)**	**♦495**	**(481–508)**
4701	Sun Country	58	(32–84)	♦641	(574–708)
4702	Five Hills	♦41	(19–64)	♦513	(451–574)
4704	Regina	61	(50–72)	♦523	(494–552)
4705	Sunrise	60	(34–87)	♦754	(682–827)
4706	Saskatoon	♦48	(39–57)	315	(294–335)
4709	Prince Albert	♦101	(73–129)	♦432	(386–479)
4710	Prairie North	♦119	(89–149)	♦676	(613–739)
Alberta		**63**	**(60–65)**	**♦311**	**(305–317)**
4831	South Zone	♦110	(96–124)	♦431	(406–456)
4832	Calgary Zone	♦40	(37–44)	♦234	(226–243)
4833	Central Zone	58	(50–67)	♦391	(373–410)
4834	Edmonton Zone	62	(57–67)	♦263	(253–273)
4835	North Zone	♦113	(102–125)	♦528	(504–551)
British Columbia		**♦77**	**(74–80)**	**♦251**	**(246–255)**
5911	East Kootenay	85	(60–110)	♦427	(381–473)
5912	Kootenay Boundary	83	(57–109)	295	(257–333)
5913	Okanagan	♦117	(103–131)	♦323	(304–342)
5914	Thompson/Cariboo/Shuswap	♦101	(85–118)	316	(293–338)
5921	Fraser East	♦110	(95–124)	292	(272–312)
5922	Fraser North	♦76	(68–84)	♦208	(196–220)
5923	Fraser South	71	(63–78)	♦233	(222–244)
5931	Richmond	♦36	(26–46)	♦162	(143–180)
5932	Vancouver	♦42	(36–47)	♦184	(173–195)
5933	North Shore	63	(52–74)	♦199	(182–216)
5941	South Vancouver Island	68	(58–77)	♦186	(171–201)
5942	Central Vancouver Island	♦106	(89–122)	♦273	(253–292)
5943	North Vancouver Island	♦95	(73–118)	294	(264–324)
5951	Northwest	♦174	(135–212)	♦525	(473–578)
5952	Northern Interior	♦114	(93–135)	♦496	(460–533)
5953	Northeast	65	(43–87)	325	(280–370)
Yukon		**♦192**	**(138–246)**	**♦561**	**(477–646)**
Northwest Territories		**♦197**	**(150–244)**	**♦650**	**(555–744)**
Nunavut		**♦379**	**(306–452)**	**♦962**	**(799–1,125)**
Canada		**65**	**(64–66)**	**302**	**(301–304)**

Self-injury hospitalization

Age-standardized rate of hospitalization in a general hospital due to self-injury, per 100,000 population age 15 and older. Self-injuries may be the result of suicidal and/or self-harming behaviours. In many cases, they can be prevented by early recognition of, intervention for and treatment of mental illnesses. While some risk factors are beyond the control of the health system, high rates of self-injury hospitalization could be interpreted as being the result of the system's failure to prevent self-injuries that are severe enough to require hospitalization.

Sources: Discharge Abstract Database, National Ambulatory Care Reporting System and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Ambulatory care sensitive conditions

Age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for hospitalization, per 100,000 population younger than age 75. Hospitalizations for ambulatory care sensitive conditions are considered to be an indirect measure of access to appropriate primary health care. While not all admissions for these conditions are avoidable, appropriate ambulatory care could potentially prevent the onset of this type of illness or condition, control an acute episodic illness or condition, or manage a chronic disease or condition.

Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Hospitalized Hip Fracture Event 2009–2010 Age-Standardized Rate per 100,000	95% CI	In-Hospital Hip Fracture 2007–2008 to 2009–2010 Risk-Adjusted Rate per 1,000 Discharges	95% CI
Newfoundland and Labrador		**581**	**(528–633)**	**0.7**	**(0.5–1.0)**
1011	Eastern	594	(523–665)	0.7	(0.4–1.1)
1012	Central	489	(387–591)	*	**
1013	Western	562	(440–684)	*	**
Prince Edward Island		**526**	**(437–615)**	**1.1**	**(0.7–1.5)**
Nova Scotia		**491**	**(458–524)**	**1.1**	**(0.9–1.2)**
1211	South Shore	521	(399–642)	*	**
1212	South West Nova	365	(265–466)	*	**
1213	Annapolis Valley	543	(431–654)	*	**
1214	Colchester East Hants	535	(414–656)	*	**
1218	Cape Breton	523	(435–610)	1.1	(0.6–1.6)
1219	Capital	455	(402–509)	1.2	(0.8–1.5)
New Brunswick		**442**	**(406–478)**	**0.9**	**(0.7–1.1)**
1301	Zone 1 (Moncton area)	393	(329–458)	0.8	(0.5–1.1)
1302	Zone 2 (Saint John area)	414	(341–487)	1.3	(0.9–1.7)
1303	Zone 3 (Fredericton area)	514	(430–598)	1.4	(1.0–1.7)
1306	Zone 6 (Bathurst area)	396	(296–496)	*	**
Quebec		**404**	**(393–414)**	..	.. ..
2401	Bas-Saint-Laurent	372	(315–429)	..	.. ..
2402	Saguenay–Lac-Saint-Jean	341	(288–394)	..	.. ..
2403	Capitale-Nationale	405	(371–439)	..	.. ..
2404	Mauricie et Centre-du-Québec	397	(358–436)	..	.. ..
2405	Estrie	391	(340–442)	..	.. ..
2406	Montréal	424	(403–445)	..	.. ..
2407	Outaouais	464	(401–527)	..	.. ..
2408	Abitibi-Témiscamingue	439	(351–526)	..	.. ..
2409	Côte-Nord	411	(297–524)	..	.. ..
2411	Gaspésie–Îles-de-la-Madeleine	367	(284–449)	..	.. ..
2412	Chaudière-Appalaches	401	(354–448)	..	.. ..
2413	Laval	388	(340–435)	..	.. ..
2414	Lanaudière	385	(335–436)	..	.. ..
2415	Laurentides	410	(363–457)	..	.. ..
2416	Montérégie	432	(404–459)	..	.. ..
Ontario		**437**	**(428–446)**	**0.7**	**(0.6–0.7)**
3501	Erie St. Clair	502	(461–543)	0.6	(0.4–0.9)
3502	South West	497	(464–530)	0.7	(0.6–0.9)
3503	Waterloo Wellington	407	(369–445)	0.7	(0.4–0.9)
3504	Hamilton Niagara Haldimand Brant	475	(448–501)	0.6	(0.5–0.8)
3505	Central West	299	(264–333)	0.5	(0.2–0.8)
3506	Mississauga Halton	433	(399–468)	0.5	(0.3–0.7)
3507	Toronto Central	426	(397–455)	0.5	(0.3–0.7)
3508	Central	380	(355–405)	0.6	(0.4–0.8)
3509	Central East	429	(403–455)	0.7	(0.5–0.8)
3510	South East	465	(422–508)	1.1	(0.9–1.4)
3511	Champlain	425	(396–454)	0.8	(0.6–1.0)
3512	North Simcoe Muskoka	457	(410–504)	0.6	(0.4–0.9)
3513	North East	466	(425–508)	0.7	(0.5–0.9)
3514	North West	527	(457–597)	0.7	(0.4–1.0)
Manitoba		**511**	**(480–541)**	**1.1**	**(0.9–1.2)**
4610	Winnipeg	511	(470–552)	1.1	(0.9–1.3)
4615	Brandon	387	(265–509)	*	**
4625	South Eastman	644	(466–822)	*	**
4630	Interlake	563	(442–684)	*	**
4640	Central	458	(357–559)	*	**
4645	Assiniboine	539	(424–654)	*	**

Map Code	Health Region	Hospitalized Hip Fracture Event 2009–2010 Age-Standardized Rate per 100,000	95% CI	In-Hospital Hip Fracture 2007–2008 to 2009–2010 Risk-Adjusted Rate per 1,000 Discharges	95% CI
Saskatchewan		**†479**	**(448–510)**	**0.7**	**(0.5–0.8)**
4701	Sun Country	469	(350–589)	*	**
4702	Five Hills	†612	(478–746)	*	**
4704	Regina	496	(429–563)	0.6	(0.3–0.9)
4705	Sunrise	391	(290–492)	0.7	(0.2–1.1)
4706	Saskatoon	465	(405–525)	0.5	(0.2–0.8)
4709	Prince Albert	414	(310–517)	*	**
4710	Prairie North	350	(238–462)	*	**
Alberta		**†471**	**(451–491)**	**†1.1**	**(1.0–1.2)**
4831	South Zone	501	(436–567)	0.8	(0.6–1.1)
4832	Calgary Zone	451	(417–485)	†1.4	(1.1–1.6)
4833	Central Zone	†522	(466–577)	†1.2	(0.9–1.4)
4834	Edmonton Zone	460	(425–494)	1.0	(0.8–1.2)
4835	North Zone	478	(409–546)	†1.2	(0.9–1.5)
British Columbia		**†468**	**(453–483)**	**†1.0**	**(0.9–1.1)**
5911	East Kootenay	439	(330–548)	*	**
5912	Kootenay Boundary	501	(393–609)	*	**
5913	Okanagan	490	(444–537)	0.8	(0.5–1.1)
5914	Thompson/Cariboo/Shuswap	475	(407–543)	0.9	(0.6–1.3)
5921	Fraser East	428	(370–486)	1.0	(0.7–1.3)
5922	Fraser North	†515	(466–564)	†1.2	(0.9–1.4)
5923	Fraser South	†498	(457–540)	†1.5	(1.2–1.7)
5931	Richmond	†301	(239–363)	0.8	(0.3–1.3)
5932	Vancouver	†406	(366–445)	0.9	(0.6–1.1)
5933	North Shore	498	(437–559)	0.9	(0.5–1.2)
5941	South Vancouver Island	489	(441–536)	0.9	(0.6–1.1)
5942	Central Vancouver Island	†503	(447–559)	†1.2	(0.9–1.5)
5943	North Vancouver Island	520	(423–617)	*	**
5951	Northwest	524	(367–680)	*	**
5952	Northern Interior	390	(295–486)	*	**
5953	Northeast	603	(404–801)	*	**
Yukon		**584**	**(250–918)**	*	**
Northwest Territories		**†909**	**(508–1,309)**	*	**
Nunavut		*	**	*	**
Canada		**445**	**(439–451)**	**0.8**	

Hospitalized hip fracture event

Age-standardized rate of new hip fractures admitted to an acute care hospital, per 100,000 population age 65 and older. New event is defined as a first-ever hospitalization for hip fracture or a subsequent hip fracture occurring more than 28 days after the admission for the previous event in the reference period. Hip fractures represent a significant health burden for seniors and for the health system. As well as causing disability or death, hip fracture may have a major effect on independence and quality of life. This indicator is important for planning and evaluating preventive strategies, allocating health resources and estimating costs.

Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

In-hospital hip fracture

The risk-adjusted rate of in-hospital hip fracture among acute care inpatients age 65 and older, per 1,000 discharges. Rates are based on three years of pooled data. This indicator represents a potentially preventable complication resulting from an inpatient stay in an acute care facility.

Notes: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec. To reflect the concept of patient safety in hospitals, this indicator is reported by the jurisdiction where hospitalization occurred rather than by the jurisdiction of patient residence.

Source: Discharge Abstract Database, Canadian Institute for Health Information.

Map Code	Health Region	Wait Time for Hip Fracture Surgery (Proportion With Surgery Within 48 Hours) 2009–2010 Risk-Adjusted Rate (%)	95% CI	Caesarean Section 2009–2010 %	95% CI
Newfoundland and Labrador		**80.5**	**(76.7–84.3)**	**31.5**	**(30.2–32.8)**
1011	Eastern	78.4	(73.4–83.5)	32.2	(30.5–33.9)
1012	Central	♦93.4	(84.6–100.0)	31.0	(27.7–34.2)
1013	Western	78.8	(69.4–88.2)	27.9	(24.5–31.4)
Prince Edward Island		**75.5**	**(68.3–82.7)**	**30.4**	**(28.0–32.8)**
Nova Scotia		**♦73.3**	**(70.5–76.1)**	**27.2**	**(26.3–28.1)**
1211	South Shore	78.2	(68.6–87.7)	31.2	(26.8–35.7)
1212	South West Nova	♦94.3	(81.7–100.0)	29.9	(25.9–33.9)
1213	Annapolis Valley	♦89.7	(80.9–98.4)	27.0	(23.6–30.3)
1214	Colchester East Hants	♦58.0	(48.2–67.7)	29.1	(25.9–32.4)
1218	Cape Breton	♦87.8	(81.1–94.6)	29.2	(26.6–31.9)
1219	Capital	♦59.2	(54.1–64.2)	25.3	(24.0–26.6)
New Brunswick		**♦82.9**	**(79.5–86.3)**	**28.9**	**(27.9–29.9)**
1301	Zone 1 (Moncton area)	83.8	(77.1–90.4)	30.2	(28.2–32.2)
1302	Zone 2 (Saint John area)	74.6	(66.7–82.5)	24.0	(22.0–26.0)
1303	Zone 3 (Fredericton area)	81.6	(74.5–88.8)	30.5	(28.4–32.6)
1306	Zone 6 (Bathurst area)	♦97.3	(87.0–100.0)	25.9	(22.4–29.5)
Quebec		**. .**	**.. ..**	**23.3**	**(23.1–23.6)**
2401	Bas-Saint-Laurent	. .	.. ..	23.6	(21.6–25.6)
2402	Saguenay–Lac-Saint-Jean	. .	.. ..	20.8	(19.3–22.3)
2403	Capitale-Nationale	. .	.. ..	23.3	(22.3–24.3)
2404	Mauricie et Centre-du-Québec	. .	.. ..	20.9	(19.7–22.1)
2405	Estrie	. .	.. ..	19.1	(17.8–20.5)
2406	Montréal	. .	.. ..	24.7	(24.1–25.3)
2407	Outaouais	. .	.. ..	28.7	(27.3–30.0)
2408	Abitibi-Témiscamingue	. .	.. ..	21.2	(19.3–23.1)
2409	Côte-Nord	. .	.. ..	22.2	(19.7–24.7)
2411	Gaspésie–Îles-de-la-Madeleine	. .	.. ..	28.5	(25.2–31.7)
2412	Chaudière-Appalaches	. .	.. ..	25.6	(24.3–26.9)
2413	Laval	. .	.. ..	24.7	(23.4–26.0)
2414	Lanaudière	. .	.. ..	20.1	(19.1–21.2)
2415	Laurentides	. .	.. ..	21.8	(20.7–22.8)
2416	Montérégie	. .	.. ..	23.0	(22.4–23.7)
Ontario		**77.8**	**(76.9–78.7)**	**28.4**	**(28.2–28.7)**
3501	Erie St. Clair	77.7	(74.1–81.2)	25.5	(24.5–26.6)
3502	South West	♦66.4	(63.5–69.3)	22.4	(21.6–23.2)
3503	Waterloo Wellington	♦92.6	(88.7–96.6)	25.9	(24.9–26.8)
3504	Hamilton Niagara Haldimand Brant	♦80.8	(78.4–83.2)	28.9	(28.2–29.7)
3505	Central West	♦66.1	(60.9–71.2)	30.3	(29.5–31.2)
3506	Mississauga Halton	♦72.0	(68.5–75.5)	27.4	(26.6–28.2)
3507	Toronto Central	♦74.5	(71.6–77.4)	29.9	(29.1–30.6)
3508	Central	♦84.6	(81.8–87.4)	29.6	(29.0–30.3)
3509	Central East	79.3	(76.8–81.9)	30.5	(29.8–31.3)
3510	South East	♦84.4	(80.6–88.3)	28.4	(27.0–29.7)
3511	Champlain	80.4	(77.5–83.3)	29.3	(28.5–30.1)
3512	North Simcoe Muskoka	♦60.4	(55.9–64.9)	30.7	(29.3–32.1)
3513	North East	81.4	(77.5–85.3)	28.7	(27.5–29.9)
3514	North West	81.4	(75.5–87.4)	24.9	(23.3–26.6)
Manitoba		**♦81.2**	**(78.7–83.7)**	**20.2**	**(19.6–20.9)**
4610	Winnipeg	♦83.8	(80.5–87.1)	20.3	(19.4–21.2)
4615	Brandon	78.3	(64.5–92.2)	30.6	(27.3–33.8)
4625	South Eastman	82.1	(69.6–94.6)	17.1	(14.7–19.5)
4630	Interlake	73.5	(64.4–82.7)	15.2	(12.7–17.6)
4640	Central	♦68.2	(58.9–77.5)	19.8	(17.9–21.8)
4645	Assiniboine	84.8	(76.2–93.3)	23.7	(20.7–26.7)

Map Code	Health Region	Wait Time for Hip Fracture Surgery (Proportion With Surgery Within 48 Hours) 2009–2010 Risk-Adjusted Rate (%)	95% CI	Caesarean Section 2009–2010 %	95% CI
Saskatchewan		**†68.8**	**(66.1–71.4)**	**22.1**	**(21.4–22.8)**
4701	Sun Country	78.7	(67.6–89.7)	22.7	(19.6–25.8)
4702	Five Hills	†59.9	(51.0–68.8)	26.7	(23.1–30.2)
4704	Regina	†85.5	(80.0–91.0)	21.3	(19.9–22.6)
4705	Sunrise	68.9	(58.4–79.4)	30.7	(27.0–34.4)
4706	Saskatoon	†55.4	(50.2–60.6)	22.9	(21.6–24.2)
4709	Prince Albert	68.7	(57.2–80.1)	18.2	(16.0–20.3)
4710	Prairie North	69.4	(56.9–81.8)	21.1	(19.0–23.3)
Alberta		**79.8**	**(78.0–81.6)**	**27.4**	**(27.0–27.8)**
4831	South Zone	†84.5	(78.9–90.2)	25.9	(24.5–27.2)
4832	Calgary Zone	†85.9	(82.7–89.1)	27.9	(27.3–28.6)
4833	Central Zone	†66.3	(61.8–70.8)	29.0	(27.9–30.2)
4834	Edmonton Zone	79.2	(76.0–82.5)	27.5	(26.8–28.2)
4835	North Zone	78.8	(72.6–85.0)	25.8	(24.8–26.8)
British Columbia		**†80.8**	**(79.4–82.1)**	**31.1**	**(30.7–31.5)**
5911	East Kootenay	83.3	(72.6–94.0)	28.1	(25.1–31.2)
5912	Kootenay Boundary	†91.3	(81.4–100.0)	27.7	(24.0–31.4)
5913	Okanagan	78.2	(74.2–82.3)	30.3	(28.7–32.0)
5914	Thompson/Cariboo/Shuswap	†85.3	(79.2–91.4)	31.7	(29.6–33.8)
5921	Fraser East	76.0	(70.2–81.8)	30.3	(28.8–31.9)
5922	Fraser North	†69.9	(65.9–73.9)	32.6	(31.4–33.7)
5923	Fraser South	†70.3	(66.7–73.9)	32.6	(31.5–33.6)
5931	Richmond	†88.1	(79.6–96.7)	32.0	(29.7–34.3)
5932	Vancouver	†85.8	(81.8–89.8)	32.2	(31.0–33.3)
5933	North Shore	82.4	(77.1–87.7)	31.7	(29.8–33.7)
5941	South Vancouver Island	†88.3	(84.4–92.2)	32.8	(31.1–34.5)
5942	Central Vancouver Island	†93.7	(89.0–98.4)	25.3	(23.4–27.1)
5943	North Vancouver Island	†92.9	(84.8–100.0)	28.2	(25.5–30.9)
5951	Northwest	†63.4	(49.7–77.0)	25.9	(23.0–28.8)
5952	Northern Interior	69.6	(58.7–80.5)	28.7	(26.6–30.8)
5953	Northeast	80.7	(66.7–94.8)	30.2	(27.4–32.9)
Yukon		*	**	**23.0**	**(18.7–27.3)**
Northwest Territories		*	**	**19.6**	**(16.7–22.5)**
Nunavut		*	**	**7.8**	**(6.0–9.6)**
Canada		**78.3**		**26.8**	**(26.7–27.0)**

Wait time for hip fracture surgery

Proportion with surgery within 48 hours: Risk-adjusted proportion of hip fracture patients age 65 and older who underwent hip fracture surgery within 48 hours of admission. 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 and length of stay in hospital, as well as improved rehabilitation. This indicator is intended to provide a comparable measure of access to care across the country and to be used as a tool to identify opportunities for improvement, using a national data source.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

Source: Discharge Abstract Database, Canadian Institute for Health Information.

Caesarean section

Proportion of women delivering babies in acute care hospitals by Caesarean section. Caesarean section rates provide information on the frequency of surgical birth delivery relative to all modes of birth delivery. Since unnecessary Caesarean section delivery increases maternal morbidity/mortality and is associated with higher costs, Caesarean section rates are often used to monitor clinical practices, with an implicit assumption that lower rates indicate more appropriate, as well as more efficient, care.

Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	30-Day Acute Myocardial Infarction In-Hospital Mortality 2007–2008 to 2009–2010		30-Day Stroke In-Hospital Mortality 2007–2008 to 2009–2010	
		Risk-Adjusted Rate (%)	95% CI	Risk-Adjusted Rate (%)	95% CI
Newfoundland and Labrador		**8.2**	**(7.3–9.1)**	**†20.4**	**(18.6–22.3)**
1011	Eastern	8.0	(6.8–9.3)	18.9	(16.4–21.3)
1012	Central	8.4	(6.6–10.1)	†25.3	(21.3–29.2)
1013	Western	8.2	(5.7–10.6)	19.3	(14.6–23.9)
Prince Edward Island		**8.2**	**(6.4–10.0)**	**18.0**	**(14.5–21.4)**
Nova Scotia		**7.9**	**(7.2–8.6)**	**†19.7**	**(18.3–21.1)**
1211	South Shore	6.6	(4.2–9.1)	18.7	(14.3–23.2)
1212	South West Nova	7.9	(5.4–10.3)	18.7	(14.3–23.1)
1213	Annapolis Valley	†5.1	(2.8–7.5)	†23.1	(18.7–27.6)
1214	Colchester East Hants	7.4	(5.3–9.5)	18.8	(13.8–23.8)
1218	Cape Breton	8.7	(7.0–10.4)	17.1	(13.2–21.0)
1219	Capital	7.1	(5.8–8.5)	†19.9	(17.5–22.4)
New Brunswick		**8.2**	**(7.4–9.0)**	**17.3**	**(15.8–18.8)**
1301	Zone 1 (Moncton area)	7.6	(5.9–9.2)	18.1	(15.2–20.9)
1302	Zone 2 (Saint John area)	9.1	(7.4–10.8)	†20.4	(17.1–23.6)
1303	Zone 3 (Fredericton area)	7.4	(5.7–9.1)	16.8	(13.5–20.1)
1306	Zone 6 (Bathurst area)	9.0	(6.4–11.7)	18.6	(14.0–23.2)
Quebec		**. .**	**.. ..**	**. .**	**.. ..**
2401	Bas-Saint-Laurent	. .	.. ..	. .	.. ..
2402	Saguenay–Lac-Saint-Jean	. .	.. ..	. .	.. ..
2403	Capitale-Nationale	. .	.. ..	. .	.. ..
2404	Mauricie et Centre-du-Québec	. .	.. ..	. .	.. ..
2405	Estrie	. .	.. ..	. .	.. ..
2406	Montréal	. .	.. ..	. .	.. ..
2407	Outaouais	. .	.. ..	. .	.. ..
2408	Abitibi-Témiscamingue	. .	.. ..	. .	.. ..
2409	Côte-Nord	. .	.. ..	. .	.. ..
2411	Gaspésie–Îles-de-la-Madeleine	. .	.. ..	. .	.. ..
2412	Chaudière-Appalaches	. .	.. ..	. .	.. ..
2413	Laval	. .	.. ..	. .	.. ..
2414	Lanaudière	. .	.. ..	. .	.. ..
2415	Laurentides	. .	.. ..	. .	.. ..
2416	Montérégie	. .	.. ..	. .	.. ..
Ontario		**8.4**	**(8.2–8.7)**	**17.0**	**(16.6–17.3)**
3501	Erie St. Clair	8.7	(7.9–9.6)	17.2	(15.7–18.7)
3502	South West	8.5	(7.8–9.3)	†18.4	(17.1–19.7)
3503	Waterloo Wellington	8.1	(7.2–9.1)	18.5	(16.8–20.2)
3504	Hamilton Niagara Haldimand Brant	8.3	(7.7–8.8)	17.7	(16.6–18.7)
3505	Central West	7.6	(6.6–8.6)	†14.0	(12.3–15.7)
3506	Mississauga Halton	7.9	(7.1–8.8)	17.1	(15.6–18.5)
3507	Toronto Central	8.2	(7.5–9.0)	15.9	(14.7–17.1)
3508	Central	†9.1	(8.4–9.8)	†14.8	(13.7–15.9)
3509	Central East	8.4	(7.8–9.0)	17.1	(16.0–18.2)
3510	South East	8.9	(7.9–9.9)	†20.4	(18.7–22.1)
3511	Champlain	7.7	(7.0–8.4)	16.8	(15.5–18.0)
3512	North Simcoe Muskoka	8.5	(7.4–9.6)	16.2	(14.4–18.1)
3513	North East	†10.2	(9.4–11.0)	†18.9	(17.4–20.4)
3514	North West	7.1	(5.9–8.3)	15.2	(12.8–17.6)
Manitoba		**†7.2**	**(6.6–7.9)**	**16.5**	**(15.3–17.7)**
4610	Winnipeg	†6.1	(5.3–6.9)	†15.2	(13.6–16.7)
4615	Brandon	8.3	(5.4–11.2)	15.9	(9.4–22.5)
4625	South Eastman	9.8	(6.4–13.2)	14.2	(7.8–20.6)
4630	Interlake	9.0	(6.5–11.5)	19.9	(15.3–24.6)
4640	Central	10.2	(7.9–12.5)	15.7	(11.5–19.9)
4645	Assiniboine	10.8	(8.2–13.4)	†26.0	(21.0–31.0)

Map Code	Health Region	30-Day Acute Myocardial Infarction In-Hospital Mortality 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI	30-Day Stroke In-Hospital Mortality 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI
Saskatchewan		**8.4**	**(7.7–9.1)**	**16.6**	**(15.4–17.9)**
4701	Sun Country	9.3	(6.2–12.5)	15.6	(9.4–21.8)
4702	Five Hills	8.0	(5.3–10.7)	13.9	(8.8–19.0)
4704	Regina	8.6	(7.0–10.1)	18.1	(15.4–20.8)
4705	Sunrise	✦12.1	(9.4–14.9)	15.5	(11.0–20.1)
4706	Saskatoon	7.8	(6.3–9.2)	✦14.1	(11.7–16.5)
4709	Prince Albert	7.5	(4.9–10.2)	20.4	(15.9–25.0)
4710	Prairie North	8.5	(5.8–11.3)	21.7	(16.2–27.2)
Alberta		**✦6.8**	**(6.4–7.3)**	**✦14.9**	**(14.1–15.7)**
4831	South Zone	8.8	(7.3–10.2)	16.1	(13.4–18.8)
4832	Calgary Zone	✦5.4	(4.5–6.3)	✦12.6	(11.2–14.1)
4833	Central Zone	8.9	(7.8–10.1)	✦19.3	(17.2–21.5)
4834	Edmonton Zone	✦6.1	(5.2–6.9)	✦13.3	(11.9–14.8)
4835	North Zone	7.5	(5.9–9.1)	18.9	(16.2–21.5)
British Columbia		**8.4**	**(8.0–8.8)**	**16.9**	**(16.3–17.5)**
5911	East Kootenay	8.7	(6.4–11.1)	18.9	(14.4–23.4)
5912	Kootenay Boundary	8.0	(5.7–10.3)	✦22.6	(18.4–26.8)
5913	Okanagan	7.8	(6.6–8.9)	15.9	(14.1–17.7)
5914	Thompson/Cariboo/Shuswap	8.3	(6.8–9.9)	18.2	(15.6–20.7)
5921	Fraser East	7.7	(6.1–9.3)	17.1	(14.6–19.6)
5922	Fraser North	9.6	(8.2–10.9)	15.7	(13.9–17.6)
5923	Fraser South	8.1	(7.0–9.1)	16.4	(14.7–18.1)
5931	Richmond	✦11.6	(9.4–13.8)	15.0	(11.9–18.1)
5932	Vancouver	8.0	(6.9–9.2)	15.7	(13.9–17.4)
5933	North Shore	8.0	(6.5–9.6)	14.6	(12.2–17.0)
5941	South Vancouver Island	8.5	(7.0–9.9)	✦19.5	(17.3–21.7)
5942	Central Vancouver Island	8.2	(6.7–9.7)	15.9	(13.5–18.4)
5943	North Vancouver Island	6.2	(3.6–8.7)	19.3	(15.6–23.1)
5951	Northwest	11.3	(7.4–15.2)	21.1	(16.0–26.2)
5952	Northern Interior	10.4	(7.8–13.0)	19.7	(15.9–23.4)
5953	Northeast	12.5	(8.2–16.8)	✦25.7	(18.2–33.1)
Yukon		*	**	**18.8**	**(10.1–27.5)**
Northwest Territories		*	**	**10.5**	**(1.1–19.9)**
Nunavut		*	**	*	**
Canada		**8.2**		**16.9**	

30-day acute myocardial infarction in-hospital mortality

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 acute myocardial infarction (AMI, or heart attack). Rates are based on three years of pooled data.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

Source: Discharge Abstract Database, Canadian Institute for Health Information.

30-day stroke in-hospital mortality

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. Rates are based on three years of pooled data.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

Source: Discharge Abstract Database, Canadian Institute for Health Information.

Map Code	Health Region	Acute Myocardial Infarction Readmission 2007–2008 to 2009–2010		Asthma Readmission 2007–2008 to 2009–2010	
		Risk-Adjusted Rate (%)	95% CI	Risk-Adjusted Rate (%)	95% CI
Newfoundland and Labrador		**✦5.5**	**(4.8–6.1)**	**3.2**	**(1.1–5.3)**
1011	Eastern	4.7	(3.8–5.6)	*	**
1012	Central	5.7	(4.3–7.0)	*	**
1013	Western	✦7.1	(5.3–8.8)	*	**
Prince Edward Island		**5.4**	**(4.0–6.9)**	*	**
Nova Scotia		**✦5.1**	**(4.5–5.6)**	**3.7**	**(1.8–5.6)**
1211	South Shore	5.8	(3.9–7.8)	*	**
1212	South West Nova	4.9	(2.8–6.9)	*	**
1213	Annapolis Valley	4.7	(2.8–6.5)	*	**
1214	Colchester East Hants	✦7.3	(5.4–9.1)	*	**
1218	Cape Breton	4.5	(3.1–5.9)	*	**
1219	Capital	3.9	(2.8–5.0)	*	**
New Brunswick		**4.8**	**(4.2–5.5)**	**2.2**	**(0.4–3.9)**
1301	Zone 1 (Moncton area)	3.6	(2.3–4.9)	*	**
1302	Zone 2 (Saint John area)	3.2	(1.8–4.6)	*	**
1303	Zone 3 (Fredericton area)	4.6	(3.3–6.0)	*	**
1306	Zone 6 (Bathurst area)	4.8	(2.8–6.9)	*	**
Quebec		**. .**	**.. ..**	**. .**	**.. ..**
2401	Bas-Saint-Laurent	. .	.. ..	. .	.. ..
2402	Saguenay–Lac-Saint-Jean	. .	.. ..	. .	.. ..
2403	Capitale-Nationale	. .	.. ..	. .	.. ..
2404	Mauricie et Centre-du-Québec	. .	.. ..	. .	.. ..
2405	Estrie	. .	.. ..	. .	.. ..
2406	Montréal	. .	.. ..	. .	.. ..
2407	Outaouais	. .	.. ..	. .	.. ..
2408	Abitibi-Témiscamingue	. .	.. ..	. .	.. ..
2409	Côte-Nord	. .	.. ..	. .	.. ..
2411	Gaspésie–Îles-de-la-Madeleine	. .	.. ..	. .	.. ..
2412	Chaudière-Appalaches	. .	.. ..	. .	.. ..
2413	Laval	. .	.. ..	. .	.. ..
2414	Lanaudière	. .	.. ..	. .	.. ..
2415	Laurentides	. .	.. ..	. .	.. ..
2416	Montérégie	. .	.. ..	. .	.. ..
Ontario		**4.3**	**(4.1–4.5)**	**3.6**	**(3.1–4.1)**
3501	Erie St. Clair	✦5.5	(4.8–6.3)	*	**
3502	South West	4.2	(3.6–4.8)	4.3	(2.2–6.4)
3503	Waterloo Wellington	4.0	(3.2–4.8)	*	**
3504	Hamilton Niagara Haldimand Brant	✦3.7	(3.1–4.2)	4.5	(2.9–6.1)
3505	Central West	4.8	(4.0–5.6)	4.1	(2.5–5.8)
3506	Mississauga Halton	✦3.2	(2.4–4.0)	2.9	(1.1–4.8)
3507	Toronto Central	4.1	(3.3–4.9)	4.4	(2.8–6.0)
3508	Central	3.8	(3.2–4.5)	3.1	(1.5–4.7)
3509	Central East	4.2	(3.6–4.7)	3.3	(1.9–4.7)
3510	South East	4.8	(4.0–5.7)	*	**
3511	Champlain	✦2.8	(2.2–3.4)	2.7	(0.9–4.6)
3512	North Simcoe Muskoka	✦3.2	(2.2–4.1)	*	**
3513	North East	✦7.1	(6.4–7.8)	3.4	(1.6–5.1)
3514	North West	✦5.7	(4.6–6.8)	*	**
Manitoba		**4.7**	**(4.1–5.3)**	**✦6.2**	**(4.8–7.6)**
4610	Winnipeg	3.8	(3.0–4.6)	*	**
4615	Brandon	*	**	*	**
4625	South Eastman	*	**	*	**
4630	Interlake	✦6.9	(4.9–8.9)	*	**
4640	Central	4.9	(3.0–6.9)	*	**
4645	Assiniboine	6.2	(4.1–8.3)	*	**

Map Code	Health Region	Acute Myocardial Infarction Readmission 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI	Asthma Readmission 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI
Saskatchewan		**4.6**	**(4.0–5.3)**	**3.9**	**(2.3–5.4)**
4701	Sun Country	*	**	*	**
4702	Five Hills	*	**	*	**
4704	Regina	3.3	(1.9–4.7)	*	**
4705	Sunrise	4.6	(2.1–7.0)	*	**
4706	Saskatoon	4.3	(3.0–5.6)	*	**
4709	Prince Albert	4.9	(2.8–7.1)	*	**
4710	Prairie North	5.7	(3.3–8.0)	*	**
Alberta		**✦3.6**	**(3.2–4.0)**	**3.2**	**(2.1–4.2)**
4831	South Zone	4.1	(2.9–5.4)	*	**
4832	Calgary Zone	✦3.2	(2.5–3.9)	5.0	(2.9–7.0)
4833	Central Zone	4.2	(3.2–5.2)	*	**
4834	Edmonton Zone	✦3.0	(2.2–3.7)	*	**
4835	North Zone	4.8	(3.7–6.0)	3.7	(1.4–6.0)
British Columbia		**4.4**	**(4.1–4.8)**	**4.6**	**(3.8–5.5)**
5911	East Kootenay	4.8	(2.8–6.7)	*	**
5912	Kootenay Boundary	✦7.5	(5.5–9.4)	*	**
5913	Okanagan	5.2	(4.2–6.3)	*	**
5914	Thompson/Cariboo/Shuswap	4.8	(3.5–6.1)	*	**
5921	Fraser East	3.5	(2.1–5.0)	*	**
5922	Fraser North	3.7	(2.6–4.9)	*	**
5923	Fraser South	4.5	(3.5–5.4)	4.9	(2.9–6.9)
5931	Richmond	2.9	(0.7–5.0)	*	**
5932	Vancouver	3.5	(2.4–4.6)	*	**
5933	North Shore	3.2	(1.8–4.5)	*	**
5941	South Vancouver Island	✦3.0	(1.6–4.3)	*	**
5942	Central Vancouver Island	5.3	(4.1–6.6)	*	**
5943	North Vancouver Island	4.8	(2.8–6.8)	*	**
5951	Northwest	6.0	(3.4–8.6)	*	**
5952	Northern Interior	✦6.3	(4.5–8.1)	*	**
5953	Northeast	*	**	*	**
Yukon		*	**	*	**
Northwest Territories		*	**	*	**
Nunavut		*	**	*	**
Canada		**4.4**		**3.8**	

Acute myocardial infarction readmission

The risk-adjusted rate of unplanned readmission following discharge for acute myocardial infarction (AMI, or heart attack). Rates are based on three years of pooled data.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

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

Asthma readmission

The risk-adjusted rate of unplanned readmission following discharge for asthma. Rates are based on three years of pooled data.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

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

Map Code	Health Region	Prostatectomy Readmission 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI	Hysterectomy Readmission 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI
Newfoundland and Labrador		**2.4**	**(1.2–3.6)**	**1.5**	**(1.1–2.0)**
1011	Eastern	*	**	♦1.9	(1.3–2.6)
1012	Central	*	**	*	**
1013	Western	*	**	*	**
Prince Edward Island		*	**	*	**
Nova Scotia		**3.2**	**(2.4–4.0)**	**1.3**	**(0.9–1.6)**
1211	South Shore	*	**	*	**
1212	South West Nova	*	**	*	**
1213	Annapolis Valley	*	**	*	**
1214	Colchester East Hants	*	**	*	**
1218	Cape Breton	*	**	*	**
1219	Capital	3.7	(2.4–4.9)	♦2.2	(1.6–2.8)
New Brunswick		**3.1**	**(2.3–3.9)**	**1.5**	**(1.1–1.9)**
1301	Zone 1 (Moncton area)	*	**	0.5	(0.2–1.3)
1302	Zone 2 (Saint John area)	*	**	*	**
1303	Zone 3 (Fredericton area)	*	**	*	**
1306	Zone 6 (Bathurst area)	*	**	*	**
Quebec		**. .**	**.. ..**	**. .**	**.. ..**
2401	Bas-Saint-Laurent	. .	.. ..	. .	.. ..
2402	Saguenay–Lac-Saint-Jean	. .	.. ..	. .	.. ..
2403	Capitale-Nationale	. .	.. ..	. .	.. ..
2404	Mauricie et Centre-du-Québec	. .	.. ..	. .	.. ..
2405	Estrie	. .	.. ..	. .	.. ..
2406	Montréal	. .	.. ..	. .	.. ..
2407	Outaouais	. .	.. ..	. .	.. ..
2408	Abitibi-Témiscamingue	. .	.. ..	. .	.. ..
2409	Côte-Nord	. .	.. ..	. .	.. ..
2411	Gaspésie–Îles-de-la-Madeleine	. .	.. ..	. .	.. ..
2412	Chaudière-Appalaches	. .	.. ..	. .	.. ..
2413	Laval	. .	.. ..	. .	.. ..
2414	Lanaudière	. .	.. ..	. .	.. ..
2415	Laurentides	. .	.. ..	. .	.. ..
2416	Montérégie	. .	.. ..	. .	.. ..
Ontario		**2.7**	**(2.5–2.9)**	**1.1**	**(1.0–1.2)**
3501	Erie St. Clair	2.7	(1.8–3.5)	1.0	(0.6–1.4)
3502	South West	2.5	(1.5–3.4)	♦1.6	(1.3–2.0)
3503	Waterloo Wellington	2.0	(0.8–3.2)	1.1	(0.7–1.5)
3504	Hamilton Niagara Haldimand Brant	2.8	(2.1–3.5)	1.1	(0.8–1.4)
3505	Central West	♦4.0	(2.9–5.1)	♦0.6	(0.1–1.1)
3506	Mississauga Halton	3.2	(2.3–4.1)	1.0	(0.5–1.4)
3507	Toronto Central	2.8	(1.9–3.7)	1.6	(1.1–2.1)
3508	Central	2.7	(2.1–3.4)	1.1	(0.8–1.5)
3509	Central East	2.8	(2.2–3.5)	♦0.8	(0.5–1.1)
3510	South East	2.1	(0.9–3.2)	1.2	(0.7–1.7)
3511	Champlain	2.1	(1.3–2.9)	1.1	(0.8–1.5)
3512	North Simcoe Muskoka	♦0.8	(0.4–1.7)	0.7	(0.2–1.2)
3513	North East	3.1	(2.1–4.2)	0.9	(0.6–1.3)
3514	North West	♦4.1	(2.9–5.3)	*	**
Manitoba		**1.7**	**(0.7–2.7)**	**1.4**	**(1.1–1.8)**
4610	Winnipeg	2.0	(0.7–3.3)	♦1.9	(1.4–2.4)
4615	Brandon	*	**	*	**
4625	South Eastman	*	**	*	**
4630	Interlake	*	**	*	**
4640	Central	*	**	*	**
4645	Assiniboine	*	**	*	**

Map Code	Health Region	Prostatectomy Readmission 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI	Hysterectomy Readmission 2007–2008 to 2009–2010 Risk-Adjusted Rate (%)	95% CI
Saskatchewan		**1.9**	**(1.0–2.9)**	**†1.7**	**(1.3 - 2.0)**
4701	Sun Country	*	**	*	**
4702	Five Hills	*	**	*	**
4704	Regina	*	**	1.8	(1.1 - 2.5)
4705	Sunrise	*	**	*	**
4706	Saskatoon	*	**	1.6	(0.9 - 2.2)
4709	Prince Albert	*	**	*	**
4710	Prairie North	*	**	*	**
Alberta		**2.1**	**(1.6–2.6)**	**1.1**	**(0.9 - 1.3)**
4831	South Zone	*	**	0.9	(0.4 - 1.5)
4832	Calgary Zone	2.5	(1.7–3.3)	1.3	(0.9 - 1.6)
4833	Central Zone	†1.1	(0.5–2.4)	0.9	(0.4 - 1.4)
4834	Edmonton Zone	2.1	(1.1–3.1)	1.0	(0.6 - 1.3)
4835	North Zone	*	**	1.3	(0.8 - 1.8)
British Columbia		**2.5**	**(2.2–2.8)**	**1.1**	**(0.9 - 1.3)**
5911	East Kootenay	*	**	*	**
5912	Kootenay Boundary	*	**	*	**
5913	Okanagan	2.3	(1.1–3.5)	0.8	(0.2 - 1.4)
5914	Thompson/Cariboo/Shuswap	3.1	(1.7–4.6)	1.2	(0.6 - 1.8)
5921	Fraser East	1.9	(0.7–3.1)	1.0	(0.4 - 1.5)
5922	Fraser North	2.8	(2.0–3.7)	0.8	(0.2 - 1.4)
5923	Fraser South	†3.5	(2.6–4.3)	1.1	(0.6 - 1.7)
5931	Richmond	*	**	*	**
5932	Vancouver	3.2	(2.3–4.0)	1.7	(1.0 - 2.4)
5933	North Shore	*	**	*	**
5941	South Vancouver Island	1.9	(0.8–3.1)	†2.0	(1.3 - 2.6)
5942	Central Vancouver Island	1.8	(0.7–3.0)	1.0	(0.4 - 1.5)
5943	North Vancouver Island	*	**	*	**
5951	Northwest	*	**	*	**
5952	Northern Interior	*	**	*	**
5953	Northeast	*	**	*	**
Yukon		*	**	*	**
Northwest Territories		*	**	*	**
Nunavut		*	**	*	**
Canada		**2.5**		**1.2**	

Prostatectomy readmission

The risk-adjusted rate of unplanned readmission following discharge for prostatectomy. Rates are based on three years of pooled data.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

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

Hysterectomy readmission

The risk-adjusted rate of unplanned readmission following discharge for hysterectomy. Rates are based on three years of pooled data.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

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

Map Code	Health Region	Mental Illness Hospitalization 2009–2010 Age-Standardized Rate per 100,000	95% CI	Mental Illness Patient Days 2009–2010 Age-Standardized Rate per 10,000	95% CI
Newfoundland and Labrador		**391**	**(364–418)**	**524**	**(517–531)**
1011	Eastern	189	(166–211)	287	(281–294)
1012	Central	532	(456–608)	833	(811–855)
1013	Western	839	(720–958)	1,104	(1,077–1,130)
Prince Edward Island		**927**	**(848–1,005)**	**837**	**(820–853)**
Nova Scotia		**364**	**(345–383)**	**600**	**(595–605)**
1211	South Shore	335	(263–408)	429	(409–450)
1212	South West Nova	551	(441–662)	768	(743–792)
1213	Annapolis Valley	227	(172–283)	252	(239–264)
1214	Colchester East Hants	269	(214–323)	524	(505–544)
1218	Cape Breton	654	(583–726)	1,153	(1,132–1,175)
1219	Capital	254	(230–277)	526	(519–534)
New Brunswick		**607**	**(580–635)**	**812**	**(805–819)**
1301	Zone 1 (Moncton area)	520	(475–565)	841	(828–855)
1302	Zone 2 (Saint John area)	246	(216–277)	457	(446–468)
1303	Zone 3 (Fredericton area)	464	(412–515)	572	(560–585)
1306	Zone 6 (Bathurst area)	884	(774–994)	1,245	(1,217–1,272)
Quebec		**429**	**(422–436)**	**860**	**(857–862)**
2401	Bas-Saint-Laurent	679	(622–735)	928	(913–943)
2402	Saguenay–Lac-Saint-Jean	768	(711–826)	1,028	(1,015–1,042)
2403	Capitale-Nationale	338	(320–356)	740	(733–747)
2404	Mauricie et Centre-du-Québec	665	(626–704)	912	(903–922)
2405	Estrie	563	(513–612)	1,327	(1,313–1,341)
2406	Montréal	256	(246–266)	771	(767–776)
2407	Outaouais	349	(323–376)	533	(525–541)
2408	Abitibi-Témiscamingue	602	(537–667)	694	(679–709)
2409	Côte-Nord	714	(635–792)	1,690	(1,664–1,716)
2411	Gaspésie–Îles-de-la-Madeleine	691	(599–784)	909	(886–932)
2412	Chaudière-Appalaches	657	(618–696)	1,078	(1,067–1,089)
2413	Laval	284	(259–308)	821	(811–831)
2414	Lanaudière	487	(453–521)	837	(828–846)
2415	Laurentides	392	(368–416)	980	(971–990)
2416	Montérégie	451	(434–468)	882	(877–888)
Ontario		**392**	**(387–398)**	**481**	**(480–483)**
3501	Erie St. Clair	381	(359–402)	598	(591–605)
3502	South West	420	(400–441)	489	(484–494)
3503	Waterloo Wellington	359	(338–379)	367	(362–372)
3504	Hamilton Niagara Haldimand Brant	393	(377–409)	485	(481–489)
3505	Central West	318	(300–336)	385	(380–389)
3506	Mississauga Halton	287	(272–302)	382	(378–386)
3507	Toronto Central	384	(367–402)	521	(517–526)
3508	Central	272	(259–284)	353	(350–356)
3509	Central East	329	(316–343)	376	(373–379)
3510	South East	403	(375–432)	466	(459–473)
3511	Champlain	396	(378–414)	512	(508–516)
3512	North Simcoe Muskoka	507	(476–538)	458	(451–466)
3513	North East	915	(873–957)	1,122	(1,112–1,132)
3514	North West	933	(865–1,002)	954	(939–968)
Manitoba		**528**	**(509–548)**	**847**	**(841–852)**
4610	Winnipeg	481	(457–505)	940	(932–947)
4615	Brandon	722	(619–825)	1,328	(1,297–1,360)
4625	South Eastman	284	(226–341)	410	(392–427)
4630	Interlake	400	(337–464)	387	(371–403)
4640	Central	300	(253–347)	341	(329–354)
4645	Assiniboine	760	(640–879)	934	(908–960)

Map Code	Health Region	Mental Illness Hospitalization 2009–2010 Age-Standardized Rate per 100,000	95% CI	Mental Illness Patient Days 2009–2010 Age-Standardized Rate per 10,000	95% CI
Saskatchewan		**611**	**(587–635)**	**735**	**(729–741)**
4701	Sun Country	367	(282–453)	183	(170–195)
4702	Five Hills	844	(715–973)	1,062	(1,031–1,093)
4704	Regina	557	(512–602)	852	(839–864)
4705	Sunrise	766	(650–881)	907	(878–936)
4706	Saskatoon	390	(358–423)	619	(609–629)
4709	Prince Albert	775	(675–876)	646	(625–667)
4710	Prairie North	889	(779–1,000)	837	(813–860)
Alberta		**428**	**(419–438)**	**665**	**(662–667)**
4831	South Zone	743	(688–797)	958	(945–970)
4832	Calgary Zone	368	(353–382)	760	(755–765)
4833	Central Zone	446	(420–473)	610	(602–618)
4834	Edmonton Zone	376	(360–393)	573	(569–578)
4835	North Zone	548	(515–581)	515	(507–522)
British Columbia		**600**	**(588–612)**	**723**	**(720–726)**
5911	East Kootenay	739	(636–841)	453	(436–470)
5912	Kootenay Boundary	917	(791–1,044)	781	(757–805)
5913	Okanagan	787	(737–836)	802	(791–813)
5914	Thompson/Cariboo/Shuswap	661	(606–716)	556	(544–567)
5921	Fraser East	837	(781–892)	799	(788–811)
5922	Fraser North	495	(467–522)	632	(625–639)
5923	Fraser South	480	(454–506)	611	(604–617)
5931	Richmond	348	(307–390)	354	(345–363)
5932	Vancouver	588	(559–618)	968	(960–976)
5933	North Shore	561	(513–608)	610	(600–621)
5941	South Vancouver Island	503	(468–538)	910	(900–921)
5942	Central Vancouver Island	617	(564–670)	747	(735–760)
5943	North Vancouver Island	449	(389–509)	576	(559–592)
5951	Northwest	1,145	(1,003–1,287)	810	(787–834)
5952	Northern Interior	953	(870–1,036)	845	(829–862)
5953	Northeast	832	(727–936)	829	(806–853)
Yukon		**562**	**(440–683)**	**382**	**(358–406)**
Northwest Territories		**1,291**	**(1,119–1,464)**	**967**	**(936–997)**
Nunavut		**809**	**(669–949)**	**482**	**(456–507)**
Canada		**465**	**(461–468)**	**672**	**(671–673)**

Mental illness hospitalization

Age-standardized rate of separations from general hospitals through discharge or death following a hospitalization for a selected mental illness, per 100,000 population age 15 and older. The hospitalization rate in general hospitals is a partial measure of hospital utilization in acute settings. This indicator may reflect differences between jurisdictions, such as the health of the population, differing health service delivery models and variations in the availability and accessibility of specialized, residential and/or ambulatory and community-based services.

Sources: Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Mental illness patient days

Age-adjusted rate of total number of days in general hospitals for selected mental illness, per 10,000 population age 15 and older. The patient days rate in general hospitals is a partial measure of hospital utilization in acute settings. This indicator may reflect differences between jurisdictions, such as the health of the population, differing health service delivery models and variations in the availability and accessibility of specialized, residential and/or ambulatory and community-based health services.

Sources: Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Hip Replacement 2009–2010 Age-Standardized Rate per 100,000	Hip Replacement 2009–2010 95% CI	Knee Replacement 2009–2010 Age-Standardized Rate per 100,000	Knee Replacement 2009–2010 95% CI
Newfoundland and Labrador		**80**	**(72–88)**	**128**	**(118–138)**
1011	Eastern	79	(68–89)	125	(112–138)
1012	Central	87	(69–105)	144	(121–166)
1013	Western	69	(52–86)	119	(96–142)
Prince Edward Island		**100**	**(84–117)**	**169**	**(148–191)**
Nova Scotia		**107**	**(101–114)**	**174**	**(166–182)**
1211	South Shore	125	(99–152)	205	(172–238)
1212	South West Nova	79	(57–101)	147	(117–176)
1213	Annapolis Valley	125	(101–149)	179	(152–207)
1214	Colchester East Hants	115	(91–140)	179	(149–209)
1218	Cape Breton	110	(92–127)	189	(166–211)
1219	Capital	108	(97–119)	176	(162–189)
New Brunswick		**94**	**(87–101)**	**147**	**(139–156)**
1301	Zone 1 (Moncton area)	98	(84–112)	135	(119–151)
1302	Zone 2 (Saint John area)	100	(85–115)	176	(156–196)
1303	Zone 3 (Fredericton area)	95	(79–110)	204	(182–226)
1306	Zone 6 (Bathurst area)	79	(60–99)	77	(58–95)
Quebec		**69**	**(67–71)**	**103**	**(100–105)**
2401	Bas-Saint-Laurent	78	(67–90)	113	(99–127)
2402	Saguenay–Lac-Saint-Jean	65	(55–74)	156	(141–170)
2403	Capitale-Nationale	69	(63–75)	102	(94–109)
2404	Mauricie et Centre-du-Québec	70	(63–77)	109	(100–118)
2405	Estrie	84	(74–95)	110	(98–121)
2406	Montréal	61	(57–64)	73	(69–77)
2407	Outaouais	96	(85–107)	144	(131–158)
2408	Abitibi-Témiscamingue	48	(36–59)	104	(87–121)
2409	Côte-Nord	57	(41–73)	149	(123–174)
2411	Gaspésie–Îles-de-la-Madeleine	69	(52–86)	132	(110–153)
2412	Chaudière-Appalaches	81	(72–90)	124	(113–135)
2413	Laval	63	(55–71)	95	(85–105)
2414	Lanaudière	74	(66–83)	96	(87–106)
2415	Laurentides	81	(73–89)	101	(92–110)
2416	Montérégie	68	(64–72)	110	(104–116)
Ontario		**110**	**(108–112)**	**184**	**(182–187)**
3501	Erie St. Clair	126	(118–135)	210	(198–221)
3502	South West	135	(127–142)	205	(196–215)
3503	Waterloo Wellington	123	(114–132)	173	(163–184)
3504	Hamilton Niagara Haldimand Brant	127	(121–133)	215	(207–223)
3505	Central West	66	(60–73)	183	(173–194)
3506	Mississauga Halton	100	(93–107)	154	(146–163)
3507	Toronto Central	96	(90–102)	120	(113–127)
3508	Central	94	(89–99)	145	(138–151)
3509	Central East	100	(95–106)	190	(183–197)
3510	South East	129	(119–139)	253	(239–266)
3511	Champlain	107	(101–113)	187	(179–195)
3512	North Simcoe Muskoka	124	(114–135)	167	(155–179)
3513	North East	116	(107–124)	249	(237–261)
3514	North West	143	(127–159)	205	(187–224)
Manitoba		**103**	**(96–109)**	**181**	**(173–189)**
4610	Winnipeg	99	(91–107)	177	(167–188)
4615	Brandon	64	(40–88)	136	(101–170)
4625	South Eastman	100	(72–129)	168	(131–205)
4630	Interlake	105	(83–128)	202	(171–232)
4640	Central	124	(101–148)	202	(172–232)
4645	Assiniboine	102	(79–125)	168	(139–197)

Map Code	Health Region	Hip Replacement 2009–2010 Age-Standardized Rate per 100,000	Hip Replacement 2009–2010 95% CI	Knee Replacement 2009–2010 Age-Standardized Rate per 100,000	Knee Replacement 2009–2010 95% CI
Saskatchewan		**130**	**(122–137)**	**243**	**(233–253)**
4701	Sun Country	104	(76–132)	221	(181–261)
4702	Five Hills	125	(94–156)	213	(174–252)
4704	Regina	96	(83–109)	182	(164–200)
4705	Sunrise	130	(102–159)	261	(220–302)
4706	Saskatoon	158	(142–173)	279	(258–300)
4709	Prince Albert	127	(101–153)	290	(251–330)
4710	Prairie North	105	(78–132)	247	(205–288)
Alberta		**121**	**(117–126)**	**172**	**(167–177)**
4831	South Zone	138	(123–153)	265	(244–286)
4832	Calgary Zone	123	(115–130)	157	(149–165)
4833	Central Zone	152	(139–165)	206	(191–221)
4834	Edmonton Zone	107	(100–114)	150	(142–158)
4835	North Zone	112	(99–124)	173	(158–189)
British Columbia		**108**	**(105–112)**	**152**	**(148–156)**
5911	East Kootenay	136	(111–161)	223	(191–255)
5912	Kootenay Boundary	114	(91–136)	163	(137–189)
5913	Okanagan	137	(126–149)	186	(173–199)
5914	Thompson/Cariboo/Shuswap	128	(113–143)	203	(185–221)
5921	Fraser East	116	(102–130)	189	(172–206)
5922	Fraser North	87	(79–95)	122	(112–132)
5923	Fraser South	101	(94–109)	171	(161–181)
5931	Richmond	65	(53–78)	91	(77–106)
5932	Vancouver	74	(66–81)	82	(74–90)
5933	North Shore	141	(126–155)	155	(140–170)
5941	South Vancouver Island	105	(95–115)	113	(103–124)
5942	Central Vancouver Island	121	(108–133)	167	(152–181)
5943	North Vancouver Island	147	(126–168)	211	(186–235)
5951	Northwest	137	(106–167)	248	(208–287)
5952	Northern Interior	131	(110–152)	195	(170–220)
5953	Northeast	152	(115–188)	183	(143–223)
Yukon		**149**	**(92–205)**	**159**	**(105–213)**
Northwest Territories		**152**	**(94–210)**	**175**	**(116–235)**
Nunavut		**79**	**(6–153)**	**376**	**(237–515)**
Canada		**100**	**(99–101)**	**158**	**(156–159)**

Hip replacement

Age-standardized rate of unilateral or bilateral hip replacement surgery performed on inpatients in acute care hospitals, per 100,000 population age 20 and older. Hip replacement surgery has the potential to improve functional status, reduce pain and contribute to other gains in health-related quality of life. Wide inter-regional variation in hip replacement rates may be attributable to numerous factors, including the availability of services, provider practice patterns and patient preferences.

Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Knee replacement

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 and older. Knee replacement surgery has the potential to improve functional status, reduce pain and contribute to other gains in health-related quality of life. Wide inter-regional variation in knee replacement rates may be attributable to numerous factors, including the availability of services, provider practice patterns and patient preferences.

Sources: Discharge Abstract Database and National Ambulatory Care Reporting System, Canadian Institute for Health Information; Alberta Ambulatory Care Database, Alberta Health and Wellness; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Percutaneous Coronary Intervention 2009–2010 Age-Standardized Rate per 100,000	95% CI	Coronary Artery Bypass Graft Surgery 2009–2010 Age-Standardized Rate per 100,000	95% CI
Newfoundland and Labrador		**♦143**	**(132–153)**	**♦79**	**(72–87)**
1011	Eastern	160	(145–174)	♦82	(71–92)
1012	Central	♦133	(111–156)	73	(57–89)
1013	Western	♦98	(76–121)	77	(59–95)
Prince Edward Island		**♦145**	**(124–165)**	**80**	**(65–95)**
Nova Scotia		**166**	**(158–174)**	**♦60**	**(55–65)**
1211	South Shore	168	(138–198)	62	(43–81)
1212	South West Nova	182	(149–215)	54	(36–71)
1213	Annapolis Valley	♦142	(117–167)	63	(47–79)
1214	Colchester East Hants	171	(141–201)	65	(46–84)
1218	Cape Breton	174	(151–197)	68	(54–82)
1219	Capital	161	(148–174)	♦55	(47–63)
New Brunswick		**♦201**	**(191–211)**	**♦84**	**(77–91)**
1301	Zone 1 (Moncton area)	♦191	(172–211)	76	(64–89)
1302	Zone 2 (Saint John area)	♦228	(205–251)	79	(66–92)
1303	Zone 3 (Fredericton area)	♦247	(222–272)	♦91	(76–106)
1306	Zone 6 (Bathurst area)	190	(161–218)	82	(63–101)
Quebec		**. .**	**.. ..**	**♦60**	**(59–62)**
2401	Bas-Saint-Laurent	. .	.. ..	58	(48–67)
2402	Saguenay–Lac-Saint-Jean	. .	.. ..	♦56	(47–65)
2403	Capitale-Nationale	. .	.. ..	61	(55–67)
2404	Mauricie et Centre-du-Québec	. .	.. ..	♦55	(49–61)
2405	Estrie	. .	.. ..	♦43	(36–50)
2406	Montréal	. .	.. ..	♦57	(54–61)
2407	Outaouais	. .	.. ..	♦51	(42–59)
2408	Abitibi-Témiscamingue	. .	.. ..	78	(63–93)
2409	Côte-Nord	. .	.. ..	70	(53–87)
2411	Gaspésie–Îles-de-la-Madeleine	. .	.. ..	♦99	(80–117)
2412	Chaudière-Appalaches	. .	.. ..	72	(63–80)
2413	Laval	. .	.. ..	♦52	(44–59)
2414	Lanaudière	. .	.. ..	61	(53–68)
2415	Laurentides	. .	.. ..	66	(58–73)
2416	Montérégie	. .	.. ..	66	(62–71)
Ontario		**170**	**(168–173)**	**♦72**	**(71–74)**
3501	Erie St. Clair	♦140	(130–149)	♦82	(75–90)
3502	South West	♦133	(125–141)	70	(64–75)
3503	Waterloo Wellington	♦107	(98–115)	69	(62–76)
3504	Hamilton Niagara Haldimand Brant	♦186	(179–193)	♦86	(81–91)
3505	Central West	♦186	(175–197)	♦77	(70–84)
3506	Mississauga Halton	171	(162–180)	♦77	(71–83)
3507	Toronto Central	♦146	(139–154)	♦49	(45–54)
3508	Central	♦155	(149–162)	♦61	(57–65)
3509	Central East	♦162	(155–168)	65	(60–69)
3510	South East	♦217	(204–230)	♦106	(97–115)
3511	Champlain	♦186	(178–194)	♦60	(56–65)
3512	North Simcoe Muskoka	181	(168–194)	♦86	(77–95)
3513	North East	♦243	(230–255)	66	(59–72)
3514	North West	♦277	(255–299)	♦133	(118–148)
Manitoba		**♦161**	**(153–169)**	**♦77**	**(72–83)**
4610	Winnipeg	♦158	(148–168)	♦75	(68–82)
4615	Brandon	141	(106–177)	59	(37–82)
4625	South Eastman	160	(125–195)	90	(62–117)
4630	Interlake	157	(130–184)	71	(52–89)
4640	Central	172	(144–199)	69	(52–87)
4645	Assiniboine	143	(114–171)	♦91	(69–112)

Map Code	Health Region	Percutaneous Coronary Intervention 2009–2010 Age-Standardized Rate per 100,000	95% CI	Coronary Artery Bypass Graft Surgery 2009–2010 Age-Standardized Rate per 100,000	95% CI
Saskatchewan		**✦205**	**(196–214)**	**✦89**	**(83–96)**
4701	Sun Country	190	(152–228)	✦97	(70–124)
4702	Five Hills	149	(116–181)	87	(61–112)
4704	Regina	161	(144–178)	✦90	(77–102)
4705	Sunrise	✦213	(175–250)	✦102	(77–126)
4706	Saskatoon	✦243	(223–262)	✦87	(75–98)
4709	Prince Albert	✦228	(192–263)	✦95	(72–118)
4710	Prairie North	✦217	(178–256)	✦93	(68–119)
Alberta		**166**	**(161–171)**	**✦50**	**(47–53)**
4831	South Zone	✦119	(105–133)	✦50	(41–59)
4832	Calgary Zone	✦152	(144–160)	✦41	(37–46)
4833	Central Zone	✦183	(169–197)	✦55	(47–62)
4834	Edmonton Zone	169	(161–178)	✦54	(49–59)
4835	North Zone	✦216	(199–234)	58	(49–67)
British Columbia		**✦161**	**(157–165)**	**✦59**	**(57–61)**
5911	East Kootenay	173	(145–202)	✦42	(28–56)
5912	Kootenay Boundary	155	(129–181)	62	(46–78)
5913	Okanagan	✦132	(121–143)	✦48	(42–55)
5914	Thompson/Cariboo/Shuswap	✦140	(125–155)	✦52	(43–61)
5921	Fraser East	✦211	(193–229)	73	(62–84)
5922	Fraser North	172	(160–183)	62	(55–69)
5923	Fraser South	✦197	(186–208)	✦75	(68–82)
5931	Richmond	✦116	(99–132)	✦50	(39–61)
5932	Vancouver	✦117	(108–127)	✦51	(45–57)
5933	North Shore	✦132	(119–146)	60	(51–69)
5941	South Vancouver Island	173	(160–186)	✦50	(43–58)
5942	Central Vancouver Island	183	(168–198)	✦57	(49–65)
5943	North Vancouver Island	181	(157–204)	62	(48–75)
5951	Northwest	174	(141–207)	66	(46–86)
5952	Northern Interior	170	(147–193)	66	(52–81)
5953	Northeast	151	(115–187)	75	(50–101)
Yukon		**✦103**	**(63–143)**	**44**	**(14–74)**
Northwest Territories		**190**	**(128–253)**	**55**	**(17–92)**
Nunavut		**126**	**(44–208)**	*	**
Canada		**169**	**(167–171)**	**66**	**(65–67)**

Percutaneous coronary intervention

Age-standardized rate of percutaneous coronary intervention (PCI) performed on patients in acute care hospitals, same-day surgery facilities or catheterization laboratories, per 100,000 population age 20 and older. 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. The choice of revascularization mode (that is, PCI or CABG) depends on numerous factors, including severity of coronary artery disease, physician preferences, availability of services, referral patterns and differences in population health and socio-economic status.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

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

Coronary artery bypass graft surgery

Age-standardized rate of coronary artery bypass graft (CABG) surgery performed on inpatients in acute care hospitals, per 100,000 population age 20 and older. As with other types of surgical procedures, variations in CABG surgery rates can be attributed to numerous factors, including differences in population demographics and health status, physician practice patterns and availability of services. In cases amenable to treatment with less invasive procedures, percutaneous coronary intervention (PCI), an alternative treatment to improve blood flow to the heart muscle, may be used. Variations in the extent to which PCI is utilized may result in variations in bypass surgery.

Sources: Discharge Abstract Database, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Cardiac Revascularization 2009–2010 Age-Standardized Rate per 100,000	95% CI	Hysterectomy 2009–2010 Age-Standardized Rate per 100,000	95% CI
Newfoundland and Labrador		***221**	**(208–234)**	***368**	**(342–395)**
1011	Eastern	241	(223–258)	344	(310–377)
1012	Central	*206	(179–233)	*454	(383–526)
1013	Western	*175	(146–204)	388	(317–460)
Prince Edward Island		**223**	**(198–248)**	***404**	**(349–460)**
Nova Scotia		***225**	**(215–234)**	***428**	**(406–450)**
1211	South Shore	229	(193–264)	412	(323–501)
1212	South West Nova	236	(199–274)	*561	(456–666)
1213	Annapolis Valley	*205	(175–235)	*608	(508–707)
1214	Colchester East Hants	236	(201–271)	*522	(434–610)
1218	Cape Breton	240	(214–267)	*593	(517–669)
1219	Capital	*215	(199–230)	*270	(245–295)
New Brunswick		***277**	**(265–289)**	***436**	**(411–460)**
1301	Zone 1 (Moncton area)	*268	(245–291)	*426	(379–473)
1302	Zone 2 (Saint John area)	*306	(280–333)	352	(309–395)
1303	Zone 3 (Fredericton area)	*337	(308–365)	*402	(353–451)
1306	Zone 6 (Bathurst area)	*272	(238–306)	*477	(396–558)
Quebec		**. .**	**.. ..**	***305**	**(299–311)**
2401	Bas-Saint-Laurent	. .	.. ..	*430	(381–480)
2402	Saguenay–Lac-Saint-Jean	. .	.. ..	*525	(476–573)
2403	Capitale-Nationale	. .	.. ..	*253	(234–271)
2404	Mauricie et Centre-du-Québec	. .	.. ..	*404	(373–434)
2405	Estrie	. .	.. ..	*478	(437–520)
2406	Montréal	. .	.. ..	*210	(199–220)
2407	Outaouais	. .	.. ..	*234	(209–258)
2408	Abitibi-Témiscamingue	. .	.. ..	*584	(516–652)
2409	Côte-Nord	. .	.. ..	342	(283–400)
2411	Gaspésie–Îles-de-la-Madeleine	. .	.. ..	*427	(358–495)
2412	Chaudière-Appalaches	. .	.. ..	*385	(352–417)
2413	Laval	. .	.. ..	*273	(248–298)
2414	Lanaudière	. .	.. ..	332	(305–358)
2415	Laurentides	. .	.. ..	*301	(278–323)
2416	Montérégie	. .	.. ..	*309	(295–324)
Ontario		***241**	**(238–244)**	***318**	**(313–322)**
3501	Erie St. Clair	*221	(209–233)	*431	(405–458)
3502	South West	*201	(192–210)	*412	(391–434)
3503	Waterloo Wellington	*175	(164–185)	*387	(364–410)
3504	Hamilton Niagara Haldimand Brant	*272	(263–281)	*404	(387–421)
3505	Central West	*261	(249–274)	*256	(239–273)
3506	Mississauga Halton	246	(235–256)	*227	(213–240)
3507	Toronto Central	*194	(185–202)	*171	(160–182)
3508	Central	*216	(208–223)	*238	(227–250)
3509	Central East	*226	(218–233)	316	(302–329)
3510	South East	*320	(304–336)	*382	(352–411)
3511	Champlain	244	(234–253)	336	(320–352)
3512	North Simcoe Muskoka	*266	(250–281)	*367	(338–395)
3513	North East	*306	(292–320)	*514	(482–546)
3514	North West	*409	(383–436)	352	(312–392)
Manitoba		**238**	**(228–247)**	***383**	**(365–401)**
4610	Winnipeg	232	(220–245)	332	(310–354)
4615	Brandon	201	(159–243)	*571	(459–684)
4625	South Eastman	249	(205–293)	*506	(411–600)
4630	Interlake	227	(194–259)	396	(321–471)
4640	Central	241	(209–274)	*481	(410–552)
4645	Assiniboine	234	(198–269)	*510	(418–603)

Map Code	Health Region	Cardiac Revascularization 2009–2010 Age-Standardized Rate per 100,000	95% CI	Hysterectomy 2009–2010 Age-Standardized Rate per 100,000	95% CI
Saskatchewan		**292**	**(281–303)**	**437**	**(416–459)**
4701	Sun Country	284	(238–330)	476	(373–579)
4702	Five Hills	233	(192–275)	677	(552–801)
4704	Regina	248	(227–269)	417	(376–458)
4705	Sunrise	307	(263–351)	457	(357–556)
4706	Saskatoon	328	(305–350)	376	(339–412)
4709	Prince Albert	318	(277–360)	298	(234–361)
4710	Prairie North	310	(264–356)	597	(495–699)
Alberta		**215**	**(209–220)**	**358**	**(348–368)**
4831	South Zone	168	(151–184)	519	(472–566)
4832	Calgary Zone	192	(184–201)	295	(280–310)
4833	Central Zone	237	(221–253)	522	(486–558)
4834	Edmonton Zone	223	(213–233)	326	(309–343)
4835	North Zone	274	(254–293)	412	(379–446)
British Columbia		**219**	**(214–223)**	**298**	**(290–306)**
5911	East Kootenay	215	(183–247)	331	(263–398)
5912	Kootenay Boundary	217	(186–247)	421	(344–498)
5913	Okanagan	180	(167–193)	360	(326–394)
5914	Thompson/Cariboo/Shuswap	190	(173–208)	465	(414–515)
5921	Fraser East	282	(261–303)	428	(387–468)
5922	Fraser North	232	(219–246)	229	(210–248)
5923	Fraser South	270	(257–283)	257	(238–276)
5931	Richmond	164	(145–184)	171	(144–199)
5932	Vancouver	167	(156–179)	157	(142–172)
5933	North Shore	191	(174–207)	209	(184–235)
5941	South Vancouver Island	222	(207–237)	306	(278–335)
5942	Central Vancouver Island	237	(220–255)	497	(450–545)
5943	North Vancouver Island	239	(212–266)	503	(432–574)
5951	Northwest	238	(199–276)	391	(316–466)
5952	Northern Interior	234	(207–261)	670	(597–743)
5953	Northeast	224	(180–267)	388	(306–470)
Yukon		**144**	**(94–194)**	**329**	**(228–431)**
Northwest Territories		**245**	**(172–318)**	**275**	**(192–358)**
Nunavut		**141**	**(56–225)**	**229**	**(128–330)**
Canada		**236**	**(234–238)**	**328**	**(325–332)**

Cardiac revascularization

Age-standardized rate of coronary artery bypass graft (CABG) surgery performed on inpatients in acute care hospitals or percutaneous coronary intervention (PCI) performed on patients in acute care hospitals, same-day surgery facilities or catheterization laboratories, per 100,000 population age 20 and older. The choice of revascularization mode (that is, PCI or CABG) depends on numerous factors, including severity of coronary artery disease, physician preferences, availability of services, referral patterns and differences in population health and socio-economic status. The combined cardiac revascularization rate represents total activity of cardiac revascularization in a jurisdiction.

Note: Rates for Quebec are not available due to differences in data collection; the Canada rate does not include Quebec.

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

Hysterectomy

Age-standardized rate of hysterectomy provided to patients in acute care hospitals or same-day surgery facilities, per 100,000 women age 20 and older. Similar to other types of surgical procedures, variations in hysterectomy rates can be attributed to numerous factors, including differences in population demographics and health status, physician practice patterns and availability of services.

Sources: Discharge Abstract Database and National Ambulatory Care Reporting System, Canadian Institute for Health Information; Alberta Ambulatory Care Database, Alberta Health and Wellness; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	Inflow/Outflow Ratio, 2009–2010					
		Overall	Hip Replacement	Knee Replacement	Hysterectomy	Percutaneous Coronary Intervention	Bypass Surgery
Newfoundland and Labrador		..	..	..	..	..	..
1011	Eastern	1.11	1.07	1.01	1.06	1.52	1.71
1012	Central	0.85	0.95	1.07	0.96	0.00	0.00
1013	Western	0.94	0.95	0.95	0.98	0.00	0.00
Prince Edward Island		**0.92**	**0.95**	**0.96**	**0.93**	**0.00**	**0.00**
Nova Scotia		..	..	..	..	..	..
1211	South Shore	0.66	0.00	0.00	0.77	0.00	0.00
1212	South West Nova	0.72	0.00	0.00	0.79	0.00	0.00
1213	Annapolis Valley	0.98	1.50	2.01	1.26	0.00	0.00
1214	Colchester East Hants	0.58	0.00	0.00	0.92	0.00	0.00
1218	Cape Breton	0.91	1.05	1.08	0.80	0.00	0.00
1219	Capital	1.45	1.50	1.34	1.33	2.93	3.35
New Brunswick		..	..	..	..	..	..
1301	Zone 1 (Moncton area)	1.11	1.16	1.20	1.26	0.00	0.00
1302	Zone 2 (Saint John area)	1.15	1.06	0.96	0.88	4.02	4.41
1303	Zone 3 (Fredericton area)	0.92	1.00	1.12	1.05	0.00	0.00
1306	Zone 6 (Bathurst area)	0.93	1.09	0.99	0.92	0.00	0.00
Quebec		..	..	..	..	..	..
2401	Bas-Saint-Laurent	0.93	0.94	0.91	0.97	..	0.00
2402	Saguenay–Lac-Saint-Jean	1.00	0.97	1.06	1.05	..	0.95
2403	Capitale-Nationale	1.33	1.18	1.14	1.36	..	2.61
2404	Mauricie et Centre-du-Québec	0.89	0.98	1.00	0.95	..	0.00
2405	Estrie	1.09	0.63	0.62	1.03	..	1.79
2406	Montréal	1.41	1.79	1.81	1.63	..	2.88
2407	Outaouais	0.78	0.61	0.74	0.43	..	0.00
2408	Abitibi-Témiscamingue	0.98	0.93	1.05	1.02	..	0.00
2409	Côte-Nord	0.78	0.79	0.73	0.71	..	0.00
2411	Gaspésie–Îles-de-la-Madeleine	0.73	0.78	0.63	0.62	..	0.00
2412	Chaudière-Appalaches	0.78	1.06	1.13	0.79	..	0.00
2413	Laval	0.78	0.34	0.57	0.77	..	0.00
2414	Lanaudière	0.70	0.65	0.60	0.65	..	0.00
2415	Laurentides	0.75	0.53	0.70	0.58	..	0.00
2416	Montérégie	0.78	0.68	0.69	0.75	..	0.00
Ontario		..	..	..	..	..	..
3501	Erie St. Clair	0.88	0.87	0.90	0.86	0.41	0.00
3502	South West	1.07	0.99	0.97	1.10	1.15	1.51
3503	Waterloo Wellington	0.92	0.96	0.99	0.93	1.39	1.43
3504	Hamilton Niagara Haldimand Brant	1.00	0.98	0.95	1.06	1.00	1.11
3505	Central West	0.75	0.66	0.67	0.54	0.00	0.00
3506	Mississauga Halton	0.96	0.82	0.97	0.84	1.43	1.40
3507	Toronto Central	1.87	2.48	2.55	2.48	3.11	4.44
3508	Central	0.91	0.85	1.00	0.90	0.81	0.93
3509	Central East	0.82	0.74	0.86	0.81	0.46	0.00
3510	South East	0.92	0.90	0.99	0.98	0.96	0.92
3511	Champlain	1.12	1.11	1.04	1.15	1.14	1.43
3512	North Simcoe Muskoka	0.88	0.73	0.74	0.90	0.00	0.00
3513	North East	0.93	0.59	0.69	0.89	0.95	0.85
3514	North West	0.92	0.92	1.01	0.79	0.81	0.00
Manitoba		..	..	..	..	..	..
4610	Winnipeg	1.40	1.69	1.57	1.58	1.91	1.93
4615	Brandon	1.57	0.83	2.48	1.96	0.00	0.00
4625	South Eastman	0.60	0.00	0.00	0.22	0.00	0.00
4630	Interlake	0.52	0.00	0.00	0.17	0.00	0.00
4640	Central	0.78	0.81	0.75	0.32	0.00	0.00
4645	Assiniboine	0.56	0.00	0.00	0.08	0.00	0.00

Map Code	Health Region	Inflow/Outflow Ratio, 2009–2010 Overall	Hip Replacement	Knee Replacement	Hysterectomy	Percutaneous Coronary Intervention	Bypass Surgery
Saskatchewan		..	..	..	..	..	..
4701	Sun Country	0.56	0.00	0.00	0.31	0.00	0.00
4702	Five Hills	0.84	0.40	0.40	0.82	0.00	0.00
4704	Regina	1.24	1.44	1.35	1.25	2.11	2.22
4705	Sunrise	0.82	0.00	0.00	1.09	0.00	0.00
4706	Saskatoon	1.37	1.86	2.10	1.56	1.84	1.69
4709	Prince Albert	0.90	0.70	0.52	0.67	0.00	0.00
4710	Prairie North	1.03	0.00	0.00	1.46	0.00	0.00
Alberta		..	..	..	..	..	..
4831	South Zone	0.92	0.99	1.15	0.98	0.00	0.00
4832	Calgary Zone	1.07	1.14	1.06	1.05	1.43	1.59
4833	Central Zone	0.80	0.66	0.69	0.69	0.00	0.00
4834	Edmonton Zone	1.25	1.28	1.27	1.30	1.84	1.78
4835	North Zone	0.79	0.62	0.68	0.58	0.00	0.00
British Columbia		..	..	..	..	..	..
5911	East Kootenay	0.83	0.65	0.72	0.75	0.00	0.00
5912	Kootenay Boundary	0.84	0.76	0.86	0.79	0.00	0.00
5913	Okanagan	1.02	0.98	1.01	1.05	0.52	0.00
5914	Thompson/Cariboo/Shuswap	0.93	0.54	0.62	0.99	0.00	0.00
5921	Fraser East	0.92	0.71	0.81	0.87	0.00	0.00
5922	Fraser North	1.02	0.77	0.85	0.82	2.32	2.23
5923	Fraser South	0.79	0.46	0.66	0.67	0.00	0.00
5931	Richmond	0.97	1.46	2.30	0.89	0.00	0.00
5932	Vancouver	1.64	3.54	2.87	2.48	4.49	4.59
5933	North Shore	0.88	0.70	0.97	0.81	0.00	0.00
5941	South Vancouver Island	1.17	0.92	0.94	1.05	2.52	3.05
5942	Central Vancouver Island	0.86	0.87	0.90	0.91	0.00	0.00
5943	North Vancouver Island	0.84	1.03	1.07	0.97	0.00	0.00
5951	Northwest	0.83	0.39	0.56	0.91	0.00	0.00
5952	Northern Interior	0.89	0.65	0.77	0.72	0.00	0.00
5953	Northeast	0.84	0.89	0.86	0.78	0.00	0.00
Yukon		**0.84**	**0.00**	**0.59**	**0.87**	**0.00**	**0.00**
Northwest Territories		**0.98**	**0.84**	**0.93**	**0.98**	**0.00**	**0.00**
Nunavut		**0.43**	**0.00**	**0.00**	**0.24**	**0.00**	**0.00**
Canada		..	..	..	..	..	..

Inflow/outflow ratio

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 (PCI) and coronary artery bypass surgery procedures from all relevant facilities. A ratio of less than one indicates that health care utilization by residents of a region exceeded care provided within that region, suggesting an outflow effect. A ratio greater than one indicates that care provided by a region exceeded the utilization by its residents, suggesting an inflow effect. A ratio of one indicates that care provided by a region is equivalent to the utilization by its residents, suggesting that inflow and outflow activity, if it exists at all, is balanced. A ratio of zero is an indication that none of the institutions in the region provided the service and residents received care outside of their region.

Note: The PCI inflow/outflow ratios for Quebec are not available due to differences in data collection.

Sources: Discharge Abstract Database and National Ambulatory Care Reporting System, Canadian Institute for Health Information; Alberta Ambulatory Care Database, Alberta Health and Wellness; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

Map Code	Health Region	General/Family Physicians 2009		Specialist Physicians 2009	
		Rate per 100,000	95% CI	Rate per 100,000	95% CI
Newfoundland and Labrador		**118**	**(108–127)**	**102**	**(93–111)**
1011	Eastern	117	(104–129)	128	(115–141)
1012	Central	113	(92–135)	64	(48–80)
1013	Western	125	(100–150)	73	(54–92)
Prince Edward Island		**89**	**(74–105)**	**76**	**(62–90)**
Nova Scotia		**117**	**(110–124)**	**115**	**(108–122)**
1211	South Shore	113	(86–140)	58	(39–78)
1212	South West Nova	86	(62–110)	46	(28–63)
1213	Annapolis Valley	102	(80–124)	74	(56–93)
1214	Colchester East Hants	92	(71–114)	46	(31–62)
1218	Cape Breton	107	(89–126)	80	(64–96)
1219	Capital	136	(125–147)	179	(166–192)
New Brunswick		**109**	**(102–117)**	**85**	**(79–92)**
1301	Zone 1 (Moncton area)	110	(96–124)	110	(96–124)
1302	Zone 2 (Saint John area)	102	(87–117)	99	(84–114)
1303	Zone 3 (Fredericton area)	101	(86–115)	65	(53–77)
1306	Zone 6 (Bathurst area)	116	(92–140)	72	(53–90)
Quebec		**110**	**(108–113)**	**112**	**(110–115)**
2401	Bas-Saint-Laurent	135	(119–152)	97	(83–110)
2402	Saguenay–Lac-Saint-Jean	113	(101–126)	80	(70–91)
2403	Capitale-Nationale	150	(141–160)	177	(167–187)
2404	Mauricie et Centre-du-Québec	96	(88–105)	75	(68–83)
2405	Estrie	129	(116–142)	137	(124–150)
2406	Montréal	120	(115–125)	207	(201–214)
2407	Outaouais	96	(85–106)	56	(48–64)
2408	Abitibi-Témiscamingue	127	(109–145)	82	(68–97)
2409	Côte-Nord	135	(112–158)	60	(44–75)
2411	Gaspésie–Îles-de-la-Madeleine	179	(152–206)	85	(66–104)
2412	Chaudière-Appalaches	108	(98–118)	71	(63–80)
2413	Laval	88	(78–97)	70	(61–78)
2414	Lanaudière	81	(73–89)	54	(47–61)
2415	Laurentides	87	(79–95)	47	(41–53)
2416	Montérégie	94	(89–99)	62	(58–66)
Ontario		**90**	**(89–92)**	**97**	**(95–99)**
3501	Erie St. Clair	66	(60–73)	56	(50–61)
3502	South West	88	(82–94)	109	(102–115)
3503	Waterloo Wellington	81	(74–87)	58	(53–64)
3504	Hamilton Niagara Haldimand Brant	81	(77–86)	100	(95–105)
3505	Central West	62	(57–68)	43	(39–48)
3506	Mississauga Halton	76	(71–81)	61	(56–65)
3507	Toronto Central	157	(150–164)	295	(285–304)
3508	Central	82	(78–86)	69	(65–73)
3509	Central East	70	(66–74)	58	(54–62)
3510	South East	108	(99–117)	110	(100–119)
3511	Champlain	117	(111–123)	132	(126–138)
3512	North Simcoe Muskoka	86	(78–95)	52	(45–59)
3513	North East	92	(84–100)	64	(57–70)
3514	North West	101	(88–114)	60	(50–70)
Manitoba		**95**	**(90–101)**	**88**	**(83–93)**
4610	Winnipeg	102	(94–109)	143	(134–151)
4615	Brandon	145	(112–178)	83	(58–109)
4625	South Eastman	57	(39–75)	*	**
4630	Interlake	71	(53–90)	17	(8–26)
4640	Central	88	(70–105)	16	(8–23)
4645	Assiniboine	88	(66–110)	*	**

Map Code	Health Region	General/Family Physicians 2009 Rate per 100,000	General/Family Physicians 2009 95% CI	Specialist Physicians 2009 Rate per 100,000	Specialist Physicians 2009 95% CI
Saskatchewan		**94**	**(88–100)**	**72**	**(67–77)**
4701	Sun Country	66	(44–88)	*	**
4702	Five Hills	81	(57–105)	28	(14–42)
4704	Regina	96	(84–108)	84	(73–96)
4705	Sunrise	65	(43–86)	28	(14–42)
4706	Saskatoon	118	(105–130)	140	(127–153)
4709	Prince Albert	106	(83–129)	41	(27–56)
4710	Prairie North	81	(60–102)	17	(7–27)
Alberta		**113**	**(110–117)**	**91**	**(88–94)**
4831	South Zone	99	(87–110)	48	(40–56)
4832	Calgary Zone	120	(114–126)	113	(108–119)
4833	Central Zone	91	(82–100)	28	(23–33)
4834	Edmonton Zone	127	(121–134)	129	(122–136)
4835	North Zone	89	(80–98)	13	(10–17)
British Columbia		**119**	**(115–122)**	**96**	**(93–99)**
5911	East Kootenay	153	(125–180)	40	(26–54)
5912	Kootenay Boundary	153	(125–180)	54	(38–70)
5913	Okanagan	117	(106–128)	85	(75–94)
5914	Thompson/Cariboo/Shuswap	108	(94–121)	55	(45–65)
5921	Fraser East	88	(77–99)	46	(38–54)
5922	Fraser North	85	(77–92)	75	(68–82)
5923	Fraser South	80	(73–86)	49	(44–54)
5931	Richmond	86	(73–100)	64	(53–75)
5932	Vancouver	171	(161–181)	266	(254–279)
5933	North Shore	130	(116–143)	66	(57–76)
5941	South Vancouver Island	160	(147–173)	130	(119–142)
5942	Central Vancouver Island	125	(112–139)	62	(52–71)
5943	North Vancouver Island	150	(129–172)	67	(53–82)
5951	Northwest	143	(116–170)	27	(15–38)
5952	Northern Interior	121	(103–139)	55	(43–68)
5953	Northeast	102	(78–126)	10	(3–18)
Yukon		**190**	**(144–237)**	**30**	**(11–48)**
Northwest Territories		**69**	**(44–94)**	**30**	**(14–46)**
Nunavut		**31**	**(12–50)**	*	**
Canada		**103**	**(102–104)**	**99**	**(98–100)**

Physicians

General/family physicians (family medicine and emergency family medicine specialists) and **specialist physicians** (medical, surgical and laboratory specialists) on December 31 of the reference year, per 100,000 population. The data includes active physicians in clinical practice and those not working in a clinical practice. Active physicians are defined as physicians who have an MD degree, are registered with a provincial/territorial medical college and have a valid mailing address. The data excludes residents and non-licensed physicians who requested that their information not be published in the *Canadian Medical Directory* as of December 31 of the reference year. Generally, specialist physicians include certificants of the Royal College of Physicians and Surgeons of Canada (RCPSC) and/or the Collège des médecins du Québec (CMQ), with the exception of Saskatchewan, Newfoundland and Labrador, Nova Scotia, New Brunswick and the Yukon, where specialists also include physicians who are licensed as specialists but who are not certified by the RCPSC or the CMQ (that is, non-certified specialists). For all other jurisdictions, non-certified specialists are counted as general 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. For further methodological information, please see *Supply, Distribution and Migration of Canadian Physicians* (www.cihi.ca). Physician-to-population rates are useful indicators and are published by a variety of agencies to support health human resources planning. However, due to differences in data collection, processing and reporting methodology, CIHI's results may differ from provincial and territorial data. Readers are cautioned to avoid inferences regarding the adequacy of provider resources based on supply ratios alone.

Note: Rates are produced using the most recent Statistics Canada population estimates and may differ slightly from previous CIHI publications.
Source: Scott's Medical Database, Canadian Institute for Health Information, extracted August 2010.

	Selected Health Professionals†										
	2009						2008				
	Nurses			Occupational	Physio-			Social		Dental	
	RNs	LPNs	Pharmacists	Therapists	therapists	Psychiatrists	Psychologists	Workers	Dentists	Hygienists	Optometrists
N.L.	1,140	494	116	30	38	12	39	245	35	23	10
P.E.I.	996	471	114	31	38	9	20	175	50	51	13
N.S.	949	357	117	40	60	15	49	175	56	58	11
N.B.	1,048	364	92	40	60	9	41	205	39	48	15
Que.	839	244	95	52	48	14	95	93	54	61	17
Ont.	718	219	79	32	49	14	25	90	63	81	13
Man.	907	216	100	41	56	12	17	57	51	50	9
Sask.	878	253	115	25	51	7	45	118	37	40	12
Alta.	792	180	100	41	54	9	67	159	54	62	13
B.C.	688	169	88	36	59	14	24	51	67	63	11
Y.T.	1,080	188	85		103	*	..		142	75	15
N.W.T.	1,348	217	46	26	..	*	180	97	113	51	0
Nun.		..	92		..	0	60		156	6	25
Canada	**785**	**227**	**90**	**39**	**51**	13	**47**	**100**	**58**	**67**	**14**

† Rates per 100,000 population.

	Health Expenditure									
	Total Health Expenditure									
	Current Dollars ($ '000,000)			GDP (%)	Public Sector (%)	By Use of Funds (Percentage Distribution of $ '000,000), 2008				
	Actual 2008	Forecast 2009	Forecast 2010	2008	2008	Institutional Services	Professional Services	Drugs	Public Health	Capital and Other Health
N.L.	2,725	2,874	3,095	8.7	76.6	53.3	17.5	15.3	3.4	10.5
P.E.I.	707	796	840	15.3	72.2	43.9	20.4	15.7	4.3	15.7
N.S.	5,071	5,381	5,711	14.8	70.6	45.3	21.1	17.2	3.5	12.9
N.B.	3,963	4,184	4,385	14.5	71.1	46.0	21.1	16.9	3.4	12.6
Que.	35,687	38,213	40,217	11.8	71.4	41.3	21.6	20.0	3.9	13.2
Ont.	67,730	71,582	74,629	11.5	67.8	36.1	26.2	17.1	7.2	13.4
Man.	6,737	7,150	7,708	13.3	74.7	43.6	21.9	13.3	6.9	14.3
Sask.	5,455	5,860	6,131	8.6	77.4	40.7	21.9	14.0	9.4	14.0
Alta.	20,496	22,018	23,583	7.0	72.7	35.8	25.2	12.5	9.1	17.4
B.C.	22,191	22,965	24,259	11.2	70.5	37.7	24.6	12.9	6.4	18.4
Y.T.	241	271	272	12.7	79.2	40.2	17.4	9.8	17.7	14.9
N.W.T.	406	423	406	8.0	84.7	47.0	17.2	6.5	7.5	21.7
Nun.	367	384	403	22.9	94.3	41.6	16.1	5.2	10.7	26.5
Canada	**171,777**	**182,100**	**191,639**	**10.7**	**70.5**	**38.6**	**24.1**	**16.3**	**6.4**	**14.5**

	Public Sector Health Expenditure by Use of Funds ($ per Capita), 2008					Private Sector Health Expenditure by Use of Funds ($ per Capita), 2008				
	Institutional Services	Professional Services	Drugs	Public Health	Capital and Other Health	Institutional Services	Professional Services	Drugs	Public Health	Capital and Other Health
N.L.	2,626	654	266	182	396	242	289	557	0	169
P.E.I.	1,868	652	232	220	688	356	380	563	0	107
N.S.	2,131	693	325	187	490	324	450	605	0	211
N.B.	2,167	682	254	178	492	275	436	645	0	175
Que.	1,668	572	415	177	453	232	423	507	0	156
Ont.	1,541	811	331	375	491	348	562	564	0	213
Man.	2,119	749	306	387	610	318	471	438	0	188
Sask.	1,914	787	347	503	613	279	394	407	0	139
Alta.	1,813	805	255	521	749	229	631	458	0	241
B.C.	1,732	608	222	326	680	174	636	432	0	251
Y.T.	2,235	857	375	1,287	1,004	689	410	335	0	82
N.W.T.	3,681	1,239	314	694	1,946	689	364	294	0	73
Nun.	4,666	1,688	349	1,237	3,007	160	176	257	0	73
Canada	**1,712**	**717**	**324**	**332**	**547**	**279**	**527**	**515**	**0**	**202**

Health professionals

Registered nurses (RNs), **licensed practical nurses (LPNs)**, **pharmacists** (with the exception of Quebec, the Yukon and Nunavut), **physiotherapists** and **occupational therapists** (with the exception of Quebec): rates reflect health professionals registered with active-practising status who are employed in these health professions. For **psychiatrists**, data reflects personnel regardless of employment status and includes the number of active registered psychiatrists. Refer to page 111 for more information on certified and non-certified specialist physicians. For other health professionals, data reflects personnel regardless of employment status and includes the number of active registered **dentists**; registered **dental hygienists**; active registered **optometrists**; active registered **psychologists**; and registered **social workers** (please note that social workers are not regulated in Manitoba, Saskatchewan or the territories).

Notes: Data on occupational therapists for Quebec and data on pharmacists for Quebec and Nunavut may include different membership categories for registrants due to differences in data collection. Data on RNs for the territories includes secondary registrations. Personnel-per-population rates are revised annually using the most recent Statistics Canada population estimates and therefore may differ slightly from previously published figures. Rates may differ from data published by provincial/territorial regulatory authorities due to CIHI's collection, processing and reporting methodology. Please consult *Canada's Health Care Providers, 1997 to 2006: A Reference Guide* and the *HPDB Technical Report* for more detailed methodological notes, data quality issues and profession-specific information.

Sources: Health Personnel Database, Canadian Institute for Health Information; Statistics Canada, *Quarterly Demographic Estimates* 23, 4 (March 2010), catalogue no. 91-002-X.

Total health expenditure

Total health expenditure includes any type of expenditure for which the primary objective is to improve or prevent the deterioration of health status. Presented in current dollars and as a proportion of gross domestic product (GDP). This definition allows economic activities to be measured according to primary purpose and secondary effects. Activities that are undertaken with the direct purpose of providing or maintaining health are included. Other activities are not included, even though they may impact health. For example, funds aligning with housing and income support policies that have social welfare goals as their primary purpose are not considered to be health expenditures, yet they are recognized as powerful factors in determining population health.

Source: National Health Expenditure Database, Canadian Institute for Health Information.

Proportion of public sector

Public-sector health expenditure presented as a proportion of total health expenditure. Public sector includes health care spending by governments and government agencies.

Source: National Health Expenditure Database, Canadian Institute for Health Information.

Total health expenditure by use of funds

Percentage distribution of total health expenditure by health-spending category. **Institutional services** includes hospitals and residential care types of facilities that are approved, funded or operated by provincial/territorial governments. **Professional services** includes expenditures on primary professional fees paid to physicians in private service as well as for the services of privately practising dentists, denturists, chiropractors and other health professionals. This category does not include the remuneration of health professionals on the payrolls of hospitals or public-sector health agencies and generally represents amounts that flow through provincial medical care plans. **Drugs** includes expenditures on prescribed drugs and non-prescribed products purchased in retail stores. This category does not include drugs dispensed in hospitals and other institutions. **Public health** is that provided by governments and governmental agencies and includes expenditures for items such as food and drug safety, health inspections, health promotion, community mental health programs, public health nursing, measures to prevent the spread of communicable diseases and other related activities. **Capital and other health** includes expenditure on construction, machinery, equipment and some software for hospitals, clinics, first-aid stations and residential care facilities (capital); the cost of providing health insurance programs by the government and private health insurance companies, and all costs for the infrastructure to operate health departments (administration expenditures); and, at the aggregate level, expenditures on home care, medical transportation (ambulances), hearing aids, other appliances and prostheses, health research and miscellaneous health care (other health).

Source: National Health Expenditure Database, Canadian Institute for Health Information.

General Notes

- The methodology used for the indicators was designed to maximize inter-regional, interprovincial and inter-territorial comparability given the characteristics of available national data sets. For this reason, there may be differences between definitions, data sources and extraction procedures used in some local, regional or provincial/territorial reports when compared to those described here. In addition, discrepancies may exist due to ongoing updates to the databases. Data presented here includes the latest updates available at the time of publication.
- Health regions are defined by provincial governments as areas of responsibility for regional health boards (that is, legislated) or as regions of interest to health care authorities. In order to determine what health region a patient belongs to, postal codes are first mapped to census geography using Statistics Canada's Postal Code Conversion File (PCCF, Vintage December 2009) and then to a health region using another Statistics Canada product, "Health Regions: Boundaries and Correspondence With Census Geography." Boundaries are those that were in effect as of December 2007 unless otherwise specified.
- Alberta is reported by the five planning zones that replaced the former nine health regions (areas): South Zone (former areas 1 and 2); Calgary Zone (former area 3); Central Zone (former areas 4 and 5); Edmonton Zone (former area 6); and North Zone (former areas 7, 8 and 9). Boundaries are those that were in effect as of December 2010 and as per direction from Alberta Health Services.
- Data for regions with a population of at least 50,000 is reported. This threshold ensures stability in rates and reduces the risk of suppression stemming from privacy and confidentiality issues.
- Records with invalid, missing or partial postal codes cannot be mapped to a health region and therefore are not included in the regional rates. However, they are included in the provincial rates when possible. Non-Canadian residents are excluded from Canada rates; they are identified by mini–postal codes relating to one of the U.S. states or by a postal code value or other relevant data element indicating out-of-country residents.
- With the exception of in-hospital hip fracture rates, indicator data is reported based on the region of the person's residence, not region of hospitalization. In-hospital hip fracture rate is a measure of patient safety in a hospital. Therefore, this indicator is reported based on the jurisdiction where hospitalization occurred, not the jurisdiction of the person's residence.

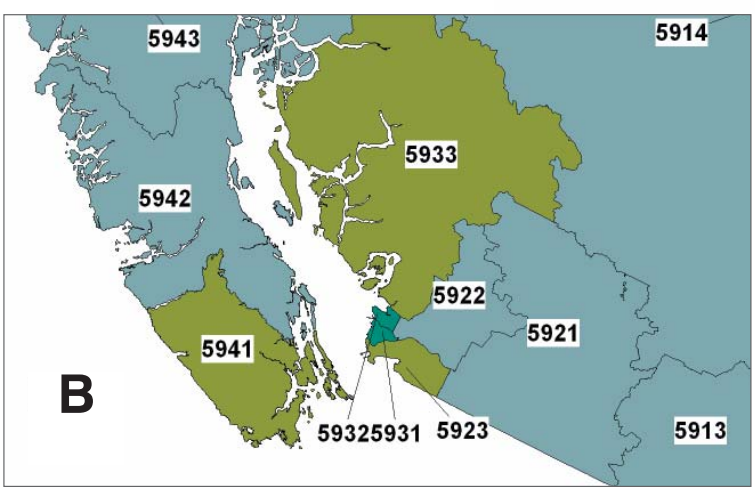
- Unless otherwise specified, hospitalizations include discharges and deaths for inpatients in acute care hospitals for the reference period. Same-day surgery (outpatient) cases are included in several indicators. Patients admitted to non–acute care hospitals (for example, chronic care, psychiatric or rehabilitation facilities) are not included in the totals.
- For procedure-derived indicators (for example, hip and knee replacement, percutaneous coronary intervention and coronary artery bypass), rates are based on the total number of discharges rather than the total number of interventions. For example, a bilateral knee replacement provided at the same admission is counted as one event. Procedure-derived indicators include discharges from acute care hospitals as well as same-day surgery facilities, where applicable.
- For the mental health–related indicators (30-day readmission for mental illness [MI], repeat hospitalizations for MI, MI hospitalization, MI patient days and self-injury hospitalization), the population of interest includes discharges from general hospitals. All free-standing psychiatric hospitals identified by the database owners used were not included. For the Discharge Abstract Database (DAD), these include all institutions identified as analytical institution type 5 (except Battlefords Union Hospital, Victoria Hospital and Yorkton Regional Health Centre in Saskatchewan, which were confirmed by Saskatchewan Health as acute mental health units within general hospitals); for hospitalization data from Quebec (MED-ÉCHO), these include all centres hospitaliers de soins psychiatriques. A list of psychiatric hospitals in the Ontario Mental Health Reporting System (OMHRS) was provided by the OMHRS program area at CIHI. Specialized acute services can be provided in general hospitals or psychiatric hospitals, and service delivery may differ slightly across jurisdictions. Therefore, interjurisdictional comparisons should be done with caution.
- The mental illnesses selected for the mental health–related indicators (except self-injury hospitalization) are substance-related disorders; schizophrenia, delusional and non-organic psychotic disorders; mood disorders; anxiety disorders; and selected disorders of adult personality and behaviour.

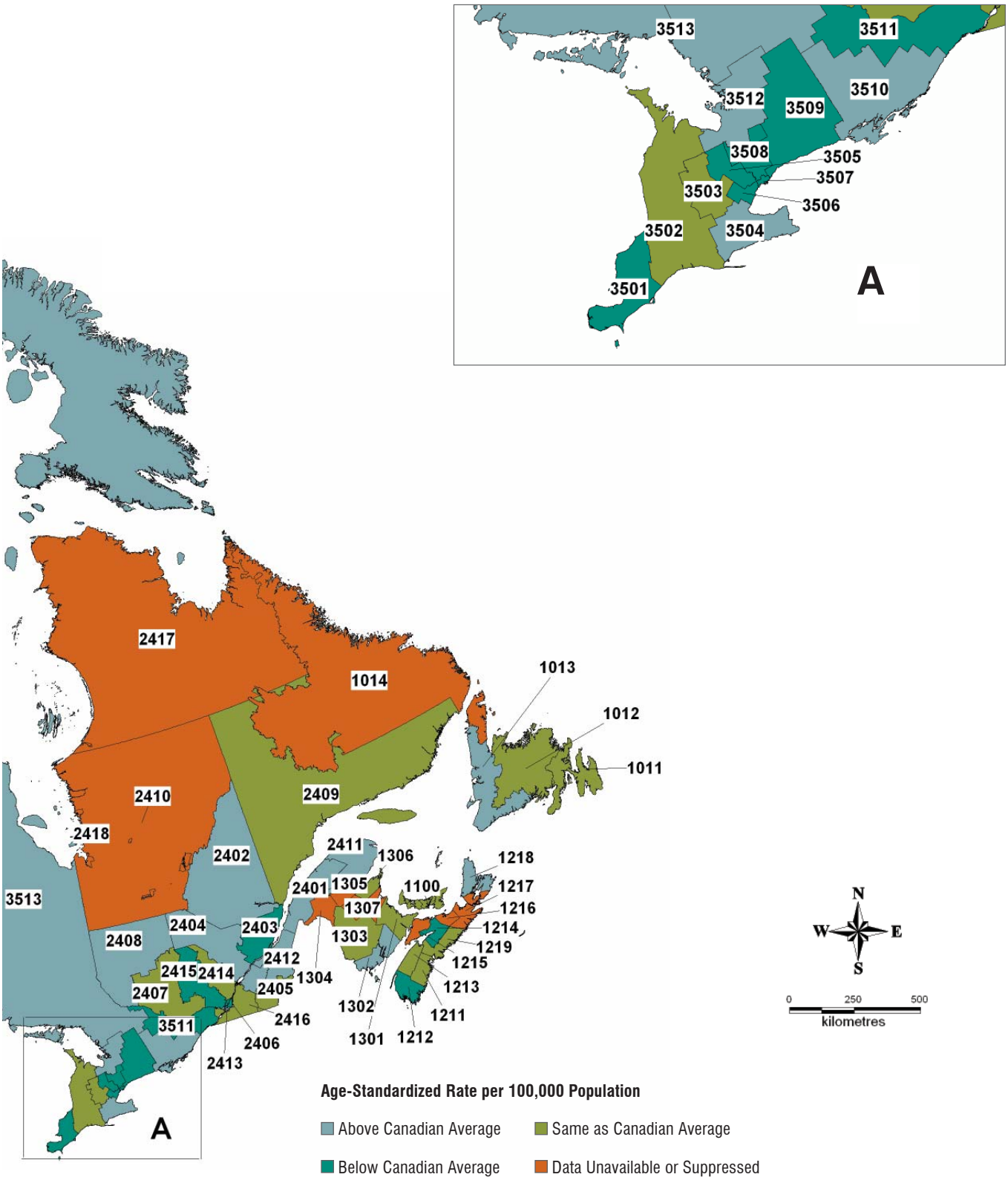
- Standardized rates are adjusted by age (collapsed to five-year groupings) using a direct method of standardization based on the July 1, 1991, Canadian population.
- The wait time for hip fracture surgery indicator is now calculated by hours, allowing comparison with the 48-hour benchmark set by the federal, provincial and territorial governments. The two wait time indicators calculated by days will continue to be reported in this year's *Health Indicators* e-publication to allow for comparisons over time.
- Due to the differences in data submission, the same Manitoba resident treated in and outside of the province could not be identified as the same individual. This may affect a small number of cases for indicators that require tracking patients beyond one hospitalization.
- See the *Health Indicators* e-publication (www.cihi.ca or www.statcan.ca) for diagnosis and procedure codes used to extract the indicator data, detailed definitions and technical notes. Indicator rates for years prior to those appearing in this publication are also available in the e-publication.

Indicator Index

Self-injury Hospitalization Rate

by Health Region, 2009–2010





Notes

For Prince Edward Island (1100), the Yukon (6001), the Northwest Territories (6101) and Nunavut (6201), the data on the map represents the entire province or territory. Rates for smaller regions (population between 20,000 and 50,000) are available in the e-publication at www.cihi.ca.

Sources

Discharge Abstract Database, Ontario Mental Health Reporting System and National Ambulatory Care Reporting System, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec.

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