



2008

# Health Care in Canada

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Canadian Institute  
for Health Information

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# About the Canadian Institute for Health Information

The **Canadian Institute for Health Information** (CIHI) collects and analyzes information on health and health care in Canada and makes it publicly available. Canada's federal, provincial and territorial governments created CIHI as a not-for-profit, independent organization dedicated to forging a common approach to Canadian health information. CIHI's goal: to provide timely, accurate and comparable information. CIHI's data and reports inform health policies, support the effective delivery of health services and raise awareness among Canadians of the factors that contribute to good health.

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# About This Report

*Health Care in Canada 2008* (HCIC 2008) is the ninth in a series of annual reports on the health care system and the health of Canadians. This year, HCIC 2008 provides a review of key analytic work undertaken at CIHI that highlights CIHI's health care research priorities (access, quality of care, costs, health human resources and population mental health). Also included in this report are key findings from seminal Canadian and international health care research as they relate to these health care priorities. HCIC 2008 is a reference tool to identify current priorities in health care for health researchers, persons involved in strategic decision-making in health care, the media and Canadians in general.

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Highlights and the full text of *Health Care in Canada 2008* are available free of charge in English and French on the CIHI website at [www.cihi.ca](http://www.cihi.ca).

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# Health Care Expenditures

Canadian health care spending has been rising over the last decade. What are the most recent trends, and where are the dollars going? The most recent information on health care spending in Canada is presented here, along with a look at one of the factors that may influence health care spending: the aging of Canada's population.

## Spending in Perspective

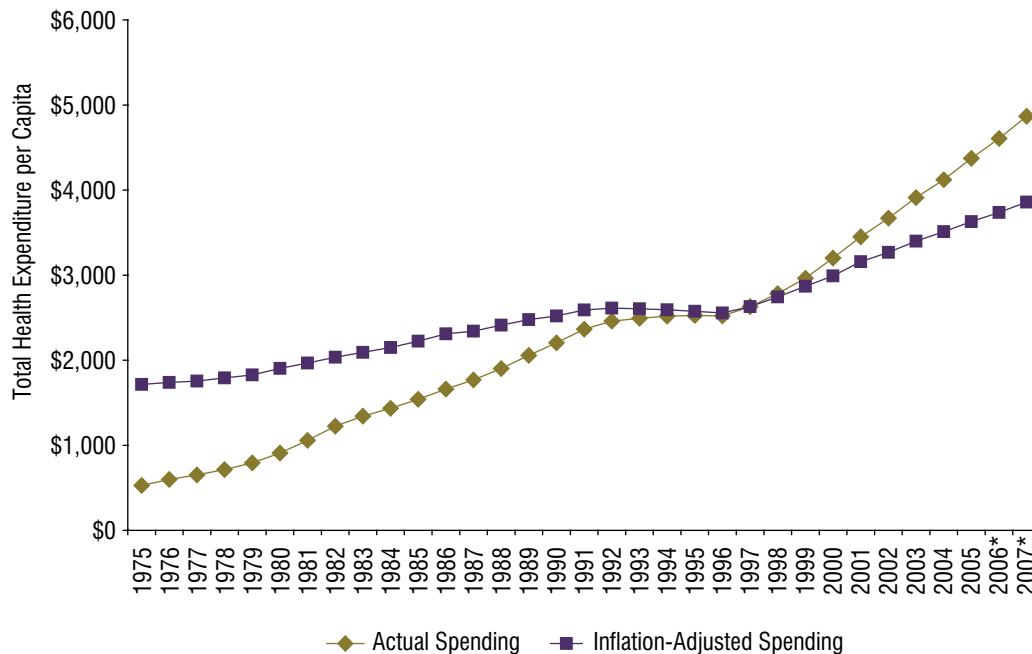
In 2007, public- and private-sector spending on health care in Canada was an estimated \$160 billion. This was about 4.1% more than in 2006 when inflation is taken into account, and about 3.2% more when both inflation and population growth are taken into account.<sup>1,2</sup> The spending growth forecast for 2007 is in line with the growth estimated for 2006, when overall spending rose by 3%,<sup>1</sup> taking both inflation and population into account.

Real health care spending has been rising since 1998, following several years of no growth preceded by two decades of steady, smaller increases. Between 1996 and 2005, real (inflation-adjusted) spending grew by an average 5% a year.<sup>1</sup> From 1991 to 1996, real spending grew by an average 0.8% a year.<sup>1,2</sup>

In 2007, Canada's health care spending outpaced inflation and population growth for the 11th consecutive year. As a share of Canada's gross domestic product (GDP), it continued the slow, steady increase of the previous five years, rising slightly from an estimated 10.4% in 2006 to an estimated 10.6% in 2007.<sup>1</sup> Spending trends since 1997 may be partly due to federal, provincial and territorial investment in health after a period of spending restraint.<sup>1,2</sup>

**FIGURE 1 Total Health Care Spending per Capita in Canada**

In 2007, total health care spending per capita continued to grow, but the rate of growth had moderated since 2000. Over the previous decade, growth in per capita spending peaked at 8.0% in 2000. The forecast spending increase of 5.7% in 2007 is in line with recent yearly growth rates: 5.4% in 2004, 6.1% in 2005 and an estimated 5.3% in 2006.



**Note**

\* Data for 2006 and 2007 are forecasts.

**Source**

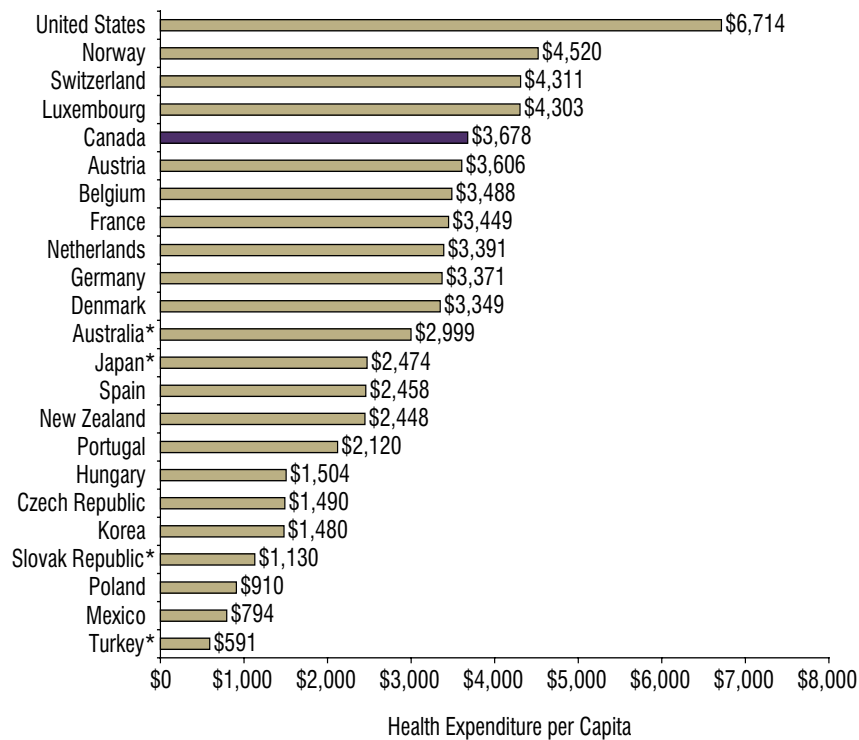
National Health Expenditure Database, Canadian Institute for Health Information.

In 2007, Canada spent an estimated \$4,867 per person on health care, about \$261 higher than the \$4,606 per capita estimated for 2006.<sup>1</sup> Total health care spending was forecast to be lowest in Quebec and Prince Edward Island, at about \$4,371 and \$4,686 per person, respectively. Among the provinces, it was forecast to be highest in Alberta and Manitoba, at about \$5,390 and \$5,250 per person, respectively.<sup>1</sup> Per capita health care spending is higher in the territories. Spending in Nunavut was an estimated \$10,903 per person. Several factors may have contributed to the spending variations among provinces and territories, including differences in populations and their health status, patterns of health service delivery and coverage, geography and population density, and the costs of providing care.<sup>1,2</sup>

Canadian spending per person on health care was relatively similar in range to that of 7 other countries among 23 countries with similar accounting systems surveyed by the Organisation for Economic Co-operation and Development (OECD) in 2006, the most recent year for which data are available. Per capita health care spending was highest in the United States (US\$6,714), compared with US\$3,678 in Canada.<sup>1</sup> France, Germany, the Netherlands and Austria were among the countries similar in range to Canada. Per capita health care spending was lowest in Mexico (US\$794) in 2006.<sup>3</sup>

**FIGURE 2 Total Health Expenditure per Capita in 23 Selected OECD Countries, US\$ Purchasing Power Parity, 2006**

Per capita spending on health care in 2006 varied substantially among 23 comparable OECD countries. Canada's spending per person on health care was relatively similar in range to that of seven other OECD countries in 2006.



**Note**

\* Total health expenditure per capita data for 2005.

**Sources**

Organisation for Economic Co-operation and Development *Health Data 2008*, June edition.

## How Canada Pays for Health Care

As in most other countries, Canadians pay for their health care out of both public- and private-sector purses. Public-sector spending—primarily by municipal, provincial or territorial and federal governments, workers' compensation boards and other programs—continues to account for the largest share of health care spending.<sup>1,4</sup> In 2007, public-sector health care spending reached an estimated \$113 billion, up 6.9% from an estimated \$106 billion in 2006.<sup>1</sup> Provincial and territorial government spending rose 7.0% to an estimated \$103.8 billion in 2007.<sup>1,2</sup> The public-sector share of total health care spending has remained at around 70% for 11 years.<sup>1,4</sup>

The remaining 30% of health care spending comes from the private purse, mostly health insurance providers and individual Canadians' out-of-pocket payments. Total private-sector health care spending was an estimated \$47 billion in 2007, up 5.7% from \$45 billion in 2006.<sup>1,2</sup>

## A Closer Look at Where the Dollars Are Going

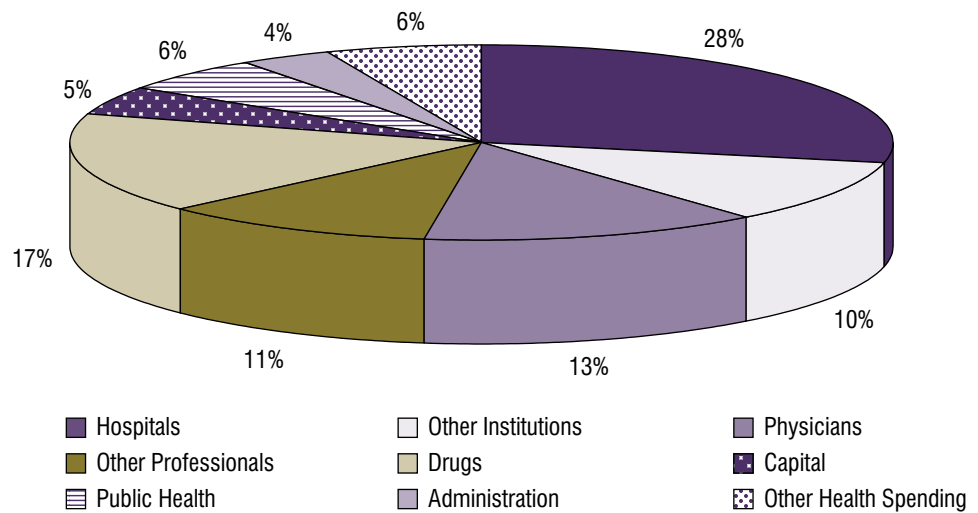
Hospital care remains the single largest category of health care spending in Canada, although its share of spending has declined since the mid-1970s. In 2007, 28.4% of Canada's health care dollars were spent on hospitals, or about \$45 billion.<sup>1</sup> This was 5.6% more than in 2006. Physician services—the third largest spending item—received 13.4% of Canada's health care dollars in 2007, or about \$21.5 billion, 8.5% more than in 2006.<sup>1</sup>

Drug spending has been the second largest category of health care spending in Canada since 1997.<sup>1,2</sup> In 2007, its share of total health care spending increased fractionally to 16.8% from 16.7% in 2006, as total drug spending reached \$26.9 billion.<sup>1,2</sup> Spending on prescribed drugs continues to grow faster than spending on non-prescribed drugs, accounting for an estimated 84% of total drug spending by 2007.<sup>5</sup> However, prescribed drug spending was estimated to have grown more slowly in 2007 (7.5%) than in the years between 1997 and 2006, when increases averaged 10.5% a year.<sup>5</sup>

The public sector pays just less than half of the total bill for prescribed drugs (48%) on average across Canada. Individual Canadians and private insurers pay for the rest.<sup>1,5</sup> Non-prescribed drugs are largely paid out of individual Canadians' pockets.<sup>1,5</sup> Spending on prescribed drugs by individual Canadians rose from \$90 million in 1988 to \$3.9 billion in 2007. During the same period, individual Canadians' share of total prescribed drug spending fell from 24.2% to 17.4%.<sup>1,5</sup>

**FIGURE 3 Distribution of Health Spending**

More than half of the estimated \$160 billion spent on Canadian health care in 2007 was spent on hospitals (28%), retail drug sales (17%) and physician services (13%).



**Notes**

Data for 2007 are forecasts. Actual numbers are available for 2005.

Percentages may not add to 100% due to rounding.

The “other professionals” category includes expenditures for the services of privately practising dentists, denturists, optometrists and dispensing opticians, chiropractors, physiotherapists and private duty nurses.

**Source**

National Health Expenditure Database, Canadian Institute for Health Information.

## Health Care Costs and Population Aging

About 12% of Canadians were seniors in 1998, 13% in 2005. By 2036, 24.5% of Canadians are expected to be age 65 and older.<sup>6</sup> What are the implications of this population aging for health care spending?

Canadians age 65 and older consumed an estimated 44% of provincial and territorial government health care spending in 2005, about the same proportion they had been consuming yearly since 1998. In 2005, CIHI analyzed the extent to which projected increases in provincial and territorial government health care spending to 2026 may be due to population aging. The analysis kept everything constant except changes in population size and the proportion of Canadians that are seniors. For example, the health care system's operations and per capita health care use by different age groups were kept at 2002 levels. The analysis found that population aging would add up to 1% a year to provincial and territorial government health care spending between 2002 and 2026.<sup>7</sup> Taking inflation into account, the "pure aging effect" can be expected to increase provincial and territorial governments' real per capita spending from \$2,321 in 2002 to \$2,940 by 2026.<sup>7</sup>

Between 1975 and 2002, provincial and territorial governments increased their per capita health care spending by about 2.2% a year in real terms. The analysis suggested that the pure aging effect could explain about 45% of the overall increase in spending during that time. Overall, the analysis suggested that if seniors' and non-seniors' health care consumption patterns do not change, the pure aging effect will contribute modest and stable increases to health care spending in the future, as it has in the past.<sup>7</sup>

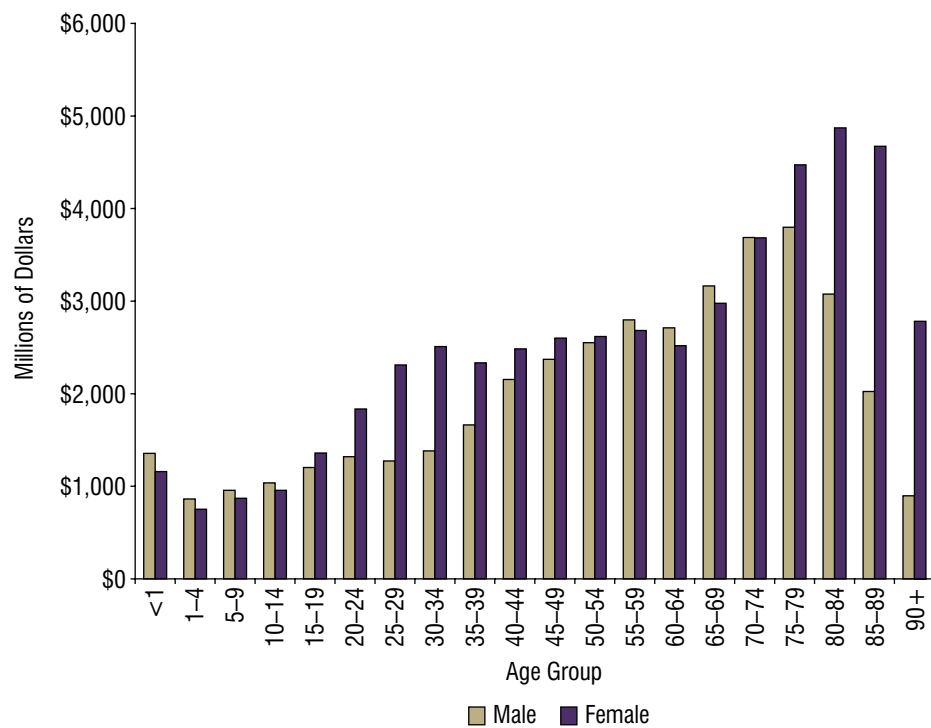
Provincial and territorial governments spent more health care dollars per capita on infants and seniors than on any other age group in 2005, the latest year for which data are available. On average, they spent about \$9,500 per Canadian age 65 and older, about \$7,400 per infant under the age of 1 year, and about \$1,700 per Canadian 1 to 64 years of age.<sup>7</sup> Among seniors, 65- to 74-year-olds consumed \$6,000 per capita, 75- to 84-year-olds consumed \$11,000 per capita and seniors 85 and older consumed \$21,000 per capita, on average.<sup>7</sup> Seniors 85 and older made up 1.5% of Canada's population in 2005.<sup>1</sup>



Between 1998 and 2005, spending on seniors by provincial and territorial governments increased at a slightly slower rate than spending on non-seniors. Spending per senior rose by \$3,125 over the same period, compared with \$2,432 per infant under the age of 1 year, and \$625 per Canadian 1 to 64 years of age.<sup>7</sup>

**FIGURE 4 Total Provincial and Territorial Government Health Expenditure, by Age and Sex, Canada, 2005**

Total provincial and territorial government health spending varied with age and gender.



**Source**

National Health Expenditure Database, Canadian Institute for Health Information.

## Hospital Costs and Population Aging

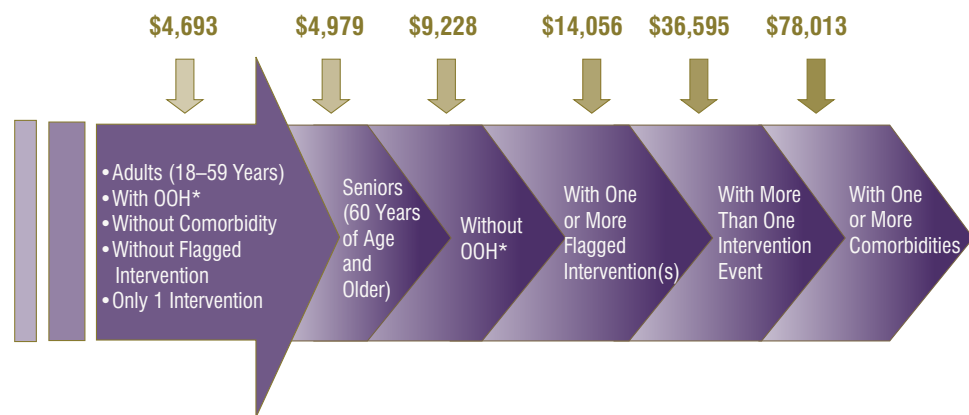
Population aging is expected to affect some parts of the health care system more than others. In 2005, about 49% of provincial and territorial government spending on hospitals went to seniors, the bulk of this to seniors 70 to 89 years old (37% of total hospital spending).<sup>1</sup> Between 2002 and 2026, growth in the proportion and number of Canadians that are seniors is expected to add about 1.1% a year to provincial and territorial government spending on hospitals.<sup>7</sup>

CIHI's newly redeveloped Case Mix Group (CMG+) methodology allows acute care hospitals to learn more about how they allocate resources among patients. This methodology adjusts for various factors—such as patient age, sex and comorbidities (the number of conditions a patient has beyond the primary reason he or she was admitted into hospital)—to see how they may influence the costs of hospital stays.<sup>8</sup>

To take an example, an angioplasty after a heart attack (a technique to mechanically widen a narrowed or totally obstructed blood vessel) costs an average \$10,553 for typical patients, but for any one patient the cost can range from \$4,700 to \$78,000.<sup>8</sup> Analysis using the CMG+ methodology found that angioplasties cost slightly (6%) more for patients 60 years of age and older than for younger patients, in the absence of major cost-relevant factors such as the presence of inpatient or out-of-hospital interventions, or one or more comorbidities. However, the costs for an angioplasty rose substantially with the presence of each additional factor.<sup>8</sup>

**FIGURE 5 Costs of Hospital Stay for Angioplasty Patients**

This figure shows the cumulative effect of factors on hospital costs for 2005–2006. As an example, hospitalizations for patients 60 and older who had an angioplasty performed in the admitting hospital—that is, did not have an Out-of-Hospital Intervention—who had one or more Flagged Intervention(s),<sup>i</sup> who also had two or more Intervention Events in a single hospital admission and who had one or more additional illnesses, cost almost 17 times more on average than hospitalizations for patients under 60 who had the procedure outside the admitting facility and who had no additional interventions or illnesses.<sup>8</sup>



**Notes**

\* OOH = Out-of-Hospital Intervention.  
 Comparable data were not available for Quebec.  
 Costs do not include physician compensation.

**Sources**

*Standards for Management Information Systems in Canadian Health Service Organizations* and *Discharge Abstract Database*, Canadian Institute for Health Information.

i. Certain hospital procedures, such as radiotherapy and tracheostomy, are flagged because they tend to be associated with higher resource consumption.

### Continuing Care and Population Aging

Population aging may have considerable influence on spending on continuing health care, a category that includes home care, residential care in the community and continuing care provided in hospitals. Between 2002 and 2026, the pure aging effect is expected to add about 2.1% a year to provincial and territorial government spending on residential care facilities in the community—that is, nursing homes, personal care homes and long-term care facilities.<sup>9</sup> Canada spent about \$16 billion on health care institutions other than hospitals (almost all residential care facilities) in 2007, or about \$508 per capita. About 75% of this spending was from the public purse.<sup>2</sup> Per capita spending on these institutions rose by almost 76% between 1997 and 2007.<sup>9</sup> Growth in public-sector spending on these institutions (up 127%) outpaced growth in private-sector spending (up 99%) during this period.<sup>4, 9</sup>

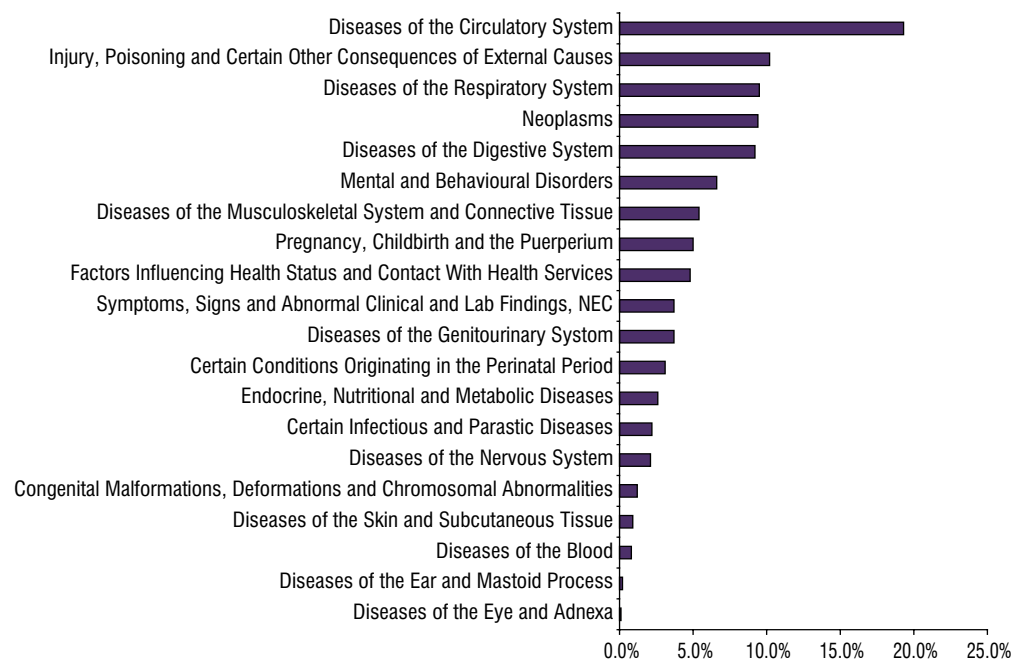
Public-sector spending for home care services, which include home care and home support, also rose by about 6% a year between 1994 and 2003. In 2003–2004, real spending on home care in Canada averaged an estimated \$94 per person. About 49% of spending on home care services went to nursing care and health services and 51% to home supports.<sup>9</sup>

### Average Costs for Typical Inpatients With Most Common Health Conditions

Circulatory system diseases such as heart disease are the single most expensive acute care condition for hospitals, costing \$3.3 billion a year and accounting for 19.3% of all inpatient acute care spending. Figure 6 shows the estimated proportion of total acute care inpatient spending on various conditions in Canada in 2004–2005. In Canada, 91% of hospital services were publicly funded in 2005, compared with between 57% and 99% of hospital services in 22 other OECD countries.<sup>10</sup>

**FIGURE 6** Estimated Total Acute Care Inpatient Hospital Costs as Share of Total, by Clinical Chapter, 2004–2005

This figure shows how the estimated \$17 billion spent on inpatient acute care in Canada in 2004–2005 was distributed among different conditions and diseases, or clinical chapters.



**Notes**

Fee-for-service payments to physicians as well as other costs, such as out-of-pocket payments, are excluded. Costs exclude Quebec data.

**Sources**

Discharge Abstract Database, *Standards for Management Information Systems in Canadian Health Service Organizations*, Canadian Institute for Health Information; Ontario Case Costing Initiative; Alberta Case-Costing Database.

## What We Know

**Trends** in public- and private-sector spending on health care.

**How** Canada's health care spending compares with spending in other Organisation for Economic Co-operation and Development (OECD) countries.

**Some** of the cost drivers behind the current trends in health care spending.

## What We Don't Know

**How** some cost drivers, such as new technologies, may affect future health care spending.

**How** innovative spending models and organizational models will affect the productivity and cost efficiency of the Canadian health care system.

**How** public policy priorities will affect the cost of care.

**What** level of public spending will be required to meet population health needs and health care demand.

**How** health and economic benefits will be affected by specific changes in spending.

## What's Happening

A CIHI release in August 2008 provides a consolidated reference of what we know about selected medical imaging technology across Canada, including the supply and distribution of imaging machines, how they are used and the number of medical imaging professionals who operate the equipment.

## Want to Know More



The following reports can be downloaded free of charge, in French and English, from CIHI's website at [www.cihi.ca](http://www.cihi.ca):

- *National Health Expenditure Trends, 1975–2007*
- *Exploring the 70/30 Split: How Canada's Health Care System Is Financed*
- *The Cost of Hospital Stays: Why Costs Vary*
- *Provincial and Territorial Government Health Expenditure by Age Group, Sex and Major Category: Recent and Future Growth Rates*
- *Drug Expenditure in Canada, 1985 to 2007*
- *Public-Sector Expenditures and Utilization of Home Care Services in Canada: Exploring the Data*
- *The Cost of Acute Care Hospital Stays by Medical Condition in Canada, 2004–2005*

## References

1. Canadian Institute for Health Information, *National Health Expenditure Trends, 1975–2007* (Ottawa, Ont.: CIHI, 2007).
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3. Organisation for Economic Co-operation and Development, *OECD Health Database (Canadian segment)* (OECD, 2008).
4. Canadian Institute for Health Information, *Exploring the 70/30 Split: How Canada's Health Care System Is Financed* (Ottawa, Ont.: CIHI, 2005).
5. Canadian Institute for Health Information, *Drug Expenditure in Canada, 1985 to 2007* (Ottawa, Ont.: CIHI, 2008).
6. Statistics Canada, *A Portrait of Seniors in Canada 2006* (2007), [online], cited July 25, 2008, from <<http://www.statcan.ca/english/freepub/89-519-XIE/89-519-XIE2006001.pdf>>.
7. Canadian Institute for Health Information, *Provincial and Territorial Government Health Expenditure by Age Group, Sex and Major Category: Recent and Future Growth Rates* (Ottawa, Ont.: CIHI, 2005).
8. Canadian Institute for Health Information, *The Cost of Hospital Stays: Why Costs Vary* (Ottawa, Ont.: CIHI, 2008).
9. Canadian Institute for Health Information, *Public-Sector Expenditures and Utilization of Home Care Services in Canada: Exploring the Data* (Ottawa, Ont.: CIHI, 2007).
10. Canadian Institute for Health Information, *The Cost of Acute Care Hospital Stays by Medical Condition in Canada, 2004–2005* (Ottawa, Ont.: CIHI, 2008).





# Health Human Resources in Canada

Meeting the health care needs of Canadians means having the right number of health care providers, with the right set of skills, in the right settings. Both supply and demand factors affect Canada's ability to achieve these goals. On the demand side, for example, the number of Canadians living with chronic diseases is on the rise, and with it the need for complex, collaborative care. On the supply side, aging providers in some health care professions and changing health practices call for ongoing planning to manage future supply. What do we know now about the supply of Canada's health care professionals and strategies in place to sustain it?

## Profile of Canada's Health Care Providers

About 1 in 10 working Canadians—more than 1.5 million—work in health and social services. Health care providers represent a wide range of regulated and unregulated professionals, including doctors, nurses, chiropractors, physiotherapists and midwives. In recent years, several new professions—such as physician assistants, nurse endoscopists, clinical specialist radiation therapists, anesthesia assistants and surgical first assists—have also emerged in Canada.<sup>1, 2</sup>

### How Many and Where?

The supply of some health care professionals in Canada has been growing more rapidly than Canada's population in recent years, but the number and mix of health care professionals varies across the country.

Physicians made up about 9% of the health care workforce in 2005, with a near even split between specialists (4%) and general practitioners and family physicians (5%). The number of active physicians<sup>i</sup> in Canada grew by 12.9% between 1997 and 2006 (from 55,207 to 62,307), compared with a 9% increase in Canada's population. Not surprisingly, just over one-third of Canadian physicians were in Ontario (22,141) in 2006, but Ontario was in the middle of the provinces and territories in its ratio of physicians to population. Among the provinces, Nova Scotia had the most physicians per capita, with 219 physicians per 100,000 population, followed closely by Quebec, with 215 per 100,000. Ontario's ratio was 174 per 100,000. Among the territories, the Yukon had the highest ratio, with 226 per 100,000.<sup>3</sup>

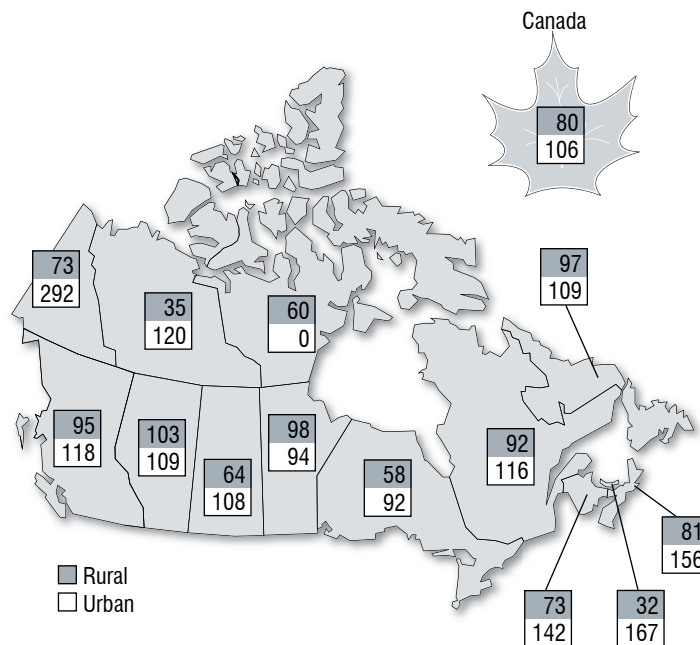
By 2006, nearly one in five Canadians (more than 6 million) lived in rural areas.<sup>4</sup> Less than 10% of all physicians and 15.7% of general practitioners and family physicians lived in rural Canada. Among the provinces, Alberta had the closest ratio of rural (103) to urban (109) general practitioners and family physicians per 100,000 residents. Manitoba was the only province with more rural than urban general practitioners and family physicians per 100,000 population.<sup>4</sup>

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i. Excludes interns and residents.

**FIGURE 1 General Practitioners and Family Physicians per 100,000 Residents in Rural and Urban Areas, by Province and Territory, Canada, 2006**

The number of general practitioners and family physicians per 100,000 population was almost a third higher in urban Canada than in rural Canada in 2006. Urban and rural ratios varied greatly both within and among individual provinces and territories. Manitoba was the only province with more rural than urban general practitioners and family physicians per 100,000 population.



**Sources**

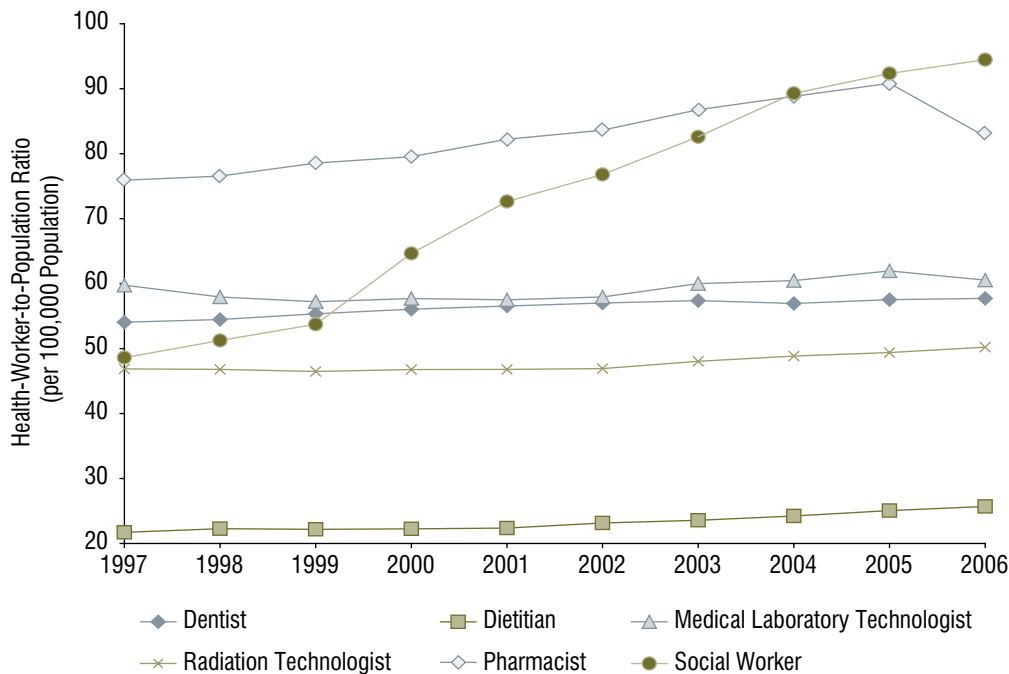
Scott's Medical Database, Canadian Institute for Health Information; 2006 population estimates, Statistics Canada.

In Canada, the nursing professions include mainly registered nurses (RNs), licensed practical nurses (LPNs) and registered psychiatric nurses (RPNs) (the last group works only in the four western provinces). In 2005, nurses made up more than 40% of the health care workforce. The number of RNs grew by 4.6% (from 241,342 to 252,948) between 2003 and 2006,<sup>5</sup> while the number of LPNs increased by 6.6% (from 63,138 to 67,300).<sup>6</sup> The number of RPNs remained stable (5,108 in 2003 and 5,051 in 2006).<sup>7</sup> A fourth, relatively new group of nurses in Canada, licensed nurse practitioners, increased their small numbers by 79.7% during this period (from 725 to 1,303), mainly as a result of new licensing laws in several jurisdictions.<sup>5</sup>

Nearly half (48%) of Canada's health care workforce is now made up of other health professionals, a category of 20 or so professions such as dietitians, medical laboratory technologists, social workers and pharmacists.<sup>8</sup> In 2006, pharmacists were the fourth-largest group in Canada, with 83 pharmacists per 100,000 population. Social work was the third-largest health care profession by 2006 (94 social workers per 100,000 population), largely as a result of legislation in British Columbia, Alberta and Ontario that regulated social work as a health care profession.

**FIGURE 2 Trends in Health-Workers-to-Population Ratio (per 100,000 Population) for Each of the Major Health Professions in Canada, 1997 to 2006**

Some professions have been growing more rapidly than others. For example, the dietitian-to-population ratio grew by 18.4% between 1997 and 2006, compared with a 1.3% increase for medical laboratory technologists. The ratio of social workers to population almost doubled in the decade from 1997 to 2006 as several provinces legislated social work as a regulated health profession.



**Sources**

Health Personnel Database, Canadian Institute for Health Information; 1997 to 2006 population estimates, Statistics Canada.

## Expanding Our Knowledge of Canada's Other Health Care Professions

CIHI has developed five new databases to give Canadians more information about their health professionals, including key demographic, education and employment information. Reports from the Occupational Therapist Database and Pharmacist Database have been released and a report from the Physiotherapist Database is coming in December. The Medical Laboratory Technologist Database and Medical Radiation Technologist Database will be ready to generate reports by late 2009.

Already, we know more about these health care providers. Occupational therapists (OTs), for example, are regulated health care professionals who promote health and well-being by enabling individuals, groups and communities to participate in occupations that give meaning and purpose to their lives. OTs work across the health care continuum. Preliminary findings from the Occupational Therapist Database (OTDB) show that Canada's supply of OTs increased by 27.2% between 2000 and 2006. OTs outside of Quebec are predominantly female (92.4%), young (38.7 years of age on average) and urban (90.3%).<sup>9</sup>

## Trends in Supply

Although many health care professions have grown in recent years, workforce aging and migratory patterns are two factors that may affect the future supply of health care professionals in Canada. What do the data show?

### Age

As Canada's population is aging, so are many of its health care providers. In 2005, the average Canadian health care professional was 42 years of age, slightly older than the average Canadian worker, who was 40. In 2006, the average Canadian physician was 49.2 years old; nearly 1 in 5 Canadian physicians was 60 years of age or older, and 1 in 10 was 65 or older.<sup>3</sup>

Canadian nurses also tend to be older than the average Canadian worker. In 2006, the average RN, LPN and RPN was 45.0, 44.1 and 47.2 years of age, respectively. More than 20% of RNs were 55 or older, while 8% were 60 or older and 2% were 65 or older.<sup>5</sup> Nearly 20% of LPNs were 55 or older and 6% were 60 or older.<sup>6</sup> Some 27.3% of Canada's RPNs were 55 or older; 10.5% were 60 or older.<sup>7</sup>

Several of the other health professions tend to be younger than the Canadian workforce as a whole, although some are aging more quickly than the rest of the workforce. For example, electroencephalographic technologists had an average age of almost 33 in 2005, and dental assistants an average age of almost 36. However, some other health professions aged by more than five years between 1995 and 2005, compared with two years for the rest of the Canadian workforce. For example, the average age for respiratory therapists rose from 33.6 to 39.0, for medical sonographers from 34.2 to 41.8, for optometrists from 36.9 to 42.4 and for cardiology technologists from 38.6 to 44.7.<sup>8</sup>

### Moving Around

Health care professionals who migrate within and between provinces and territories, and into and out of Canada, affect both the total supply of Canadian health care workers and their distribution across the country. In 2007, a series of reports on the distribution and migration patterns of workers in 15 health professions found that most health care professionals who move do so within their own province or territory. Migration between provinces and territories declined in recent years.<sup>ii, 10</sup> Ontario, Alberta and B.C. were the main interprovincial destinations for health care professionals in the five years to the end of 2006.<sup>8</sup> Physiotherapists, pharmacists, dentists, nurses and physicians were some of the professionals studied in the reports.

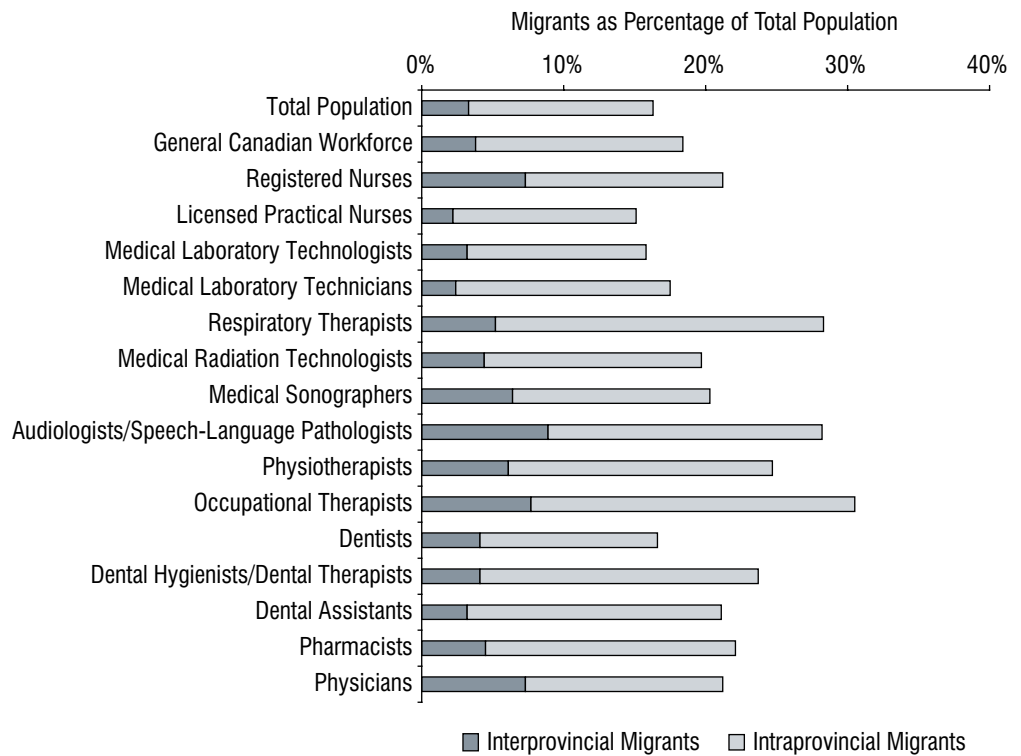
Information on health care workers' migrations into and out of Canada, and into and out of individual professions, is difficult to capture.<sup>8</sup> However, data on physicians show that the number of physicians leaving and returning from abroad declined over the five years to the end of 2006, with those emigrating declining by more than half (56.9%) and those returning dropping by 18.2%. In the three years to the end of 2006, physicians returning to Canada outnumbered those who left.<sup>3</sup>

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ii. The distribution and migration patterns of over 20 health professions were studied. One summary report, one summary video and 15 profession-specific reports are available on the CIHI website at [http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=AR\\_1749\\_E](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_1749_E).

**FIGURE 3 Migrants as a Percentage of the Total Population, General Canadian Workforce and Selected Health Care Occupational Groups (Based on Place of Residence Five Years Earlier), Canada, 2001**

Audiologists/speech-language pathologists (9%) and occupational therapists (8%) were the most likely to leave their province, based on place of residence five years earlier. Within provinces, respiratory therapists and occupational therapists were the most mobile (23% migrants in both professions).



**Source**  
2001 Census of Canada, Statistics Canada.

## Strategies to Sustain Supply

As demands on the health care system increase, decision-makers are developing several strategies to ensure that Canadians have the health care workforce they need. These include increasing health care training capacity, making it easier for foreign-trained health professionals to practise in Canada and enhancing the scope of practice for many health care professionals.

### Increasing Training Capacity

One way to ensure a sustainable supply is to increase the number of new professionals in training, along with the right training mix. About 85,000 students were enrolled in health-related programs in Canadian universities in 2004–2005.<sup>8</sup> Some 17% of the undergraduates in health programs were pursuing medical degrees (MDs), and just over half of them were in nursing.<sup>11</sup>

While the number of students in MD and post-MD training remained relatively constant during the 1990s, since 2000 Canada has steadily increased the number of first-year undergraduate placements in Canadian medical schools. Between 2000–2001 and 2005–2006, the number of medical students and post-MD trainees increased by 29%, from 14,967 to 19,252.<sup>8</sup> More students are also graduating from other programs, such as registered nursing, medical laboratory technology and medical radiation technology.<sup>8</sup>

### Access for Foreign-Trained Health Care Professionals

In recent years, several programs have been introduced to increase the numbers of foreign-trained health care professionals working in their chosen professions. These include the federal government's Prior Learning Assessment and Recognition program and Internationally Trained Workers Initiative, as well as a range of provincial initiatives.

The number of international medical graduates (IMGs) practising family medicine in Canada rose by 10% between 2001 and 2005, while the number of IMG specialists fell by 5%. By 2005, 22% of Canadian physicians were foreign-trained, up from 20% in 2001.<sup>8</sup> This percentage is comparable to that of Australia, the United Kingdom and the U.S.<sup>12</sup> Canadian IMGs come primarily from five countries: the U.K., South Africa, India, Ireland and Egypt.<sup>8</sup>



About 8% of Canada's registered nurses were internationally trained in 2005, a slightly greater proportion than the 7% in 2001.<sup>8</sup> These proportions are comparable to those in Australia and the U.K., but less than the 16% in the U.S.<sup>13</sup> Most internationally educated nurses come from the Philippines, the U.K., the U.S., India and Hong Kong.<sup>5</sup>

### Doing More With What We Have

A third strategy to optimize Canada's health care workforce is to fully recognize and expand health professionals' scope of practice. Health care professionals in many settings are being given the recognition and tools to work at the full competency of their scope of practice. The scope of practice of some professions is also expanding to meet changing needs. Specialized registered nurses in Quebec, for example, can now order diagnostic tests and adjust medication for patients with chronic diseases.<sup>8</sup> Alberta and Manitoba have introduced legislation to let pharmacists prescribe some drugs under limited conditions.<sup>14, 15</sup> In Ontario, pharmacists can now provide and be reimbursed for enhanced patient counselling, drug therapy monitoring and provision of drug information to physicians.<sup>16</sup>

### Promoting Team-Based Care

Primary health care in Canada is beginning to evolve from solo and small-group family physician practices toward a new care model in which doctors (family physicians/general practitioners), nurses, dietitians, pharmacists and other health professionals work in teams to provide coordinated care. In 2006, a seven-country study found that 32% of Canadian doctors routinely worked in interdisciplinary teams, about the same proportion as in Australia, New Zealand and the U.S. In the U.K., 81% of physicians routinely work in interdisciplinary teams and with non-physicians. Canada had the lowest proportion of non-physicians treating chronic disease (25%) among the seven countries.<sup>12</sup>

However, collaborative teams are beginning to dot the Canadian landscape. In Ontario, 150 new family health networks bring together physicians and nurses, as well as nurse practitioners, dietitians, mental health workers, social workers, pharmacists, health educators and other care providers.<sup>17, 18</sup> Saskatchewan has 42 similar teams, and Newfoundland and Labrador 11, with more planned.<sup>18</sup> In Quebec, family medicine groups provide a broad range of services with out-of-hour coverage and collaboration with community service centres.<sup>17</sup> In Alberta, the Primary Care Network provides a defined set of core services combined with chronic disease management and ensures access to appropriate primary care seven days a week, 24 hours a day.<sup>17</sup>

## What We Know

**The** supply and distribution trends of selected health professionals across the country.

**The** age and sex distribution of selected health professionals.

**The** percentage of various health care professionals on the move within Canada and migrating internationally.

## What We Don't Know

**How** many and what mix of health care professionals will be required to meet the changing health care needs of Canadians.

**The** average retirement age and retirement profile of various health professionals.

**How** changes in policy and system organization will affect the mix of health care providers.

## What's Happening

**CIHI** has been funded by Health Canada to develop a pan-Canadian, supply-based database and reporting system for pharmacists, occupational therapists, physiotherapists, medical laboratory technologists and medical radiation technologists.

**CIHI** is collaborating with provincial and territorial ministries of health to collect more comprehensive information on alternative payments to physicians and on physician services.

**This** year, *Canada's Health Care Providers, 1997 to 2006, A Reference Guide* provides aggregate, supply-based trend information, by province and territory and by year, for 24 health personnel groups. The annual reference guide provides information on the regulatory environment, supply and demographic trends and graduate trends for each of the 24 groups.

## Want to Know More

**The following CIHI reports offer detailed information on health human resources that can be downloaded free of charge, in both English and French, on the CIHI website at [www.cihi.ca](http://www.cihi.ca):**

- *Canada's Health Care Providers, 2007*
- *Canada's Health Care Providers, 1997 to 2006, A Reference Guide*
- *Summary Report: Distribution and Internal Migration of Canada's Health Care Workforce (individual detailed reports for 15 health care professions also available)*
- *Supply, Distribution and Migration of Canadian Physicians, 2006*
- *Workforce Trends of Registered Nurses in Canada, 2006*
- *Workforce Trends of Licensed Practical Nurses in Canada, 2006*
- *Workforce Trends of Psychiatric Nurses in Canada, 2006*
- *Highlights From the Regulated Nursing Workforce in Canada, 2005*
- *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2006*
- *Health Personnel Trends in Canada, 1995 to 2004*

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# Access to Health Care

Getting access to care means getting the right care, at the right time, by the right care providers, in the right setting. Canada is not alone in facing challenges to providing excellent access to health care. The growing number of Canadians living with chronic diseases, an aging health care workforce, changing patterns of health services delivery and slow uptake of new technologies, such as electronic patient health records, are some of the factors affecting Canadians' access to health care. Here is an update on recent findings on access to care across the health care continuum, from primary health care through to rehabilitation care.

## Accessing Primary Health Care

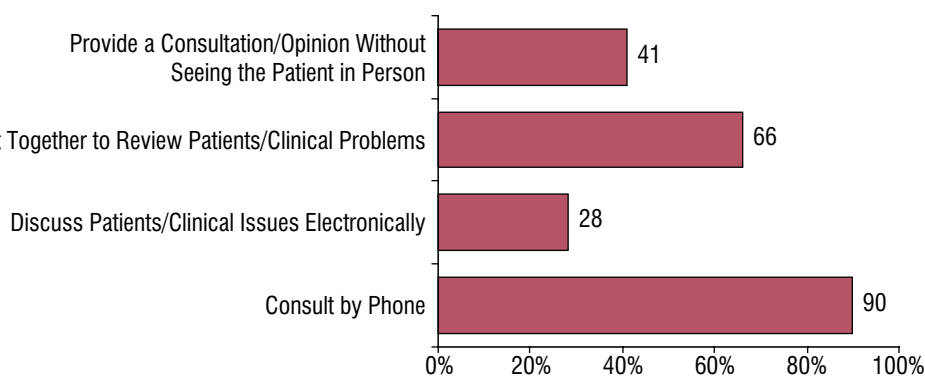
Most Canadians' first point of contact with the health care system is with a primary health care (PHC) provider, usually a family physician. PHC providers resolve short-term health issues, manage most chronic health conditions, provide health promotion and education and link patients to specialized health care. Dietitians, nurses, occupational therapists, physiotherapists, pharmacists, psychologists, social workers and other health care workers also provide PHC. In 2007, 85% of Canadians reported having a regular medical doctor.<sup>1</sup> Some 78% of those without a regular doctor (an estimated 3.3 million) said they had a regular place of care. Some 6% (equivalent to about 1.7 million Canadians) said they had looked for a regular doctor but could not find one.

Having a regular medical doctor, or a place to get most of your care, is one thing. Getting access to that doctor or place of care when you need it is another. In 2007, the Commonwealth Fund asked adults in seven countries how long they waited to see their doctor when they needed care. Canadians (30%) most often reported waiting six or more days, a higher proportion than in any other country including the U.S. (20%) and the U.K. (12%). The proportion of Canadians reporting same-day access to their doctor (22%) was lower than in the other countries, including the U.S. (30%) and the U.K. (41%).<sup>2</sup>

Efforts are under way to improve access to primary health care in Canada. Research shows that multidisciplinary care teams may increase access to care and may enhance its quality.<sup>3</sup> At present, there is widespread collaboration among different practitioners providing care to individual patients.<sup>4</sup> Nearly all the physicians surveyed in the 2007 National Physician Survey said they collaborated regularly with other non-specialist health care providers, most often with other family doctors (78%), pharmacists (65%), nurses (57%, excluding psychiatric nurses and nurse practitioners) and physiotherapists (55%).<sup>5</sup>

**FIGURE 1 Physicians and Electronic Technologies in Collaborative Care**

In a 2007 survey, Canadian physicians reported using electronic technologies when collaborating with health care colleagues to provide care. While 66% reported collaborating with colleagues in person, close to 30% discussed patients' shared treatment plans and needs electronically.



**Sources**

National Physician Survey, 2007; College of Family Physicians of Canada; Canadian Medical Association; and Royal College of Physicians and Surgeons of Canada.

## Using Information and Communication Technologies to Improve Access

Information and communication technologies have the potential to improve access to care considerably. With these technologies, for example, patients can access health care providers and manage their own health care more easily, health providers can communicate more easily and the system as a whole can track and plan services for patients more effectively.

Telemedicine and Telehealth increase direct access to care, particularly for Canadians in rural and remote areas and those with mobility problems. Telemedicine—including telepsychiatry and teleradiology—lets doctors diagnose and treat patients long distance via satellite and internet. Telehealth provides primary health care by telephone, often seven days a week, 24 hours a day. Many Canadians would also like email access to their health care providers, although few currently have it. A 2007 Commonwealth Fund survey found that 43% of Canadians who had a regular doctor said they could not communicate by email with their doctor, the highest proportion among the seven countries studied; 9% said they could. Forty percent of those who could not contact their doctor by email said they would do so if they could.

The electronic medical records (EMRs) and electronic health records (EHRs) now being introduced in Canada may open many new doors to accessible care. An EMR is a single physician office system, which supports care delivery in private practices. EMRs are critical components of EHRs, which are individual patient records that are a secure documentation of an individual's health care history and status, delivered through electronic systems to authorized health care providers. Each EMR combines this information with decision support and workflow tools tailored to the context of care delivery.

EMRs and EHRs have many possible uses. Canadians living with chronic disease can use their EHRs to help monitor and manage their conditions to a greater extent, for example. Doctors can use their EHR-linked EMRs to access patients' diagnostic and laboratory tests more quickly, and to monitor and guide patients more effectively through the health care system. Canada Health Infoway has been mandated to help integrate new technologies into Canadian health care. One of its goals is for 50% of Canadian patients to have their own EHRs by 2010.<sup>6</sup>

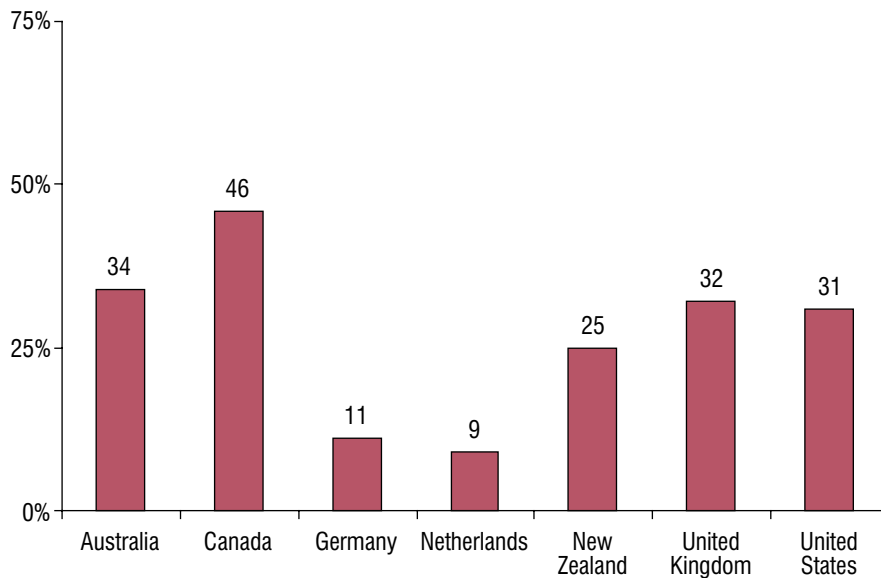
## Accessing Emergency Department Care

While most Canadians probably prefer to go to their regular medical doctor or provider for care, they cannot always access this care, or may need a different level of care. They often use emergency departments (EDs). Every year Canadians make about 14 million visits to EDs.<sup>7</sup> In a Commonwealth Fund study in 2007, 39% of the Canadians surveyed reported visiting an ED in the previous two years, and 16% said they went to the ED even though their regular doctor could have treated them had the service been available.

Wait times in Canada's EDs make the news regularly. The seven-country Commonwealth Fund study mentioned above found that a higher proportion of Canadians (46%) waited two or more hours to receive care in an ED than in the other countries. In Germany, about 11% waited this long in an ED for care.

**FIGURE 2 Waiting for Care in Emergency Departments: Canada in Perspective**

A 2007 survey of emergency department wait times by the Commonwealth Fund found that 46% of Canadians waited two hours or more for care, the highest proportion in the seven countries surveyed.



**Note**

Based on those respondents who reported that they used the ED at least once.

**Source**

Commonwealth Fund International Health Policy Survey, 2007.



Not surprisingly, both patient characteristics (such as age and severity of illness) and hospital characteristics (for example, size of hospital and time of day of visit) affect how long Canadians wait for care in EDs.<sup>7</sup> Recently, CIHI looked at the factors that affected how long patients continued to wait in EDs after they had been seen by medical staff and a decision to admit had been made.

In 2005–2006, 1.1 million visits to the emergency department resulted in patients being admitted to hospital.<sup>7</sup> Patients admitted through EDs accounted for about 65% of acute inpatient days in Canadian hospitals that year. Admission rates varied among Canadian jurisdictions—from 416 per 10,000 population in Ontario to 645 per 10,000 population in New Brunswick.<sup>7</sup> Patients waited longer for an acute care bed in larger hospitals, and those who had longer waits also tended to be older and sicker and had to remain longer in hospital than those patients who had shorter waits.<sup>7</sup>

### FIGURE 3 Waiting in the ED for a Hospital Bed

In 2005–2006, Canadians in small and medium community hospital emergency departments were less likely to wait two hours or more for hospital admission than patients in emergency departments in larger hospitals.

Hospital Type	Number of Hospitals	Number of Patients	Percent	Percent of Patients in Bed Wait Time Intervals				
				0 to 2 Hours	2 to 6 Hours	6 to 12 Hours	12 to 24 Hours	Over 24 Hours
Small-Community	155	79,827	12	86	10	2	2	1
Medium-Community	64	138,542	21	66	21	4	5	3
Large-Community	34	248,594	38	49	27	9	10	5
Teaching	24	193,816	29	45	29	10	10	5
Overall	277	660,779	100	56	24	7	8	4

#### Notes

Based on a sample of 277 hospitals outside Quebec.

Total number of bed wait times represented is 660,779.

The bed wait time categories include the upper end-point. For example, the “6-to-12” category includes bed wait times greater than 6 hours and less than or equal to 12 hours.

Percentages may not add to 100% due to rounding.

#### Source

Discharge Abstract Database, Canadian Institute for Health Information.

## Accessing Care in Wait Time Priority Areas

In 2004, Canada's first ministers agreed to focus on reducing wait times in five priority areas: cancer care, cardiac care, hip and knee replacements, cataract surgery and diagnostic imaging. Since Canadian provinces and territories measure and report wait times differently, it is difficult to compare jurisdictions' progress in reducing wait times in the priority areas. Many provinces, however, now do regularly report wait times for priority area procedures on their public websites, and report wait times in greater detail and in a more timely way than before.<sup>i, 8</sup>

Canadians' access to non-emergency surgery overall has improved recently. In 2007, 32% of Canadians reported waiting less than a month for elective surgery, compared with 15% in 2005, according to a Commonwealth Fund international survey. Some 14% of the Canadian respondents reported waiting more than six months, compared with 22% in 2005.<sup>2, 9</sup> In a 2005 Statistics Canada survey, almost 13% of the 1.6 million Canadians who had had elective surgery in the previous year reported access difficulties. Two-thirds (66%) of this group cited long wait times as a barrier to access. Overall, 40% of those who had had elective surgery reported waiting less than a month for the procedure, 41% said they waited one to three months and 19% reported waiting more than three months.<sup>10</sup>

One possible way to improve surgery wait times is to perform more surgery. While it is difficult to compare jurisdictions' progress in reducing wait times, it is possible to compare jurisdictions' surgery rates in the priority areas. Overall, rates in these areas rose by 8% more than the expected increase from population growth and aging between 2004–2005 and 2006–2007. Surgery rates grew more quickly in the first year (7%) than in the second year (1%) after the first ministers' agreement.<sup>11</sup>

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i. For more information, see the report *Wait Times Tables—A Comparison by Province, 2008* at <[http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=AR\\_1909\\_E](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_1909_E)>.

### Crowding Out or Making Room?

Solve one wait time problem, create another? Some have voiced concern that reducing wait times in priority areas might inadvertently increase wait times in other areas. CIHI has been monitoring this issue for two years; it has found that surgery rates outside the priority areas were relatively stable in the two years between 2004–2005 and 2006–2007. The number of operations increased but, after adjusting for population growth and aging, surgery rates grew by 3% in the first year and fell by 2% in the second year.<sup>11</sup>

Looking beyond the five priority areas, the Wait Time Alliance (WTA)—a consortium of 13 medical groups—has developed benchmarks for more specialty care areas as a step to improving the collection and reporting of wait time data for other types of medical care and improving wait times for all types of medical care. To date, benchmarks have been developed for emergency care, plastic surgery, obstetrics, gynecology, psychiatric care, anesthesiology (chronic pain) and gastroenterology. Benchmarks for some procedures separate urgent from scheduled cases (see page 81 for a related reference table).

**FIGURE 4 Changes in Numbers of Procedures Within Wait Time Priority Areas, 2004–2005 to 2006–2007, Canada Excluding Quebec**

The number of completed procedures increased more rapidly in wait time priority areas than in non-priority areas in Canada, between 2004–2005 and 2006–2007. Within the priority areas, the rate of age-adjusted increases varied: knee replacement surgery increased by 28% while cancer surgery increased by 1%.

Priority Area	Procedure by Year			Net Change in Two Years Since 2004–2005	Two-Year Change in Age-Adjusted Rates
	2004–2005	2005–2006	2006–2007		
Hip Replacement	19,800	22,500	23,000	3,200	11%
Knee Replacement	28,500	35,100	38,400	9,900	28%
Revascularization	52,000	54,300	54,000	2,000	-0.55%
Cataract Surgery	209,200	232,500	244,500	35,000	13%
Cancer Surgery	137,100	143,200	144,100	7,000	1%
Procedures Outside Priority Areas	1,993,500	2,083,500	2,093,000	99,600	1%

**Notes**

All figures rounded to the nearest hundred. The two-year change in age-adjusted rates is statistically significant at  $p < 0.05$  for hip and knee replacements, cataract surgery, cancer surgery and procedures outside priority levels, but not statistically significant at  $p < 0.05$  for revascularization.

**Sources**

Discharge Abstract Database, National Ambulatory Care Reporting System, 2004–2005 to 2006–2007, Canadian Institute for Health Information; ambulatory care data, Alberta Health and Wellness.

### Access to Diagnostic Imaging in Canada

Diagnostic imaging has been a priority wait time area since 2004, and in 2008 CIHI released its fifth annual report on the supply and distribution of diagnostic imaging devices across Canada. In 2005–2006, X-ray (64%) and ultrasound (14%) examinations together continued to account for nearly 80% of all medical imaging examinations (excluding angiography) in Canadian hospitals. Computed tomography (CT) accounted for another 12%, followed by nuclear medicine (6%), magnetic resonance imaging (or MRI, 3%) and cardiac catheterization (1%).<sup>12</sup>

Over the three years ended in 2006–2007, the number of MRI and CT exams in Canada rose by 42.9% (to 31.2 per 1,000 population) and 27.9% (to 103.3 per 1,000 population), respectively. During the same period, the increase in the number of exams was greater than in the number of scanners, for both MRI and CT. In the case of MRI, a 27% growth in the number of scanners led to a 47% growth in the number of exams. In the case of CT, a 12% growth in the number of scanners led to a 32% growth in the number of exams.<sup>12</sup>

In jurisdictions with MRI scanners in free-standing facilities—Nova Scotia, Quebec, Ontario, Manitoba, Alberta and B.C.—MRI exams per scanner averaged 5,970 in hospitals and 2,530 in free-standing facilities. In jurisdictions with CT scanners in free-standing facilities—Quebec, Ontario, Alberta and B.C.—CT exams per scanner averaged 9,506 in hospitals and 2,160 in free-standing facilities.<sup>12</sup>

Not surprisingly, CTs and MRIs are not evenly distributed across Canada, but their numbers are increasing around the country and generally in line with jurisdictions' populations. Some provinces have twice the number of scanners per million population as other provinces. By the end of 2006, CTs per million population ranged among the provinces from 10.2 in Ontario to 21.6 in Newfoundland and Labrador. MRIs per million population ranged from 4.0 in Saskatchewan to 8.7 in Quebec (see page 82 for a related reference table).

## Accessing Rehabilitation Care

Rehabilitation care is a critical point on the health care continuum, helping Canadians regain function and independence following injury or illness. The National Rehabilitation Reporting System (NRS), developed and housed by CIHI, has been capturing data on rehabilitation services since 2000.<sup>ii</sup> Both specialty and general facilities provide rehabilitation care. General rehabilitation facilities provide inpatient beds and care within hospitals that deliver several levels or types of care. Specialty rehabilitation facilities provide more extensive and specialized inpatient beds and care, either in a separate facility or as a specialized unit in another facility. In 2007, the NRS collected data from 94 facilities in seven Canadian provinces.<sup>13</sup> Even without pan-Canadian comparisons, NRS information can show who uses rehabilitation facilities and how long they wait between referral and admission to facilities.

From 2002–2003 to 2006–2007, median wait times from referral to admission remained stable at 0 days to a general rehabilitation facility, and 1 day to a specialty facility.<sup>13</sup> The differences in wait times for the different types of facilities may partly reflect their differences in clients. Patients with neurological conditions, for example, tend to be cared for in specialty facilities and to have longer wait times than patients with orthopedic conditions, who are typically served by general facilities.

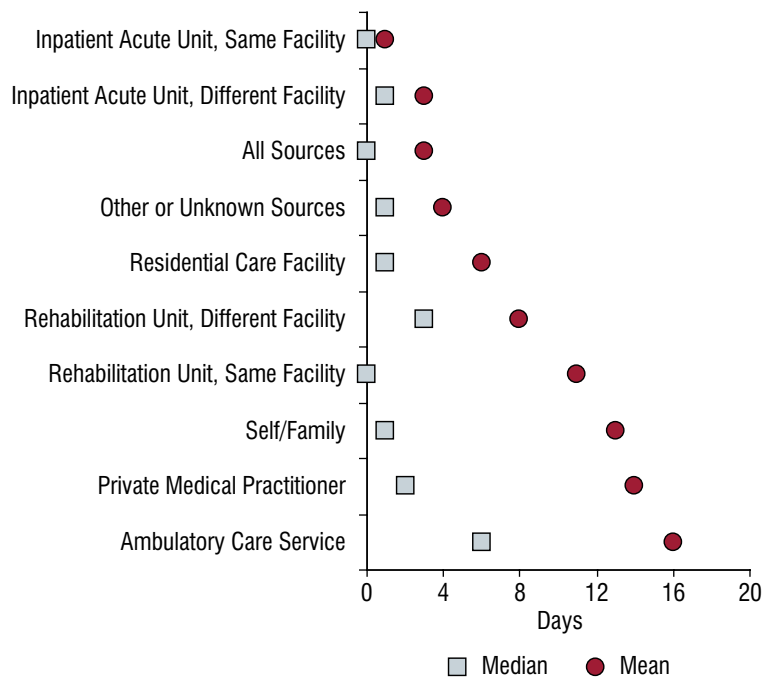
The source of referral also makes a difference to wait times to admission. For example, most patients admitted for rehabilitation were referred by their admitting hospital's acute care unit or another hospital's inpatient acute care unit. The median wait times for these admissions were between 0 and 1 day in 2006–2007.<sup>13</sup> Another example, patients referred by private medical practitioners waited a median two days, compared with a median one day for clients referred by residential care facilities.<sup>13</sup>

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ii. Patients reported in the NRS include only those with a primary health condition that is physical in nature. As such, the term "rehabilitation" in the context of NRS reporting does not include rehabilitation services provided for a mental health condition or for drug or alcohol addiction.

**FIGURE 5 Wait Times for Inpatient Rehabilitation Services in Canada, by Source of Referrals**

Waiting times between referral and admission to rehabilitation facilities vary with the source of the referral. For example, patients referred by private medical practitioners waited a median two days, compared with a median one day for clients referred by residential care facilities.



**Source**  
National Rehabilitation Reporting System, 2006–2007, Canadian Institute for Health Information.

## What We Know

**The** percentage of Canadians who have a regular medical doctor.

**How** long people wait in the emergency department before being admitted to a hospital bed.

**The** number of days between referral and receiving rehabilitation and home care services.

## What We Don't Know

**How** long people wait for continuing or long-term care in different parts of the country.

**The** effect of changing population dynamics, chronic diseases and other issues on access to health care.

**How** changing technologies will affect access to health care.

## What's Happening

**CIHI** is working with stakeholders to explore definitions and indicators in emerging areas of interest, including emergency department waits and waits for specialist care.

**CIHI** is producing a fourth annual update of wait time information collected by provinces.

## Want to Know More



**CIHI has published several reports on access and wait times. These reports are available free of charge, in French and English, on the CIHI website at [www.cihi.ca](http://www.cihi.ca).**

- *Medical Imaging in Canada, 2007*
- *Wait Times Tables—A Comparison by Province, 2008*
- *Understanding Emergency Department Wait Times: Access to Inpatient Beds and Patient Flow*
- *Inpatient Rehabilitation in Canada, 2006–2007*
- *The Yukon: Pioneers in Home Care Information*
- *Health Care in Canada 2007*

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# Quality of Health Care in Canada

Canadians count on quality health care—in hospitals, nursing homes, community health centres, doctors' offices or their own homes. Quality care is care that is accessible, appropriate, well-coordinated, effective and safe. Canadians, including health care providers and policy-makers, also want to know about the quality of the care they provide or receive. Canada is developing measures on patients' health outcomes following care as a way of assessing quality of care across the health care continuum. Here is an update on some of the measures and what they say about the quality of Canada's health care.

## **Did You Know? Results From the 2005 National Survey of the Work and Health of Nurses**

Nearly 19,000 regulated nurses (registered nurses [RNs], licensed practical nurses [LPNs] and registered psychiatric nurses [RPNs]) across the country were interviewed about the conditions in which they practise, the challenges they face in doing their jobs and their physical and mental well-being, among other topics. Some findings:

- 16% of nurses delivering direct care said that the quality of patient care in their workplace had improved over the previous year; 27% thought it had deteriorated.
- 11% of nurses delivering direct care reported having had a needlestick injury during the previous year, while nearly 30% reported being physically assaulted by a patient in the previous year.
- 27% of Quebec nurses reported occasional or frequent medication errors among their patients. Elsewhere, the percentage ranged from 7% in Newfoundland and Labrador to 18% in B.C.
- Depression and medication use were more common among nurses than among Canadian workers generally.
- Nurses were overwhelmingly positive about their working relations with doctors—87% said relations were good, 81% reported a lot of teamwork and 89% said there was collaboration.<sup>1</sup>

## Measuring Quality in Primary Health Care

For most Canadians, the first and most regular point of contact with the health care system is with a primary health care (PHC) provider. This is usually a family physician, but may also be other health professionals such as dietitians, nurses or occupational therapists. PHC professionals provide a range of care; they resolve short-term health issues, manage most chronic health conditions, provide health promotion and education and link patients to specialized health care.

To date, a lack of comprehensive and comparable data has made it difficult to measure the quality of PHC. However, recent findings on diabetes care exposed gaps in health care that PHC could fill. One 2005 Statistics Canada study, for example, found that less than half (48%) of respondents with diabetes reported having had their feet checked by a health care professional at least once during the previous 12 months.<sup>2</sup> In a 2007 OECD report across 12 countries, 48.6% of Canadians age 18 to 75 with diabetes reported having had an annual eye exam in 2005, compared with an average of 57.3% for 12 reporting countries.<sup>3</sup>

To learn more about the quality of PHC, the Health Council of Canada commissioned a survey (the Canadian Survey of Experiences With Primary Health Care) to gather information on Canadians' experiences with providers. Conducting the survey in 2007, Statistics Canada found that 73% of the Canadian adults who had seen their primary health care provider within the previous year rated their care as very good or excellent. About 57% of these adults said their doctor always explained their test results, 55% said their doctor always clearly explained their exam results and 44% said their doctor always or usually talked to them about how to improve their health or prevent illness.<sup>4</sup>

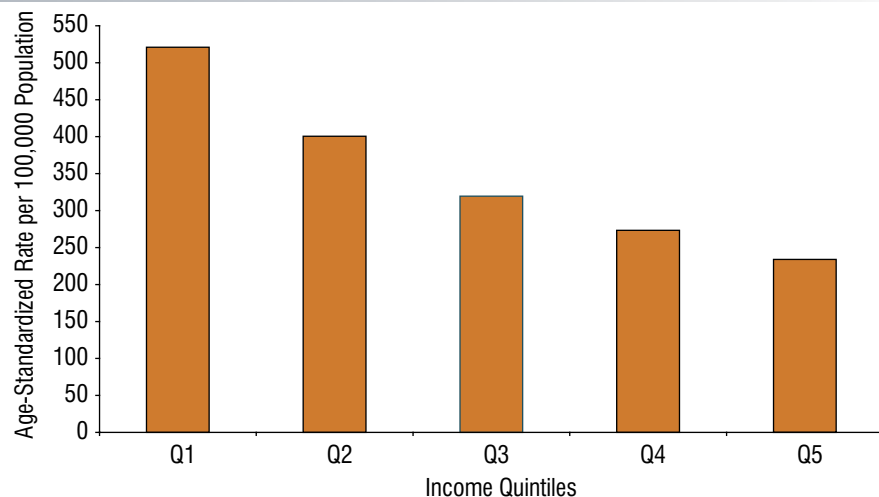
## Potentially Avoidable Hospitalizations as a Measure of Quality of Care

One indicator of quality in PHC is the proportion of potentially avoidable hospitalizations. Patients may be hospitalized when their conditions could have been treated appropriately in the community. Several chronic conditions fall into this category, including asthma, hypertension, diabetes and chronic obstructive pulmonary disease (COPD). These conditions are called “ambulatory care sensitive conditions” (ACSC). There is evidence that appropriate access to, and the quality of, primary health care can affect ACSC hospitalization rates.<sup>5</sup> Tracking these rates may lead to improvements in primary health care.

ACSC hospitalization rates in Canada outside Quebec fell by 22% in the five years between 2001–2002 and 2006–2007, after adjusting for population growth and aging. This decline is much greater than the 14% decline for all medical hospitalizations during that time.<sup>i</sup> However, in 2006–2007, ACSC hospitalization rates were up to four times higher in some provinces and territories than in others, and up to five times higher in some health regions than in others, after adjusting for population growth and aging. In addition, Canadians living in lower-income neighbourhoods were more likely than Canadians in higher-income neighbourhoods to be hospitalized for ACSC.<sup>5</sup> The differences in rates between jurisdictions and populations suggest possible differences in access to, or quality of, care for people with ACSC.

**FIGURE 1 Overall ACSC Hospitalizations by Income Quintiles**

This graph shows the age-standardized rates for overall ACSC hospitalizations by income quintile among Canadians outside Quebec under age 75 for 2006–2007. Hospitalization rates were lowest in higher-income neighbourhoods.



**Notes**

Data from Quebec were not available for 2006–2007.

Q1 represents the lowest neighbourhood income quintile and Q5 represents the highest.

Population by income quintile for 2006 was projected from 2001 Canadian census definitions.

**Source**

Discharge Abstract Database, Canadian Institute for Health Information.

i. Medical hospitalizations do not include surgical, mental health, obstetric or newborn cases.

## Measuring Quality in Hospital-Based Care

In 2004, reducing wait times for hip and knee replacements became a priority for Canada's health care system. Hip and knee replacements are some of the most common and rapidly growing elective procedures in Canada. What is the quality of care for Canadians having joint replacement surgery?

One useful measure of quality of care is the proportion of patients with joint replacements who are rehospitalized for the same problem soon after the surgery. A second is the proportion of patients who need a second round of surgery. CIHI measured the percentage of Canadians outside Quebec who were readmitted to hospital within a year of having had hip or knee replacement surgery, between 2005 and 2006. Of the 51,000 who had elective surgery, 11% had been hospitalized for their joint problem in the year before surgery and 15% were readmitted at least once during the following year. Of the 15% readmitted in the year following the surgery, 14% were readmitted twice and 6% were readmitted three or more times.<sup>6</sup>

When hip and knee replacement patients need a second round of surgery after a joint replacement, these procedures are called "revisions." Among Canadians (outside Quebec) who had at least one joint replacement in 2005–2006, about 1.3%, or 756 patients, had a revision within a year. About 40% of the hip replacement revisions were due to mechanical complications, and infection accounted for 38% of knee replacement revisions.

CIHI has been reporting since 2001 on hospital readmissions of patients suffering heart attacks. Risk-adjusted rates in Canada (outside Quebec) fell from 6.2% in the period from 2003–2004 to 2005–2006, to 5.6% (excluding Manitoba and Quebec) in the period from 2004–2005 to 2006–2007.<sup>5</sup> Rates have not fallen uniformly across Canada, and provincial and territorial readmission rates continue to vary. Patients were more than twice as likely in some regions than in others to be readmitted after initial hospitalization for a heart attack.

## Big-Dot Measures: Overall Hospital Mortality

The quality of health care is measured in different ways for different purposes. Hospital-based clinical teams, for example, use information on hospital readmissions and revisions to assess the quality of care for specific procedures, such as hip and knee replacements. However, hospital boards and executives also use big-dot summary measures to assess the quality of care from an institutional perspective. The hospital standardized mortality ratio (HSMR) is one of the big-dot measures used in Canada and elsewhere to inform and support efforts to help improve the quality of hospital care.<sup>7</sup>

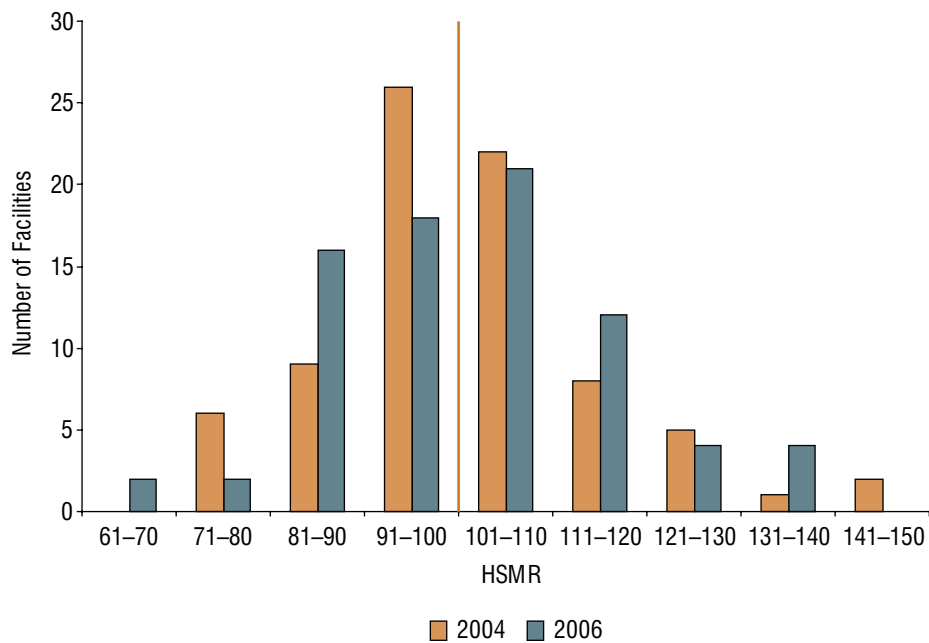
The HSMR compares the actual number of deaths in a hospital or region with the number of deaths one would expect in that hospital or region based on the average mortality of all Canadian acute care facilities outside Quebec. The ratio adjusts for factors known to affect mortality, such as patients' age, sex, diagnoses and how they arrived at the hospital. Hospitals with a ratio of 100 have the expected number of deaths, given the experience of other hospitals outside Quebec and their own patient profile. Those with higher ratios have more deaths than expected, and those with lower ratios have fewer deaths than expected.

Typically, hospitals use their mortality rates to develop targeted strategies aimed at reducing mortality in specific areas of hospital activity. The HSMR is being used as a tool to monitor changes in overall mortality and, in conjunction with other measures, to inform quality improvement efforts within hospitals.

In the three years between 2004–2005, when the HSMR was introduced, and 2006–2007, the overall average HSMR (excluding palliative care cases) fell by about 5.6%. Similarly, more hospitals and regions had HSMRs below 100 in 2006–2007 than in 2004–2005, the benchmark year.

**FIGURE 2 HSMR Trends in Canada**

In 2006–2007, more hospitals had HSMRs below 100 than in 2004–2005, the benchmark year for the ratio. The graph below shows the number of facilities with mortality ratios above and below 100 (the ratio at which a hospital or region has the number of deaths one would expect, given overall mortality rates for Canadian acute care facilities outside Quebec, and its own patient and population profile).



**Note**

HSMRs for acute care hospitals with at least 2,500 HSMR-eligible cases during the study period.

**Source**

Discharge Abstract Database, Canadian Institute for Health Information.



## Patient Safety

Infections acquired in hospital (nosocomial infections) are a major cause of death and increased morbidity in hospitals.<sup>8</sup> Based on U.S. rates, nosocomial infections are estimated to affect 220,000 Canadian hospital patients, and result in 8,000 deaths, each year.<sup>9</sup> One of the most common infections circulating in Canadian hospitals is methicillin-resistant staphylococcus aureus (MRSA). Surveillance data collected from 48 hospitals in nine provinces by the Public Health Agency of Canada show that the incidence of MRSA more than doubled between 2001 and 2006, from under 4 per 1,000 admissions to just over 8 per 1,000 admissions.<sup>10</sup> Worldwide, infectious complications associated with health care affect over 1.4 million people a year.<sup>8</sup> Among the critically ill worldwide, at least 25% of people admitted to hospital develop a health care–related infection, including people in countries with greater health care resources.<sup>8</sup> Experts say proper hand hygiene can reduce the current number of hospital-acquired infections.<sup>11</sup>

In 2005, the World Health Organization (WHO) developed and distributed the *WHO Guidelines on Hand Hygiene in Health Care* as part of the first Global Patient Safety Challenge campaign, “Clean Care Is Safer Care.” The guidelines review the scientific evidence on hand hygiene and recommend ways to improve practices and reduce infections acquired in hospitals.<sup>8</sup> In 2007, the Canadian Patient Safety Institute launched its own Hand Hygiene Campaign, “STOP! Clean Your Hands.”<sup>12</sup>

## Getting a Grip on Quality in Rehabilitation Care

Rehabilitation care helps patients regain or improve function following illness or injury. CIHI’s National Rehabilitation Reporting System (NRS) collects information on the functional abilities of rehabilitation patients who are using Canadian rehabilitation facilities—when they enter, while they are there and when they leave. CIHI recently reported on the functional abilities of rehabilitation patients in 94 general rehabilitation facilities and specialty rehabilitation facilities (which provide more extensive and specialized services) across Canada in 2006–2007. The report compared patients’ functional status within 72 hours of admission to the facility and at discharge, using the total functional score (TFS) measure. Not surprisingly, patients in the major multiple trauma rehabilitation client group (RCG) improved their function more during their stay than did patients in the arthritis and pulmonary RCGs. Patients in the first group would likely have been admitted with worse functional capacities than the chronic disease patients, but their conditions would have been more responsive to care than the chronic conditions.<sup>13</sup>

In 2006–2007, most rehabilitation clients (89%) returned to their preadmission living setting after leaving rehabilitation care. This proportion has held steady since 2002–2003, the first year for which there are data. Patients returning to their preadmission living setting would have largely recovered their preadmission functional capacities.

In another study of rehabilitation inpatients with orthopedic conditions, stroke and amputations, 11% of patients were readmitted after an initial stay between 2003 and 2007.<sup>14</sup> These readmissions might reflect the disease's severity or they might have been planned—as, for example, after an amputation. Clients readmitted to rehabilitation care in 2006–2007 for the same orthopedic condition, stroke and amputation tended to have lower function scores on their first stay. They regained more function during their second stay, and at discharge, they tended to be functioning at levels similar to those who had had only one stay. However, clients readmitted to inpatient rehabilitation care for different orthopedic conditions, strokes and amputations tended to have had similar gains in function during their first stay as those inpatients who had only one stay. At their second discharge, these clients tended to be functioning at lower levels than at their first discharge.<sup>14</sup>

### Measuring Quality in Home Care

Home and community services have become increasingly important points on the health care continuum, as Canada's population ages and chronic disease rates rise. Total spending on Canada's publicly funded home care more than doubled between 1994–1995 and 2003–2004, from \$1.6 billion to \$3.4 billion.<sup>15</sup> CIHI has developed the Home Care Reporting System (HCRS) to collect data on publicly funded home care services, including information on who uses home care and the services they receive.

A key component of the HCRS is the Resident Assessment Instrument—Home Care (RAI-HC)©, developed by an international research consortium, interRAI, and revised for Canadian use. The RAI-HC© provides a structured, standardized way to assess the health care needs of longer-term home care clients, predominantly the frail, elderly and individuals living with disabilities in the community. The HCRS provides data on clients' entry into home care, wait times for services, specific service needs of home care clients and populations and the health outcomes of clients who receive home care services. One feature of the RAI-HC© that is helpful to monitoring quality in home care is its collection of home care quality indicators.<sup>16</sup> In early 2007, the Yukon Territory became the first jurisdiction to submit data to the HCRS; other jurisdictions have since followed suit.

## You Can't Manage What You Don't Measure

There is much work ahead to develop quality-of-care indicators that allow provincial and territorial comparisons. However, progress is being made. In primary health care, CIHI has developed a PHC chartbook that demonstrates how pan-Canadian PHC indicators could provide comparable data on access, recommended care, and the organization and delivery of primary health care services. The report, published in the fall of 2008, draws on existing survey data, analyses from regional PHC quality studies, CIHI data holdings and other sources.<sup>17</sup>

For health outcomes at the population level, CIHI and Statistics Canada have developed the new Health Outcomes Conceptual Framework to guide data development and analysis. The framework can be used to describe the source and nature of factors that may influence links between interventions and outcomes at the pan-Canadian level. It also highlights gaps in existing data to inform future information development efforts on outcomes of care.<sup>18</sup>

## What We Know

**Hospitalization** rates in Canada outside Quebec have been declining for seven chronic conditions that can be potentially managed or treated in the community.

**How** many patients with joint replacements are being rehospitalized for the same joint problem, and how many are having a second round of surgery within a year of having the joint replaced.

**Readmission** rates for patients admitted to hospital for heart attack.

## What We Don't Know

**The** ways in which health care interventions may produce a range of health outcomes.

**How** client outcomes of inpatient rehabilitation care vary by region.

## What's Happening

**CIHI** continues to refine the hospital standardized mortality ratio (HSMR), a measure of quality of care in health care institutions that compares the actual number of deaths in a hospital or region with the number one would expect, based on overall mortality rates for Canadian acute care facilities outside Quebec.

**Health** Canada, the Institute for Safe Medication Practices Canada and CIHI are developing the Canadian Medication Incident Reporting and Prevention System (CMIRPS) to strengthen Canada's capacity to reduce and prevent medication incidents (or errors in appropriate medication administration) and to manage and share medication-incident information.

**CIHI** and Statistics Canada are collaborating to develop additional health indicators of patient outcomes, safety and access to care.

## Want to Know More



The following can be downloaded free of charge, in French and English, from CIHI's website at [www.cihi.ca](http://www.cihi.ca):

- *Health Indicators 2008*
- *HSMR: A New Approach for Measuring Hospital Mortality Trends in Canada*
- *Inpatient Rehabilitation in Canada, 2006–2007*
- *Clients Returning to Inpatient Rehabilitation*
- *Public-Sector Expenditures and Utilization of Home Care Services in Canada: Exploring the Data*
- *The Yukon: Pioneers in Home Care Information*
- *A Framework for Health Outcomes Analysis: Diabetes and Depression Case Studies*
- *Primary Health Care Indicators Chartbook: An Illustrative Example of Using PHC Data for Indicator Reporting*

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18. Canadian Institute for Health Information, *A Framework for Health Outcomes Analysis: Diabetes and Depression Case Studies* (Ottawa, Ont.: CIHI, 2008).



# Population Mental Health

Mental illness and compromised mental health do not discriminate; they can affect anyone. Recognizing the burden of illness that mental illness and compromised mental health impose on Canadians, the federal government established the Mental Health Commission of Canada in 2007 to increase our understanding of mental health and mental illness in Canada.<sup>1</sup> One of the missing pieces in our understanding is our knowledge of the mental health and mental illness in populations known to be at higher risk of compromised mental health and mental illness.<sup>2</sup> Such groups include the homeless and those at risk of experiencing homelessness, and Canadian youth and adults involved with the criminal justice system.<sup>1, 3</sup>

## What's in a Definition?

Distinguishing between mental health and mental illness better enables us to investigate the ways in which the determinants of health may influence Canadians' mental health.<sup>4</sup>

In Canada, the Public Health Agency of Canada defines "mental health" as more than the absence of mental illness. It is the "capacity of each and all of us to feel, think, and act in ways that enhance our ability to enjoy life and deal with the challenges we face. It is a positive sense of emotional and spiritual well being that respects the importance of culture, equity, social justice, interconnections and personal dignity." "Mental illness," by contrast, is defined as "alterations in thinking, mood or behaviour due to distress and impaired functioning."<sup>4</sup>

CIHI's Canadian Population Health Initiative has taken steps to enhance our understanding of mental health issues in Canada. Two recent reports take an in-depth look at mental health and mental illness among Canada's homeless and among youth and adults involved in the criminal justice system.<sup>1,3</sup> Here we summarize findings from these reports, and from other CIHI analyses of hospital stays and readmissions of Canadians with schizophrenia.

## Mental Health, Mental Illness and the Homeless

Homelessness and the risk of homelessness are a harsh reality for many Canadians. Men and women, single individuals of all ages, one- or two-parent families—anyone may experience homelessness at some point in life. According to one estimate, more than 10,000 Canadians are homeless on any one given night,<sup>3</sup> but nobody knows exactly how many people are homeless in Canada because it is hard to measure and track the numbers regularly and consistently. Unemployment, low income, housing availability, family or school problems, mental illness and addictions are all known risk factors for homelessness.<sup>3</sup>

Homelessness and mental illness do not always go together. Many homeless individuals have no mental illness. Most people with compromised mental health do not become homeless either. Still, homeless Canadians are more likely than Canadians in general to suffer from compromised mental health or from mental illnesses such as substance abuse and depression.<sup>3</sup> Homeless Canadians also seem to be more at risk than other Canadians for low coping strategies, low self-esteem, higher stress and fewer social support mechanisms—all factors associated with compromised mental health.<sup>3</sup>

For some of the homeless, mental health issues emerge before they become homeless; these issues may also contribute to individuals' becoming homeless, through their effect on their ability to hold down a job or manage housing.<sup>3</sup> Those who have both substance abuse disorders and mental illness diagnoses tend to be homeless longer than other homeless individuals.<sup>3</sup> Some studies also suggest that prolonged homelessness has an adverse effect on already compromised mental health and mental illness.<sup>3</sup>



Canada's homeless tend to use clinics and EDs more than other health services, and in 2005–2006 just over one-third (35%) of these visits were for mental health and behavioural disorders. After psychoactive substance use (54%), schizophrenia, schizotypal and delusional disorders (20%) were the most common type of mental disorders of homeless ED patients. Other factors associated with ED visits by the homeless included injuries, health symptoms, substance dependence and depressive symptoms (among homeless men), being a victim of crime, unstable housing and medical comorbidity.<sup>3</sup>

Inpatient hospitalizations tell a similar story. In 2005–2006, 52% of acute care hospitalizations of the homeless outside Quebec were primarily for mental diseases and disorders.<sup>3</sup>

**FIGURE 1 Top Five Reasons for Emergency Department Visits by the Homeless and Others, 2005–2006**

Mental health and behavioural disorders were the most frequent (35%) reason for ED visits by the homeless in 2005–2006. But they were not among the top five reasons for ED visits by other patients.

Homeless	Percent
Mental and behavioural disorders	35
Symptoms, signs and abnormal clinical findings	16
Injury, poisoning and consequences of external causes	14
Contact with health services	14
Diseases of the musculoskeletal system and connective tissue	5
Others	
Injury, poisoning and consequences of external causes	25
Symptoms, signs and abnormal clinical findings	19
Diseases of the respiratory system	11
Contact with health services	8
Diseases of the musculoskeletal system and connective tissue	6

**Note**

Columns do not add up to 100%, as only the top five reasons are noted.

**Source**

National Ambulatory Care Reporting System (primarily Ontario), 2005–2006, Canadian Institute for Health Information.

In a recent related analysis of the hospitalization patterns of Canadians with schizophrenia (the study included both housed and homeless patients), CIHI looked at whether longer initial hospital stays reduced patients' chances of being rehospitalized. Longer initial stays were found to be associated with lower readmission rates, especially for readmissions within 30 days of the initial discharge.<sup>5</sup> Patients whose first hospital stay lasted one to two weeks were 21% less likely than patients with initial stays of a week or less to be readmitted within the next 30 days of discharge between 2003–2004 and 2004–2005. Patients with the longest initial hospital stays (seven weeks or longer) were less than half (49%) as likely to be readmitted within 30 days as those with hospital stays of a week or less.<sup>5</sup>

Overall, from 2003–2004 to 2004–2005, 38% of patients discharged with a diagnosis of schizophrenia from a general hospital in Canada had unplanned readmissions (through emergency departments) for a mental illness within a year of their discharge. One in eight patients (12%) were readmitted to hospital within 30 days of their initial discharge.<sup>5</sup>

## Mental Health, Mental Illness, and Delinquency and Criminal Behaviour

Most people with a mental illness or compromised mental health do not commit crimes. However, youth and adults diagnosed with mental illnesses are over-represented in Canada's correctional facilities.<sup>1</sup> And patients admitted to hospital mental health beds often have some criminal history or are involved with a crime. About 28% of the 30,606 patients admitted to Ontario's mental health hospital beds in 2006–2007, for example, were reported to have some criminal history, and another 9% had either been charged or were involved with a crime.<sup>1</sup> Patients reporting some criminal history were more likely than other patients to have concurrent substance abuse disorders. Just over half (54%) of the patients charged or involved with a crime had been diagnosed with schizophrenia, and 38% with substance disorders.<sup>1</sup>

Other research has found that psychotic, major depressive, anxiety and substance abuse disorders are more common in incarcerated individuals than in the general population.<sup>1</sup> While the prison environment itself has been linked to mental health outcomes, and Canadians in prison attempt suicide more often than other Canadians, it can be difficult to isolate the effects of being in prison from pre-existing influences.<sup>1</sup>

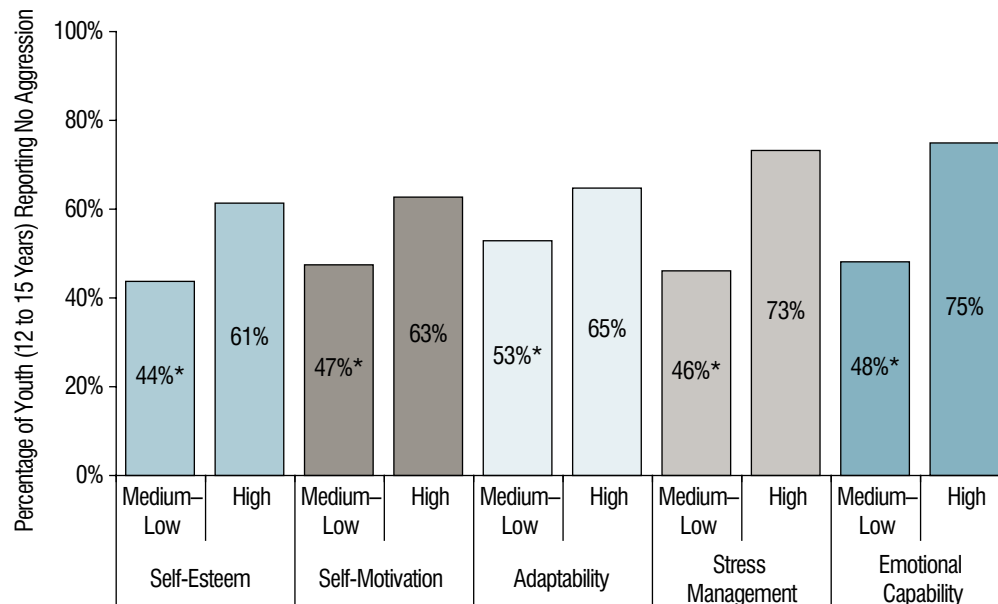
The association between compromised mental health and delinquent behaviours among youth has also been studied. In a 2004–2005 survey, 12- to 15-year-old Canadians were asked whether they had engaged in aggressive behaviour or property delinquency. Aggressive behaviour included such things as getting into fights, attacking people and bullying or being mean to other teenagers. Property delinquency included such things as stealing at home, destroying other people's things and vandalizing outside the home.<sup>1</sup> About half of those who responded said that they engaged sometimes or often in aggressive behaviour (44%) or property delinquency (51%).<sup>1</sup>

There is no definitive evidence on whether teenagers' delinquent behaviour increases with age. New analyses show that delinquent behaviours are linked to several factors related to compromised mental health, including hyperactivity, aggressive tendencies, lack of motivation and victimization. Canadian 12- and 13-year-olds who reported hyperactivity and depression, for example, were more likely to report high levels of aggressive behaviour as well as high levels of property delinquency.<sup>1</sup>

On the positive side, youth with high levels of self-esteem, social support, a sense of belonging, good stress management, self-motivation and life satisfaction were less likely to report engaging in delinquent behaviour.<sup>1</sup>

**FIGURE 2 Individual-Level Protective Factors for Youth Age 12 to 15 Who Report No Aggressive Behaviour, 2004–2005**

Canadian youth with high levels of protective factors were significantly more likely to report never engaging in aggressive behaviour than those with medium to low levels, according to a recent study. For example, 75% of youth with high emotional capability scores reported no aggressive behaviour, compared with 48% of youth who reported medium to low levels.



**Note**

\* Significant difference between levels within each mental health factor at  $p < 0.05$ .

**Source**

CPHI analysis of National Longitudinal Survey of Children and Youth (Cycle 6, 2004–2005), Statistics Canada.

The chances that young Canadians will engage in delinquent behaviours are also linked to certain characteristics of their family, school and community environments and peer networks. For example, in a 2004–2005 survey, Canadian youth who reported feeling like an outsider at school, having friends with problem behaviours and having few positive peer connections reported higher levels of aggressive behaviour.<sup>1</sup>

## What We Know

**Mental** health is influenced by both individual characteristics and social setting.

**Canadians** who are homeless or are involved in the criminal justice system are more likely than other Canadians to have compromised mental health or mental illness and disorders such as substance abuse and depression.

**Longer** initial hospitalization stays for people with schizophrenia are associated with lower hospital readmission rates.

## What We Don't Know

**The** extent of homelessness across Canada due to the absence of standardized ways of counting Canada's homeless and, by extension, the extent to which homeless Canadians experience mental illness or compromised mental health.

**The** causal mechanisms underlying the associations between mental health and mental illness and both homelessness and criminal behaviour.

**The** causal mechanisms underlying the associations between the broader determinants of health and mental health and illness among homeless Canadians and among Canadians who are involved with the criminal justice system.

## What's Happening

**The** third and final *Improving the Health of Canadians* report on mental health and resilience is scheduled for release by the Canadian Population Health Initiative (CPHI) in February 2009. This report will look at the concept of positive mental health.

**CPHI** has commissioned a collection of papers on what makes a community mentally healthy. These papers are scheduled for posting on CPHI's website in the fall of 2008.

**CIHI's** Ontario Mental Health Reporting System database collects and analyzes information about clients admitted to a mental health bed at about 70 general hospitals and specialty psychiatric hospitals in Ontario.

## Want to Know More



The following can be downloaded free of charge, in French and English, from CIHI's website at [www.cihi.ca](http://www.cihi.ca):

- *Improving the Health of Canadians: Mental Health and Homelessness*
- *Improving the Health of Canadians: Mental Health, Delinquency and Criminal Activity*
- *Hospital Length of Stay and Readmission for Individuals Diagnosed With Schizophrenia: Are They Related?*

## References

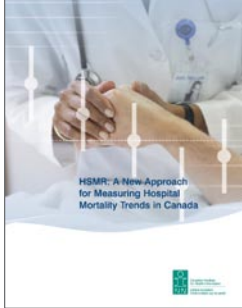
1. Canadian Institute for Health Information, *Improving the Health of Canadians: Mental Health, Delinquency and Criminal Activity* (Ottawa, Ont.: CIHI, 2008).
2. The Standing Senate Committee on Social Affairs, *Out of the Shadows at Last: Transforming Mental Health, Mental Illness and Addiction Services in Canada* (Ottawa, Ont.: The Senate of Canada, 2006).
3. Canadian Institute for Health Information, *Improving the Health of Canadians: Mental Health and Homelessness* (Ottawa, Ont.: CIHI, 2007).
4. Government of Canada, *The Human Face of Mental Health and Mental Illness in Canada*, Public Health Agency of Canada, Mood Disorders Society of Canada, Health Canada, Statistics Canada and Canadian Institute for Health Information, eds. (Ottawa, Ont.: Minister of Public Works and Government Services Canada, 2006).
5. Canadian Institute for Health Information, *Hospital Length of Stay and Readmission for Individuals Diagnosed With Schizophrenia: Are They Related?* (Ottawa, Ont.: CIHI, 2008).



# Information Updates—Key Findings From CIHI's Reports in 2007–2008







## HSMR: A New Approach for Measuring Hospital Mortality Trends in Canada

- This publication is the first report in Canada about the hospital standardized mortality ratio (HSMR)—an important new measure that can help support efforts to improve patient safety and quality of care in Canadian hospitals. The ratio provides a starting point to assess mortality rates and identify areas for improvement, which may help to reduce hospital deaths from adverse events.
- Included are the first publicly available HSMR trends over three fiscal years (2004–2005 to 2006–2007) for 42 health regions and 85 larger acute care facilities or corporations in Canada (excluding Quebec).
- The overall average HSMR (excluding palliative care cases) fell by 6% over these three fiscal years, with trends varying by patient group. For example, death rates for patients with heart attacks fell faster than those for patients with pneumonia.



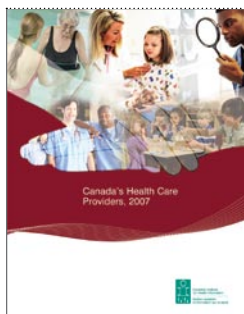
## The Cost of Hospital Stays: Why Costs Vary

- This report looks at the average costs of a wide range of treatments and procedures performed during acute care hospital stays for typical patients and some of the reasons these costs can vary from patient to patient.
- Spending on these patients can vary according to their age, the type of illness being treated, the presence of additional conditions outside of the reason for hospital admission or the number of interventions a patient undergoes.
- Costs can also vary by the types of procedures used on similar patients. For example, while bypass surgery and angioplasty are common procedures used to treat coronary artery disease, the average cost per hospitalization for a typical bypass surgery patient was \$17,869, while for a typical angioplasty patient it was \$7,829.



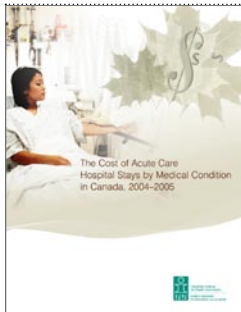
### Improving the Health of Canadians: Mental Health, Delinquency and Criminal Activity

- This report provides an overview of the latest research, analyses and policy initiatives related to mental health, delinquency and criminal activity. It also presents data on the characteristics of and issues facing individuals with a mental illness who were or are involved with the criminal justice system.
- Sixty-five percent of youth who reported being highly involved with their school reported no aggression, compared with 47% of those not as involved; similarly, 66% of youth who said they liked school reported no aggression, compared with 47% of youth who said they did not like school that much.
- At the community level, risk factors for delinquent or violent behaviour include living in neighbourhoods with a high turnover of residents and high rates of violent crime, and feelings of hopelessness.
- Nine percent of the more than 30,000 patients admitted to hospital for a mental illness in Ontario in 2006–2007 had either been charged with, or were involved in, a crime.



### Canada's Health Care Providers, 2007

- This report presents a comprehensive reference on the country's health care workforce. Highlights include the following:
  - **Size:** In 2006, just over one million people in Canada worked directly in health occupations, representing 6% of the total Canadian workforce.
  - **Growth:** From 1996 to 2005, growth of health professions varied; for example, dental hygienists experienced a growth of 45%, pharmacists 29% and medical laboratory technologists 6%.
  - **Age and sex:** Women make up the majority of the health workforce (77%, compared with 47% in the general workforce). The health workforce is also slightly older than the general working population, at an average age of 41.9, compared with the general workforce average of 39.6 in 2005.
  - **Health:** Those working in health care report levels of good health (96%) similar to that of the general Canadian workforce (94%). In 2003, 1.1% of health care workers versus 3.8% of the general labour force reported being physically injured at work.



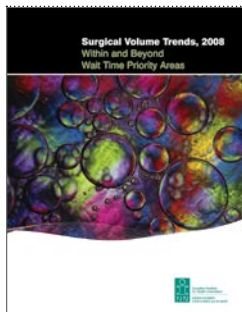
### The Cost of Acute Care Hospital Stays by Medical Condition, 2004–2005

- This report uses Canadian health care administrative data to answer the key questions related to total hospital costs for acute care inpatients. Findings include the following:
  - Total acute care inpatient cost was estimated to be \$17,046 million for 2004–2005 in Canada outside Quebec.
  - A total of 2.4 million acute hospital stays were reported with an average cost of \$6,983 per stay.
  - Admissions related to pregnancy and childbirth accounted for the greatest number of hospital stays.
  - Males accounted for an estimated \$8,382 million of the total acute care inpatient costs, compared with \$8,659 for females. However, total costs for females were \$7,799 million when childbirths were excluded.



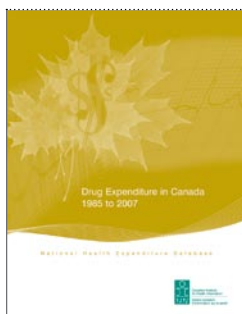
### Health Indicators 2008

- Hospitalization rates vary across the country for seven chronic conditions that could potentially be managed or treated in the community, known as ambulatory care sensitive conditions (ACSC). This report, developed jointly by CIHI and Statistics Canada, provides ACSC admission rates in health regions across Canada and explores the factors that contribute to higher or lower rates.
- Between 2001–2002 and 2006–2007, hospitalizations for ACSC fell 22% in Canada outside Quebec, after adjusting for population growth and aging.
- The chances of hospitalization for ACSC are linked to several socio-demographic factors. For example, ACSC hospitalizations tend to fall with patients' rising income. Also, rates tend to be higher in rural than in urban areas.



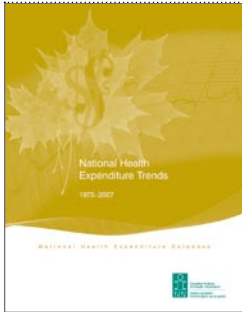
### Surgical Volume Trends, 2008—Within and Beyond Wait Time Priority Areas

- This report provides trends in the number of people having surgery within first ministers' wait times priority areas (cancer, heart, diagnostic imaging, joint replacements and sight restoration), as well as on trends in the numbers of people who had surgery for other reasons (outside priority areas).
- Over a two-year period, Canadian patients outside Quebec underwent almost 60,000 additional surgical procedures in priority areas. Between 2004–2005 and 2006–2007, surgical rates in these priority areas increased by 8% overall, after population growth and aging were accounted for.
- Growth was greater in the first year after the first ministers' 10 Year Plan was implemented (7% in 2005–2006) than in the second year (1% in 2006–2007).



### Drug Expenditures in Canada, 1985 to 2007

- *Drug Expenditures in Canada, 1985 to 2007*, in the series of National Health Expenditure Database reports, updates trends in drug spending in Canada between 1985 and 2007, primarily from retail establishments, in total, by public and private payers, and by type of drug (prescribed and non-prescribed). Provincial and territorial comparisons are included. International trends are updated based on data from the OECD.
- Since 1985, drug expenditure has consumed an increasing share of Canada's health care dollar. In 2007, spending on drugs is expected to have reached \$26.9 billion, representing 16.8% of total health care spending. Among major categories of health expenditure, drugs account for the second largest share, after hospitals.

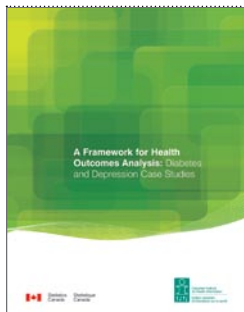


### National Health Expenditure Trends, 1975–2007

- This publication includes updated expenditure data by source of funds (sector) and use of funds (category) at the provincial and territorial level and for Canada. It also contains an overview of the trends of health care spending in Canada. International comparisons such as the ratio of health spending to GDP are included, along with a comprehensive set of data tables and technical notes.
- Canada's health care spending continues to rise and is expected to reach \$160.1 billion dollars in 2007, up from \$150.3 billion in 2006. This represents a forecast annual increase of 6.6% (3.2% after taking inflation and population growth into account).

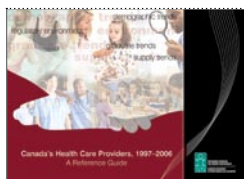
### Hospitalizations, Early Revisions and Infections Following Joint Replacement Surgery (Analysis in Brief)

- This special study focuses on post-surgery hospitalizations for infection of the joint and for revision surgery.
- One out of every seven patients who undergoes a knee or elective hip replacement procedure returns to the hospital within one year, in some cases because of complications related to the surgery.
- According to the study, 51,029 people underwent a first-time knee or elective hip replacement (outside of Quebec) in 2005–2006. Of these patients, more than 7,700 were hospitalized at least once in the subsequent 12 months. Compared with hospital use by the same group of patients in the year before surgery, this represents an increase of more than 2,000 patients hospitalized and an extra 44,000 hospital days.



### **A Framework for Health Outcomes Analysis: Diabetes and Depression Case Studies**

- This report explores the feasibility of conducting health outcomes analyses using existing data with a specific focus on diabetes and depression. A collaborative effort between CIHI and Statistics Canada, the report also identifies important data gaps and related research implications.
- The framework and case studies profiled will be of interest to health system decision-makers, health care providers, policy-makers and researchers working at different levels and points within the health sector. The overall intent of this report is to inform current and future health outcomes analyses and provide specific findings related to diabetes and depression.



### **Canada's Health Care Providers, 1997 to 2006, A Reference Guide**

- This year, *Canada's Health Care Providers, 1997 to 2006, A Reference Guide* provides aggregate, supply-based trend information, by province and territory and by year, for 24 health personnel groups.
- This latest publication maintains the continuity of previous editions, such as *Health Personnel Trends in Canada, 1995 to 2004*, within a consolidated format and is intended to be used as a reference guide for the professions highlighted.
- Each chapter is profession-specific and delivers information on regulatory environment, supply and demographic trends and graduate trends, which is suitable for baseline information and analysis on the specific health occupation.



# Quick Facts





## Health Care Expenditures

- In 2007, public- and private-sector spending on health care was an estimated \$160 billion, 4.1% more than in 2006 after adjusting for inflation, and about 3.2% more after adjusting for both inflation and population growth. Forecast spending growth in 2007 is in line with estimates for 2006, when overall spending rose by 3% after adjusting for inflation.
- In 2007, per capita spending on health care was an estimated \$4,867, about \$261 higher than the \$4,606 per capita estimated for 2006. Among the provinces, it was forecast to be highest in Alberta and Manitoba, at about \$5,390 and \$5,250 per person, respectively.
- Canadians age 65 and older consumed an estimated 44% of provincial and territorial government health care spending in 2005, a proportion relatively unchanged since 1998. Per capita spending on seniors was about \$9,500 in 2005, compared with about \$7,400 on infants under the age of 1 year, and about \$1,700 on Canadians 1 to 64 years of age. Seniors 85 and older—1.5% of the population in 2005—consumed \$21,000 per capita in health care dollars.
- Canada's population aging—the increase over the next decades in the proportion and number of Canadians that are seniors—is expected to add up to 1% a year to health care spending between 2002 and 2026, about the same annual contribution it made to health care spending from 1975 to 2002.
- Public-sector spending on health care remained at around 70% of total health care spending for the 11th consecutive year in 2007. Spending by provincial and territorial governments surpassed \$100 billion for the first time, accounting for \$103.8 billion of the \$113 billion in public-sector spending, and nearly 65% of total health care spending in 2007.
- Canada's per capita spending on health care was relatively similar in range to that of 7 other countries among the 23 countries surveyed by the Organisation for Economic Co-operation and Development (OECD) in 2006, the most recent year for which data are available. Per capita spending remained highest in the United States (US\$6,714), compared with US\$3,678 in Canada. France, Germany, the Netherlands and Australia were among the countries in a range similar to that of Canada.

## Health Human Resources

- About 9% of Canada's health care workforce were physicians in 2005, with a near even split between specialists (4%) and general practitioners and family physicians (5%). The number of physicians grew by 12.9% between 1997 and 2006 (from 55,207 to 62,307), compared with a 9% increase in Canada's population.
- More than 40% of the health care workforce were nurses in 2006. Between 2003 and 2006, the number of registered nurses (RNs) grew by 4.6% (from 241,342 to 252,948), and the number of licensed practical nurses (LPNs) grew by 6.6% (from 63,138 to 67,300). The number of registered psychiatric nurses (RPNs) remained stable (5,108 in 2003 and 5,051 in 2006).
- By 2006, nearly 20% of Canadians (more than 6 million) lived in rural areas, compared with 15.7% of general practitioners and family physicians, and less than 10% of all physicians. Alberta had the closest ratio of rural (103) to urban (109) general practitioners and family physicians per 100,000 residents.
- Canadian doctors and nurses tend to be older than the Canadian workforce as a whole, and one in five physicians and nurses were nearing retirement age in 2006. The average age of physicians was 49.2 in 2006, compared with 40 for the average Canadian worker. The average age of RNs was 45, and of LPNs, 44.1.
- About 22% of Canadian physicians were foreign-trained in 2005, compared with 20% in 2001. The number of foreign-trained family practitioners rose by 10% during the period, while the number of foreign-trained specialists fell by 5%. The proportion of Canadian physicians that are foreign-trained is similar to the proportion in Australia, the U.K. and the U.S. Canadian foreign-trained physicians come largely from the U.K., South Africa, India, Ireland and Egypt.

## Access to Health Care

- In a Statistics Canada survey, 85% of Canadians reported having a regular medical doctor in 2007. Some 78% of respondents without a regular doctor (equivalent to about 3.3 million) said they had a regular place of care. Some 6% (equivalent to about 1.7 million) Canadians said they had looked for a regular medical doctor but could not find one.
- Canadians make about 14 million visits a year to hospital emergency departments (EDs). In 2005–2006, about 1.1 million of these visits resulted in hospital admission. ED patients waited longer for an acute care bed in larger hospitals, and those who waited longer also tended to be older and sicker, and remained longer in hospital, than those with shorter waits.
- In a 2006 Statistics Canada survey, 12.5% of the 1.6 million Canadians age 15 and older who had had elective (non-emergency) surgery in the previous year reported difficulties accessing the surgery. Two-thirds (66%) of this group cited long wait time as an access barrier. Overall, 40.3% of those who had had elective surgery said they waited less than a month for the procedure, another 40.7% said they waited one to three months and 19.1% said they waited more than three months.
- Between 2004–2005 and 2006–2007, rates of elective surgery in Canada's five priority wait times areas rose by 8% above the level that would have been expected as a result of population growth and aging. Rates grew more quickly in the first (7%) than in the second year (1%) following the 2004 first ministers' agreement to reduce wait times in five priority areas: cancer care, cardiac care, hip and knee replacements, cataract surgery and diagnostic imaging.
- In 2005–2006, X-ray (64%) and ultrasound (14%) examinations continued to account for nearly 80% of all examinations in Canadian hospitals (excluding angiography), followed by computed tomography (or CT, 12%), nuclear medicine (6%), magnetic resonance imaging (or MRI, 3%) and cardiac catheterization (1%). Between 2003–2004 and 2006–2007, growth in the number MRI and CT examinations outpaced growth in the number of scanners.
- Median wait times between referral and admission to general and specialty rehabilitation facilities were 0 days and 1 day, respectively, in 2006–2007, unchanged from 2002–2003. The differences in wait times for the two types of facilities may partly reflect differences in the clients they typically serve.

## Health Care Quality

- Hospitalization rates for ambulatory care sensitive conditions (ACSC) fell by 22% in Canada outside Quebec over the five years from 2001–2002 to 2006–2007, after adjusting for population growth and aging. ACSC are seven chronic conditions, including asthma, hypertension and diabetes, that can potentially be managed or treated in the community. ACSC hospitalization rates declined one and a half times more quickly than medical hospitalizations overall over the five years.
- In the three years after the hospital standardized mortality ratio (HSMR) was introduced in Canada in 2004–2005, the overall average HSMR (excluding palliative care cases) fell by 5.6%. The HSMR compares the actual number of deaths in a hospital or region with the number of deaths one would expect based on the average mortality of all Canadian acute care facilities outside Quebec, factoring in the hospital or region's specific patient and population characteristics. Hospitals and regions can use their HSMRs to monitor changes in overall quality of care, and as a yardstick for strategies aimed at improving quality of care. Hospitals and regions with a ratio of 100 have the expected number of deaths. In the three years ended in 2006–2007, the number of hospitals and regions with HSMR results below 100 increased.
- About 11% of the Canadians outside Quebec who had elective hip or knee replacement surgery between 2005 and 2006 were hospitalized for their joint problem in the year before surgery. About 15% were hospitalized in the year after surgery, one in five of these more than once. About 1.3% had a second round of surgery for their joint problem in the year following the full or partial joint replacement.
- Readmissions for patients hospitalized for heart attacks have been falling. Rates in Canada outside Quebec fell to 5.6% in the period from 2004–2005 to 2006–2007, from 6.2% in the period from 2003–2004 to 2005–2006. Between 2004–2005 and 2006–2007, patients in some regions were more than twice as likely as patients in other regions to be readmitted.
- About 89% of the clients receiving care in Canadian rehabilitation facilities returned to pre-admission living settings upon discharge in 2006–2007. This proportion has been stable since 2002–2003, when data were first collected. Some 91% of rehabilitation patients met their service goals upon discharge in 2006–2007.

- A 2005 Canadian survey of registered nurses, licensed practical nurses and registered psychiatric nurses found that more of the nurses delivering direct care (27%) thought the quality of patient care had deteriorated during the previous year than thought it had improved (16%). Some 11% reported having had a needlestick injury, and nearly 30% said a patient had physically assaulted them, during the previous year.

## Population Mental Health

- In 2005–2006, 35% of homeless Canadians' visits to emergency departments were for mental health and behavioural disorders. Substance abuse was the most common disorder (54%), followed by schizophrenia, schizotypal and delusional disorders (20%). Mental disorders also accounted for 52% of the hospitalizations of homeless Canadians outside Quebec in 2005–2006.
- Patients with schizophrenia who stayed longer in hospital during their first admission were less likely than patients with shorter stays to be readmitted in the weeks following initial discharge, between 2003–2004 and 2004–2005. (The study included both housed and homeless patients.) Patients whose first stay lasted one or two weeks were 21% less likely than patients staying a week or less to be readmitted within 30 days of discharge.
- About 28% of the 30,000 or so patients admitted to an Ontario mental health hospital bed in 2006–2007 reported having some criminal history, and 9% had either been charged or were involved in a crime. Those reporting some criminal history were more likely than other patients in mental health beds to have concurrent substance abuse disorders.
- Canadian 12- and 13-year-olds who reported being hyperactive or depressed in a 2004–2005 survey were also more likely than their peers to report high levels of aggressive behaviour (for example, bullying, attacking people) and of property delinquency (for example, vandalism, stealing at home). On the positive side, youth with high levels of self-esteem, social support, a sense of belonging, good stress management, self-motivation and life satisfaction were less likely to engage in these behaviours.

# Quick Reference Tables



## Selected Health Professionals per 100,000 Population, 2006

	Physicians	RNs	LPNs	RPNs	Pharm- acists	Dentists	Dental Hygienists	Dietitians	Occupational Therapists	Physio- therapists	Chiro- practors	Opto- metrists	Psycho- logists
N.L.	200	1,084	519	..	109	32	18	29	28	40	9	8	38
P.E.I.	149	1,030	432	..	102	45	43	41	25	40	6	14	18
N.S.	219	941	340	..	84	55	56	47	34	57	11	10	47
N.B.	177	1,026	353	..	87	39	39	43	32	58	7	14	45
Que.	215	834	223	..	92	54	57	31	48	48	15	17	104
Ont.	174	708	197	..	73	62	70	21	30	44	28	12	24
Man.	180	924	225	81	96	50	48	32	38	50	21	9	15
Sask.	159	858	225	91	104	37	36	27	23	56	19	12	44
Alta.	191	753	163	33	93	55	57	24	41	58	33	12	57
B.C.	199	665	125	47	73	66	52	22	33	57	23	10	24
Y.T.	226	1,044	193	..	93	64	64	..	} 19	..	19	16	..
N.W.T.	115	} 1,420	220	..	53	122	36	..		..	..	0	203
Nun.	36		..	..	55	158	..	..		..	..	..	65
<b>Canada</b>	<b>190</b>	<b>772</b>	<b>205</b>	<b>50</b>	<b>83</b>	<b>58</b>	<b>59</b>	<b>26</b>	<b>36</b>	<b>49</b>	<b>23</b>	<b>13</b>	<b>48</b>

### Notes

Nursing professionals (RNs, LPNs), occupational therapists (with the exception of Quebec and the territories) and pharmacists (with the exception of Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut): Rates reflect health professionals registered with active practising status and who are employed in these health professions. Rates will differ from data published by provincial or territorial regulatory authorities due to the CIHI collection, processing and reporting methodology. Registered nurses (RNs): Data from the territories include secondary registrations. Please consult *Workforce Trends of Registered Nurses in Canada, 2006* for more detailed methodological notes and data quality issues. Registered Psychiatric Nurses (RPNs): Registered psychiatric nursing represents a distinct regulated nursing profession; RPNs are educated and regulated separately from other regulated nursing professionals in the four western provinces of Canada (Manitoba, Saskatchewan, Alberta and B.C.).

Other health professional data reflect personnel regardless of employment status and include the number of active registered dentists, registered dental hygienists, registered dietitians, active registered physiotherapists, registered chiropractors, active registered optometrists and active registered psychologists. Personnel-per-population rates are revised annually using the most recent Statistics Canada population estimates and therefore may differ slightly from previously published figures. Please consult *Health Personnel Trends in Canada, 1995 to 2004* for more detailed methodological notes, data quality issues and profession-specific information.

### Sources

Health Personnel Database, Registered Nurses Database and Licensed Practical Nurses Database, Canadian Institute for Health Information; 2006 population estimates, Statistics Canada.

## Joint Replacement Wait Times Reported by Provinces\*

The table below shows differences that exist in joint replacement wait times reported by provinces. Not all provinces report on all types of surgical procedures, and for those reported there are differences in the definitions of wait times used, the factors used by provinces for measuring and the methods of reporting wait times. For example, the summary measure for P.E.I. is the median while New Brunswick reports percentages with time periods.

	N.L.	P.E.I.	N.S.†	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
Wait Segment	From decision-to-treat to surgery	From booking to surgery	From decision-to-treat to surgery	Last major consult to surgery	From booking in provincial electronic system to surgery	From decision-to-treat to surgery	From decision-to-treat to surgery***	From booking form received to surgery	From decision-to-treat to surgery	From booking to surgery
Summary Measure	Percent within the national benchmark of 26 weeks (182 days)	Median	Percentages within time periods	Percentages within time periods	Percentage waiting more than 6 months	The point at which nearly all patients (90%) have completed their surgery	Median wait time by regional health authority††	Median for orthopedic surgery only <sup>§</sup> . Percentages within time periods	Median, mean†	Median <sup>§§</sup>
Emergency Cases Excluded	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Perspective	Retrospective	Retrospective	Retrospective	Retrospective	Retrospective	Retrospective	Retrospective	Retrospective	Retrospective	Retrospective
Time Frame	January to March 2007	January to December 2006	April to June 2007	April 2005 to March 2006	June 1 to October 15, 2007	August to October 2007	October 2007	January to June 2007	90 days preceding October 31, 2007	3 months preceding September 30, 2007
Orthopedic Surgery Wait Estimate								48 d including emergency; 129 d non-emergent	Median: 82 d Mean: 109 d	44 d
Hip Replacement Wait Estimate	79% to 100% within 182 d <sup>‡‡</sup>	77 d <sup>**</sup>	<60 d: 9% <180 d: 36% <270 d: 64% <360 d: 78% <540 d: 89%	<3 m: 41% 3–6 m: 26% 6–9 m: 15% 9–12 m: 8% >12 m: 11%	>6 m: 5% <sup>§§</sup>	210 d	Range: 133 to 385 d	≤3 w: 15% 4–6 w: 6% 7 w–3 m: 11% 4–12 m: 47% 13–18 m: 13% >18 m: 8%	Median: 92 d Mean: 116 d	72 d
Knee Replacement Wait Estimate	70% to 96% within 182 d <sup>‡‡</sup>	133 d <sup>**</sup>	<60 d: 3% <180 d: 26% <270 d: 52% <360 d: 70% <540 d: 83%	<3 m: 28% 3–6 m: 24% 6–9 m: 19% 9–12 m: 13% >12 m: 17%	>6 m: 10% <sup>§§</sup>	291 d	Range: 112 to 168 d	≤3 w: 4% 4–6 w: 3% 7 w–3 m: 10% 4–12 m: 45% 13–18 m: 21% >18 m: 17%	Median: 120 d Mean: 167 d	112 d

### Notes

\* Information retrieved from provincial websites on December 3, 2007.

† Nova Scotia reported separately for revision surgery. These estimates are not included in the above table.

‡ Alberta and Saskatchewan (for orthopedic surgery) also reported percentages within time periods. Alberta also reported against provincial access goals.

§ Saskatchewan's website presents procedure-specific data for the four regions where hip and knee replacement surgery is performed. The provincial-level summary of the data for these procedures was provided by the ministry of health.

\*\* Estimates were presented in weeks and converted to days.

†† Manitoba presented estimates in weeks separately for each region. The range represents region-specific values.

‡‡ Region-specific ranges were presented.

§§ B.C. information retrieved from <<http://www.healthservices.gov.bc.ca/cpa/mediasite/waitlist/median.html>>.

\*\*\* "Decision-to-treat" implies "readiness-to-treat."

### Source

Wait Times Tables—A Comparison by Province, 2008, Canadian Institute for Health Information.



## Total Health Expenditure

	Current Dollars		(\$' 000,000)	Percent of GDP	Percent of Public Sector	By Use of Funds (Percent Distribution of \$' 000,000), 2005				
	Actual 2005	Forecast 2006				Forecast 2007	2005	2005	Institutional Services	Professional Services
N.L.	2,235	2,368	2,551	10.4	75.5	51.1	19.3	16.3	4.4	8.9
P.E.I.	576	603	652	13.8	72.0	45.6	19.2	16.7	4.9	13.5
N.S.	4,030	4,298	4,540	12.9	70.1	46.0	22.4	17.5	2.1	12.0
N.B.	3,312	3,559	3,803	13.7	70.0	44.6	20.5	17.5	2.9	14.4
Que.	29,875	31,774	33,632	10.9	71.6	42.0	21.4	19.5	4.0	13.0
Ont.	56,631	60,194	63,813	10.5	66.8	36.9	25.1	17.1	6.4	14.5
Man.	5,603	5,809	6,213	13.4	75.0	42.3	21.5	13.3	6.5	16.3
Sask.	4,431	4,776	5,091	10.3	76.2	40.0	21.8	14.8	9.4	14.0
Alta.	15,259	16,513	18,403	7.0	72.6	37.5	23.6	13.5	9.3	16.0
B.C.	18,480	19,503	20,542	10.9	71.6	36.3	27.7	13.7	5.8	16.5
Y.T.	189	211	221	12.4	80.6	38.8	17.0	10.8	15.5	17.8
N.W.T.	320	322	335	7.8	88.5	47.2	18.1	6.4	7.5	20.9
Nun.	302	340	338	27.1	95.1	40.1	15.0	5.4	9.1	30.3
<b>Canada</b>	<b>141,241</b>	<b>150,269</b>	<b>160,134</b>	<b>10.3</b>	<b>70.1</b>	<b>39.0</b>	<b>23.9</b>	<b>16.5</b>	<b>6.0</b>	<b>14.6</b>

### Notes

Total health expenditure includes any type of expenditure for which the primary objective is to improve, or prevent the deterioration of, health status. Expenditures are presented in current dollars and as a proportion of gross domestic product. 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 health care or maintaining health are included. Other activities are not included, even though they may impact health. For example, funds aligned 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.

## Per Capita Public and Private Health Expenditures

	Public-Sector Health Expenditure by Use of Funds (\$ per Capita), 2005					Private-Sector Health Expenditure by Use of Funds (\$ per Capita), 2005				
	Institutional Services	Professional Services	Drugs	Public Health	Capital and Other Health	Institutional Services	Professional Services	Drugs	Public Health	Capital and Other Health
N.L.	2,051	569	232	191	240	172	268	477	0	148
P.E.I.	1,622	476	188	206	511	281	325	510	0	53
N.S.	1,729	599	232	89	370	252	364	521	0	147
N.B.	1,711	559	215	129	469	257	346	554	0	166
Que.	1,458	477	334	159	388	196	364	433	0	125
Ont.	1,368	646	296	286	416	296	486	477	0	239
Man.	1,733	634	275	312	624	287	392	361	0	155
Sask.	1,589	645	259	418	498	203	330	403	0	131
Alta.	1,540	611	242	434	555	208	487	389	0	191
B.C.	1,442	666	216	251	534	135	537	378	0	182
Y.T.	1,840	746	347	941	1,013	513	286	306	0	68
N.W.T.	3,282	1,070	234	561	1,499	259	288	244	0	68
Nun.	3,975	1,345	340	915	2,980	57	166	201	0	66
<b>Canada</b>	<b>1,472</b>	<b>601</b>	<b>282</b>	<b>262</b>	<b>451</b>	<b>235</b>	<b>444</b>	<b>441</b>	<b>..</b>	<b>186</b>

**Notes****Proportion of public sector**

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

**Percentage distribution of total health expenditure by health spending category**

**Institutional services** include hospitals and residential care types of facilities that are approved, funded or operated by provincial and territorial governments.

**Professional services** include 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 include 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** refers to services 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 of hospitals, clinics, first-aid stations and residential care facilities (capital); 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). Other health includes, at the aggregate level, expenditures on home care, medical transportation (ambulances), hearing aids, other appliances and prostheses, health research and miscellaneous health care.

**Source**

National Health Expenditure Database, Canadian Institute for Health Information.

## Summary of New WTA Benchmarks

Looking beyond the focus of the five priority areas, the Wait Time Alliance (WTA), a consortium of 13 medical groups, has developed benchmarks for specialty care areas. Among these are emergency care, plastic surgery and gastroenterology. The benchmarks are grouped according to whether the cases involved are urgent or scheduled, where applicable.

	Emergency Cases	Urgent Cases	Scheduled Cases
Emergency care (CTAS level 1–5)	1: Immediate 2: <15 min 3: <30 min 4: <60 min 5: <120 min	Not applicable	Not applicable
Psychiatric care	Within 24 hrs	24 hrs to 1–2 wks	1–4 wks
Plastic surgery	Within 24 hrs	2–8 wks	2–6 mths
Gastroenterology	Within 24 hrs	2–8 wks	Within 6 mths
Anesthesiology (chronic pain)	See WTA's website for benchmarks for pain management: <a href="http://www.waittimealliance.ca">www.waittimealliance.ca</a> .		
Obstetrics	Within 30 min to 2 hrs	1–4 wks	As per standards of care
Gynecology	Immediate	2–4 wks	Within 6 mths

### Note

CTAS refers to the Canadian Triage and Acuity Scale.

### Source

Wait Time Alliance (2008), from <[http://www.waittimealliance.ca/images/Spring\\_2008/wta\\_report\\_card\\_eFINAL.pdf](http://www.waittimealliance.ca/images/Spring_2008/wta_report_card_eFINAL.pdf)>.

## Number of Devices and Number of Devices per Million Population (Rate) of Selected Imaging Technologies, by Jurisdiction, as of January 1, 2007

	Nuclear Medicine Cameras		CT Scanners		Angiography Suites		MRI Scanners	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
N.L.	11	21.6	11	21.6	3	5.9	3	5.9
P.E.I.	2	14.5	2	14.5	-	-	1	7.2
N.S.	23	24.6	16	17.1	5	5.4	6	6.4
N.B.	17	22.7	15	20.0	9	12.0	5	6.7
Que.	152	19.8	119	15.5	42	5.5	67	8.7
Ont.	250	19.6	130	10.2	74	5.8	72	5.7
Man.	16	13.6	19	16.1	5	4.2	8	6.8
Sask.	13	13.1	15	15.2	5	5.1	4	4.0
Alta.	57	16.6	41	12.0	15	4.4	27	7.9
B.C.	62	14.3	49	11.3	21	4.8	29	6.7
Y.T.	-	-	1	32.3	-	-	-	-
N.W.T.	-	-	1	23.6	-	-	-	-
Nun.	-	-	-	-	-	-	-	-
<b>Canada</b>	<b>603</b>	<b>18.4</b>	<b>419</b>	<b>12.8</b>	<b>179</b>	<b>5.5</b>	<b>222</b>	<b>6.8</b>
	Catheterization Laboratories		PET Scanners		Fusion Tech. PET/CT Scanners		Fusion Tech. SPECT/PET Scanners	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
N.L.	2	3.9	-	-	-	-	-	-
P.E.I.	-	-	-	-	-	-	-	-
N.S.	5	5.4	-	-	-	-	-	-
N.B.	3	4.0	-	-	1	1.3	1	1.3
Que.	26	3.4	4	0.5	7	0.9	9	1.2
Ont.	50	3.9	5	0.4	7	0.6	19*	1.5*
Man.	5	4.2	1	0.9	-	-	-	-
Sask.	4	4.0	-	-	-	-	3	3.0
Alta.	11	3.2	1	0.3	2	0.6	-	-
B.C.	12	2.8	2	0.5	1	0.2	3	0.7
Y.T.	-	-	-	-	-	-	-	-
N.W.T.	-	-	-	-	-	-	-	-
Nun.	-	-	-	-	-	-	-	-
<b>Canada</b>	<b>118</b>	<b>3.6</b>	<b>13</b>	<b>0.4</b>	<b>18</b>	<b>0.5</b>	<b>35*</b>	<b>1.6*</b>

### Notes

\* Ontario data are as of July 31, 2008. Since no data on SPECT/CT scanners were reported for Ontario in the 2007 survey, the number of SPECT/CT scanners confirmed by the Ontario Ministry of Health and Long-Term Care as installed and operational in Ontario hospitals as of July 31, 2008, is included here instead.

- Not applicable.

Includes medical imaging equipment in both hospitals and free-standing facilities.

Includes imputation for 21 non-reporting facilities based on information collected in previous surveys: New Brunswick (1); Quebec (14); Ontario (1); Alberta (4); B.C. (1).

Includes CT scanners used exclusively for cancer treatment: New Brunswick (2); Ontario (5); Manitoba (1); Saskatchewan (2); Alberta (3); and for research: Nova Scotia (1); Quebec (1); Ontario (4); B.C. (1).

Includes MRI scanners used exclusively for research: Quebec (1); Ontario (4); Alberta (1); B.C. (1).

Includes PET scanners used exclusively for research: Ontario (3); B.C. (1).

Includes PET/CT scanners used exclusively for research: Quebec (1); Ontario (3).

The number of scanners in Ontario and B.C. is an estimation. Data supplemented by information on number of scanners from provincial ministries of health.

### Sources

National Survey of Selected Medical Imaging Equipment, Canadian Institute for Health Information; 2007 population estimates, Statistics Canada.



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