

CANADA



0 500 1,000 Miles

- 1 Prince Edward Island
- 2 New Brunswick
- 3 Nova Scotia

Yukon
Territory

Northwest
Territories

Nunavut

British
Columbia

Alberta

Saskatchewan

Manitoba

Ontario

Quebec

Newfound-
land

Ottawa

Saint Pierre
and Miquelon

United States of America

Mexico

In the 1990s, Canada's economy underwent rapid and profound changes, largely shaped by the global economy. Growth in the late 1990s was dominated by sectors such as high-tech and auto manufacturing and information and communications technology services. These sectors slowed since 2001, in favor of long-neglected areas such as construction, resources, health, and education.

GENERAL CONTEXT AND HEALTH DETERMINANTS

In 2005, the country's real gross domestic product (GDP) growth was stable at 3%. Owing to the high corporate profits and surpluses, Canada also posted the largest gain in business investment over the last three years. The surge in commodity prices and exports in turn helped push the exchange rate up from US\$ 0.65 early in 2003 to US\$ 0.86 in late 2005, the most rapid currency shift in the country's history.

The thriving energy and mining sectors helped to drive unemployment to 30-year lows, especially in western Canada. While other regions did not benefit as much, they did fare well in their own right. Quebec's unemployment hit a 30-year low of 8.3%, while Ontario experienced a 1.3% gain in employment, with the unemployment rate being less than a point above its record low of 5.8% set in 2000.

Its sheer size has allowed Canada's economy to weather repeated shocks in recent years, ranging from the stock market decline between 2000 and 2002, to the attacks in the United States on 11 September 2001, to the recent exchange rate and energy price surge. By comparison, much discussed health events such as the SARS epidemic or the mad-cow disease crisis have had little impact on the economy.

Social, Political, and Economic Determinants

In 2002, Canada supported the agreement to achieve the Millennium Development Goals, defined under the Monterrey Consensus. Developing countries assumed primary responsibility for them, while industrialized countries, including Canada, committed themselves to support the former's efforts through aid, trade, and debt relief. Among the most salient indicators reported for Canada by the United Nations are the following: net school enrollment for both sexes increased from 97.0% in 1999 to 99.5% in 2001 (97.0% to 99.7% for girls; 96.9% to 97.3% for boys); the share of women in wage employment in non-agricultural sectors increased from 48.8% in 2001 to 49.4% in 2004; the percent of seats held by women in national parliament has remained steady

at 20.6% since 2001; the percentage of children inoculated against measles dropped from 96% in 2001 to 95% in 2004; the percent of married women between the ages of 15 to 49 years using contraception has remained at 75% in the period under review; the proportion of the population using safe drinking water and improved sanitation was 100% in urban settings and 99% in rural ones; the net official development assistance as a percent of the GDP declined from 0.25% in 2004 to 0.24% in 2005.

A focus on health promotion, public health, and population health aims to improve the health of the entire population and to reduce health inequities among population groups (1).

The economic growth in 2001–2004 discussed earlier also has led to several improvements in conditions of low-income families and individuals (see Table 1). Fewer than 8% of families composed of two or more persons had low incomes in 2004, down from under 10% in 1999. Similarly, approximately 36% of single-parent families headed by women had low incomes in 2000, compared to 39% five years earlier. The percentage of children living in low-income families also has consistently fallen since 1996; in 2001, it was at its lowest (12%) since 1980. Table 1 shows the percentage of families below the low-income cutoff, by family type. Since 2001, however, low-income rates for children have remained essentially unchanged (just under 13% in 2004).

The trends in the distribution of household income, on the other hand, have shown a rise in inequality in disposable income. From 1995 to 2004, the average income of families in the highest economic quintile rose by approximately 26%. The rise in income of the families in the lowest economic quintile, however, has been more modest, just under 13%. The dollar gap between these two income groups increased by 30% between 1995 and 2004 (2).

Major health disparities also have been detected. For example, of Canadian men living in cities, those in the highest income quintile live five years longer than do those in the lowest income quintile; the men in the highest income bracket also were about one-quarter less likely to die of heart disease. These health disparities are differentially distributed among specific populations (such as among Aboriginal peoples), by gender, by socioeconomic status, by educational attainment and income, by geo-

TABLE 1. Percent of families below the low-income cutoff, by family type, Canada, 1996, 1998, 2002, and 2002–2004.

Family type	Year					
	1996	1998	2000	2002	2003	2004
Families of two persons or more	12.1	10.1	9.0	8.6	8.5	7.8
Senior families	3.3	3.9	3.1	2.9	2.7	2.1
Non-senior couples without children	8.4	6.7	6.9	7.1	6.6	6.2
Two-parent families with children	10.8	8.5	8.3	6.5	6.7	6.7
Single-parent families headed by females	52.7	42.9	36.3	39.4	38.8	35.6
Single persons	37.3	35.1	32.9	29.5	29.6	29.6

graphic location, and by other markers of disadvantage or inequality of opportunity (3).

Health disparities most affect Aboriginal peoples in the lowest socioeconomic quintile. Because they are more often and more severely sick or injured, people in the lowest income quintile use approximately twice as much health care services as those in the highest income quintile. Approximately 20% of total health care spending may be attributable to income disparities. In contrast, middle-income households utilize 8.1% of health care spending (4).

Women also face a higher incidence of poverty than men, and this social factor leads to an increased risk to health. Single mothers are at particular risk: the great majority are low-income (81% vs. 15% of partnered mothers); more than half experience food insecurity (54% vs. 10%); and 40% experience violence, compared to 7% of partnered mothers (4).

Canadian rural residents are more likely to be living in poorer socioeconomic conditions, to have lower educational attainment, and to exhibit less healthy behaviors. For all age groups up to 64 years, the mortality risks for all causes were higher in rural than urban areas (5).

Canada has been affected by various disasters during the reporting period, including forest fires, a hurricane, and serious winter storms. The frequency of flood disasters also is increasing in the country. Snowmelt accounts for about 40% of all floods in Canada, although they are also caused or compounded by heavy rainfall, ice jams, glacier outbursts, coastal storms, tsunamis, cyclones, and hurricanes.

The most commonly measured outdoor air pollutants in Canada include ground-level ozone, particulate matter, carbon monoxide, sulphur dioxide, and nitrogen oxides. According to 73% of Canadians, air and water pollution are the most significant risks to health.

The Canadian Medical Association estimated that there were 5,800 premature deaths due to air pollution in 2005 in Ontario, and projected that the figure will increase to 10,000 premature deaths by 2026 unless effective steps are taken to reduce smog. In 2005, air pollution in Ontario was estimated to cost in excess of Can\$ 1 billion in direct health care costs and lost productivity. In

British Columbia, the Provincial Officer for Health estimated that in 2004, air pollution in the province caused between 140 and 400 premature deaths, 700 to 2,100 hospital stays, and between 900 and 2,750 emergency room visits that year.

The highest human exposure to persistent organic contaminants in Canada tends to be among the northern populations. Aboriginal peoples tend to have greater exposure because they rely on traditional foods that have high levels of contaminants, such as mercury. Research has revealed significantly higher levels of mercury in maternal blood of Inuit women compared to Caucasian, Dene people, or Métis.

Demographics, Mortality, and Morbidity

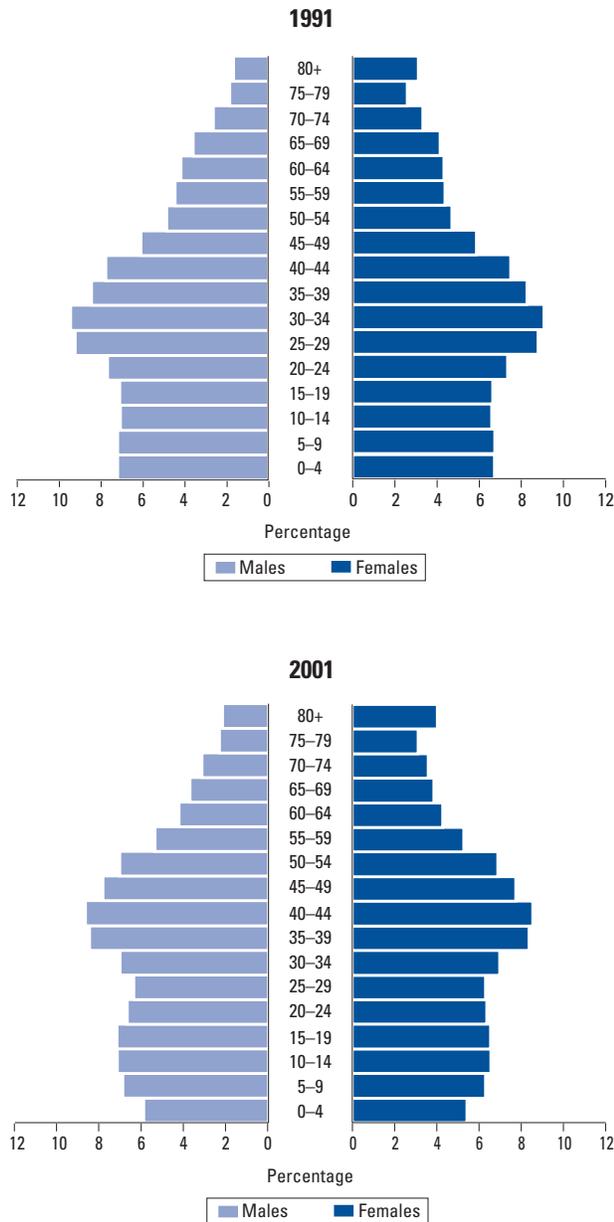
There are at least four salient factors influencing health care delivery: the aging of the population; differences in health service needs in urban, rural, and remote populations; cultural diversity resulting from high rates of immigration; and Aboriginal health (6).

In 2003, individuals aged 65 years old and older made up 12.8% of the population compared to 7.9% in 1970; this group is projected to represent 20% of the population by 2025. (See Figure 1 for the country's population structure in 1991 and in 2001.)

The total fertility rate declined from 2.3 children per woman in 1970 to approximately 1.5 in 2002, and the birth rate declined from 17.5 births per 1,000 population to 10.7 per 1,000 for the same two years, respectively (6).

According to data from the Department of Agriculture and Agri-Food Canada, in 2001, 79.4% of Canadians lived in urban areas with a population of 10,000 or more, up from 78.5% in 1996; the remainder lived in predominantly rural regions, with the three northern territories and five provinces having more than half of their populations living in predominately rural regions (7). Rural population segments that live far from metropolitan centers present enormous challenges to the delivery of health care in terms of range, quality, and cost of services offered. Canadians in these regions suffer lower health status, while having greater difficulty accessing even basic primary health care services, much less specialized health care services (6).

FIGURE 1. Population structure, by age and sex, Canada, 1991 and 2001.



High immigration to Canada after the Second World War also has created a culturally diverse population. Based on the 2001 census, 18.4% of Canadian residents were born outside the country, a majority of whom came from non-English-speaking and non-French-speaking countries. Most recent immigrants come from outside Europe and do not speak English or French as their first language.

Canadians and new immigrants were highly mobile between 2002 and 2004. Most of the provinces and territories had net

gains from migration. Relative to its population, Ontario registered the largest net gain with 10.4 new immigrants for every 1,000 population, or 127,300 people in total. British Columbia was second, with a net gain of 10.2, while Alberta was third with 8.3. Nunavut registered the largest net decline relative to its population, losing 5.1 residents per 1,000 population, although the absolute numbers were small.

Among metropolitan census areas, Toronto had the highest net inflow of people, with Vancouver ranking second, followed by Montreal. These three metropolitan areas attracted about three-quarters of the international immigrants. About 65% of the people who moved into Toronto during 2003–2004 came from outside the country, as did 50% of those who moved into Vancouver and 48% of those who moved into Montreal. Without these immigrants, these urban centers would have incurred a net outflow of people during the past several years. With this population concentration in the largest cities, pressure is placed on the health care facilities to provide services in ways that can overcome cultural and linguistic barriers (8).

Canadians reporting some Aboriginal ancestry made up 4.4% of the country's total population in 2001. Almost 50% of Aboriginal¹ Canadians are recognized First Nations people living on or off reservations. A further 26% are non-status Indians, many of whom are concentrated in urban areas; about 30% are Métis living mainly in western Canada, and 5% are Inuit who live in the Arctic regions of Canada (6). Approximately 45% of First Nations peoples are under 20 years old.

Aboriginal health status indicators, such as life expectancy and infant mortality, have been improving over the past 20 years. Aboriginal peoples do suffer disproportionately from chronic diseases and conditions such as diabetes, hypertension, heart disease, tuberculosis, HIV infection, and fetal alcohol syndrome, however. In addition, according to 2004 information from the Canadian Institute for Health Information, the death rate due to injuries and poisoning is four times higher for First Nations people and Inuits than for the overall Canadian population.

Life expectancy for Aboriginal women is 5.2 years less than the national average; Aboriginal men can expect to live 7.4 fewer years than the national average. And although they represent only 2% of Canada's total population, First Nations persons have 7.2% of the national HIV/AIDS cases. The incidence of diabetes also is three to five times higher than the national average, and suicide among young Aboriginals between the ages of 10 and 19 years is 4.3 times higher than for the rest of the country; among the Inuit it is 11 times higher for all ages.

As a result, Aboriginal Canadians account for higher use, and higher cost, of health care services than other Canadians. The

¹Most of the information provided relates to First Nations and Inuit populations, which fall under Health Canada's jurisdiction. The overall Aboriginal population in Canada, unless specified in the text, is not included in the data contained in this publication.

broader social determinants of health, including relative poverty and marginalization, are significant factors that lead to the poorer health outcomes of Aboriginal Canadians relative to other Canadians, and to a consequent greater use of public health care services (6).

In 2004, the crude birth rate edged downward to a record low—despite a second straight increase in the number of live births. The crude birth rate was 10.7 live births per 1,000 population in 2003 and 10.5 in 2004. Rates appear to have stabilized, with the crude birth rate hovering around 10.5 to 10.7 since the start of the new millennium.

The number of births increased in 5 of 13 jurisdictions: Alberta, Nova Scotia, Ontario, Quebec, and Yukon. Labrador and Newfoundland had the largest relative decrease in births (–3.0%), similar to its annual average decline of 2.8% in the number of births throughout the 1990s.

Trends in province-to-province migration, as well as in inflows of international migrants, have a major impact on the number of births in the provinces. In Labrador and Newfoundland, for example, a contributing reason for the decline in births is out-migration to other provinces, especially among men and women aged 20 to 29 years, which has not been offset by immigration from outside the country or from other provinces.

Studies show that immigrants have higher fertility rates compared with Canadian-born women, but they decline to levels of Canadian-born women by the second generation.

Mothers are getting older in Canada. In 2004, women aged 24 years and younger made up 20.6% of all women giving birth that year—one-half of the 40.7% figure seen in 1979. The bulk of the births now occur among women aged 25 to 34, with this age group accounting for 62.1% of all births in 2004, compared with 54.7% in 1979. In 2004, the average age of women giving birth in Canada was 29.7 years.

In addition, the percentage of all births to older mothers—women aged 35 years and older—was almost four times that of a generation earlier. These older mothers accounted for 17.2% of all births in 2004, nearly four times the percent from a quarter century earlier of 4.6%. Migration also is driving the trend towards older motherhood. The average age of mothers who gave birth in the province or territory in which they themselves were born was 29.0 years in 2004, compared with 30.1 years for Canadian migrants and 31.1 for international immigrants. Immigrating women and men may be delaying marriage and childbirth while settling in a new area and re-establishing social networks.

According to data from the Organization for Economic Cooperation and Development, the country's total fertility rate in 2004 was unchanged from the 2003 rate of 1.53 children per woman. The record-low total fertility rate for Canada was set in 2000, at 1.49 children per woman.

Canadian women also are increasingly likely to be having their first child in their thirties. According to information from Statis-

tics Canada, more than one-third (34.7%) of births to Canadian women in their thirties in 2004 were first births.

In 2003, combined life expectancy at birth for both men and women reached a record high—79.9 years. That same year, life expectancy at birth for women was 82.4 years and for men it reached a high of 77.4.

The widest gap between male and female life expectancy in the last quarter century was in 1979, with a 7.4 years difference. From 1979 to 2003, the gap narrowed, as life expectancy for men improved by 6.0 years, while life expectancy for women improved only by 3.6 years. Life expectancy in 2003 for both sexes combined was highest in the provinces of British Columbia and Ontario.

The number of deaths has been on an upward trend for several years, the result of a growing and an aging population. Between 2002 and 2003, the figure rose by 1.2%. In those same years, Canada's population grew by 1.0%. The number of deaths rose in every province and territory, except in Prince Edward Island, Quebec, and the Yukon, where the number of deaths declined.

Life expectancy also improved for Canadian seniors. In 2003, life expectancy for those 65 years old improved for both men and women—on average, men that age could expect to live an additional 17.4 years, while women that age could expect to live an additional 20.8 years. In 2002, the comparable figures were 17.2 years for men and 20.6 for women. The gap between the two sexes remained the same, at 3.4 years.

As can be seen in the following section, improvements in infant mortality are a clear indication of the excellent state of health care in the country. As also will be seen, however, infant mortality rates vary considerably within Canada's borders.

HEALTH OF POPULATION GROUPS

Children Under 5 Years Old

The infant mortality rate declined from 5.4 infant deaths per 1,000 live births in 2002 to 5.3 in 2003. This decrease was due to a reduction in the number of deaths among infants aged 7 to 364 days, which fell by 4.0% in 2003 to 668, compared with 696 in 2002, while the mortality rate declined from 2.1 deaths per 1,000 births to 2.0.

The mortality rates for infants under 1 day old and for infants aged 1 to 6 days old remained unchanged at 2.5 and 0.7 deaths per 1,000 births, respectively. The male infant mortality rate was 5.7 deaths per 1,000 male births in 2003, while the rate for females was 4.8.

Infant mortality rates are substantially higher in northern areas and in regions with large Aboriginal populations. Nunavut, Canada's newest Arctic province, had the highest rate of infant mortality, averaging 14.9 deaths per 1,000 live births between 1999 and 2003. British Columbia was lowest, with an average of

4.08 infant deaths in the same period. This reflects the relatively low income and difficulty in accessing health resources in northern regions. Urban centers generally experience a lower incidence of infant mortality than rural areas.

The leading causes of death for infants in 2003 were congenital anomalies, sudden infant death syndrome, and low birth-weight and its associated complications. Congenital anomalies caused a significant proportion (46%) of infant morbidity and mortality, as well as fetal mortality. With the advent of preventive measures such as food fortification with folic acid, promotion of the use of multivitamins containing folic acid in the periconceptional period, pre-pregnancy immunization against rubella, and interventions to reduce alcohol and drug use during pregnancy have greatly improved perinatal and infant health.

First Nations infants are more likely to be born pre-term, yet have heavier birthweights than non-First Nations infants. This is the case in the country's rural and urban areas. In addition, in 2003, infant mortality rates were more than twice as high among First Nations than in non-First Nations people. Post-neonatal mortality rates were 3.6 times as high.

According to the Canadian Hospital Injury Reporting and Prevention Program, in 2002 25,796 children aged 1 to 4 years old were treated for injuries. The most common cause of injury was activity-related (43% of all treatment and hospitalization); 67% of these injuries occurred at home.

Data from the National Longitudinal Survey of Children and Youth, as reported by parents, show that in 1994/1995, 42% of children aged 6 months to 5 years were in some form of childcare. Over the subsequent six-year period, the childcare rate increased steadily to more than one-half of children (53%) by 2000/2001.

Children 5–9 Years Old

Children aged 5 to 9 years make up 5.8% of Canada's population; 963,000 are male and 919,300 are female.

The leading causes of death for school-aged children are injury and cancer. Injuries accounted for almost half the reported morbidities of this group. Motor-vehicle fatalities dropped sharply, with 79 children aged 5–14 dying in vehicle accidents in 2004, down from 120 in 2000. Incidence rates of childhood cancers have remained stable over the past 18 years, with leukemia (3.8 new cases per 100,000 children per year), brain tumors (2.9 per 100,000), and lymphoma (1.4 per 100,000) being the most commonly diagnosed cancers in the age group.

According to police reports, children and youth are victims of sexual assaults to a disproportionate degree. Although they represent only 21% of the population, 6 out of every 10 sexual assaults reported to police involve a child or youth. Children in this age group also were victims in 21% of all physical assaults and 17% of all other crimes involving violence or the threat of violence reported to police in 2003.

Food allergies are an important health problem that affects children predominantly, with up to 8% of Canadian children suffering from food allergies.

Adolescents 10–14 and 15–19 Years Old

While the majority of Canadian adolescents considered themselves to be in “very good” or “excellent” health in 2000/2001, nearly one in three 12–17-year-olds rated their health as no better than “good,” according to a 2003 Government study.

Adolescents who considered their health to be poor, fair, or good were more likely to smoke, drink, or be obese. They also were less likely to live in high-income households. The study also found that the lower the adult educational level in the adolescent's household, the worse his or her self-rated health was likely to be.

Boys' self-perceived health tends to be better than that of girls. According to data from the 2000/2001 Canadian Community Health Survey, girls' perceptions of their health become less favorable in mid-to-late adolescence. At ages 12 to 14 years, 73% of both boys and girls reported excellent or very good health. But by ages 15 to 17 years, while the percentage of boys reporting very good or excellent health remained about the same, the percentage of girls reporting so dropped to 66%.

The prevalence of smoking in Canada has reportedly declined among both men and women across all age groups, but the sharpest decrease was among young people aged 12 to 17 years, among whom it fell from 14% in 2000/2001 to 10% in 2003, and to 8% in 2005. The youth smoking rate has declined primarily because of the decreasing numbers of young people who initiate smoking. In 2000/2001, 73% of youth reported that they had never smoked cigarettes. By 2005, the proportion had hit 82%. As a result, there may be further declines in smoking rates among older age groups as today's youth move into adulthood.

An estimated 12% of boys and 13% of girls reported having had sexual intercourse by ages 14 to 15 years. In 2003, over one-quarter (28%) of 15–17-year-olds reported having had sexual intercourse at least once in their lives. By ages 20 to 24, the percent was 80%. About 3 in 10 young people who had sex with multiple partners in the past year had not used a condom the last time they had intercourse. (Sex without a condom was reportedly even more common at older ages—nearly 44% of sexually active 20- to 24-year-olds reported sex without a condom, compared with 33% of those aged 18 to 19 years, and 22% of those aged 15 to 17 years.)

According to data from the Canadian Community Health Survey, 4% of 15–24-year-olds who reportedly had had sex at least once also reported having been diagnosed with a sexually transmitted infection. The true figure is likely higher than that reported, possibly because of a lack of symptoms or awareness. Early age at first intercourse also increased the risk. Those who reportedly had had sexual intercourse by age 13 were more than

twice as likely to report a sexually transmitted infection than were those who had waited until they were older to have sexual intercourse.

At ages 12 or 13 years, 26% of boys and 31% of girls reported that they had tried smoking cigarettes. Over the previous two years, more than one-quarter of this group reported that they had had intercourse.

Marijuana use was most prevalent among young people, and its use peaked in the late teens. Close to 4 out of every 10 teens aged 18 to 19 years reported having used marijuana or hashish in the past year. The proportion among 15–17-year-olds was about 3 in 10.

Adults 20–64 Years Old

This group represents the largest proportion of Canada's population, and its mortality and disease patterns vary extensively.

Canadian adults have much higher suicide rates than younger groups. An average of 282 suicides were counted in 2002 for ages 20–34, while an average of 438 were counted for 35–54-year-olds.

In 2004, nearly one-quarter (23%) of adult Canadians were obese. An additional 36% (8.6 million people) were overweight. These people tended to spend their leisure time in sedentary pursuits and ate vegetables and fruit infrequently. Obese adults were at increased risk of high blood pressure, diabetes, and heart disease. Rates of overweight and obesity vary by income, but the relationship is different when the data are disaggregated by sex. According to 2004 information from the Canadian Institute for Health Information drawn from the report "Improving the Health of Canadians," the likelihood of being overweight or obese increases with income among men: 61% of men with annual incomes of Can\$ 80,000 or more were overweight or obese, compared with 49% of men who earned Can\$ 15,000 or less. The opposite trend is true for women, however, where only 34% of women with incomes of Can\$ 80,000 or more were overweight or obese, compared with 43% in the lowest income category.

Men and women also differ in health-related habits. Women were more likely than men to consider overall health, weight, and specific diseases when choosing the food they consumed. In a 2004 Health Canada study, 80% of women were concerned about maintaining or improving health through food choice, compared with 63% of men. While 59% of women considered their weight when selecting foods, just 41% of men did so. And about 48% of women considered the relationship between food and heart disease, compared with only 38% of men.

Individuals aged 45 to 64 are generally in better health than were those in the same age group two decades ago, according to data from the 1998/1999 National Population Health Survey and the 1978/1979 Canada Health Survey.

During the past 20 years, the prevalence of arthritis or rheumatism, high blood pressure, heart disease, and bronchitis or emphysema has decreased in this age group. These trends sug-

gest that efforts in disease prevention and health promotion, along with improvements in the treatment of disease, have contributed to improved health in this group.

Adults living in rural Canada were slightly more likely than those in urban areas to have difficulty finding a regular medical doctor in 2003, according to data from the Canadian Community Health Survey. About 5.5% of individuals in rural areas had difficulty, compared with 4.5% in urban areas. Of the 1.2 million people who reported that they were unable to find a doctor in 2003, 273,000 lived in rural areas and 965,000 lived in urban areas.

Older Adults

In 2005, 74% of seniors assessed their health as good, very good, or excellent, compared to 70% who did five years earlier. Better-educated seniors were more likely to have fewer health problems than have less educated seniors.

However, Canada's roughly four million seniors aged 65 or older, which represent 13% of the total population, are heavy users of the nation's health care system. Seniors account for one-third of all hospitalizations and more than one-half of all hospital days. According to the 2003 Canadian Community Health Survey, 88% of seniors reported consulting a general practitioner or a family doctor at least once during the year before the survey, compared with 76% of people aged 12 to 64 years. Moreover, 92% of seniors reported having taken at least one type of medication in the previous month, 14% reported having been hospitalized in the past year, and 15% reported having received home care.

The Family

Child poverty rates are dependent on parental poverty rates and tend to rise and fall as economic conditions deteriorate or improve. Low-income families live on incomes substantially below the average. In 1991, the average income of low-income couples with children under 18 years old was Can\$ 18,800, 32% of the Can\$ 58,761 average income for all couples with children under 18 years. In 1996, the average income of low-income couples with children was Can\$ 19,915—31% of the Can\$ 63,981 average income for all couples with children.

Although the percent of working-age, single-parent families living in poverty has declined, the growth in the percent and number of single-parent families in the population has offset gains in poverty reduction. In 1975, 8.7% of children under age 7 years lived in single-parent families; by 1992, nearly one million children under 7 (14.7%) lived in single-parent families.

The federal government's decision to extend parental leave to 35 weeks from 10 weeks (for those eligible to receive it from employment insurance) has had a marked impact on the family. In 2001, employed mothers were able to increase maternity benefits

to 10 months, up from 6 months in the year 2000. Fathers are becoming increasingly involved: the use of paternity leave jumped from 3% to 10% of working males between 2000 and 2001.

The Canadian family portrait taken by the census at the outset of the 21st century shows a continuation of many of the changes in families over the last 20 years. The proportion of “traditional” families—a mother, a father, and children—continues to decline, while families with no children at home are on the increase.

In 2001, married or common-law couples with children aged 24 years and younger living at home represented only 44% of all families in Canada. In 1991, they accounted for 49% of all families, and in 1981 they represented more than one-half (55%).

Behind this shift in living arrangements are diverse factors, such as lower fertility rates, with increasing proportions of couples who delay having children or who are childless. In addition, life expectancy is increasing, with the result that couples have more of their lives to spend together as “empty-nesters” after their children have grown up and left home.

For the first time, the 2001 census provided data on same-sex partnerships. A total of 34,200 same-sex, common-law couples were counted in Canada in 2001, representing 0.5% of all couples. There were slightly more male same-sex, common-law couples than female; census data counted about 19,000 male same-sex couples, 55% of the total. More female same-sex couples have children living with them. About 15% of the 15,200 female same-sex couples had children living with them compared to only 3% of male same-sex couples.

Workers

About one-quarter of workers reported high levels of general stress in their daily lives. For men and women, average job strain levels were significantly lower in 2002 than in 1994/1995. In 2002, 19% of men were classified as having high strain jobs, down from 23%. The decline for women was even larger, from 35% to 27%.

According to the 2002 Canadian Community Health Survey, just over one million adults aged 18 or older had experienced a major depressive episode in the year before the survey. For workers of both sexes, high stress on and off the job was associated with depression. Men in high-strain jobs were 2.5 times more likely than their counterparts in low-strain jobs to have experienced depression. When various sources of stress were considered simultaneously, along with other possible influences, high job strain was associated with depression for men, but not for women.

Persons with Disabilities

In 2005, 30% of Canadians aged 12 years and older reported limitations in participation and activity, while in 2000–2001, 22% reported such limitations. Women were slightly more likely than men to report limitations in physical activity—31% of

women reported limitations, compared to 28% of men. Each successively older age group reports a higher percentage of their group as having impairments, from a low of 17% among 12–14-year-olds to a high of 63% for persons aged 75 years and older.

Of persons with disabilities, 44% are not included in the labor market, compared to 19% of persons without disabilities. The disabled also are more likely to have lower employment incomes. According to the Survey of Labor and Income Dynamics data for 2004, the average employment income for persons with disabilities was Can\$ 31,700 compared to Can\$ 36,100 for non-disabled persons.

Indigenous Peoples

In general, there are gaps between the social, economic, and environmental conditions of Aboriginal peoples and of other Canadians, which have a effect on health. In Nunavut, the average lifespan for women is 12 years less than the average for Canadian women; the gap for males is 8 years. Infant mortality rates among First Nations on reserve and Inuit are twice to three times higher than the Canadian rate.

In 2000, life expectancy at birth for the Registered Indian population was estimated at 68.9 years for males and 76.6 years for females. This reflects differences of 8.1 years and 5.5 years, respectively, from the 2001 Canadian population's life expectancies. In 2005, life expectancy was 5.2 years less for Aboriginal women and 7.4 years less for Aboriginal men than the national average.

Except for male prostate cancer, cancer mortality rates among First Nations peoples are lower than those for the overall Canadian population. Acute myocardial infarction rates among First Nations are about 20% higher than the overall Canadian rate, and stroke rates among First Nations are almost twice as high as the comparable overall Canadian figure.

Between 1981 and 2000, infant mortality rates declined 64% for First Nations peoples living in rural areas, and declined 47% for those in urban areas. Most of the excess infant mortality among First Nations people was due to higher post-neonatal mortality, particularly from deaths due to preventable causes, such as sudden infant death syndrome, infection, and external causes. This suggests a need for improved socioeconomic and living conditions.

In September 2000, Canada's First Ministers established early childhood development as a new federal/provincial/territorial social priority, recognizing the importance of children's early years in shaping long-term outcomes. It includes promotion of healthy pregnancy, birth, and infancy; improved family support; improved early child development, learning, and care; and improved community support.

The maternal and child health program framework for First Nations has been developed in collaboration with the Assembly of First Nations to improve health outcomes for pregnant women and families with infants and young children who live on re-

serves. The comprehensive program services include: home visits by nurses and experienced mothers in the community during pregnancy, postpartum, and early childhood; links to services for children and families with special needs; and exploration of opportunities to return safe birthing closer to communities.

Some 15% of new HIV infections and AIDS cases occur in Aboriginal peoples. Compared to the general Canadian population, heart disease is 1.5 times higher among First Nations peoples than in the general population; type 2 diabetes is 3 to 5 times higher, with even higher rates among the Inuit; and tuberculosis infection rates are 8 to 10 times higher. In 2005, First Nations peoples, while constituting only 2% of Canada's population, had 7.2% of the national HIV/AIDS cases.

Health Canada's First Nations and Inuit Health Branch (FNIHB) is actively engaged in addressing the HIV/AIDS epidemic among on-reserve First Nations people and in Inuit communities across Canada. FNIHB supports communities in developing the knowledge, skills, and tools they need to prevent HIV transmission and to facilitate care and support for those infected and affected by HIV/AIDS.

The 2000 reported rate of genital chlamydia was very high among First Nations peoples, at 1,071.5 cases per 100,000 population. This is about six times higher than the Canadian rate (178.9 per 100,000 population in 2001). First Nations females suffer much higher rates of chlamydia infection than do males. At a rate of 6,572.2 cases per 100,000 population, females aged 15 to 24 years accounted for 53.5% of all First Nations cases where age and sex were recorded.

HEALTH CONDITIONS AND PROBLEMS

COMMUNICABLE DISEASES

Vector-borne Diseases

Vector-borne diseases formerly regarded as exclusively tropical are finding their way to Canada. The incidence of imported **malaria** has increased steadily since the early 1990s. Malaria remains an important concern for travelers returning from tropical regions, and this disease accounts for illness and deaths among them. There appears to be a cyclical pattern of imported malaria, with notable peaks occurring every four to five years (1986/1987, 1991/1992, and 1996/1997). During the last peak, in 1997, there were 1,029 malaria cases reported in Canada; a 65% decrease was seen the following year with only 368 cases reported. In 2000, fewer than 400 malaria cases were reported.

Vaccine-preventable Diseases

Since Canada implemented its routine vaccination programs, the country has experienced a significant reduction in all diseases preventable by immunization. **Polio** was officially elimi-

nated in Canada in 1994, and since the implementation of routine two-dose measles, mumps, and rubella (MMR) schedules in 1996–1997, the occurrence of **measles** and **rubella** cases has been limited to sporadic importations with infrequent outbreaks. In 2005, a historic low of only six measles cases were reported in Canada, with at least four of these imported. That same year, an outbreak of 309 rubella cases occurred in a small Canadian community that was philosophically opposed to immunization.

During 2003–2004, fewer than 30 cases of **mumps** were reported annually, the lowest incidence ever recorded in Canada. Two mumps outbreaks (of 13 and 22 confirmed cases, respectively) involving adolescents and young adults occurred in 2005.

Childhood immunization rates remain high in Canada. In 2004 approximately 94% of children had received a single dose of the MMR vaccine by age 2 years and 78% of children had received their second dose by 7 years of age. Furthermore, an estimated 94% of children had received at least three doses of vaccines against diphtheria, pertussis, tetanus, polio and ***Haemophilus influenzae type b*** by their second birthday.

Since the adoption of a Canadian National Immunization Strategy in February 2003, childhood pneumococcal conjugate vaccine and adolescent acellular pertussis programs were implemented in all 13 provinces and territories, along with childhood meningococcal conjugate C and varicella vaccine programs. An oral rotavirus vaccine was approved for use in Canada in August 2006.

Intestinal Infectious Diseases

An estimated 11 million cases of foodborne illness occur each year in Canada, although most go unreported. Of these, 2% to 3% result in chronic health problems. In 2004, **campylobacteriosis** was the most commonly notified enteric infection, with 9,345 reported cases and an incidence rate of 30.2 per 100,000 population; followed by **salmonellosis**, with 4,953 cases and a rate of 16.0 per 100,000; and **verotoxigenic *E. coli***, with 1,038 cases and a rate of 3.4. The incidence rates of all three diseases have decreased from 1998 levels. Health Canada is leading a number of initiatives to lower the rates of foodborne illness, including mandatory safe handling labels for raw ground meat and ground poultry.

Chronic Communicable Diseases

In 2002, 1,634 cases of new active and relapsed **tuberculosis** (TB) were reported. The highest rate, 93.4 per 100,000, was reported from Nunavut. Individuals between the ages of 25 and 34 years were the largest group represented, accounting for 19% of the total reported caseload of TB. Of the 1,702 cases diagnosed in 2001, 84% were fully cured after completing medical treatment. Approximately 65% of these cases occurred in foreign-born persons. The spread of drug-resistant TB strains throughout the world also represents a threat for Canada. In 2001, 1% of TB infections were drug-resistant. However, in Toronto the rate of drug resistance tends to be much higher, at 14%.

Not all groups of Canadians are equally at risk. Canadian-born Aboriginal peoples have a much higher than average infection rate of 24.3 per 100,000 population, whereas Canadian-born non-Aboriginals have a rate of 1.1. Moreover, 2001 marked the first time that the proportion of cases among Canadian-born Aboriginals surpassed the proportion among Canadian-born non-Aboriginals (18% and 16%, respectively). In Nunavut, 97% of TB cases occurred in the Aboriginal population, where the infection rate was 47.5 per 100,000 population.

A TB elimination strategy was introduced in 1992. National responsibilities include policy-making, care, treatment and surveillance. Activities such as case management, drug supply, maintenance of a TB registry, outbreak management, and community health education are centralized at the regional level, and implemented through primary health services at the community level.

Acute Respiratory Infections

Acute respiratory infections under routine laboratory surveillance in Canada include **influenza**, **respiratory syncytial virus (RSV)**, **adenovirus**, and **parainfluenza virus**. Influenza and RSV account for the highest proportion of positive laboratory tests reported each year. Influenza positive tests account for 6% to 13% of the total respiratory virus tests conducted each season, with up to 30% positive for influenza at the peak of the season. RSV accounts for approximately 7% to 12% of positive laboratory tests for respiratory viruses in Canada, while adenovirus and parainfluenza virus account for approximately 1% to 4% of positive tests reported.

It is estimated that between 10% and 25% of the population develops influenza every year. Rates of influenza infection are highest among children, but rates of serious illness and death are highest among older persons (older than 65 years) and persons with medical conditions. It is estimated that, on average, 4,000 Canadians, mostly seniors, die every year from influenza, and many others may die from other serious complications of influenza. An average 20,000 Canadians are hospitalized each year from complications attributable to influenza.

About 10 to 11 million doses of influenza vaccine are distributed in the country each year during the influenza season. According to findings from the 1996–1997 National Population Health Survey and the 2000–2001 Canadian Community Health Survey, the proportion of the Canadian population aged 20 and older who reported having received an influenza vaccination in the year prior to the survey nearly doubled, from approximately 15% in 1996–1997 to almost 30% in 2000–2001; it has remained relatively stable since. The population groups with the highest proportion of persons immunized were seniors and people with chronic conditions, two of the groups targeted for influenza vaccination.

In 2003, a previously unknown respiratory infection—severe acute respiratory syndrome (SARS)—emerged in China. Be-

tween March and June 2003, a total of 438 SARS cases were reported in Canada. The first Canadian cases were identified in March 2003 in persons who had traveled to Hong Kong and returned to Canada. Since the end of the outbreak, with the last case reported in mid-June 2003, no SARS cases have been reported.

HIV/AIDS and Other Sexually Transmitted Infections

At the end of 2005, an estimated 58,000 people were living with HIV (including AIDS cases), a 16% increase from the estimate for 2002. In 2005, approximately 27% of people with HIV were unaware of their infection. At the end of 2005, an estimated 51% of all prevalent reported HIV infections were attributed to men having sex with men, 27% to heterosexual sex, 17% to illicit injection drug use, and 4% to both risk factors of men having sex with men and illicit injection drug use; the remaining 1% was due to other exposures. As of 2005, approximately 21,000 people have died of AIDS in Canada.

Women accounted for one-quarter (25.4%) of all positive HIV test results in 2005. Although the number of HIV-exposed infants has increased for each birth year, the proportion of HIV-infected infants has decreased dramatically—from 39% in 1994 to just 4% in 2005—because pregnant women have been receiving anti-retroviral therapy. Advances in treatments available for persons living with AIDS have significantly increased their life expectancy.

Among adult AIDS cases reported with a known exposure category, the proportion accounted for by men having sex with men fell from above 75% in the years prior to 1994 to 38% in 2005. Conversely, the heterosexual exposure category increased from 10% to 38% over the same period.

In December 1999, it was estimated that 11,194 HIV-infected persons were also infected with **hepatitis C** virus. An estimated 250,000 people in Canada are infected with hepatitis C, with approximately 3,300 new cases diagnosed annually. Of those infected, it is estimated that 90,000 of them are unaware of their infection. Recent outbreaks of **lymphogranuloma venereum** among men having sex with men have been associated with co-infections of HIV, hepatitis C, and other sexually transmitted infections.

There has been a rise in sexually transmitted infections in Canada since the late 1990s. **Chlamydia** accounted for a total of approximately 63,000 infections in 2004 and is most commonly diagnosed in young women aged 15–24 years and young men aged 20–29. **Gonococcal infections** are the second most commonly diagnosed sexually transmitted infection, with young males between the ages of 20 and 29 accounting for two-thirds of the reported cases in 2004.

The most dramatic increases in sexually transmitted infection rates since 1997 have been in infectious **syphilis**, which have been associated with outbreaks primarily among 30–39-year-old men having sex with men.

Zoonoses

There has been only one case of a variant of **Creutzfeldt-Jakob disease** (mad cow disease) in Canada, which was reported in 2002. The patient had spent some years in the United Kingdom and was likely exposed to contaminated beef while in that country.

NONCOMMUNICABLE DISEASES

Metabolic and Nutritional Diseases

In Canada, the national prevalence of breast-feeding is 85%, but there are marked differences in breast-feeding prevalence by age, income, marital status, and place of residence. Women older than 29 years of age who have higher education and income levels have consistently higher prevalence rates of breast-feeding, and immigrant mothers are more likely to breast-feed than non-immigrants. Initiation rates increase from east to west across the country, from 53% in Atlantic Canada to a high of 87% in British Columbia.

Obesity rates among children and adults have increased substantially during the past 25 years, according to the results of a 2004 national survey, which directly measured the height and weight of respondents. The percent of obese and **overweight** boys and girls have increased similarly, but trends differ for various age groups. The percent of children 2 to 5 years of age who were overweight or obese remained virtually unchanged from 1978 to 2004. In contrast, the percent of overweight adolescents aged 12 to 17 years more than doubled, from 14% to 29%, while the prevalence rate of obesity for this age group tripled, rising from 3% to 9%. For children aged 6 to 11 years and adolescents aged 12 to 17 years, the likelihood of being overweight or obese tends to rise with the amount of time spent in sedentary activities such as watching TV and playing video games. This surge in obesity among adolescents is of particular concern, because overweight or obese conditions in adolescence often persist into adulthood. The prevalence rates of overweight and obesity among youth varied across the country, with the highest prevalence rates being in the Atlantic provinces.

The likelihood of becoming obese is related to diet and exercise. Canadians whose leisure time is sedentary are much more likely to develop overweight and obesity. In 2004, 27% of sedentary men were obese, compared to just 19% of active men. Among women, obesity rates do not fluctuate between active and sedentary lifestyles.

Conversely, almost 15% of Canadians, or an estimated 3.7 million people, were considered to be living in food-insecure households at some point during 2000/2001. Women who were single parents were at especially high risk. One-third of female single parents reported food insecurity, almost double the figure for male single parents. In contrast, just 9% of people who were partners in a couple without children reported food insecurity.

The rate was also notably high among Aboriginal peoples living off-reserve. About 31% reported some food insecurity, more than double the rate for non-Aboriginal peoples.

Diabetes continues to be a significant health problem in Canada. It is estimated that more than two million Canadians have diabetes, and of these, one-third are undiagnosed. Nine out of ten people with diabetes have type 2 diabetes. Seniors represent almost 48% of the total number of people with the disease, and this number is expected to rise as Canada's population continues to age.

Among persons 20 years of age and older, approximately 1,054,100 persons, or 4.8% of this age group, currently have been diagnosed with diabetes; as many as one-third of all diabetes cases go undiagnosed.

Cardiovascular Diseases

In 2003, cardiovascular disease accounted for 74,255 Canadian deaths. That same year, 32% of all male deaths in the country were due to heart diseases, diseases of the blood vessels, and stroke. For women, the toll was even higher—34% of all female deaths in 2003 were due to cardiovascular diseases.

In 2002, 54% of all cardiovascular deaths were due to **coronary artery disease**, 21% were due to **stroke**, 16% were due to other forms of heart disease and the remaining 9% were due to vascular problems such as **high blood pressure** and **hardening of the arteries**.

In Canada, 80% of the population has at least one modifiable risk factor for cardiovascular diseases; nearly one-third has two modifiable risk factors, and another 11% have three or more modifiable risk factors. The prevalence of some risk factors, such as overweight among men, diabetes, and high blood pressure, is increasing. Individuals who are socioeconomically disadvantaged show higher prevalence rates of the major risk factors. However, data show some narrowing of the risk factor gap between the high and low socioeconomic population groups.

Malignant Neoplasms

An estimated 153,100 new cases of cancer and 70,400 deaths from cancer have been estimated to occur in Canada in 2006. The most frequently diagnosed cancers will continue to be **breast cancer** for women and **prostate cancer** for men. The leading cause of cancer death for both sexes continues to be **lung cancer**.

For men, the rate for lung cancer declined from 81 lung cancer deaths per 100,000 men in 1988 to 64 in 2000. The rate for women climbed, however, rising from 27 lung cancer deaths per 100,000 women in 1988 to 34 in 2000; this reflects trends in smoking.

Though prostate cancer is more frequently diagnosed, lung cancer remains more lethal for men. In 2001, 9,925 men died from lung cancer, whereas only 3,825 died from prostate cancer. In fact, 9% of all male deaths and 29% of all male cancer deaths were caused by lung cancer. By contrast, prostate cancer was re-

sponsible for 3% of all male deaths and 11% of all male cancer deaths.

For women, the incidence of cancer has risen slightly since the mid-1980s, while the death rate has remained essentially unchanged. The incidence rate of breast cancer has also risen. One in nine Canadian women will develop breast cancer in her lifetime.

Breast cancer death rates have been declining since 1986, and more rapidly since 1990. This reflects improved screening programs and more effective treatments. As of 2000, the death rate for lung cancer had climbed to 34 deaths per 100,000 women, whereas for breast cancer it had dropped to 25 deaths per 100,000 women.

Tobacco use is the cause of almost 30% of all fatal cancers and a major cause of lung cancer, one of the most preventable cancers. Poor diet—one with a high proportion of dietary fat—causes about 20% of fatal cancers.

OTHER HEALTH PROBLEMS OR ISSUES

Disasters

In the past five years, Canadians have been affected by several natural disasters, including forest fires in Western Canada, Hurricane Juan hitting the Maritime Provinces in 2003, and the severe winter storms that affected Nova Scotia and Prince Edward Island in 2004. People aged 60 and over have the highest death rates of any age group during disasters.

The 2001–2002 drought in British Columbia, the Prairies, Ontario, Quebec, and Nova Scotia was the most expensive in history, with preliminary estimates of Can\$ 5 billion in damages. The Canadian Wheat Board estimated that the 2002 drought resulted in production losses for grains and oilseeds of nearly Can\$ 2.8 billion. In 2003, Hurricane Juan caused over Can\$ 100 million in damages in the Maritime Provinces.

Violence in Children and Youths

According to data from police reports, in 2003 the risk of violent victimization of children and youth is highest for older children. The reported rate of victimization for both male and female children was under 500 victimizations per 100,000 children under 8 years of age. By age 14 years, rates were four times as high, at 2,000 victimizations per 100,000 children for both male and female youth.

One-fifth of all violent crimes reported in 2003 were committed against children and youth aged 17 and under. The risk of violent victimization of children and youth increases with age, and the profile of perpetrators of violent crimes against children and youth also changes as children get older. A family member, most often a parent, committed the majority of physical and sexual assaults against children under the age of 6. In contrast, older

youth aged 14 to 17 years were more likely to be assaulted by a peer or a stranger. More than half of teenage victims between 14 and 17 years were physically assaulted by a close friend, acquaintance, or coworker; over one-fifth were physically assaulted by a stranger; while 16% were physically assaulted by a family member.

Of the 15,000 sexual assaults reported to 122 police services, 61% of the victims were aged 17 years and under. About four-fifths of the victims 17 years and under were girls and more than two-thirds of these females were between 11 and 17 years old.

Mental Health

Data show that 20% of individuals in the country will experience a mental illness in their lifetime. Approximately 8% of adults will experience major depression at some time in their lives, and about 1% will experience bipolar disorder. Schizophrenia affects 1% of the Canadian population. Anxiety disorders affect 5% of the household population, causing mild to severe impairment.

In 2002, 1 of every 10 persons aged 15 years old and older (about 2.7 million people) reported symptoms consistent with a mood anxiety disorder, or alcohol or illicit drug dependence. Major depression was reported in 6.3% of women and 5.3% of men. Anxiety disorder is the second-most common mental disorder, with 4.8% of men and 5.9% of women reporting symptoms.

Suicide rates differ between men and women and between young and old. Men are more likely to commit suicide than women, but women are more likely than men to be hospitalized for suicidal ideation. In 2001, there were 3.5 suicides among men for every suicide among women. For men, the risk of suicide was greatest between the ages of 40 and 44 years. For women, the risk peaked at ages 45 to 49 years. People in their forties accounted for almost one in four suicides.

Suicide accounts for 24% of all deaths among 15–24-year-olds and 16% among 25–44-year-olds. Suicide is one of the leading causes of death in both men and women from adolescence to middle age.

Addictions

In 2004, 79% of Canadians aged 15 or older reported consuming alcohol, although most drank in moderation. Of those reporting consumption of alcohol, 44% reported drinking weekly. Drinking rates peaked among youth aged 18–24 years, with about 90% of that group consuming alcohol during 2004. Of drinkers, 6% reported heavy drinking (for men, five or more alcoholic drinks on a single occasion and four or more for women) at least once a week.

The proportion of women drinkers identified as high-risk is 9%, compared to 25% of men. More than 30% of those under 25

years of age were high-risk drinkers. Less than 5% of seniors 65 years of age and older were in the high-risk drinking category.

Beer consumption, which makes up about 80% of all alcoholic beverages consumed, rose to 80.3 liters per person over 15 years of age in 2005. At the same time, the consumption of wine has continued to increase over the last ten years reaching 13.9 liters in 2005. Spirit consumption, at 7.5 liters, remained fairly stable from a year earlier.

In 1989, 6.5% of the population reported using marijuana and 7.4% did in 1994; by 2002, the proportion had reached 12%. Nearly half (47%) of those who had used marijuana in the previous year had done so less than once a month. About 10% of those using marijuana in the previous year reported they used it on a weekly basis, and another 10% said they used it daily. Men were more likely than women to have tried marijuana at least once. Lifetime use of marijuana was highest among young adults aged 18 to 24 years.

Overall, 2.4% of people aged 15 years or older reported to have used cocaine, crack, ecstasy, LSD, amphetamines, or heroin in the past year. This figure is up from 1.6% in 1994. An estimated 321,000 people (1.3% of the population) had used cocaine or crack, making it the most commonly used of these drugs.

Oral Health

In the population 15 years old and older, 66% of women and 61% of men reported having made a visit to a dentist in 2003. The highest rate of dental visits was reported by people 15 to 24 years old, 35 to 44 years old, and 45 to 54 years old; 69% of each age group had visited the dentist in 2003. However, the frequency dropped sharply, to 46%, among people aged 65 and over. Dental insurance was an important factor influencing dental visits. In 2003, 74% of people who had benefits to help cover all or part of their dental expenses had consulted a dentist in the past year, compared to 48% of the non-insured. Income was also an important factor, as only 36% of the non-insured and 57% of the insured individuals from low-income households had a dental consultation in the previous year. Low-income Canadians were the least likely to have dental insurance, or to have visited a dentist during the past year. Among Canadians in the low-income group, only 44% visited a dentist in the previous year. By contrast, 77% of high-income Canadians had reported a visit to a dentist in the previous year. Education and geographic location were also factors in people accessing dental care. Of those who had not completed high school, only 47% reported visiting a dentist, while 71% of college/university graduates did. In rural areas, 56% of residents reported consulting a dentist in the past year, compared to 65% of urban residents.

Health Canada endorses the fluoridation of drinking water to prevent tooth decay, but does not participate in the decision to fluoridate water supplies, because this falls under the jurisdiction of provincial and territorial governments. In collaboration with their municipalities, the provinces and territories decide whether or not to fluoridate and the amount of fluoride to be added;

42.6% of the Canadian population has fluoridated drinking water and 57.4% does not have fluoridated drinking water.

RESPONSE OF THE HEALTH SECTOR

Health Policies and Plans

Canada's health care system reflects the underlying right to access health care. It provides first-dollar, universal coverage for hospital and physician services (i.e., no user fees are payable by any patient, rich or poor, for medically necessary hospital and physician services). It is predominately funded by taxes, but the delivery of services is largely private. In accordance with the constitutional division of powers between the two levels of government, the federal government provides funding through transfer payments to the provinces and territories to help pay for health care services, but the provinces and territories actually are responsible for managing and delivering the services.

The Canada Health Act is the country's federal health care legislation. It sets out the criteria that provinces and territories must meet in order to receive the full federal cash transfer under the Canada Health Transfer. The five principles embodied in the Act are public administration, comprehensiveness, universality, portability, and accessibility.

The responsibility for Aboriginal health services is shared by the federal, provincial, and territorial governments and by Aboriginal organizations. Through its First Nations and Inuit Health Branch, Health Canada is responsible for community health programs on First Nations reserves and on Inuit land claim areas, administering the non-insured health benefits program and the funding and management of public health and health promotion initiatives for these groups.

The mandate of the First Nations and Inuit Health Branch is to provide targeted disease prevention and health promotion programs for all Aboriginal peoples; to ensure the availability of, or access to, health services for First Nations and Inuit communities; to assist First Nations and Inuit communities to address barriers to health and disease threats, and to attain health levels comparable to other Canadians living in similar locations; and to build strong partnerships with First Nations and Inuit to improve the health system. Other Aboriginal populations in Canada are provided access to health services by provincial and territorial governments.

Responsibility for public health also is shared with the federal Public Health Agency of Canada which was created in 2004 following the 2003 SARS outbreak. The Agency works closely with other federal departments and agencies, provinces, and territories, and collaborates with various stakeholders, including those in the private sector, the not-for-profit sector, and health professionals such as family physicians. Initiatives promote health, prevent and control infectious and chronic diseases, support public health research and surveillance activities, and protect the public from the consequences of health emergencies (1, 6). Through its

activities and in partnership with the public health community, the Agency not only improves health and quality of life, but also can relieve some of the pressure on the health care system, helping to contain costs and shorten patient wait times.

Canadians are in the midst of the second phase of health reforms marked by an increase in public health expenditures and measures to ensure the fiscal sustainability of public health care. Data from the Canadian Institute for Health Information show that there has been a dramatic increase in the use of advanced medical diagnostic imaging, such as CT scans and magnetic resonance imaging, and that this spike has created a demand that has outstripped the available supply of equipment, medical radiation technologists, sonographers, and diagnostic radiation and nuclear medicine physicians who operate, maintain, and use such technology. This, in turn, has had a negative impact on the speed of treatment (6).

To cope with these and other pressures on the system, the Prime Minister, provincial premiers, and territorial leaders met in 2003 and agreed to an Accord on Health Care Renewal. The Accord constitutes a renewed commitment by governments to a sustainable public health care system in Canada and to the values that underlie it. An action plan was developed whereby First Ministers agreed to provide first-dollar coverage for a basket of services for short-term and acute home care, including acute community mental health and end-of-life care. They also agreed that by 2011, 50% of the Canadian population would have access to a primary health care provider.

Subsequently, a 2004 Health Accord built upon the previous agreements by addressing home care, catastrophic drug coverage, and pharmaceutical management. The Ministers agreed that no citizen should suffer undue financial hardship for needed drug therapy.

The Ten Year Plan to Strengthen Health Care, articulated in September 2004, committed First Ministers to reduce wait times in priority areas such as cancer, heart, diagnostic imaging, joint replacements, and sight restoration by March 31, 2007. They also agreed to an ongoing focus on primary health care reform, human resources in health, and home care in post-acute, mental health, and end-of-life circumstances. They further agreed to establish a best practices network to share information and find solutions to barriers inhibiting progress in primary health care reform. With the exception of Quebec, both levels of government created a ministerial task force to work on a national pharmaceutical strategy.

The 2003 and 2004 federal budgets supported this action plan by increasing federal investments in health care. The federal government also increased its funding to territorial governments and Aboriginal organizations in order to facilitate reform and improve access, including medical transportation infrastructure for remote northern communities.

In June 2001, the Government of Canada established a Secretariat on Palliative and End-of-Life Care to act as a focal point and facilitator of collaborative action on these issues. Community

working groups also were created to address issues in the areas of best practices and quality care, education, public information and awareness, research, and surveillance. Through the Canadian Strategy on Palliative and End-of-Life Care, Health Canada has supported initiatives such as curriculum development for providers, standards for accreditation, and networks of researchers.

In 2004, the Government of Canada also introduced the Employment Insurance Compassionate Care Benefit, which provides a maximum of six weeks of employment insurance to assist families caring for a dying loved one. Furthermore, in 2004, First Ministers agreed to provide first-dollar coverage for home palliative care services, including case management, nursing, palliative care medications, and personal care.

Canada has a highly decentralized health system with a mix of public and private health delivery. The national regulatory authority rests in the Federal Government. The provinces have primary jurisdiction over the administration and delivery of public health care services, but “delegate” actual delivery to health organizations, as well as to physicians working on fee-for-service schedules or mixed remuneration arrangements, the terms of which are negotiated with the provincial governments. Health facilities and organizations, from the hospital to the regional health authority, are accredited on a voluntary basis through the Canadian Council on Health Services Accreditation. Most health care providers, including physicians, nurses, dentists, optometrists, chiropractors, and psychologists are organized as self-governing professions under provincial framework legislation (6, p.61).

Health Canada’s Biologics and Genetic Therapies Directorate is the federal authority that regulates biological drugs (products derived from living sources) and radiopharmaceuticals for human use.

Nutrition labeling regulations became mandatory for most prepackaged foods on December 12, 2005.

The management of persistent organic contaminants is performed through a variety of tools, including legislative, regulatory, and policy instruments, guidelines, and codes of practice.

The use of pesticides for the protection of food crops is approved and registered by the federal government’s Pest Management Regulatory Agency, once its use is shown to be affordable, efficacious, and having acceptable levels of environmental and human health risks. The Regulatory Agency’s role as the Canadian regulatory body for pest control products contributes to the protection of food crops from an economic and social point of view.

Public Health Services

As the final report of the 2002 Romanow Commission on the Future of Health Care in Canada states, “there is almost universal agreement that primary health care offers tremendous potential benefits to Canadians and to the health care system No other initiative holds as much potential for improving health and sustaining our health care system.”

Approximately 80% of contacts with the Canadian health care system occur through the primary health care sector, which makes it critical to have integration and coordination within the system to ensure both comprehensive care and continuity of care. The key feature of primary health care renewal is, therefore, a shift from the current practice of single family physicians to a model that has greater coordination and collaboration among a range of health care providers who, collectively, provide comprehensive services to their clients.

Telephone advice lines, tele-health services, and electronic medical/health records are being introduced. These technologies help to improve access, support information-sharing, and improve the quality of care. In remote communities, tele-health services have been instrumental in providing quicker access to care, by allowing Canadians to access more services right in their community, resulting in better care and in cost savings for users and for the system itself.

All provincial and territorial ministries of health devote resources to communicable disease control in their jurisdictions. But because communicable diseases spread extremely rapidly and easily across geographical boundaries, the federal government often has been called upon to play a larger role in this effort. The 2003 SARS outbreak and the ensuing Naylor Report were the catalysts for a policy change, whereby the federal government expanded its national infectious disease control and prevention infrastructure along the lines of the Centers for Disease Control and Prevention in the United States (6).

In addition, as a result of a national consensus conference in 2005 on the goals and objectives for six vaccine preventable diseases, four new vaccine programs (against meningococcal disease, pneumococcal disease, varicella, and acellular pertussis) are under way in almost all provinces and territories.

Screening programs for early detection of cancer also are operating at the provincial and territorial levels. With funding from Health Canada, the Canada Breast Cancer Screening Initiative, which focuses both on public education and program development, has been operational since 1990.

The 2004 Canadian Community Health Survey incorporated nutrition-related indicators, thus filling a critical 35-year gap in national food consumption data.

As part of Canada's environmental health surveillance, levels of environmental chemicals in humans are monitored through the Northern Contaminants Program; environmental radiation is monitored; children's environmental health and air health indicators have been developed; drinking water advisory systems are applied to track enteric diseases from water- and food-borne sources; and, beginning in 2007, the Canadian Health Measures Survey will include a substantial bio-monitoring component.

The Canadian Hospitals Injury Reporting and Prevention Program is a surveillance program based in emergency departments in 10 children's and 4 general hospitals that is operated by Canada's Public Health Agency. The program tracks the number

of people visiting associated emergency departments for treatment of injuries, as well as the location and cause of the injury.

Canada's National Microbiology Laboratory is responsible for identifying, controlling, and preventing infectious diseases. The laboratory's activities include reference microbiology, support to epidemiology programs, surveillance, emergency response, applied and discovery research, and management of intellectual assets to improve public health in Canada and internationally.

The Office of Laboratory Security, within the Public Health Agency of Canada, is the country's national authority for biosafety. Its mission is to ensure effective, evidence-based biosafety interventions on a national scope through regulatory control, surveillance, applied research, and timely dissemination of information related to needs, priorities, and strategies. The Office was designated as a WHO Collaborating Center on Biosafety Technology and Consultative Services in 1983, and provides guidelines and safety programs for microbiology laboratories worldwide including consultative services in biocontainment technology and biosafety, biosafety training, the dissemination of information, the provision of a biosafety resource center, surveillance, and applied biosafety research programs.

The Public Health Bureau manages programs to protect the health of people traveling within Canada and to ensure safe drinking water for federal employees. Under the Traveling Public Program, Health Canada provides three types of services: inspections and audits, investigations of disease outbreaks, and surveillance of gastrointestinal diseases.

Inspections also are conducted to verify the safety of food, water, and other environmental health conditions on board cruise ships, passenger ferries, passenger trains, and their ancillary services. Unannounced inspections are conducted on cruise ships traveling within Canadian waters once per year during cruise ship season.

Under the International Health Regulations, international cargo vessels are required to obtain a de-ratification exemption certificate every six months declaring the ship free of rats or evidence of rats. A certificate is issued upon completion of a full inspection of the ship by a Health Canada inspector.

Approximately 78% of Canadians are served by central water distribution systems. An estimated 6.8 million Canadians rely on private water supplies, primarily groundwater wells. Approximately 74% of Canadians living mostly in urban areas are served by municipal sewer systems, and three-quarters of them receive high-level treatment. Some surveys indicate that between 20% and 40% of wells, particularly in rural areas, may be contaminated by nitrates or bacteria. All the data on drinking water quality for public systems are collected and categorized differently across the provinces and territories.

The federal/provincial/territorial Committee on Health and Environment has been created to strengthen a multi-level government surveillance of waterborne contamination; it published guidance documents on safe drinking water in both 2002 and 2004.

Through the Infrastructure Canada Program, the Government of Canada has committed additional funds over five years (2003–2007) to upgrade, maintain, and monitor drinking water and wastewater systems on First Nations reserves and to promote green municipality initiatives.

Canada promotes an environmentally sound, science-based system for monitoring waste shipments. Canada's guidance manual for sustainable communities promotes the use of waste as a resource, and encourages reduction, reuse, and recycling to reduce waste. Canadian federal, provincial, territorial, and municipal governments and businesses evaluate, develop, and implement new waste management programs and policies.

Canada has banned leaded gasoline in automobiles and over the past decade has passed several regulations controlling the formulation of various fuels. Sulphur regulations have been in place in the country since January 2005.

Internationally, Canada ratified a Heavy Metals Protocol under the United Nations Economic Commission for Europe's Convention on Long Range Trans-boundary Air Pollution, thus committing itself to enhance regional cooperation for reducing trans-boundary air pollution.

The National First Nations Environmental Contaminants Program was launched in 1999 as a collaborative research program between the Assembly of First Nations and Health Canada. The objective of the Program is to help First Nations assess the extent of exposure to environmental contaminants and the potential for associated risk to the health and well-being of First Nations in Canada.

Canada bans the use of pesticides with high levels of 2,3,7,8-tetrachlorodibenzodioxin (TCDD) levels, and is monitoring the amount of polychlorinated biphenyls (PCBs) in food, air, and water to reduce health risk. Guidelines have also been developed to minimize the release of dioxins and furans from municipal solid waste and hazardous waste incinerators.

As a way to eliminate children's exposure to lead, Canada has put in place the Lead Risk Reduction Strategy for Consumer Products. Ingestion of lead in house dust is currently the major source of intake of lead on children.

The Canadian Center for Occupational Health and Safety is a federal government agency that supports the elimination of all work-related illnesses and injuries in the country. The Center provides Canadians with unbiased, relevant information and advice that supports responsible decision-making and promotes safe and healthy working environments. It disseminates a vast scope of occupational health and safety information for the public and for health and safety professionals.

The Government of Canada, through the Public Health Agency's Center for Emergency Preparedness and Response works with multiple partners to ensure that Canada is prepared to respond to the public health risks posed by all disasters, natural or caused by humans, such as infectious disease outbreaks, hurricanes, floods, earthquakes, and criminal or terrorist acts

such as explosions and the release of toxins. The Center's approach includes the provision of preparedness training exercises, security for laboratories that handle dangerous human pathogens, and the maintenance and expansion of national stockpiles of emergency supplies across the country.

The maintenance and improvement of quarantine services at Canada's major international airports is a priority, as was the passage of a revised Quarantine Act, which was approved by Parliament on May 12, 2005. This Act provided new powers and modern tools to quarantine services.

In collaboration with the provinces, Emergency Response Assistance Plan teams are deployed across the country. The teams are comprised of various professionals prepared to respond to transportation issues involving infectious substances that pose high individual and community risk.² In 2005, the newly renovated laboratory rated for containment Level 3³ became operational and now serves as a biological threat response lab for the National Capital Region.

Individual Care Services

Canadians benefit from a strong and healthy federal public service, which is achieved through the Public Service Health Program and the Employee Assistance Services. The Program includes health evaluations; communicable diseases; workplace investigations; office ergonomics; and health education, promotion and training.

Health Canada's First Nations and Inuit Home and Community Care Program in 1999 began to allow individuals with chronic or acute illnesses and the elderly to receive care in their own home delivered primarily by First Nations and Inuit community members. The program's guiding principles include a respect for First Nation and Inuit approaches to healing and wellness and for community-focused planning.

In addition, the Canada Prenatal Nutrition Program—First Nations and Inuit Component assists pregnant women, including those living in poverty; pregnant teens; and women living in isolation or with poor access to services. Activities include food and vitamin supplementation, breast-feeding support, one-on-one nutrition counseling, counseling on lifestyle issues, food-preparation training, transportation, childcare, and referral to other services.

Health Promotion

Both the federal government and the provinces and territories run several health promotion and education programs dealing

²WHO Risk 4 Group.

³Capable of handling indigenous or exotic agents which may cause serious or potentially lethal disease as a result of exposure by the inhalation route (applicable to clinical, diagnostic, teaching, research, or production facilities).

with alcohol and drug abuse, family violence, fetal alcohol syndrome, food and nutrition, mental health, physical activity, safety and injury, and sexuality, including AIDS prevention. Health Canada also has spearheaded a comprehensive e-health information website that provides reliable information for all Canadians on how to stay healthy and prevent illness (6, p. 90).

As Health Canada works to improve the health status of First Nations and Inuit peoples, one of its priorities is to develop and implement a National Aboriginal Youth Suicide Prevention Strategy. The Strategy aims to increase resiliency and protective factors, and reduce risk factors associated with Aboriginal youth suicide.

In 2005, the Government announced a major new investment in health promotion and chronic disease prevention for the coming five-year period and beyond, the Pan Canadian Healthy Living Strategy. Approved by Canada's federal, provincial, and territorial ministers of health, the Strategy aims to improve overall health outcomes and to reduce health disparities, with an initial emphasis on healthy eating and physical activity and their relationship to healthy weight.

In addition, the Public Health Agency directs its health promotion activities through community grants and contribution programs delivered both nationally and regionally. Examples include the Community Action Program for Children, the Canadian Diabetes Strategy, and the AIDS Community Action Program.

The Family Violence Initiative brings together 14 federal departments as partners and takes a coordinated approach to promoting public awareness of the risk factors of family violence and the need for public involvement in responding to it.

In 2005, the Ministers of Education and of Health formed an intergovernmental partnership and developed an action plan to address a variety of health, social, and learning-related problems of school-aged children and youth.

Canada's Drug Strategy, spearheaded by the Health Canada's Office of Demand Reduction, is a federally coordinated intersectoral initiative to reduce the harm associated with the abuse of narcotics and other controlled substances, alcohol, and prescription drugs. The Strategy focuses on youth and includes education, prevention, and health promotion initiatives, as well as enhanced enforcement measures. It also provides best practices to front-line health and social services providers in the areas of prevention, treatment, and rehabilitation.

The Canadian Center on Substance Abuse manages the national program, Health, Education and Enforcement in Partnership. In 2004, a program implementation team comprised of provincial coordinators was created to share information and foster intersectoral networks for the development of strategies addressing substance abuse.

The Federal HIV/AIDS Initiative (2005) is a partnership of the Public Health Agency of Canada, Health Canada, the Canadian Institutes of Health Research, and Correctional Services Canada. Working closely with all stakeholders, the initiative

supports research and programs benefiting persons living with AIDS.

Health Canada recognizes that maintaining good oral health is an important part of good overall health. To emphasize this link, Health Canada created the Office of the Chief Dental Officer in October 2004. The Office is charged with improving the oral health status of Canadians and increasing awareness about the prevention of oral diseases.

Human Resources

In 2004, there were 315,139 regulated nurses employed in their discipline—78.2% were registered nurses, 20.1% were licensed practical nurses, and 1.6% were registered psychiatric nurses. Canada's nursing workforce is still predominantly female. In 2004, 5.4% of registered nurses were male, compared to 6.9% of licensed practical nurses, and 22.7% of registered psychiatric nurses.

Data from the Canadian Institute for Health Information showed that there were 69,519 physicians, including interns and residents, working in Canada in 2005; 51% were family physicians and 49% were specialists. The growth in the number of physicians has kept pace with the growth of the population.

Canada's physician workforce is increasingly female: the number of female physicians increased by 14%, rising from 16,945 in 2000 to 19,365 in 2004, whereas male physicians increased only 0.6% in the same time period. Most physicians are concentrated in urban areas, and there tend to be acute shortages in rural and isolated areas, where nurses continue to play a primary role in delivering health services.

Health Canada, working through the Pan-Canadian Health Human Resources Strategy, is collaborating with provinces, territories, and stakeholders to strengthen health human resources planning, to promote and put in place inter-professional education among health care professionals, and to develop and implement recruitment and retention strategies to ensure a better supply of health care professionals over the longer term.

Complementing that effort is the Aboriginal Health Human Resources Initiative, which addresses issues about human resources in health in Aboriginal and remote communities by seeking to increase the number and improve the skills of health providers in those communities.

Health Supplies

Health Canada's Biologics and Genetic Therapies Directorate is the Canadian federal authority that regulates biological drugs (products derived from living sources) and radiopharmaceuticals for human use.

The Common Drug Review was established in 2002 to provide a single process for reviewing new pharmaceuticals and provid-

Boosting Health among First Nations and Inuits in Canada

The Government of Canada, through Health Canada, is actively working to close health gaps between the country's indigenous peoples and the rest of the Canadian population. For example, despite significant gains in health, infant mortality rates among First Nations and Inuits still are from two to three times higher than the rates for non-Aboriginal persons. In an effort to narrow health inequities, Health Canada's First Nation and Inuit Branch seeks to ensure that these communities have adequate access to health services. In building strong partnerships with First Nations and Inuit communities, the Branch more effectively combats disease threats and helps bring down barriers to health.

ing recommendations concerning formularies to all provinces and territories, with the exception of Quebec (6, p.69).

Research and Technological Development in Health

The Canadian Institutes of Health Research is the Government of Canada's agency for health research. It coordinates research through a unique, interdisciplinary structure made up of 13 "virtual" institutes, which are networks of researchers brought together to focus on important health problems. Each institute embraces research that ranges from fundamental biomedical and clinical research, to research on health systems, health services, the health of populations, societal and cultural dimensions of health, and environmental influences on health. Priority health research themes include Aboriginal peoples' health, aging, cancer research, health services and policy research, human development, child and youth health, nutrition, metabolism, and diabetes.

In 2004, Canada Health Infoway launched a strategy targeting investments in a series of tele-health applications in Aboriginal, official language, minority, northern, rural and remote communities. To date, there have been few systematic studies of the impact of tele-health applications (6).

Health Sector Expenditures and Financing

In 1975, total Canadian health care costs represented 7% of the Gross Domestic Product. By 2005,⁴ Canada's total health care expenditures as a percentage of GDP grew to an estimated 10.4% (or Can\$ 4,411 per person). According to the Canadian Institute for Health Information, public health expenditures in 2005 accounted for seven out of every 10 Canadian dollars spent on health care. The remaining three of every ten Canadian dollars came from private sources and covered the costs of supplementary services such as drugs, dental care and vision care.

How health care dollars are spent has changed significantly over the last three decades. On average, the share of total health expenditures paid to hospitals and physicians declined, while

spending on prescription drugs greatly increased. Still, expenditures for hospitals and physicians take up 43% of the amount that is directed to health care.

In 1975, a much larger share went to hospitals (45%) than in 2005 (30%). Payments to physicians in 1975 (15%) accounted for the second largest share of expenditures; this declined to the third largest area of spending (13%) by 2005. In contrast, drug therapies, particularly those prescribed by physicians, accounted for 9% of total health expenditure in 1975. This had nearly doubled by 2005, and at almost 18% had become the second largest share of total health expenditure. The share of publicly funded health expenditure stood at 69.6% in 2005, on par with its 2002 level. These shares are the lowest on record since 1975.

Growth in total health expenditures varied greatly across provinces in 2005. At 11.3%, Alberta recorded the fastest pace of expenditure growth. At the low end, Prince Edward Island, Newfoundland, and Labrador recorded growth rates below 5%.

Per capita health spending by province was generally similar. Per capita health expenditure ranged from a low of Can\$ 3,878 in Quebec to a high of Can\$ 4,820 in Alberta in 2005. Most of the remaining provinces recorded per capita health spending within plus or minus Can\$ 300 of the national average. The three territories have significantly higher per capita expenditures (with Nunavut being much higher than Canada's average). These elevated costs per capita are a result of the remoteness of the Canadian territories and lower population density, which lead to important transportation costs.

In 2005, hospitals and drugs accounted for Can\$ 67.2 billion, or nearly half of total health expenditures. Meanwhile, expenditures on health professionals (physicians and other health professionals) represented almost one-quarter of health spending.

Technical Cooperation and External Financing

The Government of Canada is participating in large-scale, multi-donor programs based on developing-country priorities that use local institutions and systems for their implementation. This reinforces the capacity of well-governed developing coun-

⁴Data for 2004 and 2005 are forecasts.

tries that have assumed primary responsibility for achieving the Millennium Development Goals, and it also helps coordinate and focus aid.

Canada considers the Pan American Health Organization (PAHO), Regional Office of the World Health Organization, as a strategic partner in efforts to improve the health status of the people of the Americas. This is reflected in the degree of support that the Canadian International Development Agency provides to address key health issues such as communicable diseases, immunization, HIV/AIDS, pandemic preparedness, and disaster management, as well as health human resources and institutional capacity-building in Latin America and the Caribbean.

Canada does not use PAHO's Biennial Program Funds for work within Canada. Instead, these funds are used in partnership with Latin American and Caribbean countries and with PAHO itself to mobilize Canadian health experts for specific health needs as identified by the countries. Approximately 20 projects a year are supported in a two-way partnership that serves to reinforce the guiding spirit of Pan Americanism.

Internationally, Canada is addressing the "10/90 research gap" through the Global Health Research Initiative. The Initiative constitutes a partnership among four leading Canadian health organizations, each with a different comparative strength: the Canadian Institutes of Health Research, the Canadian International Development Agency, Health Canada, and the International Development Research Centre. This collaborative approach serves as a framework for activities aimed at shaping and responding to the global health research agenda, influencing policy and policy coherence relating to global health research and facilitating information sharing among partner agencies.

The International Development Research Council, through its Globalization, Growth, and Poverty Initiative, also supports policy reforms in developing countries aimed at promoting inclusive, equitable growth and poverty reduction, as well as appropriate international integration strategies by generating necessary evidence and policy analysis.

In addition, Canada has been acting as Secretariat to the Global Health Security Initiative, in which 180 countries have been participating since 2001. The Secretariat's tasks include preparing and disseminating a vaccine procurement protocol and developing coursework in containment and isolation for smallpox and other contagious diseases.

Canada also is one of several country partners to the WHO's Commission on Social Determinants of Health, and is providing funds to support three of nine knowledge network hubs on early child development, globalization and health, and health systems in South Africa. Canada has also taken a leading role with WHO in identifying chronic disease prevention and control initiatives by helping establish a Framework Agreement for Cooperation on Chronic Diseases in 2005. It is anticipated that a partnership with PAHO and the countries of the Americas will continue to expand in this area over the coming years.

The country also is committed to building capacity in water management internationally. For example, Health Canada participates in the WHO-organized international network on small community water supplies. This project is designed to address problems associated with providing safe water to remote communities in developed and developing countries, as a means to progress towards the Millennium Development Goals, specifically those related to water and sanitation.

Since 2002, when it hosted the hemisphere-wide Health and Environment Ministers' Meeting (HEMA), Canada has been supporting a health and environment agenda, including developing a broader policy framework for building bridges between health and environment. The HEMA Task Force, comprised of ten senior government representatives from the health and environment sectors of the five American subregions, has since advanced measures throughout the Region to prevent and mitigate environmental threats to human health at the national and regional levels. The subsequent Declaration and Cooperative Agenda calls for building strategic alliances that underscore connections among the health, environment, education, and labor sectors in particular; developing public policies on sustainable development that endeavor to alleviate poverty and inequality; and protecting the environment and public health within the framework of human rights.

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