GPI Atlantic

ATLANTIC HEALTH DATABASE

PART B

HEALTH OUTCOMES

NOTE

This is a companion to Appendix B, and contains brief text descriptions, definitions, data sources, and charts to accompany the Tables in the appendix. Of particular interest are gender differences in the results, so data in the various indicator sets are presented for both males and females.

This volume highlights which Atlantic region health districts have higher or lower rates of particular health outcomes according to Statistics Canada's raw statistics. However, in many cases, sample sizes at the health district level were small, and the text does not account for the high variability that may result from wide confidence intervals. Statements comparing health outcomes at the health district level should therefore be interpreted with caution. For some indicators, confidence intervals are provided in the accompanying appendix.[1]

Please see Part A for descriptions of the 21 Atlantic region health districts, which, in the case of Nova Scotia and Prince Edward Island, do not necessarily correspond with actual health region administrative boundaries.

Please note that at the time this volume was compiled, the latest available Statistics Canada data on life expectancy, potential years of life lost, suicides, and infant/perinatal mortality at the health district level were for 1996, and the latest available data on teen pregnancies were for 1998. As this volume went to press, 1997 data on life expectancy, potential years of life lost, suicides, and infant/perinatal mortality, and 1999 and 2000 data on teen pregnancies became available. Subject to interest by users, GPI Atlantic intends to have this database updated on a regular basis.

[1] For example, in Section 2.4.3 of this volume, on Infant Mortality, the following paragraph appears: 'As with many other health district data, small sample sizes and high sampling variability require great caution in interpreting these raw data. For example, the coefficient of variation for the Campbellton result above ranges from a low of 0.1 per 1,000 to a high of 5.3 per 1,000. Since every other health district in Atlantic Canada, with the exception of Labrador, has a CV with a low-end result of less than 5.3, it is statistically possible that any one of those 20 health districts could actually have the lowest rate of infant mortality in Atlantic Canada. Only in the case of the Labrador results above is it possible to be reasonably confident that the ranking has validity. For this reason, readers of these text volumes are referred to the confidence intervals provided in the accompanying appendices (in this case Appendix B, Table 105).' Such caveats are not written into each section, but they could apply to many of the other comparative data as well.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

2.1 Self-Rated Health and Life Expectancy Indicators

This section examines self-rated health, functional health, life expectancy, disability-free life expectancy, and potential years of life lost.

2.1.1 Self-rated health

Self-rated health has been found to be a reliable predictor of health problems, health care utilization, and longevity.[2]

Definition

"Population aged 12 and over (for data from the Canadian Community Health Survey and National Population Health Survey, North component) who rate their own health status as being excellent, very good, good, or fair or poor."[3]

Data Sources

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

Results

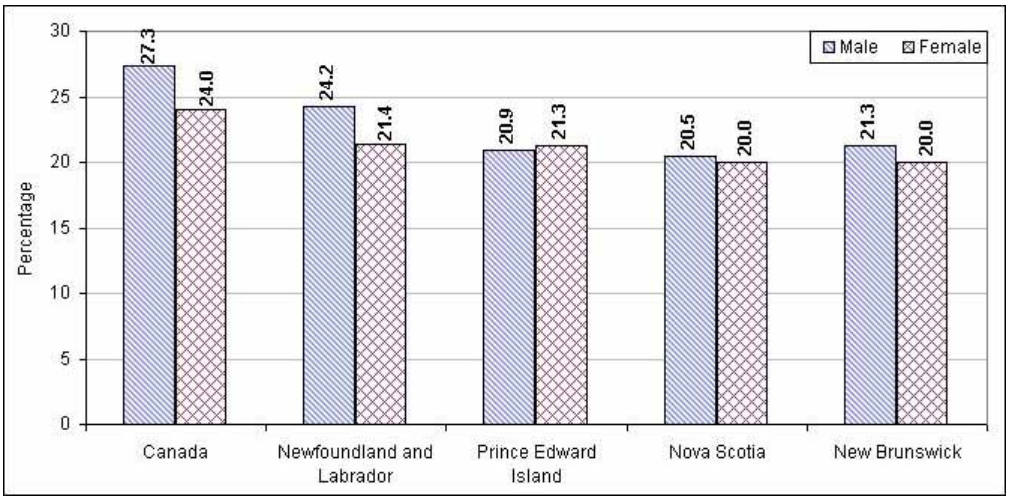
Overall, 25.6% of Canadians rated their health as "excellent" in 2000/01. Canadian men were generally more likely to rate their health as excellent than women (27.3% and 24% respectively), though there was no significant difference between the sexes in the Maritime Provinces (Figure 113). In Newfoundland and Labrador, 24.2% of males and 21.4% of females rated their health as "excellent."

In three Atlantic region health districts, women were significantly less likely to rate their health as excellent than the Canadian average (Figure 114). Only 12.3% of women in Grenfell (NF5), which includes northern Newfoundland and part of Labrador, 14.6% of women in South and Southwest Nova Scotia (NS1), and 14.6% of women in the Campbellton region of New Brunswick (NB5) rated their health as excellent, compared to 24.0% of Canadian women.

Several Atlantic region health districts also had significantly fewer men rating their health as excellent than the national average. These included Pictou-Guysborough-Antigonish-Strait (NS4) at 17.8%; South-Southwest Nova Scotia (NS1) at 15.1%; Campbellton (NB5) at 16.7%;[4] and Cape Breton (NS5) at 12.4%,[5] a full 55% lower than the national average (27.3%).

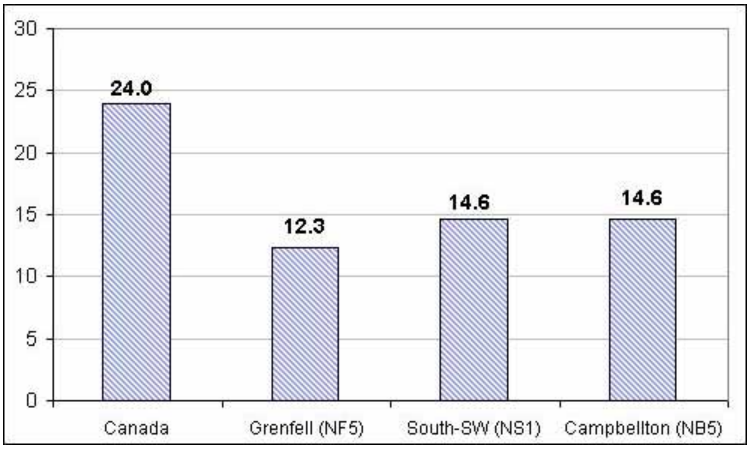
[2] Health Canada, *Toward a Healthy Future: Second Report on the Health of Canadians,* Ottawa, 1999, page 14.
[3] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#wb.
[4] Data for Grenfell (NF5) have a CV from 16.6% to 33.3% and should be interpreted with caution.
[5] Data for Campbellton (NB5) have a CV from 16.6% to 33.3% and should be interpreted with caution.

Figure 113. Population aged 12 and over who report their health as "excellent," by sex, Canada and Atlantic Provinces, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

Figure 114. Female population aged 12 and over who report their health as "excellent," Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

Note: Data for Grenfell (NF5) and Campbellton (NB5) have a CV from 16.6% to 33.3% and should be interpreted with caution.

When the "excellent" and "very good" categories are combined, higher percentages of males and females in Newfoundland and Labrador and Prince Edward Island rated their health as "excellent" or "very good," compared to the national average in 2000/01 (Figure 115). In New Brunswick, significantly fewer males and females rated their health as "excellent" or "very good" than the national average. Fewer Nova Scotians also rated their health "excellent" or "very

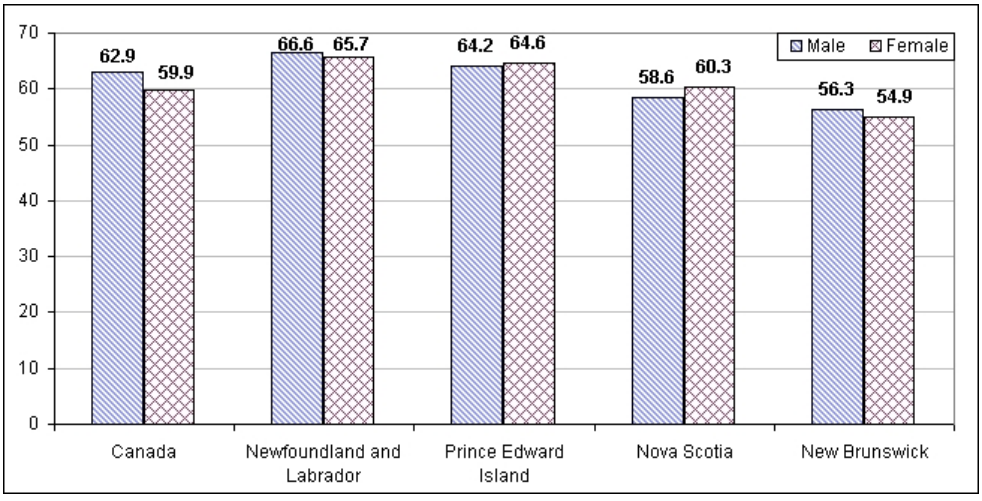
good" than the Canadian average (59.4% compared to 61.4%), with substantially fewer Nova Scotian males and slightly more females reporting "excellent" or "very good" self-rated health than the national average. Nine Atlantic health districts reported higher percentages of "excellent" or "very good" self-rated health than the national average, including all six Newfoundland and Labrador health regions, and the Capital health district in Nova Scotia (NS6) (Figure 116).

Nationally, 12.7% of Canadian women and 11.2% of Canadian men rated their health as "fair or poor" in 2000/01. In Newfoundland and Labrador, and in PEI, a higher percentage of males than the national average rated their health as "fair or poor," while a slightly lower percentage of females than the national average in these two provinces rated their health as "fair or poor." In Nova Scotia and New Brunswick, the percentages of both males and females rating their health as "fair or poor" were substantially higher than the national average (Figure 117).

Fourteen of Atlantic Canada's 21 health districts had higher proportions of both men and women reporting their health as "fair or poor" than the national average (Figure 118). Northern New Brunswick had the highest proportion of residents reporting fair or poor health in Atlantic Canada, with twice as many men in Campbellton (NB5), Edmundston (NB4), and Miramichi (NB7) reporting their health as fair or poor than the national average.

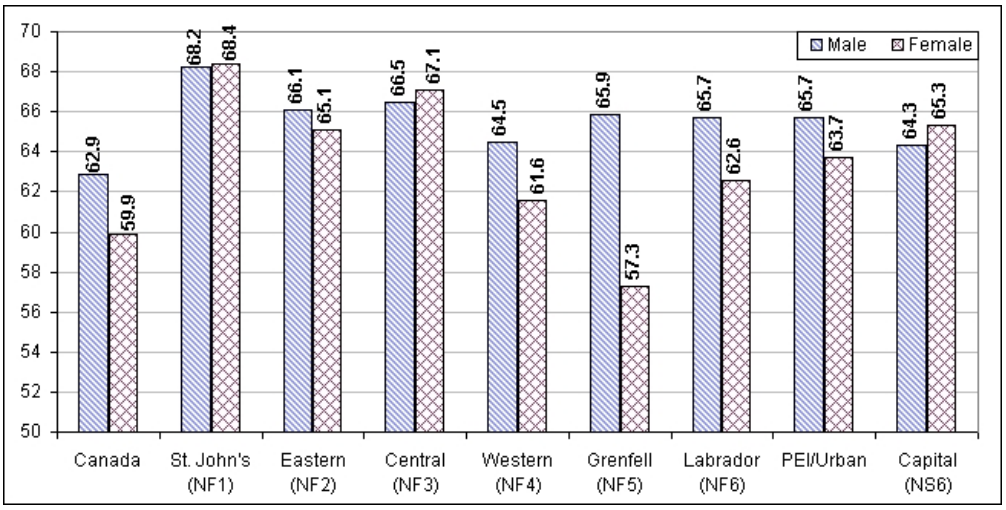
The 2000/01 Canadian Community Health Survey shows a disturbing and dramatic decline in the proportion of Canadians rating their health as excellent, both in Canada as a whole, and in the four Atlantic provinces. Figure 119 indicates the decline for women. At the time of writing, the reasons for this decline were not apparent, and further work is necessary to reconcile the 2000/01 CCHS statistics with the earlier 1994/95, 1996/97, and 1998/99 National Population Health Survey (NPHS) statistics.

Figure 115. Population aged 12 and over who report their health as "excellent" or "very good," by sex, Canada and Atlantic Provinces, 2000/01 (%)



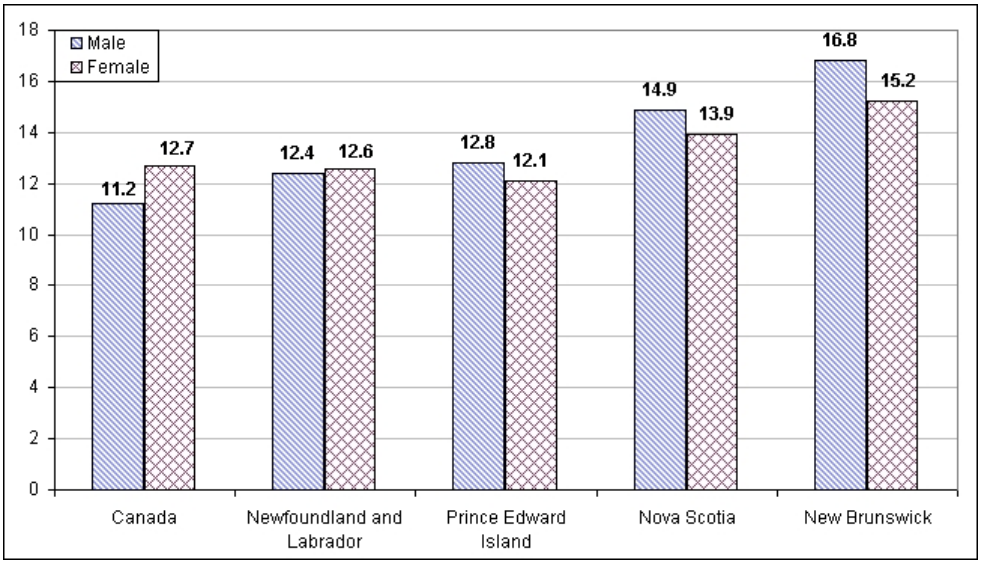
Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

Figure 116. Population aged 12 and over who report their health as "excellent" or "very good," by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



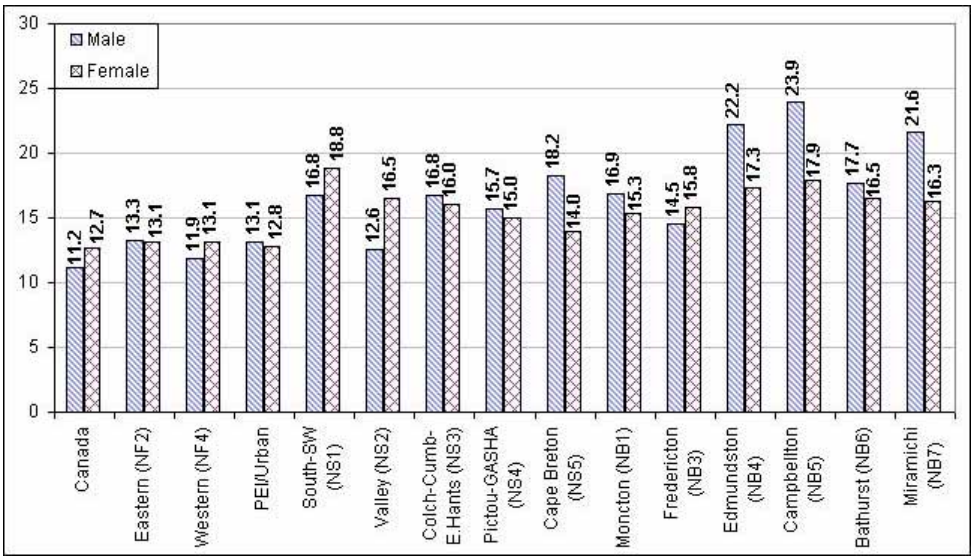
Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

Figure 117. Population aged 12 and over who rate their health as "fair or poor," by sex, Canada and Atlantic Provinces, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

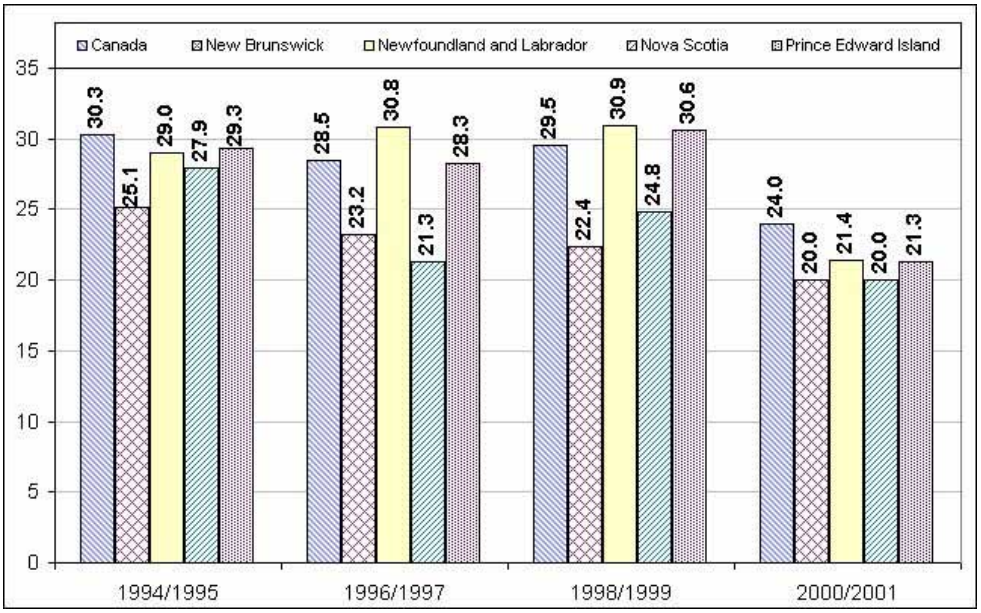
Figure 118. Population aged 12 and over who rate their health as "fair or poor," by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

Note: Data for Grenfell (NF5) and Miramichi (NB7) for both males and females have a CV from 16.6% to 33.3% and should be interpreted with caution.

Figure 119. Female population aged 12 and over who rated their health as "excellent," Canada and Atlantic Provinces, 1994/95 to 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, cross sectional sample, health file; Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, North component; Statistics Canada, National Longitudinal Survey of Children and Youth (0 to 11 years of age), 1994/95; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing1.htm, extracted 3 January, 2003.

Self-rated health as "excellent" or "very good" in 1994/95, 1996/97, 1998/99

Definition

"Population aged 12 and over who rate their own health as excellent or very good for two or more consecutive survey cycles. Consecutive survey cycles are taken two years apart."[6]

Data Source

Statistics Canada, National Population Health Survey, 1994/95, 1996/97 and 1998/99, longitudinal sample, health file.

Results

In Newfoundland and Labrador and in Prince Edward Island, both sexes together, and males and females separately, reported a higher percentage of "excellent" or "very good" self-rated health than the national average for three consecutive cycles (1994/95, 1996/97, and 1998/99). In Nova Scotia, both sexes and males reported a lower percentage of "excellent" or "very good" self-rated health than the national average for three consecutive cycles (1994/95, 1996/97, and 1998/99). Nova Scotia females reported a lower percentage of "excellent" or "very good" self-rated health than the Canadian average in 1994/95 and a higher percentage of "excellent" or "very good" self-rated health than the national average in 1996/97 and 1998/99. In New Brunswick, both sexes together, and males and females separately, reported a lower percentage of "excellent" or "very good" self-rated health than the national average for three consecutive cycles (1994/95, 1996/97, and 1998/99).

In 1994/95, Newfoundland and Labrador males (71.2%) and PEI females (72.3%) reported the highest percentage of "excellent" or "very good" self-rated health in the country. In 1996/97 and 1998/99, Newfoundland and Labrador males and females reported the highest percentage of "excellent" or "very good" self-rated health (1996/97: 73.9% male, 73.4% female; 1998/99: 73.4% male, 76.3% female).

2.1.2 Functional health

Definition

"Population aged 12 and over (for data from the Canadian Community Health Survey and National Population Health Survey, North component) reporting measures of overall functional health, based on nine dimensions of functioning (vision, hearing, speech, mobility, dexterity, feelings, cognition, memory and pain). A score of 0.8 (80%) to 1.0 (100%) is considered to be very good or perfect health; scores below 0.8 are considered to indicate moderate or severe functional health problems."[7, 8]

[6] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#wb.
[7] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#15.

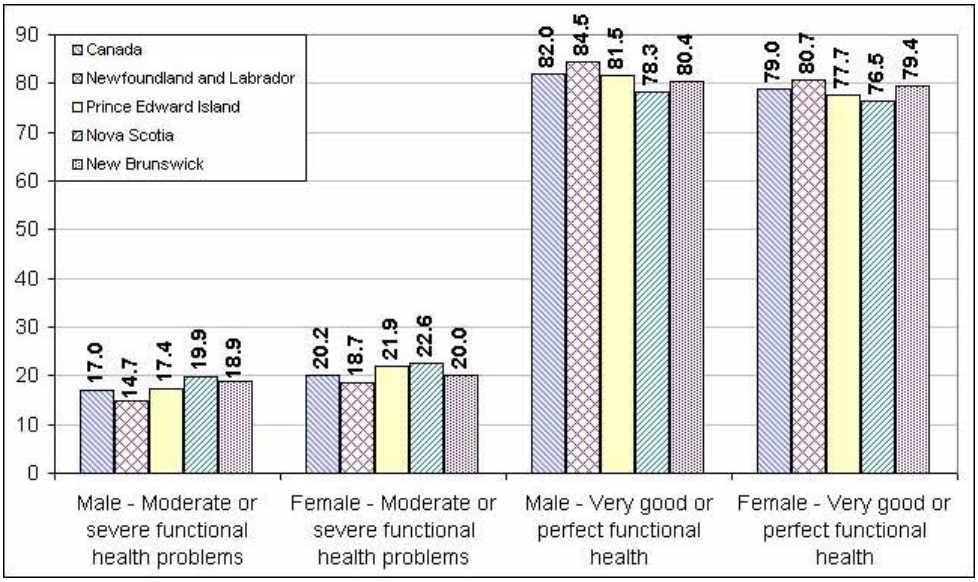
Data Sources

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

Results

Nationally, fewer males (17.0%) than females (20.2%) report having "moderate" or "severe" functional health problems. Nova Scotia has the highest percentage of people reporting "moderate" or "severe" functional health problems in the country (21.3% compared to the national average of 18.6%). Newfoundland and Labrador has the second lowest percentage reporting "moderate" or "severe" functional health problem in the country after Quebec (16.7% and 14.5% respectively) (Figure 120).

Figure 120. Self-reported functional health, population age 12 and over, by sex, Canada and Atlantic Provinces, 2000/01 (%)



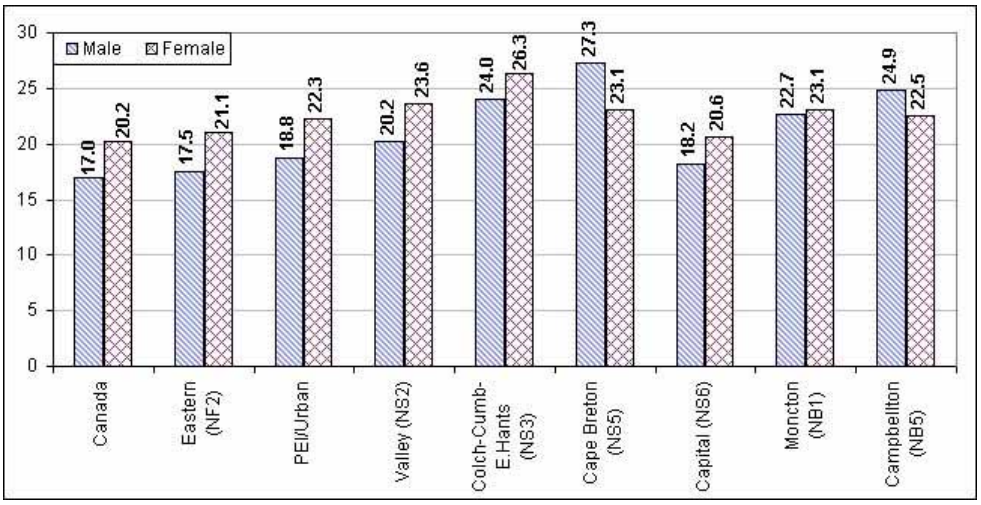
Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Of the 21 health districts in the Atlantic Provinces, 13 had a higher percentage of the population reporting "moderate" or "severe" functional health problems than the national average (Figure 121). Colchester-Cumberland-East Hants (NS3) had the highest percentage of females reporting

[8] Also known as the Health Utility Index (HUI), developed at McMaster University's Centre for Health Economics and Policy Analysis and based on the Comprehensive Health Status Measurement System (CHSMS). In a study conducted at the School of Health and Related Research, University of Sheffield, UK, HUI was selected as one of the best preference-based Health Status Measures. See Brazier et al., "A Review of the Use of Health Status Measures in Economic Evaluation," *Health Technology Assessment, 3*(9).

"moderate" or "severe" functional health problems (26.3%); Cape Breton (NS5) had the highest percentage of the male population reporting "moderate" or "severe" functional health problems (27.3%).

Figure 121. "Moderate" or "severe" functional health problems, population aged 12 and over, Canada and selected Atlantic region health districts reporting a higher percentage than Canada, 2000/01 (%)



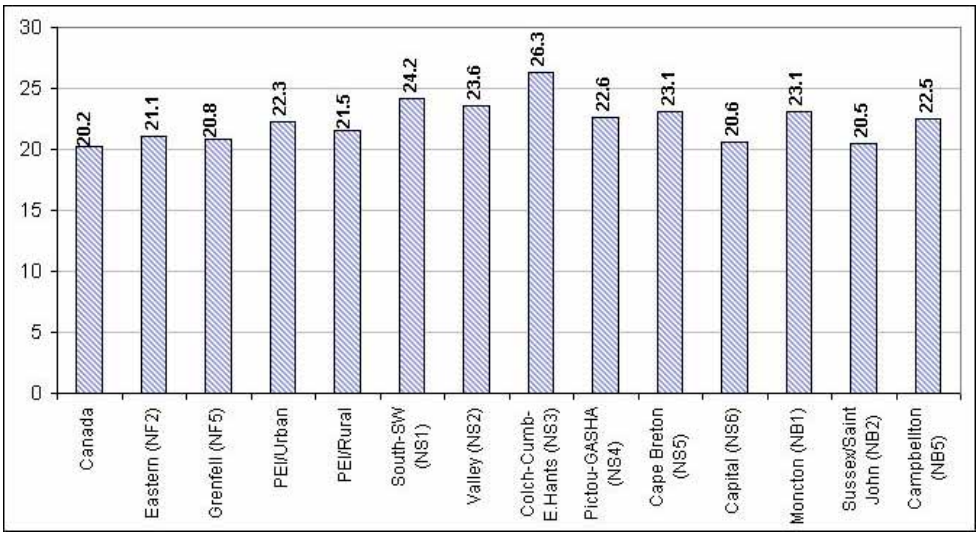
Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Note: Males in Campbellton (NB5) and Miramichi (NB7) data have a CV from 16.6% to 33.3% and should be interpreted with caution.

Eleven Atlantic region health districts had a higher percentage of males reporting "moderate" or "severe" functional health problems compared to Canada: Eastern (NF2), PEI/Urban, Valley (NS2), Colchester-Cumberland-East Hants (NS3), Cape Breton (NS5), Capital (NS6), Moncton (NB1), Fredericton (NB3), Edmundston (NB4), Campbellton (NB5), and Miramichi (NB7). Of the 21 health districts in the Atlantic Provinces, thirteen had a higher percentage of females who report "moderate" or "severe" functional health problems than the national average (Figure 122).

Nationally, 82.0% of males and 79.0% of females reported their functional health as "very good" or "perfect." Nine Atlantic region health districts had higher percentages of the population reporting "very good" or "excellent" functional health than the national average (Figure 123).

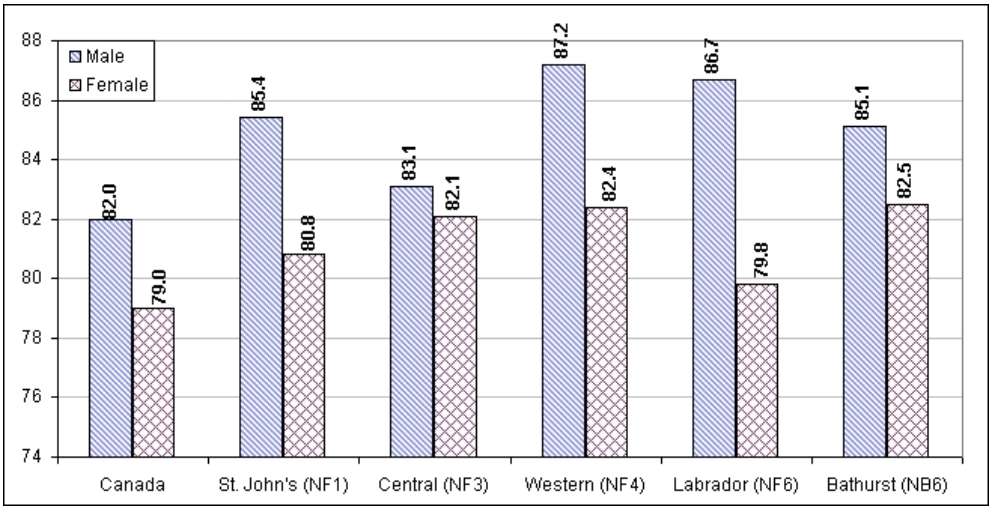
Figure 122. "Moderate" or "severe" functional health problems, female population aged 12 and over, Canada and selected Atlantic region health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Note: Data for Grenfell (NF5) have a CV from 16.6% to 33.3% and should be interpreted with caution.

Figure 123. "Very good" or "perfect" functional health, population aged 12 and over, Canada and selected Atlantic region health districts reporting a higher percentage than Canada, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Functional health status as "very good" or "perfect" in 1994/95, 1996/97, 1998/99, population aged four and over

Data Source

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

Results

The percentage of males and females, aged four and over, in Newfoundland and Labrador reporting "very good" or "perfect" functional health was higher than the national average in all three consecutive cycles (1994/95, 1996/97, and 1998/99). The percentage of males and females, aged four and over, in Nova Scotia and New Brunswick reporting "very good" or "perfect" functional health was lower than the national average for all three consecutive cycles (1994/95, 1996/97, and 1998/99). In Prince Edward Island, males and females reported a higher percentage of "very good" or "perfect" functional health than the national average in 1994/95. In 1996/97 and 1998/99, fewer PEI males reported "very good" or "perfect" functional health status than the national average, while PEI females reported a higher percentage than the national average.

2.1.3 Life expectancy

Life expectancy is a widely-used measure of health that indicates quantity or length rather than quality of life. Canada ranks near the top internationally in this measure. However, there are inequalities in life expectancy according to income levels. For example, life expectancy is significantly lower among Aboriginal people. Interestingly, immigrants to Canada from non-European countries have a higher life expectancy than Canadian-born residents.[9]

A woman born in 1998 can expect to live to 81.5 years, compared to 76.1 years for a man. Life expectancy at age 65 is 19.9 years for women and 16.1 years for men.[10] The lowest life expectancy in Canada is in Nunavut – 68.9 years – 70.2 for women and 67.7 for men – dramatically lower than the Canadian average..[11]

The life expectancy of Canadians has increased by about five years in the last quarter century. In 1901, a woman born in Canada could expect to live to age 50 and a man to age 47. However, the dramatic increase in life expectancy in the 20th century is due almost entirely to the elimination of premature death, particularly neonatal mortality. For persons 40 years and older, life

[9] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[10] Statistics Canada, *Health Indicators,* catalogue no. 82-221-XIE, December, 2001.
[11] Statistics Canada, *CANSIM Database,* Table 102-0025, "Life expectancy - abridged life table, at birth and at age 65, by sex, Canada, provinces and territories, annual (years)," available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/deaths2.htm.

expectancy increased relatively little; for those 75-years-old, the change was barely perceptible, suggesting a natural limit to the life span. If all premature death were eliminated, "statistics suggest that under ideal societal conditions mean age at death is not far from 85 years."[12]

U.S. statistics show that while life expectancy at birth has increased dramatically (by 30 years) since 1900, life expectancy at age 65 has increased by less than 6 years since 1900. In 1900, a 65-year-old man could expect to live another 11.5 years. At the end of the 20th century, a 65-year old man could expect to live another 16 years. For 65-year-old women, the corresponding figures are 12 years in 1900 and 19 years at the end of the 20th century.[13] Thus, the huge leap in average life expectancy at birth is due almost entirely to the sharp drop in infant and child mortality rather than to an increase in the length of old age. The sharp decline in premature death resulted from the prevention of infectious diseases that took their greatest toll in the first year of life.[14]

Life expectancy is closely related to socio-economic factors, increasing with income and educational attainment, and decreasing with higher unemployment levels. One study found that Canadian men in the highest quarter of income distribution can expect to live 6.3 years longer and 14.3 more years free of disability than those in the lowest quartile. For women the differences are 3 and 7.6 years respectively. Other studies have confirmed that as earnings increase, the rate of premature mortality decreases, with low economic status more likely to increase exposure to unhealthy life conditions.[15]

Canada's life expectancy at birth (78.7 years) ranks seventh in the world, behind countries like Japan and Sweden which have greater earnings equality, and ahead of countries like the United States where income distribution is more unequal.[16]

The life expectancy of Canada's status Indian population is about seven years less than that for the overall Canadian population.[17] Canadian Aboriginals have high rates of poverty, unemployment, poor housing, and low educational attainment, and they are also particularly vulnerable to certain diseases like tuberculosis that are almost entirely preventable. The Romanow Commission reported growing rates of HIV infection and high rates of disability, cardiac problems, and exposure to alcohol abuse and drug addiction among Aboriginals.[18] These and other factors, including higher suicide rates, contribute to the shorter life expectancy of Canada's Aboriginal population.

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[12] Ibid., page 131. See also Chernomas, Robert, *The Social and Economic Causes of Disease,* Canadian Centre for Policy Alternatives, March, 1999, page 2.
[13] Life expectancy averages 1900-1997 are available at: http://www.efmoody.com/estate/lifeexpectancy.html. Although these figures are for the U.S., they may be used as an approximate indicator for Canada as well.
[14] Brown, Allan, *Costs and Benefits of Preventive Medicine,* Canadian Medical Association, Department of Medical Economics, 1984, page 1.
[15] Health Canada, *Toward a Healthy Future: Second Report on the Health of Canadians,* Ottawa, 1999, page 26.
[16] Organization for Economic Cooperation and Development, *OECD Health Data 98,* cited in Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, page 324.
[17] Idem.
[18] Romanow, Roy, *Building on Values: The Future of Health Care in Canada: Final Report,* Ottawa, November, 2002, pages 218-219.

Definition

"The number of years a person would be expected to live, starting from birth (for life expectancy at birth) or at age 65 (for life expectancy at age 65), on the basis of the mortality statistics for a given observation period."[19]

Data Source

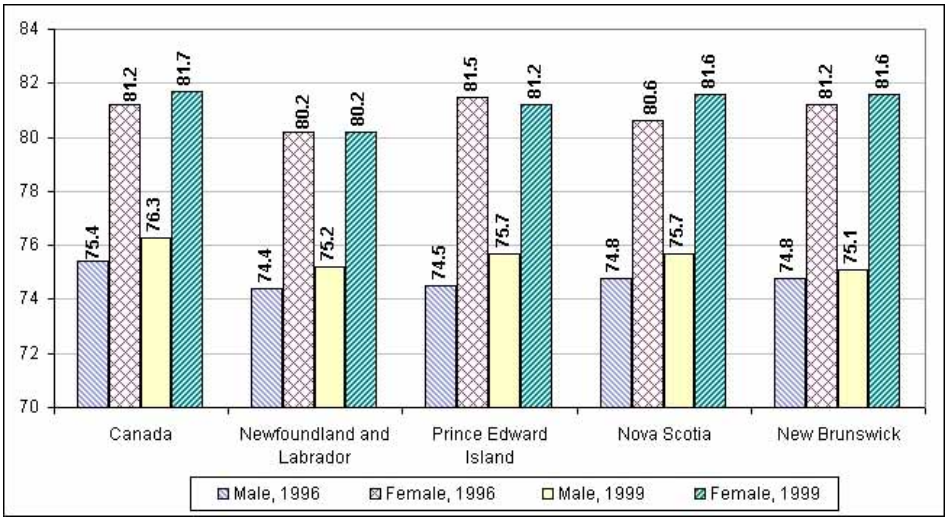
Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates).

Note: While the life expectancy rates at birth and at age 65 for Canada and the provinces are provided for both 1996 and 1999, only the 1996 statistics are currently available for health districts.

Results

Based on 1996 statistics, life expectancy at birth was lower than the national average for males and females in Newfoundland and Labrador and Nova Scotia, and males in PEI and New Brunswick. Life expectancy at birth for females in PEI was slightly higher than the national average. Life expectancy at birth for New Brunswick females was the same as the national average (Figure 124)

Figure 124. Life expectancy at birth, by sex, Canada and Atlantic Provinces, 1996 and 1999 (years)

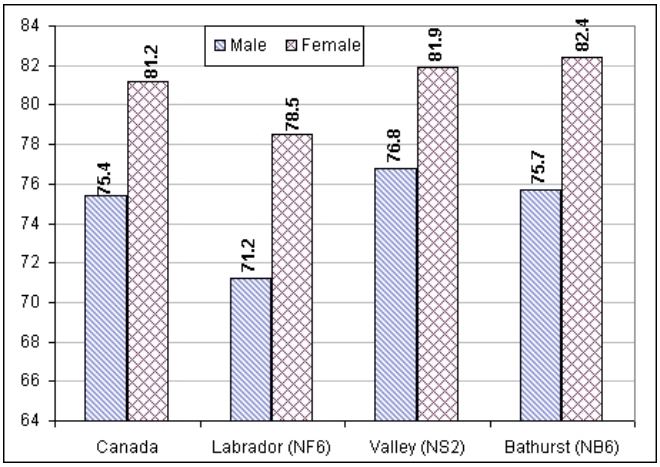


Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996 and 1999; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths2.htm, extracted 9 February, 2003.

[19] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#21.

Based on 1999 statistics, life expectancy at birth in all the Atlantic Provinces was lower than the national average for males and females (76.3 and 81.7 years, respectively) (Figure 124). Based on the 1996 statistics available at the health district level, four Atlantic region health districts had a higher average life expectancy at birth than the national average: Annapolis Valley (NS2), Rural PEI, Moncton (NB1) and Bathurst (NB6). In Atlantic Canada, the Annapolis Valley had the highest life expectancy at birth for males at 76.8 years and Bathurst had the highest life expectancy for females at 82.4 years. Labrador had the lowest life expectancy at birth for males at 71.2 years and females at 78.5 years (Figure 125).

Figure 125. Life expectancy at birth, by sex, Canada and selected Atlantic region health districts, 1996 (years)

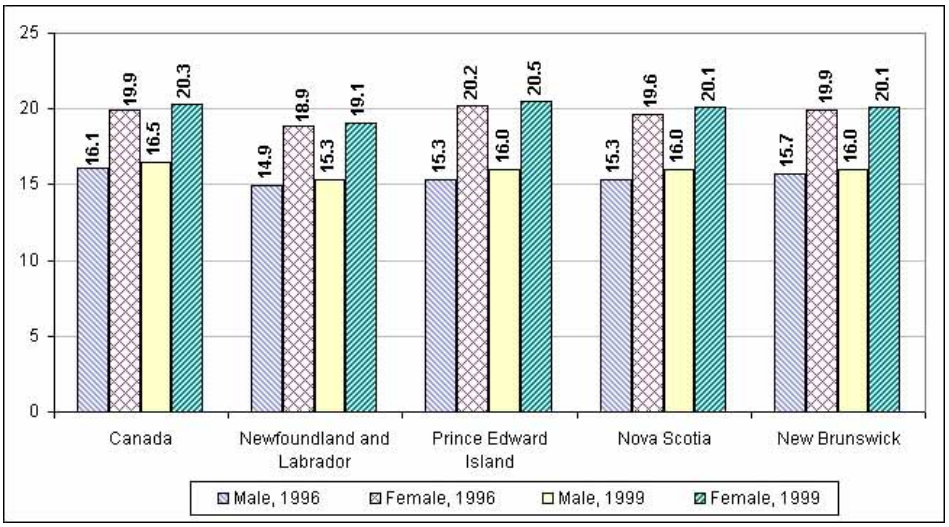


Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths2.htm, extracted 9 February, 2003.

For life expectancy at age 65, the 1999 national statistics indicate that males, on average, will live an additional 16.5 years and females an additional 20.3 years. Males and females in Newfoundland and Labrador, Nova Scotia, and New Brunswick, and males in PEI had a lower life expectancy at age 65 than the national average. Females in PEI had a slightly higher life expectancy at age 65 than the national average (Figure 126).

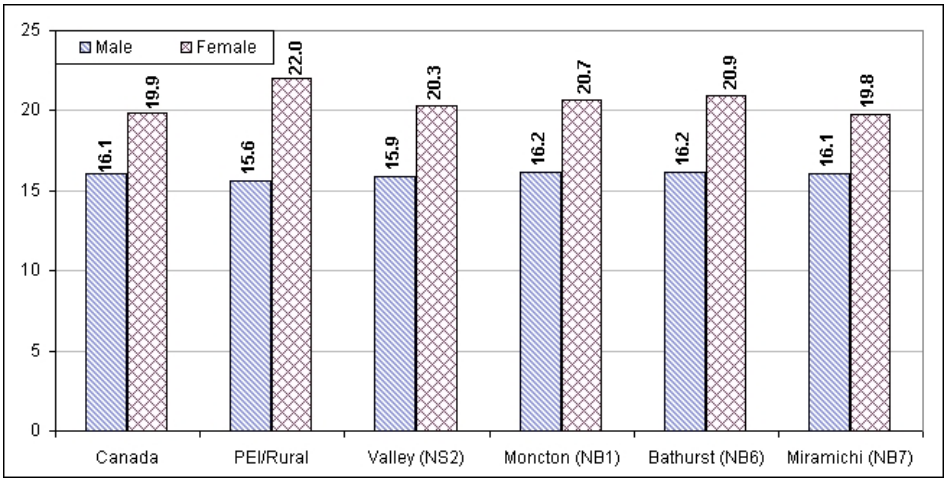
Based on 1996 statistics, males in Moncton (NB1) and Bathurst (NB6) had a higher life expectancy at age 65 than the national average (Figure 127), and males in Miramichi (NB7) had the same life expectancy at age 65 as the national average. Males in the remaining eighteen Atlantic region health districts had a lower life expectancy at age 65 than the national average. Females in four Atlantic region health districts had a higher life expectancy at age 65 than the national average: Rural PEI, Annapolis Valley (NS2), Moncton (NB1), and Bathurst (NB6) (Figure 127). Females in South-Southwest Nova Scotia (NS1) had the same life expectancy at age 65 as the national average (19.9 years), and females in the remaining sixteen Atlantic region health districts had a lower life expectancy at age 65 than the national average.

Figure 126. Life expectancy at age 65, by sex, Canada and Atlantic Provinces, 1996 and 1999 (years)



Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996 and 1999; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths2.htm, extracted 2 January, 2003.

Figure 127. Life expectancy at age 65, by sex, Canada and selected Atlantic region health districts, 1996 (years)



Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths2.htm, extracted 2 January, 2003.

2.1.4 Disability-free life expectancy

Definition

"Disability-free life expectancy is a more comprehensive indicator than that of life expectancy because it introduces the concept of quality of life. It is used to distinguish between years of life

free of any activity limitation and years experienced with at least one activity limitation. To that end, disability-free life expectancy establishes a threshold based on the nature of such limitations. Years of life lived in conditions above this threshold are counted in full. Those lived in conditions below the threshold are not counted. Thus, the emphasis is not exclusively on the length of life, as is the case for life expectancy, but also on the quality of life."[20]

Disability-free life expectancy combines mortality rates with data on major activity limitations and the proportion of the population living in health care institutions. It therefore estimates the number of years of life that a person can expect to live without activity limitation and outside a health care institution.[21]

Data Sources

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

Results

Table B1 below includes measures of both disability-free life expectancy and a related measure – disability-adjusted life expectancy, which is calculated according to a set of weights (relative values) assigned to four states of health. These states are, in order from greatest to least weight: no activity limitations; activity limitations in leisure activities or transportation; activity limitations at work, home and/or school; and institutionalization in a health care facility.[22] Because women suffer from higher rates of disability and activity limitation than men, the male-female gap was narrower for measures of life expectancy without disability than for unadjusted life expectancy figures (Table B1).[23]

Table B1. Life expectancy without disability, Canada, 1996 (years)

	Male	Female
Disability-free life expectancy at birth	66.9	70.2
Disability-free life expectancy at age 65	10.9	12.4
Disability-adjusted life expectancy at birth	72.2	76.9
Disability-adjusted life expectancy at age 65	14.0	16.9

Sources: Statistics Canada, *Health Indicators*

The regional gaps were also larger for disability-free and disability-adjusted life expectancy than for life expectancy in general. For example, the average Nova Scotian had three fewer disability-

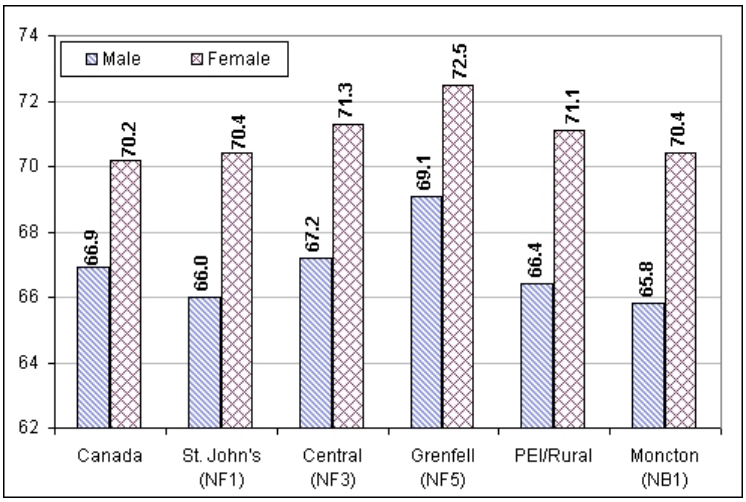
[20] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#18.
[21] Statistics Canada, "The health of Canada's communities," *Supplement to Health Reports,* volume 12, 2002, catalogue no. 82-003, page 4.
[22] Statistics Canada, *Health Indicators,* catalogue no. 82-221-XIE, Definitions, available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/defin1.htm.
[23] Statistics Canada, *Health Indicators,* catalogue no. 82-221-XIE, available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/function2.htm.

free years of life than the average Canadian (65.5 compared to 68.6). Cape Bretoners had an average disability-free life expectancy of only 61.8 years, seven fewer than the national average, and the lowest of all the 139 health regions in Canada. This means that Cape Bretoners can expect to live considerably more years with a disability than other Canadians.

Nationally, as indicated in Table B1 above, disability-free life expectancy at birth was 66.9 years for males and 70.2 years for females in 1996. With the exception of females in Newfoundland and Labrador, the Atlantic Provinces had lower disability-free life expectancy at birth than the national average. Compared to the national average, all Atlantic Provinces had lower disability-free life expectancy at age 65 for both males and females, with the exception of females in PEI who had the same disability-free life expectancy at age 65 as the national average.

In 19 of the 21 Atlantic region health districts, disability-free life expectancy at birth for males was lower than the national average. In Central Newfoundland (NF3) and Grenfell (NF5) disability-free life expectancy at birth for males was higher than the national average (Figure 128). Five Atlantic region health districts had higher disability-free life expectancy at birth for females than the national average of 70.2 years: St. John's (NF1), Central (NF3), Grenfell (NF5), Rural PEI, and Moncton (NB1) (Figure 128).

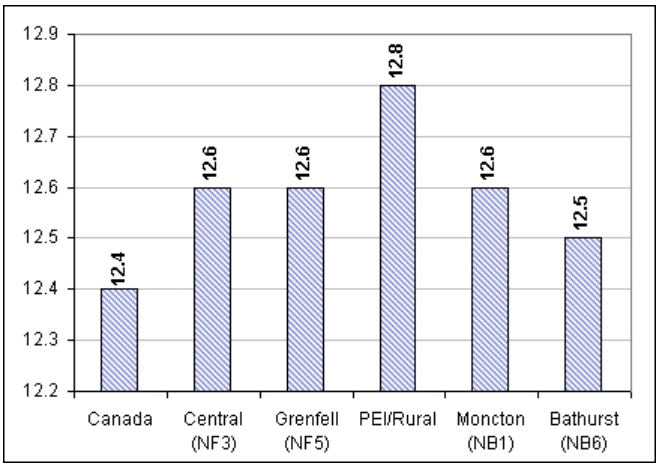
Figure 128. Disability-free life expectancy at birth, by sex, Canada and selected Atlantic region health districts, 1996 (years)



Source: Statistics Canada, Vital Statistics, Death Database, Demography Division, and the 1996 Census (20% sample); available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function2.htm, extracted 3 January 2003.

Disability-free life expectancy at age 65 for males was lower than the national average of 10.9 years for all Atlantic region health districts, with the exception of Central (NF3), which had the same disability-free life expectancy at age 65 as the national average. Five Atlantic region health districts had a disability-free life expectancy at age 65 for females that was higher than the national average: Central (NF3), Grenfell (NF5), Rural PEI, Moncton (NB1), and Bathurst (NB6) (Figure 129).

Figure 129. Disability-free life expectancy at age 65, females, Canada and selected Atlantic region health districts, 1996 (years)



Source: Statistics Canada, Vital Statistics, Death Database, Demography Division, and the 1996 Census (20% sample); available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function2.htm, extracted 3 January 2003.

2.1.5 Potential years of life lost

There are several indicators in this category, including the total mortality for all causes of death, and deaths due to all cancers, circulatory diseases, respiratory diseases, unintentional injuries, and suicide. It seems logical that addressing the causes of potential years of life lost would not only help increase life expectancy but also the quality of life.[24]

2.1.6.1 Total mortality - potential years of life lost (PYLL) rate

Definition

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

"Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a rate per 100,000 population."[25]

Data Source

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

[24] Health Canada, *Toward a Healthy Future: Second Report on the Health of Canadians*, Ottawa, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[25] Statistics Canada Website: http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#d.

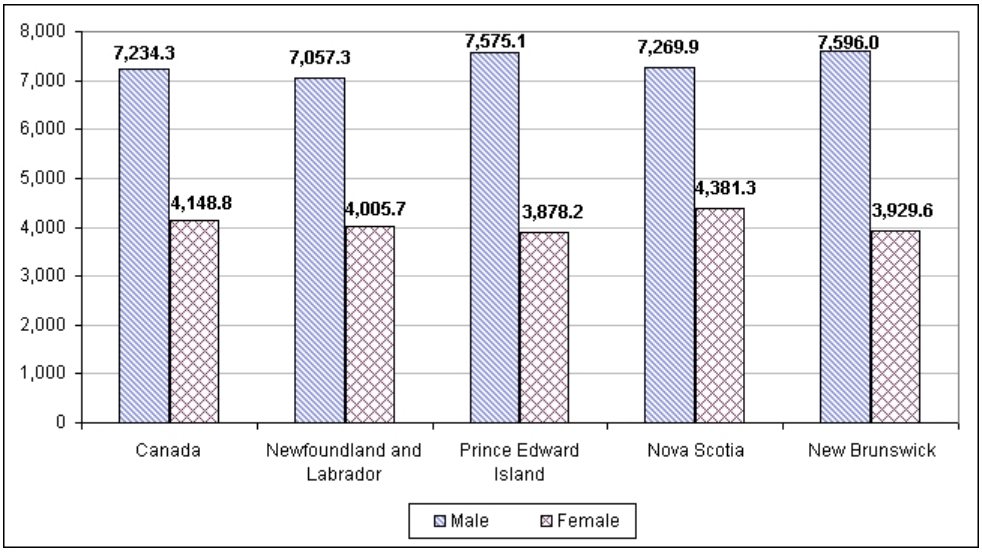
Results

Cancer has been the leading cause of potential years of life lost in Canada and, with suicides, is the only major cause of years of life lost to have increased in the last 30 years. By contrast, years of life lost due to accidents and heart disease have been declining in Canada for the past quarter century.[26]

Provincial averages mask significant intra-provincial disparities. For example, based on 1996 statistics, the Labrador health district, with its substantial Aboriginal population and high suicide rate, had the greatest number of potential years of life lost per 100,000 population in Atlantic Canada (7,432.4 per 100,000) – 30% more than the Canadian average of 5,696.6 per 100,000.

There are also sharp differences between males and females in the PYLL data for "all causes" of death — both nationally and provincially. Nationally, PYLL for females were approximately 57% lower than male rates (4,148.8 and 7,234.3 years per 100,000 population, respectively). In the Atlantic Provinces, ratios of male to female PYLL ranged from 1.66:1 to 1.95:1. Prince Edward Island had the greatest gender variance, with a male to female PYLL ratio of 1.95:1 (7,575.1 male/3,878.2 female), followed by New Brunswick at 1.93:1 (Figure 130).

Figure 130. Potential years of life lost due to all causes of death per 100,000 population, by sex, Canada and Atlantic Provinces, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

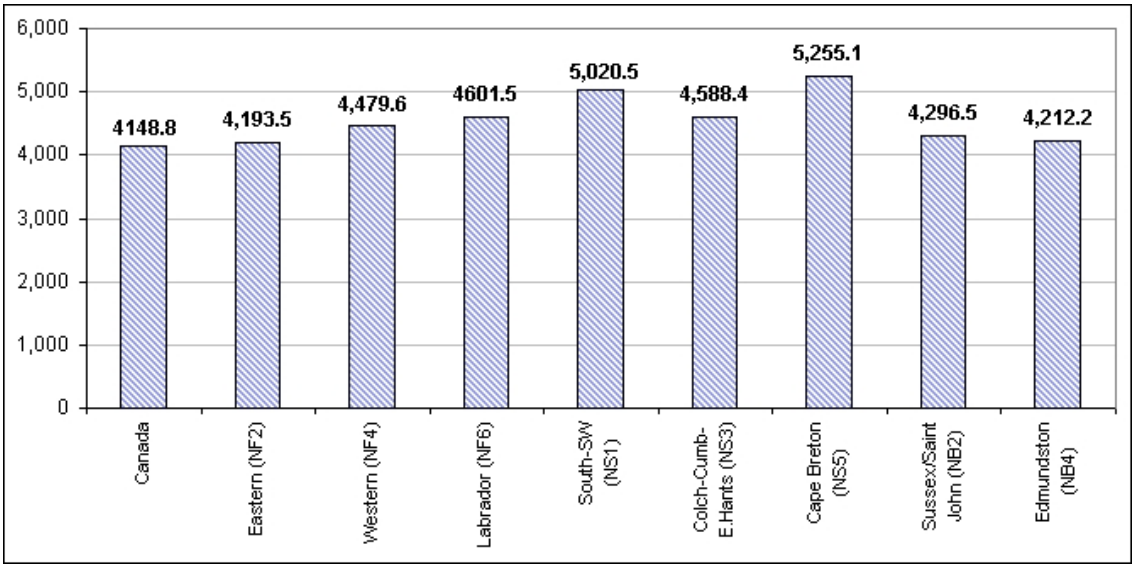
Eight Atlantic region health districts reported higher PYLL rates for females than the national average: Eastern (NF2) at 4,193.5, Western (NF4) at 4,479.6, Labrador (NF6) at 4,601.5, South-Southwest (NS1) at 5,020.5, Colchester-Cumberland-East Hants (NS3) at 4,588.4, Cape Breton

[26] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, page 319.

(NS5), at 5,255.1 (the highest rate for females), Sussex/Saint John (NB2) at 4,296.5, and Edmundston (NB4) at 4,212.2 (Figure 131).

The highest PYLL rate in Atlantic Canada for males was in Labrador (NF6) at 10,076.9, which is nearly 40% higher than the national average (7,234.3), and the lowest rate was in Grenfell (NF5) at 4,591.7. The high PYLL rate for Labrador males is partially attributable to the very high rates of suicide and unintentional injury in that region. Other Atlantic region health districts with very high PYLL rates for males included Edmundston (NB4) at 9,537.6, Campbellton (NB5) at 9,501.3, Miramichi (NB7) at 9,153.8, and Cape Breton (NS5) at 9,176.6.

Figure 131. Potential years of life lost due to all causes of death per 100,000 population, females, Canada and selected Atlantic region health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

2.1.6.2 All cancer deaths - potential years of life lost rate

Definition

"Potential years of life lost (PYLL) (all malignant neoplasms, ICD-9 140-208) is the number of years of life 'lost' when a person dies 'prematurely' from any cancer—before age 75. A person dying at age 25, for example, has lost 50 years of life.

"Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a rate per 100,000 population."[27]

[27] Statistics Canada, http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#d.

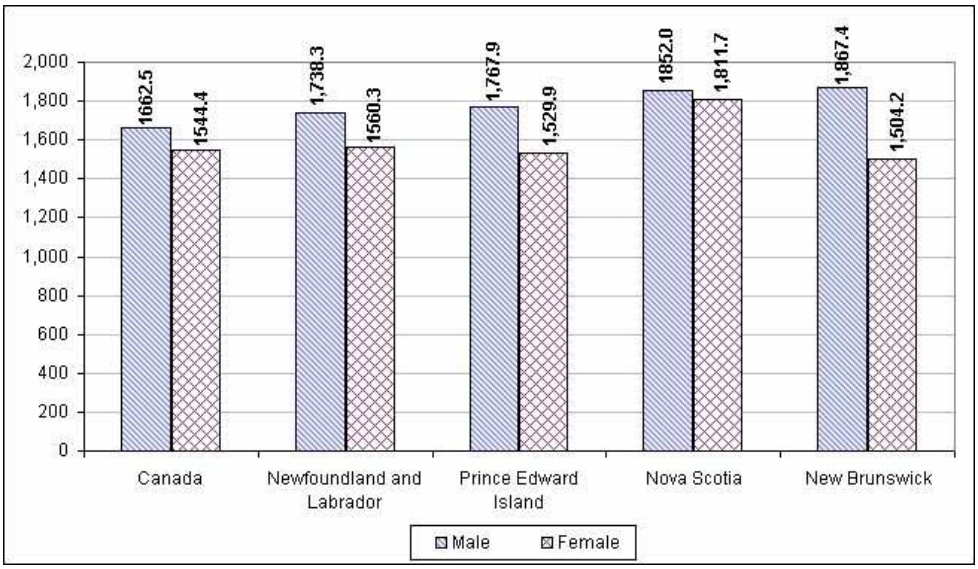
Data Source

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

Results

Death due to all cancers is the leading cause of potential years of life lost in Canada and the Atlantic Provinces. The national rate in 1996 was 1,662.5 years for males and 1,544.4 years for females per 100,000 population. In the Atlantic Provinces, New Brunswick had the highest rate of PYLL due to cancer for males at 1,867.4, while Nova Scotia had the highest rate for females at 1,811.7 (Figure 132).

Figure 132. Potential years of life lost due to all cancer deaths per 100,000 population, by sex, Canada and Atlantic Provinces, 1996 (rate)



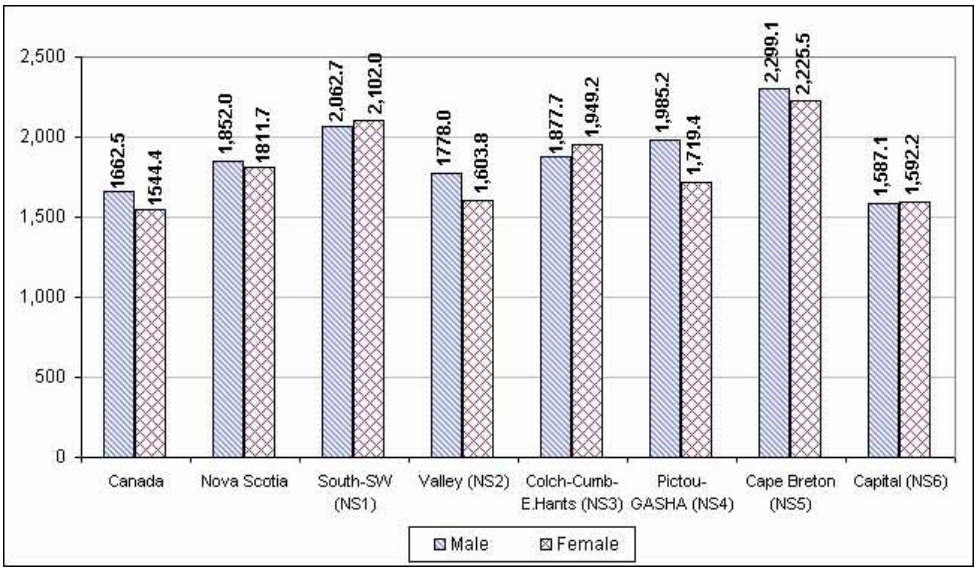
Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

In the Atlantic Provinces, rates of PYLL due to cancer were higher than the national average in all but six districts for males, and in all but nine districts for females. The three highest rates of PYLL due to cancer for females were in Nova Scotia health districts: South-Southwest (NS1) at 2,102.0, Colchester-Cumberland-East Hants (NS3) at 1,949.2 and Cape Breton (NS5) at 2,225.5 (Figure 133). Districts with notably lower than national rates for females included Labrador (NF6) at 781.0 and Edmundston (NB4) at 1,243.7 years

Health districts reporting lower than national rates for males included Central (NF3) at 1,368.6, Grenfell (NF5) at 986.4, Labrador (NF6) at 1,567.1, Capital (NS6) at 1,587.1, Fredericton (NB3) at 1,533.9, and Bathurst (NB6) at 1,547.9. Districts with notably higher than national rates for males included Campbellton (NB5) at 2,537.2, and Miramichi (NB7) at 2,380.6. Figure 134

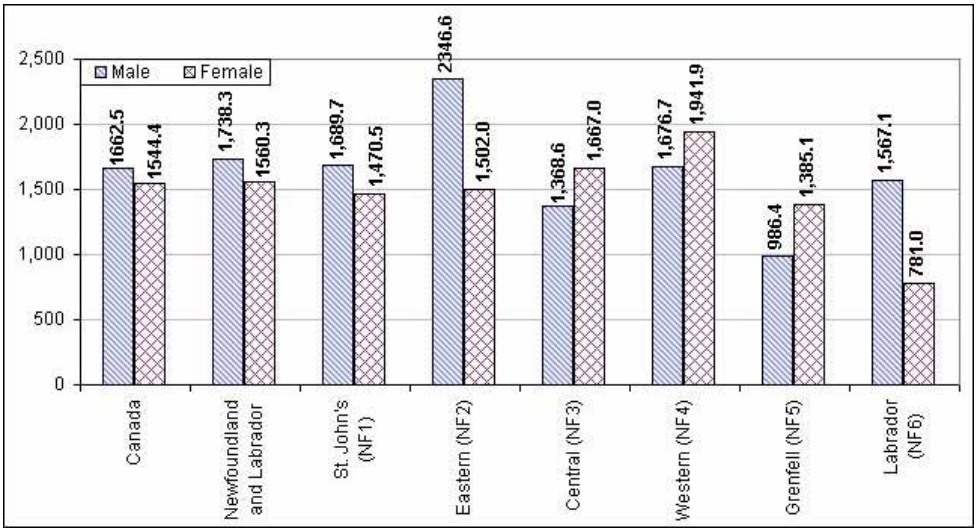
illustrates PYLL due to cancer in Newfoundland and Labrador, and Figure 135 illustrates the wide variance in PYLL due to cancer in selected Atlantic region health districts.

Figure 133. Potential years of life lost due to all cancer deaths per 100,000 population, by sex, Canada and Nova Scotia health districts, 1996 (rate)



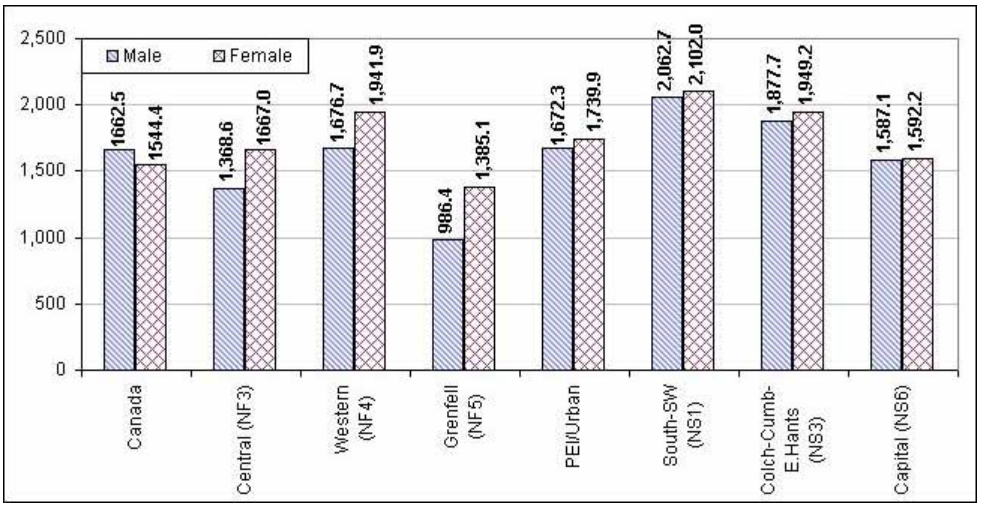
Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

Figure 134. Potential years of life lost due to all cancer deaths per 100,000 population, by sex, Canada and Newfoundland and Labrador health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

Figure 135. Potential years of life lost due to all cancer deaths per 100,000 population, by sex, Canada and selected health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

2.1.6.3 Circulatory disease deaths - potential years of life lost rate

Definition

"Potential years of life lost (PYLL) (all circulatory disease deaths, ICD-9 390-459) is the number of years of life 'lost' when a person dies 'prematurely' from any circulatory disease—before age 75. A person dying at age 25, for example, has lost 50 years of life.

"Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a rate per 100,000 population."[28]

Data Source

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

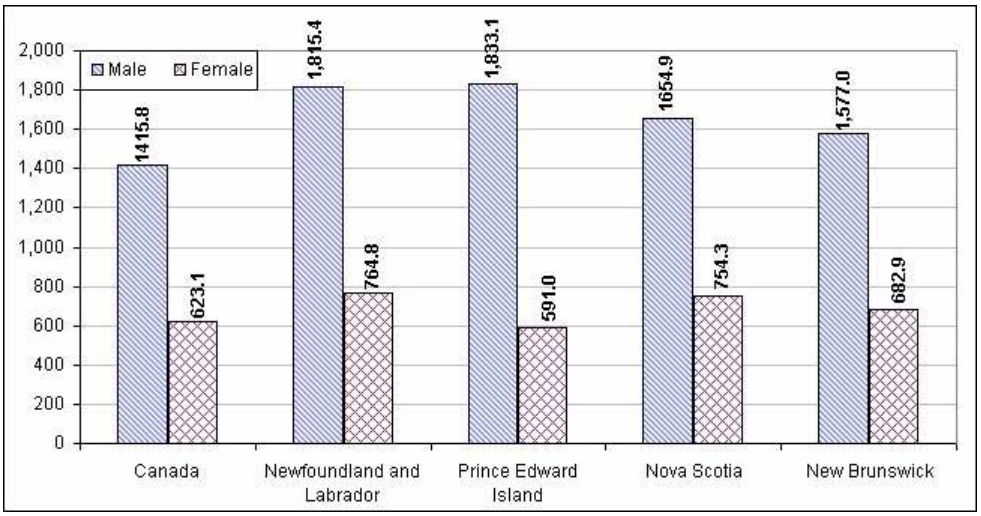
Results

Nationally, the rate for potential years of life lost due to all circulatory deaths in 1996 was 1,415.8 years for males and 623.1 females per 100,000 population, a 2.27:1 ratio. There were large gender variances for the Atlantic Provinces as well, with the largest gender variance occurring in Prince Edward Island (1,833.1 for males; 591.0 for females). Of the four Atlantic

[28] Statistics Canada, http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#d.

Provinces, only Prince Edward Island had a lower rate of PYLL due to circulatory diseases for females than the national average (Figure 136). Of the 21 Atlantic region health districts, 15 reported higher rates of PYLL due to circulatory diseases for females compared to the national rate. Six districts reported lower rates: Labrador (NF6) at 590.9, PEI/Rural at 518.6, Capital (NS6) at 604.9, Moncton (NB1) at 545.7, Campbellton (NB5) at 583.8 and Bathurst (NB6) at 548.0. Seven districts had notably high rates for females, including three in Newfoundland and Labrador: Eastern (NF2) at 917.9 years, Western (NF4) at 854.6 and Grenfell (NF5) at 841.0; three in Nova Scotia: South-Southwest (NS1) at 863.3 and Colchester-Cumberland-East Hants (NS3) at 937.1, and Cape Breton (NS5) at 1,041.9; and one in New Brunswick: Sussex/Saint John (NB2) at 878.5.

Figure 136. Potential years of life lost due to all circulatory disease deaths per 100,000 population, by sex, Canada and Atlantic Provinces, 1996 (rate)

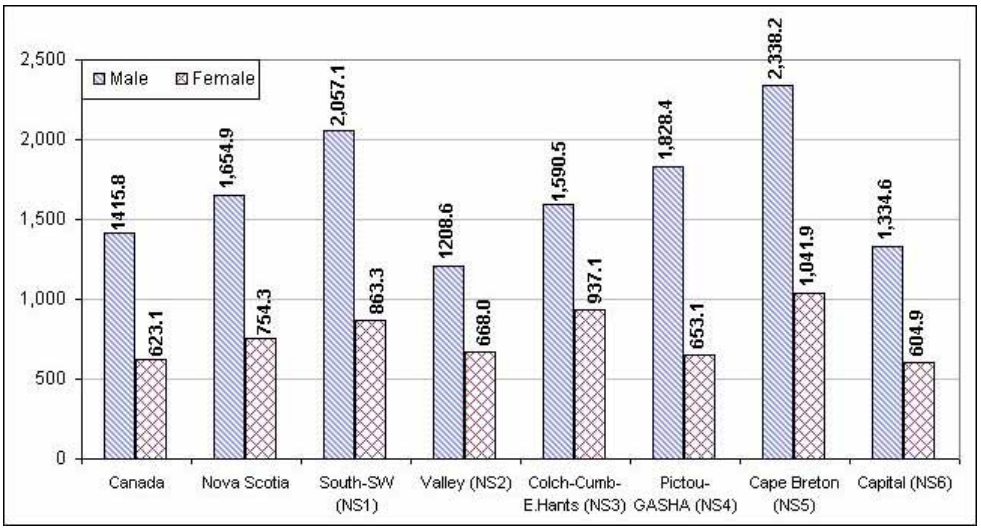


Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003; Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates).

Cape Breton had by far the highest rate of potential years of life lost due to circulatory diseases for both males and females in Atlantic Canada, with an overall rate 65% above the national average, and 74% higher than in Halifax. The magnitude of this disparity illustrates the danger of relying on provincial averages, and the necessity of examining intra-provincial differences.

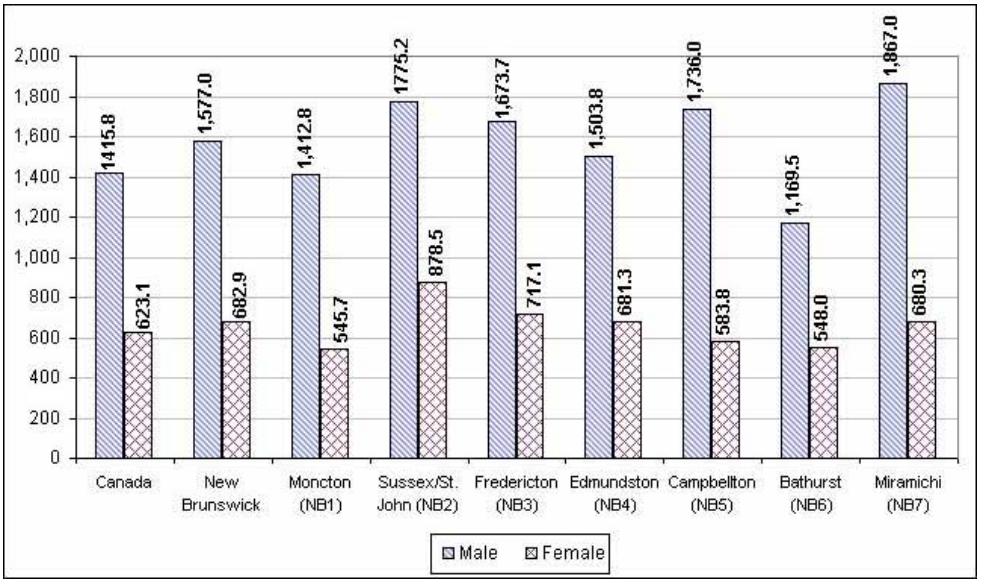
The intra-provincial disparities were also evident by gender. The widest range in rates of PYLL due to circulatory diseases for females occurred in Nova Scotia, with a low of 604.9 years in Capital (NS6) and a high of 1,041.9 years in Cape Breton (NS5) (Figure 137). New Brunswick rates range from a low of 545.7 for females in Moncton (NB1) to a high of 878.5 years in Sussex/Saint John (NB2) (Figure 138). In Newfoundland and Labrador, the lowest rate for females was in Labrador (NF6) at 590.9 and the highest in Eastern (NF2) at 917.9 years. Rural PEI had a rate of 518.6 years compared to 672.6 in urban PEI.

Figure 137. Potential years of life lost due to all circulatory disease deaths per 100,000 population, by sex, Canada and Nova Scotia health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

Figure 138. Potential years of life lost due to all circulatory disease deaths per 100,000 population, by sex, Canada and New Brunswick health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

2.1.6.4 Respiratory disease - deaths potential years of life lost rate

Definition

"Potential years of life lost (PYLL) (all respiratory disease deaths, ICD-9 460-519) is the number of years of life 'lost' when a person dies 'prematurely' from any respiratory disease—before age 75. A person dying at age 25, for example, has lost 50 years of life.

"Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a rate per 100,000 population."[29]

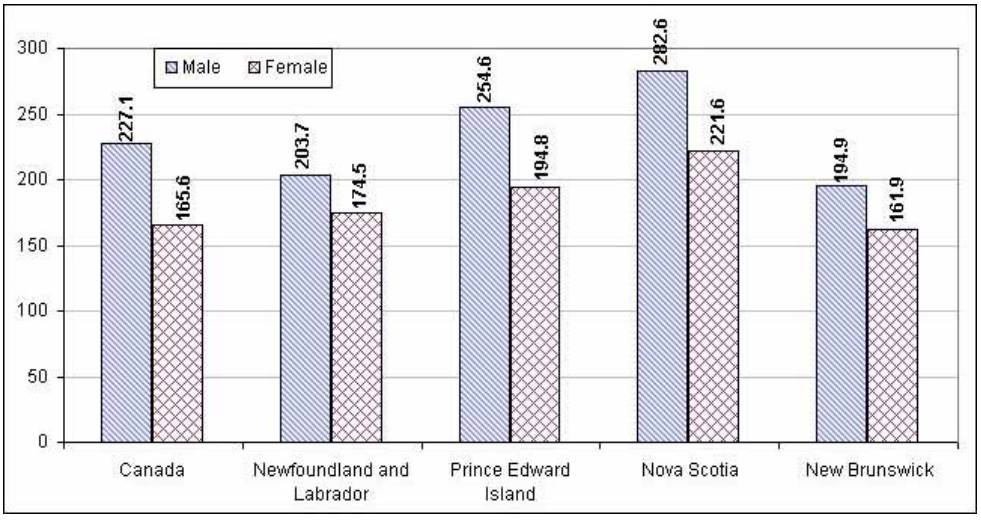
Data Source

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

Results

Potential years of life lost in Canada due to all respiratory diseases were 227.1 per 100,000 for males and 165.5 per 100,000 for females in 1996. The rates for males and females in PEI and Nova Scotia, and for females in Newfoundland and Labrador were higher than the national average (Figure 139). The rates for Newfoundland and Labrador males and for New Brunswick males and females were lower than the national average.

Figure 139. Potential years of life lost due to all respiratory disease deaths per 100,000 population, by sex, Canada and Atlantic Provinces, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

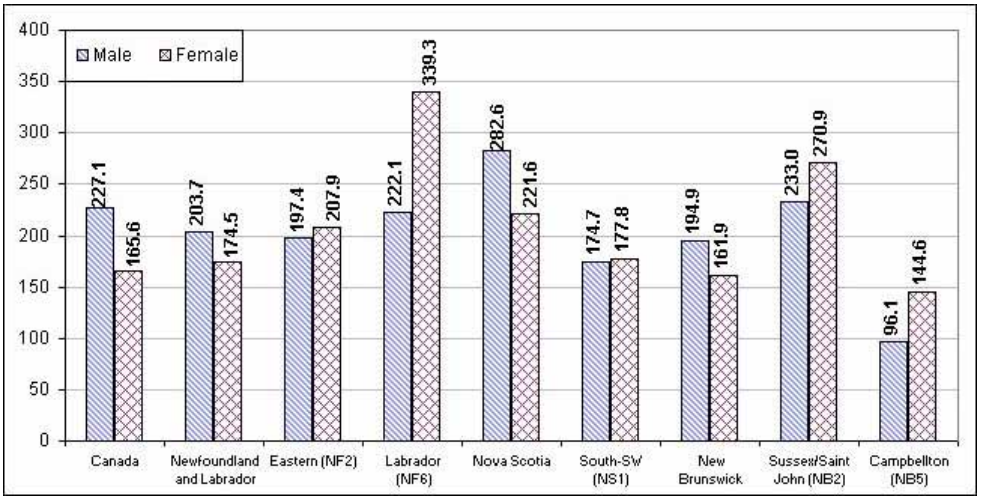
[29] Statistics Canada, http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#d.

The majority of Atlantic region health districts had higher than national rates of PYLL due to respiratory diseases for females, with the highest rate in Labrador (NF6) at 339.3 years and the lowest in Bathurst (NB6) at 57.8. Nine districts reported higher than national rates for males, with the highest rate for males in Cape Breton (NS5) at 359.4 and the lowest rate for males in Campbellton (NB5) at 96.1 years.

The very high rate of PYLL due to respiratory diseases for Labrador females – by far the highest in Atlantic Canada and more than double the Canadian rate – may be related to the very high rate of female smoking in that region, which is also by far the highest in Atlantic Canada. Fully 30% of Labrador females, aged 12 and over, smoke daily, compared to 23.3% of females in Newfoundland and Labrador as a whole, and 19.4% of Canadian females.[30]

In sixteen of the Atlantic region health districts, the rates of PYLL due to all respiratory deaths were higher for males than females. Although rates of PYLL due to respiratory diseases were generally higher for males than for females, there were five Atlantic region health districts where the female rate was higher than the male rate: Eastern (NF2) at 207.9 years for females and 197.4 for males, Labrador (NF6) at 339.3 for females and 222.1 for males, South-Southwest (NS1) at 177.8 for females and 174.7 for males), Sussex/Saint John (NB2) at 270.9 for females and 233.0 for males, and Campbellton (NB5) at 144.6 for females and 96.1 for males (Figure 140).

Figure 140. Potential years of life lost due to all respiratory disease deaths per 100,000 population, by sex, selected Atlantic Provinces, and selected Atlantic region health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted on 15 January 2003.

[30] Statistics Canada, Canadian Community Health Survey, 2000/01

2.1.6.5 Unintentional injury deaths - potential years of life lost rate

Definition

"Potential years of life lost (PYLL) (unintentional injuries, ICD-9 E800-E929, excluding E870-E879) is the number of years of life 'lost' when a person dies 'prematurely' from unintentional injuries—before age 75. A person dying at age 25, for example, has lost 50 years of life.

"Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a rate per 100,000 population."[31]

Data Source

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

Results

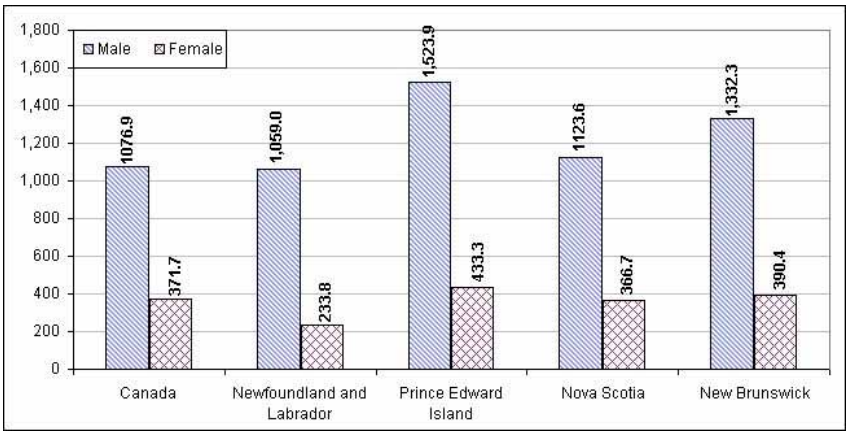
Some of the largest gender variances in PYLL statistics in Canada and the Atlantic Provinces occurred in the unintentional injury deaths category. Nationally, the PYLL rates for unintentional injury deaths were almost three times as high for males as for females — 1,076.9 for males compared to 371.7 for females. This may be due, at least in part, to occupational differences between the sexes. In the Atlantic Provinces, the male-female gap in all four provinces was even wider than in Canada as a whole. The largest gender differences in the PYLL rate for unintentional injury deaths were in Newfoundland and Labrador at 1,059.0 per 100,000 for males and 233.8 for females, and in Prince Edward Island with a PYLL rate of 1,523.9 for males and 433.3 for females (Figure 141).

The rates of PYLL due to unintentional injury deaths have dropped for both males and females since the mid-1980s, and there appears to be a gradual convergence between the two rates that may indicate a gradual decline in occupational differences between the sexes. Statistics for 1986 show that national rates for potential years of life lost due to deaths by unintentional injuries were 1,589.5 for males and 527.2 for females nationally, compared to 1,036.0 and 359.2 respectively for 1996, and 1,036.0 and 374.5 respectively for 1999. Thus the male:female ratio dropped from 3:1 in 1986 to 2.8:1 in 1999.

There were notably large differences between male and female rates of PYLL due to unintentional injury deaths in Eastern (NF2), with a rate of 1,420.9 potential years of life lost for males and 221.8 years for females; Western (NF4), with 1,271.5 years for males and 102.1 for females; PEI/Urban, with a rate for males at 1,358.0 and 171.8 for females; and Edmundston (NB4), with a rate 2,295.8 for males and 462.8 for females. The rate for females in Labrador (NF6), at 903.3 years, was almost 2.5 times the national rate, and by far the highest rate in Atlantic Canada.

[31] Statistics Canada, http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#d.

Figure 141. Potential years of life lost due to unintentional injury deaths per 100,000 population, by sex, Canada and Atlantic Provinces, 1996 (rate)

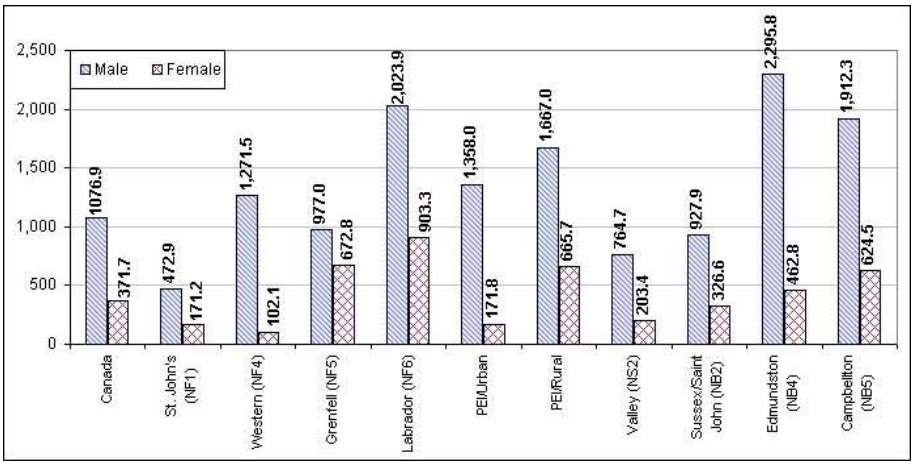


Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

Notably high rates of PYLL due to unintentional injury deaths for males occurred in some parts of Newfoundland and Labrador and New Brunswick, where the rates were approximately double the national rates: Labrador (NF6) at a rate of 2,023.9, Edmundston (NB4) at 2,295.8, and Campbellton (NB5) at a rate of 1,912.3 per 100,000 population. For females, notably high rates occurred in parts of Newfoundland and Labrador and PEI: Grenfell (NF5) at 672.8, Labrador (NF6) at 903.3, and PEI/Rural at 665.7.

Notably low rates of PYLL due to unintentional injury deaths for males occurred in three districts: St. John's (NF1) at 472.9, the Annapolis Valley (NS2) at 764.7, and Sussex/Saint John (NB2) at 927.9 years. Notably low rates for females occurred in Western (NF4) at 102.1, PEI/Urban at 171.8, and the Annapolis Valley (NS2) at 203.4 (Figure 142).

Figure 142. Potential years of life lost due to unintentional injury deaths per 100,000 population, by sex, Canada and selected health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

2.1.6.6 Suicide potential years of life lost (PYLL) rate

Definition

"Potential years of life lost (PYLL) (suicides, ICD-9 E950-E959) is the number of years of life 'lost' when a person dies 'prematurely' from suicide—before age 75. A person dying at age 25, for example, has lost 50 years of life.

"Potential years of life lost are calculated by taking the median age in each age group, subtracting from 75, and multiplying by the number of deaths in that age group disaggregated by sex and cause of death. These data are presented as a rate per 100,000 population."[32]

Data Source

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

Results

National rates of potential years of life lost in 1996 due to all suicides, both male (716.5 per 100,000) and female (181.6), were higher than for three of the Atlantic Provinces. The only exception was New Brunswick, where the rate for males (850.1 per 100,000 population) was higher than the national rate. Newfoundland and Labrador had the lowest rates of PYLL due to suicide in the country for both males (444.6) and females (66.5). The rates of PYLL due to suicide for males in Canada and in all Atlantic Provinces were much higher than those for females, – more than 6.6 times as high in both Newfoundland and Labrador and New Brunswick (Figure 143).

There were also considerable gender variances in some Atlantic region health districts. The male rate of PYLL due to suicides in Colchester-Cumberland-East Hants (NS3) was 22 times the female rate, and the male rate in Pictou-Guysborough-Antigonish-Strait (NS4) was 19.5 times the female rate. The lowest gender variance occurred in Annapolis Valley (NS2), where the male rate was 1.7 times the female rate. Due to very small sample sizes and high sampling variability in many districts, however, caution must be exercised in interpreting these differences.

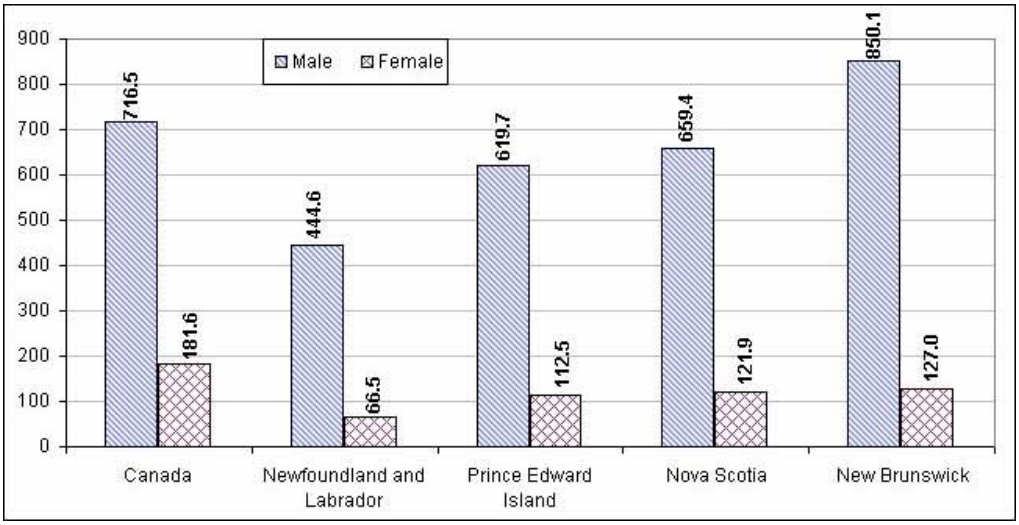
In three health districts, the female rates of PYLL due to suicide were higher than the national average: Annapolis Valley (NS2) at 274.1, Campbellton (NB5) at 300.0, and Edmundston (NB4) at 350.3, the highest rate in Atlantic Canada. Notably high rates of PYLL for males occurred in northern New Brunswick: Edmundston (NB4) at 1,433.3, Campbellton (NB5) at 1,287.3, Bathurst (NB6) at 1,225.5, and Miramichi (NB7) at 1,073.3.

Labrador (NF6) has a very high number of potential years of life lost due to both suicide and unintentional injuries. Residents of Labrador lost 938.1 years of life per 100,000 population to suicide every year – more than double the national average of 449.9. Residents of Labrador also

[32] Statistics Canada, http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#d.

lost 1,482 years of life per 100,000 population to unintentional injuries each year – again more than double the national average of 725.4.

Figure 143. Potential years of life lost due to suicide per 100,000 population, by sex, Canada and Atlantic Provinces, 1996 (rate)



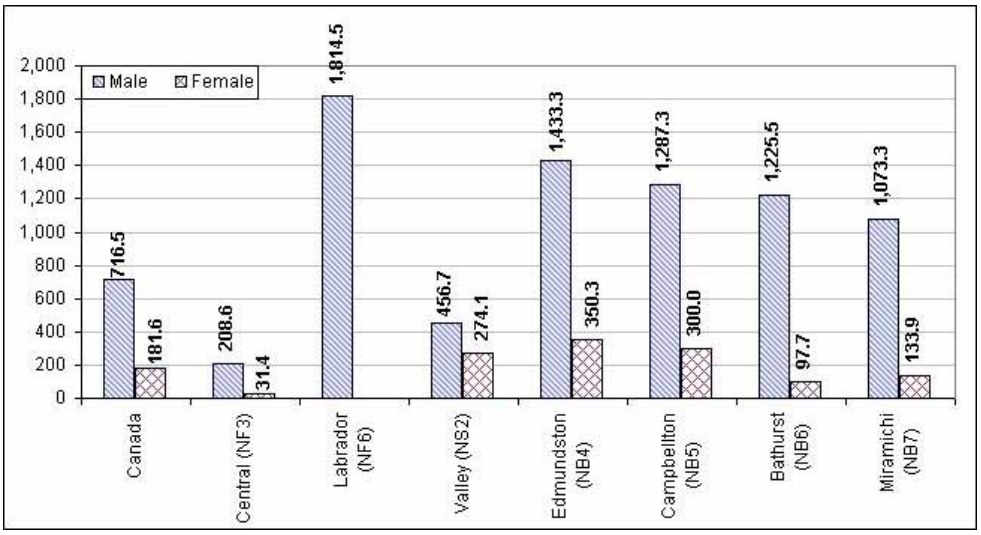
Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

For males in particular, Labrador had the highest rate of PYLL due to suicide in Atlantic Canada at 1,814.5 per 100,000 – more than 2.5 times the national rate and more than four times the rate for Newfoundland and Labrador as a whole. By contrast to Labrador, the rest of the province had very low rates of suicide and PYLL due to suicide, with the lowest rate in Atlantic Canada of PYLL due to suicide for males in Central (NF3) at 208.6 (Figures 144, 145, and 146).

The high rate of PYLL due to suicides for Labrador males reflects the region's large Aboriginal population and the high rate of suicide among the region's Aboriginal teenage boys. It also demonstrates the vital importance of examining intra-provincial disparities rather than relying on provincial averages alone, and of addressing the health status of disadvantaged groups and regions. Just as Labrador differs dramatically from Newfoundland in PYLL due to suicide for males (Figure 146), Figure 145 also demonstrates the striking difference in this indicator between the health districts of southern and northern New Brunswick.

As with all health district data, caution must be exercised in making comparisons and interpreting results, due to wide confidence intervals and high variability.

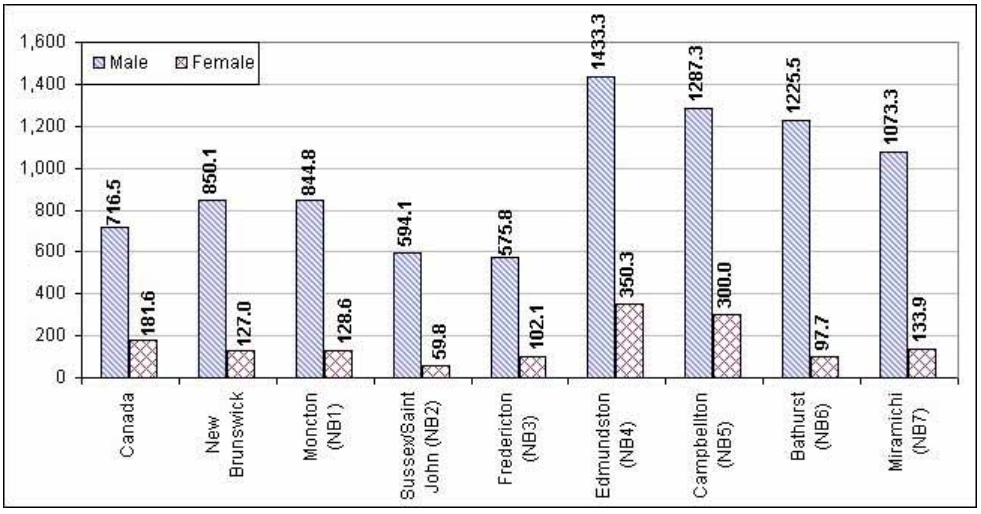
Figure 144. Potential years of life lost due to suicide per 100,000 population, by sex, Canada and selected Atlantic region health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

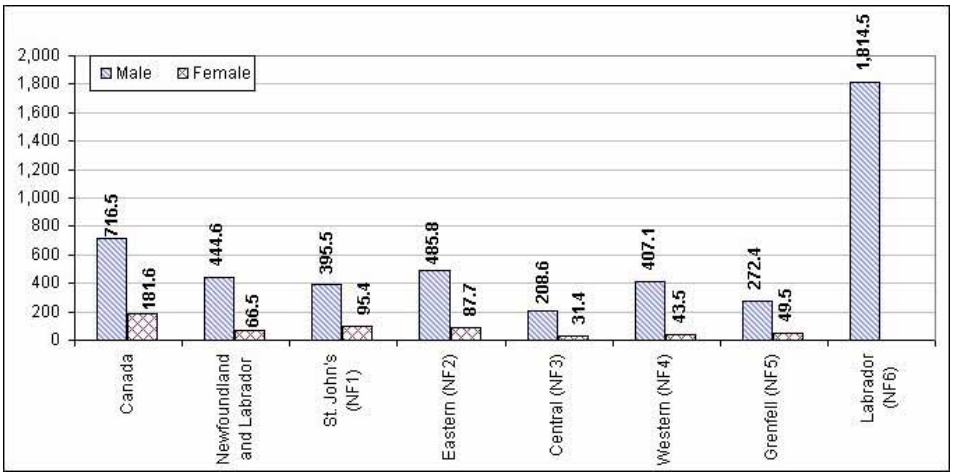
Note: Labrador (NF6) rates for potential years of life lost due to suicide for females unavailable.

Figure 145. Potential years of life lost due to suicide per 100,000 population, by sex, Canada and New Brunswick health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

Figure 146. Potential years of life lost due to suicide per 100,000 population, by sex, Canada and Newfoundland and Labrador health districts, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Death Database, and Demography Division; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths4.htm, extracted 15 January, 2003.

Note: Labrador (NF6) rates for potential years of life lost due to suicide for females are unavailable.

Summary – Self-Rated Health and Life Expectancy

Cape Breton (NS5) and Campbellton (NB5) were the two Atlantic region health districts that show the most consistent pattern of poor health outcomes for three key indicators:

- **Self-Rated Health**: In both districts a higher percentage of the population of both males and females rated their own health as "poor or fair" than in the region as a whole.
- **Functional Health**: Both had a higher than average percentage of the population reporting "moderate" or "severe" functional health problems.
- **Disability-Free Years**: Both had the lowest number of disability-free years in the region. Cape Bretoners had the shortest disability-free life expectancy of any health district in Canada.

Males had higher rates than females in almost all categories of potential years of life lost. The largest gender variances occurred in deaths by unintentional injuries and suicide, where Labrador males also had by far the worst rates in the region. In all these health outcome indicators, there were sharp intra-provincial disparities, with southern New Brunswickers generally showing better health outcomes than northern New Brunswickers, and residents of Halifax and the Annapolis Valley generally showing better health outcomes than other Nova Scotians, and much better outcomes than Cape Bretoners in particular.

Both nationally and in the Atlantic Provinces, cancer deaths accounted for the largest proportion of potential years of life lost. The Atlantic region rates of PYLL due to cancer for males were higher than the national rates in all four provinces, and Nova Scotian females had much higher rates of PYLL due to cancer than the national average.

2.2 Limitations on Physical Activity

Subjective health measures can be grouped into three categories: descriptions of general feelings of wellbeing and self-rated health, descriptions of symptoms, and the measurement of function and performance of activities.[33] The third of these categories includes self-reported limitations on physical activity. . Included in this section are data related to overall activity limitation, injuries, disability days, chronic pain, and the severity of that pain – all indicators used by Statistics Canada to assess limitations to physical activity. These broad measures of health outcomes have been in use since the *Canadian Health Survey* in 1978-79.

2.2.1 Activity limitation

The presence of a long-term disability or handicap in physical or mental health (or both) can have a serious impact on the overall experience of health and wellness. This indicator may also be linked to stress and other indicators of mental health.

In addition, disabilities and handicaps that limit activity can have negative social and economic consequences. Statistics Canada's Health and Activity Limitation Survey found that 16% of all Canadian women are disabled. According to the Disabled Women's Network Ontario (DAWN), women with disabilities suffer from a wide range of disadvantages. Disabled girls are twice as likely to be sexually assaulted, and suffer high rates of physical and emotional abuse and violence. Women with disabilities also have high rates of unemployment (74%) and poverty. According to Statistics Canada's Health and Activity Limitation Survey, the median employment income for a disabled woman is $8,360 compared to $19,250 for a disabled man.[34]

Definition

"Population aged 12 and over (for data from the Canadian Community Health Survey and National Population Health Survey, North component) who report having a disability or handicap (NPHS only) or being limited in certain activities on a continuing basis (at least six months) because of a physical condition, mental condition, or health problem."[35]

Data Sources

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

[33] Chen, M., & Bryant, B. "The Measurement of Health -- A Critical and Selective Overview," *International Journal of Epidemiology 4*(44):257-264, 1975.
[34] Disabled Women's Network Ontario, Fact sheet, available at: http://www.thot.net/~dawn/fact.html.
[35] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#17.

Results

Nationally, 20.7% of males and more than one-quarter of females, aged 12 and over, reported an activity limitation or handicap in 2000/01, a sharp increase from rates of activity limitation below 20% in the 1994/95, 1996/97, and 1998/99 National Population Health Surveys (Table B2).

Table B2. Canadian males and females reporting activity limitations, 1994/95 – 2000/01, aged 12 and over (%)

	1994/95		1996/97		1998/99		2000/01	
	Male	Female	Male	Female	Male	Female	Male	Female
Activity limitation	14.9	17.9	11.8	14.0	12.6	15.1	20.7	25.1
No activity limitation	85.1	82.1	88.0	85.9	87.2	84.6	79.3	74.9

Sources: Statistics Canada, Canadian Community Health Survey 2000-01, National Population Health Surveys, 1994/95, 1996/97, and 1998/99.

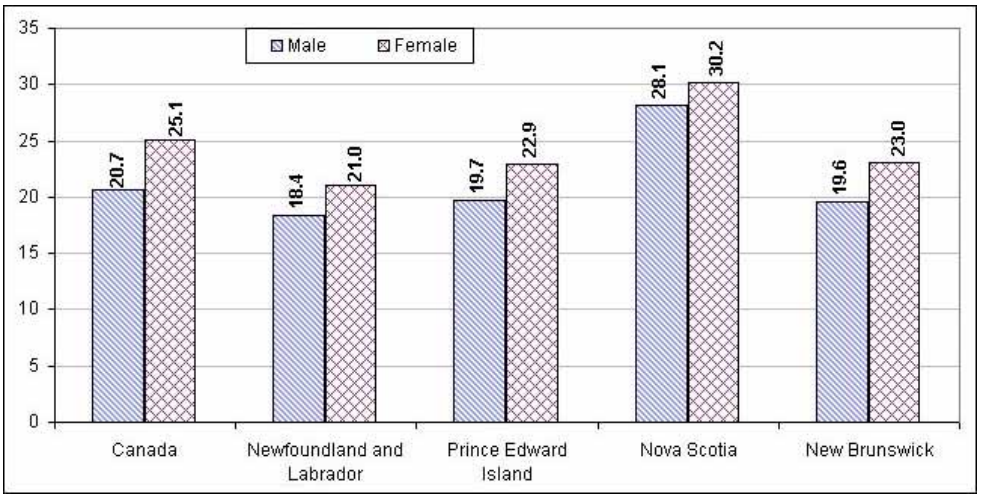
The highest rate of activity limitation for both sexes combined in 2000/01 in the country was in Nova Scotia (29.2%), followed by Alberta (26.1%), Saskatchewan and British Columbia (25.3%), and Ontario (23.3%). The lowest rates of activity limitation were in Quebec (19.2%), Newfoundland (19.7%), Manitoba (21%), and PEI and New Brunswick (21.3%). Women had higher levels of activity limitation than men in every province, but the pattern was sharply reversed in a few jurisdictions. In Cape Breton, for example, 36.5% of men and 31.7% of women reported an activity limitation – one of the highest rates of activity limitation in the country.[36]

In the Atlantic Provinces generally, females were more likely than males to report activity limitation (Figure 147). Nova Scotian men and women had, by far, the highest rates of activity limitation in the region: 28.1% for males and 30.2% for females. The other three provinces had lower rates of activity limitation for both males and females.

Twelve of the 21 Atlantic region health districts had higher rates of activity limitation than the national average, including all six Nova Scotia health districts. Cape Breton (NS5) had the highest rates of activity limitation in the region (Figure 148).

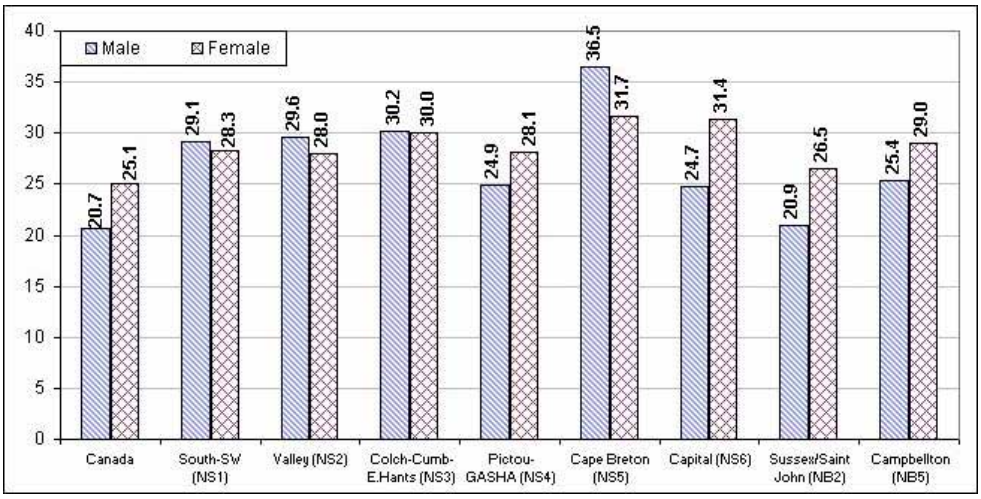
[36] Statistics Canada, Canadian Community Health Survey 2000-01, "Activity limitation, by sex, household population aged 12 and over, Canada, provinces, territories, health regions and peer groups, 2000/01," available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/1336.htm, and Statistics Canada, National Population Health Surveys 1994-95, 1996-97, and 1998-99, "Activity limitation, by sex, household population aged 4 and over, Canada and provinces, 1994/95-1998/99," available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/1332n.htm.

Figure 147. Population aged 12 and over with activity limitation, by sex, Canada and Atlantic Provinces, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

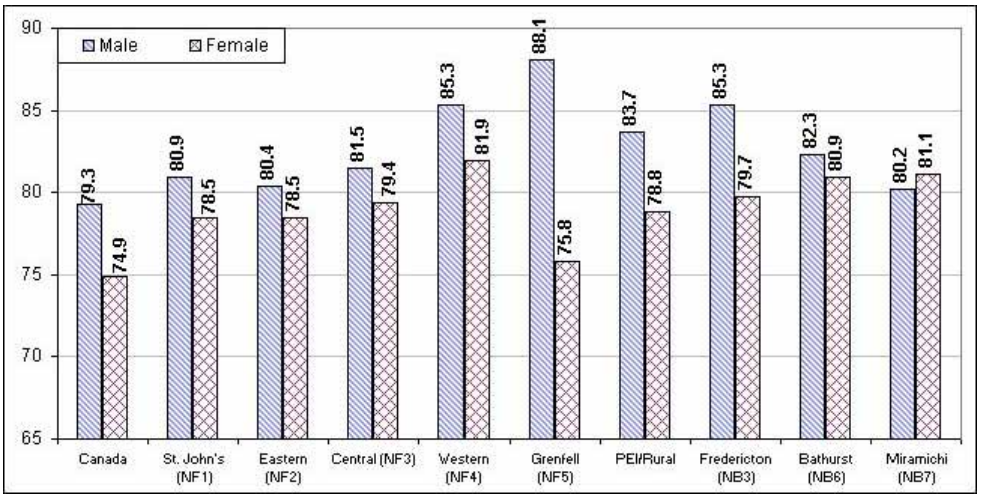
Figure 148. Population aged 12 and over with activity limitation, by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Ten health districts in the Atlantic region, including all five Newfoundland health districts (but not Labrador), had higher percentages of the population reporting no activity limitation than the national average. Significantly higher percentages of males in Western (NF4), Grenfell (NF5), and Fredericton (NB3) reported no activity limitation, compared to the national average. For females, Western (NF4), Bathurst (NB6) and Miramichi (NB7) had the highest rates reporting no activity limitation (Figure 149).

Figure 149. Population aged 12 and over with no activity limitation, by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

2.2.2 Injuries limiting activities

2.2.2.1 Injuries causing limitation of normal activity

Definition

"Population aged 12 and over who sustained injuries within the 12-month period prior to the survey. Includes all injuries serious enough to limit one's normal activities, but does not include repetitive strain injury."[37]

Data Sources

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

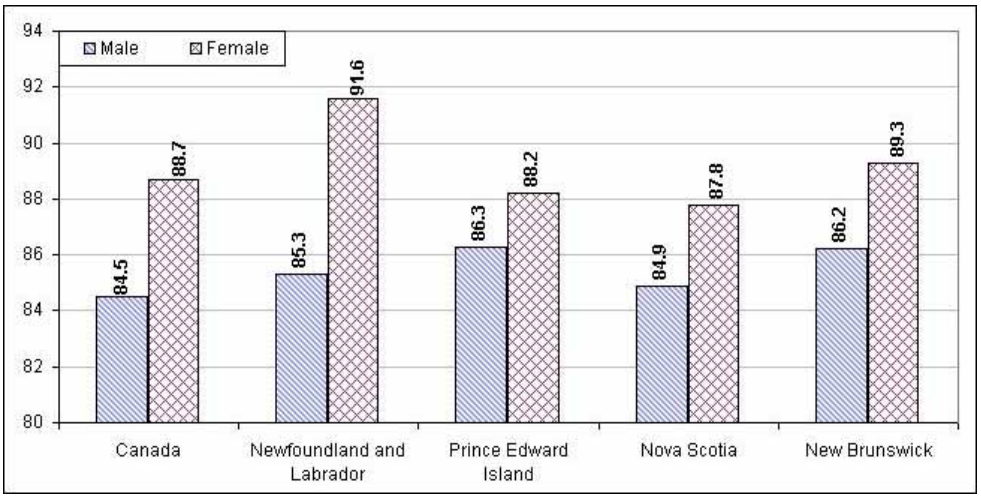
Results

Nationally, 84.5% of males and 88.7% of females did not report any injuries that limited normal activity within the 12-month period prior to the 2000/01 Canadian Community Health Survey. Both in Canada and in all four Atlantic Provinces, a higher percentage of females than males reported no such injuries in the 12 months prior to the survey. In the Atlantic Provinces,

[37] Statistics Canada http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions5.htm.

Newfoundland and Labrador had the highest percentage of females reporting no injuries limiting normal activity in the past 12 months (91.6%), followed by New Brunswick at 89.3% (Figure 150). In 18 of the 21 Atlantic region health districts, more females than males reported having no injuries in the 12 months prior to the survey. The three exceptions were Labrador (NF6), PEI/Urban, and Fredericton (NB3), where more males than females reported having no injuries that limited normal activity.

Figure 150. Population aged 12 and over reporting no injuries in the past 12 months that limited normal activity, by sex, Canada and Atlantic Provinces, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions5.htm, extracted 9 February, 2003.

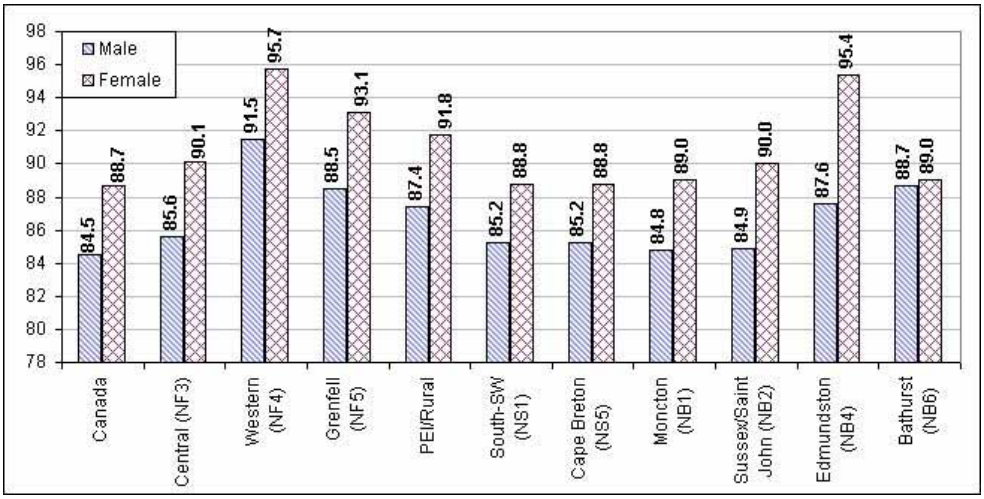
Fifteen of the 21 Atlantic region health districts had higher proportions of people than the national average reporting no injuries in the past 12 months that limited normal activity . Western Newfoundland (NF4) had the highest percentage of both males and females reporting no such injuries: 91.5% of males and 95.7% of females (Figure 151).

The gender variance for no reported injuries in the 12-month period prior to the survey ranged from a 13.1% spread for Colchester-Cumberland-East Hants (NS3) (86.8% female, 76.7% male) to negligible spreads for Capital (NS6) (87.4% female, 87.1% male) and Bathurst (NB6) (88.7% male, 89.0% female). This compares to a national average variance of 4.9% (Figure 152).

Twelve of the 21 Atlantic region health districts, including all health districts in Nova Scotia except the Halifax region (Capital – NS6), had higher than national rates of injuries in the 12 months prior to the survey that limited normal activity and for which medical attention was sought (Figure 153). Colchester-Cumberland-East Hants (NS3) had the highest percentage of males who sustained injuries that limited their normal activity and who sought medical attention for those injuries – 15.3% of males, compared to 10% nationwide. PEI/Urban had the highest percentage of females in this category (10.4% compared to 7.2% nationwide). It should be noted that, due to small sample sizes, many of the data for this indicator have high sampling variability

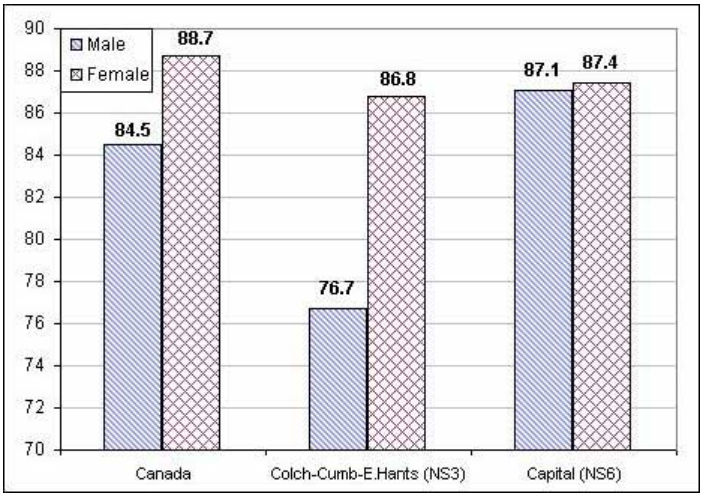
with a coefficient of variation between 16.6% and 33.3%, and should therefore be interpreted with caution.

Figure 151. Population aged 12 and over reporting no injuries in the past 12 months, by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



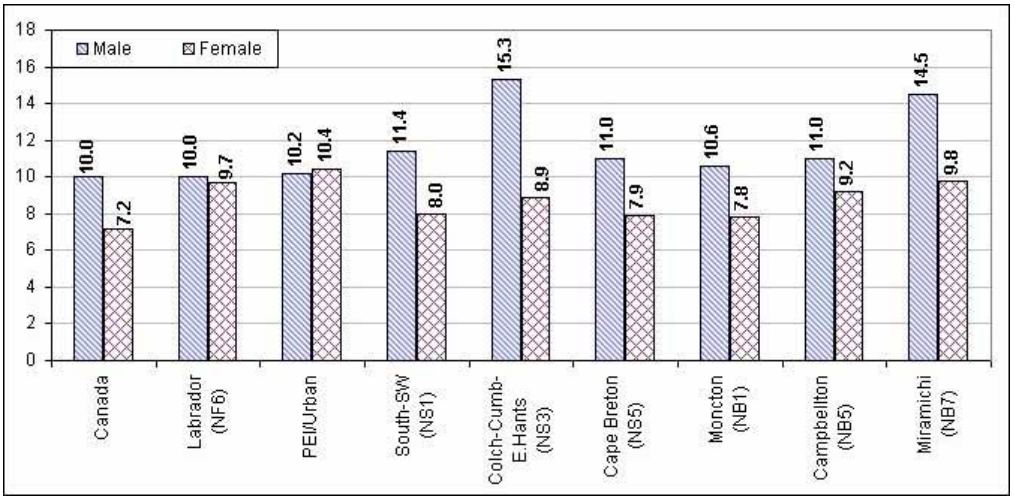
Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions5.htm, extracted 9 February, 2003.

Figure 152. Population aged 12 and over reporting no injuries in the past 12 months, by sex, Canada and Atlantic Province health districts with the highest and lowest gender variance, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions5.htm, extracted 3 January, 2003.

Figure 153. Population aged 12 and over who sustained injuries in the past 12 months and sought medical attention, by sex, Canada and selected Atlantic Province health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions5.htm, extracted 3 January, 2003.

Note: Data for both genders in Labrador (NF6), South-Southwest (NS1), Annapolis Valley (NS2), Campbellton (NB5) and Bathurst (NB6); data for males in PEI/Urban, Moncton (NB1) and Miramichi (NB7); and data for females in Colchester-Cumberland-East Hants (NS3) and Cape Breton (NS5) have a CV from 16.6% to 33.3% and should be interpreted with caution.

2.2.3 Disability days

Disability days are not only an indicator of health status, but are also linked to socio-economic status. The 1996/97 National Population Health Survey data demonstrated a connection between low-income levels and increased disability days. It is not yet known what the nature of this relationship is: whether higher disability days lead to lower income, whether low income leads to higher disability days, or whether the linkage is the result of a combination of both factors.[38] While more females than males report disability days in a two-week period, the percentages are reversed for the lowest income groups. Further studies are needed to establish and understand the nature of the relationship. The rate of disability days also affects a region's economic productivity, with higher rates potentially reducing productivity, increasing labour costs, and acting as an economic drain.

Definition

"The population (aged 12 and over for data from the Canadian Community Health Survey and National Population Health Survey, North component) who stayed in bed or cut down on normal

[38] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.

activities because of illness or injury, on one or more days in the two-week period prior to the survey."[39]

Data Sources

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

Results

In 2001/01, 18.6% of Canadian women and 13.6% of men reported one or more disability days in the two weeks prior to the survey (henceforth called "two-week disability days"). The rate of two-week disability days was highest in Nova Scotia (19.7%), Alberta (19%), British Columbia (18.2%), New Brunswick and Saskatchewan (17.8%) and lowest in Quebec (13%), Newfoundland (15.4%), PEI (15.5%), Manitoba (15.6%), and Ontario (16.4%).[40] In 2000/01, the rate of two-week disability days climbed sharply from rates reported in the National Population Health Surveys in the 1990s (Table B3).[41]

Table B3. Canadian males and females reporting one or more two-week disability days, 1994/95 – 2000/01, population 12 and over(%)

	1994/95		1996/97		1998/99		2000/01	
	Male	Female	Male	Female	Male	Female	Male	Female
One or more two-week disability days	11.6	16.9	10.4	14.1	10.9	15.8	13.6	18.6

Sources: Statistics Canada, Canadian Community Health Survey 2000-01, National Population Health Surveys, 1994/95, 1996/97, and 1998/99.

Compared to the national average for reported disability days in the two-week period prior to the survey (13.6% and 18.6% for males and females respectively), both Nova Scotia and New Brunswick had higher rates for both genders. Prince Edward Island had fewer males (12.4%) and Newfoundland and Labrador fewer females (17.2%) reporting disability days in the two-week period when compared to Canada (Figure 154).

Six Atlantic region health districts had higher percentages of people reporting no disability days in a two-week period than the national average. Grenfell (NF5) had the highest percentage of both males (92.8%) and females (87.8%) without disability days in the two weeks prior to the

[39] http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#16

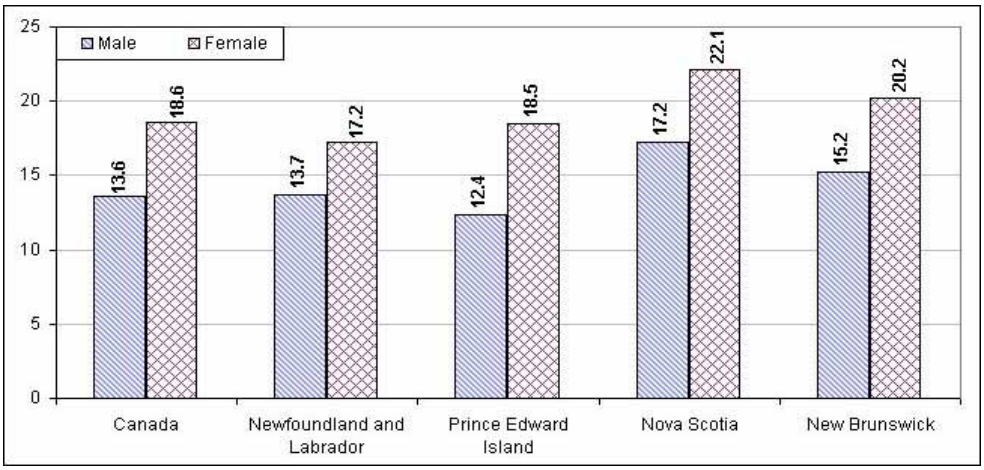
[40] Statistics Canada, Canadian Community Health Survey 2000-01, "Two-week disability days, by sex, household population aged 12 and over, Canada, provinces, territories, health regions and peer groups, 2000/01," available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/1326.htm.

[41] Idem., and Statistics Canada, National Population Health Surveys 1994-95, 1996-97, and 1998-99, "Two-week disability days, by age group and sex, household population, Canada excluding territories, 1994/95-1998/99," available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/1332n.htm.

survey. In five of these districts, men were more likely than women to report no two-week disability days, while women in Central (NF3) were more likely than men to report no disability days (Figure 155).

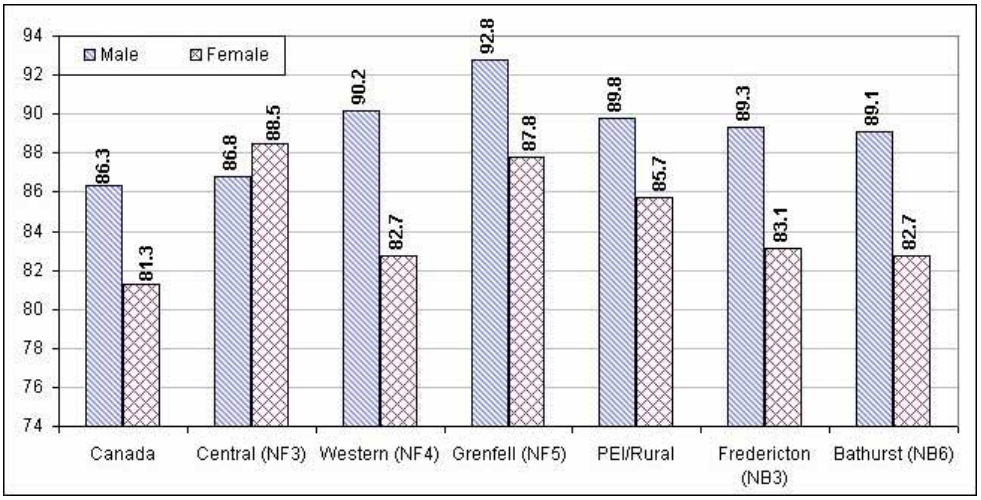
Among women, Central (NF3) and Grenfell (NF5) had the highest percentages of females without disability days in a two-week period; while Labrador (NF6) and Colchester-Cumberland-East Hants (NS3) had the lowest percentages (Figure 156).

Figure 154. Population aged 12 and over with one or more disability days in a two-week period, by sex, Canada and Atlantic Provinces, 2000/01 (%)



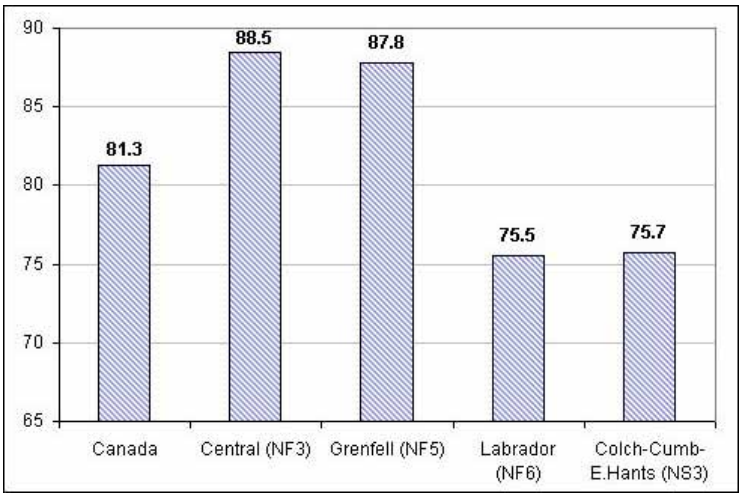
Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Figure 155. Population aged 12 and over with no disability days in a two-week period, by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

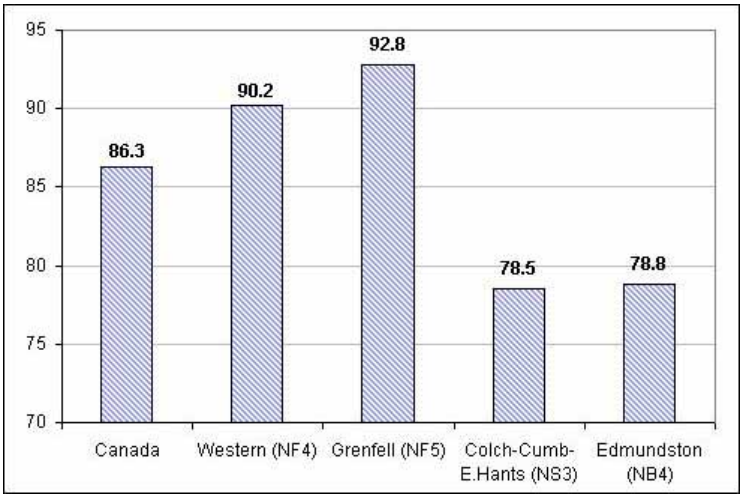
Figure 156. Population aged 12 and over with no disability days in a two-week period, females, Canada and selected Atlantic region health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Grenfell (NF5) and Western (NF4) had the highest percentages of males reporting no disability days in a two-week period, while Colchester-Cumberland-East Hants (NS3) and Edmundston (NB4) had the lowest percentages (Figure 157).

Figure 157. Population aged 12 and over with no disability days in a two-week period, males, Canada and selected Atlantic region health districts, 2000/01 (%)



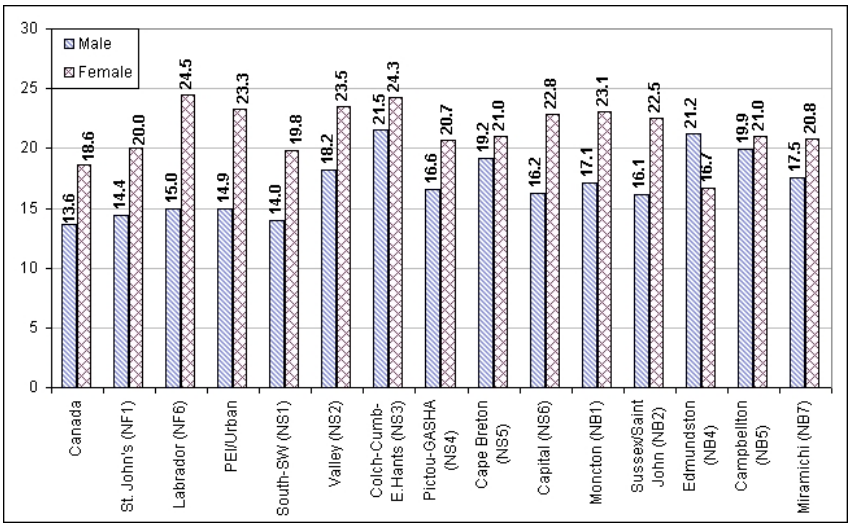
Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Fifteen of the 21 Atlantic region health districts, including every health district in Nova Scotia, had higher rates of two-week disability days than Canada. For both sexes combined, Colchester-

Cumberland-East Hants (NS3) had the highest rate of two-week disability days in the Atlantic region at 22.9%, followed by the Annapolis Valley at 20.9%, Campbellton (NB5) at 20.4%, and Moncton (NB1) and Cape Breton (NS5) both at 20.2%, compared to the national average of 16.2%.

For males, Colchester-Cumberland-East Hants (NS3) had the highest percentage of males in Atlantic Canada reporting one or more disability days in a two-week period at 21.5%, while Labrador (NF6) at 24.5% had the highest percentage for females (Figure 158). While females were more likely than males to report two-week disability days in 19 of the 21 Atlantic region health districts, more males than females reported one or more disability days in a two-week period in Edmundston (NB4) at 21.2% for males and 16.7% for females and in Central (NF3) at 13.2% for males and 11.5% for females.

Figure 158. Population aged 12 and over with one or more disability days in a two-week period, by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Note: Data for males in Labrador (NF6) and Annapolis Valley (NS2) have a CV from 16.6% to 33.3% and should be interpreted with caution.

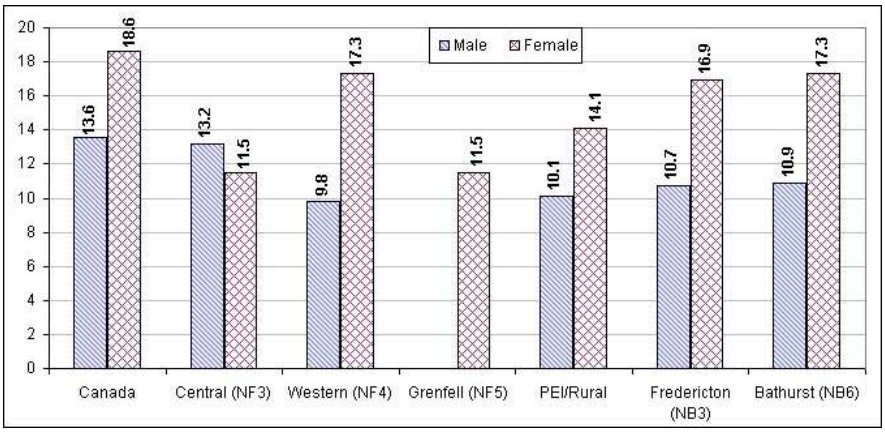
Six health districts had a lower percentage of both males and females reporting one or more disability days in a two-week period than the Canadian average (Figure 159). For females, Central (NF3) and Grenfell (NF5)[42] had the lowest percentages of two-week disability days in Atlantic Canada at 11.5%. For males, Western (NF4) had the lowest percentage of two-week disability days in Atlantic Canada at 9.8%.[43] PEI/Rural at 10.1%, Fredericton (NB3) at 10.7%, and Bathurst (NB6) at 10.9%[44] also had notably lower proportions of the male population

[42] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.
[43] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.
[44] Data for Fredericton (NB3) and Bathurst (NB6) have a CV from 16.6% to 33.3% and should be interpreted with caution.

reporting one or more disability days than the national average. Figure 160 shows the gender gap for disability days in some Atlantic health districts.

Due to small sample sizes, some of these results are subject to high sampling variability and a wide coefficient of variation, and so should be interpreted with caution. Data for males in Grenfell (NF5) have a CV greater than 33.3%, so data were suppressed by Statistics Canada due to extreme sampling variability,

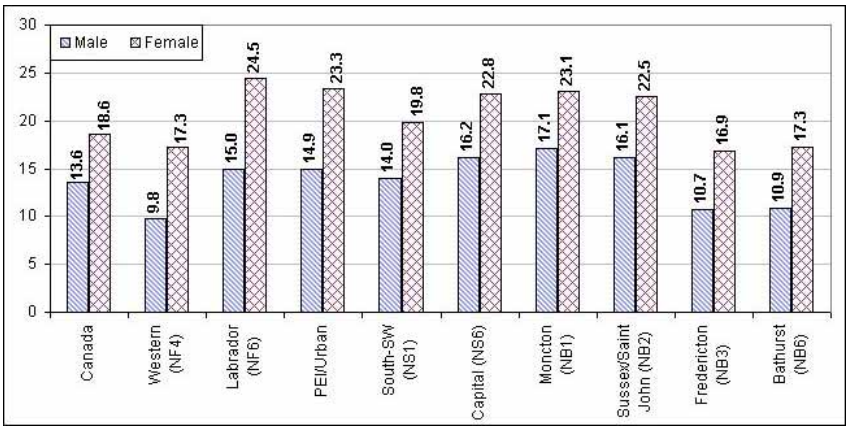
Figure 159. Population aged 12 and over with one or more disability days in a two-week period, in Atlantic region health districts with lower rates than Canada, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

Note: Data for males in Western (NF4), Fredericton (NB3), and Bathurst (NB6) have a CV from 16.6% to 33.3% and should be interpreted with caution. Data for females in Grenfell (NF5) and Bathurst (NB6) have a CV from 16.6% to 33.3% and should be interpreted with caution. Data for males in Grenfell (NF5) are unavailable as the CV is greater than 33.3% and data were suppressed due to extreme sampling variability.

Figure 160. Population aged 12 and over with one or more disability days in a two-week period, Canada and selected Atlantic region health districts with a wide gender gap, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/function1.htm, extracted 3 January, 2003.

2.2.4 Chronic pain

Chronic pain can have an adverse impact on mental and physical health which, in turn, impacts ability to conduct activities, including paid work. Thus, chronic pain that severely limits activities may negatively affect socio-economic status, due to a decreased ability to work for pay, or to undertake education, training, and other activities. Females report far higher rates of chronic pain than males. As well, recent studies show that females are more likely than males both to report one or more pain episodes over their life span, and to report multiple pain conditions (three or more episodes).[45]

2.2.4.1 Pain or discomfort that affects activities

Definition

"Population aged 12 and over (for data from the Canadian Community Health Survey and National Population Health Survey, North component) who report having pain or discomfort which prevents or limits certain activities on a continuing basis."[46]

Data Sources

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

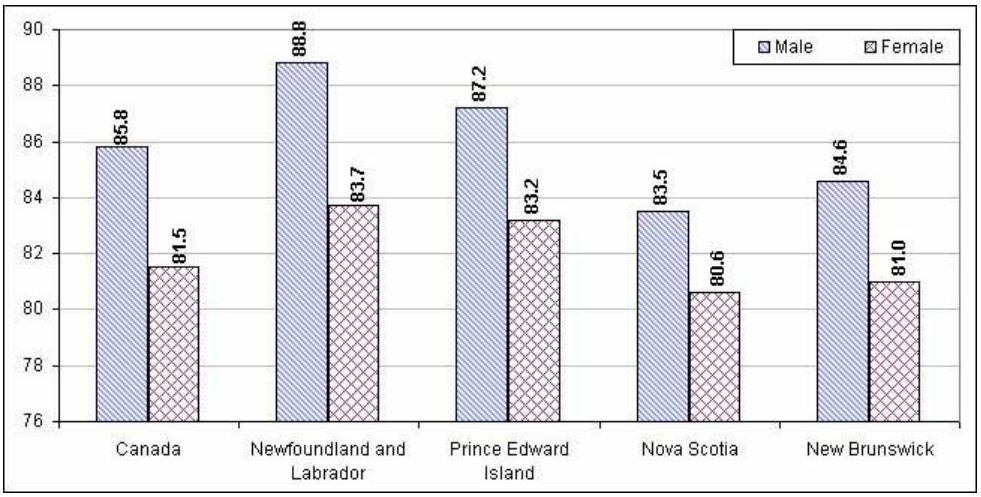
Results

In both Canada and the Atlantic Provinces, more than 80% of males and females reported no pain affecting activities in 2000/01. A higher percentage of people had no pain or discomfort affecting activities in Newfoundland and Labrador and in Prince Edward Island than the national average, while fewer people were pain-free in Nova Scotia and New Brunswick (Figure 161).

In Canada, and in 17 of the 21 health districts in Atlantic Canada, higher percentages of males than females reported no pain or discomfort that affects activities. The four districts with higher or equal percentages of females than males reporting no pain or discomfort affecting activities included Cape Breton (NS5) with 77.5% of males and 79.4% of females, Moncton (NB1) with 81.5% of males and 82.6% of females, Edmundston (NB4) with 78.1% males and 80.8% of females, and Miramichi (NB7) with 85.8% of both males and females. In the Atlantic region, Colchester-Cumberland-East Hants (NS3) had the lowest percentage of females reporting no pain or discomfort at 76.8%, and Cape Breton (NS5) had the lowest percentage of males reporting no pain or discomfort at 77.5%.

[45] Kitt, C.A. *et al.*, *Health Disparities in Treatment and Management of Chronic Pain Disorders*. Program and abstracts of the 20th Annual Scientific Meeting of the American Pain Society; April 19-22, 2001; Phoenix, Arizona.
[46] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#9.

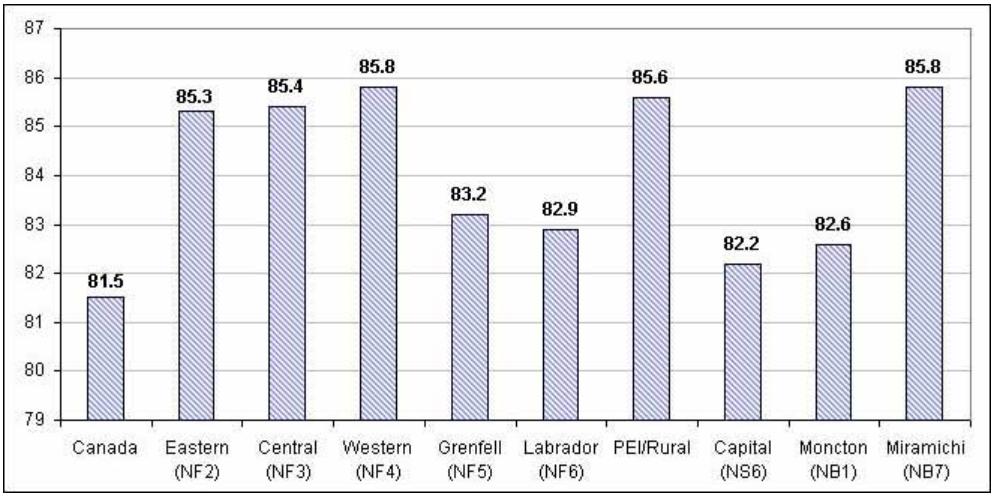
Figure 161. Population aged 12 and over reporting no pain or discomfort, by sex, Canada and Atlantic Provinces, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions2.htm#activities, extracted 3 January, 2003.

For females, nine of the health districts in Atlantic Canada, including all the rural regions of Newfoundland and Labrador, reported percentages of "no pain or discomfort" that were higher than the national average of 81.5%. Eastern (NF2), Central (NF3), Western (NF4), PEI/Rural, and Miramichi (NB7) reported percentages above 85%. Also above the national average were Grenfell (NF5), Labrador (NF6), Capital (NS6) and Moncton (NB1) (Figure 162).

Figure 162. Female population aged 12 and over reporting no pain or discomfort, Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions2.htm#activities, extracted 3 January, 2003.

In the 2000/01 Canadian Community Health Survey, 11% of Canadian women and 7% of men reported suffering from pain or discomfort that prevented a few or some activities. Another 3.1% of women and 2.7% of men reported suffering from pain or discomfort that prevented most activities.

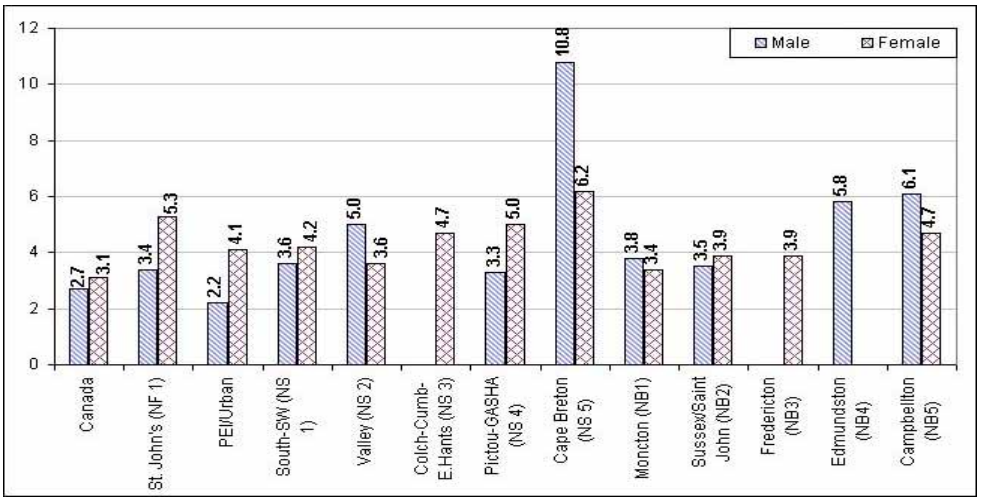
Reports of pain or discomfort that "prevents most activities" were higher than national averages in 12 Atlantic region health districts, although these results should be interpreted with caution due to high sampling variability and a coefficient of variation (CV) for most districts from 16.6% to 33.3%. Cape Breton (NS5) had by far the highest rate in Atlantic Canada of pain or discomfort preventing most activities (8.4% compared to a national average of 2.9%.) The percentage of Cape Breton males reporting pain or discomfort that prevents most activities was four times higher than the national average (10.8% compared to 2.7%), and for females it is twice as high.[47]

All the health districts in Nova Scotia and all but one in New Brunswick had higher rates of pain or discomfort affecting most activities than the national average, including 5.8% of males in Edmundston (NB4) and 6.1% of males in Campbellton (NB5) (Figure 163).[48] For females, the health districts with the lowest reported percentages of pain or discomfort that "prevents most activities" included PEI/Rural at 2.6%, Miramichi (NB7) at 2.6%, Capital (NS6) at 2.8%, and Bathurst (NB6) at 2.8% (Figure 164).[49] These results should be interpreted with caution due to high sampling variability and a coefficient of variation (CV) from 16.6% to 33.3%.

Data for males and females in Central (NF3), Grenfell (NF5), and Labrador (NF6), for men in Colchester-Cumberland-East Hants (NS3), Fredericton (NB3), and Miramichi (NB7), and for women in Eastern (NF2) and Western (NF5) had a coefficient of variation greater than 33.3%, and were therefore suppressed by Statistics Canada due to extreme sampling variability.

[47] Data for Cape Breton males and females taken separately have a CV from 16.6% to 33.3% and should be interpreted with caution, although the composite results for both sexes taken together have a CV of <16.6%.
[48] Data for males in Edmundston (NB4) and Campbellton (NB5) have a CV from 16.6% to 33.3% and should be interpreted with caution.
[49] Data for females in Rural PEI, Miramichi (NB7), Capital (NS6), and Bathurst (NB6) have a CV from 16.6% to 33.3% and should be interpreted with caution.

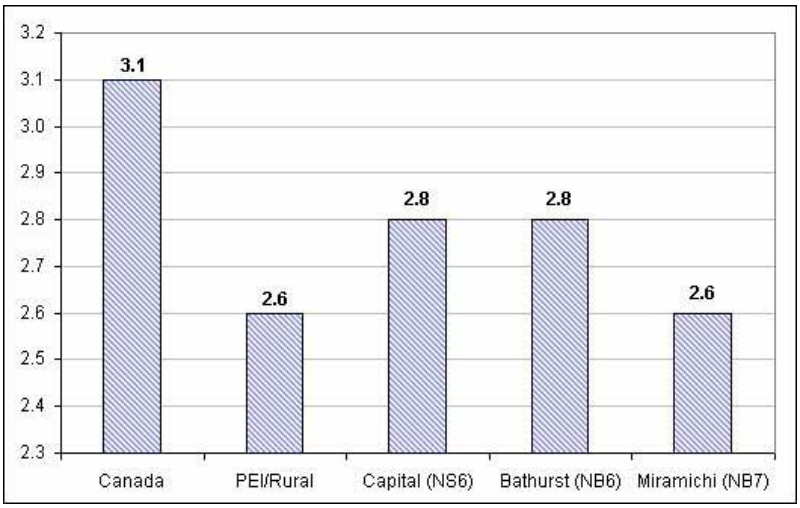
Figure 163. Population aged 12 and over with pain or discomfort that "prevents most activities," by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions2.htm#activities, extracted 3 January, 2003.

Note: All the data in this Figure except for Canada have a CV from 16.6% to 33.3% and should be interpreted with caution. Data for males in Colchester-Cumberland-East Hants (NS3) and Fredericton (NB3), and for females in Edmundston (NB4), have a CV that is greater than 33.3% and data were therefore suppressed by Statistics Canada due to extreme sampling variability.

Figure 164. Female population aged 12 and over reporting pain or discomfort that "prevents most activities," Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions2.htm#activities, extracted 3 January, 2003.

Note: All data in this Figure except for Canada have a CV from 16.6% to 33.3% and should be interpreted with caution.

2.2.4.2 Severity of chronic pain

Definition

"Population aged 12 and over (for data from the Canadian Community Health Survey and National Population Health Survey, North component) who answered 'yes' or 'no' when asked if they were usually free of pain or discomfort. Severity of pain is measured as severe, moderate or mild."[50]

Data Sources

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

Results

As indicated previously, more than 80% of respondents, both at the national level and in the Atlantic region health districts, reported no pain that affects activities in 2000/01 (Figure 161). The percentage of males and females reporting "severe pain or discomfort" in Newfoundland and Labrador and PEI was lower than the national average, while the percentage of males and females with "severe pain or discomfort" in Nova Scotia and New Brunswick was higher than the national average. Nova Scotia had the highest percentage of reported "severe pain and discomfort" in the country for both males (2.9%) and females (4.0%). Within Atlantic Canada, Newfoundland and Labrador reported the lowest rate of "severe pain and discomfort" (1.2% males, 2.6% females). It should be noted that data for Newfoundland males and for PEI males and females have a CV from 16.6% to 33.3% and should be interpreted with caution (Figure 165).

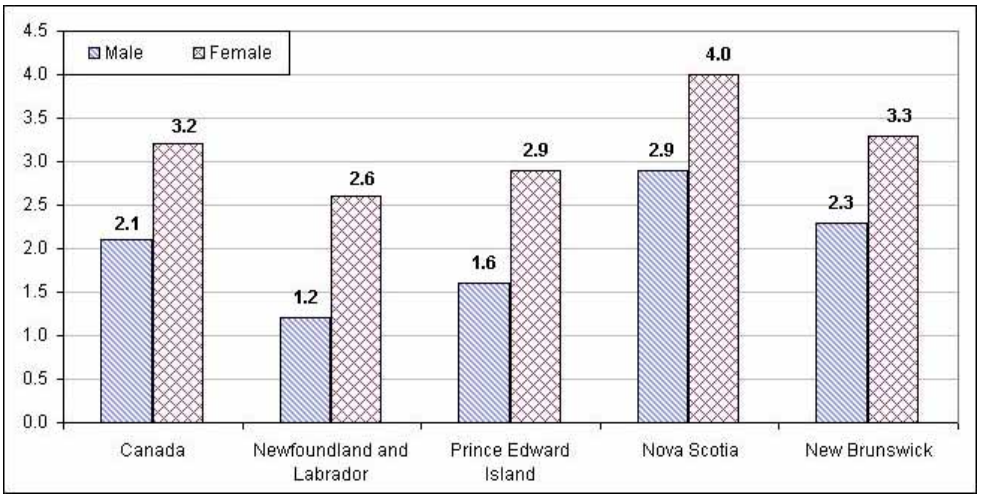
Among females, the health districts reporting the highest rates of "severe pain or discomfort" in Atlantic Canada included Colchester-Cumberland-East Hants (NS3) at 6.5%, Cape Breton (NS5) at 6.6%, and Bathurst (NB6) at 4.4%, compared to a national average of 3.2%.[51] Among those districts where data were not suppressed due to extreme sampling variability, the district reporting the lowest percentage of severe pain or discomfort for females was PEI/Rural at 2.3% (Figure 166).[52] These results all have a coefficient of variation between 16.6% and 33.3% and should be interpreted with caution.

Data for both men and women in Eastern (NF2), Central (NF3), Grenfell (NF5), Labrador (NF6), Edmundston (NB4), and Miramichi (NB7); and for men in St. John's (NF1), PEI/Urban, South-Southwest (NS1), Colchester-Cumberland-East Hants (NS3), Pictou-GASHA (NS4), Capital (NS6), Sussex/Saint John (NB2), and Fredericton (NB3) had a coefficient of variation greater

[50] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#10.
[51] Data for these three districts have a CV from 16.6% to 33.3% and should be interpreted with caution.
[52] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.

than 33.3% and were therefore suppressed by Statistics Canada due to extreme sampling variability. The absence of these data hampers accurate comparative analysis.

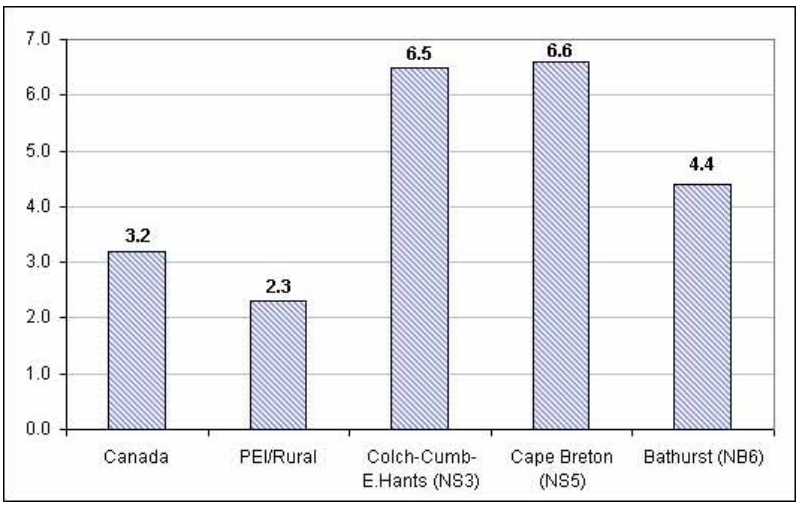
Figure 165. Population aged 12 and over reporting "severe pain or discomfort," by sex, Canada and Atlantic Provinces, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions2.htm#severity, extracted 3 January, 2003.

Note: Data for Newfoundland and Labrador males and PEI males and females have a CV from 16.6% to 33.3% and should be interpreted with caution.

Figure 166. Female population aged 12 and over reporting "severe pain or discomfort" for selected health districts compared to Canada, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/hlthstatus/conditions2.htm#severity, extracted 3 January, 2003.

Note: All data except those for Canada have a CV from 16.6% to 33.3% and should be interpreted with caution.

Summary – Limitations on Physical Activity

Females were more likely than males to report limitations on activity, disability days, chronic pain limiting activity, and severe pain or discomfort. In this regard, results in the 2000/01 Canadian Community Health Survey were consistent with those seen in previous health surveys. However, males reported injuries limiting activity more often than females, and they were more likely to report injuries for which they sought medical attention.

In the Atlantic Provinces, Newfoundland and Labrador had the lowest rate of limitations on activity for both males and females. Prince Edward Island had the lowest reports of disability days and severity of pain. A higher percentage of Nova Scotians suffered from limitations to their activities according to all the indicators in this section – in many cases registering the highest rates in the country: overall activity limitations, disability days, injuries limiting activities (combining those for which medical attention was and was not sought), pain or discomfort preventing activities, and severity of pain.

In all these indicators, a pattern emerges:

- Newfoundland and Labrador and PEI generally had lower rates than the national average of overall activity limitations, disability days, severe pain, and injuries, pain and discomfort that limit activities.
- Nova Scotian rates for all these indicators were well above the national average – in some cases the highest in the country.
- New Brunswick fell somewhere in between, closer to the national average – somewhat below the national average on overall activity limitations and injuries limiting activity, but above the national average on disability days, pain and discomfort affecting activities, and severity of pain.

Interestingly, this pattern is also reflected in other health outcomes. For example, in the evidence on self-esteem reported below:

- Newfoundland and Labrador and PEI had smaller proportions reporting low self-esteem than the national average (11.5% and 10.4% respectively, compared to 12% nationally);
- Nova Scotia had by far the highest rate of low self-esteem in the country (17.4%); and
- New Brunswick was again in between – with a slightly higher rate of low self-esteem (12.7%) than the national average.

Similarly, as we see below, Newfoundland and Labrador had the lowest rate of probable depression risk in the country (4.7%), PEI had the second lowest (5.8%), Nova Scotia had the second highest rate in the country (8.7%), and New Brunswick again fell in between (7.7%) – somewhat higher than the national average of 7.1%.

Further research is clearly necessary to determine the reasons for this apparent pattern across a wide range of health outcome indicators.

2.3 Mental Health

The mental wellbeing of individuals is directly linked to their overall physical health, and is also related to socio-economic status in general, and to employment, income, and educational status in particular. For example, self-esteem, one of three key indicators of psychological wellbeing, has been shown to have a positive association with both income level and level of education. In very basic ways, mental health is also linked to other indicators, such as ability to undertake paid employment, with the mentally ill less able to find work. In the *National Population Health Survey, 1994-95*, those with the lowest income levels also had the lowest levels of self-esteem.[53]

In examining the links between mental health and socio-economic status, it is clear that the chain of causality can go in both directions. According to the Canadian Public Health Association (CPHA), there is now a "consensus" that the "harmful effects of unemployment on mental and physical health are well established." The CPHA found that the health consequences of unemployment can be very destructive, and that job loss may lead to severe anxiety, depression, disturbed sleep, self-harming behaviour, feelings of apathy, isolation, hopelessness, and low self-esteem, and reduced decision-making ability. The CPHA cited data from the l978-l979 Canadian Health Survey, which found that of the 12 measures of self-reported health status, the unemployed fared worse in seven categories including the scale of psychological distress, and anxiety or depressive symptoms, even after adjusting for demographic and socio-economic variables.[54]

There are also sharp gender differences in mental health. Women have a 14% higher rate of psychiatric hospitalization overall than men. Across all ages, female rates of separation from psychiatric institutions are markedly higher than male rates for neurotic disorders (ratio of 1.9:1), depressive disorders (1.8:1), affective psychoses (1.7:1) and adjustment reaction (1.4:1), while men have higher rates for alcohol and drug dependence (2.4:1) and schizophrenia (1.4:1). In general hospitals, women have a 21% higher rate of admission for mental disorders than men.[55]

In this section, three indicators of mental health are examined – self-esteem, depression, and suicide. Those indicators themselves are linked, with self-esteem and depression both predicting a wide range of other health outcomes. Low self-esteem has been linked to depression, which in turn engenders numerous health risks, physical ailments, and poor health outcomes. Among the risk factors linked with depression are poor lifestyle behaviours, including unhealthy eating habits, propensity to over-consume alcohol, and smoking. Again, depression rates are highest among those at the bottom of the income ladder, with low wage-earners almost three times more

[53] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.

[54] Canadian Public Health Association (CPHA). l996. *Discussion Paper. The Health Impact of Unemployment.* CPHA. Ottawa. Available from: http://www.cpha.ca/english/policy/pstatem/unempl/htm. Accessed December 29, 2002. See also: Canadian Mental Health Association. l984. *Work and Well-being. The Changing Realities of Employment.* CMHA. Toronto. p.6; and Jahoda, M. l982. *Employment and Unemployment: A Social-Psychological Analysis.* Cambridge University Press. London. Cited in Kirsh, Sharon. l983. *Unemployment. Its Impact on Body and Soul.* Canadian Mental Health Association. Ottawa. p.68.

[55] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, pages 296 and 301.

likely to be diagnosed as depressive than the highest wage-earners.[56] Depression has also been linked by numerous studies to increased suicide rates.[57,58]

2.3.1 Self-esteem

Definition

Statistics Canada defines self-esteem as the "level of perceived self-worth reported by persons aged 12 and over, based on their responses to six questions."[59] The National Association for Self-Esteem in the United States defines self-esteem conceptually as "the experience of being capable of meeting life's challenges and being worthy of happiness."[60] The concept therefore consists of a psychological component – worthiness, – and a behavioural component – competence.

Data Source

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

Canadian data on self-esteem and data for the four Atlantic provinces are available from the 1994-95 National Population Health Survey, while data for selected provinces (including Newfoundland and Labrador, but not the country as a whole or the other three Atlantic provinces) are available from the 2000/01 Canadian Community Health Survey. For comparative purposes, therefore, only the national data for 1994-95 can be used here, although the 2000/01 data on self-esteem are provided for Newfoundland and Labrador health districts only.

Results

While similar proportions of Canadian women and men reported high self-esteem in 1994/95 (48.6% and 48.7% respectively), women were considerably more likely than men to report low self-esteem (14.1% compared to 9.9%). The male-female gap was widest among young Canadians, with 22% of 15-19 year-old women reporting low self-esteem, compared to 13% of men in that age group.[61]

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[56] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[57] Guze, S.B., & Robins, E, "Suicide and Primary Affective Disorders," *British Journal of Psychiatry*, *117*:437-438, 1970.
[58] Kiloh, L.G., G. Andrews, and M. Neilson., "The Long-Term Outcome of Depressive Illness," *British Journal of Psychiatry, 153*:752-757, 1988.
[59] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#2.
[60] Reasoner, Robert, "The true meaning of self-esteem," National Association for Self-Esteem, available at: http://www.self-esteem-nase.org/whatisselfesteem.shtml.
[61] Statistics Canada, National Population Health Survey 1994-95, "Self-esteem, by age group and sex, household population aged 12 and over, Canada excluding territories, 1994/95," available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/1131.htm.

In the 1994/95 survey results, self-esteem was also linked to income, education, and region. In 1994/95, 18% of those with the lowest income levels reported low self-esteem, compared to 13% of middle-income earners, and 10% of high-income earners. The highest rates of self-esteem in the country were in Quebec, where 62% were assessed as having high self-esteem, based on their answers to six survey questions. The lowest rates were in Manitoba and Saskatchewan, where only 34% reported high self-esteem, and in the Atlantic provinces (Newfoundland – 35%, Nova Scotia – 37%, PEI – 40%, and New Brunswick – 41%).[62]

A more detailed breakdown for the Atlantic provinces is provided below.

Low Self-Esteem, 1994/95

A much higher proportion of Nova Scotians reported low self-esteem in 1994/95 than residents in any other province in the country (17.4% compared to a national average of 12%). In particular, Nova Scotia had by far the highest percentage of females reporting low self-esteem (20.5%) in the country - 45% higher than the national average of 14.1%. By contrast, Prince Edward Island had the second lowest percentage of females in the country reporting low self-esteem (11.3%) after Quebec at 10.1%.

Among males, Nova Scotia had the second highest percentage in the country with low self-esteem (14.1% after Saskatchewan at 14.5% and compared to 9.9% nationally). Newfoundland and Labrador had the lowest proportion of males in Atlantic Canada, and the third lowest in the country, reporting low self-esteem at 8.2%, although those results must be interpreted with caution, as the data for Newfoundland males have a CV from 16.6% to 33.3% (Figure 167).

Moderate Self-Esteem, 1994/95

In 1994/95, all four Atlantic Provinces had substantially higher percentages of the population with “moderate” self-esteem than the national average. This was true for both males and females. Newfoundland and Labrador had the highest percentage of males (47.1%) and females (49.3%) in the country classified as having moderate self-esteem, well above the national averages of 32.6% and 32.8% (Figure 167).

High Self-Esteem, 1994/95

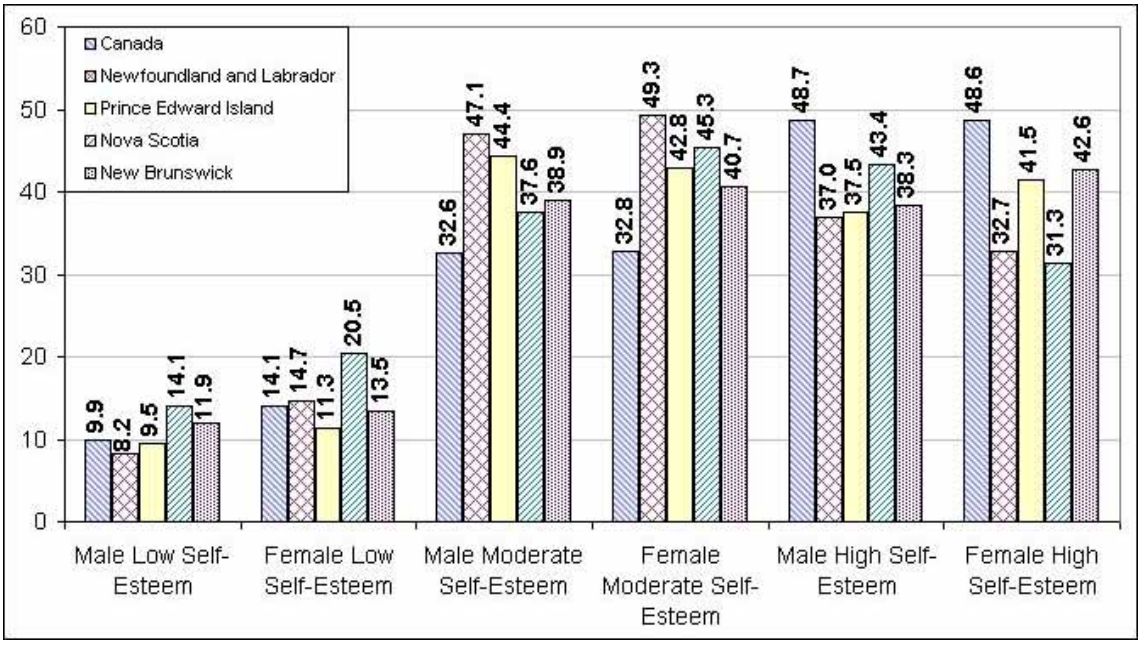
All four Atlantic Provinces had lower proportions of their population with “high” self-esteem than the national average. This was true for both males and females. Females in New Brunswick (42.6%) and Prince Edward Island (41.5%) had somewhat lower rates of high self-esteem than the national average (48.6%), and females in Newfoundland and Labrador and Nova Scotia had substantially lower rates of high self-esteem (32.7% and 31.1% respectively.) Male rates of high

[62] Health Canada, *Toward a Healthy Future; Second Report on the Health of Canadians,* Ottawa, 1999, page 16, and Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, pages 200-222.

self-esteem were 43.4% in Nova Scotia, 38.3% in New Brunswick, 37.5% in PEI, and 37% in Newfoundland and Labrador, compared to the national average of 48.7%.

Fewer males than females reported high self-esteem in Prince Edward Island and New Brunswick. In Nova Scotia and Newfoundland and Labrador, by contrast, fewer females than males report high self-esteem (Figure 167).

Figure 167. Self-esteem, population aged 12 and over, Canada and Atlantic Provinces 1994/95 (%)



Sources: Statistics Canada, National Population Health Survey, 1994/95, cross sectional sample, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/wellbeing2.htm, extracted 6 January, 2003.

Note: Data for males in Newfoundland and Labrador and Prince Edward Island *reporting low self-esteem* have a CV from 16.6% to 33.3% and should be interpreted with caution.

Self-esteem in Newfoundland and Labrador health districts, 2000/01

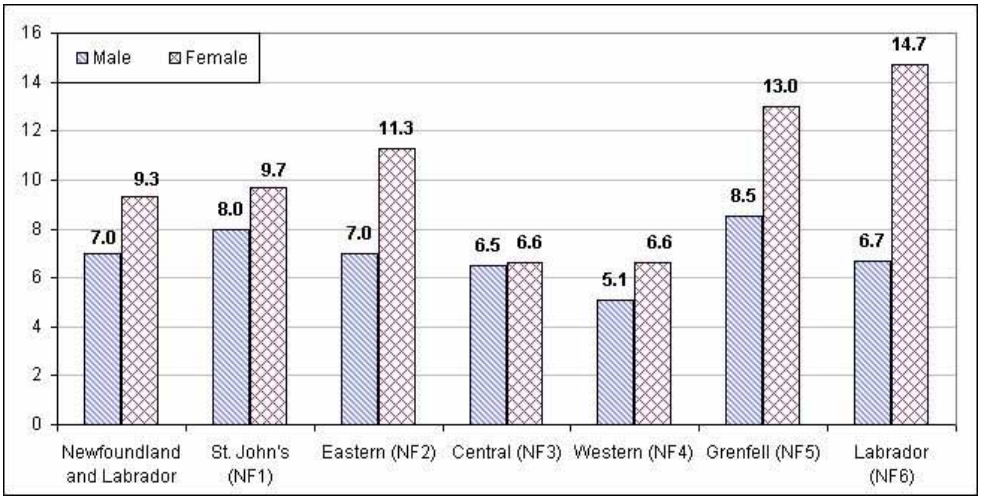
Health districts in only four Canadian provinces reported data on self-esteem in the 2000/2001 Canadian Community Health Survey, with Newfoundland and Labrador the only province in Atlantic Canada to report. Among the six health districts in Newfoundland and Labrador, the capital, St. John's (NF1) reported the highest rate of high self-esteem (44.7%), and Labrador (NF6) reported the lowest rate (23.7%), compared to the provincial average of 37.4%. Male and female levels of high self-esteem in Newfoundland and Labrador were fairly comparable (36.8% for males and 38.1% for females).

Labrador (NF6) at 14.7% and Grenfell (NF5) at 13.0%, had notably higher proportions of females reporting low self-esteem than the provincial average. In Labrador (NF6), the gender

gap was particularly wide, with 6.7% of males and 14.7% of females reporting low self-esteem. However, the gender data for low self-esteem at the health district level must be interpreted with caution, as they are subject to high sampling variability and have a CV from 16.6% to 33.3% (Figure 168).[63]

Between 1994/95 and 2000/01, the percentage of males reporting low self-esteem in Newfoundland and Labrador decreased from 8.2% to 7.0%, and the percentage of females reporting low self-esteem decreased from 14.7% to 9.3%.[64]

Figure 168. Population aged 12 and over with low self-esteem, by sex, Newfoundland and Labrador health districts, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, available at http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/1136.htm, extracted 6 January, 2003.

Note: Data for males in St. John's (NF1), Eastern (NF2), Central (NF3), Western (NF4), Grenfell-(NF5) and Labrador (NF6) have a CV from 16.6% to 33.3% and should be interpreted with caution. Data for females in Eastern (NF2), Central (NF3), Western (NF4), Grenfell (NF5) and Labrador (NF6) have a CV from 16.6% to 33.3% and should be interpreted with caution.

2.3.2 Risk of depression

Approximately 8% of Canadian adults will experience major depression at some time in their lives. During any 12-month period, between 4% and 5% of the population will experience major depression. Worldwide, major depression is the leading cause of years lived with disability, and the fourth leading cause of disability-adjusted life years.[65]

[63] Data for males and females in Labrador (NF6) and Grenfell (NF5) have a CV from 16.6% to 33.3% and should be interpreted with caution.
[64] The 1994/95 data for Newfoundland and Labrador males have a CV from 16.6% to 33.3% and should be interpreted with caution.
[65] Health Canada, *A Report on Mental Illnesses in Canada,* October, 2002, Ottawa, pages 31 and 33.

In health promotion efforts, mental illness and its associated costs receive far less attention than lifestyle factors. Yet mental illness accounts for some of the highest illness costs. Of seven modifiable risk factors examined in a major study of 46,000 U.S. employees, depression and stress accounted for higher medical costs than any other risk factors. Depressed workers had 70% higher medical costs and highly stressed workers had 46% higher costs than those who did not suffer from depression and high stress.[66] In addition, mental health problems can lead to a range of causes of premature death, including violence, substance abuse, and suicide.[67]

In the U.S., an estimated $16 billion a year is lost due to undiagnosed and untreated depression in the workplace, through lowered productivity, absenteeism, injury, alcoholism, and related physical illness attributable to depression. Yet many employees are afraid to disclose addiction or mental illness, and therefore avoid support that may be available through workplace health plans, employee assistance programs, or flexible work schedules.[68]

Studies have consistently documented higher rates of depression among women than among men, with the female – male ratio averaging about 2:1.[69] Young females are most likely to show signs of depression.[70] As noted above, males and females with low income are more likely to experience depression than those with higher incomes. One study found that females in the lowest income group were almost three times as likely as those in the highest income group to suffer from depression.[71]

Definition

"Population aged 12 and over who show symptoms of depression, based on their responses to a set of questions that establishes the probability of suffering a 'major depressive episode.'"[72] A major depressive disorder, in turn, is defined as one or more major depressive episodes consisting of at least two weeks of depressed mood or loss of interest in usual activities, accompanied by at least four additional symptoms of depression.[73]

Data Sources

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

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[66] Goetzel, Ron, David Anderson, R. William Whitmer, Ronald Ozminkowski, Rodney Dunn, Jeffrey Wasserman, and HERO Research Committee, "The Relationship Between Modifiable Health Risks and Health Care Expenditures: An Analysis of the Multi-Employer HERO Health Risk and Cost Database," *Journal of Occupational and Environmental Medicine* 40 (10): 843-854, October, 1998.
[67] Foege, William, Robert Amler, and Craig White, "Closing the Gap," *Journal of the American Medical Association* 1985; 254: 1355-1358, in Amler, Robert, and Bruce Hull (eds.), *Closing the Gap: The Burden of Unnecessary Illness,* Oxford University Press, New York and Oxford, 1987, page 207.
[68] Ballon, Diana, Editor, *Journal of Addiction and Mental Health,* 4 (1), Toronto, January-February 2001, available at: www.camh.net/journal/journalv4no1/note_from_editor.html.
[69] Health Canada, *A Report on Mental Illnesses in Canada,* October, 2002, Ottawa, page 34.
[70] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[71] Ibid.
[72] Statistics Canada internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#11.
[73] Health Canada, *A Report on Mental Illnesses in Canada,* October, 2002, Ottawa, page 32.

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

Results

In 1999, more women than men were hospitalized for major depressive disorders in every age group, with twice as many young women aged 15-19 hospitalized for depression than young men. The highest rate of hospitalization for depression among women was in the 40-44 age group (158 per 100,000).[74]

In 1998/99, 6% of Canadian women aged 12 and over reported experiencing at least one major depressive episode in the previous year, compared with 3% of Canadian men. Among 20-24 year-old women, 10% of women and 4% of men had a major depressive episode, and among 25-34 year-olds, 9% of women and 3% of men had such an episode in the previous year.[75]

In 1998/99, Nova Scotia residents were the most likely (6%) in Canada to have suffered at least one major depressive episode in the previous year, while Newfoundland residents were least likely (3%). All the other Canadian provinces were similar to one another in their levels of prevalence of such major depressive episodes. In 1994/95, Nova Scotia had the highest proportion of people with a probable risk of depression (8%), while the proportions in the other provinces ranged from 4% to 6%.[76]

According to the 2000/01 Canadian Community Health Survey, 7.1% of Canadians were at "probable risk of depression," including 9.2% of women and 5% of men. As in previous population health surveys, Newfoundlanders and Prince Edward Islanders had substantially lower risks of depression (4.7% and 5.8% respectively), and Nova Scotians were still well above the national average (8.7%, including 10.6% for women and 6.6% for men).[77] It is notable that rates of depression risk in Canada as a whole, as recorded in the 2000/01 Canadian Community Health Survey, were considerably higher for both men and women than in all the population health surveys of the 1990s (Table B4).

Table B4. Canadian males and females at risk of depression, 1994/95 – 2000/01, (%)

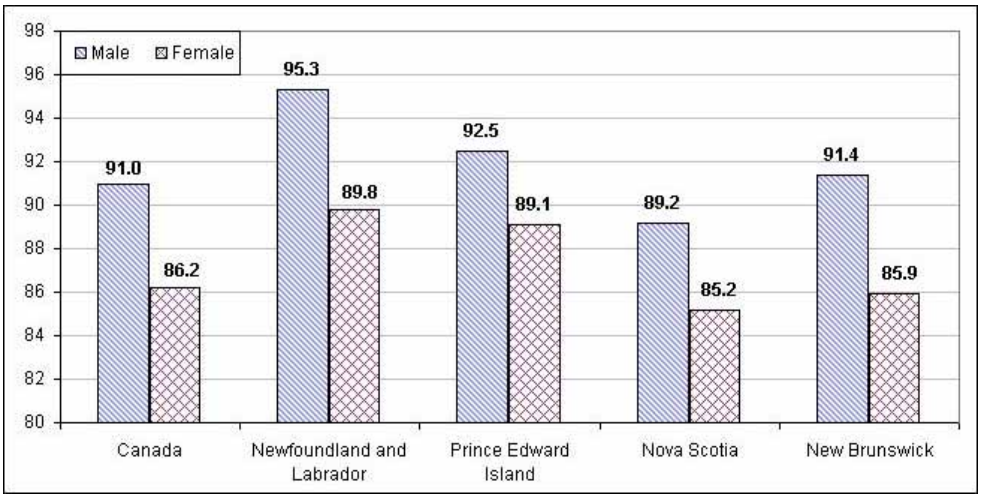
	1994/95		1996/97		1998/99		2000/01	
	Male	Female	Male	Female	Male	Female	Male	Female
Possible	2.3	2.8	1.5	1.6	1.2	1.8	2.5	3.1
Probable	3.3	7.1	2.7	5.3	2.9	5.7	5.0	9.2

Sources: Statistics Canada, Canadian Community Health Survey 2000-01, National Population Health Surveys, 1994/95, 1996/97, and 1998/99.

[74] Health Canada, *A Report on Mental Illnesses in Canada,* October, 2002, Ottawa, page 35.
[75] Statistics Canada, *Health Indicators*, catalogue no 82-221-XIE, "Depression," summary results from the 1998-99 National Population Health Survey available at: http://www.statcan.ca/english/freepub/82-221-XIE/00601/high/depres.htm.
[76] Statistics Canada, *Health Indicators,* catalogue no 82-221-XIE, "Depression," summary results from the 1998-99 National Population Health Survey available at: http://www.statcan.ca/english/freepub/82-221-XIE/00601/high/depres.htm.
[77] Statistics Canada, Canadian Community Health Survey 2000/01, *Health Indicators,* catalogue no. 82-221-XIE.

According to the 2000/01 Canadian Community Health Survey, Newfoundland and Labrador and Prince Edward Island had higher percentages of both males and females with no risk of depression (Figure 169) than the national average (91.0% males, 86.2% females). Males and females in Nova Scotia and females in New Brunswick had lower percentages with no risk of depression than the national average.

Figure 169. Population aged 12 and over with no risk of depression, by sex, Canada and Atlantic Provinces, 2000/01 (%)



Source: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions2.htm#depression, extracted 6 January, 2003.

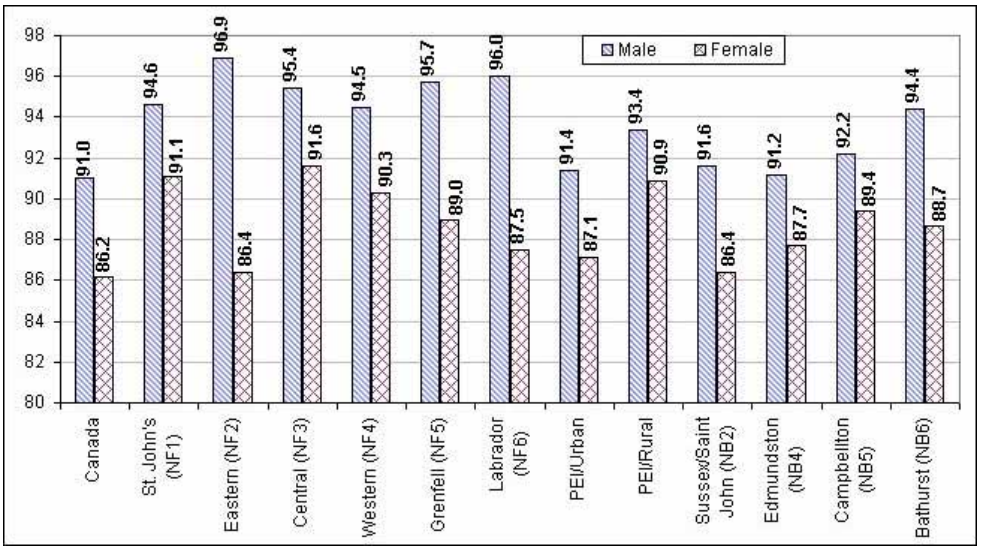
Fifteen Atlantic region health districts had a higher percentage of people, aged 12 and over, with no risk of depression than the Canadian average. These included all the health districts in Newfoundland and Labrador, PEI, and New Brunswick, except for Moncton (NB1). In Nova Scotia, by contrast, every health district except Pictou-Guysborough-Antigonish-Strait (NS4) had a smaller proportion of people with no risk of depression than the national average. Figure 171 indicates the Atlantic region health districts with the smallest proportions of people with no risk of depression. Colchester-Cumberland-East Hants (NS3) had the smallest proportion of such risk-free people in Atlantic Canada.

Among males, Eastern (NF2) and Labrador (NF6) had the highest percentages of those with no risk of depression in Atlantic Canada. Among females, St. John's (NF1) and Central (NF3) had the highest percentages of those with no risk of depression (Figure 170). All 21 Atlantic region health districts without exception had more males than females reporting no risk of depression.

Thirteen of the 21 health districts in Atlantic Canada had a lower probable risk of depression than the national average (7.1%), including all those in Newfoundland and Labrador and PEI. The lowest rates of probable risk of depression were in all the Newfoundland and Labrador

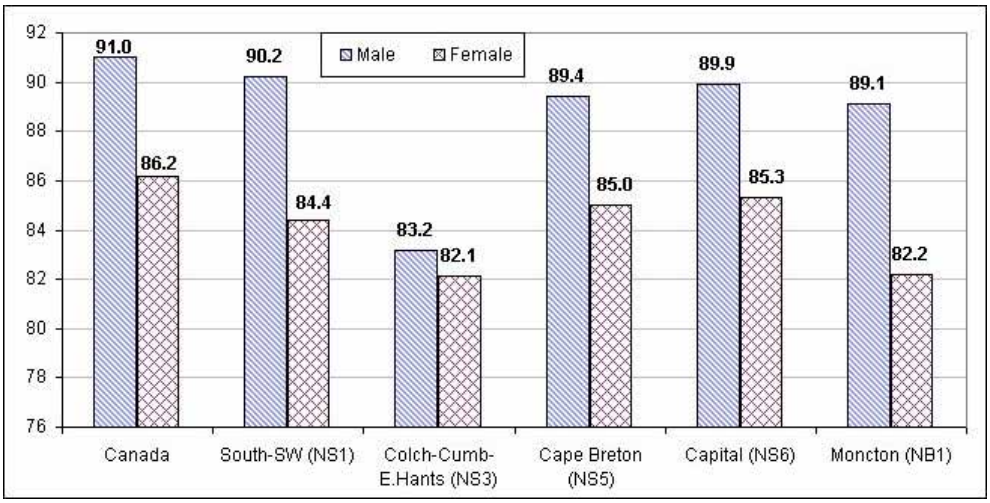
health districts, Rural PEI, Pictou-GASHA (NS4), Fredericton (NB3), Campbellton (NB5), Bathurst (NB6), and Miramichi (NB7).[78]

Figure 170. Population aged 12 and over with no risk of depression, Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions2.htm#depression, extracted 6 January, 2003.

Figure 171. Atlantic region health districts with the smallest proportions of the population, aged 12 and over, with no risk of depression, compared to Canada, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions2.htm#depression, extracted 6 January, 2003.

[78] Data for Central (NV3), Western (NF4), Grenfell (NF5), Labrador (NF6), Pictou-GASHA (NS4), Campbellton (NB5), and Miramichi (NB7) have a CV from 16.6% to 33.3% and should be interpreted with caution.

Newfoundland and Labrador had the lowest probable risk of depression in the country for both males and females (2.9%, males[79] and 6.4% females, compared to 5.0% males and 9.2% females nationwide). PEI had the second lowest probable risk of depression in Canada for males (4.0%) and the third lowest for females (7.6%) after Quebec (7.5%). In Nova Scotia both males and females had a higher percentage of the population with probable risk of depression (6.6% males, 10.6% females) than the national average – the second highest rate in the country for both men and women after Alberta (6.8% males, 11.6% females). New Brunswick had the same percentage of probable depression risk as the national average for males, and a higher percentage for females (10.3%).

As with several other health outcomes, including activity limitations, disability days, pain and discomfort, and self-esteem, these risk of probable depression statistics follow what appears to be a fairly consistent pattern, in which Newfoundland and Labrador and PEI had better outcomes than the national average, Nova Scotia had among the worst in the country, and New Brunswick again fell somewhere in between. In this case, Newfoundland and Labrador had the lowest rate of probable depression risk in the country (4.7%), PEI had the second lowest (5.8%), Nova Scotia had the second highest rate in the country (8.7%), and New Brunswick was again in between (7.7%) and somewhat higher than the national average of 7.1%.

Of the 21 Atlantic region health districts, eight had a higher rate of probable depression risk than the national average for both males and females (Figure 172). Five of these were in Nova Scotia, with the remaining three in New Brunswick. Colchester-Cumberland-East Hants (NS3) had the highest percentage of males with probable risk of depression (10.3%[80]), and Moncton (NB1) had the highest percentage for females at 14.1%.

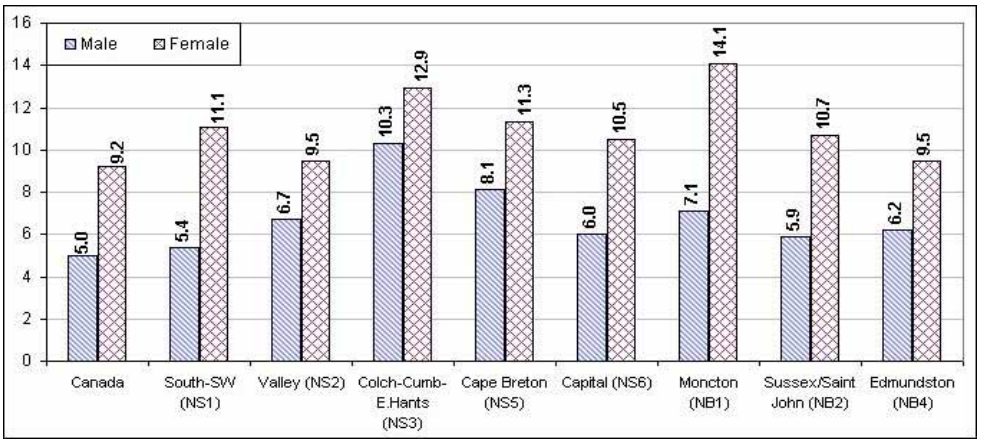
It should be noted that many of the data for probable risk of depression have a coefficient of variation between 16.6% and 33.3% and should be interpreted with caution. Data for men and women in Grenfell (NF5), men in Eastern (NF2), Central (NF3), Labrador (NF6), Fredericton (NB3), and Campbellton (NB5), and women in Miramichi (NB7) had a coefficient of variation greater than 33.3%, and were suppressed by Statistics Canada due to extreme sampling variability.

Females were substantially more likely than males to be at probable risk of depression in every Atlantic region health district for which data are available. Comparisons are not possible for six of the 21 health districts (including four in Newfoundland and Labrador), because data for males in those six districts were suppressed due to small sample sizes and high sampling variability. As well, two districts did not report data for females. Of those that did report, probable depression risk rates were generally between 60% and 100% higher for women than for men, averaging out at about 80% higher.

Examples of health districts with a wide gender gap are given in Figure 173 below. For example, in Moncton (NB1) 7.1% of males and 14.1% of females were at probable risk of depression, while in South-Southwest (NS1), 5.4% of males and 11.1% of females were at probable risk of depression (Figure 173).

[79] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.
[80] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.

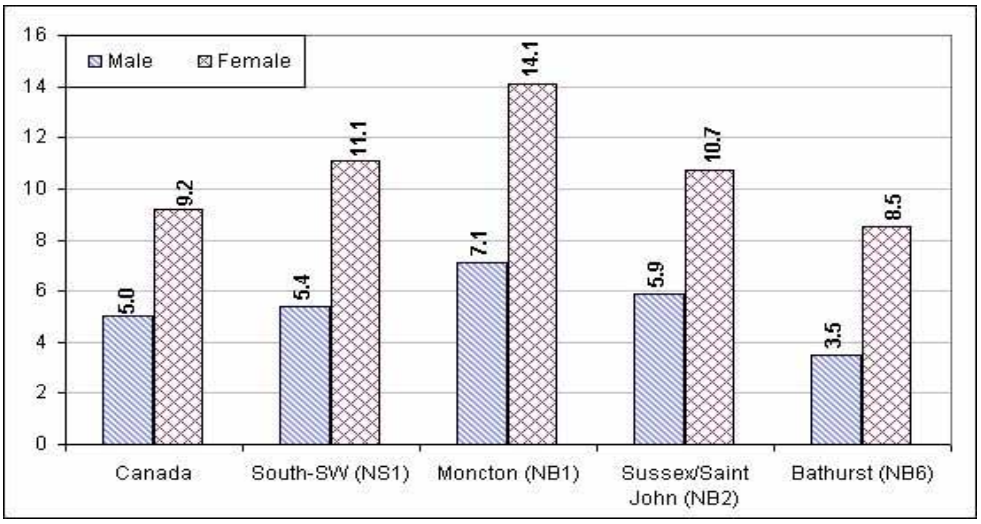
Figure 172. Population aged 12 and over with probable risk of depression, by sex, Canada and selected Atlantic region health districts, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions2.htm#depression, extracted 6 January, 2003.

Note: Data for males in all health districts indicated in this chart—South-Southwest (NS1), Annapolis Valley (NS2), Colchester-Cumberland-East Hants (NS3), Cape Breton (NS5), Capital (NS6), Moncton (NB1), Sussex/Saint John (NB2),and Edmundston (NB4) — have a CV from 16.6% to 33.3% and should be interpreted with caution. Data for females in Edmundston (NB4) also have a CV from 16.6% to 33.3% and should be interpreted with caution.

Figure 173. Population aged 12 and over with probable risk of depression, Canada and selected Atlantic region health districts with a wide gender gap, 2000/01 (%)



Sources: Statistics Canada, Canadian Community Health Survey, 2000/01, health file; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions2.htm#depression, extracted 6 January, 2003.

Note: Data for males in South-Southwest (NS1), Moncton (NB1), Sussex/Saint John (NB2) and Bathurst (NB6) have a CV from 16.6% to 33.3% and should be interpreted with caution. Data for females in Bathurst (NB6) have a CV from 16.6% to 33.3% and should be interpreted with caution.

2.3.3 Suicide rate

One of the most extreme outcomes of mental illness is suicide. Unlike many of the other adverse health outcomes considered above, such as activity limitations, disability days, pain and discomfort, depression, and low-self-esteem, for all of which women have higher rates than men, suicide rates are overwhelmingly higher among males than females – almost 4:1 nationally. As well, the incidence of suicide is different for different age groups according to gender, with the highest rates among males in the 20-24 and 35-44 age ranges, while for females the highest rates are in the 45-54 age range.[81] Some analysts have suggested that a reason for the wide gender gap in suicide rates has to do with the fact that suicide attempts by females are more likely to be a cry for help therefore less often intended to be fatal.[82, 83]

Suicide rates in Canada remain consistently higher for the Aboriginal population than for the general Canadian population as a whole, for both sexes and in almost every age category. According to a 1994 report by the Canadian Task Force on Preventive Health Care, Aboriginal suicide rates are more than twice the sex-specific rates, and three times the age-specific rates of non-Aboriginal Canadians.[84] According to a 1995 report by the Royal Commission on Aboriginal Peoples, the rate of suicide among Aboriginal youth is five to six times higher than the Canadian average.[85] Health Canada reports that over a five-year span (1989 - 1993), Aboriginal women were more than three times as likely to commit suicide than were non-Aboriginal women.[86]

Definition

"The rate of suicide death [ICD-9 E950-E959] per 100,000 population."[87]

Data Source

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

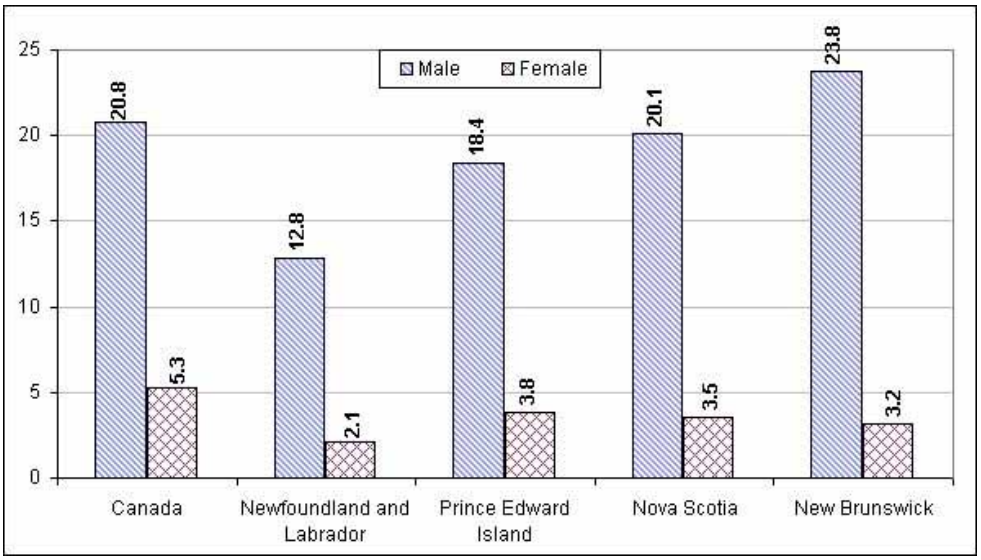
Results

Note: All rates referred to in this section are age-standardized suicide rates per 100,000 population.

[81] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[82] Ibid.
[83] Canetto, S., & Sakinofsky, I. "The Gender Paradox in Suicide," *Suicide and Life-Threatening Behaviour 28*(1):1–23, 1998.
[84] *Canadian Task Force on Preventive Health Care: Prevention of suicide*, available at: http://www.ctfphc.org/Full_Text/Ch40full.htm.
[85] "*Choosing Life: Special Report On Suicide Among Aboriginal People,"* Royal Commission on Aboriginal People., Ottawa: Canada Communication Group Publishing, 1995.
[86] Health Canada, "The Health of Aboriginal Women," available at: http://www.hc-sc.gc.ca/english/women/facts_issues/facts_aborig.htm.
[87] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#26.

The age-standardized suicide rate in Canada in 1996 was 12.9 per 100,000 population (20.8 for males, and 5.3 for females). All four Atlantic Provinces had lower suicide rates for females than the national average. Newfoundland and Labrador, PEI, and Nova Scotia also had lower suicide rates for males. The male suicide rate in New Brunswick was higher than the national average (Figure 174). Newfoundland and Labrador had the lowest suicide rate in the country (7.3 per 100,000), followed by Ontario (9.2), British Columbia (10.4), PEI (11.0), Manitoba (11.5), and Nova Scotia (11.6). Quebec had the highest suicide rate in the country (19.1), followed by Alberta (15.9), Saskatchewan (13.9) and New Brunswick (13.4).

Figure 174. Age-standardized suicides per 100,000, Canada and Atlantic Provinces, 1996 (rate)



Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths3.htm, extracted 11 February, 2003.

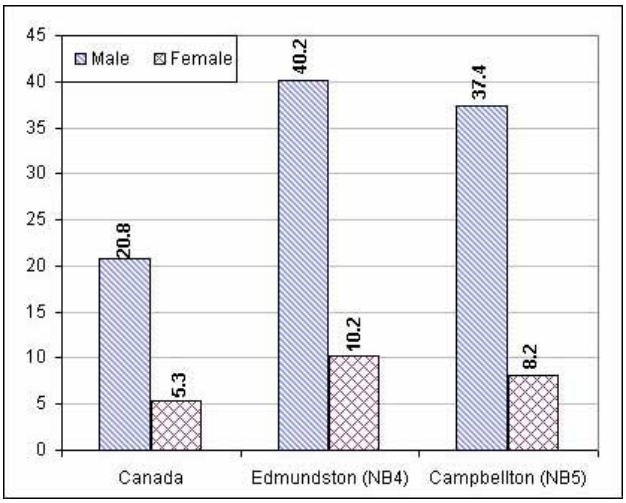
Due to small sample sizes, no suicide statistics were available for some Atlantic region health districts. Grenfell (NF5) did not have reliable suicide data for either males or females, and eight additional health districts did not have reliable data for females. These are Central (NF3), Western (NF4), Labrador (NF6), PEI/Rural, Colchester-Cumberland-East Hants (NS3), Pictou-GASHA (NS4), Bathurst (NB6) and Miramichi (NB7).

Of the reporting health districts, two (both in New Brunswick) had higher suicide rates than the national rate for both males and females: Edmundston (NB4) and Campbellton (NB5). Edmundston (NB4) had the highest suicide rates of all the Atlantic region health districts at 40.2 per 100,000 for males and 10.2 per 100,000 for females, followed by Campbellton (NB5) at 37.4 for males and 8.2 for females (Figure 175).

Labrador (NF6) had the third highest suicide rate for males in Atlantic Canada at 36.5 per 100,000, followed by Bathurst (NB6) at 33.5 and Miramichi (NB7) at 24.6. Statistics for Labrador females were not available. As noted earlier, potential years of life lost (PYLL) due to

suicide were highest in Labrador among all the Atlantic region health districts, indicating that the average age of suicide is younger there than in Edmundston and Campbellton, and likely related to high rates of suicide among Aboriginal youth. PYLL due to suicide among males are 1814.5 in Labrador, followed by 1,433.3 in Edmundston, 1,287.3 in Campbellton, 1,225.5 in Bathurst, and 1,073.3 in Miramichi.

Figure 175. Age-standardized suicides per 100,000, Atlantic region health districts where both males and females have a higher suicide rate than Canada, 1996 (rate)

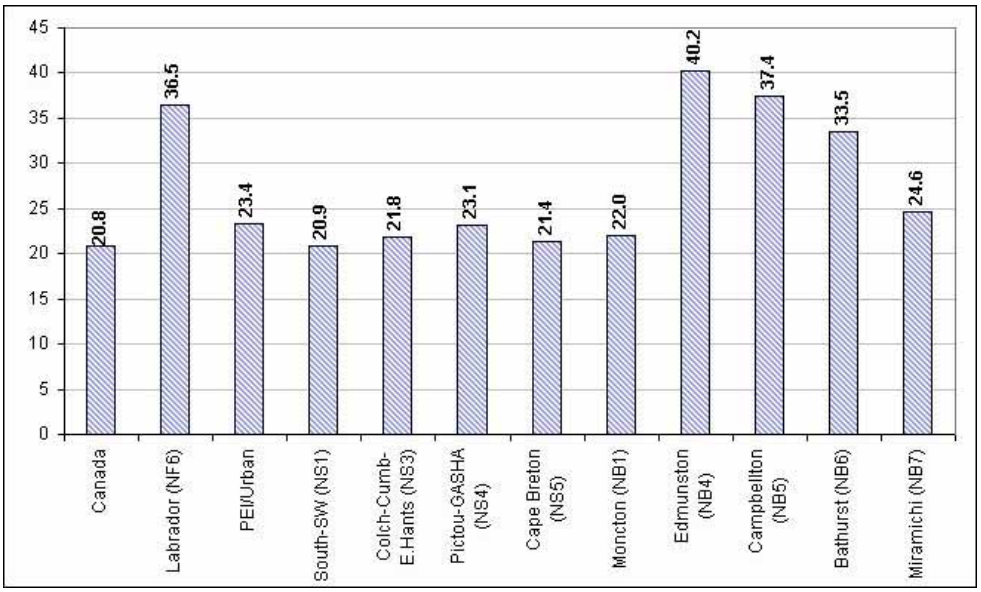


Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths3.htm, extracted 11 February, 2003.

Of the 20 Atlantic region health districts reporting suicide rates for males, 11 had a higher male suicide rate than the national rate of 20.8 per 100,000, including five of the seven health districts in New Brunswick (Figure 176). Of the 12 health districts reporting age-standardized suicide rates for females, only three had a higher female suicide rate than the national rate of 5.3 per 100,000: Edmundston (NB4) at 10.2, Campbellton (NB5) at 8.2 and the Annapolis Valley (NS2) at 8.2. Five of the reporting health districts had suicide rates for both males and females that were both lower than the national rates.

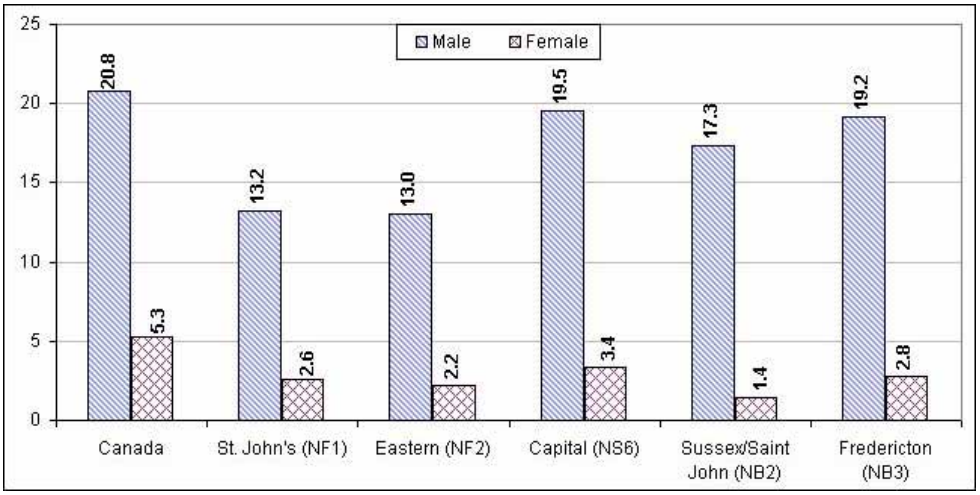
Central (NF3) had the lowest suicide rate for males at 6.9 per 100,000 and Sussex/Saint John (NB2) had the lowest reported suicide rate for females in Atlantic Canada at 1.4 per 100,000 (Figure 177). Due to small sample sizes and relatively wide confidence intervals, however, caution should be exercised in interpreting these results. For example, the "high end" of the confidence interval for Central (NF3) is 10.9 per 100,000, and there are five other health districts where the "low end" of the confidence interval is less than that. This caveat is true for all results in these text volumes, and readers should consult the appendices for the relevant confidence intervals.

Figure 176. Age-standardized suicides per 100,000, males, Canada and selected Atlantic region health districts, 1996 (rate)



Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths3.htm, extracted 11 February, 2003.

Figure 177. Age-standardized suicides per 100,000, selected Atlantic region health districts where data for both sexes are available and where both males and females have lower suicide rates than Canada, 1996 (rate)



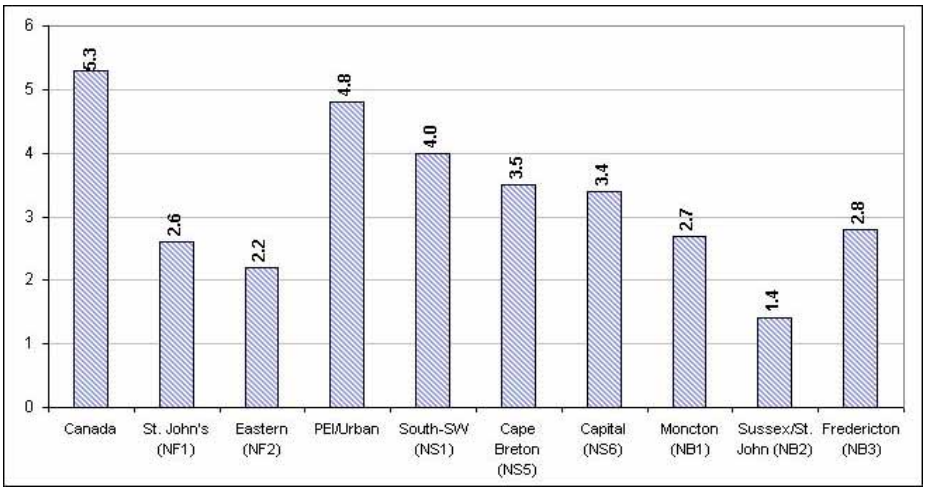
Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths3.htm extracted 11 February, 2003.

Of the 12 Atlantic region health districts that reported suicide rates for females, nine had a lower rate than Canada. Aside from Sussex/Saint John (NB2) mentioned above, which had the lowest reported female suicide rate in Atlantic Canada at 1.4 per 100,000, Eastern (NF2) had a very low

rate at 2.2, followed by St. John's (NF1) at 2.6, Moncton (NB1) at 2.7, Fredericton (NB3) at 2.8, Capital (NS6) at 3.4, and Cape Breton (NS5) at 3.5 It (Figure 178).

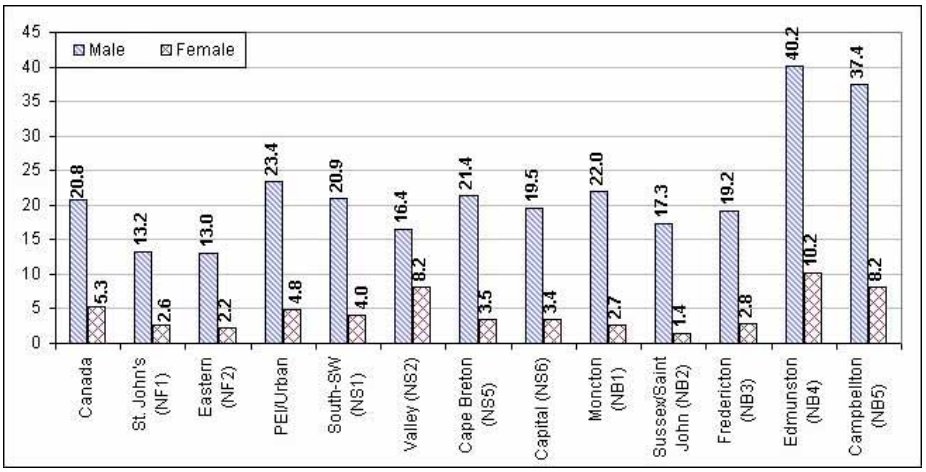
In the 12 Atlantic region health districts that reported suicide rates for both males and females, males had significantly higher suicide rates than females in every case. The smallest gender gap occurred in the Annapolis Valley (NS2) where the male suicide rate (16.4 per 100,000) was twice as high as the female rate (8.2). The female suicide rate in the Valley was the second highest in Atlantic Canada after Edmundston (NB4) at 10.2 per 100,000 (Figure 179).

Figure 178. Age-standardized suicides per 100,000, selected Atlantic region health districts where data for females are available and where females have notably lower rates than Canada, 1996 (rate)



Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths3.htm, extracted 11 February, 2003.

Figure 179. Age-standardized suicides per 100,000, Canada and selected Atlantic region health districts where data for both sexes are available, illustrating the gender gap in reported suicide rates, 1996 (rate).



Source: Statistics Canada, Vital Statistics, Death Database, and Demography Division, 1996; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths3.htm, extracted 11 February, 2003.

Summary – Mental Health

The mental health indicators examined above, particularly low self-esteem and depression, show that Nova Scotians were more at risk for mental health problems than residents of the other Atlantic Provinces. Nova Scotia had the highest rate of low self-esteem in the country and the second highest rate of residents with probable risks of depression. Among all the Nova Scotian health districts, five of the six had higher rates of probable depression risk for both males and females, with only Pictou-Guysborough-Antigonish-Strait (NS4) reporting a lower percentage of both males and females with probable risk of depression than the national average.

Conversely, based on its lowest rates of probable depression risk and suicide in Canada, Newfoundland and Labrador appears to have had the best mental health profile in the country, with PEI also ranking better than the national average on all three indicators considered here. New Brunswick generally ranked somewhere in the middle on these indicators, but (along with Labrador) had the highest suicide rates in Atlantic Canada, particularly in northern and western New Brunswick, where male suicide rates were almost double the national average in some areas.

2.4 Reproductive Health

A number of indicators relating to female reproductive health are examined in this section. These include teen pregnancy, low birth weight, infant and perinatal mortality, hysterectomy and Caesarean section rates, vaginal birth after Caesarean, chlamydia, and breastfeeding practices.

2.4.1 Teen pregnancy

Pregnancy before age 20 entails a number of medical, developmental, and social risks both for children and mothers. Teenage mothers have a greater risk of having a pre-term or low birth-weight baby or a baby with congenital abnormalities, and they themselves are less likely to complete their education and are more likely to have poor employment prospects and to live in poverty.[88] In addition to unplanned pregnancies, unsafe sex can lead to serious sexually transmitted diseases, infertility and HIV infection.[89] Pregnant teens are also at greater risk of health problems, including anemia, hypertension, renal disease, eclampsia, and depressive disorders.[90] Because teenage pregnancy can have adverse impacts on the health and wellbeing of both mothers and children, it is a key indicator of women's health.

[88] Dryburgh, H., Statistics Canada, Catalogue 82-003, *Health Reports, 12*(1), available at http://www.statcan.ca/english/kits/preg/preg3.htm.
[89] Surinder Wadhera and Wayne J. Millar, "Teenage Pregnancies, 1974 to 1994," Statistics Canada, *Health Reports,* volume 9, no. 3, Winter 1997; Health Canada, *Toward a Healthy Future,* pages 78 and 126.
[90] Combes-Orme, T, "Health effects of adolescent pregnancy: Implications for social workers," in *Families in Society: The Journal of Contemporary Human Services,* 1993; 74 (6): 344-54; Turner, R.J., Grindstaff, C.F., and Phillips, N., "Social support and outcome in teenage pregnancy," *Journal of Health and Social Behavior,* 190; 31 (1): 43-57.

Prevention, education, health promotion, and reduction of inequities have been found to be far less expensive strategies in reducing teen pregnancy rates than the significant social costs that are paid at a later stage. One Statistics Canada study noted that the Netherlands has one of the lowest teenage pregnancy and abortion rates in the world. The Dutch teen pregnancy rate is less than one-quarter of the Canadian rate. And while teenage abortions in this country have increased by 60% in the last 20 years, the Dutch abortion rate is less than one-eighth the Canadian rate. Based on the Dutch experience, the study concluded that teenage pregnancies have been reduced through effective sex education, open discussion of human sexuality in the media, easier access to contraceptives, education programs, and active participation of parents and teenagers in such programs.[91]

Definition

"Number and rate of pregnancies per 1,000 females aged 15 to 19. Pregnancies are composed of live births, induced (therapeutic) abortions and fetal loss, including stillbirths (at least 20 weeks gestation or fetal weight of at least 500 grams) and cases of spontaneous abortion (miscarriages), illegally induced abortion, and other and unspecified abortion treated in general and allied hospitals in Canada."[92]

Data Source

Statistics Canada, Vital Statistics, Birth and Stillbirth Databases, 1998; Canadian Institute for Health Information, Hospital Morbidity Database, and Therapeutic Abortions Survey.

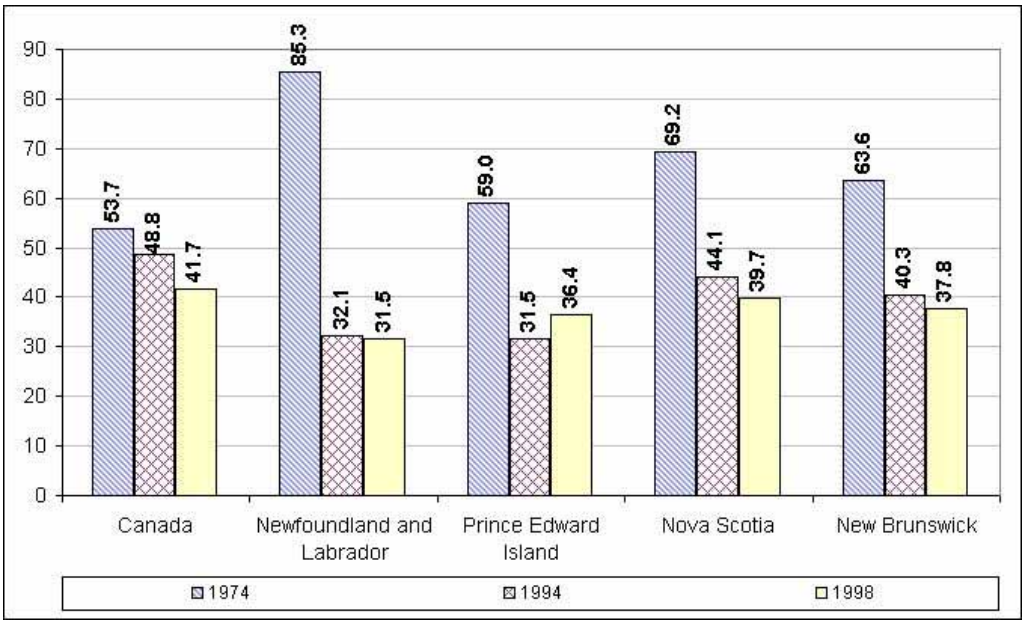
Results

The 1996/97 National Population Health Survey found that 51% of sexually active 15-19 year-old women had sex without a condom in the year prior to the survey. A four-province Atlantic region student drug survey found that 50% of sexually active high school students had unplanned intercourse at least once under the influence of alcohol or drugs.[93]

Despite these major concerns, there has been a steady decline in the Canadian teen pregnancy rate over the past quarter century.[94] Since 1974, the rate of teenage pregnancies has fallen sharply from 53.7 per 1,000 women in 1974 to 41.7 in 1998-99. Teenage pregnancy rates have fallen most sharply in Atlantic Canada. In the 1970s all four Atlantic provinces recorded teen pregnancy rates well above the national average. Twenty years later, the Atlantic region had the lowest rates in the country, with a particularly dramatic decline in Newfoundland and Labrador from the highest to the lowest rates in Canada (Figure 180).[95]

[91] Wadhera and Millar, *Health Reports* 9:3, op. cit., citing E. Ketting and A. Visser, "Contraception in the Netherlands: The Low Abortion Rate Explained," *Patient Education and Counseling,* 1994, 23 (3), pages 161-171.
[92] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin4.htm#86.
[93] Health Canada, *Toward a Healthy Future,* pages 126-127; Nova Scotia Department of Health and Dalhousie University, *Nova Scotia Student Drug Use, 1998: Technical Report.*
[94] Dryburgh, H., Statistics Canada, Catalogue 82-003, *Health Reports, 12*(1), available at http://www.statcan.ca/english/kits/preg/preg3.htm.
[95] Wadhera and Millar, *Health Reports* 9:3, op. cit., pages 13 and 17.

Figure 180. Teenage pregnancies per 1,000 women aged 15-19, Canada and Atlantic Provinces, 1974, 1994 and 1998 (rate)



Source: Statistics Canada, *Health Reports* 9 (3), "Teenage Pregnancies, 1974 to 1994." Statistics Canada, *National Population Health Survey 1998/99.*

In total, there were 41,588 teen pregnancies in Canada in1998, including 662 in Newfoundland and Labrador, 181 in PEI, 1,236 in Nova Scotia, and 955 in New Brunswick.

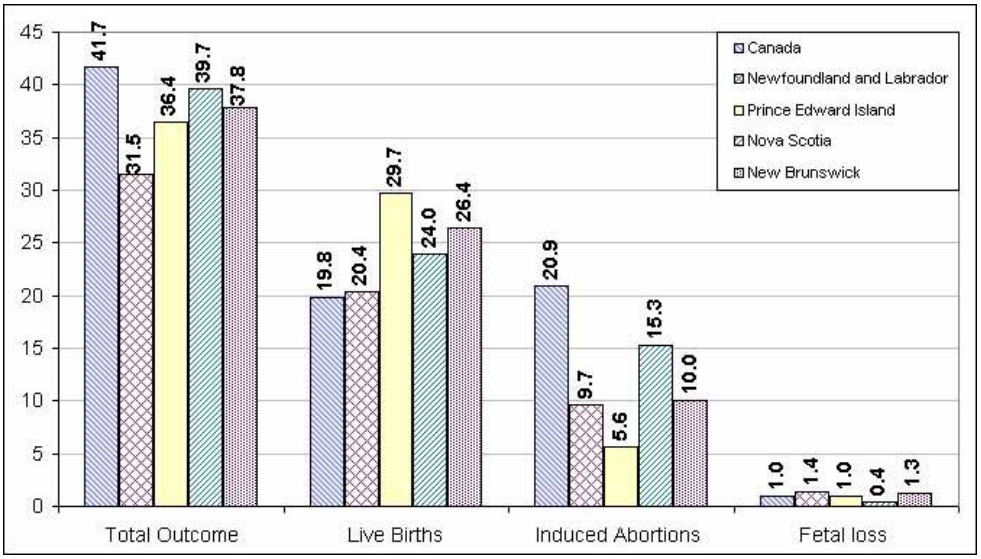
As indicated in Figure 180, in 1998 all four Atlantic Provinces had lower rates of teen pregnancy than the national average of 41.7 pregnancies per 1,000 females aged 15-19. Newfoundland and Labrador had the lowest rate of teen pregnancy at 31.5 per 1,000, while Nova Scotia had the highest rate among the Atlantic Provinces at 39.7, but still below the national average (Figure 181).

There are major regional differences in the outcomes of teenage pregnancies. Live births account for most teenage pregnancies in Atlantic Canada, but not in Canada as a whole, where induced abortions exceed live births. In fact, despite lower teenage pregnancy rates than the national average, all four Atlantic Provinces had higher rates of live births among teenagers than the national rate of 19.8 per 1,000 women aged 15-19 in 1998. PEI had the highest live birth rate among teenagers in the Atlantic region at 29.7 per 1,000 (the third highest rate in the country after Manitoba and Saskatchewan), compared to 20.4 in Newfoundland and Labrador, 24.0 in Nova Scotia, and 26.4 in New Brunswick. Thus, live births accounted for a much larger proportion of teenage pregnancies in Atlantic Canada than in the rest of Canada – 64.8% in Newfoundland and Labrador, 81.8% in PEI, 60.4% in Nova Scotia, and 69.9% in New Brunswick, compared to just 47.4% in Canada as a whole and only 37.2% in Quebec.

Correspondingly, the Atlantic region had the lowest rates of induced abortions among teenagers in the country in 1998, with PEI recording by far the lowest rate in Canada at about one-quarter the national average (Figure 181). Thus, while the ratio of live births to induced abortions among

teens aged 15-19 was 0.95:1 in Canada as a whole and only 0.61:1 in Quebec (the province with the highest abortion rate among teenagers), the ratio was 2.1:1 in Newfoundland and Labrador, 5.3:1 in PEI, 1.57:1 in Nova Scotia, and 2.64:1 in New Brunswick. The low rates of induced abortions reported among teenagers in the Atlantic region compared to Canada may be a result of a reporting problem, with induced abortions possibly being under-reported in Atlantic Canada and being performed outside the region.

Figure 181. Pregnancies per 1,000 females aged 15 to 19, by outcome, Canada and Atlantic Provinces, 1998 (rate)



Sources: Statistics Canada, Vital Statistics, Birth and Stillbirth Databases; Canadian Institute for Health Information, Hospital Morbidity Database and Therapeutic Abortions Survey, 1998; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/community/community1.htm, extracted 8 January, 2003.

Fetal loss accounted for 2% of teenage pregnancies nationwide, with a national rate of 1 per 1,000 women aged 15-19. Nova Scotia had the lowest rate of fetal loss in the country at 0.4 per 1,000 women aged 15-19, while PEI had the same rate as the national average, and New Brunswick and Newfoundland and Labrador had higher rates at 1.3 and 1.4 respectively (Figure 181). Fetal loss accounted for 4.4% of all teenage pregnancies in Newfoundland and Labrador. 2.7% in PEI, 1.0% in Nova Scotia, and 3.4% in New Brunswick.

2.4.2 Low birth weight

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

problems."[96] Neo-natal mortality is inversely proportional to birth weight, and low birth weight babies frequently develop neuro-developmental handicaps.[97] In a study of infant mortality and low birth weight between 1975 and 1995, it was found that a slowdown in the rate of decline in infant mortality occurred at the same time as an increase in the number of low birth weight babies.[98]

Several studies have pointed to the association between low birth weight, economic conditions, and maternal education. One study found that young mothers and single mothers were not particularly at risk for having a low birth weight child once income and maternal education were factored out.[99] Because birth weight is an important indicator of maternal health and nutrition prior to and during pregnancy, it is also a key indicator of women's health.

Definition

"Live births less than 2,500 grams, expressed as a percentage of all live births (birth weight known)."[100] Low birth weight can be a consequence of either premature birth (usually at less than 37 weeks gestation) or of intra-uterine growth restriction. The average full-term infant weighs 3,400 grams.[101]

Data Sources

Statistics Canada, Vital Statistics, Birth Database.

Results

In 1999, 5.6% of all babies born to Canadian mothers were considered to be at a low birth weight, down slightly from 5.8% in 1997. This ratio is virtually unchanged in 20 years (Table B5). The highest rate of low birth weight in the country in 1999 was in Nunavut (7.5%).[102]

Table B5. Low birth weight (less than 2,500 grams), by sex, Canada, annual, 1979-1999, as percentage of all live births (%)

1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999
5.9	5.9	5.6	5.6	5.5	5.5	5.5	5.7	5.8	5.8	5.6

Source: Statistics Canada, Canadian Vital Statistics, Birth Database.

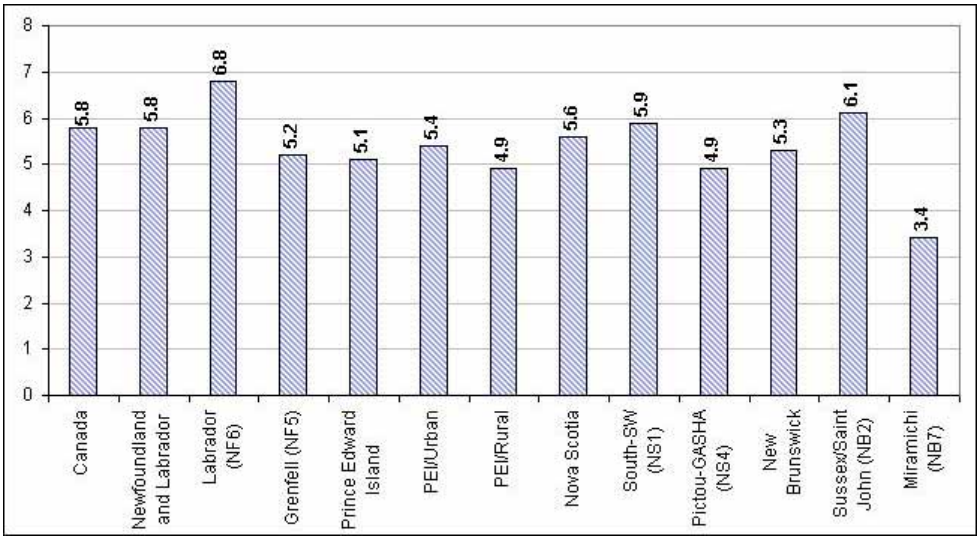
[96] Statistics Canada, *Health Indicators,* available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/defin1.htm#d.
[97] McCormick, M.C., "The contribution of low birth weight to infant mortality and childhood morbidity," *new England Journal of Medicine* 312: 82-90, 1985.
[98] Nault, F. "Infant Mortality and Low Birth Weight, 1975 to 1995," Statistics Canada, *Health Reports, 9*(3):39-46, 1997, available at http://www.statcan.ca/english/indepth/82-003/archive/1997/hrar1997009003s0a04.pdf.
[99] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[100] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#12.
[101] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, Table 64, page 256.
[102] Statistics Canada, Canadian Vital Statistics, Birth Database, in Statistics Canada, *CANSIM Database,* Table 102-4005.

Incidence of low birth weight varies by age of mother, forming a U-shaped curve with highest risks for very young and older mothers. In 1996, mothers under the age of 15 had a low birth weight rate of 9.3%; declining to 7.0% for mothers aged 15-19; 5.9% for mothers aged 20-24; and 5.3% for mothers aged 25-29. The rate then rises again with increasing age of mother to 5.6% for mothers aged 30-34, 6.4% for those aged 35-39, and 8.1% for mothers 40 and older.[103]

Internationally, Canada places in the middle of other industrialized countries. The lowest rates of low birth weight babies are in the Scandinavian countries, with Finland and Sweden registering rates of 4.1% and 4.4% respectively, while the U.S. registers a much higher rate of 7.3%.[104]

Within Canada, there are considerable intra-provincial differences in rates of low birth weight. Thus northern Quebec in 1997 had a low birth weight rate of 7.9% compared to 6.0% for the province as a whole.[105] There were also sharp differences within Atlantic Canada, ranging from highs of 6.8% in Labrador (NF6) and 6.1% in Sussex-Saint John (NB2) to a low of 3.4% in Miramichi (NB7) in 1997. Among the Atlantic provinces, PEI had a low birth weight rate of 5.1%, compared to 5.3% in New Brunswick, 5.6% in Nova Scotia, and 5.8% in Newfoundland and Labrador (Figure 182).

Figure 182. Low birth weight (less than 2500 grams) as a percentage of all live births, both sexes, Canada, Atlantic Provinces, and selected Atlantic region health districts, 1997 (rate)



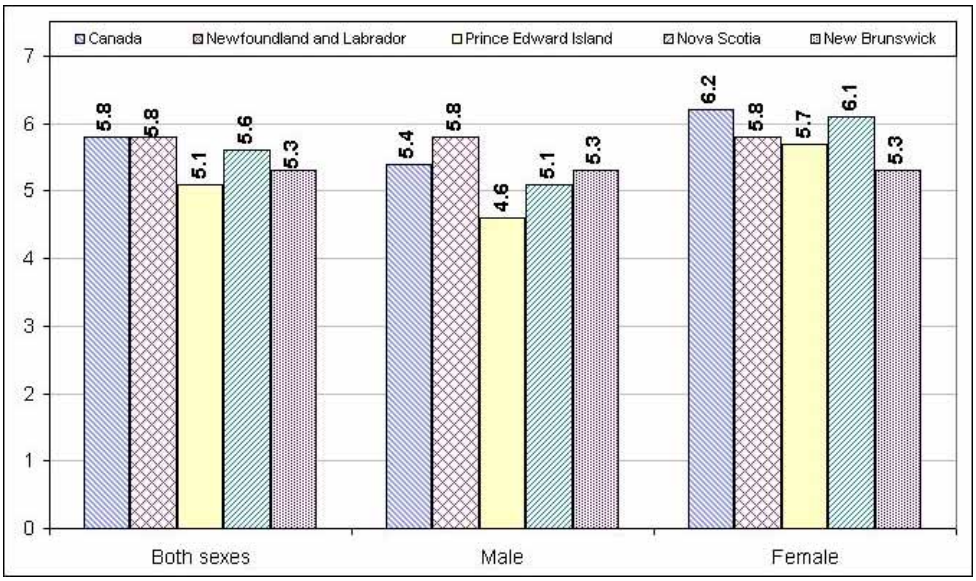
Source: Statistics Canada, Vital Statistics, Birth Database, 1997; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions3.htm, extracted 8 January, 2003 .

Nationwide, female infants were more likely to have low birth weights than male infants (6.2% of female infants and 5.4% of male infants in 1997). This gender gap was reflected in Prince

[103] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, Table 64, page 257.
[104] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, Table 64, page 256.
[105] Statistics Canada, "Low birth weight," Health Indicators, volume 2002, no. 2, catalogue no. 82-221-XIE, available at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/high/region/hlowbirth.htm, and at: http://www.statcan.ca/english/freepub/82-221-XIE/01002/tables/html/12102.htm.

Edward Island, where 5.7% of female infants and 4.6% of male infants had low birth weights in 1997, and in Nova Scotia where 6.1% of female infants and 5.1% of male infants had low birth weights. In Newfoundland and Labrador and in New Brunswick, on the other hand, low birth weight rates for male and female infants were identical in 1997 (5.8% and 5.3% respectively) (Figure 183).

Figure 183. Low birth weight (less than 2500 grams) as a percentage of all live births, Canada and Atlantic Provinces, 1997 (rate)

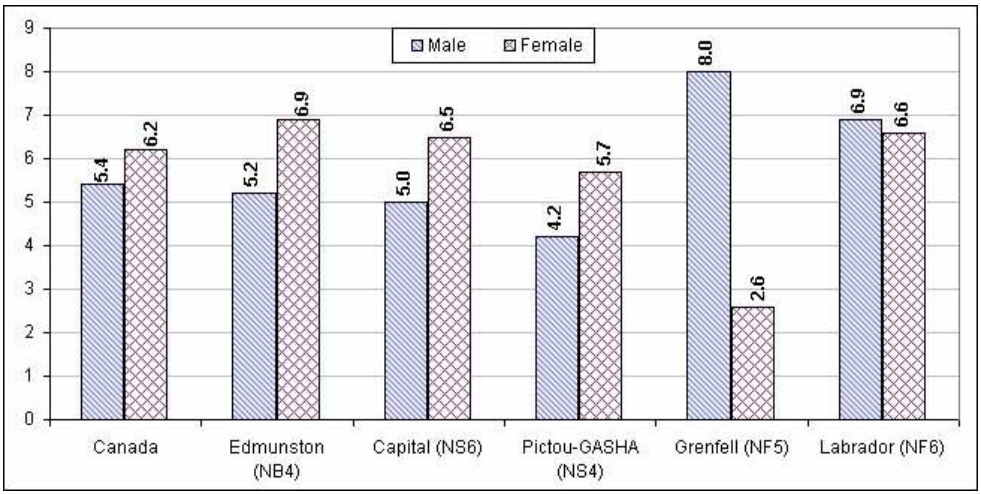


Source: Statistics Canada, Vital Statistics, Birth Database, 1997; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions3.htm, extracted 8 January, 2003.

In 13 of the 21 Atlantic region health districts, the rate of low birth weight in 1997 was higher for female infants than for male infants. The largest gender gap was in Edmundston (NB4) with a low birth weight rate of 6.9% for females and 5.2% for males, followed by Capital (NS6) with 6.5% for females and 5.0% for males, and Pictou-GASHA (NS4) with 5.7% for females and 4.2% for males. In 1997, the highest rate of low birth weight for female infants in Atlantic Canada was in Edmundston (NB4) at 6.9%, followed by Labrador (NF6) at 6.6% and the Halifax Capital district (NS6) at 6.5%. The lowest rates of low birth weight for females in Atlantic Canada in 1997 were in Grenfell (NF5) at 2.6%, and Miramichi (NB7) at 3.2%.

Of the eight districts where male rates of low birth weight were higher than female rates in 1997, Grenfell (NF5) had the highest rate for males at 8.0%, followed by Labrador (NF6) at 6.9% (Figure 184). As with all health district data, caution must be exercised in making comparisons and interpreting results, due to wide confidence intervals and high variability.

Figure 184. Low birth weight (less than 2500 grams) as a percentage of all live births, by infant sex, Canada and selected Atlantic region health districts, 1997 (rate)



Source: Statistics Canada, Vital Statistics, Birth Database, 1997; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/conditions3.htm, extracted 8 January, 2003.

2.4.3 Infant and perinatal mortality

According to Statistics Canada, infant mortality is a long-established measure, not only of child health, but of the wellbeing of a society. It reflects the level of mortality, health status, and health care of a population, and the effectiveness of preventive care and attention paid to maternal and child health.[106]

Perinatal complications are the most important single cause of both infant mortality and perinatal deaths. Congenital anomalies also contribute to infant and perinatal mortality. Sudden infant death syndrome was the cause of 166 infant deaths in 1996.[107] Fetal, neonatal, and postnatal infant deaths are partly attributable to maternal health problems and to inadequate maternal care, and partly to factors in the infant's environment.[108]

According to Statistics Canada, the probability that a fetus considered to be viable will be stillborn or will die before the end of the first week of life reflects standards of obstetric and pediatric care, as well as the effectiveness of public health initiatives. Perinatal mortality is therefore an indicator of women's health and child wellbeing in particular, and is also a more general indicator of social wellbeing and health system performance.

Definitions of the different types of infant death are as follows:

- Perinatal mortality: deaths less than one week, and stillbirths at 28 or more weeks.
- Early neonatal mortality: deaths less than one week.
- Infant mortality: deaths less than one year.

[106] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#19.
[107] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, page 305.
[108] Health Canada, *Perinatal Health Indicators for Canada: A Resource Manual,* 2000.

The official Statistics Canada definitions follow.

Infant Mortality Definition

"Infants who die in the first year of life, expressed as a count and a rate per 1,000 live births."[109]

Perinatal Mortality Definition

"Count and rate of stillbirths and early neonatal deaths (deaths in the first week of life) per 1,000 total births (includes stillbirths). Stillbirths are defined here as gestational age of 28 or more weeks. Stillbirths with unknown gestational age are excluded.[110]

Data Source

Statistics Canada, Vital Statistics, Birth, Death and Stillbirth Databases.

Because data at the health district level are only available for 1996, all inter-provincial and intra-provincial comparisons given here use 1996 infant mortality and perinatal mortality data from Statistics Canada's Health Indicators web site at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths1.htm. However, data on infant mortality to 1999 for Canada and the provinces and territories are used for Table B6 below and are available in Statistics Canada's *CANSIM* Database, Table 102-0030: "Infant mortality, by sex and birth weight, Canada, provinces and territories, annual." It should be noted that the 1996 data in the CANSIM database and on Statistics Canada's Health Indicators web site are not fully compatible, with the former listing the infant mortality rate for Canada at 5.8% and the latter at 5.6%.

Results

Canada's infant mortality rate has decreased steadily (Table B6), but the rate of improvement has been slower than in most other industrialized countries. Canada's infant mortality rate dropped below 6 per 1,000 live births for the first time in 1996. But in 1990, Canada ranked fifth among 17 OECD countries, while in 1996 it ranked only 12th, with Canadian infant mortality lower only than the U.S., New Zealand, Greece, the U.K., and Australia.[111] Japan has the lowest infant mortality rate in the world at 3.8 per 1,000 live births.[112]

Table B6. Infant mortality, Canada, rate per 1,000, 1993-1999

1993	1994	1995	1996	1997	1998	1999
6.3	6.3	6.1	5.6	5.5	5.3	5.3

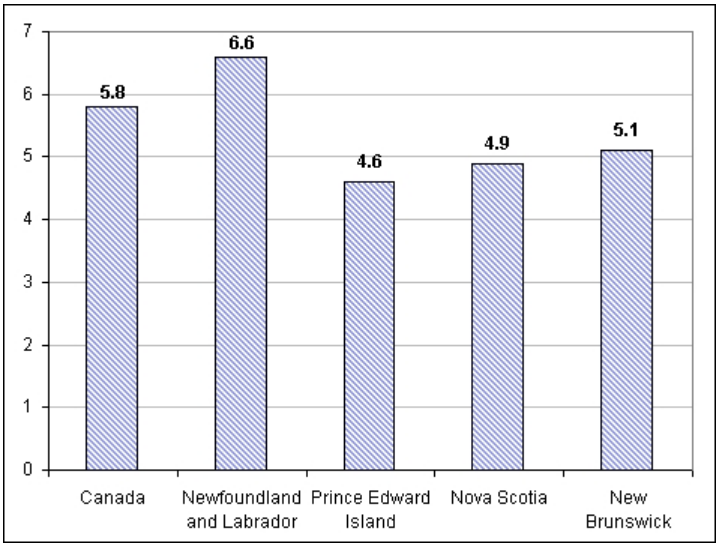
Source: Statistics Canada, *CANSIM* Database, Table 102-0030: Infant mortality, by sex and birth weight, Canada, provinces and territories, annual.

[109] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#19.
[110] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin1.htm#19.
[111] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, pages 305-306. Note that Statistics Canada and Health Canada caution that some of the variation in international comparisons may be due to different reporting rates among countries – particularly whether low birth weight infants are included in the calculations.
[112] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.

Using Statistics Canada's Health Indicators data, which are not entirely compatible with Statistics Canada's CANSIM database used in Table B6 above, the infant mortality rate in Canada in 1996 was 5.8 per 1,000, somewhat higher than the 5.6 figure provided by the CANSIM data.

The Health Indicators data indicate that in 1996, Prince Edward Island had the lowest infant mortality rate in Canada (4.6 per 1,000), followed by Nova Scotia at 4.9 per 1,000, and New Brunswick at 5.1 per 1,000 – the three Maritime provinces ranking as the best in Canada for this indicator. By contrast, Newfoundland and Labrador's infant mortality rate of 6.6 per 1,000 in 1996 was the third highest among Canada's provinces, after Saskatchewan at 8.7 per 1,000 and Manitoba at 7.3 (Figure 185). The infant mortality rate in Nunavut was 17.9 per 1,000.[113]

Figure 185. Infant mortality per 1,000 live births, both sexes, Canada and Atlantic Provinces, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Birth, Death and Stillbirth Databases, 1998; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths1.htm, extracted 8 January, 2003.

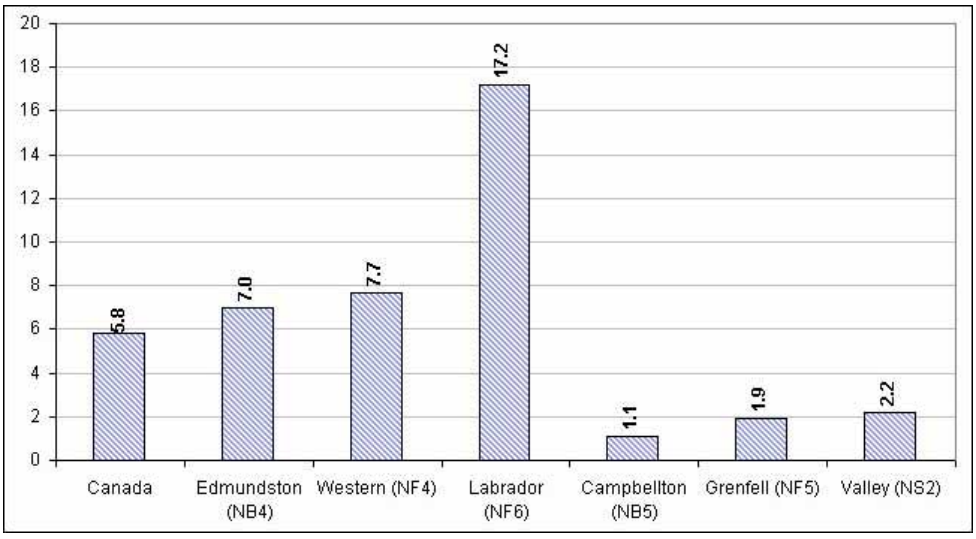
According to the most recently available 1999 CANSIM data, these rankings are markedly different, showing Canada's infant mortality rate at 5.3 per 1,000, with the lowest rates in British Columbia (3.8), Nova Scotia (4.0), Newfoundland and Labrador and Quebec (4.9), and New Brunswick (5.0). According to these more recent data, PEI has the second highest infant mortality rate among Canadian provinces at 6.6 per 1,000 live births after Manitoba (8.4). Nunavut registers an infant morality rate of 14.9 per 1,000.[114] For the sake of comparability with the health district data in Statistics Canada's Health Indicators database, the 1996 statistics in the previous paragraph are used below for comparative purposes.

[113] Statistics Canada, *Health Indicators,* catalogue no. 82-221-XIE, December, 2001, available at: http://www.statcan.ca/english/freepub/82-221-XIE/00502/tables/html/1412.htm.
[114] Statistics Canada, *CANSIM* Database, Table 102-0030: Infant mortality, by sex and birth weight, Canada, provinces and territories, annual, available at: http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths1.htm.

However, these broad averages can be misleading, as Canadian infant mortality rates differ widely by socio-economic status, ethnicity, and gender. For example, the infant mortality rate in the highest income group is significantly lower than that of the lowest income group, and the rate among First Nations is twice that of Canada as a whole. Infant mortality is also higher for boys than for girls.[115]

Among the Atlantic region health districts, Labrador (NF6) had by far the highest infant mortality rate in 1996 at 17.2 deaths per 1,000 live births, well above the next highest rate of 7.7 per 1,000 in Western (NF4). In 1996, Campbellton (NB5) and Grenfell (NF5) had the lowest infant mortality rates at 1.1 and 1.9 per 1,000 live births, respectively (Figure 186).

Figure 186. Infant mortality per 1,000 live births, both sexes, Canada and selected Atlantic region health districts, 1996 (rate)



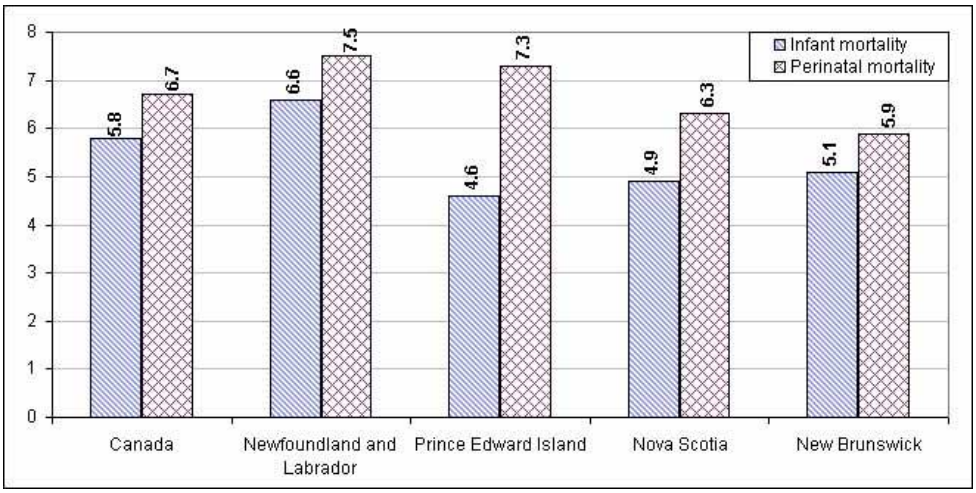
Sources: Statistics Canada, Vital Statistics, Birth, Death and Stillbirth Databases, 1998; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths1.htm, extracted 8 January, 2003.

As with many other health district data, small sample sizes and high sampling variability require great caution in interpreting these raw data. For example, the coefficient of variation for the Campbellton result above ranges from a low of 0.1 per 1,000 to a high of 5.3 per 1,000. Since every other health district in Atlantic Canada, with the exception of Labrador, has a CV with a low-end result of less than 5.3, it is statistically possible that any one of those health districts could actually have the lowest rate of infant mortality in Atlantic Canada. Only in the case of the Labrador results above is it possible to be reasonably confident that the ranking has validity. For this reason, readers of these text volumes are referred to the confidence intervals provided in the accompanying appendices (in this case Appendix B, Table 105).

[115] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html; Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, pages 305-306; Statistics Canada, *Health Indicators,* catalogue no. 82-221-XIE, December, 2001, available at: http://www.statcan.ca/english/freepub/82-221-XIE/00502/tables/html/1412.htm.

In 1996, the national perinatal mortality rate (including stillbirths and early neonatal deaths) was 6.7 per 1,000 live births, with the lowest rates in Canada in Quebec (5.8), New Brunswick (5.9), British Columbia (6.2), and Nova Scotia (6.3) and the highest rates in Saskatchewan (8.1), Newfoundland and Labrador and Manitoba (7.5), PEI (7.3), and Ontario and Alberta (7.1). Figure 187 compares infant and perinatal mortality rates in the four Atlantic provinces with those in Canada.

Figure 187. Infant and perinatal mortality per 1,000 live births, Atlantic Provinces and Canada, 1996 (rate)

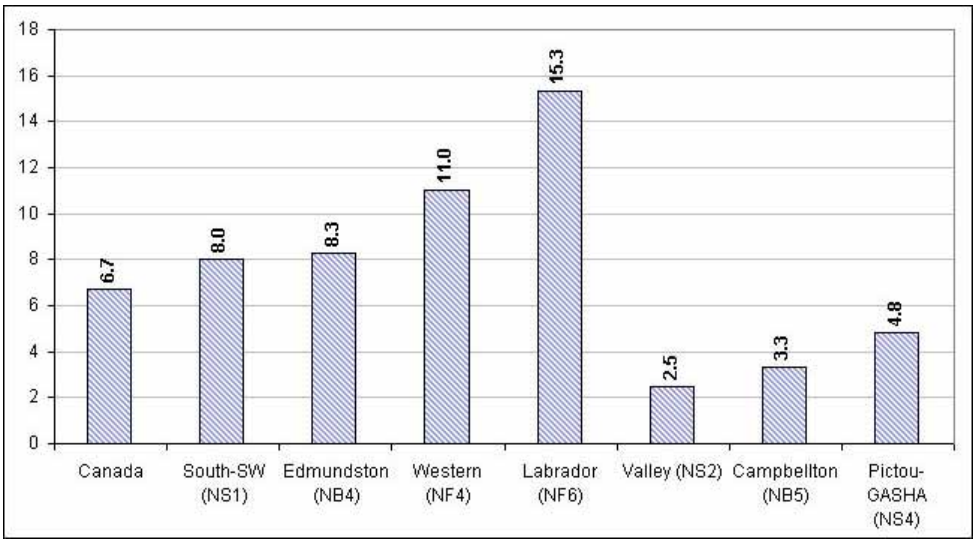


Sources: Statistics Canada, Vital Statistics, Birth, Death and Stillbirth Databases, 1998; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths1.htm, extracted 8 January, 2003.

Of the 21 health districts, Labrador (NF6) had the highest rate at 15.3 perinatal deaths per 1,000 live births, followed by Western (NF4) at 11.0, Edmundston (NB4) at 8.3, and South-Southwest (NS1) at 8.0. The Annapolis Valley (NS2) had the lowest rate of perinatal mortality at 2.5 per 1,000, followed by Campbellton (NB5) at 3.3, and Pictou-Guysborough-Antigonish-Strait (NS4) at 4.8 (Figure 188). Nine of the 21 Atlantic region health districts reported perinatal mortality rates higher than the national average, with the rest reporting lower rates.

As above, great caution must be exercised in interpreting these raw data. For example, the coefficient of variation for Annapolis Valley result above ranges from a low of 1.1 per 1,000 to a high of 5.0 per 1,000. Since 12 other health districts in Atlantic Canada have a CV with a low-end result of less than 5.0, it is statistically possible that any one of those 12 health districts could actually have the lowest rate of perinatal mortality in Atlantic Canada.

Figure 188. Perinatal mortality per 1,000 live births, selected health districts in the Atlantic Provinces and Canada, 1996 (rate)



Sources: Statistics Canada, Vital Statistics, Birth, Death and Stillbirth Databases, 1998; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/hlthstatus/deaths1.htm, extracted 8 January, 2003.

2.4.5 Hysterectomy rate

At present, there is a level of uncertainty concerning the appropriate use of this surgical procedure and that is reflected in wide variations in the utilization rates. The "right" level of utilization is not known and inter-regional hysterectomy rates may vary two- to three-fold in Canada.[116] There have been numerous studies on the appropriateness of hysterectomy surgical procedures, many indicating inappropriate applications. For example, in a 1993 study in the U.S., it was found that 16% of the surgeries were inappropriate.[117] For this reason, no effort is made here to interpret the results, but the data are supplied to indicate the very substantial disparity between Atlantic region rates and the rest of the country.

Definition

"Age-standardized rate for hysterectomies provided to inpatients in acute care hospitals, per 100,000 females age 20 and older."[118]

Data Source

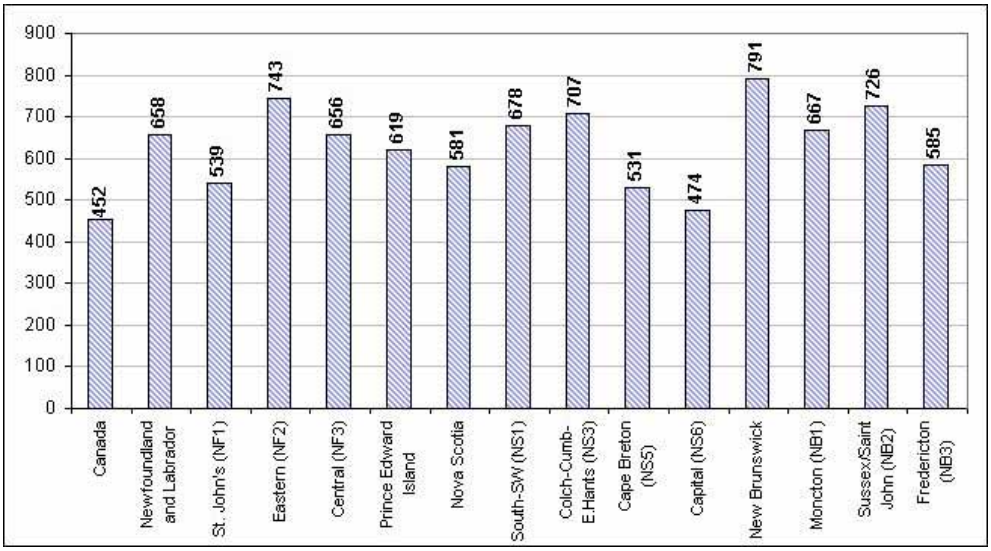
Canadian Institute for Health Information, Hospital Morbidity Database.

[116] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/01201/defin4.htm.
[117] Bernstein *et al*., "The Appropriateness of Hysterectomy: A Comparison of Care in Several Health Plans," *Journal of the American Medical Association, 269*(18):2398-2402, 1993.
[118] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/01201/defin4.htm.

Results

For 2002, the national rate of hysterectomies was 452 per 100,000 females aged 20 years and older. This was much lower than the rates in each of the Atlantic Provinces and in all reporting Atlantic region health districts. In fact, all four Atlantic provinces had by far the highest rates of hysterectomies in the country, led by New Brunswick at 791 per 100,000 females aged 20 and older, followed by Newfoundland and Labrador at 658, Prince Edward Island at 619, and Nova Scotia at 581. All these rates were substantially higher than the rest of the country, with the next highest rate of hysterectomies in Saskatchewan (515), and the lowest rates in British Columbia (414), Quebec (427), and Ontario (431) (Figure 189).

Figure 189. Hysterectomy per 100,000 females aged 20 and older, Canada, Atlantic Provinces, and reporting Atlantic region health districts, 2002 (rate)



Source: Canadian Institute for Health Information, Hospital Morbidity Database, 2002; available at http://secure.cihi.ca/hirpt/jsp/HIDispatcher.jsp, extracted 8 January, 2003. This CIHI database can also be accessed by clicking on "hysterectomy (CIHI)" on Statistics Canada's Health Indicators web site at: http://www.statcan.ca/english/freepub/82-221-XIE/00503/tindex.htm.

2.4.6 Caesarean section rate

Definition

"Proportion or percentage of females delivering babies in hospital by Caesarean section, per 100 live births. Due to characteristics of the database, stillbirths are excluded from the denominator. As well, only health districts with populations over 100,000 are considered."[119]

[119] Statistics Canada Internet Site http://www.cihi.ca/indicators/en/defin3.shtml.

Data Source

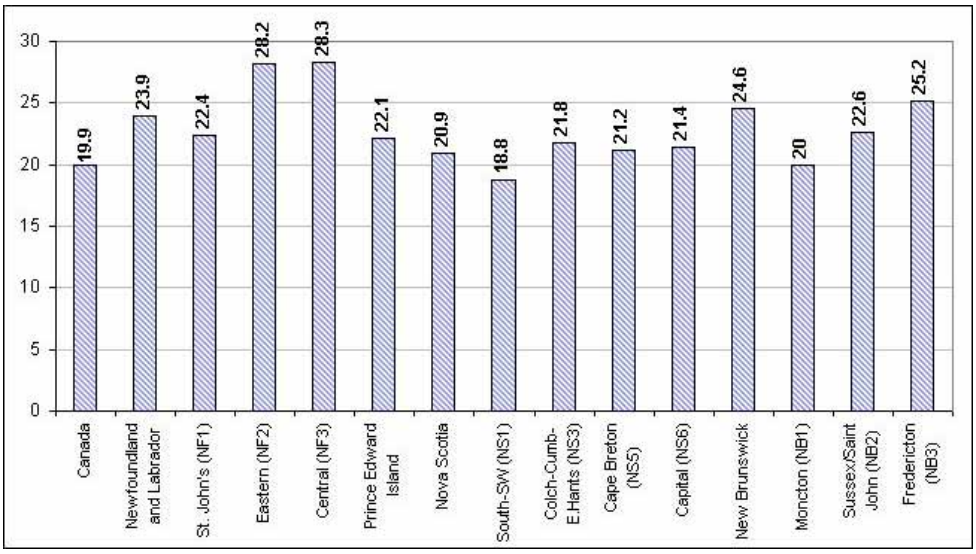
Canadian Institute for Health Information, Hospital Morbidity Database.

Results

The Caesarean section rates in all four Atlantic Provinces were higher than the national rate of 19.9 C-sections per 100 live births in 2002. New Brunswick had the highest rate of C-sections in the country (24.6 per 100 live births), followed by Newfoundland and Labrador (23.9), British Columbia (23.2), Prince Edward Island (22.1) and Nova Scotia (20.9) (Figure 190). The lowest rates in the country were in Saskatchewan (16.7) and Quebec (17.7).

Of the ten Atlantic region health districts reporting data, only one had lower rates than national average: South-Southwest (NS1) at 18.8 per 100 live births. The highest C-section rates occurred in two Newfoundland and Labrador health districts: Central (NF3) at 28.3 per 100 and Eastern (NF2) at 28.2 per 100 (Figure 190).

Figure 190. Caesarean section rates as a percentage of live births, Canada, Atlantic Provinces, and reporting Atlantic region health districts, 2002 (%)



Source: Canadian Institute for Health Information, Hospital Morbidity Database, 2002; available at http://secure.cihi.ca/hirpt/jsp/En_HIQuery.jsp, extracted 8 January, 2003, and at http://www.cihi.ca/hirpt/jsp/HIDispatcher.jsp. This CIHI database can also be accessed by clicking on "Caesarean sections (CIHI)" on Statistics Canada's Health Indicators web site at: http://www.statcan.ca/english/freepub/82-221-XIE/00503/tindex.htm.

2.4.7 Vaginal birth after Caesarean (V-BAC)

There is considerable evidence that vaginal birth is safe for many women who have previously delivered by Caesarean section. However, it is important to note that, although the risks are low,

some maternal and neonatal outcomes have been shown to be less risk-free than having a repeat Caesarean.[120] Again, no interpretation of results is offered here, but the Atlantic Canada data are presented to illustrate the very wide variance in results.

Definition

"Proportion or percentage of females who have previously received a Caesarean section who give birth via a vaginal delivery in an acute care hospital."[121]

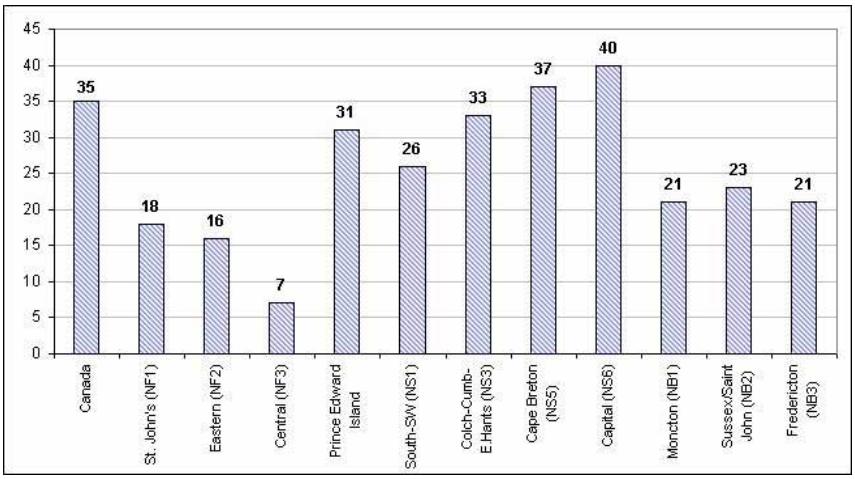
Data Source

Canadian Institute for Health Information, Hospital Morbidity Database.

Results

In 2001, the national rate for vaginal birth after Caesarean section (V-BAC) was 35%, representing the percentage of females who have previously had a C-section and have subsequently successfully given birth vaginally. In the Atlantic region health districts reporting V-BAC (only those with populations of 100,000 or more with PEI considered as one district), the percentages varied very widely, ranging from a low of 7% in Central Newfoundland (NF3) to a high of 40% in the Halifax Capital region (NS6). Only Halifax (40%) and Cape Breton (NS5) with a V-BAC rate of 37%, reported higher percentages of V-BAC than the national average (Figure 191).

Figure 191. Vaginal birth after Caesarean section as a percentage of females with previous Caesarean section for selected health districts, Atlantic Canada and Canada, 2001 (rate)



Source: Canadian Institute for Health Information, Hospital Morbidity Database, 2001; available at http://secure.cihi.ca/hirpt/jsp/HIDispatcher.jsp, extracted 8 January, 2003. This CIHI database can also be accessed by clicking on "Vaginal birth after caesarean (VBAC) (CIHI)" on Statistics Canada's Health Indicators web site at: http://www.statcan.ca/english/freepub/82-221-XIE/00503/tindex.htm.

[120] Smith *et al.,* "Risk of Perinatal Death Associated with Labor after Previous Cesarean Delivery in Uncomplicated Term Pregnancies," *JAMA, 287*(20):2684-2690, 2002.
[121] Statistics Canada Internet Site http://www.cihi.ca/indicators/en/defin3.shtml.

2.4.8 Chlamydia

Chlamydia may not have the high profile of other sexually-transmitted diseases such as gonorrhea and syphilis, but it is by far the most prevalent. While rates of other sexually-transmitted diseases have been decreasing, rates for chlamydia have not. This is disturbing, as the disease can contribute to sterility.[122]

While chlamydia can infect males, a disproportionate number of females are affected, with female rates many times higher than male rates. If left untreated in females, chlamydia may lead to pelvic inflammatory disease, and increase the risk of HIV infection. Chlamydia infection can be particularly dangerous during pregnancy, as it can result in eye or lung infections in the newborn. One of the concerns is that most of those infected with chlamydia display no symptoms for extended periods.[123]

Definition

"Number of new cases of chlamydia reported in a given year, given as a rate per 100,000 population."[124]

Data Source

Canadian Institute for Health Information, Quality of Service Indicators, Public Health Surveillance and Protection.

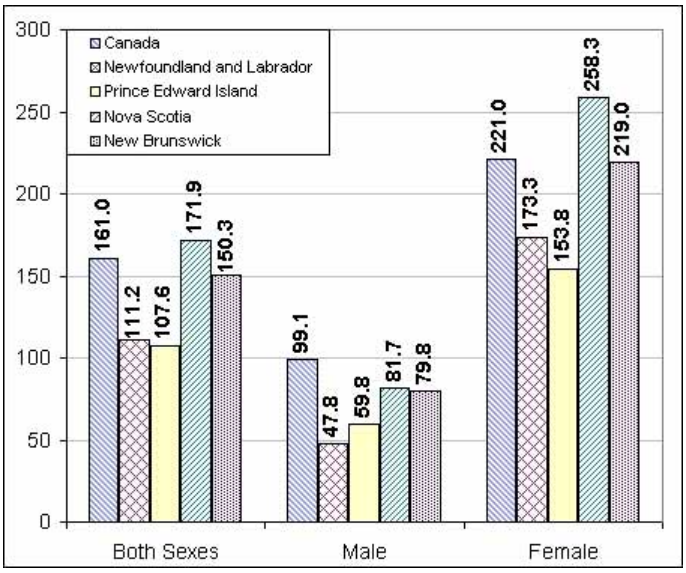
Results

The 2001 chlamydia rate for Canada was 161 per 100,000 for both sexes The lowest chlamydia rates in the country were in PEI (107.6) and Newfoundland and Labrador (111.2). New Brunswick was slightly below the national average at 150.3 per 100,000 and Nova Scotia somewhat above at 171.9.

The 2001 chlamydia rate for Canadian females was 221.0 per 100,000, over two times the male rate of 99.1. Of the four Atlantic provinces, Nova Scotia had the highest reported rates both for males and for females, at 258.3 for females and 81.7 for males, as well as the largest gap between males and females. Prince Edward Island had the lowest chlamydia rate in the country for females, at 153.8 per 100,000, and Newfoundland and Labrador had the lowest rate in the country for males, at 47.8 per 100,000 (Figure 192).

[122] *Toward a Healthy Future: Second Report on the Health of Canadians*, Health Canada, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[123] Canadian Institute for Health Information, http://secure.cihi.ca/cihiweb/en/pirc_indicators_13d_ProvSex_e.
[124] Statistics Canada Internet Site http://www.cihi.ca/indicators/en/defin3.shtml.

Figure 192. Chlamydia per 100,000 population for both sexes (Canada), males/females for the Atlantic Provinces, 2001 (rate)



Sources: Canadian Institute for Health Information, Quality of Service Indicators, Public Health Surveillance and Protection, available at http://secure.cihi.ca/cihiweb/en/pirc_indicators_13d_ProvSex_e, extracted on 13 February, 2003.

2.4.9 Breastfeeding practices

Breastfeeding is recognized as providing a wide range of medical, developmental, and emotional benefits for children: better protection from infectious disease, better development of the brain and nervous system, and improved mother-child bonding.[125,126]

Breastfeeding is recognized as providing optimal nutritional, immunological, and emotional supports for growing infants.[127] The nutrients, enzymes, hormones, immunoglobulines, and immunological properties in human milk have been shown to protect infants from respiratory ailments, otitis media, gastroenteritis, infectious diseases, and Sudden Infant Death Syndrome. Studies have also found that the benefits of breastfeeding continue for 2-10 years beyond infancy in protecting against childhood cancers, insulin-dependent diabetes, allergies, Crohn's disease, and learning disabilities, and in fostering healthy cognitive development and healthy development of the brain and nervous system.[128]

[125] Hanson, L., *et al.,* "Breastfeeding as Protection against Gastroenteritis and Other Infections," *Acta Paediatricia Scandinavia*, *74*:641-642, 1985.
[126] Lanting, C., *et al.*, "Neurological Differences Between Nine-Year-Old Children Fed Breast Milk or Formula Milk as Babies," *Lancet, 334*:1319-22, 1994.
[127] World Health Organization and UNICEF, *Protecting and Supporting Breast-feeding: The special role of maternity services,* Geneva, 1989.
[128] Davis M.K., Savitz D.A., Graubard B.I., "Infant feeding and childhood cancer", *Lancet* 1998; 2:365-368; Health Canada, *Toward a Healthy Future; Second Report on the Health of Canadians,* Ottawa, 1999, page 78.

There is strong evidence that breastfed infants have decreased incidence and severity of pneumonia, diarrhea, ear infections, bacterial meningitis, bacteremia, urinary infections and serious bacterial infections of the intestines.[129] And there is evidence that breastfeeding protects against asthma and obesity.[130]

Many studies also indicate that breast-feeding benefits the health of mothers. These benefits include less post-partum bleeding, earlier return to pre-pregnancy weight, improved bone remineralization and reduced risk of osteoporosis, fewer consequent hip fractures in later life, and reduced risk of ovarian and pre-menopausal breast cancers.[131]

The Nutrition Committee of the Canadian Paediatric Society has recommended that breast milk be the only source of nutrients for most infants in the first 3-6 months of life, and federal and provincial health departments now officially encourage breastfeeding by new mothers.[132] For all these reasons, breastfeeding rates are a key indicator of women's health, with higher rates indicating improved health outcomes for both mothers and their infants.

Researchers have found strong links between a mother's level of education and the likelihood of breastfeeding. In 1997, only 60% of mothers with less than high school education breastfed their babies, compared to 95% of those with a university education.[133]

Definition

"Proportion of recently-born children of mothers aged 15 to 49 who were breastfed, and the duration of breastfeeding. Recently-born means born within three years previous to being surveyed."[134]

Data Sources

Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, North component; Statistics Canada, National Longitudinal Survey of Children and Youth, 1994/95, 1996/97 and 1998/99.

Results

Breastfeeding practices were assessed in the 1994/95 and 1996/97 National Population Health Surveys. In that short period, the rate of breastfeeding increased in Canada (Table B7), and it is now estimated that four out of five recent Canadian mothers breastfeed their babies. In 1994/95,

[129] American Academy of Pediatrics. "Breastfeeding and the Use of Human Milk," *Pediatrics* Vol. 100,(6):1035-39, 1997.
[130] Oddy W.H., Holt P.G., Sly P.D. et al., "Association between breast feeding and asthma in 6 year old children: findings of a prospective birth cohort study," *British Medical Journal,* Sept 25 1999; 319 (7213): 815-9; Von Kries R, Koletzko B, Sauerwald T, et al., *British Medical Journal,* 1999; 319 (7203): 147-50.
[131] Newcomb P.A., Storer B.E., Longnecker M.P., et al., "Lactation and a reduced risk of premenopausal breast cancer," *New England Journal of Medicine* 1994; 330:81-87, and other sources, all cited in Greater Boston Physicians for Social Responsibility, "What about breastfeeding?" available at http://psr.igc.org/breastfeeding.htm.
[132] Health Canada, *Statistical Report on the Health of Canadians,* Ottawa, 1999, page 196.
[133] Health Canada, *Toward a Healthy Future: Second Report on the Health of Canadians*, Ottawa, 1999. Available at http://www.hc-sc.gc.ca/hppb/phdd/report/toward/report.html.
[134] Statistics Canada Internet Site http://www.statcan.ca/english/freepub/82-221-XIE/00502/defin2.htm#39.

24% of children of recent Canadian mothers, aged 15-49, were not breastfed, and in 1996/97, 22% of recently-born Canadian children were not breastfed.

Table B7. Breastfeeding practices, by age group of recent mothers, mothers aged 15 to 49, Canada, 1994/95-1996/97 (%)

	Recently-born children who:			
	Are currently being breastfed	Were breastfed for at least 3 months	Were breastfed for less than 3 months	Were not breastfed
1994/95	18.9%	31.0%	22.3%	24.0%
1996/97	20.9%	35.2%	21.6%	22.0%

Source: Statistics Canada, National Population Health Surveys, 1994/95 and 1996/97.

Breastfeeding rates in Canada followed a west-east gradient. The highest rates of breastfeeding in Canada were in the west, followed by the Prairies and Ontario. Recent mothers in the Atlantic region and in Quebec were considerably less likely to breastfeed their babies than mothers in the rest of Canada. But the east is converging with the rest of Canada, and registering significant increases in rates of breastfeeding. The lowest rates of breastfeeding were in Quebec and in Newfoundland and Labrador.

In 1994/95, 44.6% of children of recent mothers in Newfoundland and Labrador, 37.1% in PEI, 34.4% in Nova Scotia, 37.9% in New Brunswick, and 42.7% in Quebec had not been breastfed, compared to the national average of 24.0%. These proportions declined in 1996/97 to 38.8% in Newfoundland, 26.7% in PEI, 28.4% in Nova Scotia, 33.3% in New Brunswick, and 39.5% in Quebec, compared to the national average of 22% (Figure 193).[135]

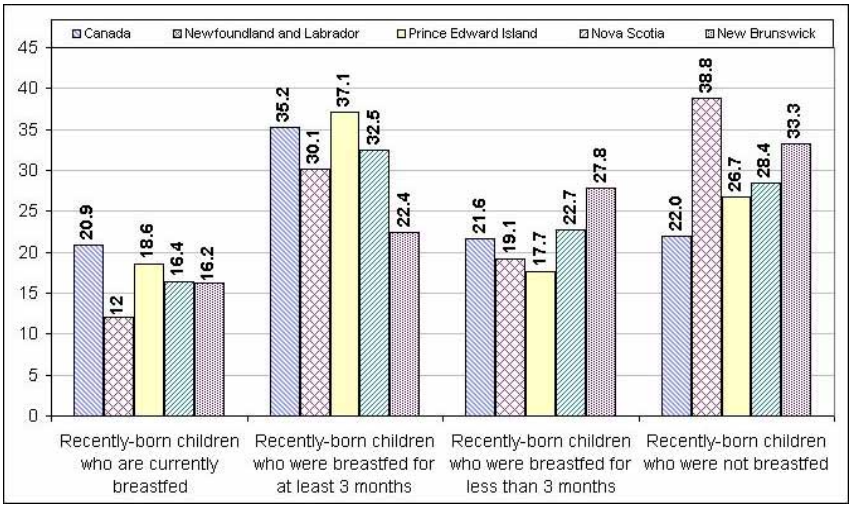
In 1996/97, only 12% of recently-born infants in Newfoundland were being breastfed at the time of the survey – the lowest rate in the country, followed by Quebec at 15.8%, New Brunswick at 16.2%, Nova Scotia at 16.4%, and Prince Edward Island at 18.6%. This compares with a national average of 20.9%.[136]

For recently born infants who were breastfed for at least 3 months, the lowest rates in the country were in New Brunswick and Quebec (22.4%), followed by Newfoundland and Labrador (30.1%), Nova Scotia (32.5%), Manitoba (33%), and Prince Edward Island (37.1%), compared to the national average of 35.2%. All other provinces had rates of breastfeeding for at least three months that were higher than the national average.

[135] Statistics Canada, National Population Health Surveys, 1994/95 and 1996/97, "Breastfeeding practices, by age group of recent mothers, mothers aged 15 to 49, Canada and provinces, 1994/95-1996/97," available at: http://www.statcan.ca/english/freepub/82-221-XIE/00502/tables/html/2171.htm. 1996/97 data for PEI have a coefficient of variation (CV) from 16.6% to 33.3%, and should therefore be interpreted with caution.
[136] Data for Newfoundland and Labrador and PEI have a CV from 16.6% to 33.3% and should be interpreted with caution.

For recently born infants who were breastfed for less than 3 months, the lowest rates in the country were in PEI (17.7%) and Newfoundland and Labrador (19.1%),[137] compared to the national average of 21.6%.In Nova Scotia and New Brunswick 22.7% and 27.8% respectively of infants had been breastfed for less than three months (Figure 193).

Figure 193. Breastfeeding practices, mothers aged 15-49, as a percentage of all mothers, Canada and Atlantic Provinces, 1996/97 (%)



Sources: Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, North component; Statistics Canada, National Longitudinal Survey of Children and Youth, 1994/95, 1996/97 and 1998/99; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/nonmed/behaviours4.htm, extracted 8 January, 2003.

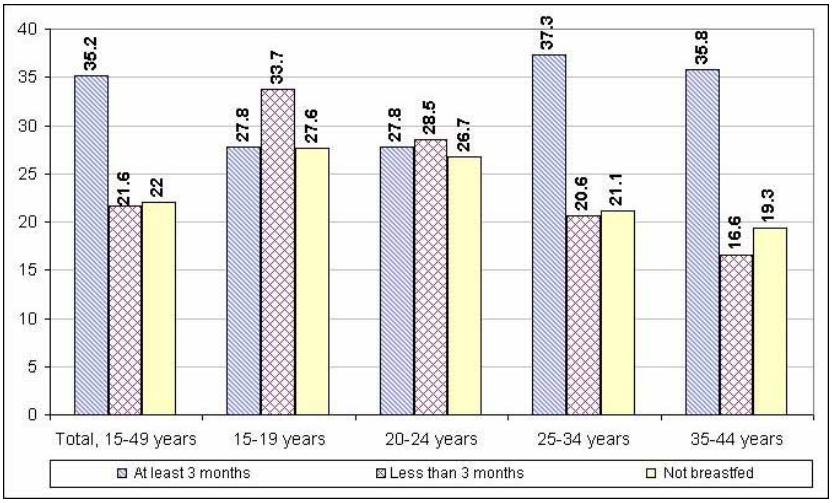
Note: Data for Newfoundland and Labrador and PEI for the "currently breastfed" and "less than 3 months" categories and data for PEI in the "not breastfed" category have a CV from 16.6% to 33.3% and should be interpreted with caution.

There are also substantial differences in breastfeeding according to the age of mothers, with older mothers significantly more likely to breastfeed their babies than younger mothers. Nationally, the lowest percentages of recently-born children who are currently breastfed are children of mothers in the 15-19 years age group (10.9%)[138] and in the 20-24 years age group (16.9%). Recently-born children of mothers in the 25-34 and 35-44 years age groups are considerably more likely to be currently breastfed (20.9% and 27% respectively).

Correspondingly, a higher proportion of recently born children of younger mothers have never been breastfed compared to recently-born children of older mothers. Thus, 27.6%[139] of recently born children of mothers aged 15-19 had never been breastfed, compared to just 19.3% of recently born children of mothers aged 35-44 (Figure 194).

[137] Data for Newfoundland and Labrador and PEI have a CV from 16.6% to 33.3% and should be interpreted with caution.
[138] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.
[139] Data have a CV from 16.6% to 33.3% and should be interpreted with caution.

Figure 194. Breastfeeding practices by mother's age, Canada, 1996/97 (%)



Sources: Statistics Canada, National Population Health Survey, 1994/95 and 1996/97, cross sectional sample, North component; Statistics Canada, National Longitudinal Survey of Children and Youth, 1994/95, 1996/97 and 1998/99; available at http://www.statcan.ca/english/freepub/82-221-XIE/00502/nonmed/behaviours4.htm, extracted 8 January, 2003.

Summary – Reproductive Health

Indicators of reproductive health in the Atlantic Provinces differ from the national averages and national rates in a number of areas, including:

- **Lower teenage pregnancy rates.** All four Atlantic provinces had lower teenage pregnancy rates than the national average. Newfoundland and Labrador had the lowest rate of teenage pregnancies in the country.

- **Higher live birth rates among teenagers.** All four Atlantic Provinces had higher rates of live births among teenagers than the national rate, and live births accounted for a much larger proportion of teenage pregnancies than in the rest of Canada – 81.8% in PEI (the highest proportion in Canada), compared to just 47.4% in Canada.

- **Lower abortion rates among teenagers.** The Atlantic region had the lowest rates of induced abortions among teenagers in the country, with PEI recording by far the lowest rate in Canada.

- **Higher hysterectomy rates.** All four Atlantic provinces had by far the highest rates of hysterectomies in the country, with New Brunswick the highest.

- **Higher C-section rates.** The Caesarean section rates in all four Atlantic Provinces were higher than the national rate. New Brunswick had the highest rate of C-sections in the country, followed by Newfoundland and Labrador.

- **Lower V-BAC rates.** All four Atlantic provinces had lower V-BAC rates than Canada. Cape Breton (NS5) and Halifax (NS6) were the only exceptions.

- **Generally lower chlamydia rates.** With the exception of Nova Scotia, Atlantic Canada had generally lower chlamydia rates than Canada. PEI and Newfoundland and Labrador have the lowest chlamydia rates in Canada.

- **Lower breastfeeding rates.** Recent mothers in all four Atlantic provinces were considerably less likely to breastfeed their babies than mothers in the rest of Canada. But all four provinces were registering significant increases in rates of breastfeeding, particularly in PEI. In 1996/97 recently born children were still less likely to be currently breastfed in Newfoundland and Labrador than in any other province.

- **Comparable rates of infant and perinatal mortality.** Rates of infant and perinatal mortality and of low birth weight in Atlantic Canada were comparable to those in Canada, but Labrador registered the highest rates of infant and perinatal mortality and of low birth weight in the region, well above the national average.