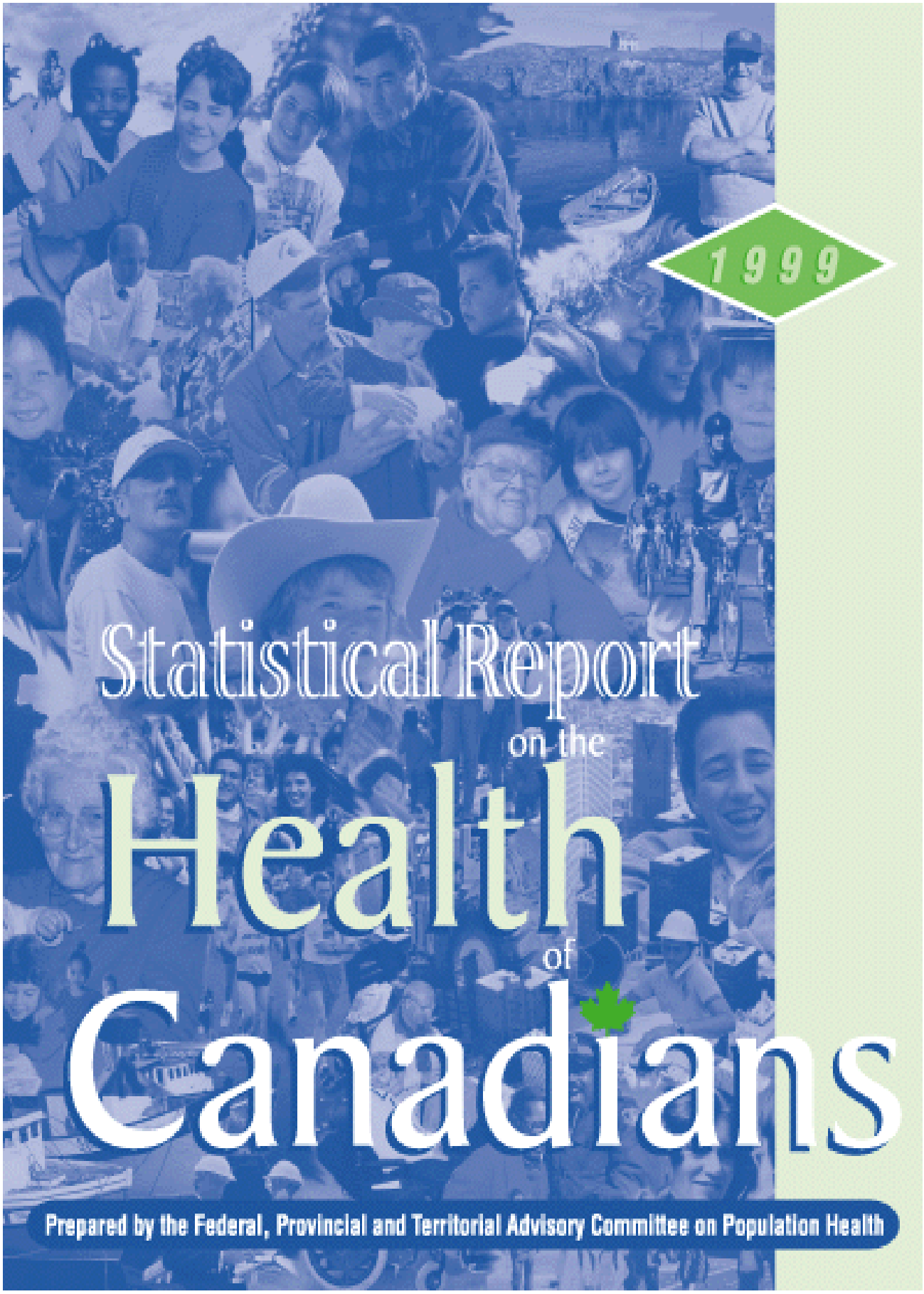

1999

Statistical Report on the Health of Canadians

Prepared by the Federal, Provincial and Territorial Advisory Committee on Population Health

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Prepared by the Federal, Provincial and Territorial Advisory Committee on Population Health

for the

Meeting of Ministers of Health

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Preface

The *Statistical Report on the Health of Canadians* is the result of a collaborative effort by Health Canada, Statistics Canada, and the Canadian Institute for Health Information. The current *Report* is the second edition of a statistical overview of the health of the Canadian population. Like the first edition in 1996, *Report on the Health of Canadians: Technical Appendix*, this *Report* was commissioned by the Federal, Provincial and Territorial Advisory Committee on Population Health. A companion to the current report, *Toward a Healthy Future: Second Report on the Health of Canadians*, provides more discussion and is less statistical in its treatment of these topics.

Print copies of this *Statistical Report on the Health of Canadians* and of *Toward a Healthy Future: Second Report on the Health of Canadians* are available from provincial and territorial Ministries of Health or from:

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Disclaimer

A large number of authors (and reviewers) from a variety of agencies contributed to this *Report*, and their contributions on the various topics are for the most part descriptive. Interpretation of the data and the commentary in the introductory sections are those of the authors, however, and should not be taken as official statements by their employers or the Federal, Provincial and Territorial Advisory Committee on Population Health.

Acknowledgments

This *Report* is the result of a collaborative effort lasting over a year and involving many individuals in several agencies at the national and provincial/territorial levels — analysts, programmers, authors, editors, production people, reviewers, and managers.

The authors came from Statistics Canada (Jason Gilmore — all topics except as specified below; Paula Woollam — Topics 19, 25, 37, and 74), the Canadian Institute for Health Information (Terry Campbell — Topic 26; Barbara McLean — Topics 27, 76, and 77; Joan Roch and Sharon Tracy — Topics 28 and 60; Joan Roch and Geoff Ballinger — Topic 29), Health Canada (Margaret Litt — Topic 15; Sandra Houston — Topics 20 and 50; Margaret Herbert — Topic 62; Jocelyn Rouleau — Topic 65; Jo-Anne Doherty — Topic 69; Robbi Jordan — Topic 70; John Farley, Chris Archibald, and Howard Njoo — Topic 71; Paul Sockett — Topic 72; Howard Morrison — Topic 79), and the private sector (Thomas Stephens — Topics 11, 12, 14, 21–24, 31, 38, 39, 41, 45, 51, 52, 54, 63, 80, and introductions). They interpreted original data produced for this report in Statistics Canada by Pino Battisti and Ai Chau, and in Health Canada by Prem Khosla.

Helpful reviews of earlier versions were provided by the staff of the three partner agencies (Statistics Canada, Health Canada, and the Canadian Institute for Health Information) and by the Federal, Provincial and Territorial Advisory Committee on Population Health Working Group.

Production and composition support was provided by Statistics Canada (Bernie Edwards, Micheline Pilon, Agnes Jones, Renée Bourbonnais and Anne Gervais), and the design was provided by Allium Consulting Group. Marla Sheffer edited the English version, and Claude C. Roy edited the French version, which was translated by Communications Essema. The overall scientific editor was Thomas Stephens.

Project management was provided by Stephanie Wilson (until September 1998), Lynda Bottoms (from September 1998), Dyanne Wilson (from January 1999), and Carol Silcoff (Health Canada), guided by an interagency team consisting of Pamela White (Statistics Canada); Joan Roch (Canadian Institute for Health Information); Maureen Carew, Bill Bradley, Hilary Robinson (until August 1998), and Linda Senzilet (from September 1998) (all from Health Canada); and Thomas Stephens.

The working group provided liaison with the Federal, Provincial and Territorial Advisory Committee on Population Health, which commissioned the *Report*. The group was chaired by John Millar (British Columbia) until December 1998 and subsequently co-chaired by Shaun Peck (British Columbia) and Kimberly Elmslie (Health Canada). Members were Jamie Blanchard (Manitoba), Gary Catlin (Statistics Canada), André Corriveau (until December 1998) and Peter Barss (until March 1999 — Northwest Territories), Stephan Gabos (Alberta), Clyde Hertzman, Debra Keays (until September 1998), and Hope Beanlands (Nova Scotia), Odette Laplante (until April 1998) and Madeleine Levasseur (Quebec), Randy Passmore (Saskatchewan), Craig Shields, Serge Taillon (Canadian Institute for Health Information), Monique de Groot (Health Canada), and other Health Canada members who served for various periods of time: Maureen Carew, Gregory Sherman, Paul Gully, Hilary Robinson, Linda Senzilet, and Rachel Moore.

Members of the Federal, Provincial and Territorial Advisory Committee on Population Health (and its Working Group) are listed in Appendix A.

Contents

Contents (continued)

Contents (concluded)

Introduction

Objectives of this *Report*

This is the second version of the *Statistical Report on the Health of Canadians.* Like the original in 1996,[1] this *Report* provides a comprehensive and detailed statistical overview of the health status of Canadians and the major determinants of that status. The original report was created for the Federal, Provincial and Territorial Advisory Committee on Population Health, which has also commissioned this update. The broad purpose of the *Report* is to help policy-makers and program planners identify priority issues and measure progress in the domain of population health.

The *Statistical Report* is meant to be a tool for learning as well as planning. The data identify populations at risk; suggest associations between health determinants, health status, and population characteristics; raise questions about the reasons for the widespread differences among the provinces and territories; and illustrate areas where Canada's health information system is robust, and others where it is relatively weak. These and other themes are touched on in the 11 section introductions of the *Statistical Report* and developed more fully in the companion publication, *Toward a Healthy Future: Second Report on the Health of Canadians*. One issue that cuts across almost all sections, however, is the relative paucity of data on Canada's Aboriginal population and on marginalized groups such as street people. While most of the topics in this *Report* describe at least 97% of the Canadian population, it is important to remember that the missing 3% often have a disproportionate share of health problems.

This edition of the *Report* updates 1996 topics wherever possible, usually using the same survey, but occasionally using improved sources. Of the 87 topics in the 1996 report, full or partial updates are provided for 73. Seventeen new topics are included, 11 were dropped, and a few were combined. Most of the topics that were dropped fall into the category of *determinants* (ownership of fire safety equipment, health hazards at work, employee health benefits) or even "determinants of determinants" (knowledge of the causes of heart disease, knowledge of STD prevention, youth attitudes concerning drinking and driving, support for behavioural change), while only a few were indicators of *health status* (infertility, high blood pressure and high plasma cholesterol, dementia). All were dropped in the absence of current data, not because they are not important.

Organization of the *Report*

The *Statistical Report* is organized into two major parts, *Determinants of health* and *Health status*. The sections under *Determinants of health* are deliberately wide-ranging, covering the social and economic environment (11 topics), the physical environment (three topics), health services (15 topics), personal resources and coping (six topics), health knowledge (three topics), and lifestyle behaviours (14 topics).

Under *Health status* are 32 topics that provide a diverse view of health. Inevitably, much of this is about "negative" health, because existing statistics focus on morbidity and mortality, but positive aspects of health status are covered whenever the data exist (three topics). The other major sections are general health and function (four topics), injuries (four topics), conditions and diseases (14 topics), and death (seven topics). In all cases, these topics describe the health of individuals, which, when considered in the aggregate, may be thought of as *population health status*. In contrast, the health of *society* — in particular, the social, economic, and physical environment — is treated as a *determinant* of individual health status.

In its broad coverage of topics, the *Statistical Report* is consistent with many current conceptual frameworks, such as *Strategies for Population Health*[2] and the Evans-Stoddart model.[3] This is intended to illustrate the very wide range of factors that affect health status, many of which are beyond the formal authority of health departments. However, the selection of topics, their relative length, or the ordering of sections is in no way meant to indicate their relative importance. Rather, this reflects the availability of appropriate data, as described further below. At the same time, only a few topics in this *Report* describe the resources and costs of the health care delivery system, as these have been under recent scrutiny in other projects, such as the National Forum on Health.[4]

The format of this edition is similar to that of the 1996 report, emphasizing breadth and consistency of presentation rather than depth of analysis. The text for each topic describes (a) its health significance, with cross-references to other relevant topics, (b) the results, with a focus on group comparisons — sex, age, social status, province/territory, and notable trends and relationships, (c) definitions, methods, and significant caveats affecting interpretation, and (d) references for data sources and any literature cited, including Internet websites for the agencies that are the principal sources of data.

The classification variables — sex, age, etc. — are similar to those used in the 1996 report, although income adequacy sometimes supplements education as an indicator of social status, and household type appears in some topics. The age groups in this edition are more detailed than in 1996; in particular, the large sample of the 1996–97 *National Population Health Survey* made it possible to differentiate ages 15–17 from ages 18–19, an important and revealing distinction for many topics.

Some readers of the first edition expressed interest in an urban/rural distinction. Such a variable is sometimes available for the major survey sources, but its interpretation is highly problematic. What appear to be urban/rural differences on individual variables could be confounded with province/territory of residence, socio-economic status, occupation, and perhaps ethnicity and age. There is a related problem defining areas that are clearly rural. Notwithstanding these problems, the *Report* provides some data on urban/rural differences.

Criteria for major data sources

The original 1996 *Report* utilized virtually all known data sources that were topical, national in scope, and reasonably recent. The *National Population Health Survey* of 1994–95 was an important source for the first edition; the cross-sectional data of the 1996–97 cycle of the *National Population Health Survey* are the major source for this update. The criteria for other data sources in this update were as follows:

- subject matter relevance — data items describing *health status* had to be at the *individual* level, while *determinants* could be individual- or community-level.
- national coverage — sources had to be Canada-wide (i.e., cover at least all provinces) and capable of providing reliable detail for *at least* the five regions (Atlantic, Quebec, Ontario, Prairies, British Columbia). Unfortunately, most tables do not have data for the territories.
- recency — data were meant to be no older than 1994–95 (although an exception was made in the case of air quality indicators).
- standard classification variables — individual-level data had to be available by a standard set of classification variables, as in 1996: age–sex groups,

province (or region) of residence, and socio-economic status (education or income). Data for the Aboriginal population are shown, where available, but, in general, there is no attempt in this *Report* to focus on any particular population group.

- data quality — sources had to be documented, of acceptable quality, and based on samples of adequate size and design to permit the reporting of age–sex and region-level detail without extensive data suppression resulting from confidence interval problems. In the case of a few indicators, sample sizes were insufficient to allow the data to be age-standardized by education or income groups. Some data collated from provincial/territorial sources by Statistics Canada and the Canadian Institute for Health Information may not precisely match the figures published by the provinces or territories because of editing procedures or definitional conventions.

About the tables and figures

Survey data are usually presented as whole numbers and thus may not always add up to the total because of rounding. Occasionally, data from small sub-samples with a high coefficient of variation (CV) require qualification of the table entries, as follows:

* moderate sampling variability; interpret with caution (CV = 16.6–33.3%)

\# data suppressed because of high sampling variability (CV > 33.3%).

Appendix A describes the sampling variability for the *National Population Health Survey*, the principal source of data for this *Report*. This table can be used to compare men and women or groups based on age, education, or income. It cannot be used to compare province-level data, as each province has its own table of sampling variability. The relatively high sampling variability of the provincial data is indicated by the frequent * and # symbols in the tables. Further details on the sample design for this and other surveys used in the *Report* can be found in the documentation accompanying the public use data tapes. The reader should note the sample sizes that are described in the section "On definitions and methods" that accompanies every topic. The small differences in the estimated population appearing in tables based on the *National Population Health Survey* reflect non-response to individual survey items. Because these missing responses were generally about 2% or less of the total (except for income adequacy, sexual practices and positive mental health), they are not shown, but are averaged into the other categories that are reported in the tables.

International comparisons in the figures generally refer to "selected OECD countries." The availability of data from members of the Organisation for Economic Co-operation and Development (OECD) varies greatly, and the selection of countries in any given figure was based strictly on the availability of recent data. This varies from country to country and from topic to topic; unfortunately, the United States and the United Kingdom are often missing from the figures, because the most recent data for them are several years older than those for Canada and most other OECD countries. This was also true for the first edition of the *Report*.

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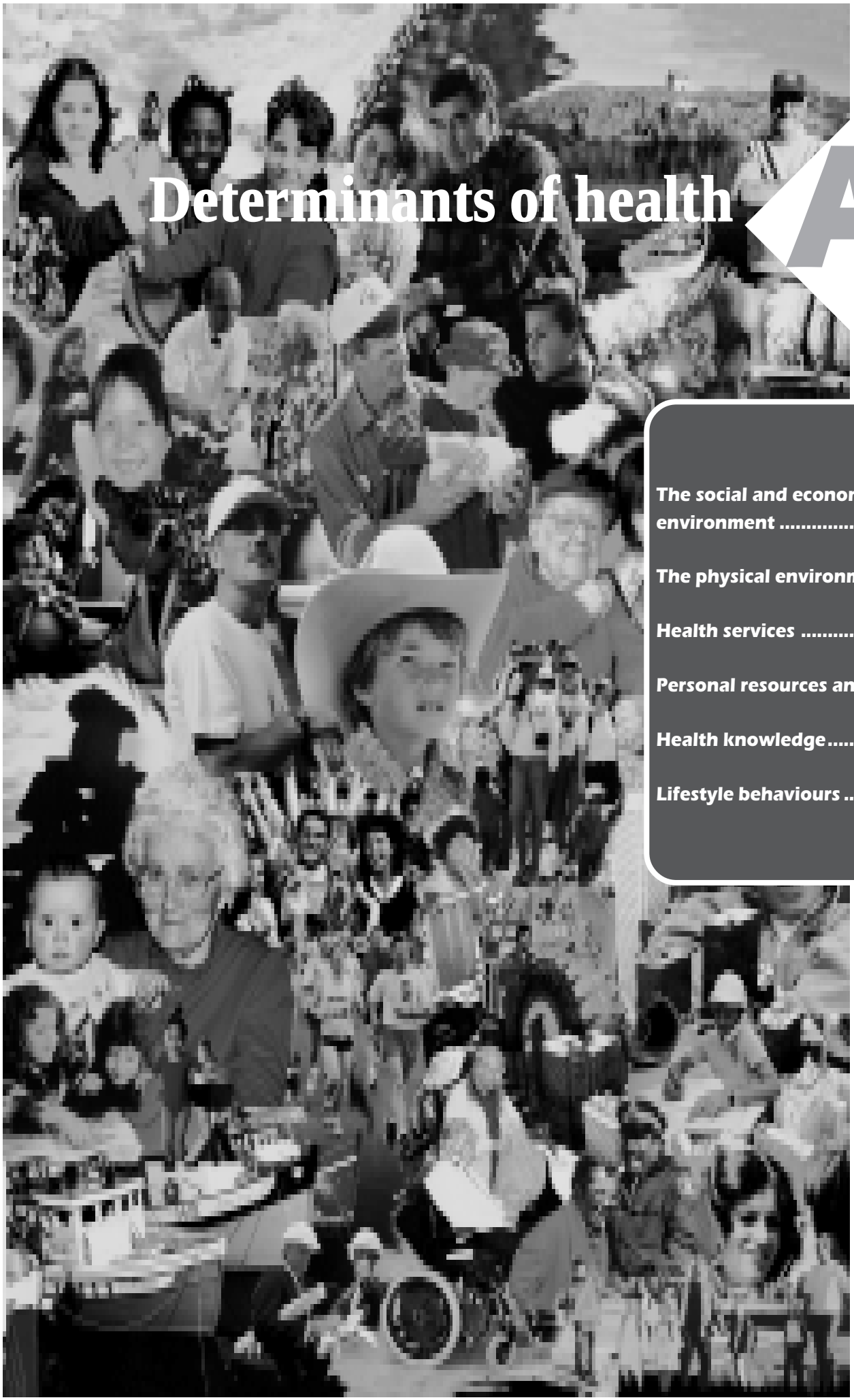

Determinants of health A

The social and economic environment

This set of 11 topics describes the nature of the Canadian population in the mid-1990s and recent trends in the composition of society that have an influence on individual and societal well-being. Many of these topics can be considered measures of social health*; because this* Report *is about the health status of* individuals*, social health is treated here as a determinant.*

In the case of poverty, unemployment, stress, and violence, the influence on health is direct, negative, and often shocking for a country as wealthy and as highly regarded internationally as Canada. Other indicators described here have a more indirect influence on health: age and family composition, the birth rate, immigration, and school readiness.

This section provides important background detail on population characteristics that serve as standard classification variables in most of the balance of this *Statistical Report*: age and sex composition, social status as revealed by education and income and, occasionally, by household type, and province/territory of residence. The aging of Canadian society, disparities in social status, and interprovincial/territorial comparisons provide recurring themes that underlie the patterns of findings in much of this *Report*.

Overview

Many of the trends revealed in this section are familiar: an aging population (Topic 1) and declining birth rate (Topic 3), a large increase in couples living common law with children (Topic 2) as well as many more children in single-parent families (Topic 2), increased immigration, especially from Asia (Topic 4), falling real incomes (Topic 6) despite increased labour force participation by women (Topic 7), and stubbornly high unemployment among youth (Topic 7).

The Index of Social Health provides a new summary of the health of Canadian society and how this has changed since 1970 (Topic 11). The index suggests that quality of life has declined since the early 1980s, even as economic output grew. Since this followed several years when social health and economic output moved in a near-perfect relationship, it suggests that policy choices starting over a decade ago have led to a divergence of the two trends. The implication is that a different course in economic and social policy could restore the positive trend in social health.

On data sources and gaps

The 1996 Census provides most of the data for this section. The major shortcoming is an absence of a routinely published measure of income *disparity*, which has not been updated by Statistics Canada since 1991. As the prime suspect in the disparities of health that are described in the later sections of this *Report*, income disparity is an important part of the policy puzzle. Perhaps even more revealing would be data on concentrations of *wealth* in addition to income, but such information is simply not available.

1

Population age and sex

Introduction

The characteristics of a population have an inevitable impact on the social and economic situation of a country. A population's age and sex composition can also affect various aspects of health, including general fertility rate (Topic 3), the use of health care services (Topics 15–29), mortality rates (Topic 82), prevalence of activity limitation (Topics 58 and 59), and chronic conditions (Topic 68), among others.

This topic describes the age and sex composition of the Canadian population.

The Canadian population

In 1997, there were just over 30 million people living in Canada, almost equally divided between men and women (Table 1).[1] From 1971 to 1997, the Canadian population grew by 8.7 million people.[1,2]

In 1996, the Canadian rate of "dependency" (a standard demographic measure relating population age 0–19 and 65+ as a percentage of the total population) was in the lowest third of the range of other OECD countries (Fig. 1a).[3] In 1996, one-quarter (27%) of the population was age 19 and younger, and 12% was age 65 and older. The Netherlands, Switzerland, and Japan had the lowest rates of dependency, although theirs were not significantly lower than that of Canada. Ireland had the highest rate of dependency, owing to the large concentration of youth in its population.

Differences among groups

There is little gender variation by age in the Canadian population. While there are more women than men in the oldest age groups (65–74 and 75+) as a result of the longer life expectancy for women (Topic 84), there are virtually equal numbers in all younger age groups (Table 1).

The bulk of the Canadian population is concentrated in Ontario (38%) and Quebec (24%) (Table 1). There are three times as many people living in the Prairies and British Columbia (29%) as there are in the Maritimes and Newfoundland (9%). The vast differences in provincial population size are illustrated by the ratio of the largest (Ontario) to the smallest (Prince Edward Island), which is 83:1. The territorial populations are even smaller than that of the smallest province.

From 1991 to 1997, British Columbia had the highest population growth rate (almost 20%) of all the provinces, which was almost double the 11% growth of Canada as a whole.[1,2] Only Newfoundland had a decrease in population, with just under a 1% negative population growth rate from 1991 to 1997.[1,2]

The proportion of the population made up of the youngest Canadians (age 0–19) decreased from approximately 39% in 1971 to 27% in 1996 (Fig. 1b),[4] illustrating the aging of the "baby boom" generation. This decrease was more than offset by the increase in the number of Canadians between the ages of 20 and 64, from 53% in 1971 to 61% in 1996, as well as an even greater increase in the population age 65 and over — from 8% in 1971 to 12% in 1996.

On definitions and methods

A complete census of population is conducted every five years in Canada. Population data for intercensal years are based on estimates by Statistics Canada, derived from the previous census (1996 in the current case) and from data from administrative sources on births, deaths, and migration.

These estimates are revised periodically as more complete data become available for intercensal years. The next census will be in 2001.

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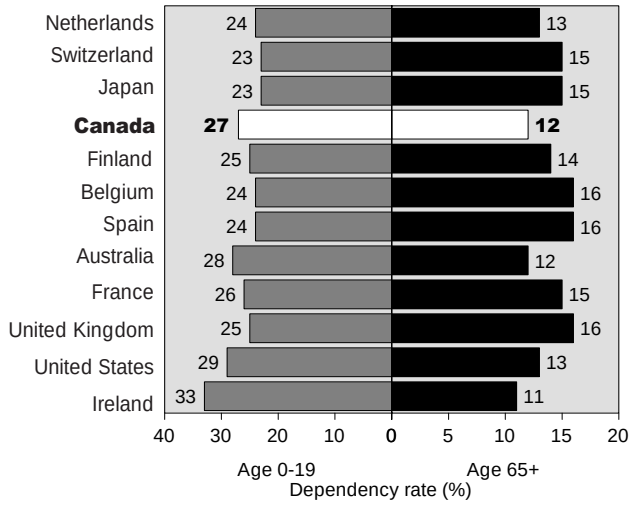
3. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).
4. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

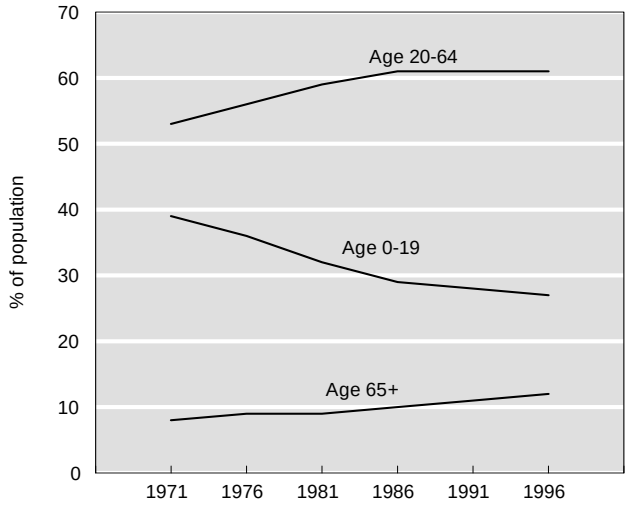
Figure 1a. **Dependency rates,* selected OECD countries, 1996**



* Population age 0–19 and 65+ as a percentage of the total population.

Source: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM).

Figure 1b. **Proportion of the population, by age, Canada, 1971–1996**



Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Table 1. **Characteristics of the population, by age and sex and by province/territory and sex, Canada, 1997**

	Total		Male		Female	
	Number		Number		Number	
	('000)	%	('000)	%	('000)	%
Total, all ages	**30,287**	**100**	**15,000**	**50**	**15,287**	**50**
Age 0–4	1,916	6	982	3	934	3
Age 5–9	2,049	7	1,050	3	1,000	3
Age 10–14	2,027	7	1,035	3	992	3
Age 15–17	1,224	4	627	2	597	2
Age 18–19	800	3	410	1	390	1
Age 20–24	2,034	7	1,032	4	1,002	3
Age 25–34	4,767	16	2,409	8	2,359	8
Age 35–44	5,172	17	2,596	9	2,576	9
Age 45–54	3,978	13	1,995	7	1,983	7
Age 55–64	2,593	9	1,281	4	1,312	4
Age 65–74	2,127	7	984	3	1,144	4
Age 75+	1,598	5	599	2	999	3
Newfoundland	564	2	281	1	282	1
Prince Edward Island	137	0.5	68	0.2	69	0.2
Nova Scotia	948	3	467	2	481	2
New Brunswick	762	3	377	1	383	1
Quebec	7,420	24	3,657	12	3,763	12
Ontario	11,408	38	5,636	19	5,771	19
Manitoba	1,145	4	568	2	577	2
Saskatchewan	1,023	3	508	2	515	2
Alberta	2,847	9	1,432	5	1,415	5
British Columbia	3,933	13	1,954	6	1,980	7
Yukon	32	0.1	16	0.05	15	0.05
Northwest Territories	68	0.2	35	0.1	33	0.1

Source: Statistics Canada, 1996 Census: Postcensal population estimates, *The Nation Series* (CANSIM Matrix 6367).

2

Marital status and family composition

Introduction

For the purpose of this *Report*, family situation and marital status are relevant as determinants of healthy living. Marital status and family situation can be linked to access to social support (Topic 30), support for behavioural change (Topic 52), and informal care (Topic 32). As well, there are implications for family violence (Topic 10) and everyday stress (Topic 8).

Families in Canada, 1996

In 1996, 42% of Canadians were single, and 47% were married (including common law and separated).[1] The rest of the population was either divorced (4%) or widowed (5%) (Table 2a).[1]

Divorce rates (as legally defined) doubled between 1971 and 1982 (Fig. 2a),[2,3] decreased through 1985, and then dramatically increased to the 1987 peak of 362 per 100,000 population. From 1987 through 1996, divorce rates steadily declined. In fact, the 1996 divorce rate was 248 per 100,000, the lowest rate since 1985. The number of divorces dropped almost 8% from 1995 to 1996, largely because of changes in legal-aid divorce funding in Ontario.[3]

Common-law marriages are the fastest-growing category of marital status in the 1990s; there were over 1.8 million Canadians living common law in 1996.[4] This means that people living common law constituted about 13% of all married persons. Almost half of all common-law couple families included children,[5] and nearly two-thirds of individuals in common-law relationships had never been married before. Another quarter of individuals in these relationships had been divorced previously.[4]

As of 1996, almost 24.6 million (87%) Canadians were living in 7.8 million families.[5,6] About three-quarters of families were married couples (Table 2b),[7] but this proportion had declined from 80% in 1986.[5] This decline was largely due to the increase in common-law and single-parent families. Between 1991 and 1996, the number of common-law families increased by 28%, compared with 19% for lone-parent families and 2% for married couple families.[5]

Between 1991 and 1996, the number of children living in families increased by 6%. However, there was almost no increase in the number of children living in families of married couples. The growth in the number of children in families came from common-law couples (52%) and lone parents (19%).[5]

As of 1996, there were 1.1 million lone-parent families, or 15% of all families (Table 2b).[5] More than five in every six of these single-parent families were headed by women, nearly one-quarter of whom had never been married. Almost one in every five children lived with a lone parent in 1996, compared with one in six in 1991. Between 1991 and 1996, the number of children living with a female lone parent increased at a much faster pace (20%) than did the number of children living with a male lone parent (11%).[5]

The average legally married couple had 1.2 never-married children living at home in 1996 (Table 2b). This compares with 0.8 children in common-law families and an average of 1.6 children in lone-parent families. Among families with children at home, differences in the number of never-married children at home were smaller: legally married couples had an average of 1.9 children at home, while common-law families had 1.7 children and lone-parent families had 1.6 children at home.

Two-thirds (65%) of Canadian families had children living with them in 1996 (Fig. 2b).[7,8] The average family size was 3.1 persons, and the average number of children per family was 1.2. These figures remain identical to those of the 1991 Census.

There are no directly comparable international data on family composition.

Differences among groups

Overall in 1996, men were more likely than women to have never married (Table 2a). Much of this difference can be attributed to 20–44 year olds, where men were much more likely to be single, while women were more likely to have married.[1] Women were more likely than men to be widowed (8% vs. 2%), owing to women's greater life expectancy (see Topic 84).

Not surprisingly, there were significant age differences in marital status (Table 2a). Virtually all Canadians under the age of 19 and most 20–24 year olds were single, although 15% of men and 29% of women of this latter age group were married. The majority of Canadians between the ages of 25 and 44 were married (72%). The prevalence of divorce for 35–64 year olds was above average, and the highest rate was found for people age 65–74. Approximately four-fifths of 45–64 year olds were married. Nearly half of Canadians age 75 and over were widowed (the large majority of whom were women).[1]

There were large interprovincial/territorial differences in marital status. The territories presented the greatest departures from the Canadian average: the Northwest Territories had the largest proportion of single Canadians (55%), followed by Yukon (46%). This is most likely attributable to the relatively young nature of their populations (see Topic 1). Newfoundland and New Brunswick were the provinces with the highest rates of marriage (51% each). The Northwest Territories had a low rate of marriage, and both territories had a low prevalence of widows (2% each). The Northwest Territories and Newfoundland had the lowest prevalence of divorce (2%).

The youngest Canadians were those most likely to be living in families. Almost all (99.8%) Canadians under 15 years of age were living in families in 1996, while only two-thirds of the elderly (65 and older) were likely to be a part of families.[1] Only 56% of people 75 and over were living in families. This was particularly true for women age 75 and older, the only Canadian group where a majority (57%) were not living in families. In sharp contrast, the majority of men 75 and over were still living in families (77%).[1] The only other significant gender difference was among 25–44 year olds, where men were less likely than women to live in families (81% compared with 89%).

There was some provincial variation in family composition. Residents of Newfoundland were most likely (93%) to live in families, and Quebeckers and British Columbians were least likely to do so (85%).[1] Most of the other provinces and territories were around the Canadian average (87%).

While married couples made up 74% of Canadian families, the provincial value ranged widely, from a low of 64% of couples in Quebec to a high of 81% in Alberta (Table 2b). The two territories had an even lower rate than Quebec. As a consequence, the rates of common-law and lone-parent families were highest in Quebec and the territories, while Alberta had the lowest rate of lone-parent families in Canada.

Among those families with children at home, Saskatchewan and the Northwest Territories had slightly more children for each type of family than the respective Canadian averages. In general, differences in family size among the provinces and territories were modest (Table 2b).

Common-law families were most frequently found in Quebec, which had 43% of all such families.[2] In fact, almost one-quarter of all couples in Quebec were common law. Between 1991 and 1996, the fastest growth in the number of common-law families occurred in New Brunswick and the Northwest Territories. Newfoundland, Prince Edward Island, Quebec, and Yukon had increases above the national average.

Nationally, in 1996, 14% of all children under the age of six were living in common-law families.[2] In Quebec, by comparison, 31% of all children in this age group were in common-law families. Every province and territory recorded large increases among children living in common-law families since the 1991 Census. For example, Quebec experienced an increase of 69% and Ontario 45% in the number of children living in such families.

On definitions and methods

The data are from the 1996 Census. In this topic, "single" refers to those Canadians who have never been married. "Married" includes first marriages, remarriages, common-law relationships, and Canadians who are separated (unless otherwise specified, as in Table 2b). "Divorced" and "widowed" refer only to those who have not remarried. A "family" is a group of two or more persons that may include spouses, parents, and never-married children. Persons not living in a family are typically living alone or with non-relatives, either with roommates or in institutions. "Children" refers to never-married sons

or daughters living at home, of whom 90% are under the age of 25.

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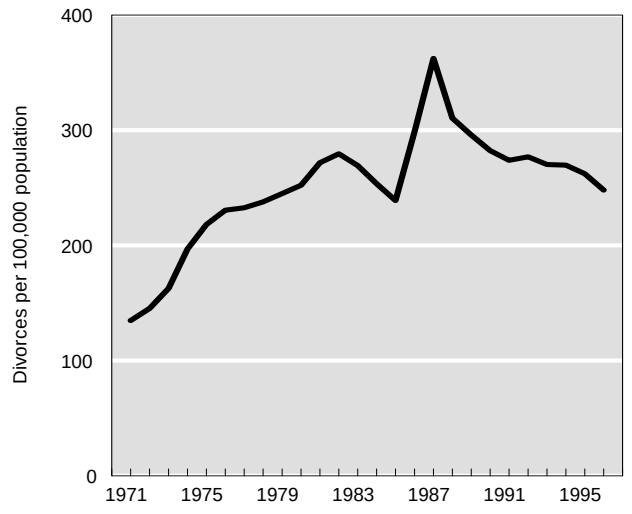
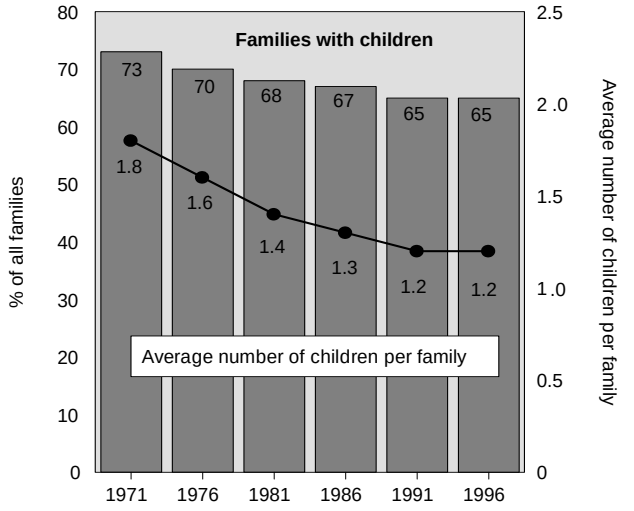
1. Statistics Canada. 1996 Census: Marital status, common-law unions and family composition. *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96005).
2. Statistics Canada. Divorce in the 1990s. *Health Reports* 1997; 9(2): 53–58 (Statistics Canada Cat. No. 82-003-XPB).
3. Statistics Canada. Marriages and divorces 1996. *The Daily*, January 29, 1998 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.
4. Statistics Canada. 1996 Census: Marital status, common-law unions and family composition. *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96006).
5. Statistics Canada. 1996 Census: Marital status, common-law unions and families. *The Daily*, October 14, 1997 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.
6. Statistics Canada. 1996 Census: Family composition. *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96010).
7. Statistics Canada. 1996 Census: Marital status and family composition. *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96008).
8. Statistics Canada. *A Portrait of Families in Canada*. Ottawa: Statistics Canada, 1993 (Statistics Canada Cat. No. 89-523).

Figure 2a. **Divorces, Canada, 1971–1996**



Sources: Statistics Canada, Divorce in the 1990s, *Health Reports* 1997; 9(2): 53–58 (Statistics Canada Cat. No. 82-003-XPB); Statistics Canada, Health Statistics Division, special tabulations.

Figure 2b. **Families with children, and average number of children per family, Canada, 1971–1996**



Sources: Statistics Canada, *A Portrait of Families in Canada,* Ottawa: Statistics Canada, 1993 (Statistics Canada Cat. No. 89-523); Statistics Canada, 1996 Census: Marital status and family composition, *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96008).

Table 2a. **Marital status, by age and sex and by province/territory, Canada, 1996**

	Population estimate	Single[a]	Married[b]	Divorced	Widowed
	('000)	(%)	(%)	(%)	(%)
Total, all ages	**28,847**	**42**	**47**	**4**	**5**
Male	14,170	45	50	3	2
Female	14,677	39	48	5	8
Age <15, total	5,901	100	–	–	–
Male	3,025	100	–	–	–
Female	2,876	100	–	–	–
Age 15–19, total	1,959	98	2	<1	<1
Male	1,003	98	2	<1	<1
Female	956	96	3	<1	<1
Age 20–24, total	1,898	78	22	<1	<1
Male	952	85	15	<1	<1
Female	946	71	29	<1	<1
Age 25–34, total	4,499	33	64	3	<1
Male	2,227	39	58	2	<1
Female	2,272	27	70	4	<1
Age 35–44, total	5,012	20	75	5	<1
Male	2,480	24	72	4	<1
Female	2,533	16	78	6	<1
Age 45–54, total	4,862	14	79	7	1
Male	2,403	16	78	6	<1
Female	2,459	11	79	8	1
Age 55–64, total	4,412	10	80	9	1
Male	2,186	11	81	7	<1
Female	2,226	9	79	10	2
Age 65–74, total	3,710	8	81	10	2
Male	1,848	8	83	8	1
Female	1,863	7	79	11	3
Age 75+, total	1,466	7	42	2	48
Male	544	6	70	2	22
Female	921	8	26	2	64
Newfoundland	552	42	51	2	5
Prince Edward Island	135	43	48	3	6
Nova Scotia	909	41	49	4	6
New Brunswick	738	41	51	3	5
Quebec	7,139	42	48	5	5
Ontario	10,754	42	50	4	5
Manitoba	1,114	43	48	4	6
Saskatchewan	990	43	48	3	6
Alberta	2,697	43	49	4	4
British Columbia	3,735	41	50	5	5
Yukon	31	46	48	5	2
Northwest Territories	64	55	41	2	2

[a] Never married.

[b] Includes common-law relationships and separated individuals.

Source: Statistics Canada, 1996 Census: Marital status, common-law unions and family composition, *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96005).

Table 2b. **Married, common-law, and lone-parent families, and average number of never-married children living at home, by province/territory, Canada, 1996**

	Married couple families				Common-law families				Lone-parent families		
	Number	%	Number of children for all families	Number of children for those families that have children	Number	%	Number of children for all families	Number of children for those families that have children	Number	%	Number of children for all families
Canada	**5,779,720**	**74**	**1.2**	**1.9**	**920,640**	**12**	**0.8**	**1.7**	**1,137,510**	**15**	**1.6**
Newfoundland	121,855	78	1.3	1.9	13,410	9	0.8	1.6	20,480	13	1.5
P.E.I.	27,915	78	1.3	2.0	2,765	8	0.8	1.7	5,200	14	1.6
Nova Scotia	190,040	75	1.1	1.9	24,420	10	0.7	1.6	39,685	16	1.5
New Brunswick	155,315	75	1.2	1.9	22,490	11	0.8	1.6	29,435	14	1.5
Quebec	1,240,270	64	1.2	1.9	400,270	21	0.9	1.6	309,435	16	1.5
Ontario	2,283,115	79	1.2	1.9	227,910	8	0.7	1.7	421,705	14	1.6
Manitoba	226,345	77	1.2	2.0	25,330	9	0.9	1.9	41,260	14	1.6
Saskatchewan	203,295	78	1.2	2.1	22,160	9	1.0	2.0	34,930	13	1.7
Alberta	717,560	81	1.2	2.0	72,320	8	0.8	1.8	92,485	10	1.6
British Columbia	765,565	76	1.1	2.0	103,865	10	0.7	1.7	139,010	14	1.6
Yukon	4,900	61	1.3	2.0	1,835	23	0.9	1.8	1,330	16	1.6
N.W.T.	8,345	56	2.0	2.5	4,050	27	1.4	2.1	2,560	17	1.9

Source: Statistics Canada, 1996 Census: Marital status and family composition, *The Nation Series* (Statistics Canada Cat. No. 93F0022XDB96008).

3

Births and fertility

Introduction

The Canadian population has grown substantially since 1971 (Topic 1), the two principal reasons being net immigration (Topic 4) and net births. Factors affecting the rate of live births are economic prospects (Topics 6 and 7), stillbirths (Topic 65), and abortion (Topic 66), as well as health and social policies, cultural and social values, and the health status of the prospective parents, among others. A general sense of social well-being (Topic 11) may also be a factor.

This topic describes the distribution of births in Canada according to the age and province or territory of residence of the mother.

Incidence of births, 1996

More than 366,000 babies were born in Canada in 1996, which is a rate of 1.59 live births per woman of childbearing age (Table 3).[1] Fertility, which had been virtually stable for several years, declined significantly in 1996 to an almost historic low.[1] The crude birth rate — live births per 1,000 population — was 12.2 in 1996, the lowest value since before 1972; it is clear that the decline in birth rates of at least the last 25 years has resumed after a brief revival in the late 1980s (Fig. 3a).[2]

The average number of live births per woman of childbearing age was lower in Canada in 1996 than in the United States, Australia, France, and the United Kingdom; however, Canada's fertility rate was higher than that in Germany, Spain, and Japan (Fig. 3b).[3]

Differences among groups

Women having a child are predominantly age 25–29 and secondarily age 30–34; almost two-thirds of all babies were born to women within this 10-year range in 1996. However, there were also 227 babies whose mothers were age 10–14 and 211 whose mothers were age 45 or more (Table 3). Age-specific birth rates (based on 1,000 women in the specific age group) ranged from a low of 0.2 for women age 45 and older to a high of 105.9 for women age 25–29.

Provincial/territorial fertility rates ranged widely, from 1.26 live births per woman in Newfoundland to 2.71 in the Northwest Territories (Table 3). The Prairie provinces and both the territories had higher rates than the rest of Canada.[1] Similarly, there was a wide range in crude birth rates (per 1,000 population), from a low of 10.1 in Newfoundland to a high of 23.5 in the Northwest Territories. Provinces in addition to Newfoundland that fell below the national average of 12.2 were New Brunswick (10.7), Nova Scotia (11.2), Quebec (11.5), and British Columbia (12.0).

On definitions and methods

Fertility rates are the statistical summary of age-specific fertility rates (which are not shown in Table 3), expressed as the average number of children born live to women age 15–49.[4] Women below 15 were assigned to the 15–19 years age group. Women over 49 were assigned to the 45–49 years age group. Crude birth rates (Canada and the provinces) are the number of live births per 1,000 population. Age-specific birth rates show the average number of live births to 1,000 women in a specified age range. Pregnancy rates differ from fertility rates and are reported (for teens) in Topic 64.

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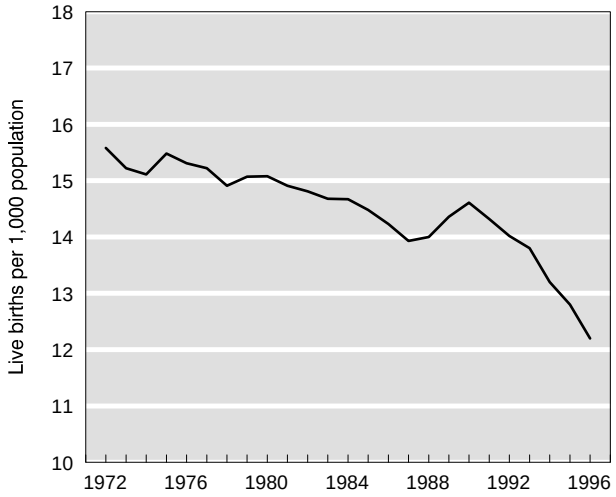
2. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

3. Dumas J, Belanger A. *Report on the Demographic Situation in Canada 1997: Current Demographic Analysis*. Ottawa: Statistics Canada, Demography Division (Statistics Canada Cat. No. 91-209).

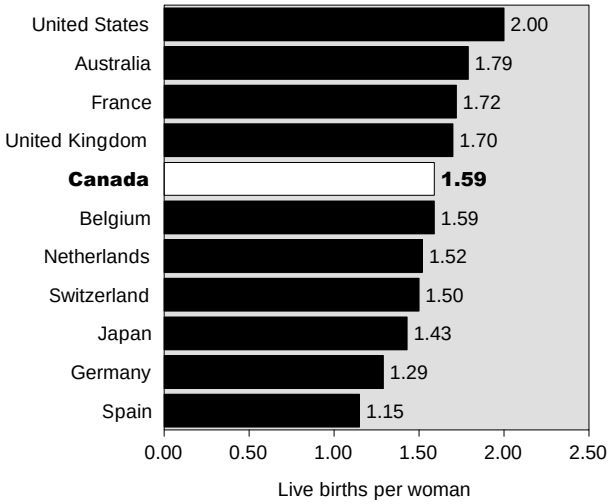
4. Statistics Canada. *Compendium of Vital Statistics 1996*. Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).

Figure 3a. **Crude birth rate, Canada, 1972–1996**



Sources: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Statistics Canada, Health Statistics Division, special tabulations.

Figure 3b. **Total fertility rate, selected industrialized countries, 1996**



Source: Dumas J, Belanger A, *Report on the Demographic Situation in Canada 1997: Current Demographic Analysis*, Ottawa: Statistics Canada, Demography Division (Statistics Canada Cat. No. 91-209).

Table 3. **Live births, fertility rate, and birth rate, by age of mother and by province/territory of mother, Canada, 1996**

	Births		Fertility rate[a]	Crude birth rate[b]
	Number	%		
Total, all ages	**366,189**	**100**	**1.59**	**12.2**
Age 10–14	227	0.1	n/a	n/a[c]
Age 15–19	21,597	5.9	n/a	22.3
Age 20–24	67,515	18.4	n/a	67.3
Age 25–29	116,723	31.9	n/a	105.9
Age 30–34	111,024	30.3	n/a	85.6
Age 35–39	42,637	11.6	n/a	32.2
Age 40–44	6,056	1.7	n/a	5.1
Age 45+	211	0.1	n/a	0.2
Newfoundland	5,747	1.7	1.26	10.1
Prince Edward Island	1,694	0.5	1.67	12.3
Nova Scotia	10,562	2.9	1.49	11.2
New Brunswick	8,176	2.2	1.41	10.7
Quebec	85,226	23.3	1.56	11.5
Ontario	140,012	38.2	1.57	12.4
Manitoba	15,478	4.2	1.86	13.5
Saskatchewan	13,300	3.6	1.89	13.0
Alberta	37,851	10.3	1.72	13.6
British Columbia	46,138	12.6	1.54	12.0
Yukon	443	0.1	1.69	14.1
Northwest Territories	1,562	0.4	2.71	23.5

[a] Total fertility rate (for Canada and provinces) is the average number of children a woman can expect to have in her lifetime, based on the birth rates of 1996.

[b] Live births per 1,000 population.

[c] Birth rate for 10–14 and 15–19 age category included in the latter group.

Sources: Statistics Canada, Births 1996, *The Daily*, July 8, 1998 (Statistics Canada Cat. No. 11-001-XIE); Statistics Canada, Health Statistics Division, special tabulations.

4

Immigrant population

Introduction

Immigration has been a vital part of Canadian society since European explorers first arrived in Canada over 450 years ago. This topic examines the total immigrant population in Canada, the origin of those immigrants, and the class of current immigrants to this country. Immigration is important to the overall health picture because the health of immigrants is often different from that of the general population. Sometimes it is better, as in the case of lower rates of smoking among recent immigrants,[1] and sometimes it is worse, as in the case of increased tuberculosis among recent arrivals from poor countries (Topic 71).

Trends in immigration

In 1996, 17% of the Canadian population consisted of immigrants. This amounted to approximately 5 million persons (Table 4).[2] Overall, the largest proportion of immigrants (Fig. 4a)[3] were born in the United Kingdom (13%) or Italy (7%). However, these earlier waves of immigration from Europe have been replaced by those born in Asia and the Middle East (Fig. 4b).[3] In fact, between 1991 and 1996, 57% of those who arrived in Canada were from Asia and the Middle East.

While flows of immigration generally fluctuate over time, immigration from countries such as Hong Kong, the People's Republic of China, and India remained high between 1991 and 1996 (Fig. 4c).[4] In contrast, immigration from countries such as Portugal and Poland declined during this period.

In 1996, there were 226,072 new landed immigrants in Canada.[4] The majority of immigrants in 1996 were independent class immigrants (56%), followed by family immigrants (30%). This represents a departure from 1993, when the proportions of family and independent class immigrants were identical (Fig. 4d).[4] In fact, the number of family immigrants entering Canada in 1996 was similar to that in 1990. About one in six immigrants were classified as refugees in 1996, which is consistent with most years since 1981 (except for the brief surge from 1989 to 1993).

From 1981 to 1996, there were some significant changes in the numbers of landed immigrants arriving in Canada (Fig. 4d). Between 1980 and 1983, there was a decrease each year, reaching a low of 84,302 in 1983. By 1987, the number of immigrants had increased beyond the level in 1981. By 1992, the total number of landed immigrants was almost twice the 1980 figure. This trend of increasing immigration peaked in 1993, with 256,000 immigrants, and decreased slightly to an average of about 225,000 per year after 1993.

Characteristics of immigrants

The immigrant population has different characteristics from the Canadian-born population. For example, 47% of immigrants who arrived in 1996 were between 25 and 44 years of age, and 22% were age 0–14[5]; both represent higher proportions than the overall Canadian population for those age categories (33% and 21%, respectively; see Topic 1). Further, 27% of immigrants were over the age of 65, although this age group accounted for only 11% of the total population in Canada (see Topic 1). Immigrants were least likely to be young, either less than 15 (5%) or age 15–24 (11%).

There is significant variation in the place of residence of the immigrant population within Canada. Over half of the immigrant population lives in either Ontario or British Columbia. In fact, British Columbia has had a 25% increase in its immigrant population since 1991, the highest among the provinces.[3] There are also significant concentrations of immigrants in Alberta, Manitoba, and Yukon. The

eastern provinces are the least likely to have large immigrant populations; Newfoundland has the lowest proportion of total immigrants (less than 2%). Recent immigrants have been especially attracted to Canada's three largest urban areas: Toronto, Vancouver, and Montreal. In fact, 85% of all immigrants lived in a census metropolitan area, compared with just 57% of Canadian-born people.[3]

Recent immigrants, regardless of their country of birth, tend to be in better health than Canadian-born residents.[6] New immigrants tend to be healthy largely because of the immigration process. People in good health are more inclined to emigrate than those in poor health, and potential immigrants must first undergo medical screening for serious medical conditions. In the 1994–95 *National Population Health Survey*, 50% of all immigrants age 18 and over reported a chronic health problem such as allergies or joint problems, compared with 57% of the Canadian-born. In the same survey, 18% of immigrants reported a long-term disability, compared with 22% of the Canadian-born. The longer immigrants lived in Canada, however, the more their health resembled that of the Canadian-born, as their lifestyles and health-related behaviours became more like those of persons born in Canada. Smoking rates are an example.[1]

On definitions and methods

The 1996 Census is a key source of information on immigration, while yearly immigration data are obtained from Citizenship and Immigration Canada.

In general, the term "immigrant" refers to a person born outside Canada whose parents were not Canadians, but who has been granted the right to live in Canada permanently by immigration authorities. "Independent immigrants" include assisted relatives, business immigrants, and retirees, among others. "Refugees" include both individuals and designated classes. "Family immigrants" roughly refers to immigrants who are immediately related to one another and arrive in Canada together. "New immigrants" refers to persons immigrating in a given time period. Citizenship and Immigration Canada has more detailed definitions (Internet site: http://cicnet.ci.gc.ca).

References

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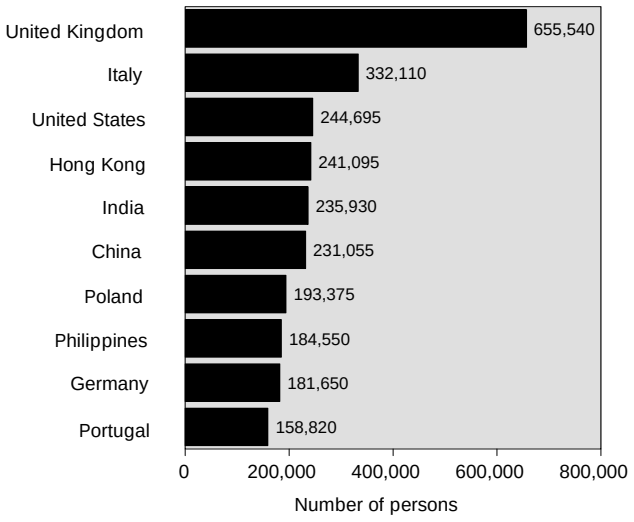
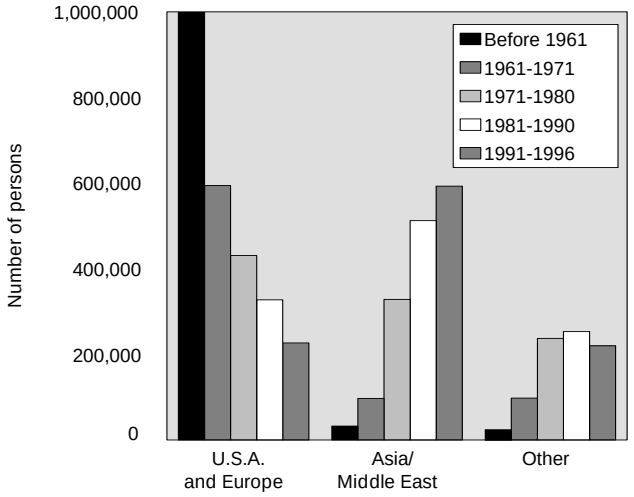
Figure 4a. **Birthplace of all immigrants as of 1996**



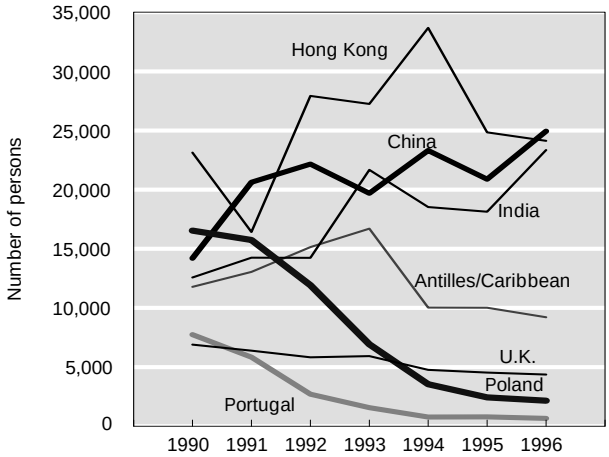
Source: Statistics Canada, 1996 Census: Immigration and citizenship, *The Daily*, November 4, 1997 (Statistics Canada Cat. No. 11-001-XIE).

Figure 4b. **Birthplace of all immigrants, by period of immigration, 1996 Census**



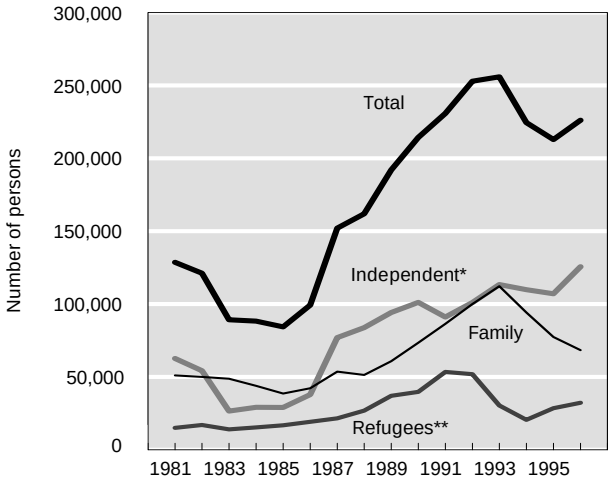
Source: Statistics Canada, 1996 Census: Immigration and citizenship, *The Daily*, November 4, 1997 (Statistics Canada Cat. No. 11-001-XIE).

Figure 4c. **Birthplace of new immigrants, 1990–1996**



Source: Dumas J, Belanger A, *Report on the Demographic Situation in Canada 1997: Current Demographic Analysis,* Ottawa: Statistics Canada, Demography Division (Statistics Canada Cat. No. 91-209) (original data source: Citizenship and Immigration Canada).

Figure 4d. **New landed immigrants, by class, 1981–1996**



* Includes assisted relatives, business immigrants, retirees, and other independents.

** Includes both individual convention refugees and designated classes.

Source: Dumas J, Belanger A, *Report on the Demographic Situation in Canada 1997: Current Demographic Analysis,* Ottawa: Statistics Canada, Demography Division (Statistics Canada Cat. No. 91-209) (original data source: Citizenship and Immigration Canada).

Table 4. **Immigrant population, by age and sex and by province/territory, Canada, 1996**

	Total Canadian population	Immigrants
	('000)	(%)
Total, all ages	**28,528**	**17.4**
Male	14,047	17.1
Female	14,481	17.7
Age <15, total	5,899	4.9
Male	3,024	4.9
Female	2,875	4.9
Age 15–19, total	1,956	9.9
Male	1,008	10.0
Female	948	9.7
Age 20–24, total	1,893	12.6
Male	947	12.2
Female	946	13.1
Age 25–34, total	4,481	17.7
Male	2,209	17.2
Female	2,272	18.2
Age 35–44, total	4,843	19.5
Male	2,386	18.9
Female	2,457	20.0
Age 45–54, total	3,698	25.2
Male	1,837	25.3
Female	1,861	25.1
Age 55–64, total	2,478	27.5
Male	1,217	28.1
Female	1,261	26.9
Age 65+, total	3,280	27.2
Male	1,417	28.5
Female	1,862	26.7
Newfoundland	547	1.6
Prince Edward Island	133	3.3
Nova Scotia	900	4.7
New Brunswick	730	3.3
Quebec	7,045	9.4
Ontario	10,643	25.6
Manitoba	1,100	12.4
Saskatchewan	977	5.4
Alberta	2,669	15.2
British Columbia	3,690	24.5
Yukon	31	10.4
Northwest Territories	64	4.8

Sources: Statistics Canada, 1996 Census: Immigration and citizenship, *The Nation Series* (Statistics Canada Cat. No. 93F0023XDB96005); assistance provided by Housing, Family and Social Statistics Division, Statistics Canada.

5

Education and literacy

Introduction

Educational attainment is widely acknowledged as one of the key components of socio-economic status and is the key indicator of that status throughout this *Report* (since good data on income are often less readily available in population surveys). Socio-economic status in general, and education specifically, is very often positively associated with health status and health behaviours.[1] For example, in the 1996–97 *National Population Health Survey*, only 19% of respondents with less than a high school education rated their health as "excellent," compared with almost 30% of university graduates.[2]

Literacy and numeracy skills are essential for full participation in today's society. People lacking such skills are unable to rise to the challenge of a changing work world or take advantage of government initiatives that appear in print. Those Canadians lacking the literacy and numeracy skills to meet everyday needs may end up feeling alienated from society and may suffer from various physical and mental health problems. Literacy has become a priority of governments.

This topic describes the educational attainment of Canadians age 15 and over, the literacy skills of persons age 16–65, and the school readiness of 4–5 year olds.

Education and literacy

According to the 1996 Census, over 14 million Canadians age 15 and over (66%) had completed *at least* high school (Table 5a).[3,4] The greatest proportion of persons age 15–19 reported less than a high school education, which is not surprising. About 69% of Canadians age 20 and older had completed at least high school; the most common level of education was college (27%), followed by a high school certificate (25%) and a university degree (17%).

From 1971 to 1996, there was a significant decline in the number of Canadians age 15 and over with less than Grade 9 (from 32% to 12%) and a corresponding increase in the number of Canadians who had completed some post-secondary schooling (from 17% to 34%) (Fig. 5a).[5] The increase in the number of Canadians who had completed some post-secondary education appears to be slowing somewhat, with only a four percentage point increase from 1986 to 1996; however, the trend among those with less than Grade 9 continued to decrease significantly. By comparison, the changes in the number of Canadians completing Grades 9 through 13 and university degrees during the same period were quite slight (only changes of two and four percentage points, respectively). Interestingly, 1996 was the first census year to record more university graduates than people reporting less than Grade 9 education.

In 1994–95, only 57–58% of Canadians age 16–65 attained Level 3 or greater (out of five levels) in prose, document, and quantitative literacy (Table 5b).[6,7] Literacy in Canada was distributed similarly to that in the United States, although there was a slightly larger proportion at Level 1 in the United States. Both countries had relatively large numbers at Level 1 (most notably at the document scale) and Level 4/5. The Netherlands showed great internal consistency across scales, while Sweden ranked at the highest levels of all three scales. When comparing the Level 4/5 of each scale, out of the 11 countries/regions listed, Canada ranked second highest in prose, second highest in document, and fifth highest in quantitative literacy (numeracy).

There are no trend data to describe changes in literacy or numeracy over time, and no such data on Aboriginal Canadians.

Differences among groups

There were considerable variations between groups with regard to educational attainment, which, in turn, helps to explain the intergroup differences in health described later in this *Report*. Further, parents' education was strongly linked to the school readiness of children (Fig. 5b),[5,8] which suggests why intergenerational patterns of poverty and underemployment are sometimes observed.

Overall, women were as likely as men to have less than high school, but were somewhat more likely to have ended their education after high school and slightly less likely to have a college certificate or university degree. Women in their 20s, however, were *more* likely to be college and university graduates than men of the same age (Table 5a). One of the most important changes between 1971 and 1996 was the increase in the number of Canadian women obtaining university degrees. This change was true for both women age 15–24 and those 25 and over. There were over four times as many women university graduates over the age of 25 in 1996 as there were in 1971, compared with twice as many men over 25 with university degrees (Fig. 5c).[5]

There was a strong inverse relationship between age and education: with each older cohort, there was a greater proportion who had not finished high school. For example, more than twice as many Canadians in their early 20s had finished high school and/or some post-secondary education compared with people age 55 and older (Table 5a). Both college diplomas and university degrees were most common among persons age 25–44, where about one-third of such persons had a college diploma and about 21% had a university degree.[3]

There was considerable provincial/territorial variation among Canadians who had not completed high school, ranging from 45% in Newfoundland to 31% in British Columbia. There was less variation in rates of high school or college completion, while university degrees were least common in Newfoundland (10%) and most likely in Ontario and Yukon (17%) (Table 5a). These differences should be borne in mind when reviewing interprovincial/territorial comparisons elsewhere in this *Statistical Report*, as they are not standardized for education. In contrast to these adult results, children age 4–5 in Newfoundland, Nova Scotia, and Saskatchewan were well above the national average in school readiness, while those in Ontario and British Columbia were significantly below the national average.[9]

According to the 1996 Census, Aboriginal Canadians are less likely than the average Canadian 15 and over to have a formal education, regardless of age group.[10] About 54% of Aboriginals age 15 and over had not received a high school diploma, compared with 35% of the non-Aboriginal population. At higher levels of attainment, 5% of Aboriginal people were university graduates, compared with 16% of the non-Aboriginal population. Comparisons between 1981 and 1996 show that Aboriginals are making educational progress, however. Between 1981 and 1996, the proportion of Aboriginal people age 20–29 with a post-secondary degree or diploma improved from 19% to 23%, while the proportion with a university degree increased from 3% to 4%. The proportion of Aboriginals with less than a high school education dropped from 59% in 1981 to 45% in 1996.

With respect to literacy, several intergroup contrasts have been noted[11]:

- The literacy skills of Canadians older than 45 were markedly lower than those of adults age 16–45. Most of the difference was attributable to respondents' socio-economic background, their years of education, and whether their first language was the test language.
- Women's scores in prose literacy were higher than those of males across the full age range of 16–90. However, no statistically significant differences existed between the sexes in document literacy scores. Men scored higher in quantitative literacy than women; however, the differences were evident only for youth (16–25) and adults over 65.
- Adults whose first language differed from the test language scored substantially lower than those whose first language matched the language of the test.
- Adults in "rural communities" scored slightly lower than those in urban areas (a difference of about five months of formal schooling); however, after accounting for their background characteristics, rural adults scored higher, with a difference of about one full year of schooling.
- The 10 provinces varied substantially in their literacy scores. The unadjusted results for youth can be clustered into three groups, with Manitoba and Saskatchewan scoring more than one year of schooling above the national average; British Columbia, Alberta, Nova Scotia, and Quebec

scoring near the national average; and Ontario, New Brunswick, Newfoundland, and Prince Edward Island scoring about one year of schooling below the national average. About three-eighths of the variation was attributable to differences in youths' socio-economic background.

- The relationship between literacy skills and socio-economic status varied dramatically among the provinces. The distribution of literacy skills along social class lines was considerably more equitable in Quebec and the three Prairie provinces. In Ontario, British Columbia, and the four Atlantic provinces, youth from less advantaged family backgrounds scored much lower than youth with similar backgrounds in the other provinces.

Intergroup differences in school readiness are consistent with these findings: boys and girls scored equally well in vocabulary skills, and family social position, especially mother's education and father's occupation, were positively related to school readiness.[8] Children in two-parent families and those in smaller families were also at an advantage in school readiness.

On definitions and methods

Data on educational attainment come from the 1996 Census. In this and other topics using the same categories to describe education, the highest level completed is shown. The only category that is not found elsewhere in this report is the "some post-secondary" category. This group simply represents people who have completed high school or college but have gone on to only partially complete some level of college, trade school, or university education. In most sections of the *Report*, this group is included with those who have completed high school.

Most of the data presented by level of education elsewhere in this *Report* have been standardized for age — that is, adjusted as if all four main education groups had the same age distribution. Age-standardized data are marked as such, but some data are not standardized because of lack of access to the microdata or small sample sizes.

The *International Adult Literacy Survey* explored prose, document, and quantitative literacy of Canadians as well as citizens in other countries, with an emphasis on practical skills needed for everyday life. Prose literacy refers to the ability to read and comprehend a passage of text, while document literacy describes the ability to complete standard forms, such as job applications. Quantitative literacy, sometimes referred to as numeracy, requires basic computational skills. Literacy skills were allotted to one of five levels, where each higher level represented more complex literacy tests. The *International Adult Literacy Survey* was conducted in 1994–95 in a number of countries. Consistency tests showed 97% agreement of the surveys among participating countries.[11]

International Adult Literacy Survey respondents were generally age 16–65 and were representative of their countries' population of 16–65 year olds (although there was no upper age limit on Canadian respondents). In Canada, 3,130 respondents were tested in English and 1,370 in French, representing 98% coverage of Canadians 16 and over, excluding residents of institutions, persons living on Indian reserves, members of the armed forces, and residents of Yukon and the Northwest Territories.

School readiness was assessed with a sample of more than 3,000 children age 4–5 as part of Statistics Canada's *National Longitudinal Survey of Children and Youth* in 1994–95, using the Peabody Picture Vocabulary Test. Children within 15 points of a score of 100 are regarded as normal; those below are delayed, and those above, advanced.[8,9]

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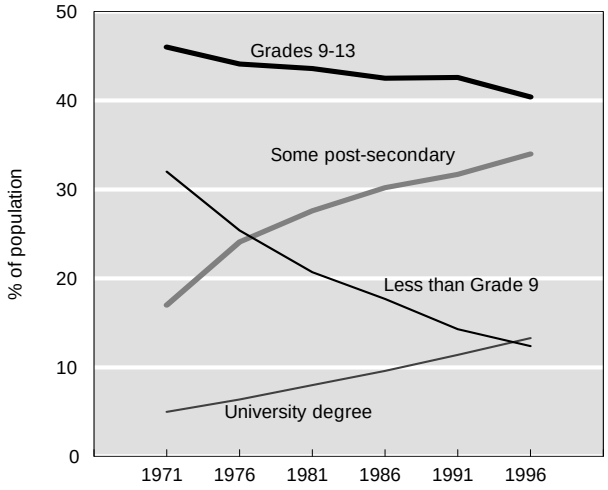
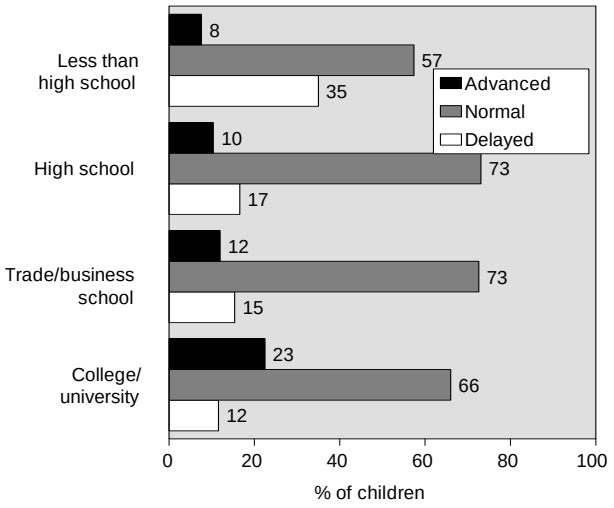
Figure 5a. **Highest level of schooling, age 15+, Canada, 1971–1996**



Source: Statistics Canada, 1996 Census: Education, *The Nation Series* (Statistics Canada Cat. No. 93F0028XDB96002).

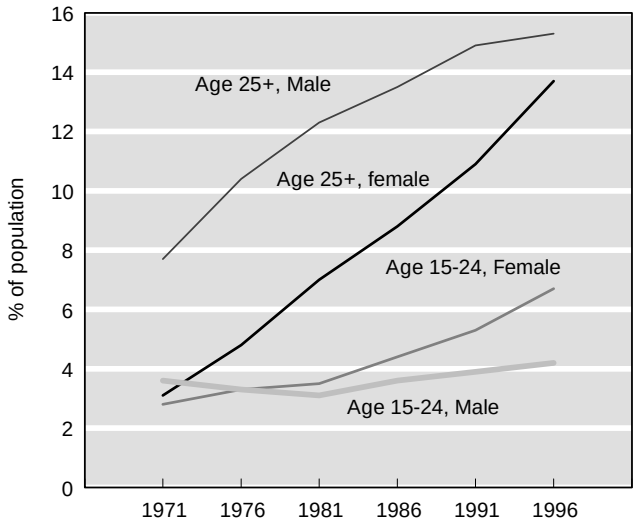
Figure 5b. **School readiness, by parents' education,* age 4–5, Canada, 1994–95**



* Education of most-schooled parent.

Source: Human Resources Development Canada and Statistics Canada, *Growing Up in Canada: National Longitudinal Survey of Children and Youth,* Ottawa: Statistics Canada, November 1996 (Statistics Canada Cat. No. 89-55-MPE, No. 1).

Figure 5c. **Attainment of a university degree, by age and sex, age 15+, Canada, 1971–1996**



Source: Statistics Canada, 1996 Census: Education, *The Nation Series* (Statistics Canada Cat. No. 93F0028XDB96002).

Table 5a. **Educational attainment, by age and sex and by province/territory, age 15+, Canada, 1996**

	Population estimate	Less than high school	High school completed	Some post-secondary[a]	College completed	University completed
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 15+	**22,629**	**35**	**14**	**11**	**25**	**16**
Male	11,022	35	13	11	25	16
Female	11,606	35	16	11	24	15
Age 15–19, total	1,956	69	16	12	3	<1
Male	1,008	71	15	11	3	<1
Female	948	66	16	14	4	<1
Age 20–24, total	1,893	19	15	29	24	13
Male	947	22	17	29	22	11
Female	946	16	13	29	27	16
Age 25–34, total	4,481	19	14	12	33	22
Male	2,209	21	14	12	32	21
Female	2,272	17	15	12	33	23
Age 35–44, total	4,843	22	17	10	31	20
Male	2,386	24	14	10	33	20
Female	2,457	21	19	10	30	19
Age 45–54, total	3,698	29	15	11	28	17
Male	1,837	28	13	10	30	20
Female	1,861	30	18	12	26	14
Age 55–64, total	2,478	47	12	9	22	10
Male	1,217	45	10	8	25	13
Female	1,261	50	14	10	19	7
Age 65+, total	3,280	62	10	6	15	8
Male	1,417	59	8	5	17	11
Female	1,862	63	12	6	13	6
Newfoundland	437	45	10	9	26	10
Prince Edward Island	104	42	10	10	26	13
Nova Scotia	720	39	10	9	27	15
New Brunswick	585	40	15	10	24	12
Quebec	5,673	36	18	9	23	15
Ontario	8,429	33	15	11	24	17
Manitoba	856	41	11	11	23	14
Saskatchewan	748	43	11	11	23	13
Alberta	2,055	34	12	12	27	15
British Columbia	2,955	31	13	13	27	16
Yukon	23	28	8	14	33	17
Northwest Territories	43	42	7	12	27	12

[a] Includes individuals who have completed high school or college, but have gone on to only partially complete some level of college, university, or trade school education.

Sources: Statistics Canada, 1996 Census: Education, special tabulations from Housing, Family and Social Statistics Division; Statistics Canada, 1996 Census: Education, *The Nation Series* (Statistics Canada Cat. No. 93F0028XDB96001).

Table 5b. **Literacy on prose, documents, and quantitative material, by country, age 16–65, 1994–95**

	Level 1 (Lowest)	Level 2	Level 3	Level 4/5 (Highest)
	(%)	(%)	(%)	(%)
Prose				
Australia	17	27	37	19
Belgium (Flanders)	18	28	39	14
Canada	**17**	**26**	**35**	**23**
Germany	14	34	38	13
Ireland	23	30	34	14
Netherlands	11	30	44	15
New Zealand	18	27	35	19
Sweden	8	20	40	32
Switzerland (French)	18	34	39	10
United Kingdom	22	30	31	17
United States	21	26	32	21
Documents				
Australia	17	28	38	17
Belgium (Flanders)	15	24	43	17
Canada	**18**	**25**	**32**	**25**
Germany	9	33	40	19
Ireland	25	32	32	12
Netherlands	10	26	44	20
New Zealand	21	29	32	18
Sweden	6	19	39	36
Switzerland (French)	16	29	39	16
United Kingdom	23	27	31	19
United States	24	26	31	19
Quantitative				
Australia	17	27	38	19
Belgium (Flanders)	17	23	38	23
Canada	**17**	**26**	**35**	**22**
Germany	7	27	43	24
Ireland	25	28	31	16
Netherlands	10	26	44	20
New Zealand	20	29	33	17
Sweden	7	19	39	36
Switzerland (French)	13	25	42	20
United Kingdom	23	28	30	19
United States	21	25	31	23

Source: Organisation for Economic Co-operation and Development and Human Resources Development Canada, *Literacy Skills for the Knowledge Society: Further Results from the International Adult Literacy Survey*, Ottawa: Human Resources Development Canada, 1997.

6

Low income

Introduction

Income is an important measure of socio-economic status. There is a strong association between income, other health determinants, and health status. For example, Canadians with the lowest income were five times more likely than those from the highest income groups to report their health as only fair or poor (Topic 53), two times more likely to have a long-term activity limitation (Topic 58), and only one-third as likely to have dental insurance (Topic 21).

This topic examines the prevalence of low income, average family income, and the distribution of family expenditures. It also examines the income levels of Canadians in 1995 as well as previous years. The two main sources of information were the *Survey of Consumer Finances*[1] and the 1996 Census.[2]

Prevalence of low-income persons and families

According to the 1996 Census, about 16% (or 1.3 million) of all economic *families* in Canada fell below the low-income cut-off in 1995 (Table 6a).[2] Likewise, about 20% of *individual* Canadians fell below Statistics Canada's low-income cut-offs. This amounted to just over 5.5 million people (Table 6b).[3]

Between 1980 and 1996, the prevalence of low-income individuals in Canada fluctuated substantially (Fig. 6a).[1] Across all ages, there was an increase from a low of 16% in 1980 to a high of 19% in 1983 and 1984. This trend turned around in the mid-1980s, and, by 1989, the prevalence of low income was down to a low of 14%. Since then, low-income prevalence has increased again to over 18%, almost reaching the same levels as in the mid-1980s.

Low income has followed similar patterns for children, although the changes have been more dramatic (Fig. 6a). In particular, the increase in low income among children under 18 has increased significantly in the 1990s, with 21% falling below low-income cut-offs in 1996.[2]

In contrast, elderly Canadians have experienced a consistent trend away from low income. In 1980, 34% of seniors were below the low-income cut-off, compared with 21% in 1992.[2] This trend reversed slightly in 1993, but then fell to 19% in 1994 and 1995. However, the level of low-income elderly Canadians increased again to 21% in 1996, the first time that low-income children and the low-income elderly had the same percentage of low-income persons.

From 1978 to 1980, there was a modest increase in average family incomes of Canadians (all data in constant 1996 dollars) (Fig. 6b).[1,4] Between 1980 and 1984, there was a steady decrease in the average family income, reaching a low in 1984.[2] The period of 1984–1989 represented a time of impressive increases, to a peak of $58,910 in 1989. After 1989, family incomes decreased rather dramatically in constant dollars to a low in 1993, with a slight increase in 1994 and again in 1996, to an average family income of $56,629.

In 1996, the majority of family expenditures were concentrated in taxes (22%) and necessities such as shelter (17%), food (12%), and transportation (12%) (Fig. 6c).[5] Combined, these four costs accounted for almost two-thirds of the average Canadian family's expenditures in 1996.

Of the 21 million individual income earners in Canada in 1995, the average total income was $25,196, down by 6% from 1990.[6] Of the 15 million *employed* Canadians, the average earnings were $26,474 in 1995, down 3% from 1990.[2] The biggest drop in average total income was felt by Canadians age 20–24, who experienced a one-quarter decrease in income from 1990 to 1995, followed by income decreases for earners age 15–19 (18%) and age 25–34 (10%) (Table

6c).[6,7] Only Canadian income earners age 70 and older experienced virtually no change in average total income (in constant dollars) over this time period.

While there have been fluctuations in the prevalence of low income (Fig. 6a) and of average income (Fig. 6b) over the last 15 years, the trends in income *disparity* have been more consistent. The incomes of the wealthiest 10% of families with children grew 14% from 1981 to 1996, while the incomes of the poorest 10% declined 5% during this period (Fig. 6d).[8] In 1973, the average incomes of the top 10% of families with children were 8.5 times those of the bottom 10%; by 1996, this ratio had increased to 10.2.[8] Other analyses suggest no change in income disparity between 1985 and 1995,[9] which illustrates the sensitivity of such analyses to time periods studied and definitions used.

Differences among groups

In 1996, the elderly and children were the most likely to be classified as low income (Fig. 6a).[1] This was not true among the elderly in *families*, however. In 1996, the elderly in families were actually the least likely to be low income (8%), while children under 18 were the most likely (21%).[1] Unattached elderly Canadians were by far the most likely to fall below the low-income cut-off, with almost half qualifying as low income.[2] In 1995, unattached individuals were about two and a half times more likely to be classified as low income compared with people in economic families (Table 6a). Lone parents faced a low-income situation very similar to that of unattached individuals in 1995 compared with other economic families; in fact, almost half of female lone parents (comprising 400,000 families) were below the low-income cut-off.[2]

There were differences in low-income individuals by age and sex. Overall, men were less likely than women to be low income in both 1990 and 1995 (Table 6b). Women age 18–24 and age 70 and older had the highest incidence of low income in 1990 and 1995. There was above-average incidence of low income among children under 14, persons age 18–24, and seniors age 70 and older in both census years. However, only seniors age 70 and older experienced a decrease in the incidence of low income between 1990 and 1995; all other age groups experienced an increased incidence of between 6% and 40%, where the largest increases were among those under age 45.

There were large interprovincial variations in incidence of low-income individuals (Table 6b). In 1995, Quebec had the highest proportion of low-income individuals (23%).[7] Quebec was followed by Newfoundland and Manitoba (both at 21%). All the other provinces were below the Canadian average of 20%. The province with the lowest percentage of low-income individuals was Prince Edward Island (15%), followed distantly by Ontario (18%). The distribution of low-income individuals does not correspond very closely to the *average* provincial income, however, as described below. (There are not yet any data available from the 1996 Census on income *distribution*.)

Virtually all of the provinces experienced an increase in low-income individuals between 1990 and 1995. In Canada as a whole, there was a 29% increase of such persons over this time period (Table 6b). In fact, there were over 42% more low-income individuals in British Columbia and 41% more in Ontario in 1995 compared with 1990. Only Saskatchewan did not incur an appreciable increase in the number of low-income individuals over this period; the next lowest was a 13% increase in low-income Albertans.[3]

In 1995, 44% of the Aboriginal population (who were not living on reserves or in Yukon or the Northwest Territories) was below Statistics Canada's low-income cut-offs, compared with the national average of 20%.[2] Three out of five Aboriginal children under the age of six were in low-income families in 1995, compared with the national rate of one in four. Among Aboriginal children age 6–14, the prevalence of low income was 48%, more than double the national average of 22%.

According to the 1996 Census, the average family income was $54,583 the year before, down 4.8% from 1990 (in 1995 constant dollars).[5] In 1995, the average husband–wife family income was $58,763. Where a husband and wife were both earning income, the total average income was $65,561. If the husband was the sole earner, it was $47,993, and if the wife was the sole earner, it was $39,211. This contrasts with the income of male lone-parent families ($40,974) and female lone-parent families ($27,721). The 29,000 families of male lone parents who had no earnings had an income of just $15,008, and 278,000 families of female lone parents with no earnings had an income of only $12,765 in 1995. This clearly illustrates the large disparities of income among family structures and even within family structures. Unattached *individuals* saw very few changes in their income over the period 1980–1996.[1] There was a low of $23,369 in 1980 (in 1996 dollars), followed by a modest increase

until a slight downturn in 1983, then a period of steady growth, reaching its peak of $25,845 in 1990. Since then, average income has slowly decreased and levelled off at the 1996 level of $24,433.[1]

As suggested by this, there were gender differences in individual income. Overall, men earned 62% more than women in 1995 ($31,117 vs. $19,208).[3] The largest wage disparity was found between men and women age 55–64, where men earned almost double what their female cohorts did. In fact, men age 25 and older earned from 41% to 97% more than their female cohorts in 1995 (Table 6c).

There were some interesting changes in income by gender from 1990 to 1995. Men's income fell by almost 8% from 1990 to 1995, compared with a 2% drop for women's income (Table 6c). Only one subgroup — women age 45–54 — saw an increase in income (2%) over this time period. Both males and females age 20–24 experienced an average loss of one-quarter of their income over this period, the largest decrease of any group, related largely to falling employment (see Topic 7).

From a provincial/territorial perspective, individuals living in the two territories had the highest average income in 1995 (about $29,000) (Table 6c).[6] Provincially, people in Ontario earned the highest incomes ($27,309), followed by British Columbians and Albertans ($26,295 and $26,138, respectively). These three provinces also had the highest educational attainments (see Topic 5). People in Newfoundland and Prince Edward Island earned the least, with an average income of around $20,000. People in all the provinces and territories experienced a decrease in income from 1990 to 1995. During this period, people from Quebec experienced the largest drop in average income (7%), followed by Ontarians, New Brunswickers, and Newfoundlanders. The smallest decreases in income were in the two territories and Saskatchewan.

In 1995, average *employment* income of Aboriginal people was $17,382, 34% below the national average of $26,474.[5] There was a predominance of part-year or part-time work among Aboriginal people. In 1995, just over one-third of Aboriginal people who reported employment income worked for the full year on a full-time basis, compared with one-half of the total population. However, the average employment income of Aboriginals was significantly lower than the national average, regardless of whether they worked full year, full time in 1995. The average earnings of full-year, full-time Aboriginal workers ($29,684) were 21% lower than the national average, while those of other Aboriginal earners ($10,866) were 29% lower. The average earnings of Aboriginal people were lower in every age and education category compared with the national average. On the whole, these differences in work patterns, age, and education accounted for about three-fifths of the total difference between the average earnings of the Aboriginal population and the national average.

On definitions and methods

For all the tables as well as most references to 1995 data, the source was the 1996 Census.[2] Questions regarding an individual's total 1995 income were asked to one in five households in the 1996 Census. The data for Figures 6a and 6b, as well as some of the data for 1996, come from the *Survey of Consumer Finances*, held annually since 1971.[1] The survey for 1996 income was conducted in April 1997 as a supplement to the monthly *Labour Force Survey*. Since the estimates in the report are based on a sample survey, they are subject to sampling variability in addition to response errors and errors due to non-response. Although the numbers in specific years on the figures may differ from the census year data, the terms and definitions used in the *Survey of Consumer Finances* are consistent with the 1996 Census.

"Low income" refers to economic families and unattached individuals who have total incomes below Statistics Canada's low-income cut-offs, 1992 base.[2] These cut-offs were selected on the basis that families and unattached individuals with incomes below these limits usually spend more than 54.7% of their income on food, shelter, and clothing and can hence be considered to live in straitened circumstances. Low-income cut-offs are quite different from measures of poverty, and Statistics Canada does not endorse their use as such.

The "economic family" concept is used instead of a census family to establish low-income cut-offs.[2] An economic family consists of all persons in a household who are related to each other by blood, marriage, common law, or adoption. An unattached individual is a person 15 years of age or older who is living alone or living in a household where he/she is not related to anyone else. Yukon, the Northwest Territories, and Indian reserves were not included in the low-income cut-off calculation.

As mentioned above, data on low-income Aboriginals do not include the 36% of Aboriginals

residing on reserves or in Yukon or the Northwest Territories. Since income is generally lower for the Aboriginal population on reserves, their inclusion would likely increase the prevalence of low income among the Aboriginal population.[2] The Statistics Canada survey that determined low-income cut-offs, however, excludes these areas.

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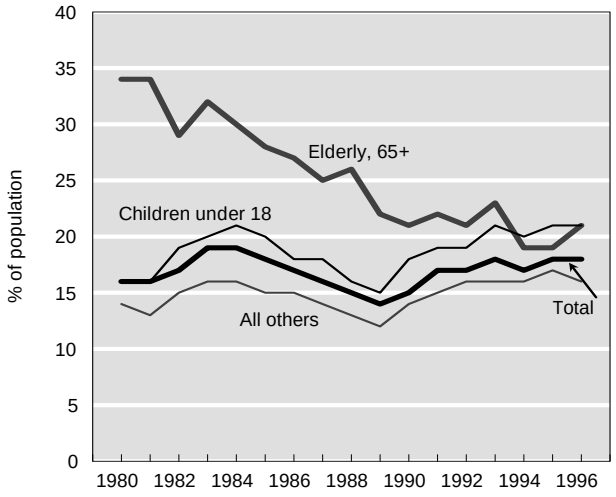
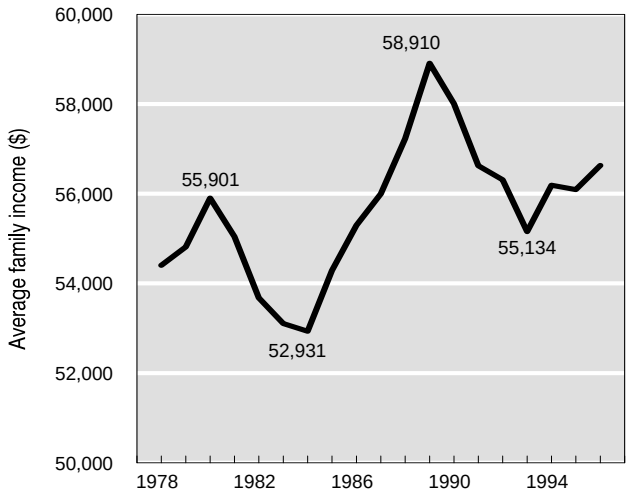
Figure 6a. **Low-income persons, by age, Canada, 1980–1996**



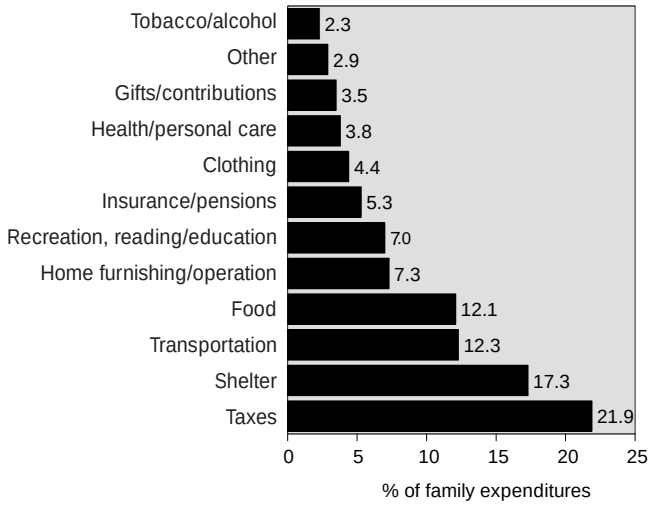
Source: Statistics Canada, *Income Distribution by Size in Canada, 1996* (Statistics Canada Cat. No. 13-207).

Figure 6b. **Average family income, 1996 dollars, Canada, 1978–1996**



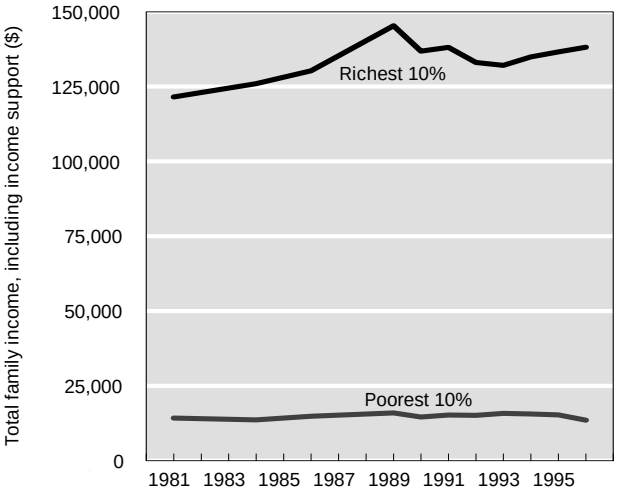
Sources: Statistics Canada, *Income Distribution by Size in Canada, 1996* (Statistics Canada Cat. No. 13-207); Statistics Canada, Income distribution by size in Canada, 1996, *The Daily*, December 22, 1997 (Statistics Canada Cat. No. 11-001-XIE).

Figure 6c. **Distribution of family expenditures, Canada, 1996**



Source: Statistics Canada, *Family Expenditures Survey, 1996* (Statistics Canada Cat. No. 62-555-XPB).

Figure 6d. **Income disparity among families with children under 18, in 1996 dollars, Canada, 1981–1996**



Source: Yalnizyan A, *The Growing Gap,* Toronto: Centre for Social Justice, 1998 (based on unpublished data from Statistics Canada's *Survey of Consumer Finances*).

Table 6a. **Families with low income, by family structure, Canada, 1995**

	Low income	Number of families	Average income	Income deficiency
	(%)	('000)	($)	($)[a]
All economic families	**16**	**1,267**	**13,778**	**10,223**
Total husband–wife families	12	760		
Married couples only	10	253	11,223	7,398
Married couples with children	13	457	16,199	11,641
Other married couples	13	50	19,960	12,333
Total non-husband–wife families	40	508		
Male lone parents	24	39	11,612	9,412
Female lone parents	48	396	12,032	10,165
Other	25	294	13,884	10,450
Unattached individuals	**42**	**1,512**		
Male	39	654		
Female	45	857		

[a] Income deficiency is the difference between family income and the applicable low-income cut-off.

Source: Statistics Canada, 1996 Census: Sources of income, *The Daily*, May 12, 1998 (Statistics Canada Cat. No. 11-001-XIE).

Table 6b. **Low-income[a] persons, by age and sex and by province/territory, Canada, 1990 and 1995**

	1990		1995	
	Low income	Number of persons	Low income	Number of persons
	(%)	('000)	(%)	('000)
Total, all ages	**16**	**4,289**	**20**	**5,514**
Male	15	1,896	18	2,499
Female	18	2,393	21	3,015
Age <6, total	20	447	26	583
Male	20	229	26	297
Female	20	219	26	286
Age 6–14, total	17	576	22	762
Male	17	295	22	391
Female	17	282	22	370
Age 15–17, total	17	180	20	229
Male	16	90	19	115
Female	17	91	20	114
Age 18–24, total	21	549	26	675
Male	18	242	23	303
Female	24	306	29	372
Age 25–34, total	15	729	20	895
Male	14	319	19	402
Female	17	410	22	493
Age 35–44, total	12	528	17	795
Male	11	238	16	366
Female	13	290	18	429
Age 45–54, total	11	323	14	511
Male	10	147	13	240
Female	12	175	15	271
Age 55–64, total	16	372	18	440
Male	14	161	17	199
Female	18	211	19	242
Age 65–69, total	16	169	17	183
Male	14	66	15	76
Female	19	104	19	107
Age 70+, total	23	415	21	441
Male	14	110	12	109
Female	29	306	26	332
Newfoundland	18	98	21	116
Prince Edward Island	14	17	15	20
Nova Scotia	16	136	19	167
New Brunswick	17	119	19	137
Quebec	19	1,305	23	1,631
Ontario	13	1,323	18	1,869
Manitoba	19	198	21	213
Saskatchewan	18	170	18	170
Alberta	17	425	18	482
British Columbia	16	498	20	708

[a] Excludes population on Indian reserves, in Yukon, and in the Northwest Territories.

Sources: Statistics Canada, 1996 Census: Sources of income, *The Nation Series* (Statistics Canada Cat. No. 93F0029XDB96010); Statistics Canada, Labour and Household Surveys Division, special tabulations.

Table 6c. **Average individual income, by age and sex and by province/territory, age 15+, Canada, 1990 and 1995**

	1990		1995	
	Average income	Income earners	Average income	Income earners
	($)	('000)	($)	('000)
Total, age 15+	**26,805**	**19,425**	**25,196**	**20,917**
Male	33,733	9,882	31,117	10,517
Female	19,630	9,542	19,208	10,400
Age 15–19, total	4,981	1,194	4,092	1,127
Male	5,370	621	4,350	584
Female	4,561	573	3,813	543
Age 20–24, total	14,628	1,829	11,142	1,808
Male	16,326	931	12,433	916
Female	12,869	899	9,815	892
Age 25–34, total	27,145	4,521	24,398	4,280
Male	32,464	2,347	28,435	2,192
Female	21,404	2,174	20,161	2,088
Age 35–44, total	34,490	4,086	31,756	4,611
Male	43,375	2,128	38,935	2,371
Female	30,835	1,958	24,157	2,240
Age 45–54, total	35,951	2,737	34,176	3,501
Male	46,199	1,461	42,787	1,828
Female	24,215	1,276	24,772	1,673
Age 55–64, total	29,525	2,149	27,223	2,324
Male	39,026	1,143	35,628	1,211
Female	18,736	1,006	18,078	1,113
Age 65–69, total	23,066	1,042	22,083	1,086
Male	30,686	481	28,540	520
Female	16,544	562	16,157	566
Age 70+, total	20,599	1,867	20,420	2,180
Male	25,288	772	25,140	895
Female	17,294	1,095	17,130	1,284
Newfoundland	20,961	374	19,710	387
Prince Edward Island	21,334	92	20,527	99
Nova Scotia	23,283	632	21,552	662
New Brunswick	22,143	503	20,755	539
Quebec	25,007	4,844	23,198	5,158
Ontario	29,278	7,300	27,309	7,823
Manitoba	23,597	778	22,667	806
Saskatchewan	23,048	687	22,541	707
Alberta	27,283	1,778	26,138	1,921
British Columbia	27,641	2,381	26,295	2,752
Yukon	29,934	20	29,079	22
Northwest Territories	29,559	35	29,011	40

Source: Statistics Canada, 1996 Census: Sources of income, *The Nation Series* (Statistics Canada Cat. Nos. 93F0029XDB96001 and 93F0029XDB96002).

7

Employment and unpaid work

Introduction

Employment and unemployment rates are a measure of the health of a nation's economy. Unemployed people suffer a disproportionate share of health problems, including depression, other forms of morbidity, and reduced life expectancy.[1] Participation in the wage economy is only part of the picture, however. Thus, this topic also highlights the unpaid household activities that Canadians perform.

Employment and unemployment, 1997

In 1997, 65% of Canadians age 15 and older were participants in the labour force — that is, they were either working or actively seeking work. Among these persons, the unemployment rate was 9.2%. Thus, there were 15.4 million people in the labour force, and 1.4 million of them were unemployed (Table 7a).[2]

Between 1970 and 1997, the overall size of the Canadian labour force grew significantly, from 8.3 to 15.4 million, with steady increases almost every year (Fig. 7a).[2] This occurred despite an increase in the number of people outside the labour force, from 6.8 million in 1989 to 8.3 million in 1997. Unemployment rates have fluctuated but generally increased since the early 1970s, when unemployment was only 6%. The unemployment rate increased in the latter part of that decade and peaked at 11.8% (1.4 million persons) in 1983. Although unemployment began to decline in the late 1980s, it never returned to the 1970 lows. During the recession of the early 1990s, Canada experienced a sharp increase in unemployment, which hit 11.2% in 1992. However, the unemployment rate slowly eased to the 1997 level of 9.2%.[2] This decline has continued into 1998.[3]

Unpaid work, 1996

In 1996, 89% of Canadians 15 and older spent some time in the week prior to the 1996 Census performing unpaid housework, yard work, or home maintenance for members of their household or others. About 5% of Canadians 15 and older spent 60 or more hours in the week prior to the survey doing unpaid household activities (Table 7b).[4]

Differences among groups

During the period from 1970 to 1997, there were some very important changes in female labour force participation rates (Fig. 7b).[5] There was a significant increase, from 36% in 1970 to 59% in 1992, returning to about 57% from 1995 onwards. This overall increase in female participation has important health implications, given that women are joining the labour market at unprecedented rates but are often still burdened with the majority of child-rearing responsibilities and elder care (Topics 32 and 33). It is also important to note that the participation rate of males, after years of generally rising or stable levels, slowly fell from 78% in 1981 to 73% in 1997.[2]

Men still participate in the labour force at a much higher rate than do women (Table 7a). This is true for all age groups except for 15–17 year olds, where the participation is almost equal. The biggest gender difference in 1997 participation rates was found among 55–64 year olds, where about 58% of men and only 34% of women participated in the labour force. Not surprisingly, labour force participation was lowest among the youngest and the oldest age groups, reflecting the fact that younger Canadians may still be completing schooling and older Canadians have retired.

Unemployment rates were higher for men than for women under age 25, roughly even between the sexes from 25 to 44, and slightly higher for women age 45 and up. The biggest difference in the unemployment rate occurred between males and females age 15–19 (a 2.4 percentage point difference between sexes).

Unemployment was highest among youth age 15–17 (25.5%), 18–19 (18.4%), and 20–24 (13.6%) and lowest among those age 65 and older (3.1%). The increase in youth unemployment over the last few years has become an important concern for many social organizations and government bodies.

Labour force participation rates increased and unemployment decreased with each higher level of education (Table 7a). The exception was that people who had completed high school were less likely to be unemployed and more likely to have higher rates of participation than those who had some post-secondary education.

People living in the provinces from Quebec eastward experienced the highest rates of unemployment and, with the notable exception of Prince Edward Island, the lowest labour force participation in the country. Newfoundland had the lowest participation rate (52.5%) and the highest unemployment rate (18.8%) of all provinces. Those living in the provinces from Ontario west were much more likely to have lower than average unemployment and higher rates of participation. Alberta had the highest participation rate of all provinces, at 71.8%. Of the western provinces, British Columbia had the highest unemployment rate, which was only 0.5 percentage points below the Canadian average. In line with the Canadian average, the males in every province had a higher participation rate than the females. However, the unemployment rate was higher for males in every province except for Ontario, Manitoba, and Alberta (data not shown).

From a gender perspective, 92% of women reported spending some amount of time doing unpaid household activities in the week preceding the census, compared with 84% of men.[6] One in 50 men and one in 13 women performed 60 or more hours of unpaid household activities (Table 7b). Among wives who worked full-time (30 or more hours) for pay, about half reported spending 15 or more hours doing unpaid household activities, while about one-quarter of husbands working full-time spent at least 15 hours doing such work around the home.[7] Of wives with no paid employment, 70% did 15 or more hours of unpaid household activities, compared with 36% of husbands with no paid employment. About three out of five wives employed full-time who had at least one child at home under the age of 15 worked at least 15 hours on household activities, compared with one-quarter of husbands working full-time who had at least one child under 15 at home. About 95% of lone parents (regardless of employment status) performed at least some unpaid household activities, whereas almost 10% of all lone parents performed 60 hours or more of such unpaid work.

There were provincial differences in the performance of unpaid household activities. People in provinces from Quebec eastward were below average in performing at least some unpaid household activities, while Canadians in the remaining provinces were equal to or above average in performing at least some unpaid household activities. However, only people in Quebec were below the Canadian average of 5% for providing 60 or more hours; people in all the other provinces were at or up to five percentage points above the Canadian average. Interestingly enough, although Newfoundlanders were the least likely to do any unpaid household activities (85%), they also were the most likely to do 60 or more hours of such work (10%).[7]

On definitions and methods

Unemployment rates reflect those people who say they are actively looking for a job. In times of dire recession, people may become discouraged and remove themselves from the labour force. When the economy does improve, unemployment rates may increase, but this may simply be a result of individuals returning to the labour force. From a health perspective, unemployment is an important indicator, but it may understate economic impacts on health, since it does not include those too discouraged to seek employment.

The 1996 Census was the first to ask questions about the unpaid household activities that Canadians perform, above and beyond any paid work. It asked, "Last week, how many hours did this person spend time...doing unpaid housework, yard work, or home maintenance for members of this household or others?" Examples included preparing meals, doing laundry, household planning, shopping, and cutting the grass.

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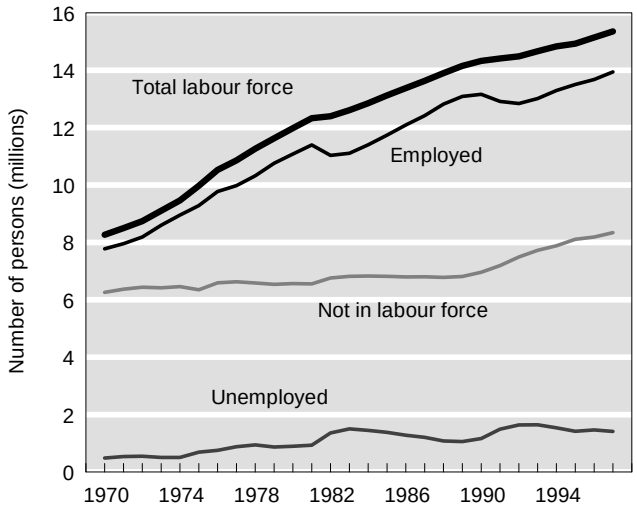
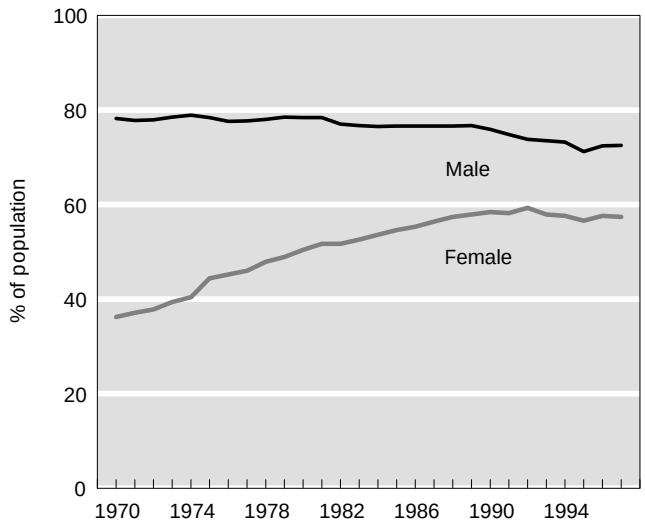
Figure 7a. **Labour force, age 15+, Canada, 1970–1997**



Source: Statistics Canada, *Historical Labour Force Statistics, 1970–1997* (Statistics Canada Cat. No. 71-201-XPB).

Figure 7b. **Labour force participation rates, by sex, age 15+, Canada, 1970–1997**



Sources: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Statistics Canada, Labour Division, special tabulations.

Table 7a. **Unemployment, by age and sex, by education, and by province, age 15+, Canada, 1997**

	Population estimate	Participation rate	Labour force	Unemployment rate
	('000)	(%)	('000)	(%)
Total, age 15+	**23,687**	**64.8**	**15,354**	**9.2**
Male	11,630	72.5	8,428	9.2
Female	12,057	57.4	6,926	9.2
Age 15–17, total	1,214	36.4	442	25.5
Male	617	36.2	223	26.7
Female	597	36.7	219	24.3
Age 18–19, total	769	63.1	485	18.4
Male	398	65.4	260	19.5
Female	371	60.7	225	17.1
Age 20–24, total	1,990	75.6	1,504	13.6
Male	1,005	79.2	797	14.4
Female	984	71.8	707	12.6
Age 25–34, total	4,663	84.6	3,943	9.1
Male	2,336	91.4	2,136	9.4
Female	2,326	77.7	1,807	8.7
Age 35–44, total	5,081	85.7	4,354	7.8
Male	2,537	92.6	2,349	7.6
Female	2,545	78.8	2,005	8.0
Age 45–54, total	4,236	79.7	3,376	6.7
Male	2,122	88.1	1,868	6.6
Female	2,115	71.3	1,507	6.8
Age 55–64, total	2,803	45.6	1,277	7.5
Male	1,377	57.5	791	7.3
Female	1,426	34.1	486	7.8
Age 65+, total	3,484	6.4	223	3.1
Male	1,510	10.2	154	2.9
Female	1,975	3.5	69	3.5
0–8 years of school	2,801	26.3	736	15.2
Some high school	4,485	51.3	2,303	16.0
High school graduate	4,430	70.4	3,120	8.8
Some post-secondary	2,159	69.4	1,498	10.4
Post-secondary certificate	6,480	76.4	4,950	7.5
University degree	3,332	82.5	2,749	4.8
Newfoundland	450	52.5	236	18.8
Prince Edward Island	107	66.3	71	14.9
Nova Scotia	742	60.2	447	12.2
New Brunswick	603	60.1	362	12.8
Quebec	5,926	62.1	3,680	11.4
Ontario	8,979	65.9	5,915	8.5
Manitoba	861	66.9	576	6.6
Saskatchewan	760	66.4	504	6.0
Alberta	2,159	71.8	1,550	6.0
British Columbia	3,100	64.9	2,012	8.7

Sources: Statistics Canada, *Historical Labour Force Statistics, 1997* (Statistics Canada Cat. No. 71-201-XPB); Statistics Canada, Household Surveys Division, special tabulations.

Table 7b. **Performing unpaid household activities, by age and sex and by province/territory, age 15+, Canada, 1996**

	Population estimate	Unpaid household activities	
		Any	60+ hours
	('000)	(%)	(%)
Total, age 15+	**22,629**	**89**	**5**
Male	11,022	84	2
Female	11,606	92	8
Age 15–19, total	1,956	79	1
Male	1,008	75	0
Female	948	83	1
Age 20–24, total	1,893	82	2
Male	947	76	1
Female	946	89	4
Age 25–34, total	4,481	92	6
Male	2,209	87	2
Female	2,272	96	10
Age 35–44, total	4,843	94	6
Male	2,386	90	2
Female	2,457	97	10
Age 45–54, total	3,698	92	5
Male	1,837	88	2
Female	1,861	96	8
Age 55–64, total	2,478	89	6
Male	1,217	84	2
Female	1,261	93	8
Age 65+, total	3,280	82	5
Male	1,417	80	3
Female	1,862	84	6
Newfoundland	437	85	10
Prince Edward Island	104	87	5
Nova Scotia	720	87	6
New Brunswick	585	87	6
Quebec	5,673	88	4
Ontario	8,429	89	5
Manitoba	856	89	6
Saskatchewan	748	90	7
Alberta	2,055	90	5
British Columbia	2,955	89	5
Yukon	23	89	6
Northwest Territories	43	88	8

Sources: Statistics Canada, 1996 Census: Unpaid work, *The Nation Series* (Statistics Canada Cat. No. 93F0027XDB96010); Statistics Canada, Labour and Household Surveys Analysis Division, special tabulations.

8

Life stress

Introduction

With the exception of pregnancy and related conditions, the major causes of hospitalization (Topic 77) and death (Topic 82) are stress-related. Although scientists have not implicated stress as a direct risk factor for many conditions, it is clear that both chronic stress and life events can have at least a strong indirect impact on physical and mental health, by affecting the physiology and morphology of the circulatory system and — by psychoneuro-immunological mechanisms — by affecting the development of cancer.[1]

This topic describes differences between groups in the Canadian population with respect to their experience of ongoing stress in their lives, with a focus on social relationships and family. Work stress is described in Topic 9, and psychological resources for coping with stress are dealt with in Topic 54.

Prevalence of chronic stress, 1994–95

For the purposes of assessing the *relative* amount of stress in people's lives, the 1994–95 *National Population Health Survey* asked up to 18 questions, depending on marital and parenthood status. For this analysis, scores on this continuous scale were arbitrarily divided into three categories, with 26% being rated as experiencing high chronic stress and the balance about equally divided between moderate stress (38%) and low stress (36%). These percentages have no inherent meaning, but the categories do permit intergroup comparisons (Table 8).[2]

Differences among groups

Women were more likely than men to report high stress (Table 8). This is true of all ages except the youngest (age 18–19). Indeed, women age 20–24 were the group most likely to report high stress (38%) — a sharp contrast to women age 75 and older (10%). High stress becomes much *less* common for both sexes with advancing years, a pattern that resembles work stress (Topic 9) and depression (Topic 75).

Among education groups, it is clear that there is a considerable advantage to education: the least educated group was twice as likely as university graduates to report high life stress (Table 8). The more one is educated, the lower is the incidence of reporting high life stress.

The least amount of high life stress was reported in Newfoundland (17%) and Prince Edward Island (20%), while high life stress was most likely to be reported in Manitoba (29%, mainly due to 35% of women in Manitoba who reported high stress; data not shown) and Ontario (28%). Most of the other provinces were around the average high life stress level for Canada (Table 8).

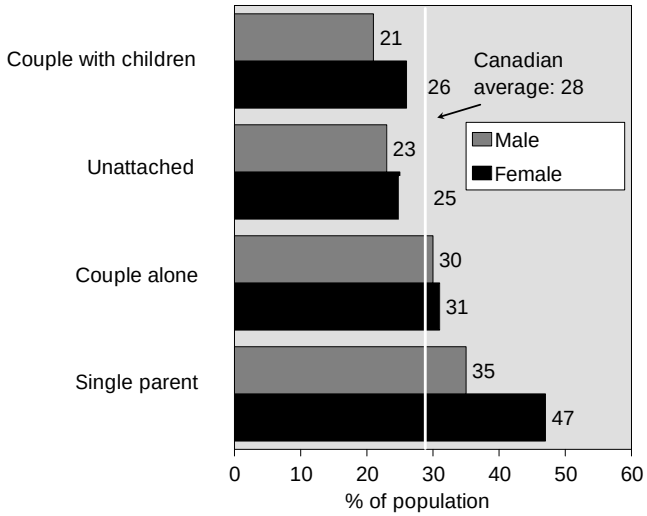
There were substantial differences in stress according to living arrangements (Fig. 8).[2] Many more single parents reported high stress than individuals in couples with children or unattached individuals. More specifically, almost half (47%) of all female lone parents reported high stress levels.

On definitions and methods

These data are from the personal interview portion of the *National Population Health Survey*, conducted by Statistics Canada in June, August, and November 1994 and March 1995. The survey visited over 22,000 households; these data are based on the sample age 18 and older, which consisted of almost 15,000 persons.[3]

As noted above, a maximum of 18 questions was asked about daily life, each to be answered true or false. General items included "You are trying to take on too many things at once" and "There is too much pressure on you to be like other people." Examples of family-oriented questions are: "Someone in your family has an alcohol or drug problem" and "A child's behaviour is of serious concern to you." Total scores were adjusted by Statistics Canada for the number of applicable items. The following arbitrary definitions were used for the three levels of stress: low (score of 0 or 1), moderate (score of 2–4), and high (score of 5 or more).

Figure 8. **High stress, by household type (age-standardized), age 18+, Canada, 1994–95**



Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

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Table 8. **Chronic stress, by age and sex, by education (age-standardized), and by province, age 18+, Canada, 1994–95**

	Population estimate	Low stress	Moderate stress	High stress
	('000)	(%)	(%)	(%)
Total, age 18+	**20,163**	**36**	**38**	**26**
Male	9,648	37	39	23
Female	10,515	35	37	28
Age 18–19, total	762	32	31	37
Male	429	29	32	39
Female	334	37	28	35
Age 20–24, total	1,619	28	38	35
Male	770	27	41	32
Female	849	28	35	38
Age 25–34, total	4,544	29	41	30
Male	2,182	31	42	27
Female	2,362	27	40	33
Age 35–44, total	4,631	29	43	28
Male	2,302	32	45	23
Female	2,329	26	41	33
Age 45–54, total	3,302	34	39	27
Male	1,662	38	38	23
Female	1,640	30	40	30
Age 55–64, total	2,333	43	36	21
Male	1,071	45	36	18
Female	1,262	42	35	23
Age 65–74, total	1,918	55	31	14
Male	836	58	29	13
Female	1,082	53	32	15
Age 75+, total	1,054	64	27	9
Male	395	64	30*	#
Female	658	64	26	10
Less than high school	5,117	34	36	30
High school	8,417	34	38	28
College	3,654	37	38	25
University	2,949	46	39	15
Newfoundland	398	44	39	17
Prince Edward Island	92	43	38	20
Nova Scotia	665	36	37	27
New Brunswick	513	35	39	26
Quebec	5,086	37	38	24
Ontario	7,661	34	38	28
Manitoba	763	30	41	29
Saskatchewan	649	38	37	25
Alberta	1,087	37	39	24
British Columbia	2,528	37	36	26

* Moderate sampling variability; interpret with caution

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

9

Work stress

Introduction

A substantial proportion of Canadians are in the labour force (Topic 7), and the vast majority of them report experiencing considerable satisfaction with their work, even though this has declined since 1991 (Topic 55). Since work is such an important facet of daily life for so many Canadians, the stress they experience at work is a key determinant of overall mental health.

This topic describes the results of the 1994–95 *National Population Health Survey*, which used a battery of questions to assess work stress in an unprecedented fashion for a Canadian study.

Prevalence of work stress, 1994–95

On a scale based on 12 questions, with a minimum score of 0 and a maximum of 45, employed Canadians had a mean work stress score of 19.8, or slightly better than the middle of the possible range (Table 9).[1] About 4% of working Canadians claimed to have high work stress.

As this is the first national use of this scale, there are no earlier or international data for comparison purposes.

Differences among groups

High work stress was most common among employed 20–24 year olds and declined with each age group to reach its lowest level among employed 45–54 year olds (Table 9). The mean score of work stress followed a similar pattern, from a maximum among 15–19 year olds to a low of 17.5 for those age 65–74. (For purposes of analysis and comparison, it should be noted that there are fewer than 170,000 people working after the age of 65.)

Women reported slightly higher mean scores of work stress and more women reported high work stress compared with men, at all age groups (Table 9) and education groups (data not shown). In fact, women age 20–24 were more than three times as likely to report high work stress compared with the Canadian average.

With each successive level of education, there was a modest but steady decline in the mean score of work stress, and a similar pattern held for the percentage of people reporting high work stress. University graduates reported the least work stress, at 2% (Table 9).

Provincial differences were more muted than those related to either education or age. Similar to the results on life stress (see Topic 8), Ontario and Manitoba workers were above average in high work stress. By contrast, only 3% of Quebec workers reported high work stress (Table 9).

There were notable differences in high work stress among individuals in different types of household. Members of couples with no children had the lowest percentage of high work stress (3%), while single parents were twice as likely to report such stress (Fig. 9).[1] Additionally, only 2% of males in couples with no children had high work stress, compared with 6% of female lone parents.

On definitions and methods

These data are from the personal interview portion of the *National Population Health Survey*, conducted by Statistics Canada in June, August, and November 1994 and March 1995. The survey visited over 22,000 households; these data are based on the sample age 15 and older and working, which consisted of almost 8,500 persons.[2]

The work stress scale consisted of 12 questions describing working conditions that were answered on a five-point scale of agree–disagree. Developed at the University of Ottawa, the scale covers the dimensions of decision latitude, psychological demands, job insecurity, physical exertion, and social support. High stress is arbitrarily defined as a score of 30 or more.

Work stress was not assessed in the 1996–97 cycle of the *National Population Health Survey*.

References

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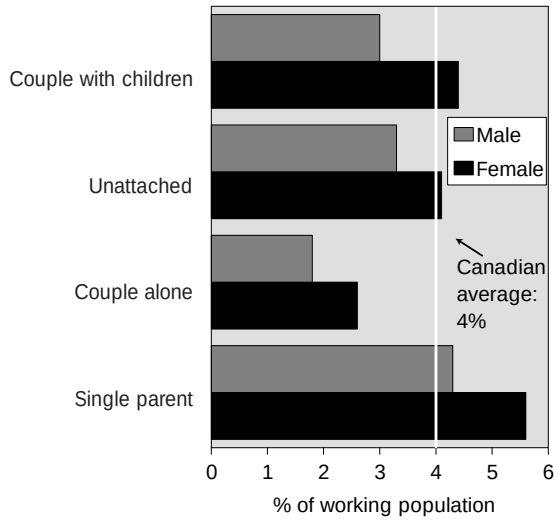
Figure 9. **High work stress, by household type (age-standardized), employed persons age 15+, Canada, 1994–95**



Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

Table 9. **Work stress index, by age and sex, by education (age-standardized), and by province, working population age 15–74, Canada, 1994–95**

	Population estimate	Mean score	High stress
	('000)		(%)
Total, age 15+	**11,833**	**19.8**	**4**
Male	6,378	19.3	4
Female	5,465	20.3	5
Age 15–19, total	821	22.3	7
Male	407	22.2	#
Female	414	22.4	#
Age 20–24, total	1,003	21.2	9
Male	494	20.7	#
Female	509	21.7	13
Age 25–34, total	3,228	20.2	5
Male	1,705	19.9	4
Female	1,523	20.6	6
Age 35–44, total	3,378	19.5	4
Male	1,827	19.0	3
Female	1,550	20.0	5
Age 45–54, total	2,311	18.7	2
Male	1,230	18.1	#
Female	1,012	19.4	#
Age 55–64, total	934	18.7	#
Male	530	18.2	#
Female	404	19.4	#
Age 65–74, total	168	17.5	#
Male	115	17.3	#
Female	53	17.9	#
Less than high school	2,185	20.6	4
High school	5,131	19.7	5
College	2,430	19.5	3
University	2,088	17.4	2
Newfoundland	186	19.8	#
Prince Edward Island	55	20.3	#
Nova Scotia	381	20.6	#
New Brunswick	261	20.0	#
Quebec	2,226	19.2	3
Ontario	4,886	19.7	5
Manitoba	498	20.3	5
Saskatchewan	414	19.7	#
Alberta	1,302	19.6	4
British Columbia	1,649	19.5	4

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

10

Family violence

Introduction

Family violence, particularly wife and child abuse, has moved from the privacy of families to become a major social issue. Health professionals now recognize that exposure to family violence affects health, leading to mental and physical anguish and even death, in the most extreme cases.[1] Children who are raised in violent homes often grow up to be abusers themselves, helping to perpetuate the cycle of violence in society.

This topic presents indicators relating to family violence, including assaults against children and youth in the family, family-related homicides, use of transition homes, and violence against older adults.

Incidence of family violence, 1996

In 1996, children under 18 were the victims of 22% of assaults reported to police agencies, accounting for a total of almost 23,000 reported assaults. Sexual assaults accounted for about one-quarter of the total of all assaults against children.[2] Family members were accused in 24% of all assaults against children — 32% of all sexual assaults and 20% of physical assaults. Almost 70% of victims under the age of three were physically assaulted by family members, and parents accounted for 58% of such assaults (Table 10a).[2]

Another source of data on family violence is solved family-related homicides.[3] Of the 581 homicides in 1997, 42% of victims were killed by a spouse or other family member. Where an accused was identified, about 87% of homicide victims were killed by someone they knew. From 1981 to 1996, family-related homicides involved a female victim approximately four times out of seven (Fig. 10).[4] Family-related homicides have accounted for 162–191 homicides annually since 1993, down from generally higher levels from 1981 to 1992.

Spousal homicides decreased from 90 in 1995 to 80 in 1996 and to 75 in 1997. Wives accounted for 80% of spousal victims in 1997.[3] A further 19 women were killed by a boyfriend or ex-boyfriend. In all, about 40% of female homicide victims were killed by a man with whom they had an intimate relationship at some point in time.

Shelters or transition homes are intended to offer abused women and their children a temporary but safe place to live during the crisis of assaults by partners. According to Statistics Canada's national survey on transition homes, 2,361 women accompanied by 2,217 children were living in shelters across Canada on May 31, 1995.[5] Four in five women were there to escape an abusive situation, the majority from abuse by a husband (64%) or former husband (21%). The vast majority of women who sought shelter to escape violence were victims of physical abuse (70%), almost half reported threats of abuse, and one-fifth experienced sexual abuse (total exceeds 100% due to multiple responses). One-quarter of women reported injuries that required medical attention when they came to the shelter, and 3% required hospitalization.

Differences among groups

Between 1974 and 1996, there were 1,994 victims of homicide under 18 years of age, accounting for 13% of all homicide victims in Canada during this period.[2] Despite yearly fluctuations, the homicide rate for children has remained relatively constant; in 1996, it was half the rate for adults.

Patterns of physical and sexual assault by family members differ according to the victim's gender (Table 10b).[2] Girls and young women were the victims of more assaults, especially sexual assaults, by family members compared with boys and young men. The

victims were female in 79% of sexual assaults and over half of all physical assaults.[2]

Parents were more likely than other family members to commit both sexual and physical assaults (Table 10b). Males had a higher likelihood than females of being sexually or physically assaulted by a parent, while females were more likely to be sexually assaulted by other immediate family or physically assaulted by a spouse.

In 1996, older adults (age 65 and older) were victims in 2% of violent crimes reported to the police.[5] Family members were involved in 20% of all violent crimes against people 65 years of age and older, with children and spouses accounting for the majority of accused in these cases (44% and 34%, respectively). According to police data, the percentage of violent crimes carried out by family members against older adults has remained fairly constant since 1993, ranging between 19% and 24%. Throughout this period, spouses and children continued to be the primary perpetrators of these crimes.

On definitions and methods

These indicators come from different sources and are not entirely comparable. There has not yet been a large comprehensive national survey of family violence.

The publication *Assaults Against Children and Youth in the Family, 1996* derives most of its data from the *Uniform Crime Reporting Survey, 1996.* The *Uniform Crime Reporting Survey* data reflect criminal incidents reported to 154 police agencies in six provinces, representing 47% of the national volume of actual *Criminal Code* incidents.[2] They originate largely in Ontario and Quebec and reflect mostly urban populations. Nonetheless, it is felt that analysis of these data provides insight into the nature of child abuse cases reported to the police. "Child abuse" is defined as *Criminal Code of Canada* incidents of physical and sexual assault against victims under 18 years of age that come to the attention of police. "Family" refers to immediate and extended family members related by blood, marriage, common law, or adoption, as well as those who would be considered to be the child's legal guardian. If the accused is a boyfriend or girlfriend of an abused child's parent, he or she is likely to be reported as a "non-family member."

The *Uniform Crime Reporting Survey* has collected police-reported data on homicide incidents since 1961. The homicide count for each year reflects the number of homicides reported to police in that year, regardless of the date on which the homicide actually occurred.[3] The survey has 100% Canada-wide coverage, with over 1,500 police forces reporting. Homicide in Canada (and this survey) is defined as first-degree murder, second-degree murder, manslaughter, or infanticide. Deaths caused by criminal negligence, suicide, accidental homicide, or justifiable homicide are not included in this classification.

References

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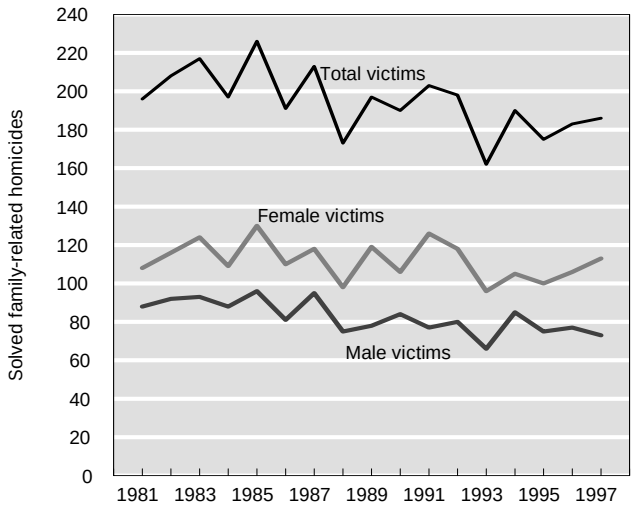
Figure 10. **Family-related homicides, by sex of victim, Canada, 1981–1997**



Source: Statistics Canada, Canadian Centre for Justice Statistics, *Uniform Crime Reporting Survey*, special tabulations.

Table 10a. **Assaults against children, by type of assault, by age of victim, and by relationship with the accused, Canada, 1996**

		Sexual assault						
		Age of victim						
		Total	<3	3–5	6–8	9–11	12–14	15–17
Total	**Number**	**6,481**	**164**	**867**	**1,026**	**1,101**	**1,805**	**1,518**
	%	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Acquaintance		49	25	41	46	47	56	51
Stranger		13	6	5	8	13	14	21
Unknown		6	12	7	5	5	5	6
Family total	**%**	**32**	**57**	**48**	**42**	**36**	**25**	**21**
Spouse		–	–	–	–	–	1	–
Parent		14	30	20	15	16	11	10
Other immediate family		9	9	12	13	11	7	6
Extended family		9	18	16	14	9	6	4

		Physical assault						
		Age of victim						
		Total	<3	3–5	6–8	9–11	12–14	15–17
Total	**Number**	**16,371**	**342**	**509**	**961**	**1,997**	**5,465**	**7,097**
	%	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Acquaintance		53	17	25	40	54	60	52
Stranger		22	4	9	15	21	21	26
Unknown		5	10	8	7	5	4	5
Family total	**%**	**20**	**69**	**58**	**38**	**20**	**15**	**17**
Spouse		2	–	–	–	–	–	4
Parent		13	58	49	33	15	10	7
Other immediate family		4	6	6	3	3	4	5
Extended family		1	5	4	2	2	1	1

Source: Statistics Canada, Canadian Centre for Justice Statistics, *Assaults Against Children and Youth in the Family, 1996*, Ottawa: Statistics Canada, November 1997 (Statistics Canada Cat. No. 85-002-XPE, Vol. 17, No. 11) (data from *Revised Uniform Crime Reporting Survey*).

Table 10b. **Family assaults against children and youth, by type of assault, by sex[a] of victim, and by accused–victim relationship, Canada, 1996**

		Sexual assault			Physical assault		
		Total	Against females	Against males	Total	Against females	Against males
Total	**Number**	**2,102**	**1,662**	**440**	**3,328**	**1,855**	**1,473**
	%	**100**	**100**	**100**	**100**	**100**	**100**
Parent		43	42	48	64	59	70
Other immediate family[b]		28	29	24	21	21	21
Extended family[c]		27	27	28	7	6	8
Spouse of victim		1	2	1	8	14	1

[a] Cases where the sex of the victim was unknown were excluded.

[b] "Immediate family" includes natural, step, half, foster, and adopted siblings.

[c] "Extended family" includes others related by blood or marriage (e.g., grandparents, aunts, uncles, cousins).

Source: Statistics Canada, Canadian Centre for Justice Statistics, *Assaults Against Children and Youth in the Family, 1996*, Ottawa: Statistics Canada, November 1997 (Statistics Canada Cat. No. 85-002-XPE, Vol. 17, No. 11) (data from *Revised Uniform Crime Reporting Survey*).

11

Social health

Introduction

While most of the remaining topics in this *Statistical Report* describe population health by aggregating individual statistics, there is no practical means to *summarize* all these indicators. However, a recently developed "Index of Social Health" does provide a summary of 15 important indicators,[1] most of which are included in this *Report*. Taken together, these indicators provide a much more comprehensive view of the health of society than traditional measures of progress, such as gross domestic product (GDP) or even the United Nations' measure of quality of life, the Human Development Index. Economic measures such as GDP are a poor reflection of social health because they fail to take account of non-economic activities or even the negative aspects of economic activities (e.g., pollution).[2] The United Nations' measure is limited in its scope, consisting only of GDP per capita, literacy, school enrollment, and infant mortality,[3] and, until 1998, it took no account of disparities within a society.

The new Index of Social Health has its limitations as well and is best seen as a work-in-progress. It is scored so that the only valid comparisons are within a region (e.g., province or country) over time. The only comparisons among jurisdictions that are possible are the trends over time. Nevertheless, the index provides a revealing perspective on social progress in Canada, especially when compared with economic progress.

Trends in social health, 1970–1995

From 1970 to 1980, the Index of Social Health grew impressively in Canada. However, the peak values were reached in 1980, and there has been a slow and steady decline since that time, interrupted only briefly by a modest recovery in the late 1980s (Fig. 11).[2] By this measure, Canada's social health had declined to the same level as in 1972. In 1995, the index stood at about 50, which means that the indicators, taken together, were at only half the maximum levels they had reached during the 25-year period. In sharp contrast, Canada's GDP continued to increase markedly from 1970 to 1995.

International rankings on the Index of Social Health are not possible, but Canada has scored well on the United Nations' more limited Human Development Index for the last several years.[3] In 1998, although Canada again placed first on the general index, it ranked only 10th out of 17 wealthy countries on the new Human Poverty Index of the United Nations, which incorporates a measure of income distribution.

Differences among groups

Ten of the 15 components of the Index of Social Health cover four stages of life: childhood, youth, adulthood, and old age. The other five components cut across all ages: homicides, alcohol-related fatalities, access to affordable housing, and income inequity. It is thus possible to compare the trends for various life stages, although, as noted, *only* the trends can be compared, not the absolute values. (There are no gender-specific indicators.)

The childhood indicators — child poverty (Topic 6), child abuse (Topic 10), and infant mortality (Topic 78) — reached their peak values in 1980 and have declined steadily since, except for a brief recovery in 1989. By 1995, the index had declined 52% from this level (Table 11).[1] The childhood social health indicators appear to be particularly vulnerable to downturns in the economy[1] and are distinguished from the other life stages by achieving their lowest levels most recently.

The youth indicators are teen suicides (Topic 81), drug abuse (Topic 45), and the high school dropout rate (Topic 5). They show a different pattern from the childhood indicators, declining abruptly and dramatically from their peak in 1982 to their lowest values in 1986. From 1986 to 1993, there was a partial recovery in this sub-index, but the trend since then has been downward. After the childhood indicators, the youth sub-index is the one to have most recently hit its lowest level. In 1995, it was 37% below its peak value of 13 years earlier.

The adult social health indicators are economic in nature — unemployment (Topic 7) and average weekly earnings — and so grew with the economy through the early part of the 1970s and most of the 1980s. However, there were steep declines in the adult sub-index from 1976 to 1982 and from 1989 to 1993. While these indicators have now recovered somewhat, they are still 23% below their maximum values in 1983.

The seniors indicators consist of their poverty rate (Topic 6) and uninsured health costs (see Topics 21, 23, and 24). The elderly showed dramatic improvement in the 1970s, compared with other groups, but have slowly and steadily declined since 1982. In 1995, their sub-index was 38% below its highest value.

There are some important exceptions to the generally similar provincial trends. Most provinces reached their maximum values in social health in 1979 or 1980, although Ontario and Prince Edward Island reached theirs much later in the 1980s (Table 11). Most provinces also had their low points in 1970, when the index begins, but Quebec's lowest value was as recently as 1994. Changes from the peak values until 1995 (the most recent year tracked for the index) are uniformly negative but vary in the magnitude of this downward trend, from a modest 4–5% in Alberta and Newfoundland to a striking 32% in Quebec.

While the Index of Social Health does not provide gender-specific indicators, the United Nations has a gender-related development index, which takes account of inequality in achievement between men and women, and a gender empowerment measure, which indicates whether women are able to actively participate in economic and political life. Worldwide, Canada ranks first on the gender-related development index and sixth on the gender empowerment measure.

Canada's Aboriginal population scores substantially below the general population on the Human Development Index and has a status closer to that of the developing countries.[4] By this measure, off-reserve Indians are similar to the residents of Trinidad and Tobago (ranked 35th globally), while those living on reserve are marginally better off than Brazilians, who are ranked 63rd.

On definitions and methods

The Index of Social Health was developed by Human Resources Development Canada, in collaboration with Statistics Canada, and is based on a similar index recently developed for the United States.[1] The index summarizes 15 indicators, described above, many of which are reported on elsewhere in this *Statistical Report*. The score for each indicator, for any given year in a time series, is set relative to the best and worst years in the series. The best year for an indicator is scored 10, and the worst, 0. Thus, the scores are useful for showing changes over time within a jurisdiction, but they cannot be used to compare different regions (provinces or countries) except with respect to trends over time.

The Human Development Index is based on four indicators: life expectancy at birth (Topic 84), school enrollment and adult literacy (Topic 5), and real GDP per capita.

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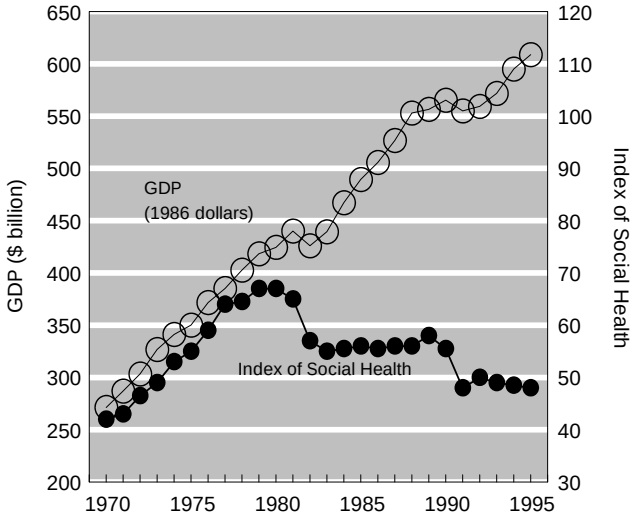
Figure 11. **Social health and economic output, Canada, 1970–1995**



Source: Human Resources Development Canada, How do we *know* that times are improving in Canada? *Applied Research Bulletin* 1997; 3(2): 6–8.

Table 11. **Trends in the Index of Social Health and sub-indices, by life stage and by province, Canada, 1970–1995**

	Lowest year	Highest year	Change from peak to 1995
			(%)
Total	**1970**	**1980**	**-28**
Child	1995	1980	-52
Youth	1986	1982	-37
Adult	1976	1983	-23
Elderly	1970	1982	-38
Newfoundland	1970	1981	-5
Prince Edward Island	1971	1987	-15
Nova Scotia	1970	1980	-21
New Brunswick	1970, 1982	1980	-8
Quebec	1994	1979	-32
Ontario	1970	1988	-13
Manitoba	1970	1979	-13
Saskatchewan	1970	1979	-19
Alberta	1970	1979	-4
British Columbia	1970	1979	-17

Source: Brink S, Zeesman A, *Measuring Social Well-being: An Index of Social Health for Canada*, Ottawa: Human Resources Development Canada, Applied Research Branch, June 1997 (Research Paper R-97-9E).

The physical environment

This brief section provides a glimpse of aspects of the physical environment that are known to affect health — namely, second-hand smoke and common air pollutants. There are other indicators of the state of Canada's environment, but either they are very general, such as trends in sales of consumer goods with ozone-damaging constituents, or their health implications are not clear, such as the proportion of the population with access to municipally treated water. On the other hand, good data are not readily available for the wide range of environmental hazards known to affect human health.[1,2]

Overview

Although there were some new municipal bylaws regulating public smoking between 1991 and 1995, restrictions are still modest overall and highly variable between provinces (Topic 12). Further, only a quarter of smokers face any restrictions on

smoking at home, meaning that a minimum of 1.4 million children are exposed to cigarette smoke on a daily basis (Topic 13). When smoking during pregnancy (Topic 40) and breast-feeding (Topic 48) are also considered, it becomes clear that many young Canadians are not able to begin life with the assurance of clean air. Meanwhile, these children, along with most other Canadians, even in rural areas, are exposed to increasing amounts of the major components of smog (Topic 14).

On data sources and gaps

As noted above, there are few indicators of environmental quality that are clearly relevant to health, and those that do exist (e.g., Topic 14) are too old to be of real value. Indeed, the data on environmental indicators are the oldest in this *Report* and are an exception to the general rule that "current" statistics would be no older than 1994–95. The lack of up-to-date, comprehensive, and regionally relevant environmental indicators represents a major gap in an otherwise reasonably comprehensive view of the factors affecting Canadians' health.

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12

Restrictions on public smoking

Introduction

Both smoking and environmental tobacco smoke (ETS) are important and preventable causes of illness and death (Topic 79). Most governments attempt to discourage smoking, while many municipalities have restrictions on smoking in public settings in an attempt to protect the health of non-smokers. Bylaws against smoking in public are almost as effective as tobacco taxes in discouraging the use of cigarettes.[1]

This topic presents the results of two independent national surveys of smoking restrictions affecting public places.

Prevalence of smoking restrictions, 1995

In 1995, smoking was at least partially restricted in a wide variety of public settings. According to an analysis of 269 bylaws received from most of the major municipalities in Canada, restrictions covered 17.9 million individuals, or 63% of the total Canadian population. Anti-smoking bylaws were most likely to specify municipal facilities, places of public assembly, service counters, and reception areas.[2] Of the municipalities with bylaws, 68% made an explicit provision for enforcement, but only 12% both identified the responsibility for enforcement and specified escalating fines for repeat offences. Again, of municipalities with bylaws, only 29% required that visible signs be posted to inform the public of the existence of restrictions.

A separate study of a large sample of public institutions across Canada in the same year revealed that smoking was completely restricted indoors and out in 65% of schools and 51% of daycare centres; only 29% of hospitals and other health care institutions such as long-term care facilities banned indoor smoking (Table 12).[3]

The nature of the smoking restrictions imposed by municipalities varied from setting to setting; however, in commercial settings (restaurants, shopping malls, bingo halls, etc.), the most common requirements were designated, unventilated indoor smoking areas. Restaurants had the highest overall proportion of designated indoor smoking areas (33%), whereas shopping malls had the highest percentage of ventilated smoking areas (6%).[4]

Differences among provinces

There are significant interprovincial differences in municipal smoking restrictions, but some consistent patterns emerge.

The population covered by bylaws in 1995 ranged from 3% in Newfoundland to 81% in Ontario (Fig. 12).[2,5] For most provinces, the coverage was greater than in 1991,[5] and there is the likelihood of some new bylaws since that time.[2] However, the additional population protected from ETS in public between 1991 and 1995 was very modest in all provinces except Quebec and New Brunswick, while there was actually a decrease in protection in Manitoba.

Reports of smoking restrictions obtained directly from schools, daycare centres, and health care institutions also reveal wide interprovincial variations in the extent of protection from ETS afforded employees, students, patients, and visitors to these locales (Table 12). There is a particularly wide range of school smoking bans, varying from 93% of Ontario schools (where total bans were a provincial requirement in 1995) to 15% of Quebec schools. There was less variation in the proportion of licensed daycare centres with total indoor and outdoor smoking bans, but it was still considerable, ranging from 55% in Newfoundland and Manitoba to 24% in the

territories. Indoor smoking bans in health care settings ranged from 81% in the territories to only 7% in Quebec. In all provinces except Newfoundland, Manitoba, and Saskatchewan, indoor vented smoking areas were more common than indoor smoking bans in health care settings.[3]

On definitions and methods

The survey of municipal bylaws contacted 698 municipalities and analysed 269 bylaws. Another 31 municipalities apparently had bylaws but did not provide them for analysis, and these municipalities are not included in the results presented here; 397 municipalities reported no bylaws.[2]

These results describe the existence of bylaws and could be seen as a reflection of official concern. Without data on enforcement activity, however, it is not possible to conclude how much protection from ETS residents actually experience. However, these bylaws describe minimum requirements; many organizations, including schools, daycare centres, hospitals, and residential health care settings, have stricter anti-smoking provisions than required by their municipalities.

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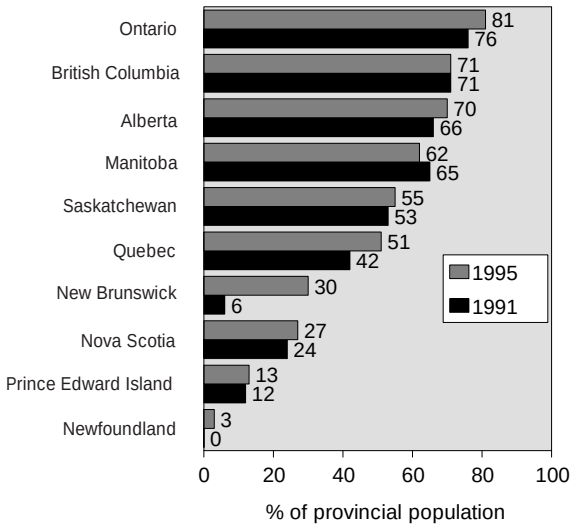
Figure 12. **Population protected by bylaws restricting public smoking, by province, Canada, 1991 and 1995**



Sources: Health Canada, *Smoking Bylaws in Canada, 1991*, Ottawa: Health Canada, Environmental Health Directorate, 1992 (Cat. No. H46-1/26-1991E); Health Canada, *Smoking Bylaws in Canada, 1995*, Office of Tobacco Control, Health Protection Branch.

Table 12. **Extent of policies restricting smoking in schools and daycare centres (total ban indoors and out) and health care settings (indoor ban), by province/territory, Canada, 1995**

	Schools	Daycare	Health care
	(%)	(%)	(%)
Canada, total	**65**	**51**	**29**
Newfoundland	66	55	44
Prince Edward Island	66	50	18
Nova Scotia	78	48	18
New Brunswick	59	47	31
Quebec	15	35	7
Ontario	93	53	30
Manitoba	72	55	47
Saskatchewan	65	49	44
Alberta	49	53	28
British Columbia	67	54	37
Yukon/Northwest Territories	57	24	81

Source: Thomas Stephens and Associates and Goss Gilroy Inc., *Study of Smoking Policies in Various Settings in Canada*, report prepared for Health Canada, August 1995.

13

Exposure to environmental tobacco smoke

Introduction

Smoking has been widely regarded for many years as the major preventable cause of both illness and death, and, increasingly, the hazards of environmental tobacco smoke (ETS) are understood by the public (Topic 37). Young children are particularly susceptible to the effects of ETS, which include complications of pregnancy and low birth weight; increased risk of sudden infant death syndrome and middle ear infection; reduced lung development, with a possible impact on aerobic fitness; increased severity of childhood asthma and a possible role in the onset of asthma; and increased incidence of lower respiratory illness and frequency of chronic respiratory symptoms.[1] In addition to these consequences for the youthful non-smoker, there is the elevated risk of later smoking (Topic 40) and nicotine dependence (Topic 41) and all the disorders that these entail (Topics 73 and 79), not to mention the risks to the fetus of smoking during pregnancy (Topic 40). In 1991, Health Canada estimated that more than 300 Canadian non-smokers die each year from lung cancer caused by ETS.[2] U.S. researchers have estimated that at least 10 times the number of non-smokers die from ETS-linked heart disease as from lung cancer.[3]

This topic describes the degree of some form of restrictions on smokers from smoking at home, the potential ETS exposure of Canadian children at home, and ETS exposure of non-smokers at any location.

Prevalence of smoking restrictions at home and potential ETS exposure, 1995

In 1995, there were approximately 5.7 million daily smokers in Canada.[4] Only 24% of these smokers faced any sort of restriction from smoking in the home — whether a complete or just a partial ban, whether self-imposed, by family agreement, or by the landlord's requirement (Table 13a).[4] There were about 5.1 million daily smokers who lived in homes where they were not subject to a total ban on smoking in the house. Over one-quarter (27%) of these 5.1 million smokers lived in households with at least one child age 14 and under, and 15% lived in a household with two or more children (Table 13b).[4] This accounts for a minimum of 1.4 million children potentially exposed to ETS, an apparent decline from the 1.8 million children exposed in 1994,[5] although the questions asked in the two surveys were not identical.

In 1995, 4.5 million non-smoking Canadians age 15 and older were exposed to cigarette smoke on a daily basis at any location.[6] Although 20% of adult non-smokers lived with a smoker, only 11% of these non-smokers (1.8 million) encountered daily second-hand smoke at home, because not all smokers smoked in their presence every day.

Almost one-quarter (24%) of pregnant women smoked while pregnant in 1994–95, and 84% of them smoked during their entire pregnancy, consuming an average of 10.1 cigarettes daily.[7]

There are no international data with which to compare the 1995 situation.

Differences among groups

Overall, male daily smokers were slightly more likely than female daily smokers (26% vs. 23%) to face some form of restriction on smoking at home, which was also the case for most of the age groups (Table 13a).[4] Daily smokers under the age of 45 were more restricted than those age 45 and older. Almost 30% of daily-smoking Canadians age 25–44 were restricted from smoking in the home, compared with about 15% of Canadians age 55 and older.

Almost one in three daily-smoking women with no total-house ban on smoking potentially exposed at least one child to ETS in the home, compared with just over one in five unrestricted daily-smoking men (Table 13b).[4] This is at least partly attributable to more women staying at home to raise their children. Almost half of all daily smokers age 25–44 who were not subject to a total house ban on smoking were potentially exposing at least one child to ETS in the home. This is also the age group that smokes the greatest number of cigarettes daily (see Topic 40). This age group thus potentially exposes a minimum of 1.2 million children to ETS in the home. Younger and older daily smokers without a total house ban were least likely to potentially expose children to ETS.

Among non-smokers, 13% of women and 9% of men were exposed to second-hand smoke in the home. About 22% of non-smoking teens age 15–19 experienced daily exposure to second-hand smoke at home.[6]

The more educated daily smokers were, the greater the chance that they observed some form of smoking restriction in the home (Table 13a).[4] Daily-smoking university graduates were twice as likely as daily smokers with less than a high school education to have a smoking restriction in the home. This is consistent with the awareness of health problems from ETS that increases with education (see Topic 37).

Daily-smoking high school and college graduates without a total house ban were the most likely to potentially expose at least one child to ETS, while daily smokers with either less or more education were less likely to do so (Table 13b).[4] There were at least 340,000 children potentially exposed to ETS by daily-smoking female high school graduates, the largest single education–sex group that was allowed to smoke unrestricted in a home where there is at least one child.

On a provincial basis, about one-third of daily smokers in Nova Scotia, Prince Edward Island, and British Columbia faced some form of smoking restrictions in the home, compared with a low of 18% of daily smokers in Quebec and 20% in Manitoba (Table 13a).[4] The Prairie provinces fell below the Canadian average for smoking restrictions at home, while the Atlantic provinces and Ontario were all above the average.

About one-third of daily smokers in Newfoundland, Nova Scotia, New Brunswick, and Saskatchewan were potentially exposing at least one child to ETS (Table 13b).[4] Smokers in the Prairie provinces and Quebec were slightly above the Canadian average for potentially exposing children to ETS in the home. Unrestricted daily smokers in Quebec potentially exposed a *minimum of* 491,000 children to ETS in the home, representing the largest group out of all the provinces (Fig. 13).[4]

On definitions and methods

These data are from the 1995 *General Social Survey, Cycle 10*, conducted by Statistics Canada. The survey data were collected monthly from January 1995 to December 1995.[4] Residents of Yukon and the Northwest Territories and full-time residents of institutions were excluded. Telephone interviews were conducted with a national sample of 10,749 persons age 15 and older. "Daily smoker" excludes occasional smokers, and "restrictions" could be from any source. The presence of children in the home of an unrestricted smoker does not necessarily mean that the children were those of the smoker, nor does it necessarily mean that the children were exposed to ETS.

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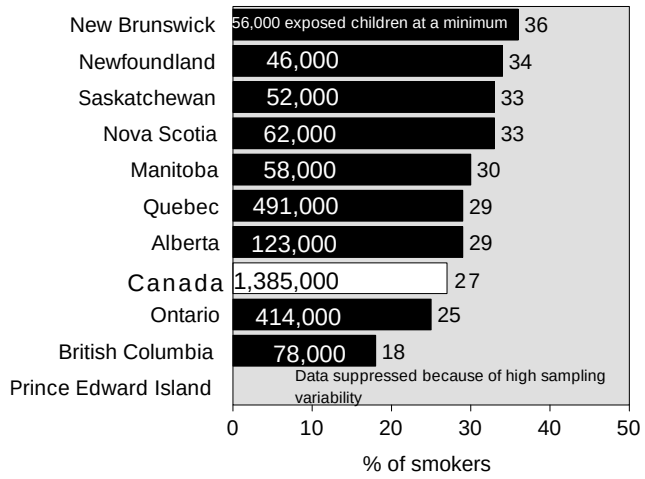
Figure 13. **Daily smokers not subject to a total house ban on smoking with at least one child under 15 years in the household, by province, age 15+, Canada, 1995**



Source: Statistics Canada, Housing, Family and Social Statistics Division, *General Social Survey, Cycle 10 (1995)*, special tabulations.

Table 13a. **Daily smokers with some degree of smoking restrictions in the home, by age and sex, by education,[a] and by province, age 15+, Canada, 1995**

	Population estimate	Some smoking restriction at home
	('000)	(%)
Total, age 15+	**5,730**	**24**
Male	2,970	26
Female	2,760	23
Age 15–19, total	421	28
Male	229	33
Female	192	22
Age 20–24, total	603	25
Male	331	24
Female	272	27
Age 25–34, total	1,456	29
Male	752	28
Female	704	30
Age 35–44, total	1,429	28
Male	724	30
Female	705	26
Age 45–54, total	887	19
Male	476	24
Female	411	15
Age 55–64, total	568	15
Male	271	17
Female	297	13
Age 65+, total	366	13
Male	188	#
Female	178	#
Less than high school	1,810	18
High school	2,214	26
College	1,250	28
University	442	36
Newfoundland	148	29
Prince Edward Island	27	34
Nova Scotia	224	34
New Brunswick	165	28
Quebec	1,795	18
Ontario	1,921	27
Manitoba	218	20
Saskatchewan	181	23
Alberta	500	23
British Columbia	551	33

Data suppressed because of high sampling variability

[a] Not age-standardized.

Source: Statistics Canada, Housing, Family and Social Statistics Division, *General Social Survey, Cycle 10 (1995)*, special tabulations.

Table 13b. **Daily smokers without a "total house ban" on smoking in the home, by number of children 14 years and under living in the household, by age and sex, by education, and by province, age 15+, Canada, 1995**

	Population estimate	Number of children age 0–14			
		0	1+	1	2+
	('000)	(%)	(%)	(%)	(%)
Total, age 15+	**5,092**	**73**	**27**	**13**	**15**
Male	2,575	78	22	11	11
Female	2,517	68	32	14	18
Age 15–19, total	338	96	#	#	#
Male	175	99	#	#	#
Female	164	93	#	#	#
Age 20–24, total	510	84	16	11	#
Male	292	95	#	#	#
Female	218	71	29	20	#
Age 25–34, total	1,259	54	46	17	29
Male	642	66	34	14	21
Female	616	42	58	21	37
Age 35–44, total	1,258	52	48	21	2
Male	611	55	45	21	24
Female	647	49	51	21	31
Age 45–54, total	834	88	12	10	#
Male	430	86	14	12	#
Female	404	90	10	9	#
Age 55–64, total	541	98	#	#	–
Male	246	97	#	#	–
Female	295	98	#	#	–
Age 65+, total	350	100	–	–	–
Male	177	100	–	–	–
Female	173	100	–	–	–
Less than high school	1,660	77	23	11	12
High school	1,963	71	29	13	17
College	1,074	69	31	14	17
University	380	76	24	13	11
Newfoundland	134	66	34	16	18
Prince Edward Island	22	77	#	#	#
Nova Scotia	190	67	33	15	17
New Brunswick	155	64	36	20	16
Quebec	1,691	71	29	14	15
Ontario	1,681	75	25	11	13
Manitoba	199	71	30	14	16
Saskatchewan	156	67	33	#	25
Alberta	431	72	29	14	15
British Columbia	433	82	18	#	13

Data suppressed because of high sampling variability

Source: Statistics Canada, Housing, Family and Social Statistics Division, *General Social Survey, Cycle 10 (1995)*, special tabulations.

14

Air quality

Introduction

Environmental pollution is a significant and fairly consistent worry for a majority of Canadians, as between half and two-thirds reported each year between 1987 and 1996 that they were "very concerned" about air quality.[1] A quarter of adult Canadians think that their health is affected a "great deal" by pollution, and air is the path of greatest concern (37%), substantially higher than food (14%) or water (14%).[1] Recent studies bear out these concerns, showing that there is an increase in the death rate when smog is at its worst.[2] Perhaps as a consequence, substantial numbers of Canadians claim to be taking some action to benefit the environment (Topic 39).

This topic describes levels of air pollution in Canadian urban centres, as monitored by Environment Canada, how these have changed over time, and related indicators of air quality.

Air quality, 1993

In 1993 (the most recent year for which data are available), ground-level ozone and airborne particles, two important components of smog, were on the increase. In contrast, carbon monoxide, nitrogen dioxide, and sulphur dioxide all continued a long-term downward trend (Fig. 14a).[3]

Between 1979 and 1993, average levels of ground-level ozone climbed 29%. In contrast, airborne particles fell 38% during this period, a decline attributed to cleaner cars and industries and better control of open burning. However, this favourable trend was reversed in 1992, and, by 1993, levels were approaching those of 1989. Fine particles were again of concern.[3]

During this same period, sulphur dioxide levels fell as a result of reduced emissions from smelters and power plants, under the Acid Rain Control Program.[3] Carbon monoxide and nitrogen dioxide levels fell 56% and 28%, respectively, despite an estimated increase of 13% in passenger-vehicle miles.

Differences among regions

Ground-level ozone standards were most often exceeded in the Windsor–Quebec City corridor by a large margin among four regions of Canada. This was true of every year between 1979 and 1993 except two (Table 14).[3] In the last four years for which data are available, British Columbia and the Prairies averaged less than one hour annually of excessive ozone levels, compared with approximately 12 hours in Central Canada. Rural areas were not exempt, as high levels of ground-level ozone are frequently recorded in the Fraser Valley in British Columbia, Fundy National Park in New Brunswick, and Kejimkujik National Park in Nova Scotia.[3]

Sulphur levels in gasoline vary widely in Canada (Fig. 14b),[4] which may explain some of the distribution of smog: Ontario has by far the highest levels of sulphur, as well as the highest concentration of vehicles. Ontario's levels of sulphur are roughly double those of Europe and the U.S. average and are almost *20 times* the California limits. On average, Canadian sulphur levels are higher than those of Europe, the United States, and Japan, but this is slated to change: in October 1998, the federal environment minister announced that Canadian levels would have to be reduced to an average of 150 parts per million (ppm) by 2002 and to an average of 30 ppm — the current California level — by 2005.[5] This would make Canadian gasoline sulphur levels among the lowest in the world.

Increased death rates related to smog range widely, from 11% in Quebec City — representing 0.9

additional deaths — to 3.6% in Windsor and Edmonton (Fig. 14c).[2]

On definitions and methods

The National Air Pollution Surveillance Network (NAPS) monitors and assesses the quality of ambient air in Canadian cities and towns. Most NAPS stations monitor all five common air pollutants. Sulphur dioxide, nitrogen dioxide, and ground-level ozone readings are one-hour averages taken every hour throughout the year. Carbon monoxide readings are averages of an eight-hour running mean, taken every hour throughout the year. Total suspended particulate readings are from 24-hour samplings carried out every six days at each station.[3]

National Ambient Air Quality Objectives for the five common air pollutants have been cooperatively developed by federal, provincial, and municipal agencies. Three levels of objective exist for pollutant concentrations: desirable, acceptable, and tolerable. Figure 14a shows the percentage of the maximum acceptable level reached by the five common pollutants.

How representative a particular sampling site is of city air is a further consideration. It may not be possible to characterize the air quality in a given city solely on the basis of data from a single station — hence the caveat in comparing pollution levels in different cities. Caution should be exercised in this regard. The data represent the condition of the air in the vicinity of the individual sampling stations but may not necessarily represent community-wide air quality. However, a consistent time series can give a good representation of change.

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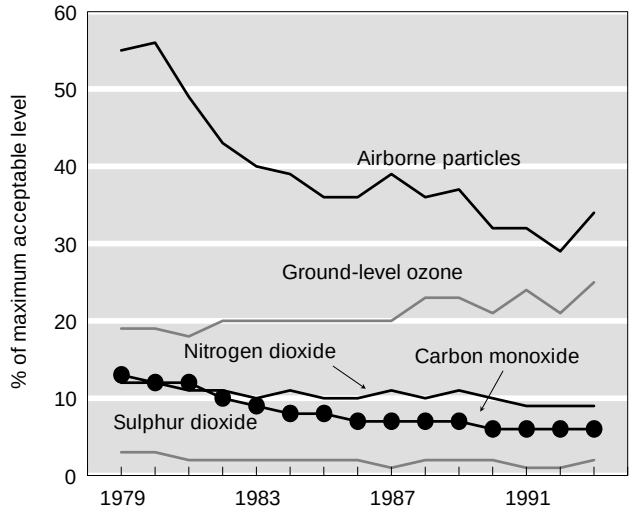
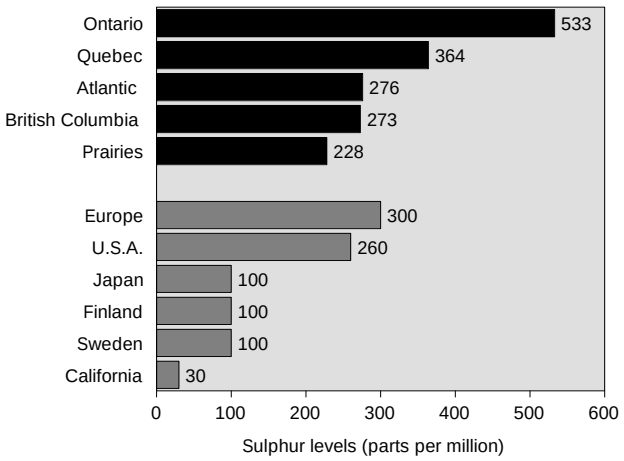
5. Sulphur level in gas to be cut. *The Globe and Mail*, October 23, 1998.

Figure 14a. **Levels of five common air pollutants, Canada, 1979–1993**



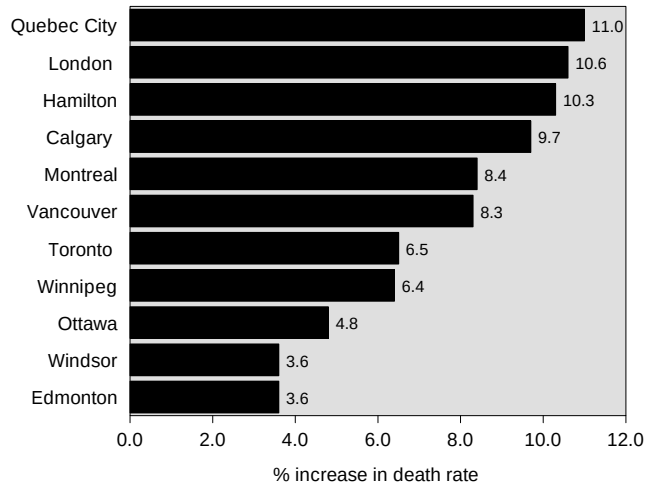
Source: Environment Canada, *Canada's National Environmental Indicator Series* as of August 1998.

Figure 14b. **Sulphur levels in gasoline, various jurisdictions, 1995–96**



Source: Mittlestaedt M, Canadian gasoline found to fuel smog, *The Globe and Mail*, March 7, 1998 (based on data from Environment Canada).

Figure 14c. **Increased death rate with high air pollution, by city, Canada, 1980–1991**



Source: Burnett R, Cakmak S, Brook JR, The effect of urban ambient air pollution mix on daily mortality rates in 11 Canadian cities, *Canadian Journal of Public Health* 1998; 89: 152–156.

Table 14. **Number of hours the ozone standard was exceeded, by region, Canada, 1979–1994**

	Canada	Atlantic Canada	Central Canada[a]	Prairies	British Columbia
1979	25.2		28.2	9.0	39.0
1980	21.1	12.6	30.1	1.4	16.5
1981	20.5	5.9	25.7	5.4	25.4
1982	10.4	4.0	14.5	3.6	6.5
1983	26.3	0.0	42.4	0.7	8.1
1984	14.4	47.8	16.3	7.5	2.8
1985	8.9	1.3	12.5	0.2	8.8
1986	8.3	0.0	12.6	0.4	2.9
1987	12.0	9.0	19.5	0.9	0.2
1988	51.0	8.2	83.0	0.9	10.2
1989	13.9	9.5	22.5	1.5	1.0
1990	8.8	7.1	12.8	0.6	4.3
1991	14.8	8.5	25.0	0.4	0.0
1992	4.9	0.5	8.5	0.0	0.0
1993	3.1	0.3	5.5	0.3	0.0
1994	6.5	2.5	10.5	0.7	1.0

[a] Windsor–Quebec City corridor.

Source: Environment Canada, *Canada's National Environmental Indicator Series* as of August 1998.

Health services

A *quarter century has passed since* A New Perspective on the Health of Canadians *attempted to raise the profile of lifestyle and the environment to the level of health services as determinants of health. However, it is a common observation that Canadians cherish, take pride in, and, lately, are very concerned about their health care system. This section describes selected aspects of that system, particularly population patterns of use of disease prevention and early detection measures. Unmet needs are described, as is the extent of problems obtaining services. Use of medications, access to emergency services, and in-patient hospital care are also included in this section, which concludes with an overview of the cost of the health care system.*

Overview

Taken as a whole, this set of topics reveals dramatic changes in the delivery of health care in Canada over the recent past. However, there is little evidence in these topics, based primarily on data from the general population, of problems of access arising from these changes. Further analysis and other sources may reveal such problems.

While overall costs for health care continue to rise in Canada (Topic 29), the recent annual increase is markedly lower than what it was from 1975 to 1991. Medication use is one area where costs have continued to grow, and this is reflected in the much wider extent of medication use, including multiple simultaneous medication use (Topic 24). Cost increases for hospital care and physicians have slowed more than for other health expenditures, and this is reflected in the sharp drop in emergency clinic use (Topic 26) and in-patient hospital care generally (Topic 27).

The majority of Canadians check their blood pressure (Topic 18) or teeth (Topic 21) regularly or have a mammogram, breast examination (Topic 17), or Pap smear (Topic 16) with appropriate regularity, but an annual physical examination (Topic 22) is still also widespread, and only a minority have their eyes examined annually (Topic 23). Immunization levels among children are, generally, satisfactorily high, but only about half of all seniors reported recent influenza immunizations (Topic 15). Insurance for eyeglasses, dental work, and medications is concentrated among the working population and is much more common among higher-income groups; actual use of preventive services is also tied to income or education, but not nearly as strongly. The one-year prevalence of unmet needs for health care was 5% in 1996–97, but only 1% or fewer reported *ever* having problems obtaining dental care, a mammogram, a breast examination, or even a full physical.

On data sources and gaps

A combination of administrative data from the Canadian Institute for Health Information and population survey data from Statistics Canada provides a reasonably complete picture of health services use in Canada, and there are many more data on the health care system not included here. The major requirement at this time is not for more data, but rather for more *analysis.* Some important issues are: (a) the relationship between the consumption of dental care, medications, and eyeglasses and individual insurance coverage, (b) the health status of persons reporting unmet health care needs and those reporting very high physician use, (c) the health and social status of persons using preventive measures with sub-optimum frequency, and (d) patterns of use of services in relation to specific province-level changes in the availability of these services.

15

Immunization

Introduction

Canadian immunization programs focus on children and, to a lesser extent, seniors. Immunizations for children are essential to protect them against various disabling and even fatal childhood diseases (Topic 69). Immunizations given to seniors are generally intended to lessen the severity of disease, especially influenza.

This topic examines data on immunization coverage levels for Canadian children and seniors.

Immunization coverage

In 1997, the proportion of two year olds who had received immunization appropriate for their age was 94% for measles, mumps, and rubella (based on at least one measles dose given on or after the first birthday), 85% for diphtheria, pertussis, and tetanus (four doses), 86% for poliomyelitis (three or more doses), and 74% for *Haemophilus influenzae* type b vaccine (four doses) (Table 15a).[1] Trends in coverage since 1994 indicate a small but steady increase in immunization levels for diphtheria, pertussis, and tetanus and a consistently high coverage for measles, mumps, and rubella. Coverage for the *Haemophilus influenzae* type b infant conjugate vaccine continues to be the lowest among the routine vaccines given to this age group, mostly because of the relatively recent introduction of the vaccine (in 1992) into the infant immunization schedule.

While the data for seven year olds show increases in coverage compared with the levels at two years of age (Table 15b),[1] there are still significant proportions of children who have not received age-appropriate immunization for diphtheria, pertussis, and tetanus (75% coverage) and poliomyelitis (85% coverage).

The influenza vaccine is recommended for people 65 years of age and older and other high-risk groups, particularly the immuno-compromised. In 1996–97, 51% of Canadians age 65 and older reported having had an influenza vaccination within the year prior to being surveyed (Table 15c).[2] Coverage data for those in the other high-risk groups are not available.

Differences among groups

The samples in the children's surveys were obtained from nationwide mail surveys conducted by Health Canada; they are too small to allow provincial differences to be assessed, and the 1997 survey data are insufficient to allow the assessment of two-dose measles coverage for this age group because of the recent (and in some cases ongoing) implementation of that strategy.

Canada continues to progress towards the goal of eliminating measles by the year 2005. All provinces and territories now have a routine second-dose measles vaccination program, and three-quarters have successfully completed some form of a measles catch-up campaign. By mid-1998, all provinces/territories had switched to acellular pertussis from the whole-cell pertussis vaccine. Canadian children are now able to receive the safer acellular pertussis vaccine in a single combined vaccine that protects against five childhood diseases: diphtheria, tetanus, and pertussis; *Haemophilus influenzae* type b; and polio (inactivate polio vaccine). As well, since the early fall of 1998, all provinces and territories provide a school program to vaccinate against hepatitis B. National guidelines on childhood immunization practices were published in 1997,[3] and the fifth edition of the *Canadian Immunization Guide* was released in September 1998.[4]

Among seniors, immunization against influenza is related to age: 47% of Canadians between 65 and 74 years of age reported having had an influenza vaccination within the year prior to the *National*

Population Health Survey (Table 15c).[2] This is not significantly different from the 43% reported in the 1990–91 survey.[5] Recent immunization increased to 58% for those 75 years and older in 1996–97, which is up from 47% in 1990–91.

Across all age groups, the incidence of influenza vaccination is slightly higher for females than for males, and there are no real differences related to education (Table 15c).

Provincial comparisons of immunization coverage among seniors show a wide range for influenza shots within the year prior to the survey, from 60% in Nova Scotia and Ontario to 34% in Quebec (Fig. 15).[2]

On definitions and methods

Childhood immunization data are based on a series of nationwide mail surveys, conducted by Health Canada from 1994 to 1997, of households with two year old children (sample of respondents ranging between 534 and 753 per age cohort) and seven year old children (1997 only; 941 respondents).[1]

The data on influenza vaccination are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The questions on this topic were asked of the full sample of 82,000 respondents age 12 and older,[6] although the focus of this discussion is on seniors age 65 and older.

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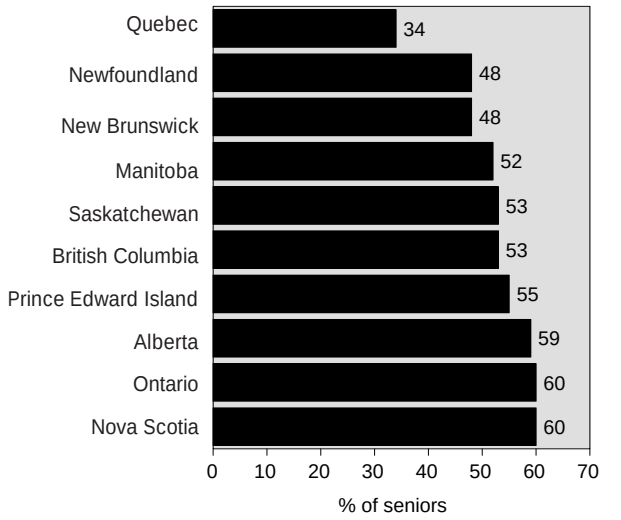
Figure 15. **Immunized against influenza in the past year, by province, age 65+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 15a. **Vaccination coverage for selected diseases, age 2, Canada, 1992–1997**

	Coverage (%) for children born in[a]:				
	1990–91	1991–92	1992–93	1993–94	1994–95
Diphtheria, pertussis, tetanus (4 doses)	80	82	83	85	85
Polio (≥3 doses)	90	89	87	90	86
Measles, mumps, rubella (≥1 dose)[b]	96	97	96	97	96
Measles, mumps, rubella (≥1 dose)[c]	–	–	91	93	94
Haemophilus influenzae type b (4 doses)	–	–	55	69	74

[a] 95% confidence limits range between ±1% and ±5%.

[b] Coverage based on measles vaccine dose(s) received at any time.

[c] Coverage based on measles vaccine dose(s) received on or after the first birthday, as recommended.

Source: Health Canada, Canadian national report on immunization, 1997, *Paediatrics and Child Health* 1998; 3(Suppl. B): 23B–25B.

Table 15b. **Vaccination coverage by the seventh birthday, children born July 1989 to June 1990, Canada, 1997**

	No. of doses	Coverage[a]	No. of doses	Coverage[a]
		(%)		(%)
Diphtheria, pertussis, tetanus	4	91	5	75
Polio (≥3 doses)	≥3	95	≥4	85
Measles, mumps, rubella[b]	≥1	99	2	56
Measles, mumps, rubella[c]	≥1	98	2	50
Haemophilus influenzae type b	–	–	≥1	86

[a] 95% confidence limits range between ±1% and ±5%.

[b] Coverage based on measles vaccine dose(s) received at any time.

[c] Coverage based on measles vaccine dose(s) received on or after the first birthday, as recommended.

Source: Health Canada, Canadian national report on immunization, 1997, *Paediatrics and Child Health* 1998; 3(Suppl. B): 23B–25B.

Table 15c. **Influenza shots, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Ever had flu shot	Time of last shot[a]		
			<1 year ago	1–<2 years ago	2+ years ago
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	23,745	26	56	12	30
Male	11,558	26	50	12	35
Female	12,187	26	61	12	26
Age 12–14, total	1,008	22	39	21	27
Male	493	24	39	22	28
Female	514	20	40	20	27
Age 15–17, total	1,218	26	41	22	30
Male	649	27	39	18	37
Female	569	25	43	28	22
Age 18–19, total	794	26	28	22	45
Male	384	33	21	25	47
Female	410	20	37	15	42
Age 20–24, total	1,799	20	24	15	57
Male	892	25	24	13	60
Female	907	15	24	20	52
Age 25–34, total	4,390	17	31	17	50
Male	2,152	20	25	13	60
Female	2,238	14	40	21	38
Age 35–44, total	5,148	16	45	13	41
Male	2,584	16	39	12	48
Female	2,564	16	51	14	35
Age 45–54, total	3,675	21	51	12	36
Male	1,849	19	46	14	39
Female	1,826	23	55	11	34
Age 55–64, total	2,508	32	61	11	27
Male	1,196	29	57	10	31
Female	1,311	34	65	12	24
Age 65–74, total	2,013	59	79	8	13
Male	884	58	81	9	11
Female	1,129	60	79	7	14
Age 75+, total	1,193	70	83	6	11
Male	474	70	84	5	10
Female	718	69	82	6	12
Less than high school	7,071	26	57	13	29
High school	9,062	26	56	12	31
College	4,070	25	49	11	32
University	3,402	25	55	9	26
Newfoundland	460	18	62	#	27
Prince Edward Island	110	27	60	#	29
Nova Scotia	757	33	59	11	29
New Brunswick	618	24	63	#	26
Quebec	5,948	17	48	11	40
Ontario	8,940	32	57	12	29
Manitoba	871	26	55	14	29
Saskatchewan	781	23	59	#	30
Alberta	2,112	28	54	11	33
British Columbia	3,149	29	58	16	25

Data suppressed because of high sampling variability

[a] Among those who had ever had an influenza shot.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

16

Pap smear practices

Introduction

Participation in cervical cytology screening with Pap smear tests reduces the incidence of disease and mortality from cervical cancer (Topic 73). Currently, Pap smears are recommended every three years within an organized program, starting soon after age 18 or once women are sexually active, and continuing until age 69.[1,2] An organized program is one that has a population-based registry and good laboratory services,[2] but none of the provinces currently has both components in place.

This topic examines lifetime experience with Pap smears in women age 18 and older with a focus on incidence of testing and the time of the last test.

Incidence of Pap smears, 1996–97

In 1996–97, 87% of Canadian women age 18 and older reported that they had had a Pap smear test at some point in their lives. The majority (59%) of women who had been tested indicated that the Pap smear had been taken within the previous year. Almost one-quarter (24%) had been tested between one and three years ago, and 17% had had their last Pap smear more than three years ago (Table 16).[3] Thus, 72% of Canadian women had had a Pap test according to the recommended schedule.

Between 1985 and 1996–97, there was an increase in the proportion of Canadian women who had had a Pap smear test within the previous three years and a modest decrease in those who had never been tested (Fig. 16).[3,4,5] Different age groups in this time series (age 15+ and age 18+) call for caution; however, changes since 1994–95[5] have been modest.

Differences among groups

The prevalence of Pap smear testing has a bell-shaped relationship with age. Women between the ages of 25 and 64 were the most likely to have had a Pap smear (over 90%). Teenage women (age 18–19) were the least likely (51%), although this is not that surprising, given that Pap smears are currently recommended only for women age 18 and older or when they become sexually active (Topic 50). About one-third of elderly women (age 75 and older) had never been tested for cervical cancer with a Pap smear test (down from 39% of elderly women in 1994–95[5]).

Among those women who had been tested, the likelihood of having had a Pap smear test within the three years prior to the survey decreased with age, from a high of 98% of teens to about 40% of women age 75 and older (Table 16).

The chances of ever having had a Pap smear test were lower (81%) for women with less than a high school education than for women in the other three education categories (88–90%). The chances of having had a test within the last three years were higher at each successive level of education (Table 16).

Women in Quebec were the least likely to have had a Pap smear test (82%), and those in Saskatchewan were the most likely (93%). Among women who had ever been tested, those in Quebec and Alberta were the most likely to have been tested within the last three years (84% and 85%, respectively), while women in Saskatchewan and New Brunswick were the least likely (78%) (Table 16).

An analysis of the 1994–95 *National Population Health Survey* data revealed that single women were the most likely to have never had a Pap test.[6] In addition, single women who had ever had a Pap test had the highest odds of having had the last one three or more years ago. Women whose main activities included both working and care-giving had the lowest

odds of never having had a Pap test, significantly lower than for women who only worked. Women whose main activity was care-giving had the second highest odds of not having had their most recent test within the last three years, significantly higher than for women whose main activity was working.

Analysis of the 1994–95 *National Population Health Survey* data also revealed that women born in Asia had the highest odds of never having had a Pap test — almost nine times those of Canadian-born women.[6] However, the Asian-born women that had had a Pap test were very likely to have had it less than three years ago. Women born in South America, Central America, the Caribbean, or Africa who had had at least one Pap test were also more compliant with guidelines for test recency than were Canadian-born women.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The questions on Pap smears were asked to approximately 35,000 women age 18 and older.[7]

The 1990 *Health Promotion Survey* asked all women age 15 and older about their lifetime experiences with Pap smears. In the 1994–95 and 1996–97 *National Population Health Surveys*, only women age 18 and older were asked about their Pap smear practices. Consequently, the trend data from 1985 to 1997 should be interpreted with some caution. The 1985 and 1990 data indicate low levels of testing for women younger than 18.[4]

References

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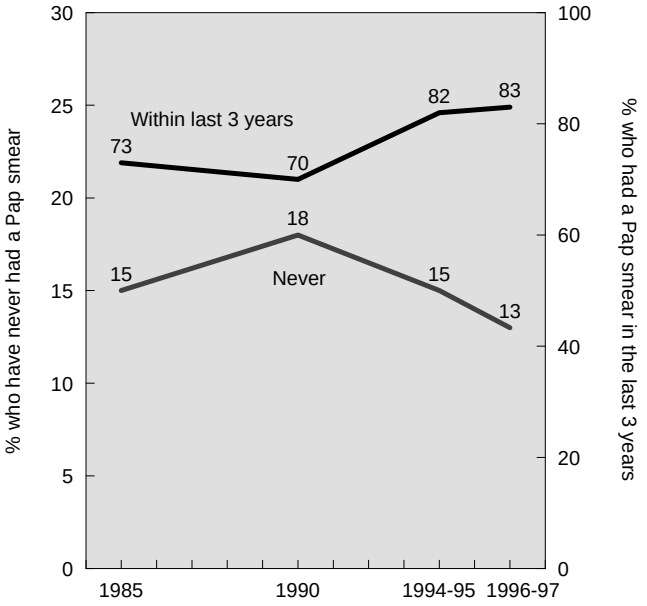
6. Lee J, Parsons G, Gentleman J. Falling short of Pap test guidelines. *Health Reports* 1998; 10(1): 9–19 (Statistics Canada Cat. No. 82-003-XPB).
7. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 16. **Pap smears, women age 15+ and 18+, Canada, 1985 to 1996–97***



* Data for 1994–95 and 1996–97 are for age 18+.

Sources: O'Connor A, Women's cancer prevention practices, in Health and Welfare Canada, Stephens T, Fowler Graham D (eds.), *Canada's Health Promotion Survey 1990: Technical Report*, Ottawa: Minister of Supply and Services Canada, 1993 (Cat. No. H39-263/2-1990E); Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

Table 16. **Lifetime experience with Pap smears and time of most recent Pap smear, by age, by education (age-standardized), and by province, women age 18+, Canada, 1996–97**

	Population estimate	Ever had		Time of last Pap smear[a]		
		Yes	No	<1 year ago	1–<3 years ago	3+ years ago
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 18+	**10,999**	**87**	**13**	**59**	**24**	**17**
Age 18–19	411	51	49	88	10	#
Age 20–24	912	74	26	79	19	2
Age 25–34	2,228	92	8	73	21	6
Age 35–44	2,535	93	7	61	28	11
Age 45–54	1,813	94	6	58	25	18
Age 55–64	1,294	90	10	50	24	26
Age 65–74	1,109	84	16	37	23	40
Age 75+	697	67	33	19	22	59
Less than high school	2,504	81	19	55	24	21
High school	4,731	88	12	60	24	16
College	2,112	90	10	59	26	16
University	1,605	89	11	64	23	13
Newfoundland	206	91	9	53	26	20
Prince Edward Island	52	87	13	56	23	21
Nova Scotia	359	90	10	60	19	20
New Brunswick	290	89	11	53	25	22
Quebec	2,770	82	18	58	26	16
Ontario	4,141	88	12	62	21	16
Manitoba	402	90	10	60	23	18
Saskatchewan	351	93	7	49	29	22
Alberta	955	90	10	61	24	16
British Columbia	1,474	86	14	56	26	18

Data suppressed because of high sampling variability

[a] Among those women who reported ever having had a Pap smear.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

17

Mammograms and breast examinations

Introduction

Cancer is one of the leading causes of death and potential years of life lost in Canada (Topics 82 and 83). For women, breast cancer remains one of the most fatal cancers (Topic 73). Early detection of breast cancer through mammograms has been shown to reduce mortality in women age 50–69. Currently, mammograms are recommended every two years for women in this age group.[1]

This topic describes the *National Population Health Survey* findings on mammography practices in Canada for women age 35 and older.[2] Breast examination data describe women 18 and older.

Incidence of mammograms and breast examinations, 1996–97

In 1996–97, 60% of women age 35 and older reported that they had had at least one mammogram.[2] This overall level of prevalence remains unchanged from 1994–95.[3] Of those who had had at least one mammogram, over two-thirds (70%) reported that the most recent one took place within the two years prior to the survey, and almost half (46%) reported that the most recent had occurred in the previous year (Table 17a).[2] A significant majority (77%) of women who reported having had a mammogram within the last two years reported that they had a mammogram as part of a regular checkup or routine screening. Of women tested in the past two years, one in 10 reported they had a mammogram because of a detected lump, and 8% of women cited a family history of breast cancer as the reason for their last mammogram. Only 1% of women reported that they had a problem obtaining a mammogram.[2]

Between 1990 and 1996–97, there has been a dramatic increase of 28 percentage points in the proportion of women age 50 and older who have ever had a mammogram (Fig. 17a).[2,3,4] Among women who reported ever having had a mammogram, however, there has been only a modest increase in the percentage of women reporting having had a mammogram within the two years previous to the survey.

The largest single reason (57%) why women age 50–69 did not have a mammogram within the last two years was that they didn't think it was necessary (Fig. 17b).[2] Other reasons were that they had not got around to it (26%), their doctor said it was not necessary (12%), or the women were afraid or embarrassed to get the test performed (4%). These results were very similar to the reasons why women did not have a breast examination within the past two years.

In 1996–97, 75% of women age 18 and older reported that they had had their breasts examined by a health professional at least once during their lifetime (Table 17b).[2] Of those who had had a breast examination, the vast majority (85%) had it within the previous two years. Two-thirds of ever-tested women had had their exam within the last year. Most (90%) of these women reported that they had their breasts examined as part of a regular checkup or routine screening, while others reported that they received an examination because they had a family history of breast cancer (5%) or had detected a lump in their breast (5%). Less than 1% of women who had ever had their breasts examined reported that they had a problem obtaining a breast examination.[2]

In 1996–97, 25% of women had never examined their own breasts for lumps.[2] Of those women who did perform self-examinations, 48% checked monthly, 27% checked every 2–3 months, and 25% checked less often than every 2–3 months (data not shown).

There are no Aboriginal data with which to compare the overall Canadian situation.

Differences among groups

The likelihood that a woman has had a mammogram increases with age but peaks at age 50–59 (82%) (Table 17a). Women age 50–59 are also the most likely to have had their last mammogram within the previous two years (81%), as recommended, and also within the last year (55%). Considering the questionable value of regular mammography for most women before age 50, the lifetime incidence of mammograms among women age 35–39 and 40–49 seems quite high. Not surprisingly, younger women (35–39) were more likely to report that they had a mammogram done because of a detected lump (27%) or family history (15%), as opposed to older women, who were more likely to be getting it done as part of a regular checkup or routine screening (about 80% of women age 50–69).

There is a positive relationship between mammography and education. Just under two-thirds (63%) of university graduates had had a mammogram, compared with 57% of women with less than a high school education (Table 17a). University-educated women were also most likely to have had a mammogram within the previous two years (74%).

There also appears to be a positive relationship between mammogram tests and income adequacy (data not shown). Just over half of women in the lowest two income groups had ever had mammograms, compared with about two-thirds of women in the two highest income groups.[2]

There are notable interprovincial differences in lifetime experience with mammography. Women in Newfoundland were the least likely to have had a mammogram (40%), while women in Quebec and British Columbia were the most likely (64% and 63%, respectively) (Table 17a). Those women in Quebec who have had mammograms were the least likely to have had them in the last two years (62%), while women in New Brunswick and British Columbia were the most likely (76% each).

The likelihood that a woman has had a breast examination increases with age but peaks at age 35–54 (83%) (Table 17b). Women age 18–19 were the most likely to have had their last examination within the previous two years (96%), and also within the last year (86%). The proportion of women who had a breast examination within the two years previous to the survey generally dropped with each successive age group, to a point where 75% of women age 75 and older had had a breast examination within the previous two years. Younger women (18–19) are more likely to report that they had a breast examination done as part of a regular checkup or routine screening (97%), as opposed to older women age 45–64, who are increasingly motivated by family history (6–7%) or the detection of a lump (7%).

There is a positive relationship between breast examinations and education. Four-fifths of university-educated women have had an examination, compared with 68% of women with less than a high school education (Table 17b). Women with less than high school were also least likely to have had their breasts examined within the two previous years.

There also appears to be a modest positive relationship between breast examinations and income adequacy (data not shown). Three-quarters of women in the lowest income group had ever had a breast exam, compared with 82% of women in the highest income group.[2] Of those who received exams, 79% of women in the lowest income group had been tested within the last two years, compared with 88% of women in the highest income group.

There are notable interprovincial differences in lifetime experience with breast exams by health professionals. Women in Newfoundland are the least likely to have had their breasts examined (67%), while women in Manitoba were the most likely (84%) (Table 17b). Those women in Saskatchewan who have had breast exams were the least likely to have had them in the last two years (82%), while women in Manitoba were the most likely (87%).

In 1996–97, 31% of women age 18–34 and 21% of women 35 and older had never examined their own breasts for lumps (Fig. 17c).[2] About 29% of all women age 18–34 checked their breasts monthly, compared with 40% of women age 35 and older.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. Mammogram questions were asked of women 35 and

older (about 22,000 respondents); breast exam and self-exam questions were asked of women 18 and older (about 34,000 respondents).[5]

The reasons for not having a mammogram or breast examination (Fig. 17b) were unprompted, and multiple responses were possible.

References

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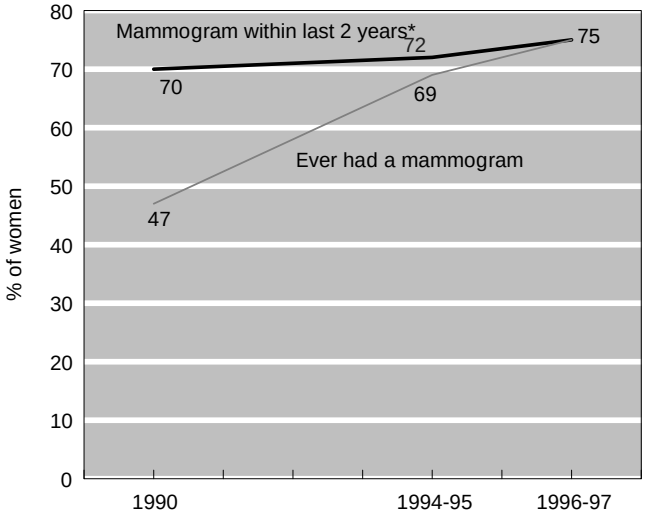
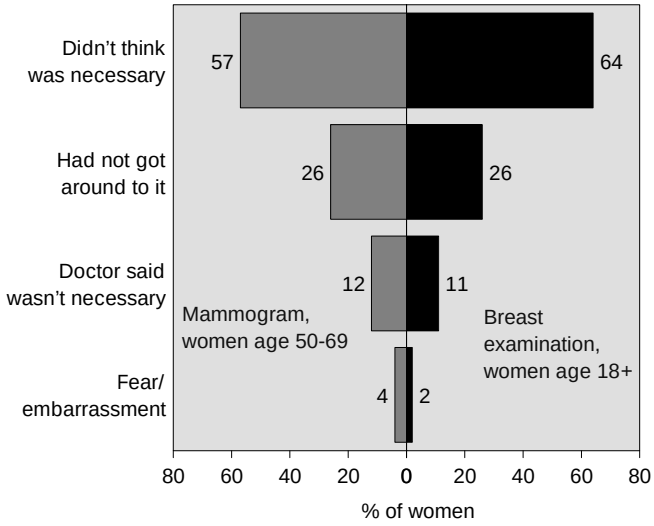
Figure 17a. **Mammograms, women age 50+, Canada, 1990 to 1996–97**



* Among women who report ever having had a mammogram.

Sources: O'Connor A, Women's cancer prevention practices, in Health and Welfare Canada, Stephens T, Fowler Graham D (eds.), *Canada's Health Promotion Survey 1990: Technical Report*, Ottawa: Minister of Supply and Services Canada, 1993 (Cat. No. H39-263/2-1990E); Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

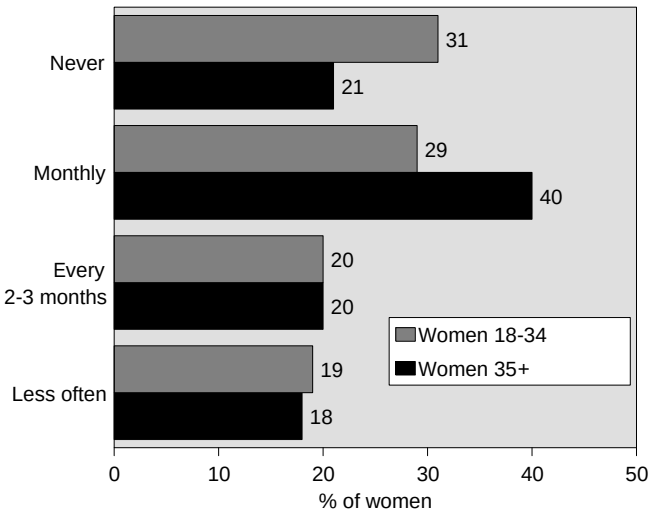
Figure 17b. **Reasons for not having a recent* mammogram, women age 50–69, or a recent* breast examination, women age 18+, Canada, 1996–97**



* Within the last two years.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 17c. **Prevalence and frequency of breast self-examinations, by age, women age 18+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 17a. **Lifetime experience with mammograms, time of most recent mammogram, and reasons for most recent mammogram within the last two years, by age, by education (age-standardized), and by province, women age 35+, Canada, 1996–97**

	Population estimate	Ever had	Most recent mammogram[a]			Reasons for test[b,c]		
			<1 year ago	1–<2 years ago	2+ years ago	Checkup or routine screen	Family history	Lump
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 35+	**7,497**	**60**	**46**	**24**	**30**	**77**	**8**	**10**
Age 35–39	1,314	25	32	16	52	61	15	27
Age 40–49	2,221	56	41	24	36	75	9	12
Age 50–59	1,556	82	55	26	19	81	6	8
Age 60–69	1,187	75	52	26	22	79	7	8
Age 70+	1,220	65	40	21	39	77	8	5
Less than high school	2,102	57	45	23	32	75	8	11
High school	2,934	61	46	24	29	80	7	8
College	1,375	64	44	26	30	76	10	13
University	1,039	63	52	22	26	74	8	10
Newfoundland	142	40	41	29	30	60	#	#
Prince Edward Island	34	52	43	28	30	76	#	#
Nova Scotia	240	52	43	31	26	66	#	#
New Brunswick	197	58	56	20	24	70	#	#
Quebec	1,930	64	40	22	38	76	#	12
Ontario	2,805	60	50	24	26	81	8	8
Manitoba	282	57	42	21	35	69	11	12
Saskatchewan	251	57	43	28	30	66	#	#
Alberta	619	59	44	23	33	76	10	11
British Columbia	998	63	50	26	24	81	#	#

Data suppressed because of high sampling variability

[a] Among women who report ever having had a mammogram.

[b] Multiple responses were allowed.

[c] Among women who report having had a mammogram in the last two years.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 17b. **Lifetime experience with breast examinations by health professionals, time of most recent examination, and reasons for most recent examination, by age, by education (age-standardized), and by province, women age 18+, Canada, 1996–97**

	Population estimate	Ever had	Most recent breast exam[a]			Reasons for test[b,c]		
			<1 year ago	1–<2 years ago	2+ years ago	Checkup or routine screen	Family history	Lump
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 18+	**11,044**	**75**	**67**	**18**	**14**	**90**	**5**	**5**
Age 18–19	414	38	86	10	#	97	#	#
Age 20–24	913	57	73	18	9	95	4	3
Age 25–34	2,235	73	69	18	13	93	4	4
Age 35–44	2,554	83	65	20	14	91	5	5
Age 45–54	1,811	83	69	19	12	88	7	7
Age 55–64	1,301	82	66	18	15	85	6	7
Age 65–74	1,116	77	64	15	20	89	5	4
Age 75+	700	66	58	17	23	88	5	3
Less than high school	2,523	68	64	18	19	88	6	6
High school	4,738	76	68	19	13	90	5	5
College	2,115	79	68	19	13	91	6	6
University	1,614	80	70	17	13	91	5	3
Newfoundland	206	67	65	20	14	87	#	#
Prince Edward Island	52	76	65	18	17	94	#	#
Nova Scotia	360	72	72	14	14	88	#	#
New Brunswick	290	71	64	19	17	89	#	#
Quebec	2,787	69	69	17	14	86	5	5
Ontario	4,166	77	69	17	13	92	5	4
Manitoba	405	84	67	20	13	91	7	6
Saskatchewan	352	80	58	24	18	90	#	#
Alberta	956	80	64	19	16	93	5	5
British Columbia	1,471	78	64	20	16	90	#	#

Data suppressed because of high sampling variability

[a] Among women who report ever having had a breast exam by a health professional.

[b] Multiple responses were allowed.

[c] Among women who report having had a breast examination by a health professional in the last two years.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

18

Blood pressure checkup

Introduction

Coronary heart disease and stroke are major causes of death (Topics 74 and 82) and hospitalization (Topic 77). Among the principal risk factors for these conditions, high blood pressure, along with high blood cholesterol, is unique in being undetectable without a proper test. Earlier surveys indicate that there may be a significant number of people with undetected high blood pressure.[1] A regular blood pressure checkup is the most reliable means of detecting high blood pressure.

This topic reports on the timing of the most recent blood pressure checkup.

Incidence of blood pressure checkups, 1996–97

Almost three-quarters of the Canadian population age 12 and older (71%) reported a blood pressure checkup within the 12 months leading up to the 1996–97 *National Population Health Survey* (Table 18).[2] Another 12% had been tested 1–2 years earlier; 10% had been tested two or more years before; and only 7% reported that they had never had their blood pressure measured.

Among Canadians age 15 and older, the likelihood of a recent checkup (72%) has declined since 1985 (Fig. 18).[3,4,5] This suggests that an increasing proportion of Canadians have not had their blood pressure checked within the past year, compared with the mid-1980s or early 1990s. This is contrary to recommended medical practice, at least for middle-aged and older persons.

Differences among groups

Across all ages combined and for each age group from 15–17 through 45–54, women were substantially more likely than men to have had their blood pressure checked within the previous year (Table 18). This may be because high blood pressure is, in general, more common among women than among men (Topic 68) or because women are more likely to have their blood pressure monitored in connection with the prescribing of hormone medications (Topic 24) or during obstetric care.

With each older age group, there was a higher percentage of people who had had blood pressure checkups within the previous year, starting with 38% of the 12–14 year age group and 49% of those 15–17 years old (Table 18). In all other age groups, more than half of the population reported a checkup within the previous year. Considering that almost all Canadians reported visiting a health care professional within the previous year (Topic 19), this high level of recent blood pressure checkups is not surprising.

The percentage of those who received a blood pressure checkup increased moderately with level of education. Of those with less than a high school education, 73% had received a blood pressure checkup within the previous two years, while 82% of those with a university education had had a checkup within the same time period (Table 18).

Interprovincial differences ranged from a low for recent checkups of 66% in British Columbia to a high of 75% in Nova Scotia and Ontario (Table 18). Prince Edward Island has the highest proportion of residents who have never been tested (10%).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who

provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[6]

In the first cycle (1994–95) of the *National Population Health Survey*, the question on blood pressure specified that the testing had to be by a health professional, whereas in the second cycle (1996–97) reported here, the question was simply "Have you ever had your blood pressure taken?" Proxy data were not accepted.

Data for comparison to earlier years are limited to those age 15 and older.

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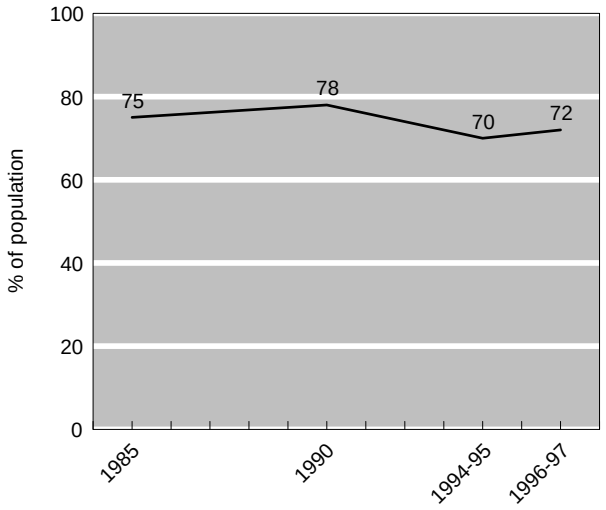
Figure 18. **Blood pressure checkup within past year, age 15+, Canada, 1985 to 1996–97**



Sources: Lauzon R, Heart disease prevention, in Health and Welfare Canada, Stephens T, Fowler Graham D (eds.), *Canada's Health Promotion Survey 1990: Technical Report*, Ottawa: Minister of Supply and Services Canada, 1993 (Cat. No. H39-263/2-1990E); Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

Table 18. **Blood pressure checkup, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Date of last blood pressure checkup			
		<1 year ago	1–<2 years ago	2+ years ago	Never
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**23,693**	**71**	**12**	**10**	**7**
Male	11,521	64	14	14	8
Female	12,173	77	10	7	5
Age 12–14, total	982	38	11	11	41
Male	474	37	11	12	39
Female	507	38	10	9	43
Age 15–17, total	1,209	49	12	12	27
Male	636	42	12	11	35
Female	573	57	13	12	18
Age 18–19, total	796	59	14	11	17
Male	383	45	19	17	19
Female	413	71	9	5	14
Age 20–24, total	1,804	60	15	15	10
Male	894	47	18	22	13
Female	910	72	12	9	7
Age 25–34, total	4,388	67	15	13	5
Male	2,153	56	18	18	8
Female	2,235	78	13	7	2
Age 35–44, total	5,142	70	15	12	3
Male	2,583	64	17	16	3
Female	2,560	76	14	8	3
Age 45–54, total	3,666	75	12	10	2
Male	1,843	71	15	11	3
Female	1,823	80	10	9	1
Age 55–64, total	2,502	84	8	7	1
Male	1,196	81	10	9	1
Female	1,306	87	7	5	1
Age 65–74, total	2,011	89	5	5	1
Male	883	88	6	6	1
Female	1,128	91	5	4	#
Age 75+, total	1,192	93	5	2	1
Male	474	94	4	2	#
Female	718	92	5	2	#
Less than high school	7,036	63	10	10	6
High school	9,050	64	11	9	5
College	4,061	68	11	9	3
University	3,410	66	16	12	2
Newfoundland	459	73	12	9	7
Prince Edward Island	110	67	12	11	10
Nova Scotia	757	75	10	9	6
New Brunswick	618	71	11	9	8
Quebec	5,939	68	12	13	7
Ontario	8,921	75	11	8	6
Manitoba	862	72	13	10	5
Saskatchewan	777	68	12	11	9
Alberta	2,107	69	14	11	6
British Columbia	3,143	66	14	13	6

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

19

Visits to health professionals

Introduction

While the use of health care resources is a less satisfactory indicator of health status than many topics in this *Statistical Report*, information on such visits is an important part of health care planning. Like emergency care (Topic 26), information on the use of physicians and other health care professionals can indicate emerging trends that may have an impact on health care budgets. Also relevant in this regard is the use of alternative, non-traditional forms of health care (Topic 35).

This topic describes the distribution of visits to health care professionals and the frequency of visits to physicians within the 12 months preceding the 1996–97 *National Population Health Survey*. Administrative data from the National Physician Database and the Medical Care Database are used to complement the self-report data from the survey.

Health professional visits, 1996–97

Almost every Canadian age 12 and older (93%) had paid at least one visit to a health professional in the year prior to the survey (Table 19).[1] This amounts to almost 23 million visits. Of those who received health care, physicians were by far the most frequent providers: 81% of the population visited a physician, a proportion that is one percentage point higher than in 1994–95.[2] Although the increase is minimal, it may indicate a return to the trend towards increased physician use seen between 1978–79 and 1991 (Fig. 19a).[3,4,5] This trend is also evident in the National Physician Database[6] and the Medical Care Database,[7] which are based on claims submitted by fee-for-service physicians to provincial medical insurance programs. These sources indicate that, in general, over the period 1978–79 to 1993–94, the number of physician visits per insured Canadian, excluding special calls, increased from 4.5 to 6 annually.[6,7]

Of those who saw *physicians*, three-quarters paid two or more visits (Table 19). For the family physician/general practitioner, the physician's office was the overwhelming location for these visits (Fig. 19b)[1]; community health centres, work, school, house calls, and telephone consultations each accounted for less than 1% of the most recent contact (data not shown).

Visits to health professionals other than general practitioners were relatively rare (Fig 19c)[1] except for dentists (see Topic 21), although substantial proportions also visited eye specialists (see Topic 23). Nevertheless, it is clear that the delivery of health care, even when broadly defined, is primarily the responsibility of the family physician.

Differences among groups

While females were somewhat more likely than males to visit a health professional, the differences are noteworthy only among those age 18–34 (Table 19). Sex differences in *physician* visits are more marked, however, particularly for ages 18 through 54, when women were about two to three times as likely to have seen a physician during the preceding year. Up to age 75, women were also more likely than men to have seen physicians twice or more in the previous year. A similar trend is found in the National Physician Database, where females average more physician visits than males. According to this database, in 1993–94, females averaged seven visits to a physician, while males averaged five visits.[6]

Age-related differences in health professional visits are also modest, since even 90% of 12–24 year olds visited some type of health professional in the year prior to the survey. However, usage is highest among the oldest age group: 97% of seniors age 75

and older had seen a health professional. Further, the proportion of Canadians who had seen a physician at least once increases with age, as does the proportion making two or more visits.

Relationships between education and visits to health care professionals reveal little difference, except a slightly higher probability of use by Canadians with only a high school education (Table 19). Provincial comparisons reveal somewhat more variation: Newfoundlanders were least likely to visit a health professional (88%), whereas Quebeckers were least likely to see a physician. Health care professionals in general, and physicians in particular, were most likely to be seen in British Columbia, Ontario, Nova Scotia, and Manitoba.

The higher the level of income, the more likely a person is to visit a health professional: 87% of people in the lowest income level made at least one visit, compared with 96% of people in the highest income level (data not shown).[1]

On definitions and methods

Except as noted, these data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The data for this topic are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[8]

Data for comparison to earlier years are limited to those age 15 and older.

References

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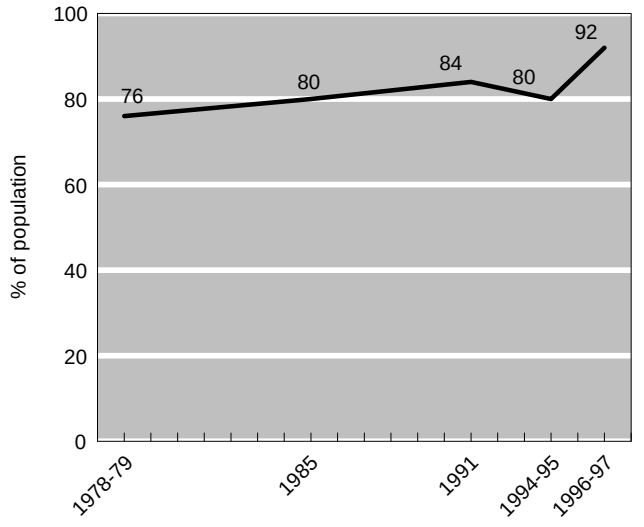
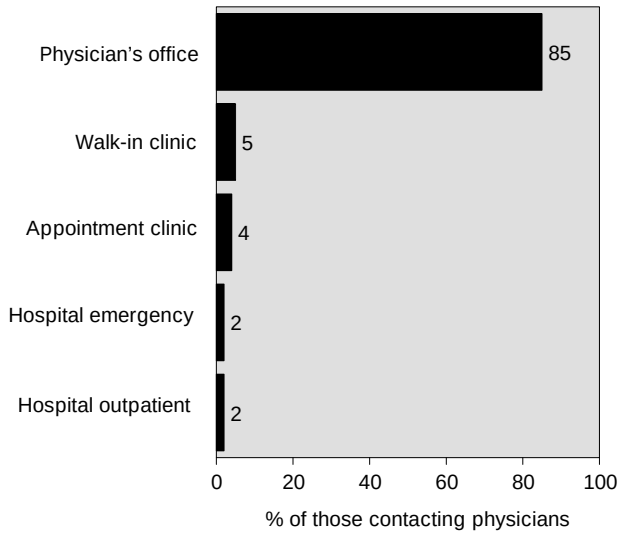
Figure 19a. **Visit to a physician in the previous 12 months, age 15+, Canada, 1978–79 to 1996–97**



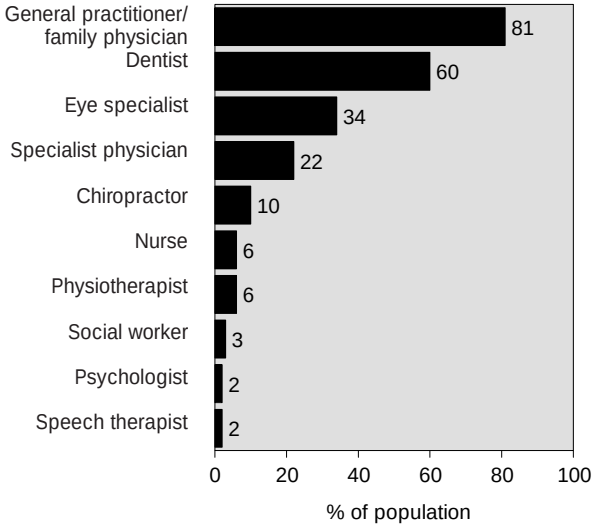
Sources: Statistics Canada, *Canada Health Survey, 1978–79*, *General Social Survey, Cycle 1 (1985)* and *Cycle 6 (1991)*, and *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

Figure 19b. **Location of family physician visits, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 19c. **Health professionals consulted, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 19. **Visits to health care professionals in the previous 12 months, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Any health care professional visit	Physician visits only[a]		
		1+	0	1	2+
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**24,595**	**93**	**20**	**21**	**60**
Male	12,099	90	27	23	51
Female	12,495	95	13	19	68
Age 12–14, total	1,151	95	25	28	47
Male	580	94	29	30	41
Female	571	96	20	26	53
Age 15–17, total	1,284	95	22	24	54
Male	683	94	25	25	50
Female	601	97	18	24	59
Age 18–19, total	826	90	23	23	54
Male	403	84	31	23	45
Female	424	96	15	23	62
Age 20–24, total	1,873	89	24	22	54
Male	948	84	36	25	39
Female	924	95	12	19	69
Age 25–34, total	4,472	91	22	20	58
Male	2,209	85	34	22	44
Female	2,263	96	10	18	71
Age 35–44, total	5,238	92	22	23	55
Male	2,645	89	30	24	45
Female	2,593	95	15	21	64
Age 45–54, total	3,771	93	20	23	58
Male	1,922	91	25	25	50
Female	1,849	95	14	20	66
Age 55–64, total	2,565	93	15	19	66
Male	1,231	90	19	20	62
Female	1,334	96	11	19	71
Age 65–74, total	2,096	95	11	15	74
Male	930	94	13	15	72
Female	1,166	95	10	15	75
Age 75+, total	1,320	97	7	11	81
Male	549	97	6	11	83
Female	771	97	8	12	80
Less than high school	7,526	89	22	18	60
High school	9,307	93	20	21	59
College	34	84	17	18	54
University	3,461	86	18	19	53
Newfoundland	478	88	21	15	65
Prince Edward Island	113	92	20	21	59
Nova Scotia	775	93	17	16	66
New Brunswick	632	90	20	24	56
Quebec	6,131	91	24	24	52
Ontario	9,323	94	17	21	61
Manitoba	902	93	19	20	61
Saskatchewan	801	92	19	18	63
Alberta	2,244	91	20	21	59
British Columbia	3,196	93	18	17	66

[a] As a proportion of those making a visit to any health care professional.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

20

HIV testing

Introduction

Knowledge of whether or not one is HIV-positive can be useful for several reasons. If a person is found to be HIV infected (see Topic 71), consideration can be given to starting anti-retroviral therapies. In the case of pregnant women, treatment can reduce the chances that the infant will be infected.[1] As well, counselling received at the time of HIV testing can provide information on how to reduce the risk of HIV infection to the individual if the individual is HIV-negative, and to others if the individual is HIV-positive (see Topic 50).

Extent of HIV testing, 1996–97

The *Canada Health Monitor*, a survey conducted in January 1997, found that 19% of men and 16% of women age 15 and older had been tested for HIV (excluding tests for blood donation and insurance purposes) at some point.[2,3] Of these persons, 39% had been tested in the year prior to the survey, another 18% had been tested between one and two years prior, and the balance of 43% had had their most recent test more than two years earlier.

The *National Population Health Survey* in 1996–97 found that, among those 18 years of age and older, 15% of both men and women had been tested at some point (Table 20).[4] The main reason for being tested was "peace of mind"; other motivations were relatively infrequent (Fig. 20).[4]

Differences among groups

Both surveys show roughly equal proportions of men and women being tested. Not surprisingly, HIV testing was strongly related to age (Table 20).[4] Canadians age 25–34 were most likely to have been tested (25%), and those 45 years of age and older were least likely (11% or less). Testing was markedly higher among university graduates (18%) than among those with no education beyond high school (11%). However, testing was most common among the lowest income group (20%), while it ranged from 13 to 17% of higher-income groups, even after age-standardizing (data not shown). Provincial rates of testing varied even more, from a high of 17% in Ontario and British Columbia to a low of 8% in three Atlantic provinces and Saskatchewan (Table 20).

Persons who report risk factors for HIV are more likely to be tested. For example, among *Canada Health Monitor* respondents who had opposite-sex sexual partners, those with two or more partners in the year prior to being surveyed were much more likely to be tested than those with one partner (51% vs. 17%).[2,3] The *National Population Health Survey* revealed that HIV testing was at least twice as high among those who had two or more partners in the year prior to the survey (34%) than among those who did not have any sexual partners (12%) and those who had one partner (17%).[5]

Of *Canada Health Monitor* respondents who reported having had a sexually transmitted disease in the past five years, 58% had been tested, compared with 17% of those who did not report a sexually transmitted disease.[2,3] Among Canadians who had ever had sexual intercourse and reported having a sexually transmitted disease in the two years prior to the *National Population Health Survey*, 40% had been tested, compared with 18% of those who had not had a sexually transmitted disease in the two years prior.[5]

Although those reporting risk factors such as injection drug use or multiple partners are more likely to be tested, a substantial proportion of those reporting these risk factors have not been tested recently or have not been tested at all. For example, among *Canada Health Monitor* respondents who reported having had more than one partner in the last

year and not using condoms consistently, 53% of men and 38% of women had never been tested.[2,3] This finding is of concern, as it suggests that substantial numbers of Canadians may be HIV-positive but unaware of their infection.

On definitions and methods

The *Canada Health Monitor* is an ongoing Canada-wide telephone survey. The *Canada Health Monitor, 1997* was conducted in January 1997, and 2,513 respondents age 15 and older were interviewed. Stratified random sampling was used, with stratification by province and community size according to census population estimates. Random digit dialling was used to select households within each stratum, and one eligible person per household was randomly selected to be interviewed.

The *National Population Health Survey* data reported here are from the personal interview portion of the second cycle of the survey, which was conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of approximately 68,000 respondents age 18 and older.[6] No proxy (third-party) reports were accepted for these questions.

References

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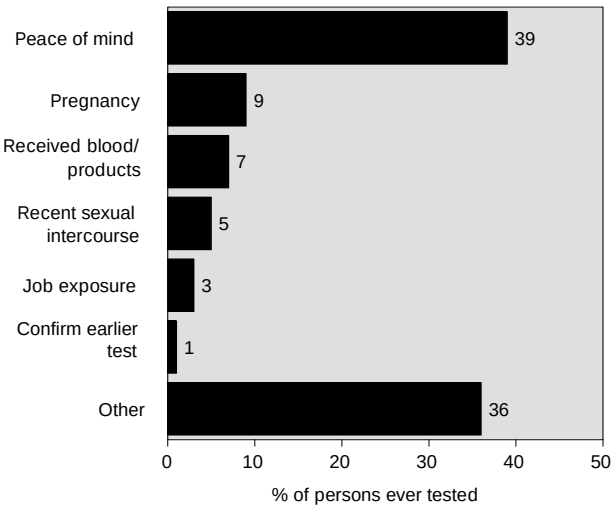
Figure 20. **Main reason for getting an HIV test, age 18+, Canada, 1996–97**



Source: Health Canada, Laboratory Centre for Disease Control, *National Population Health Survey, 1996–97*, special tabulations.

Table 20. **Lifetime testing for HIV/AIDS, by age and sex, by education (age-standardized), and by province, age 18+, Canada, 1996–97**

	Population estimate	Ever tested
	('000)	(%)
Total, age 18+	**21,464**	**15**
Male	10,415	15
Female	11,049	15
Age 18–19, total	806	11
Male	386	9
Female	420	12
Age 20–24, total	1,828	22
Male	916	20
Female	912	25
Age 25–34, total	4,354	25
Male	2,138	22
Female	2,216	28
Age 35–44, total	5,168	18
Male	2,604	19
Female	2,564	18
Age 45–54, total	3,678	11
Male	1,867	12
Female	1,812	10
Age 55–64, total	2,469	7
Male	1,162	7
Female	1,308	6
Age 65–74, total	1,975	4
Male	871	5
Female	1,104	3
Age 75+, total	1,186	2
Male	472	3
Female	714	1
Less than high school	4,946	11
High school	9,057	15
College	3,963	16
University	3,387	18
Newfoundland	400	8
Prince Edward Island	100	8
Nova Scotia	685	11
New Brunswick	549	8
Quebec	5,397	14
Ontario	8,059	17
Manitoba	780	11
Saskatchewan	693	8
Alberta	1,935	15
British Columbia	2,867	17

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

21

Dental visits

Introduction

Dental health is an important aspect of overall physical health, and dentists are among the health professionals consulted by Canadians on a frequent basis (Topic 19). In this topic, recent data are reported on who is insured for dental care and how recently they have visited the dentist.

Dental insurance and visits, 1996–97

Slightly more than half of all Canadians age 12 and older have dental insurance (Table 21),[1] which is unchanged since 1990.[2]

Whether insured or not, almost two-thirds (62%) of Canadians reported visiting a dentist in the year leading up to the 1996–97 *National Population Health Survey*, while an additional 20% had seen a dentist in the two years before that. Overall, 19% had not seen a dentist for three years or more (Table 21). Among this latter group, the principal reasons offered for not visiting a dentist were thinking it was unnecessary (43%) or wearing dentures (33%). Cost was mentioned as a barrier by 12%, while fear inhibited only 3%. Only 1% of all Canadians indicated that they had *ever* had problems getting dental services (data not shown).

Comparison of changes over time in dental visits is complicated by changes in question approach. In 1990, 75% of Canadians age 15 and older reported a dental visit within the past year, but this was confined to persons with one or more natural teeth, who accounted for 84% of adults.[2] If those without teeth made no visits in the earlier time period — an assumption that cannot be tested — that would be the equivalent of 63% of the total population. It would thus appear that there has been little or no change during the period 1990–1997 in the regularity of dental visits.

In response to an open-ended question about what prompted them to visit the dentist, most Canadians reported prevention-related reasons, while only a small proportion visited to remedy a problem (Fig. 21).[1] This mirrors the relative importance of the reasons reported in 1990.[2]

Differences among groups

Dental insurance is much more common among children, youth, and working-age adults than among seniors (Table 21). Gender differences are virtually non-existent except among the oldest Canadians: only 25% of men and 17% of women age 75 and older reported dental insurance, compared with 71% of both males and females in their mid-teens.

Income differences are even more pronounced: those in the highest income group are almost three times as likely to have insurance as those in the lowest category (Table 21). There is a similar advantage to education, although the differences are less pronounced than for income (data not shown). These socio-economic differences were also found in 1990.[2]

Interprovincial differences in insurance coverage are marked, ranging from lows of 40% in Quebec and 43% in Newfoundland to highs of 62% in Alberta and 63% in Ontario (Table 21). These relative rankings are very similar to those reported for 1990.[2]

Generally speaking, the likelihood of a recent dental visit declines with age: seniors were about half as likely to have visited a dentist within the past year as the youngest Canadians (Table 21). In a similar fashion, the chances that the most recent dental visit was three or more years ago increase dramatically with age. Nearly half of Canadians age 75 and older had not seen a dentist for at least three years, compared with only 2% of the youngest age group. As in 1990, however, there is a substantial drop-off between the late teens and 20–24 years of age in recent dental visits.[2]

In the aggregate, the distribution of recent dental visits is similar to the distribution of dental insurance coverage. Thus, it is not surprising that those persons in the highest income group were twice as likely to have made a recent dental visit as those in the lowest (Table 21), or that university graduates were 40% more likely to have seen a dentist than those who had not finished high school (data not shown).

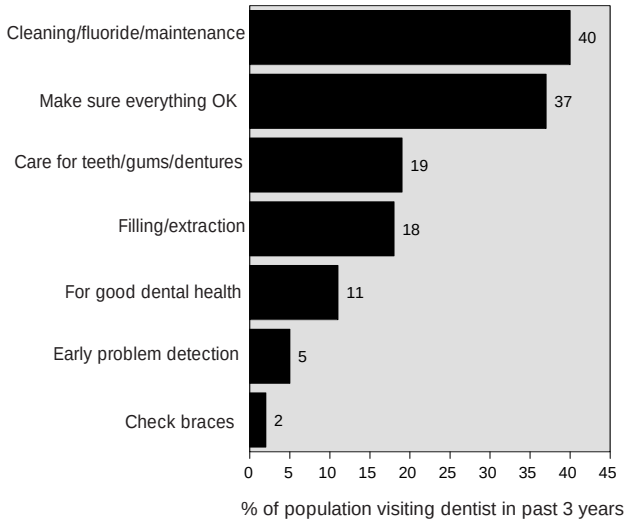
Recent visits are least likely and distant visits most likely in Newfoundland and Saskatchewan, while the opposite pattern — recent dental care — is most true in Ontario and British Columbia (Table 21). These rankings are similar to those in 1990.[2]

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[3]

The reasons for dental visits (Fig. 21) or non-visits were unprompted, and multiple reasons were accepted.

Figure 21. **Reasons* for most recent dental visit, age 12+, Canada, 1996–97**



* Multiple reasons accepted.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

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Table 21. **Dental insurance and dental visits, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Insured	Last dental visit		
			<1 year ago	1–<3 years ago	3+ years ago or never
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**23,884**	**55**	**62**	**20**	**19**
Male	11,651	56	60	21	19
Female	12,233	54	64	18	18
Age 12–14, total	1,041	67	86	12	2
Male	507	68	86	12	#
Female	534	66	86	12	1
Age 15–17, total	1,243	71	79	17	4
Male	658	71	80	16	4
Female	585	71	78	18	4
Age 18–19, total	814	61	73	21	6
Male	396	58	69	24	7
Female	418	63	77	17	6
Age 20–24, total	1,828	48	58	30	12
Male	913	46	52	34	14
Female	915	50	63	27	10
Age 25–34, total	4,415	59	62	24	14
Male	2,170	59	57	26	17
Female	2,245	60	67	22	12
Age 35–44, total	5,158	65	67	20	13
Male	2,594	65	64	21	14
Female	2,564	65	70	19	12
Age 45–54, total	3,685	63	64	17	18
Male	1,862	62	63	18	20
Female	1,823	63	66	17	17
Age 55–64, total	2,504	46	52	17	31
Male	1,196	50	51	18	31
Female	1,308	44	53	16	30
Age 65–74, total	2,006	25	45	14	40
Male	879	26	45	15	40
Female	1,127	23	46	14	41
Age 75+, total	1,189	20	39	14	48
Male	476	25	39	15	46
Female	713	17	39	12	49
Lowest income	947	26	42	27	31
Lower middle income	2,197	25	45	24	31
Middle income	5,923	56	55	23	23
Upper middle income	7,795	67	67	18	15
Highest income	3,048	73	81	13	6
Income not stated	3,899	55	63	19	18
Newfoundland	459	43	44	24	32
Prince Edward Island	110	48	58	22	20
Nova Scotia	756	50	57	18	25
New Brunswick	618	53	52	22	27
Quebec	5,966	40	53	23	24
Ontario	9,034	63	71	15	14
Manitoba	879	58	60	19	20
Saskatchwan	782	50	48	23	29
Alberta	2,129	62	59	22	18
British Columbia	3,152	59	64	22	14

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

22

Physical examinations

Introduction

The annual physical is a well-established ritual for many Canadians, although its efficacy and cost-effectiveness for early detection among the general, low-risk population have been questioned officially for many years. The long-standing recommendations of the Canadian Task Force on the Periodic Health Examination[1] are that a complete physical examination not be performed on a routine basis, but that specific procedures such as blood pressure testing (Topic 18), Pap smears (Topic 16), and breast examination (Topic 17) be provided according to a risk profile that takes account of age, medical history, and family background. Some individual physicians argue, however, that if these recommended tests are being provided, it takes little additional time and cost to provide a full physical.

This topic examines the extent of routine physical testing in Canada.

Incidence of physical examinations, 1996–97

Of the 80% of Canadians age 12 and older who had had a physical examination at some point prior to the second *National Population Health Survey*, half had been examined within the previous year, and another third within the previous 1–3 years (Table 22).[2] Only 14% of the ever-examined population reported that their last exam was three or more years earlier. Of the 16.7 million Canadians examined within the previous three years, two-thirds reported that they received a physical checkup at least once a year. As there are no earlier comparable data on this question, it is impossible to know how this may have changed over the almost two decades since the first recommendations regarding periodic health examinations.

By far the most important reason given for seeking a checkup was the wish to "make sure everything is OK" (Fig. 22).[2] Other reasons paled by comparison. Job requirements accounted for only 6% of examinations, and monitoring of existing health conditions for 14% (multiple reasons were accepted).

Among those Canadians who had *not* been examined within the past three years, 74% did not think a checkup was necessary. In stark contrast, only 5% reported that their doctor thought a checkup was unnecessary. Nearly one-quarter (22%) reported that they had not gotten around to it, suggesting that a physical was not a very high personal priority. Only 1% of ever-examined Canadians reported that they had had a problem getting a checkup at some point, and less than 0.5% indicated that cost was a barrier to getting a recent checkup (data not shown).

Differences among groups

Females were more likely than males to have had a recent physical exam and to get one at least annually (Table 22). These sex differences are particularly pronounced from ages 18–19 through 35–44, corresponding to the child-bearing years. Among seniors age 65 and over — but *only* among seniors — men were more likely than women to have had a recent checkup and to have one at least annually.

From childhood until middle age, the chances of a recent checkup are relatively low, especially among young men (Table 22). Two-thirds or more of seniors reported receiving a physical within the previous year, and the vast majority of them are examined at least yearly.

In contrast to these age-related patterns, there is no relationship at all between getting a recent checkup and income adequacy (Table 22) or education level (data not shown). Nor is there any relationship between income and having a regular annual exam.

Interestingly, college and university graduates are slightly less likely than average to have a regular physical, but the contrasts to less educated persons are modest (data not shown).

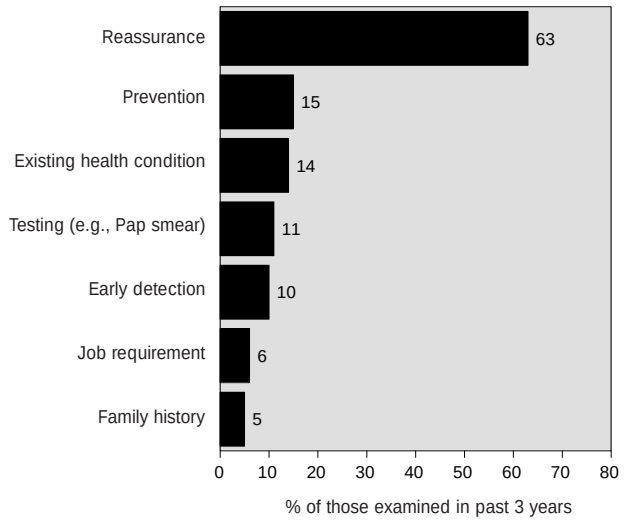
Interprovincial differences in having a recent exam are modest, ranging from a low of 44% in Quebec to a high of 56% in Newfoundland (Table 22); among those recently examined, however, there is only a little variation in the regularity of having an exam annually, ranging from 63 to 71%.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[3]

As noted above, the questions on most recent examination were asked only of those respondents (representing 20 million Canadians, or 80% of the total age 12 and older) who had *ever* had an exam, and the questions about regularity of exams were asked only of those who had had a checkup within the previous three years.

Figure 22. **Reasons* for getting a physical exam, age 12+, Canada, 1996–97**



* Multiple reasons accepted.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

References

1. Canadian Task Force on the Periodic Health Examination. The periodic health examination: task force report. *Canadian Medical Association Journal* 1979; 121: 1193–1254.

2. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.

3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Table 22. **Most recent physical checkup and regularity of checkups, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Most recent physical checkup[a]			Frequency of checkup[b]	
		<1 year ago	1–<3 years ago	3+ years ago	Annually or more often	Less than annually
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**19,677**	**50**	**35**	**14**	**67**	**33**
Male	9,431	44	36	20	58	42
Female	10,246	56	35	10	75	25
Age 12–14, total	666	51	42	6	70	30
Male	334	50	44	6	69	31
Female	333	53	40	7	72	28
Age 15–17, total	816	52	36	11	66	34
Male	428	47	39	14	63	37
Female	388	59	33	9	69	31
Age 18–19, total	560	53	36	12	65	35
Male	260	36	47	18	52	48
Female	300	67	27	6	75	25
Age 20–24, total	1,353	48	37	14	63	37
Male	628	35	38	26	45	55
Female	725	59	37	4	75	25
Age 25–34, total	3,603	45	37	17	55	34
Male	1,688	33	40	27	48	52
Female	1,914	56	35	9	78	22
Age 35–44, total	4,388	45	38	17	62	38
Male	2,163	39	37	24	48	52
Female	2,225	51	39	10	74	26
Age 45–54, total	3,190	50	36	15	65	35
Male	1,604	44	38	18	56	44
Female	1,586	55	34	11	74	26
Age 55–64, total	2,269	55	32	13	72	28
Male	1,100	53	32	16	67	33
Female	1,170	57	33	10	77	23
Age 65–74, total	1,779	59	29	11	77	23
Male	796	64	26	10	78	22
Female	982	56	32	12	76	24
Age 75+, total	1,054	63	27	10	80	20
Male	430	70	20	11	84	16
Female	625	59	31	10	78	22
Lowest income	722	50	33	17	68	32
Lower middle income	1,673	50	34	15	69	31
Middle income	4,805	49	37	15	66	34
Upper middle income	6,510	50	36	15	67	33
Highest income	2,671	49	34	17	67	33
Income not stated	3,296	53	35	12	70	30
Newfoundland	324	56	33	11	70	30
Prince Edward Island	92	48	38	15	69	31
Nova Scotia	559	54	34	12	69	31
New Brunswick	479	46	42	12	65	35
Quebec	4,553	44	38	19	66	34
Ontario	7,872	55	33	12	71	29
Manitoba	788	50	34	15	63	37
Saskatchewan	642	47	40	14	63	37
Alberta	1,837	50	35	15	63	37
British Columbia	2,532	48	37	15	65	35

[a] Among those persons ever examined.

[b] For those persons examined within the previous three years.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

23

Eye examinations

Introduction

Deteriorating eyesight seems to be one of the immutable biological facts of aging, and a majority of Canadians report some form of vision problem (Topic 59). In addition to aging, diabetes, which affects 3% of Canadians (Topic 68), is a major risk factor for eye problems. A regular eye examination to assess vision, prescribe corrective lenses, and check for eye diseases such as glaucoma is thus a recommended practice. Provincial health plans vary in their coverage of eye examinations; most cover an annual checkup by an ophthalmologist or optometrist, but supplementary insurance is generally needed to pay for any corrective lenses that may be prescribed.

This topic examines the extent of routine eye examinations and of insurance for corrective lenses, and reasons for regular — or irregular — checkups.

Incidence of eye examinations, 1996–97

Three-quarters of the Canadian population had had an eye examination within the three years prior to the 1996–97 *National Population Health Survey*, but well under half (42%) reported that their most recent visit was within the previous year (Table 23).[1] Fully one-quarter of Canadians age 12 and older had not had an eye examination for at least three years. Of those who had been tested within the previous two years, 43% made an annual visit.

Two principal reasons were given for seeking a regular eye checkup: the wish to "make sure everything is OK" and to update a prescription (Fig. 23).[1] Other reasons were relatively unimportant.

Among those Canadians who had *not* been examined within the past two years, 79% did not think a checkup was necessary, presumably because they felt they had no vision problems. Only 1% reported that their doctor thought a checkup was unnecessary. Nearly one-fifth (18%) reported that they had not gotten around to it (data not shown). These reasons and their frequency are very similar to those for not getting a physical examination more regularly (Topic 22).

Only 1% of recently examined Canadians reported that they had had a problem getting an eye exam at some point; 4% of these persons indicated that cost was a barrier to getting a recent checkup (data not shown). Overall, 47% of Canadians had insurance to cover at least part of the cost of glasses or contact lenses (Table 23).

Differences among groups

Across all age groups, females were more likely than males to have had a recent eye exam, but the differences were modest, and there was no gender difference in reported regularity among those persons having a recent eye exam (Table 23). Surprisingly, there is considerable consistency across age groups — at least until the senior years — in the likelihood of a recent eye exam. Among those who had had an eye exam within the previous two years, an annual checkup was most likely to be reported by the youngest and the oldest groups. Canadians in their prime working years were the least likely to have regular eye exams, again apparently because of a lack of perceived need.

There was a somewhat greater chance of having had a recent eye exam among the two highest income groups, but no difference in the regularity of examination (Table 23). Nor was there any relationship between eye exams and education (data not shown).

Interprovincial differences in having a recent eye exam range from a low of 31% in Newfoundland to a high of 48% in Ontario (Table 23); among those

recently examined, however, there is wider variation in the regularity of having an *annual* exam, ranging from 28–29% in Newfoundland and Prince Edward Island to 45–49% in Quebec and Ontario.

Insurance coverage is similar for males and females but varies widely by age, from 60% of 15–17 year olds to only 26% of persons age 75 and older (Table 23). Coverage is highest during the working years, except at age 20–24, presumably because insurance is an employment benefit that most young workers do not have.

There are three-fold differences in insurance coverage between the lowest and highest income groups (Table 23), a pattern that is similar to that found for dental insurance (Topic 21). These are among the most pronounced income-related differences in this report, but, at least in the aggregate, it appears that under-insured Canadians are no less likely to have had a regular eye exam than the average Canadian.

Supplemental insurance for glasses and contact lenses is least often reported in Saskatchewan (26%) and Quebec (34%), which may be a reflection of the availability of public insurance in these provinces (Table 23).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on a sample of 18,000 respondents age 12 and older.[2] The survey also included a sample of 2,000 respondents under 12 years of age.

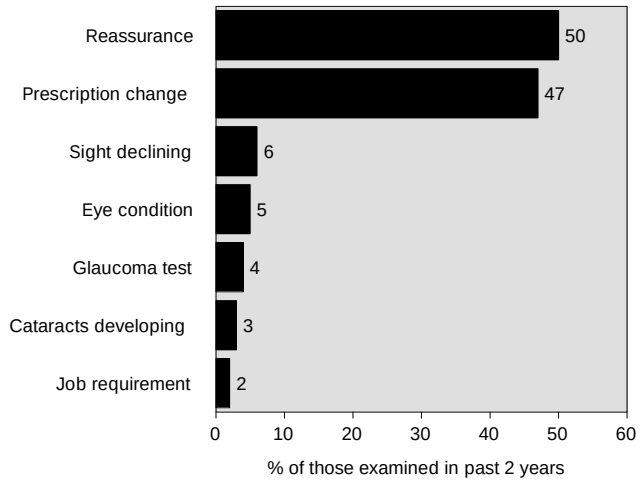
As noted above, the questions on *most recent* eye examination and insurance were asked of all respondents, while regularity of exams was determined only for those who had been examined within the past two years (representing 14.4 million Canadians, or 60% of those age 12 and older).

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.

2. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 23. **Reasons* for getting an eye exam, age 12+, Canada, 1996–97**



* Multiple reasons accepted.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 23. **Most recent eye examination and regularity of examination, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Insured	Most recent eye examination			Usual frequency of examination[a]		
			<1 year ago	1–<3 years ago	3+ years ago and never	At least yearly	Every 2 years	3+ years ago or never
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**23,172**	**47**	**42**	**31**	**27**	**43**	**39**	**18**
Male	11,274	48	39	30	31	42	38	20
Female	11,898	46	44	32	23	44	40	15
Age 12–14, total	845	54	48	27	25	62	28	10
Male	411	54	45	25	29	64	25	11
Female	434	54	51	28	21	59	31	10
Age 15–17, total	1,070	60	51	25	24	58	25	17
Male	553	60	46	26	28	54	25	21
Female	517	59	57	23	20	62	26	12
Age 18–19, total	759	48	41	32	27	54	27	19
Male	365	42	32	35	34	52	24	24
Female	394	54	49	30	20	56	29	15
Age 20–24, total	1,735	39	37	28	34	44	36	20
Male	857	38	32	28	40	42	38	20
Female	878	40	43	29	29	46	34	20
Age 25–34, total	4,341	48	31	29	40	38	39	23
Male	2,138	48	29	27	44	38	35	27
Female	2,203	47	33	31	36	39	43	19
Age 35–44, total	5,101	54	34	31	35	36	42	22
Male	2,567	54	31	30	39	34	41	26
Female	2,534	53	37	32	31	37	44	19
Age 45–54, total	3,653	54	47	36	17	37	46	18
Male	1,841	53	46	33	21	36	44	20
Female	1,812	54	48	38	14	37	47	15
Age 55–64, total	2,492	44	44	40	16	37	49	14
Male	1,189	46	42	40	19	38	47	15
Female	1,303	43	46	39	15	36	50	14
Age 65–74, total	1,993	28	53	32	15	50	38	12
Male	879	30	52	30	17	50	36	14
Female	1,114	26	53	34	13	50	39	10
Age 75+, total	1,183	26	65	24	12	64	26	11
Male	475	32	65	23	13	63	28	10
Female	708	22	65	24	11	64	25	11
Lowest income	930	21	37	27	36	44	37	18
Lower middle income	2,141	22	39	29	33	44	37	19
Middle income	5,838	37	38	32	30	41	39	20
Upper middle income	7,607	58	42	33	25	44	40	16
Highest income	2,969	64	47	31	22	41	41	18
Income not stated	3,687	46	44	31	25	47	37	16
Newfoundland	446	47	31	37	32	28	51	21
Prince Edward Island	108	51	39	29	32	29	54	18
Nova Scotia	740	52	39	32	29	39	41	20
New Brunswick	613	56	34	36	30	31	54	15
Quebec	5,878	34	39	32	30	45	37	18
Ontario	8,700	57	48	29	23	49	36	15
Manitoba	831	40	37	37	26	31	48	21
Saskatchewan	768	26	43	28	29	38	44	18
Alberta	2,002	43	38	33	29	37	41	22
British Columbia	3,087	49	36	35	29	37	44	20

[a] Among those examined within the previous two years only.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

24

Medications

Introduction

In 1993, prescription and non-prescription medications were estimated to cost $9.884 billion and to account for 6.3% of the total economic burden of illness in Canada.[1] Costs for medications have increased dramatically since 1979, and, while the increase for all forms of health expenditure slowed markedly after 1990, the slowdown in medication expenses has been less than for other categories such as hospitals and physicians (Topic 29).

This topic reports on the current use of both prescription and non-prescription medications by Canadians, where "current" is defined as the two days prior to the 1996–97 *National Population Health Survey* for data on number of medications taken and as the past month for data on types of medications taken.

Medication use, 1996–97

Almost one-half (42%) of Canadians age 12 and older reported in 1996–97 that they were taking some form of medication; about one fifth of these persons (9% overall) were taking *three or more different types of medication at the same time* (Table 24a).[2] This level of drug use is similar to that in 1978–79, when 48% of Canadians age 15 and older reported using some medication, and 7% were using three or more types.[3]

The most common medication by far was pain killers such as aspirin and Tylenol, reportedly being taken within the past month by an impressive 64% of the population. After such analgesics, the most common form of medication was cough/cold remedies (18%), followed by antibiotics and medicine for blood pressure, stomach ailments, and allergies, each used by 8–9% of the population (Fig. 24a).[2] Sixteen percent of women of childbearing age were taking birth control pills, while 11% of women age 30 and older were taking hormones for menopause or aging (Fig. 24b).[2]

The drug costs of almost two-thirds of Canadians (62%) were reportedly covered to some extent by government plans or insurance (Table 24a).

Differences among groups

Across all age groups combined, women were more likely than men to be taking drugs (Table 24a). This pattern was also true in 1978–79.[3] Anti-depressants constitute one class of medication that women were clearly more likely to take (Table 24b), which is consistent with their higher prevalence of depression (Topic 75). Both sexes were equally likely to be insured for medication use; this is hardly surprising, considering that this is usually a benefit for the entire family.

Some current medication use was evident for about one third of most age groups from the youngest until age 45–54, when use increased noticeably. Taking three or more drugs at a time is also consistent at 2-4% of younger age groups and increases thereafter with age. The 35% of Canadians age 75 and older and the 24% of those aged 65-74 who were taking three or more drugs at a time (Table 24a) are substantially higher than the 20% of seniors age 65 and older using this many drugs a generation earlier.[3,4]

Anti-depressants and stomach remedies are two types of medication used increasingly with age (Table 24b), while asthma and, to a lesser extent, allergy medications were more common among the young. Insurance for these medication costs was most often reported by persons in their working years (age 25–64) or by children in families, which is similar to the pattern for eyeglass and dental insurance (Topics 21 and 23).

Although there was a strong relationship between income adequacy and insurance for medications, use became slightly *less* likely as income rose (Table 24a). In particular, use of three or more medications among the highest-income Canadians

was only a little more than half as likely as among the lowest-income persons. Anti-depressants, stomach remedies and asthma medications were three classes of drug more commonly used among low-income than among high-income persons (Table 24b).

The variation among the provinces in the use of drugs was modest, although there was greater use in Nova Scotia; further, in Nova Scotia and New Brunswick, insurance coverage was more likely than in all other provinces except the three wealthiest (Table 24a). In Prince Edward Island and Nova Scotia, the chances that three or more drugs were being used simultaneously were well above those of the other provinces. Although there are some differences among the provinces in the classes of medication being used, small samples and the inconsistent nature of these make interpretation risky (Table 24b).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[5]

Questions about medication use did not distinguish prescribed from non-prescribed types and focused on the two days or the month prior to the survey in an effort to increase the accuracy of reports. Third-party accounts were accepted for these questions, which may mean there is some under-reporting of use.

References

1. Moore R, Mao Y, Zhang J, et al. *Economic Burden of Illness in Canada, 1993*. Ottawa: Health Canada, Laboratory Centre for Disease Control, 1997 (Cat. No. H21-136/1993E).
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3. Health and Welfare Canada and Statistics Canada. *The Health of Canadians: Report of the Canada Health Survey*. Ottawa: Minister of Supply and Services Canada, 1981 (Cat. No. 82-538E).
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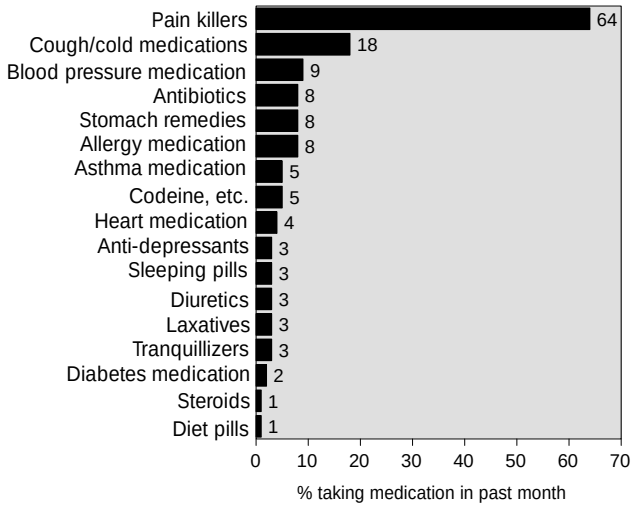
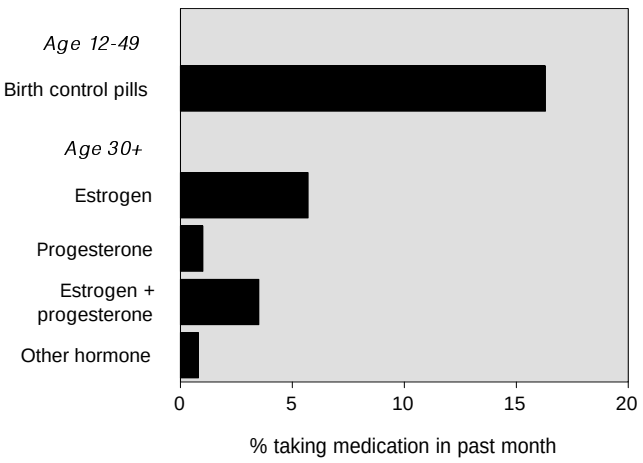
5. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 24a. **Selected types of medications used, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 24b. **Hormonal medications used by women, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 24a. **Number of medications taken and insurance for medications, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Different medications in last 2 days				Insured for prescription medications
		0	1	2	3+	
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**24,453**	**58**	**23**	**10**	**9**	**62**
Male	12,038	67	19	8	7	62
Female	12,414	49	27	13	11	62
Age 12–14, total	1,147	79	16	4	#	67
Male	578	81	16	3	#	67
Female	569	78	17	4	#	68
Age 15–17, total	1,283	69	23	6	2	66
Male	683	78	17	3	#	65
Female	600	58	29	9	3	66
Age 18–19, total	823	64	25	8	3	59
Male	402	80	16	#	#	54
Female	421	49	34	12	6	63
Age 20–24, total	1,865	67	24	6	2	50
Male	942	81	16	3	#	46
Female	923	54	33	10	3	54
Age 25–34, total	4,454	67	23	7	3	62
Male	2,200	80	15	4	2	61
Female	2,254	55	31	10	4	63
Age 35–44, total	5,222	67	22	8	4	69
Male	2,638	74	17	5	3	69
Female	2,584	59	27	10	5	69
Age 45–54, total	3,745	57	24	11	9	68
Male	1,905	65	21	8	6	67
Female	1,840	48	27	13	12	69
Age 55–64, total	2,544	42	25	17	16	61
Male	1,225	50	24	14	12	63
Female	1,320	35	26	20	19	60
Age 65–74, total	2,073	29	26	21	24	52
Male	923	33	27	18	21	56
Female	1,150	25	25	23	26	50
Age 75+, total	1,296	22	22	21	35	51
Male	542	26	24	19	30	54
Female	754	19	21	22	38	48
Lowest income	961	53	21	11	14	39
Lower middle income	2,242	54	22	12	13	39
Middle income	6,170	58	23	11	9	54
Upper middle income	7,948	57	24	10	8	74
Highest income	3,099	57	24	11	8	75
Income not stated	4,034	62	22	9	8	59
Newfoundland	477	59	23	11	7	57
Prince Edward Island	113	52	24	12	13	59
Nova Scotia	772	46	27	12	14	68
New Brunswick	632	51	26	13	10	63
Quebec	6,105	62	21	9	8	55
Ontario	9,250	58	23	10	9	68
Manitoba	898	53	26	11	10	50
Saskatchewan	799	51	25	14	10	40
Alberta	2,225	57	25	10	8	69
British Columbia	3,182	56	24	11	9	63

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 24b. **Selected types of medications taken, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Medications taken in past month				
		Anti-depressants	Codeine/ demerol	Allergy drugs	Asthma drugs	Stomach remedies
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**24,595**	**3**	**5**	**8**	**5**	**8**
Male	12,099	2	4	7	4	8
Female	12,495	5	5	8	6	9
Age 12–14, total	1,151	#	2	8	8	4
Male	580	#	#	7	8	4
Female	571	#	#	10	8	4
Age 15–17, total	1,284	2	4	11	9	5
Male	683	#	4	12	8	4
Female	601	#	4	11	11	6
Age 18–19, total	826	2	4	13	9	6
Male	403	#	3	14	9	6
Female	424	#	6	13	10	7
Age 20–24, total	1,873	2	6	10	6	6
Male	948	#	4	10	4	7
Female	924	2	7	11	8	6
Age 25–34, total	4,472	3	6	9	5	7
Male	2,209	1	5	8	4	7
Female	2,263	4	7	10	6	7
Age 35–44, total	5,238	4	5	7	4	8
Male	2,645	3	4	7	3	8
Female	2,593	5	6	8	4	9
Age 45–54, total	3,771	5	5	7	4	9
Male	1,922	3	4	6	3	9
Female	1,849	7	5	9	5	10
Age 55–64, total	2,565	4	5	5	5	11
Male	1,231	3	4	3	4	10
Female	1,334	5	5	8	7	12
Age 65–74, total	2,096	4	3	4	6	10
Male	930	3	3	3	6	10
Female	1,166	5	2	5	5	11
Age 75+, total	1,320	5	3	2	6	12
Male	549	6	2	2	6	12
Female	771	5	3	2	6	12
Lowest income	970	6	6	7	9	13
Lower middle income	2,262	6	6	7	6	11
Middle income	6,194	3	4	6	5	8
Upper middle income	7,962	3	4	8	5	8
Highest income	3,107	4	5	10	5	9
Income not stated	4,100	3	5	7	4	7
Newfoundland	478	#	#	4	4	8
Prince Edward Island	113	4	3	9	6	8
Nova Scotia	775	5	6	11	7	11
New Brunswick	632	3	#	9	6	10
Quebec	6,131	3	2	5	5	6
Ontario	9,323	3	5	8	5	7
Manitoba	902	3	5	8	6	11
Saskatchewan	801	4	4	10	5	12
Alberta	2,244	4	6	8	5	10
British Columbia	3,196	5	6	9	6	12

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

25

Unmet health care needs

Introduction

The premise of a universal health insurance scheme is that all citizens will have access to the care they need within a reasonable time period. However, since there is no accepted definition of "care needed," the possibility arises of health care needs that are perceived to be unmet. Given the nature of the ongoing and widespread efforts to reform the health care delivery system, it is to be expected that some health care needs will not be met as quickly as they have been in the past.

This topic describes recent perceptions of Canadians regarding their need for care that was not received during the 12 months prior to their participation in the 1996–97 *National Population Health Survey.*

Incidence of unmet needs, 1996–97

In the year prior to the *National Population Health Survey*, there were 1.2 million Canadians (5% of the population age 12 and older) who required some health care or advice on at least one occasion and did not receive it (Table 25).[1] More than three-quarters of these needs were for physical health conditions (78%); emotional health and injuries were each cited by 9%. Only 5% wanted a checkup that they did not receive (see Topic 22). These latest results show a non-significant increase from 1994–95, when 4% of the population age 12 and older reported unmet needs.[2]

As there are no comparable data from other countries, international comparisons cannot be provided.

Differences among groups

There is little systematic variation in the incidence of unmet needs related to sex or age (Table 25). At least one occasion of unmet need was reported by 3–6% of all age groups. Differences between males and females are slight, perhaps because the overall level of unmet needs is quite low. Since 1994–95, there has been no change in the reports by males of unmet needs, but a modest increase in the reports by females (Fig. 25).[1,2]

The level of income adequacy has some effect on the likelihood of having unmet health care needs. People in the lowest income level had a 9% chance of having unmet needs, compared with 5% of people in the highest income level (Table 25). The lowest income group also had the greatest likelihood of unmet needs of an emotional nature. Education does not appear to be strongly related to unmet health care needs, with the likelihood averaging between 4 and 6% for all education groups (data not shown).[1]

There is almost a three-fold interprovincial variation in unmet health care needs, ranging from a low of 3% of residents of Newfoundland and Quebec to a high of 8% in Alberta (Table 25). Injuries were an important reason for care being sought in Manitoba and Alberta.

The incidence of unmet health care needs did not vary greatly among household types (4–7%); however, twice as many male single parents as female single parents had unmet needs of an emotional nature (33% vs. 15%) (data not shown).[1]

On definitions and methods

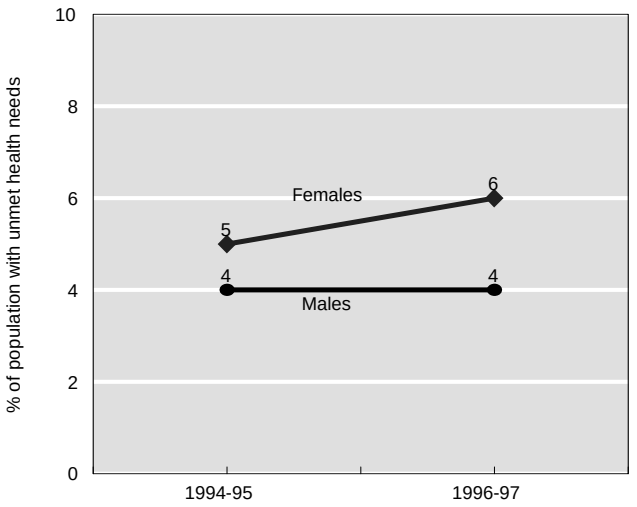
These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The

findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[3]

The existence and nature of unmet health care needs are based on self-report or the report of a third person. For both the 1994–95 and 1996–97 surveys, respondents who reported having unmet health care needs at least once in the previous year were asked to categorize the nature of their needs as follows: physical, emotional/mental, regular checkup, or care of an injury. Respondents could choose as many categories as were applicable. There was no attempt to verify the need or identify its nature beyond the general classification reported here.

Age group and provincial comparisons for various types of unmet needs were limited because of small sample sizes.

Figure 25. **Persons reporting an unmet need for health care, by sex, Canada, 1994–95 and 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Statistics Canada. *National Population Health Survey, 1994–95*. Special tabulations.
3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Table 25. **Unmet needs for health care in the previous 12 months, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	1+ times	Type of problem/care needed[a]			
			Physical	Emotional	Checkup	Injury
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**24,576**	**5**	**78**	**9**	**5**	**9**
Male	12,091	4	80	8	2	12
Female	12,485	6	78	10	7	7
Age 12–14, total	1,151	3	68	#	#	#
Male	580	4	#	#	#	#
Female	571	1	#	#	0	#
Age 15–17, total	1,284	3	79	#	#	#
Male	683	3	76	#	#	#
Female	600	3	82	#	#	#
Age 18–19, total	825	6	89	#	#	#
Male	402	7	#	#	#	#
Female	423	6	88	#	#	#
Age 20–24, total	1,871	6	79	#	#	8
Male	947	4	83	#	#	#
Female	924	8	77	#	#	#
Age 25–34, total	4,468	6	75	10	6	10
Male	2,207	4	76	8	#	14
Female	2,261	8	74	11	8	8
Age 35–44, total	5,235	6	77	13	4	10
Male	2,643	5	71	15	#	14
Female	2,592	7	81	11	5	8
Age 45–54, total	3,765	5	76	12	7	6
Male	1,920	5	85	#	#	8
Female	1,845	6	69	16	9	#
Age 55–64, total	2,563	4	83	#	#	9
Male	1,230	3	84	#	#	#
Female	1,333	5	83	#	#	#
Age 65–74, total	2,095	4	84	#	#	#
Male	930	4	93	#	#	#
Female	1,166	3	74	#	#	#
Age 75+, total	1,319	4	89	#	#	#
Male	549	3	93	#	#	#
Female	771	5	87	#	#	#
Lowest income	969	9	75	15	7	4
Lower middle income	2,259	8	86	9	3	6
Middle income	6,192	5	75	10	7	10
Upper middle income	7,960	4	77	8	6	12
Highest income	3,105	5	72	11	4	12
Income not stated	4,092	6	86	7	4	4
Newfoundland	478	3	88	#	#	#
Prince Edward Island	113	5	72	#	#	#
Nova Scotia	775	5	83	#	#	#
New Brunswick	632	6	81	#	#	#
Quebec	6,130	3	70	#	#	#
Ontario	9,311	6	82	8	5	7
Manitoba	901	7	71	8	5	17
Saskatchewan	801	6	81	#	0	#
Alberta	2,239	8	81	8	5	10
British Columbia	3,196	6	75	#	#	#

Data suppressed because of high sampling variability

[a] As a proportion of those reporting unmet needs.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

26

Emergency health services

Introduction

Emergency health services are generally described as medical services that are provided for health problems requiring immediate care. This is a broad and loosely defined area of health services, which includes institution-based care (e.g., hospital emergency departments) and community-based care (e.g., urgent care centres and paramedical services).

For analysis of utilization patterns, two parameters are of interest — the number of individuals accessing a service, and the number of times a specific service is accessed. The number of Canadians accessing all emergency services is based on self-report. Service-specific utilization rates for provinces and the nation are available only for hospital emergency departments, a significant component of emergency services.

Use of emergency health services

In 1996–97, one in four Canadians (5.3 million) 12 years of age and older reported having used emergency health services at least once during the previous year (Table 26a).[1]

During 1995–96, there were 12.9 million visits to hospital emergency departments (Table 26b),[2] for a national utilization rate of 433.1 per 1,000 population.

The use of emergency services peaked in 1987–88 at 669 per 1,000 population and has declined since then to pre-1980 levels (Fig. 26a).[3,4] Emergency department use decreased 31% from 640.2 per 1,000 in 1991–92 to 433.1 per 1,000 in 1995–96. This may be partly attributable to the closing of hospital emergency departments, the opening of community walk-in clinics and urgent care centres, as well as the triaging of patients to appropriate services.

Differences among groups

Overall, women were slightly more likely than men to use emergency health services (27% vs. 22%) (Table 26a). Among women, use of services ranged from a low of 21% for 12–14 year olds to a high of 35% for those between the ages of 25 and 44. Men with the highest use were those 75 years of age and older (26%), while the lowest usage was reported for the 55–64 year age group (17%).

Use of emergency health services by university graduates was lower than that for other education levels (Fig. 26b),[1] but the differences were modest, and there were no differences related to income (data not shown).

There appear to be dramatic interprovincial/territorial differences in the use of emergency department care; however, the lack of completeness of reporting in some provinces may mask real differences. Saskatchewan reported the lowest utilization rate (151.7 per 1,000) in 1995–96, while the Yukon rate was 527.8 per 1,000 (Table 26b).

On definitions and methods

Data for this topic come from two sources. Data related to individuals accessing emergency health services come from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The

findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[5]

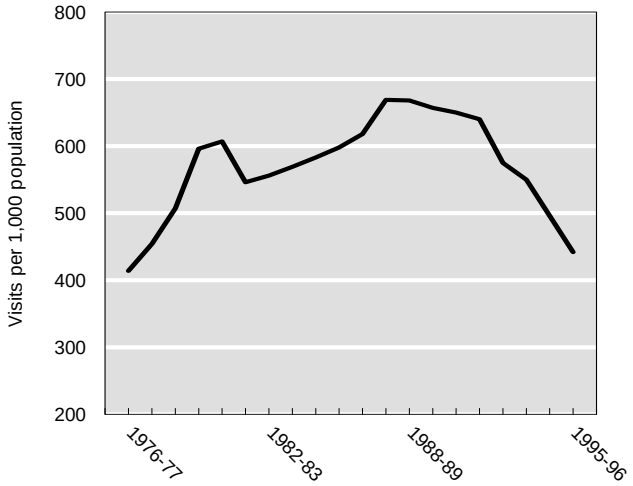
Emergency department utilization rates are calculated from data reported through the *Annual Return of Health Care Facilities*, initially administered by Statistics Canada, and the *Annual Hospital Survey*, administered by the Canadian Institute for Health Information, commencing in the 1995–96 reporting year. Data are collected from provincial/territorial ministries of health, from federal and private hospitals, or, in those provinces that do not have central databases, directly from the hospitals themselves.

Data from the hospital survey represent visits, not the number of individuals accessing a service. Estimates in this topic are based on reported values for outpatients in public hospitals only. Owing to differences in completeness of reporting, inter-provincial/territorial comparisons should be made with caution.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Canadian Institute for Health Information. *Annual Hospital Survey Database, 1995–96.*
3. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).
4. Canadian Institute for Health Information. Special tabulations.
5. Statistics Canada. *National Population Health Survey Overview, 1996–97.* Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

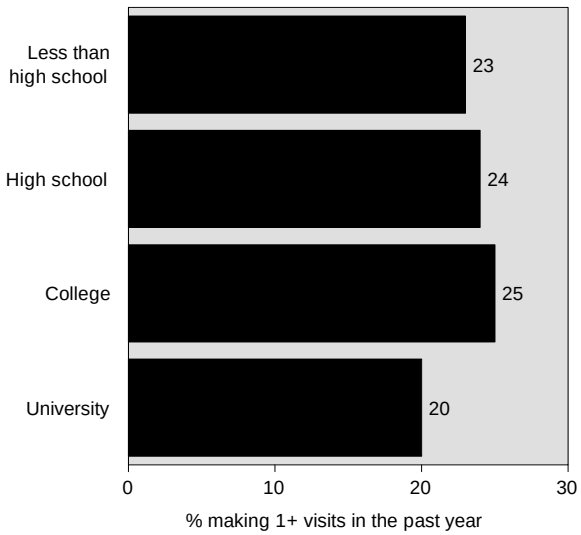
Figure 26a. **Emergency department visits, Canada, 1976–77 to 1995–96**



Note: 1994-95 data are not available.

Sources: Statistics Canada, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Canadian Institute for Health Information, special tabulations.

Figure 26b. **Use of emergency services, by education (age-standardized), age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 26a. **Individuals accessing emergency services in the previous 12 months, by age and sex, age 12+, Canada, 1996–97**

	Male		Female		Total	
	Number	%	Number	%	Number	%
	('000)		('000)		('000)	
Total, age 12+	**10,469**	**22**	**10,850**	**27**	**21,319**	**25**
Age 12–14	430	21	463	21	893	21
Age 15–17	618	25	537	28	1,155	26
Age 18–19	357	25	372	29	729	27
Age 20–24	838	21	826	34	1,664	27
Age 25–34	1,957	25	2,003	35	3,960	30
Age 35–44	2,332	24	2,003	35	4,335	26
Age 45–54	1,668	19	1,592	24	3,260	21
Age 55–64	1,062	17	1,150	22	2,212	20
Age 65–74	778	18	966	22	1,744	20
Age 75+	429	26	625	22	1,054	23

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 26b. **Number and rate of emergency department visits, by province/territory, Canada, 1995–96**

	Total number	Rate of emergency visits/1,000 population
	('000)	
Canada	**12,873**	**433.1**
Newfoundland	103	180.3
Prince Edward Island	45	332.4
Nova Scotia	357	380.3
New Brunswick	145	190.9
Quebec	3,307	449.1
Ontario	5,198	465.3
Manitoba	569	502.1
Saskatchewan	154	151.7
Alberta	1,321	479.2
British Columbia	1,639	433.5
Yukon	16	527.8
Northwest Territories	18	280.7

Source: Canadian Institute for Health Information, *Annual Hospital Survey Database, 1995–96.*

27

In-patient hospital care

Introduction

In-patient hospital care refers to care requiring admission to a hospital, including general and allied specialty hospitals but not psychiatric institutions (see Topic 76). While the average length of stay in hospital is only an indirect indicator of health in a population, it may reflect the efficiency of a health care system. Hospital separations and average length of stay provide an idea of which diseases or disorders are the most taxing on the health care system (Topic 77), as well as which groups of persons are the most likely to use hospitals.

Average length of stay, 1995–96

In 1995–96, 35.5 million patient-days were spent in general and allied specialty hospitals (excluding psychiatric institutions). There were 3.3 million separations, and the average hospital stay was 11 days (Table 27a).[1]

Between 1990–91 and 1995–96, total days' stay declined from 41.4 to 35.5 million, and the average length of hospital stay fell from 11.5 to 11 days (Fig. 27a).[1,2] It is noteworthy that during this same period (1990–91 to 1995–96), the Canadian population increased by approximately 1.8 million people and became older, on average (Topic 1). Thus, it appears that greater efficiencies were achieved during this period, possibly due to increasing use of ambulatory care (i.e., same-day surgery/medical care) and technological changes.

In 1995–96, diseases of the circulatory system (Topic 74) accounted for the most hospital days: 18% of the total (Fig. 27b).[1] Mental disorders accounted for the next highest number, which was due more to the extended average length of stay of 31.7 days than to a high number of separations (Topic 76). In contrast, hospitalization due to childbirth accounted for 4% of hospital days, but the average length of stay was quite short (2.9 days) (data not shown). Two areas that demonstrated a change in total hospital days from 1990–91 to 1995–96 are nervous system disorders, which now account for more hospital days than cancer, and musculoskeletal diseases, which now represent more hospital days than childbirth (data not shown). This is consistent with the high prevalence of arthritis/rheumatism and back problems as chronic conditions (Topic 68) and the major role of nervous system disorders and back and limb problems as causes of activity limitation (Topic 59).

Differences among groups

In 1995–96, there were important differences in the average length of hospital stay in Canada. Although there is no overall gender difference in the average length of stay, women account for significantly more separations and total days in hospital (Table 27a). Much of this difference can be attributed to women in the childbearing years (age 20–44), as well as to those 75 and over, where women account for almost twice as many total hospital days as their male counterparts. Of course, at this age, there are also many more women than men (see Topic 1).

Between the ages of 18 and 44, men had a longer average length of stay in hospital than women. From the age of 55 on, women's stays were slightly longer, and women 75 and older stayed in hospitals for almost one month (27 days) on average, compared with 19 days for men of this age.

The average length of hospital stay increased significantly with age, starting at age 5–9. Most age groups fell well below the average length of stay in hospital, but the 55–64 year age group reached the average stay of 11 days (Table 27a). Elderly Canadians averaged such extended stays in hospitals (23 days for those 75 and over) that the Canadian average is skewed towards the older age groups.

There are significant interprovincial variations in average length of hospital stay (Table 27a). The averages for the territories (four and five days) were considerably less than those for the provinces. This may be attributed to variation in data definitions across jurisdictions (see below). British Columbia and Quebec had the longest average lengths of stay (13 days) owing to submission of long-term care data. The remainder of the provinces ranged from six to 10 days. These provinces submit chronic and specialty, but not long-term, care data. Of these, Alberta had the shortest average length of stay (six days).

Alternate level of care patients and cases that may not require hospitalization

Hospitals classify patients who occupy a designated acute care bed but no longer require acute care as "alternate level of care" (ALC) patients. These patients generally are awaiting transfer to continuing care or rehabilitation facilities or have no one at home who is free and able to provide their continuing care needs. The number of ALC separations is growing (Table 27b).[3] Since reporting variations may exist within individual provinces, it is important to compare the percent change within a province rather than across provinces.

As well, some patients occupy an acute care bed for procedures that "may not require hospitalization" (MNRH), such as tonsillectomy/adenoidectomy (almost 18,000 separations), urinary obstruction without complications (over 12,000), adjustment disorders (over 12,000), and false labour less than three days' stay (over 11,000) (Fig. 27c).[3] However, some of these cases involve complicating conditions that make hospitalization appropriate.

In 1996–97, the Yukon/Northwest Territories had the highest number of MNRH cases (13% of patients), while Ontario, Manitoba, and Alberta had the lowest (7%) (Table 27c).[3] This could be attributed to the great distances that people in the territories must travel for treatment or readmission, in the event of complications.

On definitions and methods

Average length of stay in hospitals is calculated by taking the total number of days spent in hospitals and dividing it by the number of separations (departures from hospital whether alive or dead). A high average length of stay can thus result from a large number of both total days and separations (e.g., Quebec) or a smaller number of total hospital days and relatively fewer separations (e.g., British Columbia). Variations in average lengths of stay between the provinces and territories may be attributed to the differences in definitions for reporting facilities between the jurisdictions, as noted above (e.g., *all* levels of care are reported for British Columbia, unlike other provinces). Newborns are excluded from the data in this report.

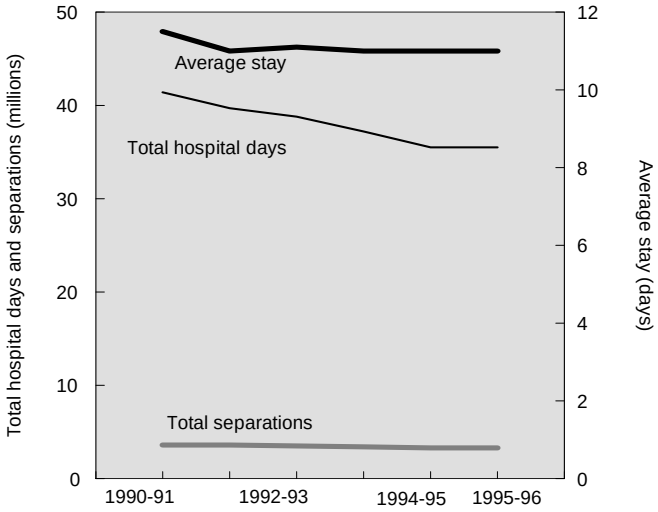
These data, which are collated by the Canadian Institute for Health Information from provincial/territorial administrative sources and combined to create the national *Hospital Morbidity Database*, are based on the fiscal year ending March 31, 1996.

According to the Canadian Institute for Health Information, "alternate level of care" (ALC) is a designation assigned by physicians (or designated others) to patients who have finished the acute care phase of their hospital treatment but remain in acute care beds. The "may not require hospitalization" (MNRH) category is determined through the case mix group (CMG™) methodology.[4] ALC and MNRH data are available only for provinces that have reported data comprehensively over time to the *Discharge Abstract Database* of the Canadian Institute for Health Information.

References

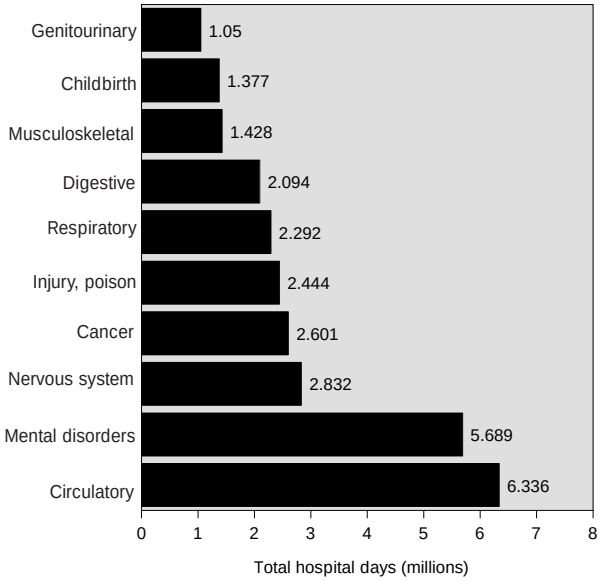
1. Canadian Institute for Health Information. *Hospital Morbidity Database, 1994–95* and *1995–96.*
2. Statistics Canada, Health Statistics Division. *Hospital Morbidity and Surgical Procedures, 1990–91* to *1993–94.*
3. Canadian Institute for Health Information. *Discharge Abstract Database, 1994–95* to *1996–97.*
4. Canadian Institute for Health Information. *CMG [Case Mix Groups] Directory, 1996–97.*

Figure 27a. **Total hospital days, average length of stay, and total separations, Canada, 1990–91 to 1995–96**



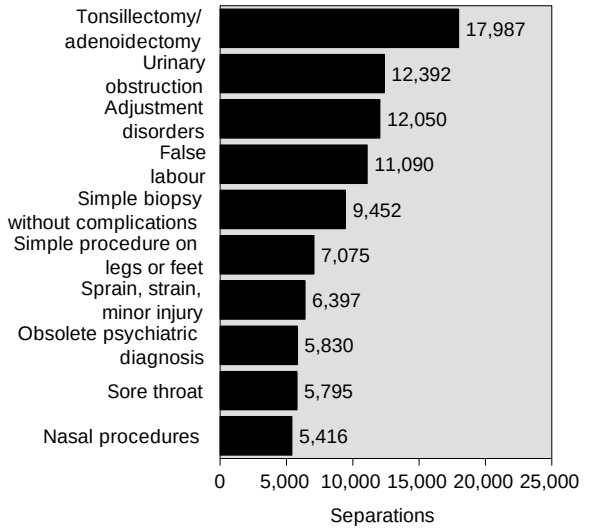
Source: Canadian Institute for Health Information, *Hospital Morbidity Database, 1994–95* and *1995–96*; Statistics Canada, Health Statistics Division, *Hospital Morbidity and Surgical Procedures, 1990–91* to *1993–94.*

Figure 27b. **Total hospital days, by major causes, Canada, 1995–96**



Source: Canadian Institute for Health Information, *Hospital Morbidity Database, 1994–95* and *1995–96.*

Figure 27c. **Diagnosis/procedures for separations that may not have required hospitalization, Canada, 1996–97**



Note: Data are unavailable for all Quebec cases, 60% of cases in Manitoba, 17% in Prince Edward Island, and approximately 1% in Saskatchewan.

Source: Canadian Institute for Health Information, *Discharge Abstract Database, 1996–97.*

Table 27a. Indicators of hospital use, by age and sex and by province/territory, Canada, 1995–96

	Total days ('000)	Separations	Average length of stay (days)
Total, all ages	**35,513**	**3,320,789**	**11**
Male	14,958	1,390,110	11
Female	20,555	1,930,656	11
Age <4, total	861	199,128	4
Male	501	117,385	4
Female	361	81,741	4
Age 5–9, total	261	66,261	4
Male	149	37,186	4
Female	112	29,075	4
Age 10–11, total	109	21,503	5
Male	64	11,865	5
Female	45	9,638	5
Age 12–14, total	197	38,603	5
Male	99	19,553	5
Female	97	19,050	5
Age 15–17, total	316	63,290	5
Male	123	22,558	5
Female	193	40,732	5
Age 18–19, total	257	57,586	4
Male	104	16,530	6
Female	153	41,056	4
Age 20–24, total	805	183,271	4
Male	287	39,873	7
Female	518	143,394	4
Age 25–34, total	2,425	530,096	5
Male	780	106,228	7
Female	1,645	423,861	4
Age 35–44, total	2,457	368,507	7
Male	1,074	139,082	8
Female	1,382	229,417	6
Age 45–54, total	2,708	324,198	8
Male	1,319	157,963	8
Female	1,388	166,233	8
Age 55–64, total	3,817	358,165	11
Male	1,964	193,291	10
Female	1,853	164,874	11
Age 65–74, total	7,168	507,460	14
Male	3,512	267,985	13
Female	3,656	239,475	15
Age 75+, total	14,132	602,721	23
Male	4,981	260,611	19
Female	9,151	342,110	27
Newfoundland	590	70,192	8
Prince Edward Island	141	18,593	8
Nova Scotia	981	116,007	8
New Brunswick	985	117,004	8
Quebec	10,450	776,224	13
Ontario	12,006	1,185,434	10
Manitoba	1,477	143,741	10
Saskatchewan	1,292	159,293	8
Alberta	1,920	300,417	6
British Columbia	5,618	423,238	13
Yukon	13	2,843	4
Northwest Territories	40	7,803	5

Source: Canadian Institute for Health Information, *Hospital Morbidity Database, 1994–95* and *1995–96.*

Table 27b. Alternate level of care (ALC) as a proportion of all separations, all ages, selected provinces,[a] Canada, 1994–95 to 1996–97

	1994–95 (%)	1995–96 (%)	1996–97 (%)	% change, 1995–96 to 1996–97
Newfoundland	n/a	0.45	0.64	+42.2
Nova Scotia	n/a	0.57	0.77	+35.1
New Brunswick	0.17	0.22	0.19	-13.6
Ontario	1.84	1.91	2.05	+7.3
Alberta	0.84	0.76	0.87	+14.5
British Columbia	n/a	1.04	1.37	+13.7

n/a = not available

[a] Only the listed provinces have reported data comprehensively over time. Data collection methods vary across provinces; thus, comparisons should be made cautiously.

Source: Canadian Institute for Health Information, *Discharge Abstract Database, 1994–95* to *1996–97.*

Table 27c. Separations that may not have required hospitalization (MNRH), by province/territory,[a] Canada, 1996–97

	% of all separations
Newfoundland	11
Prince Edward Island	10
Nova Scotia	8
New Brunswick	11
Ontario	7
Manitoba	7
Saskatchewan	9
Alberta	7
British Columbia	8
Yukon/Northwest Territories	13

[a] Data are unavailable for all Quebec cases, 60% of cases in Manitoba, 17% in Prince Edward Island, and roughly 1% in Saskatchewan.

Source: Canadian Institute for Health Information, *Discharge Abstract Database, 1996–97.*

28

Organ replacement and dialysis

Introduction

Many Canadians live with conditions that seriously affect their kidneys, livers, lungs, and hearts (Topic 68). Interventions such as organ replacement and dialysis may improve the health of people living with conditions related to these specific organs.

The Canadian Organ Replacement Register collects information on the level and outcomes of vital organ transplantation and dialysis activity in Canada. The register provides national statistics that track long-term trends and makes comparative data available to facilitate better, more cost-effective treatment. For example, the cost per kidney transplant is estimated at $50,000 over a five-year period, compared with the cost of dialysis at $250,000 for the same time period. Thus, in addition to improving the patient's quality of life, kidney transplantation is substantially more cost-effective than the alternative of dialysis. At the same time, the register highlights the fact that, as the need for organ transplants is increasing, the rate of organ donation has remained low; greater coordination of resources may be required to improve the situation, including promotion aimed at increasing public awareness of the importance of participating in organ donation programs.

Need and incidence, 1996 and 1997

There were 3,072 patients waiting for an organ transplant at the end of December 1997. Of these patients, 82% were waiting for a kidney, 8% for a liver, and 4% for a heart or heart and lungs (Fig. 28a).[1] Between 1991 and 1997, the number of patients waiting for an organ transplant increased by 68%, from 1,830 to 3,072. This represents an average annual increase of 9%, ranging from an increase of less than 1% from 1993 to 1994 to 17% from 1994 to 1995. The rate per million population for patients waiting for transplants in Canada in 1997 was 101.4, a 50% increase since 1991 (data not shown).

There were 1,533 single organ transplants in Canada in 1996 (including four heart/lung transplants). Kidneys accounted for the majority of single transplants (939, 61%), followed by livers (349, 23%) and hearts (165, 11%) (Table 28a).[1] There were also 24 combination transplant operations, comprising 19 kidney/pancreas and five kidney/liver procedures (data not shown). Overall, the rate per million population for transplant activity has increased 25% over the last decade and has more than doubled since 1981 (Fig. 28b).[1] In total, more than 12,000 persons had functioning transplants as of the end of 1996 (Table 28b).[1]

As of December 31, 1996, 19,424 Canadians were alive on renal replacement therapy, including 8,937 patients with a functioning kidney transplant and 10,487 patients on dialysis. The majority of dialysis patients were on hemodialysis (68%), and the balance were on peritoneal dialysis (32%). Hypertension, cardiovascular disease, and diabetes were common among patients entering renal replacement therapy programs. There were 3,322 new dialysis patients in 1996. Approximately 28% of patients with a renal transplant returned to dialysis in 1996 because of organ failure.[1]

In 1996, there were 689 organ donors in Canada (data not shown). These included 266 living kidney donors (data not shown) and 423 cadaveric organ donors (Table 28c).[1] The number of cadaveric donors decreased by 3% from 1995 to 1996 and has fluctuated from 330 to 436 over the past four years.[1]

In 1996, Canada's donation rate was 14.1 donors per million population (Table 28c), down from 14.7 in 1995 (data not shown). This rate was among the lowest of all developed countries. For

example, the 1996 donation rate was 26.8 per million population in Spain and 17.1 per million population in the United States.[1]

Differences among groups

Forty-eight percent of donors were in the 15–44 year old age category, followed by 29% in the 45–59 year old age category. Pediatric donors, defined as under the age of 15, represented 12% of all organ donors, and 11% of donors were 60 years of age and older in 1996. The average age of donors in 1996 was 38 years. Over half of donors were male.[1]

As of December 31, 1997, patients listed for transplant in Ontario represented 48% of the total number of patients on waiting lists in Canada, followed by Quebec with 21% and British Columbia with 12%. The Atlantic and Prairie provinces accounted for a combined total of 19%.[1]

The majority of transplant recipients (87%) were age 18–64 (Table 28a). Males continued to constitute the majority (65%) of transplant recipients, with a particular male predominance (84%) in heart transplants (data not shown).

On definitions and methods

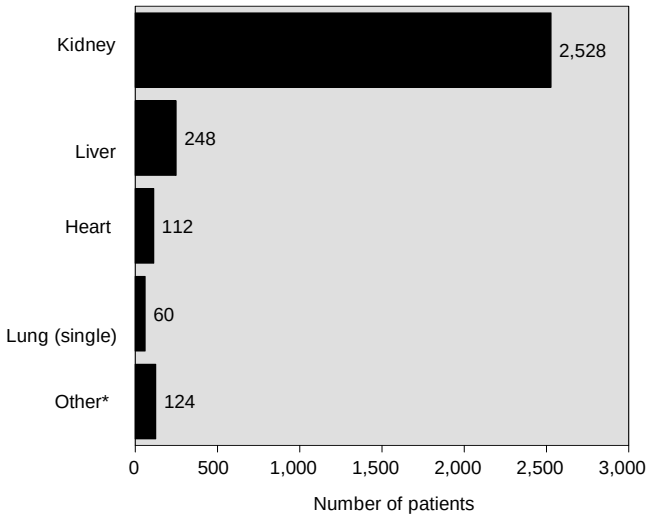
Data in the Canadian Organ Replacement Register are collected from a number of sources, including 28 transplant hospitals, 86 dialysis facilities, and eight organ procurement organizations. The register database includes patient demographics, risk factors such as diabetes and heart disease, treatment information including type of dialysis received and transplants, follow-up information, and donor and waiting list data.

Managed by the Canadian Institute for Health Information, the Canadian Organ Replacement Register contains data on dialysis, organ donation, and transplantation up to December 1996, and transplant waiting list data up to December 1997. Dialysis, renal transplant, and other organ transplantation data are included from 1981, waiting list data from 1991, and organ donation data from 1992.

References

1. Canadian Institute for Health Information. *Canadian Organ Replacement Register, 1998 Report. Volume 2. Organ Donation and Transplantation.* Ottawa: CIHI, 1998.

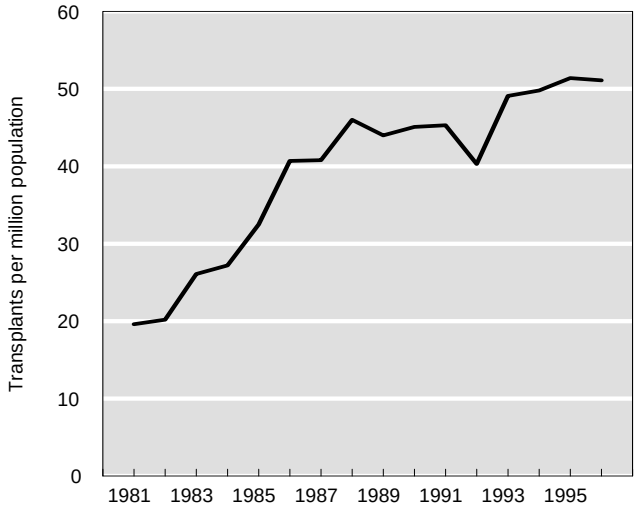
Figure 28a. **Patients waiting for organ transplants, by type, Canada, 1997**



* Other includes pancreas, bowel, and combinations of the other organs listed above.

Source: Canadian Institute for Health Information, *Canadian Organ Replacement Register, 1998 Report, Volume 2, Organ Donation and Transplantation,* Ottawa: CIHI, 1998.

Figure 28b. **Organ transplants, Canada, 1981–1996**



Source: Canadian Institute for Health Information, *Canadian Organ Replacement Register, 1998 Report, Volume 2, Organ Donation and Transplantation, Ottawa: CIHI, 1998.*

Table 28a. Transplant recipients, by organ and by age, Canada,[a] 1996

	Kidney[b]	Liver	Pancreas[c]	Heart	Heart/ lung	Single lung	Double lung	Bowel	Total
Total, all ages	**939**	**349**	**2**	**165**	**4**	**29**	**43**	**2**	**1,533**
Age 0–17	41	43	0	23	2	1	1	2	**113**
Age 18–44	452	107	2	24	0	5	24	0	**614**
Age 45–64	392	172	0	116	2	21	17	0	**720**
Age 65+	54	27	0	2	0	2	1	0	**86**

[a] Does not include combination transplants.

[b] Includes living and cadaveric donors.

[c] Whole pancreas.

Source: Canadian Institute for Health Information, *Canadian Organ Replacement Register, 1998 Report, Volume 2, Organ Donation and Transplantation*, Ottawa: CIHI, 1998.

Table 28b. Number of transplants performed since 1981 (the program's inception) and patients with a functioning transplant, by province/region, Canada, December 1996

	Transplants performed since 1981	Patients with a functioning transplant
Canada	**21,451**	**12,083**
Atlantic	1,782	1,009
Quebec	4,904	2,460
Ontario	9,193	5,464
Manitoba	810	401
Saskatchewan	642	225
Alberta	2,110	1,165
British Columbia	2,010	1,359

Source: Canadian Institute for Health Information, *Canadian Organ Replacement Register, 1998 Report, Volume 2, Organ Donation and Transplantation*, Ottawa: CIHI, 1998.

Table 28c. Transplants performed and cadaveric donors, by province/region, Canada, 1996

	Transplants performed in 1996 (per million population)	Cadaveric donors	Cadaveric donors (per million population)
Canada	**51.1**	**423**	**14.1**
Atlantic Canada	41.4	25	10.4
Quebec	45.6	113	15.3
Ontario	57.3	153	13.6
Manitoba	43.7	26	22.7
Saskatchewan	21.5	5	4.9
Alberta	69.9	53	19.0
British Columbia	47.9	48	12.4

Source: Canadian Institute for Health Information, *Canadian Organ Replacement Register, 1998 Report, Volume 2, Organ Donation and Transplantation*, Ottawa: CIHI, 1998.

29

Health expenditures

Introduction

National health expenditures are expenditures for which the primary objective is to improve or prevent the deterioration of health status. They include expenditures in both the public and private sectors for personal health care (i.e., health services used by individuals), as well as expenditures made on behalf of society for items such as public health and the administrative expenses related to planning and managing the health care system.

Health expenditures reflect the volume of health goods and services and their prices. Over time, an increase in health expenditure may be attributed to one or more of the following: population growth, increased utilization per capita, increased prices. The expenditures are grouped into seven major categories of use: hospitals, physicians, drugs, other professionals, other institutions, capital, and other health spending. Per capita expenditure is the average value of health expenditures at the person level in total and for each category of spending. Per capita information allows comparisons over time by removing the effect of population growth.

Health expenditures, in current dollars

Canada's total health expenditures were $75.3 billion in 1996, representing 9.2% of gross domestic product (Table 29a).[1,2] From 1995 to 1996, expenditures increased by $1.1 billion or 1.5%. On a per capita basis, the expenditure was $2,513 in 1996, up $7 or 0.3% over 1995, the second lowest annual percent change since 1975 (the lowest annual per capita growth was -0.1% in 1995).[2]

Hospitals accounted for the largest share ($25.9 billion or 34.3%) of all health expenditures in 1996. Hospital expenditures were followed by expenditures for physicians at $10.7 billion (14.3%) and drugs at $10.2 billion (13.6%).[2]

Between 1975 and 1991, Canada's total health expenditures increased at an average annual rate of 11.1%, or 9.8% on a per capita basis. Between 1991 and 1996, the average annual rate of growth fell to 2.5%, or 1.2% on a per capita basis (Fig. 29a).[2]

The slowdown was most noticeable in the two largest categories of expenditure, hospitals and physicians. In the case of hospitals, the rate of change in spending fell from an average annual rate of 10.2% from 1975 to 1991 to -0.1% between 1991 and 1996. In the case of physicians, the rate of change in spending fell from an average annual rate of 11.3% from 1975 to 1991 to 1.0% between 1991 and 1996. The rate of increase from drugs and other health spending slowed as well but not to the same extent as for hospitals and physicians (1975–1991: 13% for both drugs and other health spending; 1991–1996: 5.9% and 6.2% for drugs and other health spending, respectively).[2]

In 1997, Canada ranked fourth among the Group of Seven (G-7) industrialized countries in total health expenditure as a percentage of gross domestic product (Fig. 29b).[3]

Health expenditures, in constant dollars

Recent analysis suggests that, historically, increases in total health expenditures are due more to increases in the prices of health-related goods and services than to either population growth or increased utilization.[4] As such, it is important to consider health expenditure data with the effects of inflation removed — in other words, in constant dollars.

In 1986 dollars, total health expenditures amounted to $56.7 billion in 1996, an increase of 2.2% over 1995.[4] On a per capita basis, 1996 expenditures were $1,891, an increase of 1.0% from 1995 levels. Between 1975 and 1991, the annual rate of change in per capita expenditures ranged between -1.4% and 4.8%. In 1991, the increase was 2.3%, and the levels actually decreased during 1993 and 1995 (Fig. 29c).[4]

Differences among jurisdictions

Health expenditures per capita in 1996 varied among the provinces, from $2,267 in Newfoundland to $2,728 in British Columbia; the amounts were higher still in both territories. As a percentage of gross domestic product, health expenditures were highest in the Northwest Territories (12.9%) and Newfoundland (12.1%) and lowest in Alberta (7.1%) (Table 29a).[1,2] In all provinces and both territories, hospitals accounted for the largest proportion of health expenditures, by far (Table 29b).[2] Among the provinces, Saskatchewan and Alberta were well below average on per capita hospital spending, while Newfoundland was well above. Per capita spending on hospitals in the territories was higher still, especially in the Northwest Territories, where it was more than double the Canadian average.

All provinces and territories experienced a pronounced drop in rates of expenditure growth after 1991. These rates are based on the total health care spending by both public and private sectors. Some provinces — Saskatchewan, Alberta, Nova Scotia, and Quebec — and Yukon had decreases in expenditure growth in the mid-1990s, while the others grew after 1991 at rates that were low compared with those of the previous 20 years.[2]

The decreases in health expenditure are also evident in constant dollars per capita, with a flattening of the 15-year trend beginning in 1991 (Fig. 29d).[2] That year, several provinces — Newfoundland, Nova Scotia, Manitoba, Saskatchewan, and Alberta — experienced decreases in constant dollar expenditures per capita. In subsequent years, all provinces and territories experienced declines in at least one year.

On definitions and methods

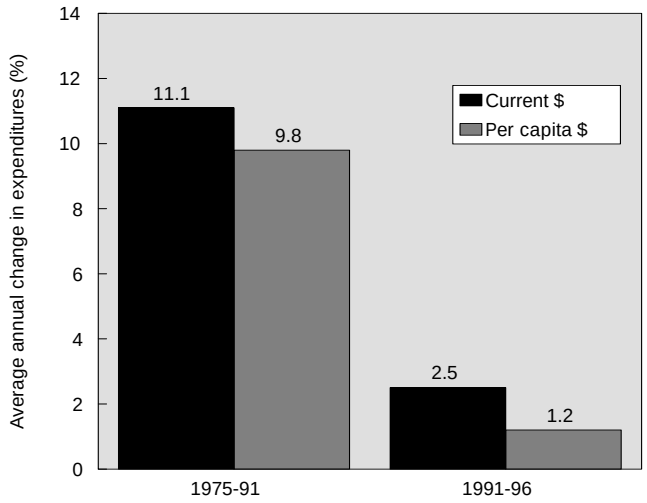
National health expenditures are based on various types of financial data (public accounts, main estimates, annual reports, surveys, and special tabulations) from over 100 sources (federal, provincial/territorial, and municipal governments, workers' compensation boards, not-for-profit and for-profit insurance companies and associations). The data are classified according to methods established by a review committee to provide the most comprehensive and current estimate of spending on health possible. The data are updated annually, although new data are not necessarily available from all sources every year. Thus, the data include a combination of actual, preliminary, and estimated data.

Constant dollar expenditures are calculated using price indices for public and private health expenditures in each province and territory.[1] Price indices are not available for individual categories of expenditures. Thus, expenditure data by use of funds are presented in current dollars only.

References

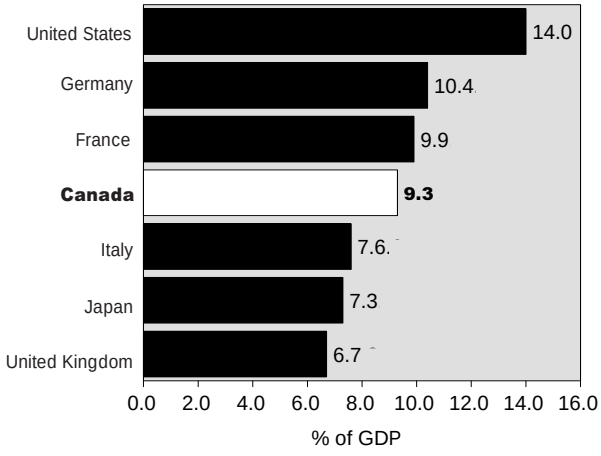
1. Statistics Canada, National Accounts and Environment Division. Special tabulations.
2. Canadian Institute for Health Information. *National Health Expenditure Trends, 1975–1998.*
3. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).
4. Canadian Institute for Health Information. *National Health Expenditure Trends, 1975–1997*.

Figure 29a. **Average annual change in total health expenditures, current dollars and dollars per capita, Canada, selected periods**



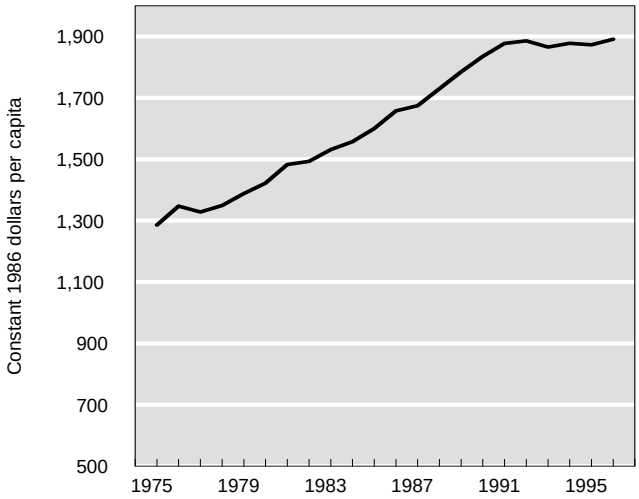
Source: Canadian Institute for Health Information, *National Health Expenditure Trends, 1975–1998*.

Figure 29b. **Percentage of gross domestic product (GDP) spent on health, G-7 industrialized countries, 1997**



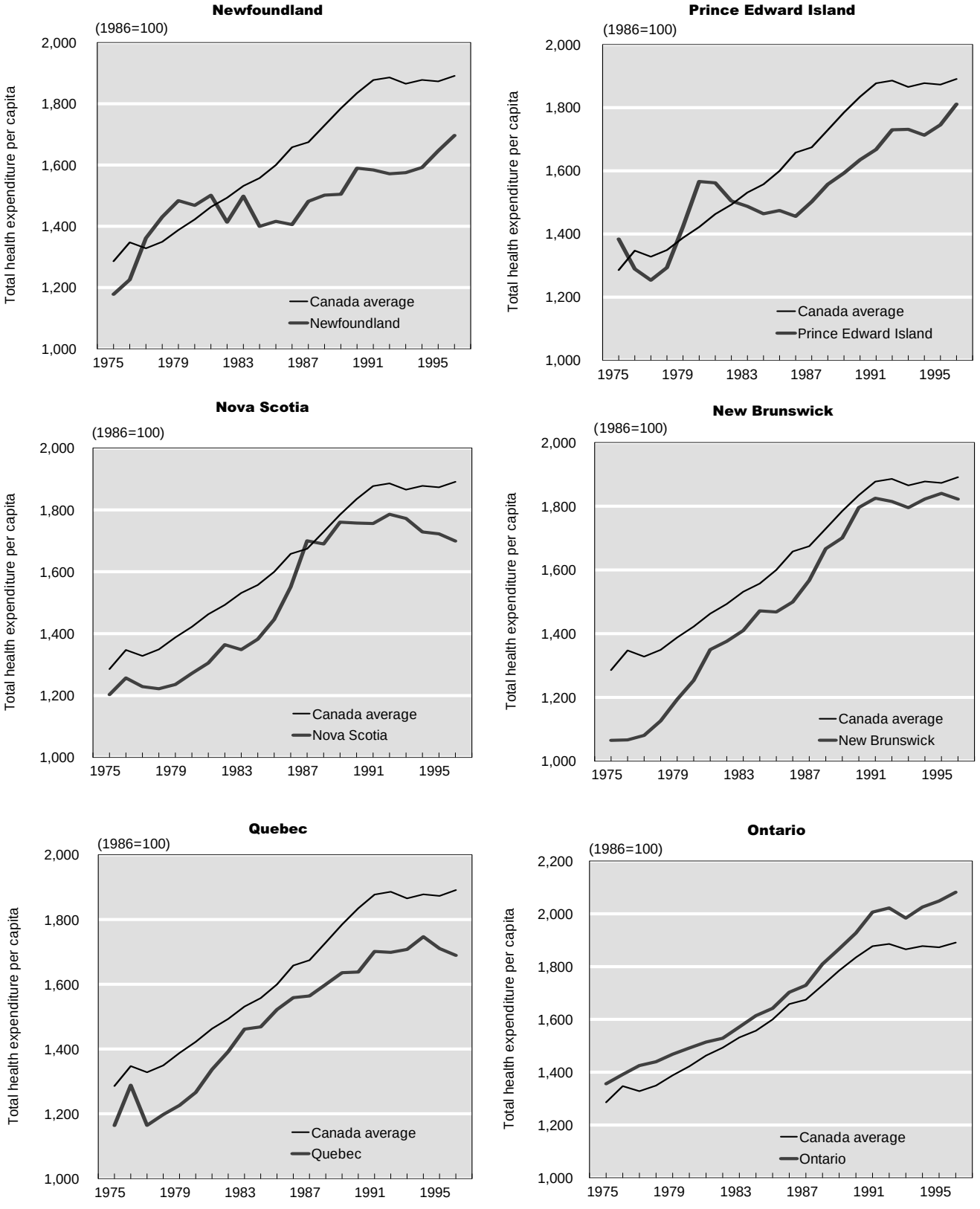
Source: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM).

Figure 29c. **Total health expenditures (constant 1986 dollars) per capita, Canada, 1975–1996**



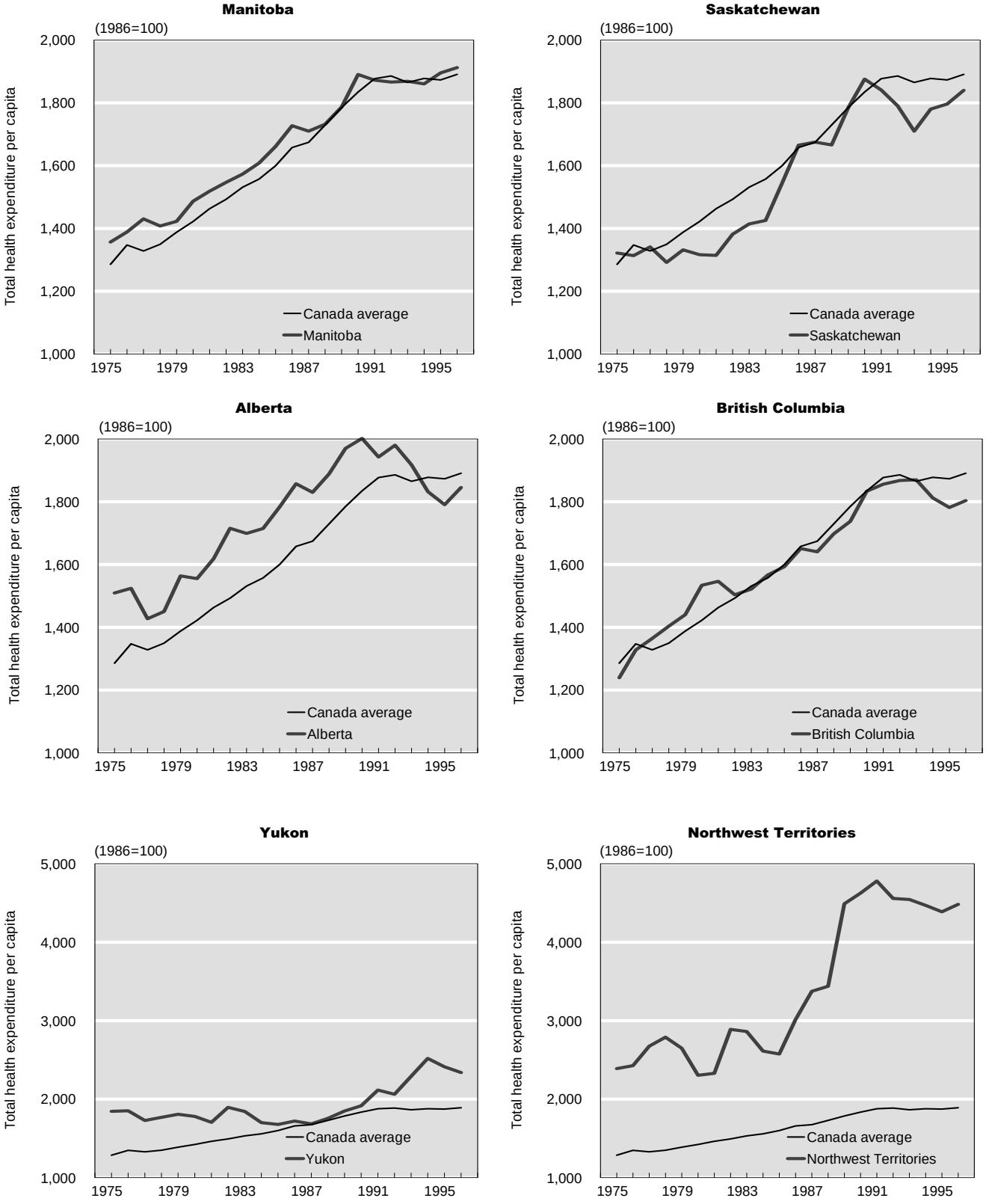
Source: Canadian Institute for Health Information, *National Health Expenditure Trends, 1975–1997*.

Figure 29d. **Total health expenditure per capita in constant 1986 dollars, by province/territory, Canada, 1975–1996**



(continued)

Figure 29d. **Total health expenditure per capita in constant 1986 dollars, by province/territory, Canada, 1975–1996 -** continued



Source: Canadian Institute for Health Information, *National Health Expenditure Trends, 1975–1998.*

Table 29a. **Total health expenditures, by province/territory, Canada, 1996**

	$'000,000	$ per capita	% of GDP
Canada	**75,304.1**	**2,513**	**9.2**
Newfoundland	1,295.9	2,267	12.1
Prince Edward Island	337.2	2,467	11.8
Nova Scotia	2,144.6	2,274	10.9
New Brunswick	1,807.1	2,371	10.8
Quebec	17,059.0	2,309	9.5
Ontario	29,545.1	2,624	8.9
Manitoba	2,941.4	2,579	10.4
Saskatchewan	2,525.7	2,477	9.0
Alberta	6,648.9	2,380	7.1
British Columbia	10,524.8	2,728	9.9
Yukon	102.6	3,267	8.7
Northwest Territories	371.92	5,564	12.9

Sources: Canadian Institute for Health Information, *National Health Expenditure Trends, 1975–1998*.

Table 29b. **Per capita health expenditures, by use of funds and by province/territory, Canada, 1996**

	Total	Hospitals	Other institutions	Physicians	Other professionals	Drugs	Capital	Other
	($)	($)	($)	($)	($)	($)	($)	($)
Canada	**2,512.72**	**862.93**	**251.23**	**358.52**	**294.54**	**340.58**	**74.11**	**330.81**
Newfoundland	2,266.86	992.23	274.93	252.07	164.69	340.37	18.51	224.06
Prince Edward Island	2,465.77	915.37	347.56	245.74	256.39	400.09	40.29	260.34
Nova Scotia	2,273.71	890.86	310.20	268.48	218.74	357.98	19.36	208.08
New Brunswick	2,371.39	972.97	261.64	287.94	180.11	321.84	96.78	250.10
Quebec	2,309.01	896.18	207.03	304.82	245.24	333.97	62.86	258.90
Ontario	2,624.27	875.04	225.57	412.47	334.17	376.50	83.00	317.52
Manitoba	2,579.30	902.23	340.33	263.10	267.35	322.93	59.50	423.85
Saskatchewan	2,477.06	692.96	368.63	303.20	215.37	319.25	105.57	472.08
Alberta	2,380.35	722.38	280.48	288.82	310.12	297.83	50.36	430.36
British Columbia	2,728.32	830.59	309.91	453.75	354.86	287.21	88.78	403.22
Yukon	3,267.22	993.68	245.19	341.59	191.17	248.07	413.54	833.98
Northwest Territories	5,563.87	1,885.71	191.16	319.66	217.78	405.02	634.80	1,909.74

Sources: Canadian Institute for Health Information, *National Health Expenditure Trends, 1975–1998*.

Personal resources and coping

Enhancing individual coping abilities and bolstering social supports are two of the principal strategies for health promotion, as described 12 years ago in Health Canada's policy document Achieving Health for All: A Framework for Health Promotion. *This section provides some evidence on the extent of coping responses and social supports in the Canadian population, as well as on the quality of parenting and family functioning.*

Overview

Social support in the form of access to friends and family in times of need is described as generally very high in Canada (Topic 30). In fact, social support is reported as so high as to raise concerns about the value of the indicator: 83% of Canadians claim access to four out of four possible sources of social support. Less clear is

whether they had ever felt obliged to ask for support and what response they received if they did. What *is* known is that social support is least often reported by those who need it most — seniors, low-income persons, and single parents. While access to support is reported as generally widespread, only 3% of Canadians received informal care for a long-term health problem (Topic 32), and only 2% used home care (Topic 34). These figures seem low, considering that 16% have a long-term activity limitation of some form (Topic 58). The use of self-help groups (Topic 35) was also quite rare.

Large numbers of Canadians provide some form of informal care to others, but the stress of doing so and the job repercussions are concentrated in certain age groups that would obviously benefit from some form of respite or other supports (Topic 33). In other words, it may not be enough for government to rely upon family and friends to provide informal care indefinitely; the coping abilities and supports of these care-givers also need bolstering.

Most of the informal care is provided to seniors by persons age 35–54, but many of these Canadians are also responsible for raising the next generation, and most are doing so effectively (Topic 31). However, there is a substantial proportion of families that are not functioning well, which bodes ill for the future of their children and underlines the need for well-placed support services.

On data sources and gaps

Compared with many other nations, Canada is now well served with ongoing population surveys that describe the social determinants of health. Foremost among these are the two prospective surveys, the *National Population Health Survey* and the *National Longitudinal Survey of Children and Youth.* The planned biennial repetition of both surveys will provide valuable updates on many of the indicators in this *Report* and, equally importantly, insights into the dynamics of individual change over time. The analysis of such change is only just beginning, but its promise is illustrated by the findings on family functioning and parenting style (Topic 31). Further analysis and perhaps additional years of data are needed to identify why positive parental–child interactions decrease as the child ages.

Although these surveys are good sources of data on social determinants of health, improvements are always possible. Such is the case for the index of social support in the *National Population Health Survey*, which could be supplemented with questions that produce greater variability in response. At present, the distribution of social support is so skewed that analysis possibilities for this key variable are limited.

30

Social support and pro-social behaviour

Introduction

The level of social support available to Canadians is important for their health in several ways.[1] A low level of social support is an important risk factor for numerous health problems, including depression and suicide (Topics 75 and 81), as well as a range of physical health conditions and even early death.[2] Conversely, a high level of support can be an important coping mechanism for individuals when problems arise (Topics 32, 33, and 35).

This topic examines variations in the distribution of high levels of social support as reported by respondents to the 1996–97 *National Population Health Survey* as well as the *National Longitudinal Survey of Children and Youth* of 1994–95.

Prevalence of high levels of social support, 1996–97

Overall, most Canadians report access to quite substantial levels of support. More than four out of five people reported four sources out of four — the highest level of support. This amounts to almost 20 million Canadians age 12 and older (Table 30).[3] This high level of support was also reported by this age group in 1994–95.[4] Similarly, a large majority (87%) of parents of Canadian children age 0–11 reported having access to people that they can count on in an emergency, while children age 10–11 reported a strong tendency towards pro-social behaviour or caring for others.[5]

Differences among groups

Although all groups reported quite high levels of support, this was more true of females (87%) than of males (80%) (Table 30). High support is most prevalent among adolescents and young adults and least prevalent among seniors, for whom, arguably, it is most important (see Topic 32). Nonetheless, the decline in support as Canadians age is very gradual. Almost three-quarters of seniors reported that they had access to high levels of support.

Income appears to be associated with the level of social support received. People with the lowest level of income had the lowest percentage of high support (74%), compared with those with the highest level of income (89%) (Table 30). Education, however, does not seem to be strongly associated with the social support received by Canadians (data not shown).[3]

A relatively high percentage of people in all household types enjoyed high levels of social support, ranging from a low of 72% for men in both single-parent and childless couple households to a high of 89% for unattached women. Overall, unattached individuals enjoyed the highest social support, and single parents had the lowest (Fig. 30).[3]

Provincial differences in social support are almost non-existent. Only Quebeckers reported a significantly lower level of support than the average. In spite of this, over three-quarters of Quebeckers were able to claim high support levels (Table 30).

On definitions and methods

The data for those age 12 and older are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on a sample of 18,000 respondents age

12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[6]

The *National Population Health Survey* determined level of social support by asking four questions: if respondents had 1) someone they could confide in; 2) someone they could count on in a crisis; 3) someone they could count on for advice; and 4) someone that makes them feel loved and cared for. Those responding yes to all questions are considered to have a high level of social support.

The *National Longitudinal Survey of Children and Youth* collected information on almost 23,000 children age 0–11 in 1994–95; the data presented here on social support were obtained by interviewing the "person most knowledgeable" about the child. Children age 10–11 were interviewed about their own pro-social behaviour.[5]

References

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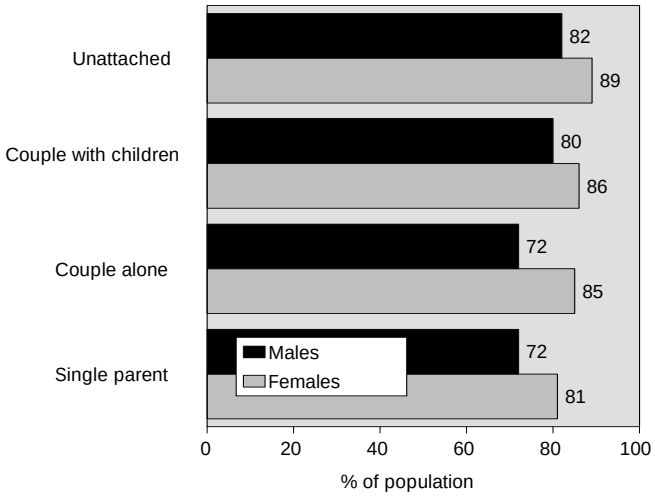
Figure 30. **High levels of social support, by household type (age-standardized) and by sex, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 30. **High levels of social support, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	High support
	('000)	(%)
Total, age 12+	**24,595**	**83**
Male	12,099	80
Female	12,495	87
Age 12–14, total	1,151	81
Male	580	76
Female	571	86
Age 15–17, total	1,284	90
Male	683	87
Female	601	93
Age 18–19, total	826	92
Male	403	89
Female	424	95
Age 20–24, total	1,873	90
Male	948	85
Female	924	95
Age 25–34, total	4,472	88
Male	2,209	85
Female	2,263	92
Age 35–44, total	5,238	85
Male	2,645	82
Female	2,593	87
Age 45–54, total	3,771	81
Male	1,922	77
Female	1,849	86
Age 55–64, total	2,565	79
Male	1,231	75
Female	1,334	82
Age 65–74, total	2,096	75
Male	930	73
Female	1,166	77
Age 75+, total	1,320	72
Male	549	68
Female	771	74
Lowest income	970	74
Lower middle income	2,262	76
Middle income	6,194	82
Upper middle income	7,962	85
Highest income	3,107	89
Income not stated	4,100	83
Newfoundland	478	87
Prince Edward Island	113	90
Nova Scotia	775	88
New Brunswick	632	85
Quebec	6,131	77
Ontario	9,323	85
Manitoba	902	83
Saskatchewan	801	87
Alberta	2,244	83
British Columbia	3,196	87

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

31

Healthy child development

Introduction

Early child development has a profound and lasting effect on later physical and mental well-being and on school readiness[1] (Topic 5). That development may be affected by the presence or absence of both parents (Topic 2), economic circumstances (Topic 6), and stress at home (Topics 8 and 10). The functioning of the family as a unit, consistency of parenting, and warm, positive interactions between parent and child all have their lasting influence on development as well.[2] These factors are examined in this topic, with data based on parents' reports as collected during the *National Longitudinal Survey of Children and Youth* in 1994–95.

Family environment, 1994–95

Over 90% of families in Canada were reported to function effectively in 1994–95 (Table 31),[3] while 8% were sufficiently ineffective that long-term problems for the children could be anticipated.[2] (Since the scores for consistency of parenting and positive parent–child interaction are defined arbitrarily here, they are meaningful only for group comparisons.)

Differences among groups

According to these parental reports, there were no differences in the functioning of the families of boys or girls, nor were there any differences in the consistency or warmth in parenting of boys or girls (Table 31). Age differences were also minimal, except with regard to positive parent–child interaction, which was reported to fall off sharply as the child's age increased.

Families where the reporting parent had not finished high school functioned somewhat less effectively than the average, but the differences were modest (Table 31). Consistent parenting was more strongly related to parent's education, being reported 1.5 times more often by university graduates than by parents with no high school (Fig. 31).[3]

There were virtually no differences in family functioning among the provinces according to these data, but consistent parenting was more often reported from Ontario westward (Table 31).

On definitions and methods

These results are from Statistics Canada's *National Longitudinal Survey of Children and Youth* in 1994–95. Family functioning and parenting style were assessed with information obtained by interviewing the most knowledgeable parent of a representative sample of almost 23,000 children age 0–11. Family functioning was assessed for the entire sample, while parenting style, as reported here, was based on a sample of the parents of more than 18,000 children age 2 and older.

Family functioning was assessed with 12 questions with a possible maximum score of 35 (for major dysfunction); healthy or effective functioning is defined as a score of 0–14, which has been independently established as a clinical threshold.[2] No such threshold exists for positive interaction and consistency of parenting, which were assessed with six different parenting scales.[1] For comparisons among groups, the values reported here are simply those at or above the "good" side of the mean score (14.7 out of a possible 20 for consistency and 13.5 out of 20 for interaction).

References

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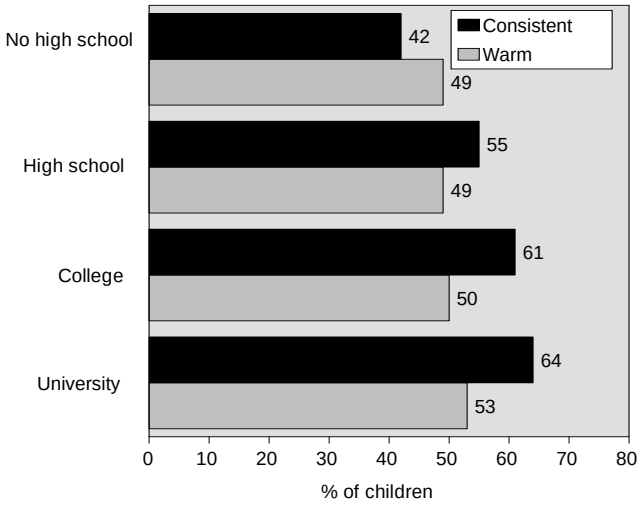
3. Health Canada, Information Coordination Section. *National Longitudinal Survey of Children and Youth, 1994–95.* Special tabulations.

Figure 31. **Parenting style, by parent's education, children age 2–11, Canada, 1994–95**



Source: Health Canada, Information Coordination Section, *National Longitudinal Survey of Children and Youth, 1994–95*, special tabulations.

Table 31. **Effective family functioning, consistent parenting, and positive parent–child interaction, by child's age and sex, by parent's education, and by province, Canada, 1994–95**

	Population estimate	Effective functioning	Consistent parenting	Positive/ warm interaction
	('000)	(%)	(%)	(%)
Total, age 0–11	**4,673[a]**	**92**	**58**	**51**
Boys	2,390	91	59	51
Girls	2,283	92	57	51
Age 0–1	753	92	–	–
Boys	385	91	–	–
Girls	367	92	–	–
Age 2–4	1,208	91	54	81
Boys	624	89	54	81
Girls	583	92	54	81
Age 5–8	1,543	92	59	47
Boys	783	93	61	47
Girls	760	92	57	46
Age 9–11	1,171	92	60	26
Boys	597	91	60	25
Girls	573	92	61	27
No high school	750	86	42	49
High school	819	93	55	49
College	1,317	92	61	50
University	1,721	93	64	53
Newfoundland	89	93	54	56
P.E.I.	23	94	58*	47*
Nova Scotia	144	92	59	50
New Brunswick	115	93	53	52
Quebec	1,083	91	47	52
Ontario	1,755	92	61	51
Manitoba	180	92	62	49
Saskatchewan	175	91	64	41
Alberta	482	91	65	51
British Columbia	564	92	63	51

* Moderate sampling variability; interpret with caution

– Data not available

[a] Totals shown are for family functioning; those for parenting style are smaller by the number of children under age 2.

Source: Health Canada, Information Coordination Section, *National Longitudinal Survey on Children and Youth, 1994–95*, special tabulations.

32

Giving and receiving informal care

Introduction

There is a widespread view, particularly within the health promotion community, that social support is an important part of a healthy lifestyle.[1] One obvious manifestation of social support is informal care provided for or by friends and family when people are young or ill. The 1996 *General Social Survey* and the 1996 Census attempted to gauge the extent of informal care in Canada as one important indicator of social support (see also Topics 30 and 33). The 1997 *National Survey of Giving, Volunteering and Participating*[2] provides a broader context for these findings on informal care.

Giving and receiving informal care, 1996

In the week preceding June 1, 1996, 38% of Canadians age 15 and older provided at least some unpaid time towards child care, and 17% of such Canadians provided some unpaid time towards the care of seniors (Table 32a).[3,4] In total, about 7% of Canadians spent 60 or more unpaid hours on child care, and 2% of Canadians provided 10 or more unpaid hours of senior care. Helping others was second only to making charitable donations as a supportive activity in 1997.[2]

In 1996, 12% of all Canadians age 15 and older (2.8 million persons) provided informal care to people with long-term health problems (Table 32b).[5,6] About 3% of Canadians *received* informal (but no formal) care due to their long-term health problems during 1996.[6] Most assistance with instrumental activities (e.g., meal preparation, house cleaning, laundry, shopping, etc.) was provided to parents/parents-in-law (47%) and friends/neighbours (24%).[7] Personal care (e.g., bathing, dressing) was provided to parents (46%), spouses (16%), and friends/neighbours (13%).[7]

Differences among groups

Overall, women are more likely than men to provide child care and senior care; only in the 45–54 year age category was there a roughly equal percentage of men and women providing child care (Table 32a). Furthermore, between the sexes, the largest disparity for providing child care was found among women and men age 25–34 (60% and 42%, respectively), and for senior care, women and men age 45–54 (27% and 19%, respectively).[8]

The highest percentage of people who provided no unpaid child care during the week prior to the survey was found in the age 15–24 and 65 and older categories. Conversely, the Canadians most likely to provide some unpaid child care were age 35–44 (65%), while the Canadians most likely to provide some unpaid senior care were age 45–54 (23%). However, the group most likely to provide 60 or more unpaid hours of child care was Canadians age 25–34 (15%), and Canadians age 55–64 were most likely to provide 10 or more unpaid hours of senior care (4%) (Table 32a).

In census families where children under 15 were present, almost two-thirds (65%) of lone parents provided at least some unpaid child care during the week previous to the census, compared with only half (50%) of individuals in husband–wife families (data not shown).[8] In fact, 20% of persons in one-parent families provided 60 or more unpaid hours of child care, compared with 9% of persons in husband–wife families.

Overall, women were more likely than men to provide informal care to those with long-term health problems (14% vs. 10%, respectively) (Table 32b). Among age groups, women and men age 45–54 represented the largest group of providers of informal care to people with long-term health problems (20% and 12%, respectively). The age groups least likely to

provide such care were those age 15–19 and 75 and older (6% each).

British Columbians were least likely to provide unpaid time for both child care (36%) and senior care (15%) compared with all other provinces (Table 32a), and people in Yukon had the lowest level in Canada for providing unpaid time to senior care (12%). On the other hand, people in Saskatchewan and Alberta were most likely to have provided some unpaid child care (41%), and Saskatchewan residents were also most likely of all provinces to have provided unpaid senior care (21%). A majority (57%) of Northwest Territories residents provided some unpaid child care, and over one-fifth (21%) provided some unpaid senior care; 42% of Yukon residents also provided some unpaid child care. It is possible that some of these differences may be due to the demographic composition of these provinces and territories.

There were provincial differences in the provision of informal care to people with long-term health problems. One-quarter (25%) of Prince Edward Island residents provided informal care, the largest proportion of any province (Table 32b). People in Nova Scotia (22%) and Newfoundland (19%) were also much more likely to provide such care, compared with the Canadian average. All the other provinces had values close to the Canadian average of 12%.

The older a person was, the greater the likelihood of receiving informal care for his or her long-term health problems; the most notable group to receive such care was 13% of people 75 years of age and older (11% of men and 14% of women) (Table 32b).[5,6] People in Newfoundland and Prince Edward Island were the most likely (8% each) to have received informal care, while Saskatchewan residents were the least likely (2%).

There were also some interesting differences in the provision of 60 or more unpaid hours of child care by state of employment and sex, for people who had children under 15 at home (Fig. 32).[8] In all four labour force categories, women were two to four times more likely to provide 60 or more unpaid hours of child care than their male counterparts. Men employed full-time or not in the labour force were the least likely to provide 60 or more unpaid hours of child care (6%), while unemployed women were most likely to provide such care (35%).

On definitions and methods

The 1996 Census asked questions on unpaid work in one of five households (of all members of the household). The relevant questions were: "Last week, how many hours did this person spend doing the following activities: .... Looking after one or more of this person's own children, or the children of others, without pay; ... Providing unpaid care or assistance to one or more seniors." Possible responses ranged from "No care" to "60+ hours."

The 1996 *General Social Survey* focussed on help given or received during temporary difficult times or due to long-term health or physical limitations. In the 1996 survey, "informal care" was defined as the performance of tasks by family and friends, without pay, that helps maintain or enhance people's independence. The survey did not track how much time was spent providing such care. Approximately 13,000 Canadians age 15 and older were interviewed between February and December 1996, with a response rate of 85%.

References

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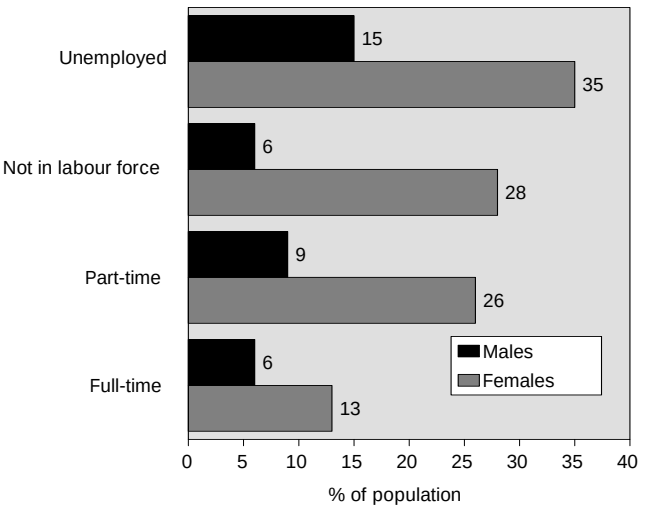
Figure 32. **Providing 60+ unpaid hours of child care in the past week, by employment status and sex, parents age 15+ with children under 15 at home, Canada, 1996**



Source: Statistics Canada, 1996 Census: Unpaid work, *The Nation Series* (Statistics Canada Cat. No. 93F0027XDB96015).

Table 32a. **Providing unpaid child care and senior care, by age and sex and by province/territory, age 15+, Canada, 1996**

	Population estimate	Some child care	60+ hours per week child care	Some senior care	10+ hours per week senior care
	('000)	(%)	(%)	(%)	(%)
Total, age 15+	**22,629**	**38**	**7**	**17**	**2**
Males	11,022	34	3	14	2
Females	11,606	42	10	19	3
Age 15–19, total	1,956	23	1	11	1
Male	1,008	19	0	10	1
Female	948	28	2	12	1
Age 20–24, total	1,893	23	6	10	1
Male	947	16	1	8	1
Female	946	31	11	11	1
Age 25–34, total	4,481	51	15	12	1
Male	2,209	42	5	9	1
Female	2,272	60	24	15	2
Age 35–44, total	4,843	65	11	20	3
Male	2,386	61	5	16	2
Female	2,457	69	16	24	3
Age 45–54, total	3,698	38	3	23	3
Male	1,837	38	2	19	2
Female	1,861	39	4	27	4
Age 55–64, total	2,478	22	1	19	4
Male	1,217	18	1	15	2
Female	1,261	26	1	23	5
Age 65+, total	3,280	23	1	15	3
Male	1,417	11	0	14	3
Female	1,862	14	1	17	4
Newfoundland	437	39	9	16	4
P.E.I.	104	40	7	19	3
Nova Scotia	720	38	8	17	3
New Brunswick	585	38	7	18	3
Quebec	5,673	39	4	16	2
Ontario	8,429	38	7	16	2
Manitoba	856	40	8	20	3
Saskatchewan	748	41	9	21	3
Alberta	2,055	41	8	16	3
British Columbia	2,955	36	7	15	2
Yukon	23	42	12	12	3
N.W.T.	43	57	18	21	6

Sources: Statistics Canada, 1996 Census: Unpaid care, *The Nation Series* (Statistics Canada Cat. No. 93F0027XDB96011); Statistics Canada, Labour and Household Surveys Analysis Division, special tabulations.

Table 32b. **Prevalence of informal care given and received for long-term health problems, by age and sex and by province, age 15+, Canada, 1996**

	Population estimate	Care given	Care received
	('000)	(%)	(%)
Total, age 15+	**23,605**	**12**	**3**
Male	11,618	10	3
Female	11,987	14	4
Age 15–19, total	1,959	6	#
Male	998	7	#
Female	961	6	#
Age 20–24, total	2,054	9	#
Male	1,046	8	#
Female	1,008	10	#
Age 25–34, total	4,818	10	1
Male	2,425	9	#
Female	2,393	11	#
Age 35–44, total	5,015	14	2
Male	2,509	12	#
Female	2,506	17	2
Age 45–54, total	3,818	16	3
Male	1,917	12	#
Female	1,901	20	4
Age 55–64, total	2,523	13	6
Male	1,243	9	6
Female	1,280	17	6
Age 65–74, total	2,102	10	7
Male	970	9	6
Female	1,132	11	7
Age 75+, total	1,316	6	13
Male	509	7	11
Female	807	6	14
Newfoundland	454	19	8
Prince Edward Island	107	25	8
Nova Scotia	750	22	4
New Brunswick	608	14	4
Quebec	5,905	12	3
Ontario	8,907	10	3
Manitoba	885	13	4
Saskatchewan	775	11	2
Alberta	2,137	11	3
British Columbia	3,077	12	3

Data suppressed because of high sampling variability

Sources: Statistics Canada, *General Social Survey, Cycle 11 (1996)*, August 19, 1997, public microdata file release; Statistics Canada, Housing, Family and Social Statistics Division, special tabulations.

33

Care-giver burden

Introduction

With an aging population (Topic 1), an increase in life expectancy (Topic 84), and ever-increasing health care costs (Topic 29), the appeal of home care to policy-makers and patients alike is obvious. The provision of light health care in the home, along with homemaker services (Topic 34), can help seniors and others in failing health maintain their independence outside institutions. This topic describes how unpaid care-givers feel about their role as care-giver.

Impact of providing informal care, 1996

About 2.8 million Canadians age 15 and older provided help to someone with a long-term health or physical limitation in 1996 (Topic 32). As illustrated below, providing care to others can affect the care-giver in different ways.

Of all Canadians who provide care to people with long-term health or physical limitations, 45% indicated that providing such care impacted on their social activities, and 44% incurred extra expenses as a result (Table 33).[1] One-quarter of care-givers stated that their holiday plans were affected, 12% reported that they or their care receiver moved closer to the other, and 21% indicated that their health was affected. Overall, half of all care-givers who worked for pay felt that their care-giving had repercussions on their job (Fig. 33).[1] Also, about one in 10 care-givers felt that they nearly always did not have enough time for themselves (data not shown).[1]

However, almost half of all care-givers nearly always felt that they were simply giving back what they had received, and over three-quarters of care-givers rarely or never felt angry about giving informal care.[1] Despite the burdens that many care-givers endure, fewer than 5% said that they nearly always wished that someone else would take over their responsibilities. In fact, almost two-thirds of all care-givers nearly always felt that providing such care strengthens relationships; most notably, almost three-quarters of males age 15–24 felt this way.

How the individual perceived his or her "burden" may differ from general public perceptions of the burden of care-giving arrangements. When individual care-givers were asked as to the degree of their care burden, 56% of care-givers said there wasn't a burden at all (Fig. 33), and only 4% said there was quite a bit of burden.[1,2] There was little gender variation in the response to this question.

When asked whether certain incentives would allow the care-givers to continue to provide informal care, about 15% of all care-givers stated that financial compensation would help; this finding suggests that there is a group of care-givers whose duties are having an economic impact on their families.[3] About 15% of care-givers felt that flexible work arrangements (for those who were working), occasional relief, or information on long-term illnesses would also prove to be incentives to continue their care-giving.

There are no international or trend data on this aspect of informal care.

Differences among groups

More than twice as many female as male care-givers felt that their care-giving affected their health status (27% vs. 12%) (Table 33).[1] As well, 31% of female care-givers felt that their sleeping patterns were affected, compared with 26% of male care-givers.

The largest age group of care-givers was those age 35–44. This group exhibited above-average impacts in almost all categories: social activities, effects on holiday plans, changes to sleep patterns, extra expenses, and affected health (Table 33). The age group in which care-giving impacted most on social

activities was those age 20–24 (57%), and the least affected group was those age 65–74 (34%). Women age 35–44 were twice as likely as men the same age to have health impacts as a result of their care-giving (36% vs. 18%).

Despite the burdens of family and work responsibilities, having a spouse and children did not prevent men and women from accepting informal care-giving responsibilities, nor did the care-giver's main activity (i.e., employed, unemployed, retired, or providing unpaid work).[2] There was very little difference in the percentage of men and women providing informal care who had a spouse and children, a spouse only, children only, or were living alone.

The impact of providing care was diverse across the country. Compared with the Canadian average of 21%, Manitobans were most likely (29%) to report that their health had been affected as a result of their care-giving; at the other extreme, Nova Scotians were the least likely (14%) to report their health being affected (Table 33).[1] Nova Scotians were more likely to report an impact on their social activities compared with other provinces, but were the least likely to report changes to their sleep patterns as a result of their care-giving. Quebeckers were the most likely to indicate that they had incurred extra expenses as a result of care-giving, and Albertans were more likely than other Canadians to report that they themselves or their care-receiver(s) had moved to be closer to one another.

Almost two-thirds of working women and half of working men age 25–44 reported job repercussions as a result of their care-giving.[1] Although half of working Canadians felt that their care-giving had work repercussions, results differed across provinces. A low of 40% of working Newfoundlanders and Albertans who provided care felt such repercussions; at the other extreme, 58% of workers in Ontario felt there were work repercussions (Fig. 33, where the provinces are ordered from the highest to the lowest level of work repercussions). As well, while 56% of Canadians felt that their care-giving was not at all burdensome, this differed across provinces, from a low of 39% in Manitoba to a high of 79% in Quebec (Fig. 33).

The largest age–sex group that felt that they nearly always did not have enough time for themselves was women age 25–44 (16%).[1] About 15% of care-givers reported that they nearly always felt stressed; the most notable group was women age 25–44 (21%). Interestingly enough, 39% of male care-givers age 45–64 reported that they rarely or never felt that they were giving back what they had received, compared with just 17% of women care-givers the same age. There was very little disparity in the response to this question among the other age and sex groups.

There were very few differences between sex or age groups in answering the question of whether there were certain incentives that would allow the care-giver to continue to provide informal care. However, there were some regional differences with regard to views concerning incentives to care-givers to continue providing informal care. Although 15% of Canadians mentioned financial compensation, one in three Atlantic province care-givers felt that financial compensation would help, compared with one in 10 Quebeckers, one in seven Ontarians, and about one in eight care-givers west of Ontario.[1] In addition, there were some regional differences with regard to a desire for occasional relief: just over one in four care-givers from the Atlantic provinces reported that occasional relief would help, compared with just under one in six care-givers from Quebec, Ontario, and the Prairies. Additionally, although almost half of Canadian care-givers said that no additional incentives were needed, this figure ranged from one-third of Nova Scotian care-givers to two-thirds of British Columbian care-givers.[1]

On definitions and methods

The information for this topic comes from the public microdata file of the 1996 *General Social Survey* on social support (Cycle 11). The *General Social Survey* focussed on help given or received during temporary difficult times or due to long-term health or physical limitations.[3] In the 1996 survey, "informal care" was defined as the performance of tasks by family and friends, without pay, that helps maintain or enhance people's independence. The survey did not track how much time was spent providing such care. Approximately 13,000 Canadians age 15 and older were interviewed between February and December 1996, with a response rate of 85%.

"Long-term health problems" refers to any condition that lasted, or was expected to last, more than six months.[3] "Help" was defined as help given, because of long-term health problems, with one or more of the following activities: child care, meal preparation, house cleaning, household maintenance, grocery shopping, transportation, banking or bill paying, or personal care.

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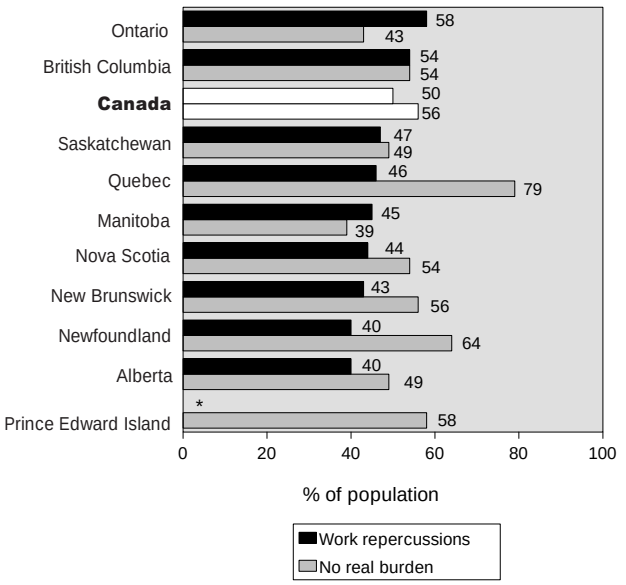
Figure 33. **Burden of giving informal care, by province, employed care-givers age 15+, Canada, 1996**



* Data suppressed because of high sampling variability.

Source: Statistics Canada, *General Social Survey, Cycle 11 (1996)*, August 19, 1997, public microdata file.

Table 33. **Impact of giving informal care, by age and sex and by province, care-givers age 15+, Canada, 1996**

	Population estimate	Social activities	Holiday	Move in with person	Move closer to person	Change sleep	Extra expenses	Health affected
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 15+	**2,763**	**45**	**25**	**6**	**12**	**29**	**44**	**21**
Male	1,137	44	25	5	9	26	46	12
Female	1,626	47	26	7	15	31	42	27
Age 15–19, total	126	39	#	#	#	#	#	#
Male	66	#	#	#	#	#	#	#
Female	59	#	#	#	#	#	#	#
Age 20–24, total	188	57	#	#	#	30	32	#
Male	87	63	#	#	#	#	#	#
Female	101	51	#	#	#	#	#	#
Age 25–34, total	487	42	26	#	17	30	40	18
Male	218	38	20	#	#	#	#	#
Female	269	46	31	#	18	37	38	23
Age 35–44, total	715	53	31	7	11	38	54	29
Male	293	53	32	#	#	34	55	18
Female	422	52	29	#	12	40	54	36
Age 45–54, total	619	47	29	7	11	26	50	24
Male	236	45	27	#	#	23	50	#
Female	383	47	29	#	13	29	50	32
Age 55–64, total	331	41	21	#	#	21	39	20
Male	110	34	#	#	#	#	53	#
Female	222	45	23	#	#	25	33	25
Age 65–74, total	214	34	21	#	#	27	42	18
Male	91	#	#	#	#	#	44	#
Female	123	38	#	#	#	28	41	#
Age 75+, total	83	#	#	#	#	#	#	#
Male	37	#	#	#	#	#	#	#
Female	46	#	#	#	#	#	#	#
Newfoundland	88	45	29	#	#	27	43	22
Prince Edward Island	27	31	#	#	#	40	#	#
Nova Scotia	165	53	26	#	19	21	46	14
New Brunswick	84	48	24	#	#	29	36	19
Quebec	722	38	28	9	7	31	51	21
Ontario	894	51	27	#	14	28	41	19
Manitoba	111	47	31	#	15	29	46	29
Saskatchewan	100	35	27	#	#	31	38	19
Alberta	233	41	18	#	24	30	36	22
British Columbia	356	48	20	#	11	28	42	23

Data suppressed because of high sampling variability

Source: Statistics Canada, *General Social Survey (Cycle 11), 1996*, public microdata file, special tabulations.

34

Use of home care services

Introduction

As the population ages (Topic 1) and health care services are reorganized, there will be an increased need for arrangements that will allow individuals in failing health to postpone institutionalization. Informal care is one such arrangement (Topic 32), but it raises the prospect of care-giver burden (Topic 33). In this context, home care services become increasingly important as a potentially effective means to maintain health and contain costs (Topic 29).

This topic describes the use of home care services by the population age 18 and older in the 12 months prior to the 1996–97 *National Population Health Survey*.

Use of home care services, 1996–97

Of the more than 22 million people in Canada age 18 and older, 2%, or about 450,000 Canadians, made use of paid home care services during 1996–97 (Table 34).[1] This is essentially unchanged from the 2.4% of Canadians using these services in 1994–95.[2]

The most common type of service used was nursing (46%), followed by housework (42%) (Table 34).[1] Personal care, meal preparation, respite care, and shopping were less frequently received as home care services. A comparison with 1994–95 reveals that, while the number of people using home care services declined, the *type* of home care services most frequently demanded changed in popularity. For example, while the use of housework services dropped by 16% over this time period, the use of personal care and meal preparation services doubled (Fig. 34).[1,3]

Differences among groups

Not surprisingly, the use of home care services was very low among persons less than age 65 (Table 34), but home care was significant for seniors, as 17% of Canadians age 75 and older used some form of service. Use was higher among women than among men of this age (20% vs. 13%).[1] An analysis of the 1994–95 data revealed that while two-thirds of home care recipients were women, the adjusted odds of receiving home care were no higher for women than for men.[2] This reflects the association between being female and factors that are more strongly associated with receiving home care, such as reaching old age, having chronic conditions, and needing help with activities of daily living.[2]

Services that appear to have become increasingly used as the population aged were personal care, housework, and meal preparation, whereas nursing care was relatively important among younger age groups (Table 34).

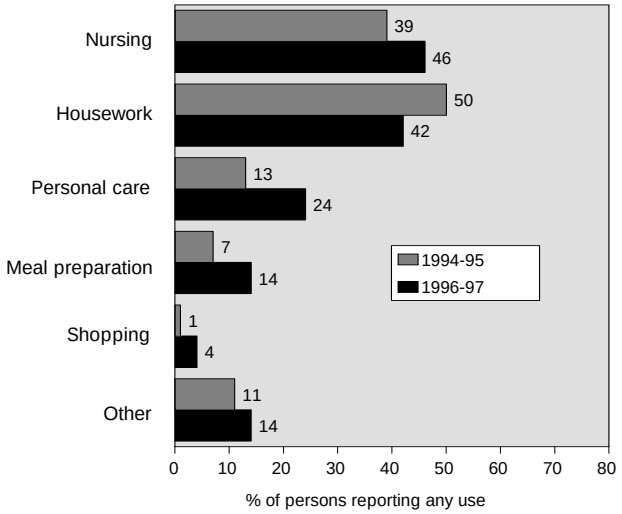
Overall use of care was similar for all education groups, but the type of care varied: with minor exceptions, the use of nursing care decreased with each successive level of education, while the need for help with both personal care and meal preparation increased (Table 34).

There was decreasing use of home care services with each increase in income adequacy (data not shown).[1] Meal preparation services were most popular among the lowest income group (26% for the lowest income group compared with 10% for the highest income group); with all other services, differences among income groups were less clear. In 1994–95, the odds of receiving home care were 1.6 times as high among people in the two lower income groups as among those in the three higher income groups, after controlling for a number of factors.[2]

There was little variation among the provinces in the use of home care services, where data were not suppressed because of high sampling variability. Manitobans made use of a variety of such services, while British Columbians were above-average users of housework services, and Ontarians were above average in their use of nursing services (Table 34).

Analysis of the 1994–95 data revealed that, even after controlling for factors that might help explain the need for home care, people with cancer or the effects of a stroke had about twice the odds of receiving home care as did those without these conditions. It may be that these conditions confer specific needs, perhaps for rehabilitative therapy or palliative care, not accounted for by the other health-related characteristics that were considered.[2]

Figure 34. **Use of home care services, age 18+, Canada, 1994–95 and 1996–97**



Sources: Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the sample of 68,000 respondents age 18 and older.[4]

Home care was defined in the interview as health care or homemaker services received at home, with all or part of the cost being borne by the government. Examples were provided, but the question on type of care received was open-ended, and the types described by respondents were only generally like those in the examples.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Wilkins K, Park E. Home care in Canada. *Health Reports* 1998; 10(1): 29–37 (Statistics Canada Cat. No. 82-003-XPB).
3. Statistics Canada. *National Population Health Survey, 1994–95*. Special tabulations.
4. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Table 34. **Use of home care services in the previous 12 months, by age and sex, by education (age-standardized), and by province, age 18+, Canada, 1996–97**

	Population estimate	Any use	Type of service used[a]						
			Nursing	Personal care	Housework	Meal preparation	Shopping	Respite care	Other
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 18+	**22,156**	**2**	**46**	**24**	**42**	**14**	**4**	**5**	**14**
Male	10,834	2	55	21	32	16	4	6	16
Female	11,322	3	42	26	47	14	4	5	12
Age 18–19, total	825	#	#	#	#	0	0	#	#
Male	403	#	#	0	#	0	0	0	#
Female	423	#	#	#	#	0	0	#	#
Age 20–24, total	1,873	1	74	#	#	#	#	#	#
Male	948	#	#	#	0	0	0	0	#
Female	924	1	#	#	#	#	#	#	#
Age 25–34, total	4,471	1	64	#	#	#	#	#	#
Male	2,208	0	#	#	#	#	#	#	#
Female	2,263	1	66	#	#	#	#	#	#
Age 35–44, total	5,236	1	60	#	22	#	#	#	#
Male	2,644	1	47	#	#	#	#	#	#
Female	2,592	2	67	#	22	#	#	#	#
Age 45–54, total	3,770	1	58	#	29	#	#	#	#
Male	1,922	1	79	#	#	#	0	#	#
Female	1,849	1	41	#	#	#	#	#	#
Age 55–64, total	2,565	2	40	18	41	9	#	#	11
Male	1,231	1	62	#	#	#	#	#	#
Female	1,334	2	28	23	49	#	#	#	#
Age 65–74, total	2,096	5	45	26	49	14	#	#	11
Male	930	4	56	28	36	#	#	#	#
Female	1,166	6	40	26	56	12	#	#	9
Age 75+, total	1,320	17	37	34	54	18	6	#	13
Male	549	13	49	29	43	19	#	#	16
Female	771	20	32	37	59	18	5	#	11
Less than high school	5,195	3	46	23	44	14	4	7	10
High school	9,210	2	48	20	43	11	4	6	11
College	4,134	2	38	25	37	17	3	2	26
University	3,461	2	40	34	47	20	6	9	15
Newfoundland	416	#	#	#	#	#	0	#	0
Prince Edward Island	101	#	#	#	#	#	#	#	#
Nova Scotia	701	3	#	#	#	#	#	#	0
New Brunswick	562	2	#	#	#	#	#	#	#
Quebec	5,538	2	#	#	#	#	#	#	#
Ontario	8,423	3	53	25	39	14	5	3	16
Manitoba	809	3	39	47	49	27	#	#	#
Saskatchewan	709	3	#	#	#	#	0	0	#
Alberta	1,993	2	44	21	30	11	#	#	22
British Columbia	2,905	3	#	#	63	#	#	#	#

Data suppressed because of high sampling variability

[a] As a proportion of those reporting any use.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

35

Use of alternative health care

Introduction

Over the past few years, the use of alternative health care has apparently become much more accepted by the public and, perhaps consequently, more controversial with medical authorities.

The *National Population Health Survey* of 1994–95 was the first major survey to explore the extent to which Canadians use alternative health care and which forms of alternative care are the most common. The 1996–97 survey asked the same questions. This topic also discusses the use of self-help groups.

Prevalence of alternative health care, 1996–97

In 1996–97, 7% of Canadians age 12 and older or approximately 1.7 million people reported using some type of alternative health care in the previous 12 months.[1] This compares with 5% of Canadians in 1994–95.[2] The most common type of alternative care was massage therapy (3%).[1] One percent of Canadians had visited a naturopath or homeopath, and another 1% had gone to an acupuncturist (Table 35).[1] In contrast, of all types of alternative care used, herbalists, reflexologists, relaxation therapists, and spiritual healers were rarely visited (Fig. 35).[1]

Some time during the 12 months previous to the survey, 2% of Canadians age 12 and older attended a meeting of a self-help group such as Alcoholics Anonymous or a cancer support group.[1]

There are no international data with which to compare the current Canadian situation.

Differences among groups

Women were one and a half times more likely than men to have used alternative care in the 12 months prior to the *National Population Health Survey* (8% vs. 5%) (Table 35). There appears to be little difference in the type of care sought, although women were more likely than men to have seen a massage therapist (4% vs. 2%).

Owing to the small proportions of people who have used alternative care, it is difficult to establish reliable relationships between age and the use of such care; however, it does appear that Canadians age 35–44 were the most likely to have sought alternative care (9%), followed by those age 25–34 (8%). About 11% of women age 25–44 used alternative care, representing the largest single group of alternative care users (Table 35).

The use of alternative care increased with education. Only 3% of Canadians with less than a high school education made use of alternative care, compared with 9% of university graduates (Table 35). It also appears as if acupuncturist services were popular among college graduates, at 3%, compared with only 1% of the general population. In contrast, there was no systematic relationship between income and use of home care (data not shown).

There were large interprovincial variations in alternative health care use, from a low of 3% in New Brunswick and Nova Scotia to a high of 11% in British Columbia (Table 35). Saskatchewan residents were the most frequent users of massage therapy, at 7%, compared with the Canadian average of 3%. Residents in Alberta and British Columbia were also more likely than the average Canadian to use massage therapists.

There were no real differences between the genders or among education groups making use of self-help groups; 2% of university graduates and of Canadians with less than a high school education attended such groups, compared with 3% of high school-educated and of college-educated Canadians.[1] However, 5% of single parents attended such self-help groups, compared with 4% of individuals in a couple

with no children, 3% of unattached individuals, and just 2% of individuals in a couple with children (data not shown).

On definitions and methods

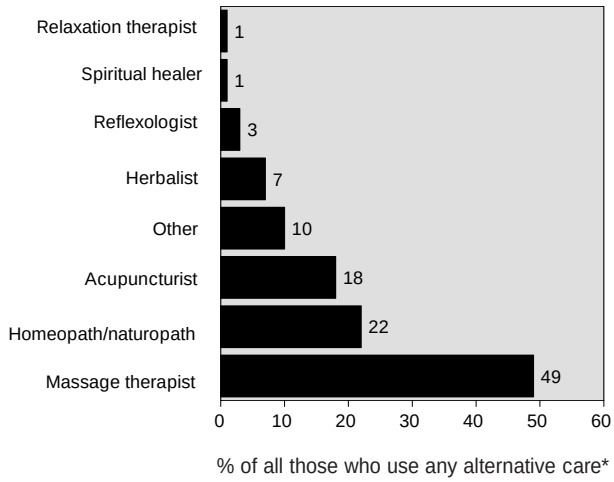
These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[3]

The questions on alternative care were close-ended, and multiple responses were possible.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Statistics Canada. *National Population Health Survey, 1994–95*. Special tabulations.
3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 35. **Use of alternative health care, by type, age 12+, Canada, 1996–97**



* Total exceeds 100% because of multiple responses.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 35. **Use of alternative health care, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Any use	Massage therapist	Homeo-path/ naturo-path	Acu-punc-turist
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**24,595**	**7**	**3**	**1**	**1**
Male	12,099	5	2	1	1
Female	12,495	8	4	2	1
Age 12–14, total	1,151	2	#	#	#
Male	580	#	#	#	0
Female	571	#	#	#	#
Age 15–19, total	1,284	3	2	1	#
Male	683	#	#	#	#
Female	601	6	3	#	#
Age 20–24, total	1,873	5	3	1	#
Male	948	4	3	#	#
Female	924	6	4	#	#
Age 25–34, total	4,472	8	5	2	1
Male	2,209	6	3	1	1
Female	2,263	11	6	2	1
Age 35–44, total	5,238	9	4	2	1
Male	2,645	7	3	1	1
Female	2,593	11	6	2	1
Age 45–54, total	3,771	7	4	2	1
Male	1,922	5	2	1	1
Female	1,849	10	5	2	1
Age 55–64, total	2,565	7	3	1	1
Male	1,231	3	1	#	1
Female	1,334	10	4	1	2
Age 65–74, total	2,096	4	1	0	2
Male	930	2	1	#	#
Female	1,166	5	1	1	2
Age 75+, total	1,320	4	1	#	1
Male	549	4	#	#	#
Female	771	5	1	#	#
Less than high school	7,526	3	1	1	1
High school	9,307	6	3	1	1
College	4,134	8	4	1	3
University	3,461	9	4	2	1
Newfoundland	478	#	#	#	#
P.E.I.	113	#	#	#	#
Nova Scotia	775	3	#	#	#
New Brunswick	632	3	#	#	#
Quebec	6,131	7	2	2	1
Ontario	9,323	5	2	1	1
Manitoba	902	6	3	0	1
Saskatchewan	801	8	7	#	#
Alberta	2,244	8	5	1	1
British Columbia	3,196	11	6	#	#

\# Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey*, *1996–97*, special tabulations.

Health knowledge

Health education has long been the staple strategy of health promotion, on the grounds that healthy lifestyle choices will be made by rational adults who are well aware of the health consequences of their actions. There are many problems with this view, not the least of which is that short-term considerations such as pleasure may interfere with long-term gains in longevity. More subtly, as pointed out in Health Canada's A Framework for Health Promotion, *the process of "choosing" a behaviour (such as not smoking) may be complicated by* biological forces *such as addiction (Topic 41),* social forces *such as modelling by other smokers in the household (Topic 13), and* legal forces *such as restrictions (or lack of restrictions) on smoking in public places (Topic 12). Similar*

complications arise with respect to other behaviours, such as pursuing a healthy diet (Topic 47) in the face of unhealthy food choices, breast-feeding (Topic 48) despite public disapproval, or exercising (Topic 46) in the absence of accessible or affordable facilities.

Despite these complications, health knowledge still seems like a desirable attribute in the population. While hardly sufficient to *guarantee* healthy behaviour, health knowledge is probably a key precursor of healthy personal choices; it also helps to increase support for legislative and regulatory measures such as seatbelt legislation and impaired driving crackdowns.

Overview

The Canadian population appears to be well aware, when prompted, of the health hazards of smoking, for both the smoker (Topic 36) and the non-smoker (Topic 37). However, there has been nearly a two-fold increase since 1994 in skepticism about harm from environmental tobacco smoke. For both these topics, knowledge is directly related to amount of education. While not surprising, it is important to note that, in the aggregate at least, smoking behaviour is also more common among less educated groups (Topic 40).

Knowledge of nutrition — in particular, nutrition terminology — is generally low and has declined somewhat in recent years (Topic 38). While nutrition is a complex topic and widespread and detailed understanding may not be realistic, knowledge may also have suffered in recent years from well-publicized scientific controversies about the harm of various nutrients such as dietary fats.

On data sources and gaps

This is the briefest section of this *Statistical Report*, a clear indication of the fact that health knowledge is seldom assessed despite its alleged importance. Indeed, two related topics that appeared in the previous edition of the *Report* are omitted here for lack of new data: knowledge of how to prevent sexually transmitted diseases and knowledge of the risk factors for heart disease. Population data on health knowledge thus constitute one of the weakest areas in the Population Health Framework.

If health education is to continue as one of the key strategies in promoting population health, it is fundamental that knowledge be assessed more routinely.

36

Knowledge of the health impact of smoking

Introduction

As a cause of death, smoking is important (Topic 79) and preventable (Topic 12). While nicotine dependence (Topic 41) means that quitting can be very difficult, knowing about the harmful consequences of smoking is probably an essential component of successful prevention and cessation programs, even if it is not sufficient.

There have been only a few national surveys to ask Canadians about their knowledge of the health impact of smoking. The results of the latest such survey are discussed in this topic, with a focus on the direct effects — that is, the health effects on the smokers.

Awareness of the health impact of smoking, 1996–97

In 1996–97, only 4% of Canadians age 12 and older felt that there were no smoking-related health risks for smokers (Table 36).[1] More than 22 million people felt there were at least some risks. This is little different from 1994, when 2% of Canadians age 15 and older felt that smoking did not cause health problems for smokers.[2]

Canadians were highly likely to recognize various specific health problems as associated with smoking when asked (Table 36).[1] Almost everyone agreed that lung cancer (97%), respiratory ailments (i.e., emphysema/bronchitis/asthma) (95%), heart disease (94%), and stroke (85%) are associated with smoking.[1] This is an apparent increase over 1994, when only 83% of prompted Canadians believed in a link between lung cancer and smoking, and fewer than two-thirds believed in a link between respiratory ailments and smoking.[2] Awareness of the association between smoking and stroke could be considered low, considering that smoking is one of three major risks for stroke (see Topic 74).

There are no international data with which to compare the current Canadian situation.

Differences among groups

There is little gender variation in prompted awareness of the health impact of smoking, and there is only modest variation associated with age. With increasing years, there is an increase in the proportion who see no direct risks from smoking (Table 36).

Not surprisingly, there is a relationship between education and prompted recognition of specific health hazards of smoking. About 6% of Canadians with less than a high school education did not believe that smoking could cause health problems in a smoker, compared with 2% of university-educated Canadians (Table 36).[1] However, less educated individuals were somewhat more likely to recognize a link with lung cancer, respiratory ailments, heart disease, and stroke compared with people with more than a high school education.

Quebeckers were the most likely (6%) to state that smoking cigarettes does not cause direct health problems, while people in Manitoba and British Columbia were least likely (2%) to say so (Table 36).[1] People in Quebec and Nova Scotia were below average in awareness of the link between lung cancer and smoking, while people from Saskatchewan and Quebec were least likely to recognize the role of smoking in heart disease or stroke. Nova Scotians were least likely (93%) to see a link between respiratory problems and smoking. These findings are consistent with the high levels of nicotine dependence among smokers in Nova Scotia and Quebec (Topic 41) and pose a challenge to health educators.

Canadians tended to identify health impacts common to both smokers and non-smokers in about the same order, but the problems for smokers were more likely to be recognized than those for non-smokers (Fig. 36[1]; see also Topic 37).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[3]

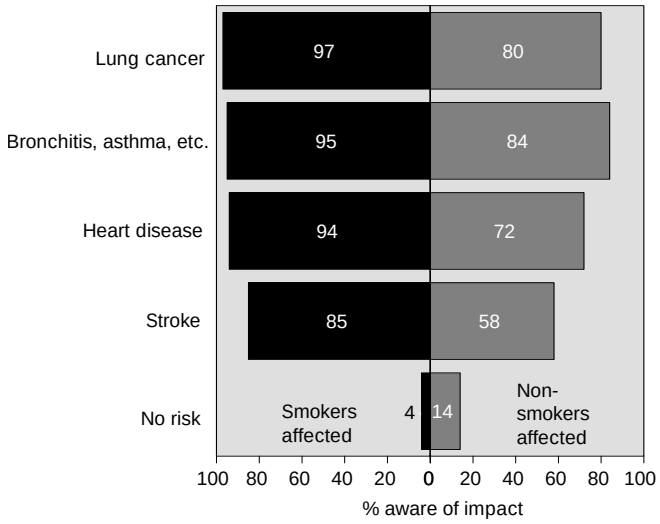
The questions on specific effects of smoking on smokers were prompted for an answer of "Agree" or "Disagree"; a response of "No opinion" was also recorded. About 2% of the overall population had no opinion on the lung cancer question, 3% for respiratory ailments, 4% for heart disease, and 10% for the question on the link between stroke and smoking.[1] In general, the elderly were more likely to have no opinion on the questions at hand.

The *Survey of Smoking in Canada* (1994) was conducted by Statistics Canada in 1994 for Health Canada and contained both unprompted and prompted questions. The unprompted questions were not updated in 1996–97.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Health Canada. *Survey of Smoking in Canada, Cycle 3*, 1994. Special tabulations.
3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 36. **Prompted awareness of the health impact of smoking, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 36. **Awareness of the health impact of smoking on smokers (prompted), by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	No risk to smoker	Lung cancer	Heart disease	Stroke	Respiratory ailments
	('000)	(%)	(%)[a]	(%)[a]	(%)[a]	(%)[a]
Total, age 12+	**22,893**	**4**	**97**	**94**	**85**	**95**
Male	11,173	4	97	94	86	94
Female	11,720	4	96	93	85	96
Age 12–14, total	1,024	#	99	95	85	93
Male	502	#	99	95	85	91
Female	522	#	99	95	86	96
Age 15–17, total	1,214	#	99	94	83	95
Male	634	#	99	93	82	93
Female	579	#	100	94	85	96
Age 18–19, total	789	#	98	95	86	95
Male	380	#	99	97	90	95
Female	408	#	97	93	82	96
Age 20–24, total	1,782	2	98	96	84	95
Male	886	3	99	97	85	94
Female	896	2	97	94	84	96
Age 25–34, total	4,239	3	98	95	87	96
Male	2,086	3	99	96	88	96
Female	2,171	2	98	94	86	97
Age 35–44, total	5,002	4	97	94	87	95
Male	2,533	4	96	94	87	95
Female	2,470	4	97	94	86	96
Age 45–54, total	3,547	3	96	94	87	95
Male	1,792	3	96	94	87	94
Female	1,755	4	96	94	87	96
Age 55–64, total	2,345	4	96	93	86	95
Male	1,101	5	96	93	87	94
Female	1,244	4	95	92	84	95
Age 65–74, total	1,865	6	94	90	82	93
Male	832	5	96	92	83	92
Female	1,033	8	93	88	81	93
Age 75+, total	1,086	7	93	88	77	92
Male	444	9	97	91	79	93
Female	641	6	90	87	76	91
Less than high school	6,818	6	95	92	84	93
High school	8,850	3	97	93	84	95
College	3,867	2	88	85	76	86
University	3,262	2	89	86	79	87
Newfoundland	451	4	98	95	89	95
Prince Edward Island	109	#	98	94	83	97
Nova Scotia	741	#	96	92	85	93
New Brunswick	615	4	97	95	90	97
Quebec	5,689	6	95	92	79	94
Ontario	8,476	3	97	95	90	96
Manitoba	794	2	98	94	87	96
Saskatchewan	755	3	97	90	81	95
Alberta	2,136	#	98	93	85	94
British Columbia	3,127	2	98	93	84	94

Data suppressed because of high sampling variability

[a] Of those who are aware of some risks.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

37

Knowledge of the health impact of ETS

Introduction

Although smoking has long been acknowledged as the most important preventable cause of death in industrialized countries (see Topic 79), it was not until much more recently that environmental tobacco smoke (ETS) was also documented as hazardous.[1] Canadians' growing concern about the health effects of ETS exposure has led to bylaws restricting public smoking (Topic 12) and voluntary restrictions on smoking at home (Topic 13), although such limitations are far from universal.

The 1996–97 *National Population Health Survey* asked Canadians about their awareness of the health risks of ETS, which are presented in this topic, as well as their knowledge of the direct health impact of smoking (Topic 36).

Knowledge of ETS health effects, 1996–97

In 1996–97, a strong majority of Canadians (86%) were generally aware that ETS could have hazardous health effects (Table 37).[2] However, 14%, or over 3 million Canadians 12 years of age and older, still believed that there were no health risks for non-smokers or had no opinion on the matter. This is a surprising *increase* from 1994, when 8% of Canadians age 15 and older felt that ETS did not cause health problems for non-smokers.[3]

Of those 19 million Canadians who are aware of some risks, the vast majority were able to correctly recognize specific outcomes, such as lung cancer (80%), heart disease (72%), stroke (58%), and respiratory ailments (i.e., emphysema/bronchitis/asthma) (84%) (Table 37).

Canadians were less likely to recognize the specific health effects of ETS than they were to recognize problems for the smoker (see Fig. 36 in the previous topic). In general, health problems were more likely to be ascribed to smokers than to non-smokers. This was particularly pronounced for stroke (85% for smokers vs. 58% for non-smokers), even though it is a risk for both groups.

There are no international data with which to compare the Canadian situation.

Differences among groups

Overall, there are no gender differences in the awareness of the risks of ETS. However, in the age group 15–17, males were twice as likely as females to state that ETS posed no health risks, and males in the age group 55–64 were also much more likely than females in the same age group to say that there were no risks (Table 37). Women 65 years of age and older were also more likely than their male counterparts to say that there were no health risks.

Younger people were much more aware of ETS health risks than older people. Only 7% of people in the 12–14 year old age group said there were no risks, compared with 20% of people in the 65–74 year old age group (Table 37).

As expected, there is an increase in awareness of the health impact of ETS as education increases. However, among all those who agreed that ETS posed a health risk, people with less than a high school education were the most likely to say, when prompted, that it was a risk for certain specified problems (Table 37).

People with higher incomes are somewhat more likely to believe that ETS is a health risk. Only 73% of those in the lowest income group believed that ETS was a risk, compared with 81% of those in the highest income group (data not shown).[2]

Quebeckers were twice as likely to believe that ETS is not a health risk (21%) as residents of

Newfoundland, Alberta, and British Columbia (Fig. 37).[2] Quebeckers also fell below the average in awareness of health risks for specific diseases (Table 37). These interprovincial rankings in awareness are quite different from those for the direct effects of smoking, except that Quebeckers exhibited the most skepticism on both dimensions (Fig. 37).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[4]

The questions on the specific diseases associated with ETS were prompted for an answer of either "Agree" or "Disagree"; however, a response of "No opinion" was also recorded. The percentages of the overall population who had no opinion on the link between ETS and specific diseases were: 13% for lung cancer, 18% for heart disease, 10% for respiratory ailments such as bronchitis, and 25% for stroke.

References

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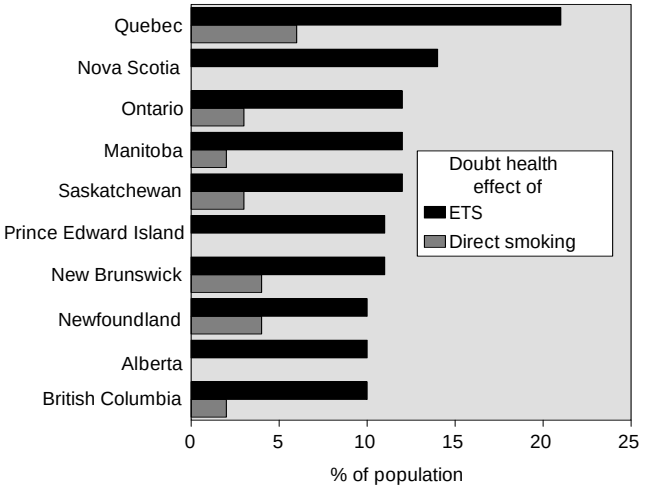
4. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 37. **Skepticism about the health risks of smoking, by province, age 12+, Canada, 1996–97**



Note: Data suppressed for Nova Scotia, Prince Edward Island, and Alberta because of high sampling variability.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 37. **Awareness of the health impact of ETS on non-smokers (prompted), by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	No risk	Lung cancer	Heart disease	Stroke	Respiratory ailments
	('000)	(%)	(%)[a]	(%)[a]	(%)[a]	(%)[a]
Total, age 12+	**22,134**	**14**	**80**	**72**	**58**	**84**
Male	10,814	15	81	75	61	83
Female	11,320	13	79	69	56	85
Age 12–14, total	1,006	7	83	74	58	84
Male	488	7	86	77	55	81
Female	517	7	80	71	61	87
Age 15–17, total	1,206	9	84	72	56	84
Male	629	12	85	73	54	83
Female	577	6	83	71	57	85
Age 18–19, total	779	9	82	73	60	85
Male	373	7	86	75	62	85
Female	406	10	79	72	57	85
Age 20–24, total	1,759	11	85	74	56	85
Male	880	13	86	76	60	84
Female	879	8	84	72	52	86
Age 25–34, total	4,105	11	83	74	59	85
Male	2,020	11	83	76	61	83
Female	2,085	11	82	72	58	87
Age 35–44, total	4,833	14	78	70	58	84
Male	2,447	17	79	73	61	84
Female	2,385	12	77	67	54	85
Age 45–54, total	3,428	15	79	72	59	84
Male	1,727	15	79	74	62	83
Female	1,701	15	79	70	57	85
Age 55–64, total	2,248	16	77	72	59	83
Male	1,059	20	79	76	64	83
Female	1,189	12	75	68	54	83
Age 65–74, total	1,745	20	75	70	58	78
Male	772	18	77	76	62	78
Female	973	21	73	65	55	79
Age 75+, total	1,026	19	75	68	58	79
Male	419	18	78	70	61	77
Female	608	20	73	66	56	80
Less than high school	6,617	20	78	71	60	81
High school	8,564	14	77	69	56	83
College	3,713	12	72	65	52	76
University	3,153	8	74	66	53	78
Newfoundland	446	10	84	77	64	86
Prince Edward Island	105	11	78	69	52	85
Nova Scotia	723	14	84	73	58	84
New Brunswick	610	11	80	73	62	88
Quebec	5,544	21	72	65	47	77
Ontario	8,070	12	84	77	68	86
Manitoba	748	12	84	73	59	87
Saskatchewan	743	12	79	68	53	87
Alberta	2,078	10	82	71	53	84
British Columbia	3,067	10	79	70	56	85

[a] Of those who are aware of some risks.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

38

Knowledge of healthy eating practices

Introduction

The promotion of healthy eating (see Topic 47) has been an objective of the federal health department and many of its provincial/territorial counterparts for many years. Over the past two decades, nutrition has been increasingly implicated in the major causes of death (Topics 82 and 83) and illness (Topics 68 and 77), especially cardiovascular disease and its risk factors (Topics 67 and 74) and many of the cancers (Topic 73).

Healthy eating is arguably the most complex subject to be tackled by health educators, and conflicting scientific claims about the merits and demerits of various food substances do not make the challenge easier. Assessing nutrition knowledge is also complex and challenging. This topic describes the results of studies based on self-assessed knowledge.

Knowledge of nutrition, 1997

Claimed comprehension of a series of nutrition terms by Canadian adults ranged widely in 1997, from 54% who felt they understood the meaning of blood cholesterol to only 11% who claimed to know the meaning of Omega-3 fatty acids (Fig. 38a).[1] Surprisingly, perhaps, there were different levels of comprehension among similar terms. For example, more adults claimed to know the meaning of polyunsaturated fats (36%) than of monounsaturated fats (23%), and rather more claimed to understand blood cholesterol (54%) than dietary cholesterol (39%).

For most nutrition terms, there seemed to be greater confusion in 1997 than in 1994, and understanding of many concepts was no higher than in 1989 (Fig. 38a).

Claimed comprehension may be lower than actual understanding; when asked to explain the term saturated fats, only 69% of those who claimed to understand the term were able to give a reasonably accurate definition.[1]

As for the relationship between diet and disease, knowledge is also somewhat tenuous: a bare majority agreed completely that reducing dietary fat can lower blood cholesterol or that a high-fibre diet may help prevent colon cancer, while less than a third agreed that some types of dietary fibre can help reduce blood cholesterol. Two-thirds continued to believe, wrongly, that dietary cholesterol is the major factor affecting blood cholesterol (Fig. 38b).[1]

In general, level of knowledge, even claimed knowledge, was not very high. This is perhaps surprising, considering that almost two-thirds of Canadian adults claim to regard nutrition as "very or extremely" important as a consideration in choosing their food (Table 38).[1]

Differences among groups

Detailed data have not been published on nutrition knowledge for age–sex groups, but those age 35–54 apparently claimed more knowledge than others (data not shown).[1] A correct understanding of saturated fats was more often demonstrated by those with a university education (76%) and by persons who claimed to have very good or excellent eating habits (73–83%).[1]

Women are much more likely than men to regard nutrition as important, while persons age 18–34 rate the importance lower than other age groups (Table 38).[1] Women's importance ratings increased from 1989, while men's remained at the same level. There was also some increase in perceived importance by Canadians age 55 and older.

Only residents of the Prairies seemed to be substantially below the national average in their ratings of importance in 1997, while Ontario was the

only region whose residents regarded nutrition as more important in 1997 than in 1989 (Table 38).

On definitions and methods

These data are from the April 1997 *Canadian Facts Monitor*, carried out for the National Institute of Nutrition by conducting approximately 2,000 face-to-face interviews in homes.

Knowledge was rated as follows: the interviewee was provided a card listing the dietary terms and asked to select one of three possible responses: "know the meaning," "heard or read it; not sure of meaning," or "never heard of it; do not know what it means." The data in Figure 38 are for the response "know the meaning." There was no independent assessment of the interviewee's actual comprehension of the terms except as described for saturated fats.

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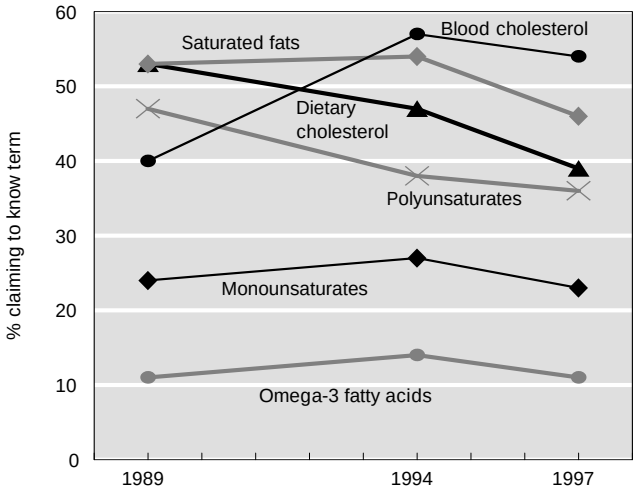
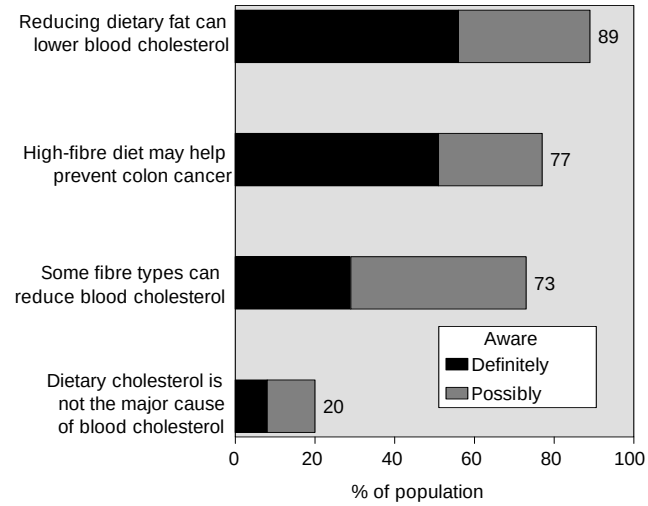
Figure 38a. **Knowledge of nutrition terms, age 18+, Canada, 1989, 1994, and 1997**



Source: National Institute of Nutrition, *Tracking Nutrition Trends: Summary of Findings, 1997*, Ottawa: National Institute of Nutrition, 1997.

Figure 38b. **Knowledge of nutrition and disease, age 18+, Canada, 1997**



Source: National Institute of Nutrition, *Tracking Nutrition Trends: Summary of Findings, 1997*, Ottawa: National Institute of Nutrition, 1997.

Table 38. **Perceived importance of nutrition in choosing foods, by sex, by age, and by province/region, age 18+, Canada, 1989 and 1997**

	Nutrition regarded as very or extremely important	
	1989	1997
	(%)	(%)
Total, age 18+	**59**	**62**
Males	52	51
Females	65	73
Age 18–34	54	55
Age 35–54	65	66
Age 55+	58	65
Atlantic	60	60
Quebec	65	62
Ontario	53	65
Prairies	55	56
British Columbia	63	63

Source: National Institute of Nutrition, *Tracking Nutrition Trends: Summary of Findings, 1997*, Ottawa: National Institute of Nutrition, 1997.

Lifestyle behaviours

The single most enduring impact of A New Perspective on the Health of Canadians *may have been focussing the spotlight on lifestyle behaviours as a critical influence on health. A corollary of this focus was the belief that lifestyle influences were avoidable, in contrast to genetic or biological influences such as aging or gender. Thus, smoking, for example, became routinely referred to as the number one preventable cause of disease and death. Another outcome of* A New Perspective *was the 1978–79* Canada Health Survey, *the first to document comprehensively the health practices of the general Canadian population. Since that time, there have been more surveys of health behaviours than of any other determinant of health. This section reports the latest findings on a wide range of those behaviours.*

Overview

Recent surveys document some positive changes in behaviour, such as more leisure-time activity (Topic 46), breast-feeding (Topic 48), bicycle helmet use (Topic 49), and recycling and composting (Topic 39). Other hoped-for changes have not materialized, however: there has been no change in smoking (Topic 40), contemplating quitting smoking (Topic 41), or the use of cocaine (Topic 45). Still other changes have been negative: increased smoking by teens (Topic 40), more regular heavy drinking (Topic 43), increased cannabis use (Topic 45), and greater consumption of dietary fat (Topic 47). Considering both the magnitude of the risks to health and the number of persons at risk, physical inactivity and diet rank with smoking as major threats to the well-being of the Canadian population.

There are strong and consistent differences in lifestyle behaviours related to social status, and these put less educated or lower-income Canadians at greater risk for poor health. The differences between university graduates and those who have not finished high school are often on the order of twice the level of risk, and sometimes this extends to a three-fold difference (e.g., in the regular use of bicycle helmets) or even a four-fold difference (e.g., in smoking during pregnancy) (Topic 40). Other behaviours with a strong social status gradient are smoking (Topic 40), nicotine dependence (Topic 41), regular heavy drinking (Topic 43), regular physical activity (Topic 46), condom use with a new sexual partner (Topic 50), recycling and composting (Topic 39), sun protection (Topic 51), and intentions to change health behaviours in the future (Topic 52).

While not as consistent as these differences related to social status, there are contrasts among the provinces that are often as pronounced. Behaviours that vary by a factor of 1.5–2 or more include contemplating giving up cigarettes (Topic 41), drinking regularly (Topic 42) or drinking heavily (Topic 43), driving after drinking and routinely arranging for a designated driver (Topic 44), using cannabis and other illegal drugs (Topic 45), and using a bicycle helmet routinely (Topic 49). Interestingly, the use of seatbelts (Topic 49) is quite uniform across provinces and education groups, suggesting that a well-explained and well-enforced law is an effective leveller of the usual social gradient in health behaviour.

On data sources and gaps

As noted above, lifestyle behaviour is one of the more thoroughly surveyed of the health determinants, and reasonably good time series exist for many health practices. Because of the high level of social desirability of so many of these practices, however, and because many of them are complex and some are simply illegal, the validity of reported behaviours is often questioned. As important as additional population data on health practices, therefore, may be a better understanding of the quality of existing data. More detailed analysis, such as examining the profiles of young heavy drinkers, is important, as is further monitoring of increased drinking rates by young Canadians, especially young women.

39

Environmental actions

Introduction

The quality of the physical environment (see Topic 14) is an important part of health, and this is clearly recognized by Canadians. This topic reports on actions taken by Canadians to preserve and protect their physical environment.

Environmental actions, 1997–98

In late 1997 and early 1998, large numbers of adult Canadians reported taking a range of actions to preserve their physical environment or to protect their own health against perceived environmental hazards.[1,2] Over half of all adults (59%) claimed to have avoided certain consumer products for environmental reasons in the previous year, while large numbers (51%) also gathered information about environmental issues (Fig. 39).[1,2] Smaller, but still substantial, proportions belonged to environmental groups or supported them financially (28%) or voted for (or against) political candidates or parties because of their stand on environmental issues (27%). In addition to those who reported these actions, there was an additional significant minority considering each of them in the year leading up to the survey.

Among ongoing activities to preserve the environment, recycling or composting was the most common, being reported by 88% of Canadian adults (Table 39).[1,2] Buying environmentally friendly products (64%) and using energy-saving devices (69%) were also widely reported. While actions that might protect oneself from environmental hazards were less common, there were still very sizable numbers of Canadians who reported using a water purifier at home (42%) and buying organic food (40%). (While the *reasons* for these actions were not ascertained, they are consistent with a high level of concern with food and water as the pollution path of greatest concern to over one-quarter of the population.[2])

Only approximate comparisons with an earlier period are possible, as these questions have not remained stable over time. In 1990, 67% of Canadian adults reported recycling, and 22% claimed to be composting.[3] Since most persons who composted also recycled, this suggests some increases in these behaviours over the previous eight years. In contrast, there may have been less progress in buying "green" products, since 61% reported purchasing goods made with recycled products in 1990 and 64% more recently reported choosing environmentally friendly products.

Differences among groups

Women were somewhat more likely than men to report these environmentally sensitive behaviours, especially buying "green" products and organic food and purifying their home drinking water (Table 39).[1,2] There was little variation in these behaviours by age, with the exception of purchasing environmentally friendly products, which was notably less common among those age 55 and older.

As education increases, so too does the likelihood of most of these environmentally sensitive behaviours (Table 39). Only the consumption of organic food was uniform across education levels. Buying "green" was particularly associated with education: university graduates were 1.4 times as likely to report this behaviour as Canadians who had not finished high school.

Regional differences in these behaviours are modest, but there are some consistent patterns: Quebeckers were least likely to report all the behaviours except the consumption of organic food, while residents of Toronto and Vancouver were above the national average in their use of water filters

(Table 39). Buying "green" and recycling were reported most often in Ontario.

On definitions and methods

The *Environmental Monitor* is a regular telephone survey conducted by Environics Research Group. These results were obtained from approximately 1,500 adults in late 1997 and early 1998. The modest size of the sample suggests that intergroup comparisons should be made with caution. For this same reason, the breakdowns by education in Table 39 were not standardized for age.

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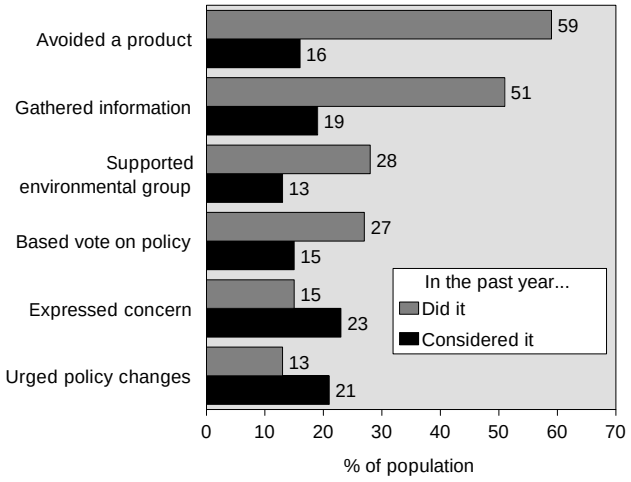
Figure 39. **Environmentally inspired actions in the past year, age 18+, Canada, 1997–98**



Sources: Environics Research Group Ltd., *The Environmental Monitor, 1997, Cycle 4*, Toronto: Environics, 1997; Environics Research Group Ltd., *The Environmental Monitor, 1998, Cycle 1*, Toronto: Environics, 1998.

Table 39. **Actions currently being taken for environmental reasons, by age and sex, by education, and by province/region/city, age 18+, Canada, 1997–98**

	Own "green" products	Recycle or compost	Own energy-saving device	Purify drinking water	Eat organic food
	(%)	(%)	(%)	(%)	(%)
Total, age 18+	**64**	**88**	**69**	**42**	**40**
Male	57	86	68	39	35
Female	70	90	71	45	45
Age 18–34, total	67	89	64	44	39
Male	55	86	61	42	34
Female	78	91	67	47	45
Age 35–54, total	71	90	76	40	40
Male	64	89	74	36	35
Female	78	91	79	44	45
Age 55+, total	50	85	68	42	42
Male	51	82	71	39	40
Female	50	89	66	45	45
Less than high school	54	70	59	33	37
High school	59	91	72	40	42
College	64	90	70	46	39
University	73	95	72	43	43
Atlantic	64	85	73	37	43
Quebec	60	81	54	23	40
Montreal	63	88	56	24	34
Ontario	67	93	76	53	39
Toronto	67	93	64	60	37
Prairies	60	90	72	42	37
British Columbia	65	90	72	49	44
Vancouver	62	88	75	60	34

Sources: Environics Research Group Ltd., *The Environmental Monitor, 1997, Cycle 4*, Toronto: Environics, 1997; Environics Research Group Ltd., *The Environmental Monitor, 1998, Cycle 1*, Toronto: Environics, 1998.

40

Smoking

Introduction

Smoking is widely acknowledged as the most important preventable cause of death in industrialized countries. It is a major cause of illness and death (Topic 79) and thus of direct and indirect costs, which have been estimated at $7.8–11.1 billion annually.[1] In addition to the health impacts of smoking for the smoker and the adult non-smoker, which are at least recognizable to most adults in Canada (Topics 36 and 37), smoking has a disproportionately high impact on the fetus, the newborn, and the infant.[2] These impacts range from low birth weight (Topic 64) to respiratory problems that are exacerbated because infant lungs are large relative to body size. For these reasons, the prevention and reduction of smoking, especially among pregnant women, and the protection of non-smokers are appropriate concerns of government.

Risk to smokers and to others near the smoker, including the fetus, depends on *type of smoker* and *amount smoked*. In both cases, the focus is on cigarettes in this topic, because they are by far the most commonly used form of tobacco.

Prevalence of smoking, 1996–97

In 1996–97, 28% of Canadians age 12 and older smoked (Table 40),[3] on either a daily (24%) or an occasional basis (4%) (data not shown). This level is essentially unchanged from the 29% of Canadians who were current smokers in 1994–95.[4] Former smokers accounted for another 29% of the population in 1996–97, but the largest group (44%) of Canadians remained those who have never smoked at all (Table 40). Nonetheless, there are still nearly 7 million smokers in Canada. The daily smokers among this group smoked an average of 17 cigarettes a day, down from a level of 19 cigarettes per day in 1994–95.[3,4]

From 1970 to 1990, the prevalence of smoking dropped impressively, from 47% to 30% of Canadians age 15 and older. Since 1990, there has been some fluctuation in prevalence, but no clear trend (Fig. 40a).[3,4,5] The national prevalence objective of 27% by 1996 for Canadians age 15 and older was thus missed, and the objective of 24% by 2000[6] is also in jeopardy.

About 36% of new mothers who had ever been smokers acknowledged smoking during their most recent pregnancy, and they smoked an average of nine cigarettes per day during that period (Table 40).[3] This amounts to about 146,000 women who smoked during their last pregnancy.

In 1996, Canada compared quite favourably with many European industrialized countries and Japan,[7] although Finland, the United States, Australia, and the United Kingdom had a lower prevalence of daily smokers.[8]

Differences among groups

The chances of being a current smoker are highest if one is 18–24 years old or has not completed high school (Table 40). The heaviest daily smokers are males, persons age 45–54, and people with less than a university education.

There is also a difference between the numbers of occasional smokers by age and sex (Fig. 40b).[3] Young women age 15–19 and young men age 18–19 were the most likely groups to be occasional smokers (8%). Men and women under the age of 35 were more likely to be occasional smokers than men and women age 35 and older (4–8% vs. 2–3%).

Overall, males continue to have a greater likelihood of smoking and to smoke more cigarettes daily (Table 40), a pattern that has been true for at least a quarter century, although the gender gap in prevalence is narrowing (Fig. 40a).

There are some important ways in which teen smoking is distinctive from that of the general population. Most significantly, the teen rate of current smokers *increased* substantially between 1990 (21%)[5] and 1994–95 (29%),[4] unlike that of other groups in the population, and this level remained at 29% in 1996–97[3] (Fig. 40c). Youth age 12–17 are also the only age group in which females are more likely than males to smoke (Table 40). The relative attraction of smoking for young females is most pronounced at age 15–17 but occurs as young as age 12–14: 10% of girls that age were current smokers, compared with 6% of boys.

The prevalence of smoking is inversely related to education, with impressive strength (Table 40). People with less than a high school education are almost *three times more likely* than university graduates to be current smokers. University-educated daily smokers also smoke about three fewer cigarettes per day than daily smokers with less education.

There are substantial interprovincial variations in current smoking, from a low of 24% in British Columbia to a high of 32% in Quebec and Prince Edward Island (Table 40). Canadians who have never smoked are most likely to live in Ontario, Alberta, or Manitoba and least likely to be from Newfoundland or Nova Scotia. Amount smoked by daily smokers ranged from a low of 16 cigarettes per day in Newfoundland to a high of 20 cigarettes per day in Prince Edward Island.

Of the new mothers age 18–24 who were reported as current or former smokers, just under half (42–46%) actually smoked during their last pregnancy (Table 40).[3] Smoking while pregnant became less prevalent with age; however, the amount smoked daily by these new mothers *increased* with age.

The prevalence of smoking while pregnant is very strongly related to education. Among these ever-smokers, about three-fifths (61%) of pregnant women with less than a high school education smoked during their pregnancy, compared with only 14% of those with a university education (Table 40).[3] Further, pregnant smokers with less than a high school education smoked an average of 10 cigarettes per day, while the university-educated pregnant smokers smoked an average of five cigarettes per day.

Pregnant smokers in Prince Edward Island and Saskatchewan smoked the most (15 cigarettes per day), while pregnant women in British Columbia smoked the least (four cigarettes per day) (Table 40).

Small sample sizes and different reporting periods for smoking during pregnancy preclude meaningful comparison of provincial prevalence levels.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions.[9] The findings for smokers are based on the full sample of 82,000 respondents age 12 and older.

Data on pregnant smokers describe women between the ages of 15 and 49 who were current or former smokers and pregnant within two years of the survey (five years in Alberta). Education data for pregnant women were not age-standardized, but the restricted age range for this group reduces the need for standardizing.

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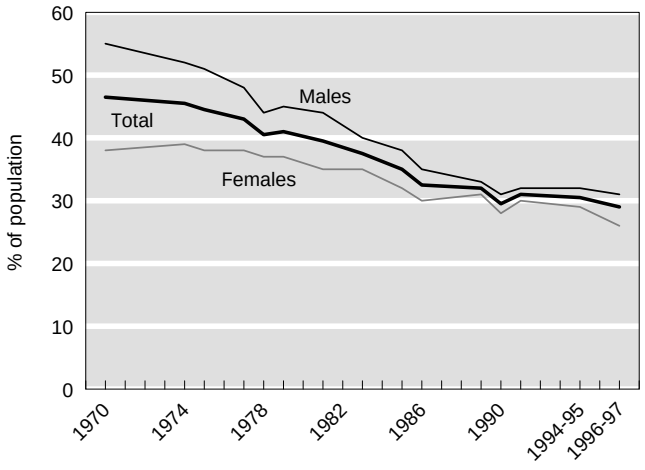
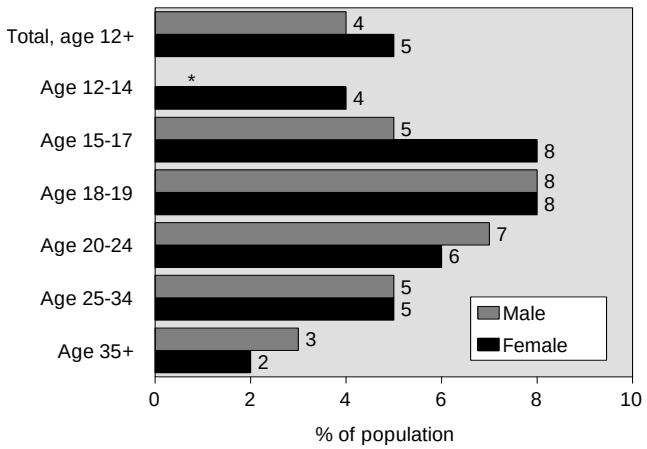
Figure 40a. **Prevalence of smoking, by sex, age 15+, Canada, 1970 to 1996–97**



Sources: Pederson LL, Smoking, in Health and Welfare Canada, Stephens T, Fowler Graham D (eds.), *Canada's Health Promotion Survey 1990: Technical Report*, Ottawa: Minister of Supply and Services Canada, 1993 (Cat. No. H39-263/2-1990E); Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

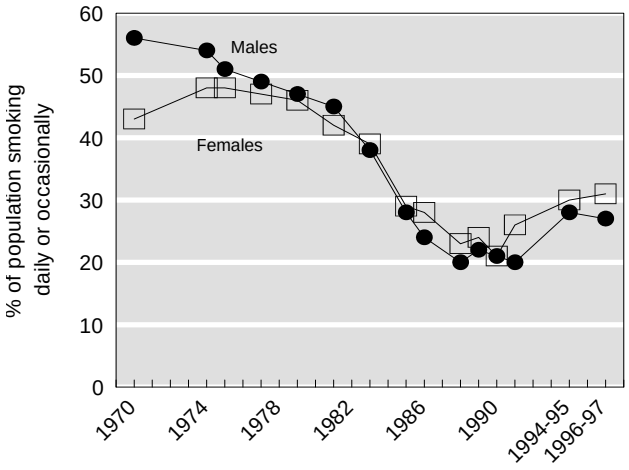
Figure 40b. **Prevalence of occasional smoking, by age and sex, age 12+, Canada, 1996–97**



* Data suppressed because of high sampling variability.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 40c. **Prevalence of smoking, by sex, age 15–19, Canada, 1970 to 1996–97**



Sources: Statistics Canada and Health Canada, various national surveys.

Table 40. **Type of cigarette smoker and number of cigarettes used by daily smokers, by age and sex, by education (age-standardized), and by province, all persons age 12+, and whether smoked during last pregnancy and number of cigarettes smoked daily, by age, by education,[a] and by province, recently pregnant ever-smokers age 15–49, Canada, 1996–97**

	Population estimate	All persons age 12+				Women ever-smokers age 15–49	
		Current smoker	Former smoker	Never smoked	Average number of cigarettes daily	Smoked during last pregnancy	Average number of cigarettes daily
	('000)	(%)	(%)	(%)		(%)	
Total, age 12+	**24,595**	**28**	**29**	**44**	**17**		
Male	12,099	30	31	39	19		
Female	12,495	25	26	48	16	**36**	**9**
Age 12–14, total	1,151	8	14	78	9		
Male	580	6	13	80	11		
Female	571	10	15	75	8		
Age 15–17, total	1,284	25	20	54	12		
Male	683	22	19	59	13		
Female	601	29	22	49	11	#	4
Age 18–19, total	826	35	16	48	13		
Male	403	36	14	50	14		
Female	424	34	19	46	12	46	7
Age 20–24, total	1,873	35	20	45	14		
Male	948	38	18	43	15		
Female	924	31	22	47	13	42	8
Age 25–34, total	4,472	34	22	44	16		
Male	2,209	36	19	45	18		
Female	2,263	31	25	44	15	36	10
Age 35–44, total	5,238	33	28	38	19		
Male	2,645	37	29	34	20		
Female	2,593	30	27	43	17	29	11
Age 45–54, total	3,771	28	34	37	20		
Male	1,922	31	38	30	21		
Female	1,849	25	29	45	18	#	13
Age 55–64, total	2,565	24	38	38	19		
Male	1,231	26	47	26	21		
Female	1,334	21	29	49	17		
Age 65–74, total	2,096	17	41	42	17		
Male	930	20	55	25	18		
Female	1,166	15	30	55	16		
Age 75+, total	1,320	11	41	48	16		
Male	549	13	60	26	17		
Female	771	9	27	63	14		
Less than high school	7,526	39	26	35	18	61	10
High school	9,307	28	30	42	17	36	9
College	4,134	25	28	37	18	31	9
University	3,461	14	27	49	15	14	5
Newfoundland	478	31	31	38	16	#	8
Prince Edward Island	113	32	28	40	20	#	15
Nova Scotia	775	31	31	38	18	#	7
New Brunswick	632	28	30	42	18	#	11
Quebec	6,131	32	28	40	19	#	9
Ontario	9,323	25	27	47	17	32	9
Manitoba	902	26	29	44	17	34	8
Saskatchewan	801	29	30	40	17	#	15
Alberta	2,244	28	26	46	17	38	10
British Columbia	3,196	24	34	42	17	#	4

Data suppressed because of high sampling variability

[a] Education data not age-standardized for pregnant women because of small sample size.

Source: Statistics Canada, *National Population Health Survey*, *1996–97*, special tabulations.

41

Nicotine dependence

Introduction

The last 30 years have seen impressive reductions in the prevalence of smoking among Canadians,[1] even though this trend has stalled since the early 1990s (Topic 40). While some of the decline, especially prior to 1994, can be attributed to lower rates of taking up smoking among youth, much of it is the result of quitting among current smokers. There are several factors that may contribute to a smoker's decision to quit smoking. Generally, health concerns are the biggest reason smokers attempt to quit or would like to quit. Other reasons include cost, restrictions, and pressure from family and friends.[2] Nevertheless, it is clear that nicotine dependence is very powerful and that quitting is not easy.

This topic describes levels of tobacco dependence among daily smokers, based on two indicators: time to first cigarette in the morning and contemplation of quitting. (Topic 40 describes the extent and distribution of former smokers.)

Prevalence of tobacco dependence, 1996–97

In 1996–97, over half (59%) of the 5.6 million daily smokers in Canada were sufficiently addicted to nicotine that they had their first cigarette within a half hour of waking each morning; one-quarter (23%) had a cigarette within *five minutes* of waking. Overall, daily smokers were evenly divided between those contemplating quitting in the next six months and those not even considering a quit attempt (Table 41).[3] These "contemplators," who were taking the first tentative step towards cessation,[4] were about the same proportion of smokers as in 1994.[4]

Differences among groups

Among presumably well-established smokers age 25–64, there was little variation in time to first cigarette (Table 41). That this indicator of dependence *dropped* markedly at age 65 and older undoubtedly reflects a "survivor phenomenon" — the likelihood that daily smokers, especially those with high levels of dependence or daily consumption, have died early (Topic 79). However, contemplating quitting within the next six months was most prevalent among the youngest daily smokers, especially those age 12–14. This is consistent with other surveys showing that quit attempts are most common among teen smokers.[2] By age 65, there was relatively little contemplation of quitting — another and more perverse example of the survivor mentality. Over all age groups, there were no gender differences in time to first cigarette or contemplating quitting.

There was a pronounced *inverse* relationship between socio-economic status and nicotine dependence, just as there was an inverse relationship between the prevalence of smoking and social status, as indicated by education level (Topic 40). Dependence among university graduates, as indicated by having the first cigarette of the day within five minutes of waking, was half that of Canadians who had not finished high school (Fig. 41)[3]; a similar relationship holds for income adequacy (data not shown). Similarly, contemplating quitting became more common as education (Fig. 41) and income (data not shown) increased. Although dependence is a biological, not a social, process, these findings may reflect the greater influence of work-related restrictions on smoking among higher-income and better-educated Canadians (see Topic 12). It is consistent with the greater tendency to attempt quitting as social status increases.[4]

Interprovincial variation in nicotine dependence was less dramatic but still noteworthy, as it has implications for the success of smoking cessation campaigns and support for restrictions on public smoking. The lowest levels of dependence, as indicated by a very brief delay time before the first cigarette, were found in Ontario and Saskatchewan, where 20% of daily smokers lit up within the first five minutes daily (Table 41). The highest levels were in Nova Scotia and Quebec (28%). Contemplating quitting was most common in Ontario (54% of daily smokers) and least common in Quebec and Newfoundland (42%).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The data presented here are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[5]

These questions on dependence were asked only of daily smokers. Time to first cigarette is the key question from the Fagerström Scale of Nicotine Dependence,[6] while contemplating quitting within the next six months distinguishes "precontemplators" from "contemplators" in the five-stage continuum of quitting.[7]

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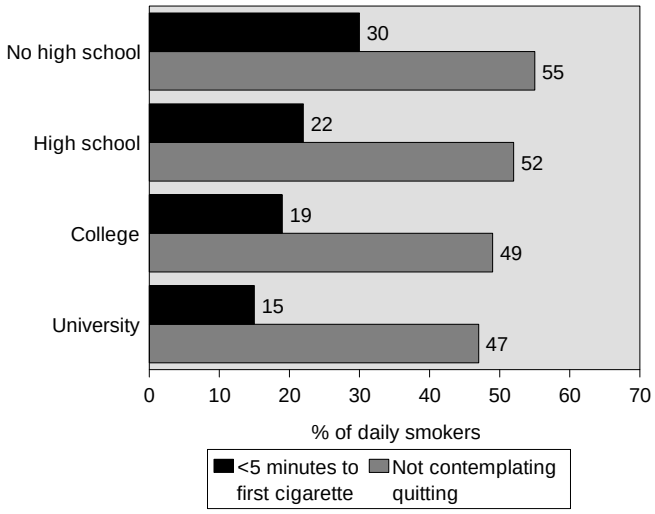
Figure 41. **Nicotine dependence, by education, daily smokers age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 41. **Time to first cigarette in the morning and contemplation of quitting, by age and sex, by education (age-standardized), and by province, daily smokers age 12+, Canada, 1996–97**

	Population estimate	Time until first cigarette after waking[a]		Considering quitting[a]
		<5 minutes	6–30 minutes	
	('000)	(%)	(%)	(%)
Total, age 12+	**5,686**	**23**	**36**	**49**
Male	3,080	24	36	49
Female	2,605	23	35	48
Age 12–14, total	45	#	#	72
Male	16	#	#	#
Female	29	#	#	#
Age 15–17, total	242	21	27	56
Male	119	21	22	54
Female	123	#	32	59
Age 18–19, total	227	17	25	52
Male	119	21	31	55
Female	108	12	19	48
Age 20–24, total	497	20	28	54
Male	275	20	26	55
Female	222	21	31	54
Age 25–34, total	1,267	24	33	49
Male	672	23	36	48
Female	594	26	30	50
Age 35–44, total	1,553	25	39	49
Male	880	26	40	51
Female	674	24	39	45
Age 45–54, total	933	25	38	50
Male	519	26	40	51
Female	414	25	35	49
Age 55–64, total	524	26	41	47
Male	274	31	39	44
Female	250	21	43	51
Age 65–74, total	298	18	39	32
Male	153	18	40	31
Female	145	18	38	34
Age 75+, total	100	14	34	30
Male	53	#	33	28
Female	46	#	35	33
Less than high school	1,858	30	36	45
High school	2,403	22	35	48
College	1,006	19	37	51
University	390	15	27	53
Newfoundland	123	23	38	42
Prince Edward Island	29	24	37	49
Nova Scotia	208	28	34	47
New Brunswick	162	22	47	43
Quebec	1,719	28	33	42
Ontario	1,896	20	37	54
Manitoba	195	21	38	52
Saskatchewan	191	20	40	51
Alberta	520	23	35	50
British Columbia	642	25	32	53

Data suppressed because of high sampling variability

[a] As a percentage of all daily smokers.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

42

Drinking

Introduction

While the health impact of moderate alcohol consumption is no longer controversial, excessive use can lead to problems of a social and health nature (Topics 43 and 44). High blood alcohol concentrations continue to be a major factor in fatal traffic crashes in Canada, particularly among young to middle-aged adults (Topic 80).

Individual risk due to drinking is a function of drinking status, the amount one drinks, and the frequency with which one drinks. This topic examines these variables. The next topic (Topic 43) provides statistics on problem drinking.

Prevalence and amount of drinking, 1996–97

In 1996–97, 53% of Canadians age 12 and older reported drinking at least one drink each month in the previous year (Table 42a).[1] This is essentially unchanged from the 55% reported in 1994–95.[2] Twelve percent reported never drinking in 1996–97. This amounts to 12.7 million Canadians who are regular drinkers and another 2.9 million who are lifetime abstainers; the balance consists of occasional and former drinkers.[1] The largest proportion of regular drinkers in Canada (43%) reported consuming an average of 1–6 drinks each week, while another third (32%) drank less than one, on average. Less than one-tenth (9%) of Canadians 12 and older reported drinking 14 or more drinks weekly, or an average of two or more per day.[1] Average weekly consumption is up from 1994–95, when 44% of regular drinkers had less than one drink per week, compared with 32% in 1996–97.[2]

In 1996–97, many more regular or occasional drinkers reported drinking less than once a month (28%) than reported drinking either daily (7%) or 4–6 times a week (3%) (Table 42b).[1] These overall values have changed little since 1994–95.[2]

There are no recent international data on alcohol consumption or frequency of consumption with which to compare the Canadian situation.

Differences among groups

Men were significantly more likely than women to be regular drinkers (63% vs. 43%) (Table 42a). This was true in all age groups but was most pronounced among 25–44 year olds, where three-quarters of men (74%) and half of women (49–50%) were regular drinkers. Male regular drinkers also reported higher average weekly consumption of alcohol than their female counterparts. Men were one and a half times more likely than women to drink 7–13 drinks each week (18% vs. 12%) and three times more likely to drink 14 or more drinks each week (13% vs. 4%).

Men also drink more frequently than women. Among regular and occasional drinkers, men were twice as likely as women to report drinking daily (9% vs. 4%) or 4–6 times a week (5% vs. 2%) (Table 42b). In contrast, women were twice as likely as men to report occasional drinking (less than one drink a month) (38% vs. 20%) (Fig. 42a).[1]

There is a bell-shaped relationship between drinking prevalence and age. The proportion of regular drinkers increases rapidly from age 12–14 through age 20–24, levels out, then starts to decrease at age 55–64. Less than one-third (30%) of Canadians age 75 and older reported drinking at least once a month. Amount drunk weekly by regular drinkers is less clearly related to age; persons age 20–24 and 55–64 were the only age groups to clearly exceed the national average for 14 or more drinks weekly (Table 42a).

Among regular drinkers, however, *daily* drinking increases considerably with age among both

men and women. Between 13% and 16% of drinkers age 55 and older drank daily, compared with only 1% of 20–24 year olds (Table 42b).

There is a *positive* relationship between regular drinking and education. As education increases, so does the likelihood that Canadians are regular drinkers. University graduates were most likely (61%) to drink at least once a month, while those with less than high school were least likely (44%) to do so (Table 42a).[1] The relationship between amount drunk and educational attainment is similar, though less pronounced: with each successive level of education, the likelihood of having had one or more drinks weekly increased. However, university graduates were least likely to have had 14 or more drinks weekly.

There were no education-related differences in drinking four or more times per week. However, drinking less than once a month was twice as common among Canadians who did not finish high school as among university graduates (Table 42b).

There is also a strong positive relationship between regular drinking and income adequacy (Fig. 42b).[1] People in the lowest income group were least likely (40%) to be regular drinkers and most likely (18%) to be abstainers, while people in the highest income group were by far the most likely (68%) to be regular drinkers and the least likely (9%) to be abstainers. People with the highest income were also least likely to consume an average of less than one drink per week.[1]

About 5% of drinkers in the lowest income category were daily drinkers, compared with 9% of drinkers in the highest income category (data not shown).[1] Also, drinkers with the lowest income were almost twice as likely to drink less than once a month, compared with drinkers with the highest income.

There are large interprovincial variations in drinking, with New Brunswick and Prince Edward Island both falling well below the average in terms of regular drinking prevalence (42% and 44%, respectively) and Quebec and British Columbia falling above average (57% and 56%, respectively) (Table 42a). People from Newfoundland and Ontario were most likely (14%) to be abstainers. Drinkers in British Columbia were most likely to have had one or more drinks per week, while drinkers from New Brunswick were least likely to do so. Nova Scotians (12%), Newfoundlanders, and Manitobans (11% each) who drank were most likely to have consumed 14 or more drinks per week compared with people from the other provinces.

There are also large interprovincial variations in drinking frequency. British Columbia and Ontario had the highest rates of daily drinkers (8%), although these rates were only slightly above the Canadian average (Table 42b). As well, although Ontarians were slightly above average in the rate of *daily* drinkers, they were the least likely to report regularly consuming five or more drinks on one occasion (see Topic 43).

In 1994–95, 59% of Aboriginal people in the territories were reported as regular or occasional drinkers, whereas non-Aboriginal residents of the territories were as likely as southern Canadians to be drinkers (78% and 75%, respectively).[3] Other research, however, indicates that when they do consume alcohol, Aboriginal people are more likely than non-Aboriginal people to have five or more drinks[4] at a sitting (see Topic 43).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[5]

Where type of drinker is described, there is a focus on regular drinkers — that is, persons who report drinking at least one drink each month — and lifetime abstainers. The data on number of drinks consumed per week are based only on those respondents who are regular drinkers. One drink was defined for the respondent as one bottle or can of beer or a glass of draft, one glass of wine or a wine cooler, or one straight or mixed drink with one and a half ounces of hard liquor.

Questions on the frequency of drinking were asked of both regular and occasional drinkers. Occasional drinkers consume less than one drink a month. The definition of regular drinker differs from the definition used in earlier Canadian surveys, making trend analysis impossible before 1994–95.

It is generally accepted that frequency of drinking (as well as amount) is under-reported in household surveys.

References

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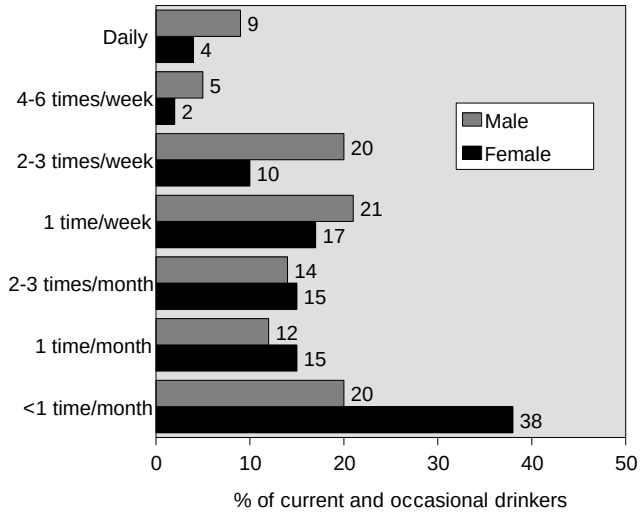
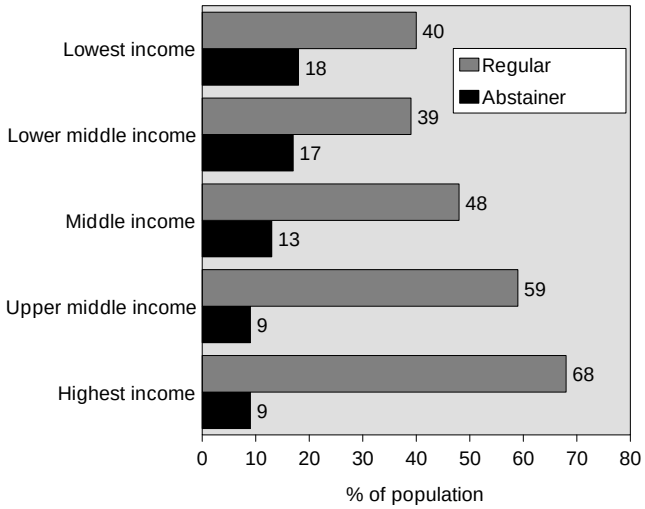
Figure 42a. **Frequency of drinking, by sex, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 42b. **Type of drinker, by income adequacy (age-standardized), age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 42a. **Type of drinker and amount drunk weekly, by age and sex, by education (age-standardized),[a] and by province, age 12+, Canada, 1996–97**

	Population estimate	Type of drinker		Number of drinks per week[b]			
		Regular	Never	<1	1–6	7–13	14+
	('000)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**24,353**	**53**	**12**	**32**	**43**	**16**	**9**
Male	11,983	63	9	29	40	18	13
Female	12,370	43	15	36	48	12	4
Age 12–14, total	1,143	5	60	63	#	#	#
Male	575	6	59	65	#	#	#
Female	568	4	62	60	#	#	#
Age 15–17, total	1,278	31	23	54	30	8	8
Male	678	32	24	54	28	7	11
Female	600	30	22	53	33	9	#
Age 18–19, total	823	61	9	46	29	17	9
Male	401	65	10	44	26	17	13
Female	422	56	8	48	31	16	4
Age 20–24, total	1,849	68	8	35	34	17	14
Male	938	76	6	27	32	19	22
Female	911	59	10	45	35	15	5
Age 25–34, total	4,440	61	7	34	45	13	8
Male	2,194	74	5	31	41	16	12
Female	2,246	49	8	38	50	9	3
Age 35–44, total	5,185	62	6	28	49	14	9
Male	2,620	74	3	26	45	18	12
Female	2,565	50	10	32	56	9	4
Age 45–54, total	3,734	60	8	30	45	17	8
Male	1,902	70	6	29	40	19	12
Female	1,832	49	11	31	53	13	3
Age 55–64, total	2,529	52	10	29	42	17	12
Male	1,212	64	7	27	38	18	17
Female	1,317	41	13	31	47	16	6
Age 65–74, total	2,070	43	13	28	41	22	9
Male	920	54	7	26	36	24	13
Female	1,151	34	18	30	47	19	3
Age 75+, total	1,302	30	20	32	40	21	7
Male	544	41	10	29	42	23	7
Female	758	23	27	36	38	18	8
Less than high school	7,446	44	15	37	37	16	11
High school	9,216	56	8	35	41	15	9
College	4,099	55	6	27	39	15	9
University	3,437	61	7	24	43	15	7
Newfoundland	477	48	14	28	44	16	11
Prince Edward Island	113	44	11	33	40	17	10
Nova Scotia	773	47	13	36	36	17	12
New Brunswick	630	42	13	38	38	13	10
Quebec	6,070	57	10	32	45	14	9
Ontario	9,190	52	14	34	41	16	9
Manitoba	893	52	13	32	41	17	11
Saskatchewan	795	54	10	32	45	14	8
Alberta	2,226	52	13	32	44	16	9
British Columbia	3,186	56	9	26	46	18	10

Data suppressed because of high sampling variability

[a] Rows may not add to 100% owing to a small number of cases suppressed in calculating standardized rates.

[b] Percentage of regular drinkers (i.e., persons who consume one or more drinks per month).

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 42b. **Frequency of drinking, by age and sex, by education (age-standardized), and by province, regular and occasional drinkers age 12+, Canada, 1996–97**

	Population estimate	Less than once per month	4–6 times per week	Daily
	('000)	(%)	(%)	(%)
Total, age 12+	**18,097**	**28**	**3**	**7**
Male	9,447	20	5	9
Female	8,650	38	2	4
Age 12–14, total	283	79	0	0
Male	144	77	0	0
Female	139	82	0	0
Age 15–17, total	803	51	#	#
Male	422	49	#	#
Female	381	52	0	#
Age 18–19, total	694	28	#	#
Male	333	21	#	#
Female	361	34	#	#
Age 20–24, total	1,584	21	3	1
Male	833	15	5	2
Female	751	28	#	#
Age 25–34, total	3,692	27	3	3
Male	1,917	16	4	4
Female	1,775	38	1	2
Age 35–44, total	4,248	24	4	5
Male	2,263	15	6	7
Female	1,985	35	2	2
Age 45–54, total	2,952	24	4	9
Male	1,579	15	6	13
Female	1,373	34	3	6
Age 55–64, total	1,844	29	4	13
Male	957	19	5	18
Female	887	39	4	8
Age 65–74, total	1,322	33	4	16
Male	660	25	5	23
Female	662	41	3	10
Age 75+, total	675	41	4	14
Male	339	35	6	16
Female	336	48	#	13
Less than high school	4,345	35	3	7
High school	7,343	28	3	6
College	3,392	23	3	7
University	2,929	17	5	8
Newfoundland	337	32	#	#
Prince Edward Island	77	35	#	#
Nova Scotia	566	35	#	#
New Brunswick	435	39	#	#
Quebec	4,676	26	4	6
Ontario	6,688	29	3	8
Manitoba	659	30	2	6
Saskatchewan	577	26	#	#
Alberta	1,650	30	3	5
British Columbia	2,433	27	5	8

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey*, *1996–97*, special tabulations.

43

Problem drinking

Introduction

Although the health impact of drinking continues to be debated, it is undisputed that regular heavy drinking is not healthy. Alcohol abuse can lead to both acute and chronic health problems (Topic 76) and death (Topic 80).

This topic describes problem drinking — in particular, the prevalence of regular heavy drinking in Canada as well as the limited data available on reasons for quitting heavy drinking.

Prevalence of problem drinking, 1996–97

In 1996–97, 18% of current drinkers age 12 and older drank five or more drinks on one occasion 12 or more times in the previous 12 months. This amounts to approximately 3.2 million persons who would be classified as heavy drinkers who imbibe regularly — at least once a month — in Canada. In fact, 6% of current drinkers in 1996–97 drank to this extent on a weekly basis. Close to one-quarter (24%) drank heavily (5+ drinks on one occasion) between one and 11 times in the past year, while the majority (58%) of current drinkers reported not drinking that much on even one occasion (Table 43a).[1] In 1994–95, 14% of current drinkers were regular heavy imbibers — a lower proportion than the 18% reported in 1996–97.[2]

The 1996–97 *National Population Health Survey* asked those respondents who said they had not had a drink in the past 12 months if they had ever regularly drunk 12 or more drinks weekly and, if so, why they had quit drinking. The most common response from those who had quit drinking was that they had been "drinking too much" (40%). Almost one-quarter (22%) had quit because drinking was affecting their physical health, and one in six (17%) quit drinking because it was affecting their family life (Fig. 43a).[1]

A 1994 Canadian survey asked questions from the "CAGE" questionnaire, developed in 1970 and recognized as a simple tool to screen for alcohol dependence.[3] A total of 6% of CAGE-tested current drinkers had a positive result on the past-year CAGE in 1994. The proportion of the population reporting alcohol-related problems in one or more areas of their lives was seven times greater among drinkers with a positive result than among those with a negative result. About 85% of the respondents with a positive result had not sought help for their drinking. Overall, it was estimated that 4% of Canadians had an alcohol dependence in 1994.

There are no international data with which to compare the current Canadian situation. There are also no Aboriginal data on heavy drinking, although, when they do consume alcohol, Aboriginal people are more likely than non-Aboriginal people to have five or more drinks.[4]

Differences among groups

Men are much more likely than women to report drinking heavily on a regular basis. Male current drinkers were two and a half times more likely than female current drinkers to report drinking five or more drinks on one occasion 12 or more times in the previous year (25% vs. 10%) and three times more likely to have drunk heavily 52 or more times in the previous year (9% vs. 3%) (Table 43a). Nevertheless, regular heavy drinking by women increased proportionally more than it did among men between 1994–95 and 1996–97.[1,2]

Regular heavy drinking is most common among youth in Canada. Over one-third (36%) of youth age 20–24 who were current drinkers drank five or more drinks at least 12 times in the previous year (Table 43a).[1] Over one in 10 (13%) such youths actually drank heavily 52 or more times in the previous year.

One-fifth (20%) of young teenage drinkers (age 15–17) also reported regular heavy drinking, despite being under the legal age, along with about one-third (34%) of teens age 18–19. The gender differences among youth in regular heavy drinking are somewhat less pronounced than the overall variation, but young men age 18–24 are about one and a half times more likely than young women to report heavy drinking on a regular basis. However, the proportion of women age 20–24 classified as regular heavy drinkers almost doubled from 1994–95 to 1996–97.[1,2] Regular heavy drinking is very rare among seniors in Canada; 94% of 65–74 year olds and 98% of those age 75 and older either never drank heavily or drank heavily less than once a month in the previous year.[1]

Canadians with university degrees are the least likely of all education groups to report regular heavy drinking. One-fifth (21%) of Canadians with less than a high school education drank heavily on a regular basis, compared with just 12% of current drinkers with a university education (Table 43a).[1] A smaller percentage (8%) of current-drinking Canadians with less than a high school education drank heavily 52 or more times in the previous year, but this was still double the percentage of comparable university graduates.

There are large interprovincial variations in regular heavy drinking, from a low of 16% in Ontario to a high of 28% in Newfoundland (Table 43a).[1] Over one-quarter (26%) of current drinkers in Saskatchewan and Nova Scotia reported drinking heavily on 12 or more occasions in the previous year. One in 10 current drinkers in Newfoundland and Nova Scotia drank heavily at least 52 times in the previous year.

There is an interesting variation among individuals, especially men, by household type (Fig. 43b).[1] Over one-quarter of people living with a partner but no children drank heavily at least 12 times in the previous year. This compares with a low of 16% of individuals in a couple with children, 19% of unattached individuals, and 17% of single parents. In every household type, men were two or more times as likely as women to be regular heavy drinkers. One in six men in a couple without children drank heavily 52 or more times in the previous year, compared with a low of 7% of men in a couple with children (data not shown).

In 1994, when all demographic characteristics were controlled simultaneously, males, those with less than high school and residents of all regions outside Ontario were found to be at a substantially elevated risk (odds ratio >1.6) for a positive result on the CAGE questionnaire (Table 43b).[3]

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[5]

Current drinkers are respondents who report drinking at least one drink each month. Heavy drinking is based on those who report drinking five or more drinks on one occasion. Regular heavy drinkers are those who report having drunk this amount 12 or more times in the past 12 months.

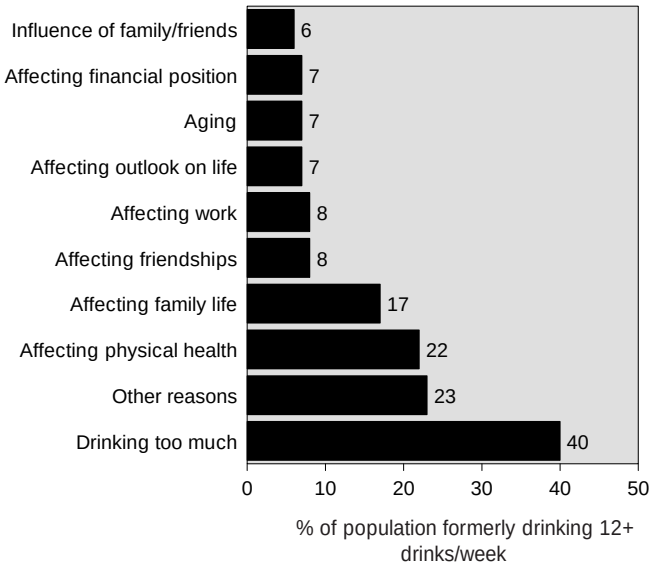
The small sample size of former regular drinkers of 12 or more drinks per week precludes further analysis on reasons for quitting. Multiple reasons were accepted on this question.

The CAGE questionnaire ("CAGE" is a mnemonic for four questions on the scale, about the need to Cut down on drinking, feeling Annoyed by criticism of drinking, feeling Guilty about drinking, feeling need for an Eye-opener drink in the morning) was a secondary analysis of data from *Canada's Alcohol and Other Drugs Survey*, which was conducted in October 1994.[3] The sampling frame included Canadians age 15 and older residing in one of the 10 provinces and not a full-time resident of an institution. In the survey instrument, the CAGE questions were asked in relation to the respondent's experience in the 12 months before the survey. A cut point of two or more affirmative responses to the CAGE questionnaire was deemed to be a positive result. Current drinking was defined as having consumed alcohol in the 12 months before the survey. The CAGE questionnaire was administered to all current drinkers whose drinking frequency was at least once per month or who usually consumed at least three drinks on the days they had a drink.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Statistics Canada. *National Population Health Survey, 1994–95*. Special tabulations.
3. Poulin C, Webster I, Single E. Alcohol disorders in Canada as indicated by the CAGE questionnaire. *Canadian Medical Association Journal* 1997; 157(11): 1529–1535.
4. Northwest Territories Bureau of Statistics. *1996 NWT Alcohol and Drug Survey. Report No. 1*. Yellowknife: Northwest Territories Bureau of Statistics, 1996.
5. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

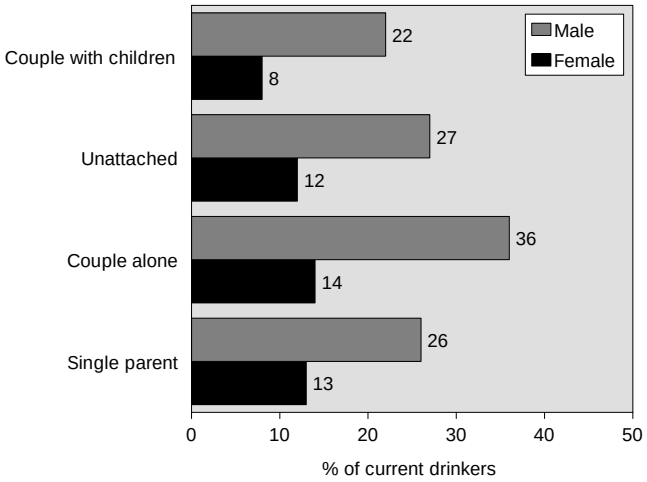
Figure 43a. **Reasons for quitting drinking,* age 12+, Canada, 1996–97**



* Percentage total is greater than 100% owing to multiple responses.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 43b. **Regular heavy drinking,* by household type (age-standardized) and sex, age 12+, Canada, 1996–97**



* Current drinkers who have five or more drinks on a single occasion at least once per month.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 43a. **Prevalence of heavy drinking,[a] by age and sex, by education (age-standardized), and by province, current drinkers[b] age 12+, Canada, 1996–97**

	Population estimate	Frequency during the past year			
		Never	Less than once per month	1–3 times per month	1+ times per week
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**17,987**	**58**	**24**	**12**	**6**
Male	9,380	48	27	16	9
Female	8,607	70	20	7	3
Age 12–14, total	282	85	12	#	#
Male	143	84	13	#	#
Female	139	85	11	#	#
Age 15–17, total	797	50	29	16	4
Male	421	47	31	17	5
Female	377	54	27	15	#
Age 18–19, total	689	35	31	22	12
Male	331	29	31	24	17
Female	358	41	32	20	7
Age 20–24, total	1,568	32	32	23	13
Male	820	25	29	27	18
Female	748	40	34	19	7
Age 25–34, total	3,668	47	32	14	8
Male	1,904	35	35	19	11
Female	1,763	60	28	8	3
Age 35–44, total	4,232	56	26	12	6
Male	2,254	43	30	17	9
Female	1,978	71	21	6	2
Age 45–54, total	2,934	65	21	10	4
Male	1,567	53	26	15	6
Female	1,367	79	15	5	1
Age 55–64, total	1,831	73	15	7	5
Male	951	59	23	10	8
Female	879	88	7	3	2
Age 65–74, total	1,315	86	8	3	2
Male	652	78	12	6	4
Female	662	94	4	#	#
Age 75+, total	672	94	4	#	#
Male	337	90	6	#	#
Female	335	97	#	#	#
Less than high school	4,325	55	24	13	8
High school	7,294	57	25	12	7
College	3,369	61	22	12	5
University	2,912	66	22	8	4
Newfoundland	337	47	25	18	10
Prince Edward Island	77	52	25	18	#
Nova Scotia	564	49	25	16	10
New Brunswick	434	53	26	13	8
Quebec	4,643	61	22	11	6
Ontario	6,638	61	23	10	6
Manitoba	654	52	28	12	7
Saskatchewan	576	52	22	17	9
Alberta	1,636	52	29	12	6
British Columbia	2,428	56	25	13	6

Data suppressed because of high sampling variability

[a] Heavy drinking is defined as drinking five or more drinks per occasion.

[b] Current drinkers are those who had at least one drink in the previous 12 months.

Source: Statistics Canada, *National Population Health Survey*, *1996–97*, special tabulations.

Table 43b. **Adjusted multivariate model for a positive result on the CAGE questionnaire, by sex, by age, by region, and by education, current drinkers age 15+, Canada, 1994**

	Adjusted odds ratio
Male	1.72
Female	1.00
Age 15–17	0.67
Age 18–19	0.73
Age 20–24	1.07
Age 25–34	0.88
Age 35–44	1.00
Age 45–54	0.96
Age 55–64	0.62
Age 65+	0.32
Atlantic	2.09
Quebec	2.90
Ontario	1.00
Prairies	2.17
British Columbia	1.64
Less than secondary	2.01
Secondary completed	1.29
Some post-secondary	1.22
University completed	1.00
Not stated	1.00

Source: Poulin C, Webster I, Single E, Alcohol disorders in Canada as indicated by the CAGE questionnaire, *Canadian Medical Association Journal* 1997; 157(11): 1529–1535.

44

Driving after drinking

Introduction

Every year in Canada, thousands of lives are lost accidentally in motor vehicle traffic crashes, and many of these deaths are among the young (Topic 83). Thousands more are injured in vehicle collisions (Topic 63). Many of these accidents are the inevitable outcome of combining alcohol and driving (Topic 80). In an attempt to curb these senseless deaths, federal and provincial/territorial governments have increased police enforcement of impaired driving and mounted media campaigns to raise awareness of the dangers of drinking and driving.

This topic examines the prevalence of driving after drinking in Canada.

Incidence of driving after drinking, 1996–97

In 1996–97, there were just over 15 million Canadians age 16 and older who had a driver's licence and were considered to be current drinkers.[1] In the 12 previous months, 10% of these Canadians had drunk too much alcohol, by their own report, and then proceeded to drive (Table 44)[1]; this amounts to about 1.5 million Canadians who acknowledged driving after drinking. About 3% of these licensed, current-drinking Canadians reported they had drunk too much and then driven at least three times in the previous 12 months.

Overall, two-thirds of motorists attend social events where there will be drinking.[1] About 60% of them claim to *always* make arrangements for a designated driver (Fig. 44a).[1]

Although there are trend data on driving after drinking, the survey questions and methods are not consistent. There are no international data with which to compare the Canadian situation. There are also no reliable data on Aboriginal drinking and driving.

Differences among groups

Men were almost three times more likely than women to report driving after drinking in the 12 months prior to the 1996–97 *National Population Health Survey* (13% vs. 5%) (Table 44).[1] The most pronounced difference is found among 35–44 year olds, where 17% of men drove after drinking excessively at least once in the previous 12 months, compared with 5% of women the same age.

Canadians age 18–19 were the most likely to acknowledge having driven after drinking too much (18%), with a consistent downward trend for each successive age group, to a low of 1% of seniors age 65–74 (Table 44). This appears to contrast with data from 1990, when driving after drinking *any amount* was most common at age 25–44.[2] However, since the current survey asked for judgments of *excessive* drinking, this may mean that younger Canadians have stricter definitions of drinking and driving.

Driving after drinking in the previous 12 months does not seem to have any relationship with education (Table 44), and the differences based on income adequacy are modest. For example, 9% of the lowest income group drove after drinking *at least once* in the previous 12 months, compared with 12% in the highest income group (data not shown).[1]

There are large interprovincial variations in prevalence of driving after drinking. Over one-fifth (21%) of licensed, current-drinking Saskatchewan residents age 16 and over reported doing so *at least* once in the previous 12 months, compared with only 7% of drivers from Nova Scotia, New Brunswick, and Ontario (Table 44). The other Prairie provinces also reported slightly higher than average levels of driving after drinking. These rankings are similar to 1990 data,[2] with the exception of Ontario, which has improved its relative position.

The proportion of motorists who always arrange for a designated driver when they go to events where alcohol will be consumed varies greatly among provinces (Fig. 44a).[1] Motorists from Quebec (48%) and Saskatchewan (50%) were least likely to *always* arrange for a designated driver for these social events, while motorists from Nova Scotia (75%) were most likely to do so. Manitoba and Alberta motorists were also below the Canadian average for making such arrangements.

Single parents were the most likely (14%) to have driven after drinking at least one time in the previous 12 months, while individuals in a couple with children were least likely (8%).[1] Single fathers were the most likely (18%) to drive after drinking on at least one occasion, while women in couples with children were least likely (3%) (Fig. 44b).[1]

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions.[3] There were about 55,000 respondents age 16 and older who had valid driver's licences.

Since the behaviour under question is certainly unwise and may be illegal (if the drinking leads to legal impairment), there may have been some under-reporting. No third-party (proxy) answers were accepted for these questions, and the definition of drinking "too much" was left to the respondent. It is impossible to know how this corresponds to actual legal impairment.

References

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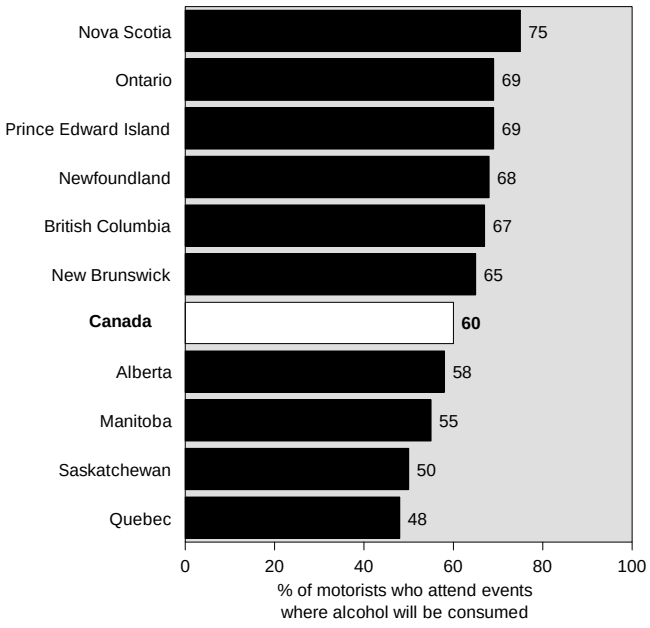
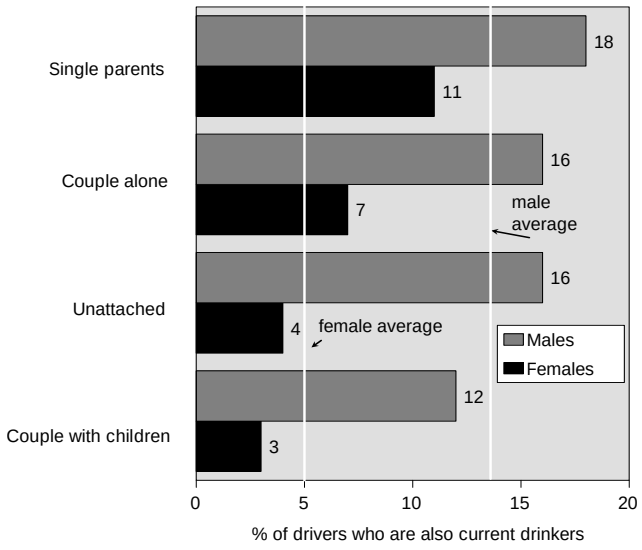
Figure 44a. **Motorists who always arrange for a designated driver when attending an event where alcohol will be consumed, by province, age 16+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 44b. **Driving after drinking at least once in previous 12 months, by household type (age-standardized), drivers age 16+ who are current drinkers, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 44. **Frequency of driving after drinking, by age and sex, by education (age-standardized), and by province, licensed drivers age 16+ who are current drinkers, Canada, 1996–97**

	Population estimate	Frequency of driving after drinking in last 12 months				
		0	1	2	3+	1+
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 16+	**15,188**	**90**	**4**	**3**	**3**	**10**
Male	8,269	86	5	4	4	13
Female	6,919	95	3	1	1	5
Age 16–17, total	288	91	#	#	#	9
Male	152	93	#	#	#	7
Female	136	89	#	#	#	#
Age 18–19, total	491	82	9	3	6	18
Male	259	83	7	4	5	17
Female	232	81	10	#	#	19
Age 20–24, total	1,352	84	6	4	5	16
Male	722	77	8	6	8	22
Female	631	91	4	2	#	8
Age 25–34, total	3,364	88	5	4	3	12
Male	1,783	83	6	6	5	17
Female	1,581	93	4	2	1	7
Age 35–44, total	3,986	88	5	3	3	11
Male	2,160	83	6	5	5	17
Female	1,825	95	3	1	1	5
Age 45–54, total	2,708	93	3	2	1	7
Male	1,467	89	5	3	2	10
Female	1,240	98	1	1	#	2
Age 55–64, total	1,615	95	2	1	1	5
Male	899	92	4	2	2	8
Female	717	99	#	#	#	#
Age 65–74, total	1,003	98	#	#	#	1
Male	575	97	#	#	#	2
Female	428	100	#	0	#	#
Age 75+, total	380	99	#	#	#	#
Male	252	99	#	#	#	#
Female	129	100	#	0	0	#
Less than high school	2,752	91	3	3	3	9
High school	6,437	90	5	3	3	10
College	3,159	90	4	3	3	10
University	2,774	92	4	3	2	8
Newfoundland	261	92	#	#	#	8
Prince Edward Island	67	91	#	#	#	9
Nova Scotia	474	92	#	#	#	7
New Brunswick	370	92	#	#	#	7
Quebec	3,797	90	4	2	3	10
Ontario	5,621	92	3	2	2	7
Manitoba	558	87	5	5	4	13
Saskatchewan	509	78	6	6	8	21
Alberta	1,408	88	5	4	3	12
British Columbia	2,123	89	5	3	#	11

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

45

Illicit drug use

Introduction

The use of cannabis (marijuana and hashish), cocaine or crack, and heroin continues to be a serious concern of governments, not only because their use is illegal, but also because it can result in social and health problems (Topic 50) and even death, particularly in the case of cocaine, crack, and heroin. The "war on drugs" currently being waged by governments around the world consumes significant government resources in an attempt to deal with drug problems. However, the effectiveness of this control effort is increasingly being questioned, and, as a consequence, the concept of harm reduction is increasingly discussed.

This topic examines the extent of illicit drug use in Canada, focussing on the use of cannabis and cocaine or crack in the previous 12 months, as well as the rate of federal drug offences in the country. It provides some perspective for this debate.

Prevalence of illicit drug use, 1994

Canada's Alcohol and Other Drugs Survey, conducted in 1994, found that 7% of adult Canadians reported current cannabis use (Table 45),[1] and 8% reported current use of some illicit drug — one or more of cannabis (excluding one-time-only use), cocaine/crack, LSD, amphetamines (speed), and heroin. In other words, the use of illicit drugs other than marijuana was very low: 0.7% for cocaine/crack, 0.9% for LSD, and 0.2% for amphetamines (speed).[2] Although current use is relatively low, one-quarter of Canadians (24%) have used an illicit drug at least once in their lifetime (Table 45).

To put this in perspective, consider that there are about one-quarter of a million users of LSD/speed/heroin in Canada, 1.7 million current marijuana users, and 2.0 million heavy drinkers (Fig. 45a).[2] Cigarette smokers outnumber marijuana users by 3.6 times, while there are 8.5 times as many light drinkers as cannabis users.

Between 1985 and 1994, trends in self-reported 12-month use of marijuana or hashish were erratic, but use appears to have returned to 1989 levels after declining in the early 1990s (Fig. 45b).[2,3,4] From 1990 to 1994, there was, for all practical purposes, no change in the use of cocaine/crack.

At least one of the injectable drugs (cocaine/crack, LSD, amphetamines, heroin, and steroids) has been used at some point by 7% of Canadians, and 41% of these persons reported needle-sharing,[2] a clear risk for the transmission of HIV, hepatitis B virus, and other pathogens (see Topics 71 and 72). Less than 1% of Canadians acknowledged sniffing solvents at any point in their lifetime.[2]

In 1996, the national rate of federal drug offences per 100,000 population was 157 for cannabis and 37 for cocaine or crack (Fig. 45c).[5] This represents an increase of 13% since 1991 in cannabis offences and a drop of 20% in cocaine/crack offences.[5]

Differences among groups

Overall, men are twice as likely as women to be *current* users of cannabis or any illicit drug (10% vs .5%) and one and a half times as likely to be *lifetime* users of any illicit drug (Table 45).[1]

Current use of illicit drugs is primarily a teenage phenomenon, although most age cohorts have at least experimented with these drugs at some point. The highest current use of cannabis was reported by men age 15–24 (26–28%), while the highest lifetime use of any illicit drug was by males age 20–34 (44–45%). By age 45, current use is negligible; lifetime use is also much lower starting at this age (Table 45).

There are no significant differences in illicit drug use according to educational attainment, except that current use was higher among persons with some post-secondary education — current students, in many cases (Table 45).

There is a wide range in reported drug use among the provinces. Both current and lifetime use were more than twice as common in British Columbia as in Newfoundland (Table 45).

There is significant interprovincial/territorial variation in rates of federal drug offences. Both territories had by far the highest rates of cannabis offences in 1996, while British Columbia had the highest rate of cocaine/crack offences (Fig. 45c).[5] British Columbia also had rates for federal drug offences that are above the Canadian average for cannabis. In sharp contrast, Quebec had the lowest rate of drug offences for cannabis — approximately three-quarters of the Canadian average.

Since 1991, cannabis offences have become more common in every province and territory except Yukon and Alberta, where they have declined. In the same period (from 1991 to 1996), cocaine offences were fewer everywhere except Manitoba, Saskatchewan, and Prince Edward Island, where the rate increased.[5]

On definitions and methods

Data on the use of illicit drugs are from *Canada's Alcohol and Other Drugs Survey*, a telephone survey conducted in 1994 by Statistics Canada; the sample consisted of 12,155 persons age 15 and older, and the response rate was 76%.[2] The possibility of under-reporting use of these illicit drugs is considerable. Under-coverage of certain high-use populations, such as young men and "street people," is also likely. "Current users" are those persons reporting use of a specified substance at least once in the previous 12 months.

Data on drug offences are from police records and may reflect enforcement efforts as much as differences in actual drug activity. This could account for some of the interprovincial/territorial variation as well as the changes from 1991 to 1996.

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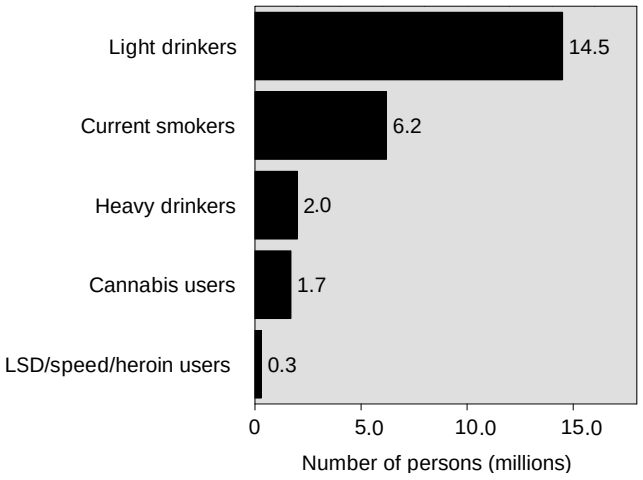
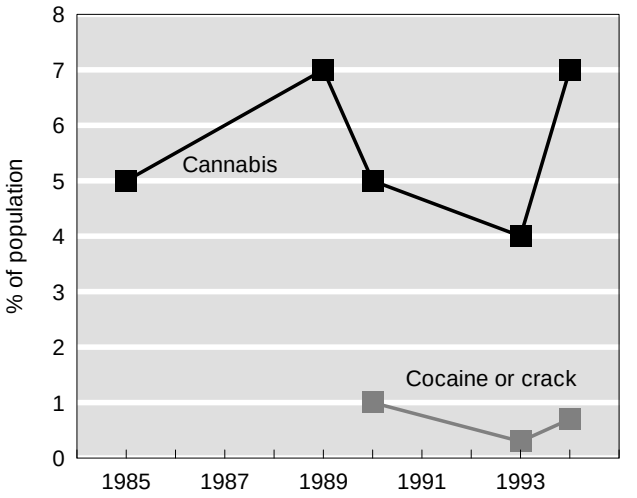
Figure 45a. **Use of alcohol, tobacco, and illicit drugs, age 15+, Canada, 1994**



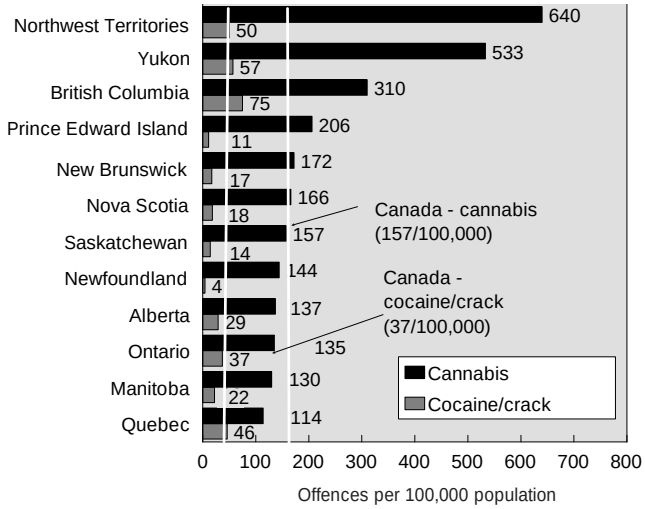
Source: MacNeil P, Webster I, *Canada's Alcohol and Other Drugs Survey: A Discussion of the Findings*, Ottawa: Minister of Public Works and Government Services Canada, 1997.

Figure 45b. **Trends in cannabis and cocaine/crack use, age 15+, Canada, 1985–1994**



Sources: Adlaf EM, Alcohol and other drug use, in Health and Welfare Canada, Stephens T, Fowler Graham D (eds.), *Canada's Health Promotion Survey 1990: Technical Report*, Ottawa: Minister of Supply and Services Canada, 1993 (Cat. No. H39-263/2-1990E); Single E, MacLennan A, MacNeil P, *Horizons 1994: Alcohol and Other Drug Use in Canada*, Ottawa: Health Canada and the Canadian Centre on Substance Abuse, 1994 (Cat. No. H39-307/1994E); MacNeil P, Webster I, *Canada's Alcohol and Other Drugs Survey: A Discussion of the Findings*, Ottawa: Minister of Public Works and Government Services Canada, 1997.

Figure 45c. **Federal drug offences, by province/territory, Canada, 1996**



Source: Statistics Canada, *Canadian Crime Statistics 1996*, Ottawa: Statistics Canada, 1997 (Statistics Canada Cat. No. 85-205-XPE).

Table 45. ***Illicit drug use, by age and sex, by education,[a] and by province, age 15+, Canada, 1994***

	Population estimate	Cannabis currently	At least one illicit drug[b]	
			Lifetime	Current
	('000)	(%)	(%)	(%)
Total, age 15+	**23,030**	**7**	**24**	**8**
Male	11,337	10	28	10
Female	11,692	5	19	5
Age 15–17, total	1,247	25	30	26
Male	636	27	31	27
Female	611	24	29	24
Age 18–19, total	711	23	33	24
Male	367	28	38	29
Female	344	18	27	19
Age 20–24, total	2,051	19	38	20
Male	1,038	26	45	26
Female	1,013	13	30	13
Age 25–34, total	4,952	10	38	10
Male	2,497	13	44	13
Female	2,455	6	32	7
Age 35–44, total	4,802	6	33	6
Male	2,404	9	38	9
Female	2,399	3	28	3
Age 45–54, total	3,531	1	15	2
Male	1,771	2	18	2
Female	1,760	#	12	#
Age 55–64, total	2,470	#	4	#
Male	1,220	#	5	#
Female	1,250	#	3	#
Ages 65+, total	3,265	#	1	#
Male	1,405	#	1	#
Female	1,860	–	#	–
Less than high school	5,936	8	19	8
High school	5,415	7	24	7
Some post-secondary	3,572	11	32	11
College/university degree	6,457	7	29	7
Newfoundland	458	4	16	4
Prince Edward Island	104	#	19	#
Nova Scotia	743	8	25	8
New Brunswick	603	6	22	6
Quebec	5,796	9	25	9
Ontario	8,673	5	17	5
Manitoba	874	9	26	9
Saskatchewan	767	7	22	7
Alberta	2,073	8	30	9
British Columbia	2,939	12	37	12

– Data not available

Data suppressed because of high sampling variability

[a] Not age standardized.

[b] "Illicit drugs" refers to one or more of cannabis (excluding one-time-only use), cocaine/crack, LSD, amphetamines (speed), and heroin.

Source: Health Canada, Information Access and Coordination Division, Policy and Consultation Branch, *Canada's Alcohol and Other Drugs Survey, 1994*, special tabulations.

46

Physical activity

Introduction

Lack of physical activity has long been recognized as a risk factor for coronary heart disease (Topic 74). The relative risk (RR) is about 1.9, which establishes a sedentary lifestyle as having about the same importance to coronary heart disease as high blood pressure (RR = 2.1) (Topic 68), high cholesterol (RR = 2.4), and smoking (RR = 2.5)[1] (Topics 40 and 41). Physical activity provides many other health benefits, such as weight control; reduced risk of diabetes, cancer, and osteoporosis; and stress reduction.[2] Consequently, the level of leisure-time activity performed by individuals is highly relevant to the overall health of Canadians.

This topic describes data on physical activity during leisure time, while doing chores and errands, and while commuting to work.

Prevalence of physical activity, 1996–97

Overall, one-fifth (21%) of Canadians were classified as active during leisure time in the three months preceding the 1996–97 *National Population Health Survey*. Another fifth (23%) were moderately active, while the remainder — well over half — were inactive (Table 46a).[3] This is virtually unchanged from 1994–95[4]; however, comparison with older data sources suggests that adult Canadians are becoming more active (Fig. 46).[5]

While participating in physical activity outside an organized setting is the most frequent form of participation among Canadian adults, participation also frequently occurs in organized settings.[6] In 1997, as many as one-fifth of Canadian adults were involved competitively in physical activity. Taking the stairs was the most frequently cited of five ways to incorporate physical activity into daily life and was cited by 80% of Canadian adults. About two-thirds reported light and heavy chores and walking to go to work or to conduct errands. One-quarter chose to commute by bicycle.

In 1996, 7% of employed Canadians age 15 and over walked to work, and an additional 1% rode a bicycle to work (Table 46b).[7] No comparable, earlier data exist for these questions.

Although international comparisons are complicated by different approaches to measuring activity, increased activity over time by adults in Canada (Fig. 46) is matched in Finland, while active leisure time in Scotland, Australia, and the United States has *not* increased similarly.[8]

Differences among groups

Across all age groups, males were generally more active than females; this difference was least pronounced in the middle years (Table 46a),[3] which was also true in 1994–95.[4] Generally speaking, there was a decline in the active population with age, at least until age 65. Interestingly, young seniors (65–74) were about as active as Canadians age 35–44.

As education increases, so does the likelihood of an active lifestyle. Fewer than half of university graduates (47%) were classified as *inactive*, compared with three-fifths (61%) of those with less than a high school education (Table 46a).[3] Similarly, there is a positive relationship between activity level and income adequacy (data not shown). For example, only 48% of Canadians in the highest income group were reported as being inactive, compared with 57% of Canadians in the lowest income group and 61% of Canadians in the lower middle income group.

Provincial comparisons reveal that residents of British Columbia and Alberta lead the way by a considerable margin (27% and 26% active, respectively, compared with the average of 21%). Residents

of Prince Edward Island reported the lowest activity levels, at 14% (Table 46a).[3]

Regarding transportation to work, employed men were slightly more likely to ride a bicycle (2% vs. 1%), but employed women were slightly more likely to walk to work (8% vs. 6%) (Table 46b).[7] While these differences may be statistically significant, the practical difference is negligible.

Walking to work was most common in both territories, Newfoundland, and Saskatchewan. In British Columbia and Yukon, 2% of persons rode bicycles to work (Table 46b).[7] Employed persons in Ontario were least likely to choose either walking or riding as a mode of transportation to work. These results seem to suggest that walking to work is affected by factors such as population density and size of community.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[9]

Leisure-time physical activity was determined in the *National Population Health Survey* by asking participants to list all of their leisure-time physical activities for the previous three months. Information on frequency of participation and amount of time per occasion was also asked. Using independently established values for the energy demands of each activity, an index of total kilocalorie expenditure was calculated. Level of activity was classified according to estimated kilocalories per kilogram body weight per day: active (3.0 or more), moderate (1.5–2.9), or inactive (less than 1.5).

While the *National Population Health Survey* approach was similar to those of the 1981, 1988, and 1995 surveys, these earlier surveys were more comprehensive in their probing of different activities. The *National Population Health Survey* data may thus understate total leisure-time physical activity, comparatively speaking. For this reason, Figure 46 shows comparable sources only.

The question on the 1996 Census on mode of transportation to work was asked of employed Canadians age 15 and older. Details by census metropolitan area have been published elsewhere.[10]

References

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3. Statistics Canada. *National Population Health Survey, 1996–97.* Special tabulations.
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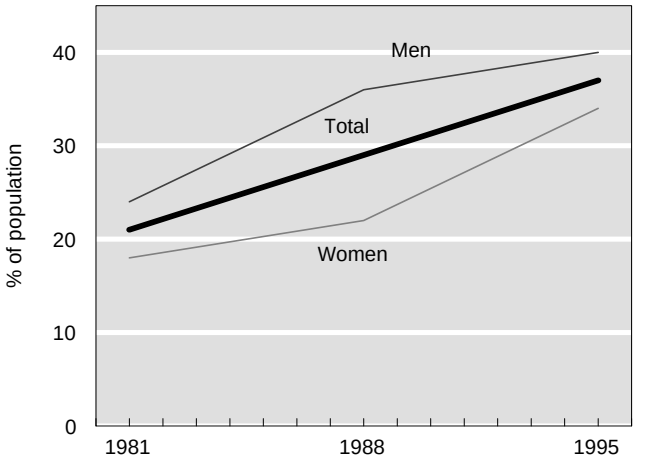
5. Canadian Fitness and Lifestyle Research Institute. *Progress in Prevention* #1, 1996 (ISSN 1205-7029).
6. See *Progress in Prevention*, a series of monthly bulletins published by the Canadian Fitness and Lifestyle Research Institute with findings from the *Physical Activity Monitor* (ISSN 1205-7029).
7. Statistics Canada. 1996 Census: Mode of transportation. *The Nation Series* (Statistics Canada Cat. No. 93F0027XDB96019).
8. Stephens T. *International Trends in the Prevalence of Physical Activity and Other Health Determinants.* Presentation to the 1998 FIMS (Fédération international de médecine sportive) World Congress of Sport Medicine, Orlando, May 1998.
9. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).
10. Statistics Canada. 1996 Census: Mode of transportation to work. *The Daily*, March 17, 1998 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.

Figure 46. **Active leisure-time physical activity, age 18+, Canada, 1981–1995**



Source: Canadian Fitness and Lifestyle Institute, *Progress in Prevention* #1, 1996 (ISSN 1205-7029).

Table 46a. **Leisure-time physical activity, by age and sex, by education (age-standardized),[a] and by province, age 12+, Canada, 1996–97**

	Population estimate	Active	Moderate	Inactive
	('000)	(%)	(%)	(%)
Total, age 12+	**23,836**	**21**	**23**	**57**
Male	11,611	24	22	54
Female	12,225	17	23	60
Age 12–14, total	1,047	44	27	30
Male	512	54	25	21
Female	535	33	28	38
Age 15–17, total	1,243	43	21	36
Male	658	53	21	26
Female	586	31	22	47
Age 18–19, total	812	33	25	42
Male	395	39	24	37
Female	418	26	27	47
Age 20–24, total	1,827	27	24	49
Male	910	32	22	46
Female	916	22	26	52
Age 25–34, total	4,400	19	23	57
Male	2,166	22	23	55
Female	2,233	17	23	59
Age 35–44, total	5,141	17	22	61
Male	2,583	18	22	61
Female	2,559	17	22	61
Age 45–54, total	3,668	15	22	63
Male	1,844	17	21	62
Female	1,824	14	23	63
Age 55–64, total	2,500	17	24	60
Male	1,190	19	23	58
Female	1,310	15	24	61
Age 65–74, total	2,006	16	23	61
Male	878	21	24	55
Female	1,128	13	22	65
Age 75+, total	1,192	10	16	74
Male	475	14	21	66
Female	716	7	13	80
Less than high school	7,146	19	20	61
High school	9,083	20	23	57
College	4,063	17	22	52
University	3,410	19	24	47
Newfoundland	460	18	21	61
Prince Edward Island	110	14	18	67
Nova Scotia	756	18	22	61
New Brunswick	618	18	18	64
Quebec	5,930	17	22	61
Ontario	9,037	21	23	56
Manitoba	878	20	22	58
Saskatchewan	775	20	20	60
Alberta	2,125	26	24	50
British Columbia	3,147	27	23	50

[a] Rows may not add to 100% owing to a small number of cases suppressed in calculating standardized rates.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 46b. **Active mode of transportation to work, by sex and by province/ territory, employed persons age 15+, Canada, 1996**

	Population estimate	Walking	Bicycling
	('000)	(%)	(%)
Total, age 15+	**12,183**	**7**	**1**
Male	6,591	6	2
Female	5,592	8	1
Newfoundland	172	10	<1
Prince Edward Island	56	7	<1
Nova Scotia	354	8	1
New Brunswick	288	7	1
Quebec	2,909	7	1
Ontario	4,691	6	1
Manitoba	465	9	1
Saskatchewan	377	10	1
Alberta	1,222	7	1
British Columbia	1,608	7	2
Yukon	16	15	2
Northwest Territories	26	42	1

Source: Statistics Canada, 1996 Census: Mode of transportation, *The Nation Series* (Statistics Canada Cat. No. 93F0027XDB96019).

47

Dietary practices

Introduction

Diet in general and the consumption of fat and fibre in particular have been implicated in the onset of some of the major causes of death (Topic 82), especially cancer (Topic 73) and coronary heart disease (Topic 74). The proportion of the population that is overweight has been increasing in recent years (Topic 67), a reflection, in part, of how leisure time is spent (Topic 46). Dietary practices, as the other major component in the energy equation that affects body weight and overall health, are thus a natural concern for governments and individuals concerned with maintaining good health, although the health implications of dietary practices extend far beyond concerns with excess body weight.[1]

This topic describes measures taken by adults to improve their dietary practices.

Prevalence of healthy dietary practices, 1994–95

In 1994–95, dietary fat was a source of concern for more Canadians than any other aspect of the diet: 59% of persons age 12 and older described themselves as concerned about fat in their diet and claimed to be taking action to reduce their consumption of fat (Table 47).[2] Another 9% were concerned but taking no action. The remaining third (32%) of Canadians expressed no concern about the amount of fat in their diet.

In contrast to the concern over fat, only 26% of Canadians age 12 and older described themselves as concerned about the amount of starch and fibre they ate and taking action to increase their consumption (Table 47).[2] Another 17% were concerned but apparently not enough to take any action on this front. The majority of Canadians (57%) were not concerned about how much starch and fibre they had in their diet.

Three popular ways of limiting fat intake were reducing use of butter, oil, and salad dressing (81%), eating less fried food (78%), and cutting down on high-fat milk products (72%) (data not shown).[2] Despite these concerns and claims and some changes in specific food preferences, there was an increase between the early 1980s and 1997 in the amount of fats and oils consumed (Fig. 47a).[3] However, there was a reduction in the consumption of whole and 2% milk and an increase in the consumption of skim and 1% milk (Fig. 47b).[3]

For the relatively small proportion of Canadians trying to increase their starch and fibre intake, the four most popular ways were eating vegetables and fruits at most meals (84%), eating whole-grain products (78%), eating meals with less meat (60%), and eating high-fibre foods (54%) (data not shown). From 1982 to 1996, the apparent consumption of fruits and vegetables increased modestly (Fig. 47a).

Differences among groups

There is clearly a gender difference in concern over diet (Table 47).[2] Two-thirds (67%) of women were concerned and taking action to reduce dietary fat, compared with only 50% of men. Only 24% of women were not concerned about fat intake, compared with 40% of men. However, men were more likely to be classified as overweight than women (see Topic 67).

The gender differences were similar for concern over starch and fibre, although not as pronounced; one-third (32%) of women were concerned and taking action to increase starch and fibre, compared with one-fifth of men (20%) (Table 47).[2] About half (51%) of women were not concerned with fibre and starch intake, compared with two-thirds (63%) of men.

There was a largely positive relationship between action and age. Only one-third (33%) of 15–19 year olds and just over half (54%) of 20–24 year olds reported taking action to reduce dietary fat, compared with around 70% of Canadians age 45–74 (Table 47).[2] This age trend in concern is appropriate, since the likelihood of being overweight also increases with age (see Topic 67). Similarly, concern and action over dietary starch/fibre grow with age.

There were only modest differences related to education regarding dietary action. About half (51%) of Canadians with less than a high school education reported taking action on their fat intake, compared with about 60% of people in the three other education groups (Table 47).[2] Similarly, 21% of Canadians with less than high school were concerned about and taking action to increase starch/fibre intake, compared with 29% of university-educated Canadians.

There were only a few differences among provinces regarding dietary action. People from Saskatchewan (53%) and Prince Edward Island (54%) were least likely to be taking action to reduce fat intake (Table 47)[2]; both provinces were also well above the Canadian average in their overweight population (see Topic 67). In contrast, residents of Quebec and British Columbia were most likely (61%) to report taking action to reduce fat consumption; they also had the lowest prevalence of overweight (Topic 67). Quebeckers were also most likely (27%) to be taking action to increase starch/fibre intake, while Saskatchewan residents were least likely (21%) to do so.

On definitions and methods

These data about dietary concerns are from the Health Supplement portion of the *National Population Health Survey*, conducted by Statistics Canada in June, August, and November 1994 and March 1995. The survey visited over 22,000 households; these data are based on the sample age 12 and older, which consisted of almost 17,000 persons.[4] The Supplement was sponsored by Health Canada and was not part of the second *National Population Health Survey* in 1996–97.

Data on "apparent food consumption" in the two figures are based on the disappearance of food available for consumption. Most of it is consumed; some of it is spoiled.

References

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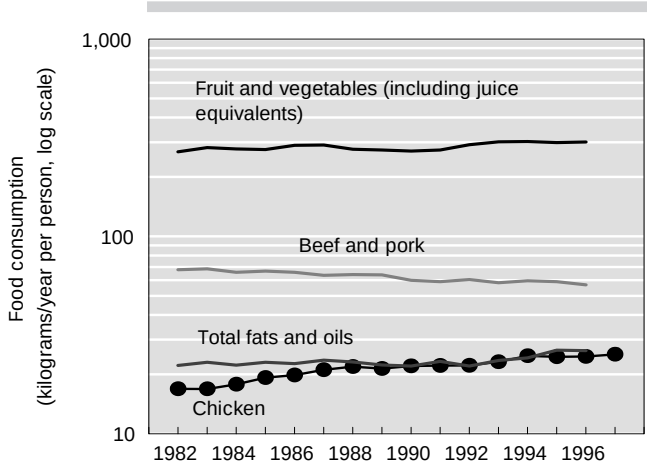
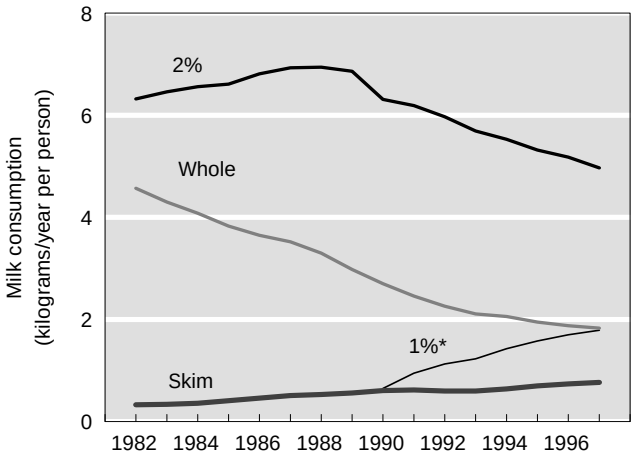
Figure 47a. **Changes in apparent food consumption, Canada, 1982–1997***



* 1997 data available for chicken only.

Source: Statistics Canada, *Apparent Per Capita Food Consumption Parts 1 and 2, 1997* (Statistics Canada Cat. Nos. 32-229 and 32-230).

Figure 47b. **Changes in milk consumption, Canada, 1982–1997**



* 1% milk data became available in 1990.

Source: Statistics Canada, *Apparent Per Capita Food Consumption Parts 1 and 2, 1997* (Statistics Canada Cat. Nos. 32-229 and 32-230).

Table 47. **Concerns about fat and fibre, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1994–95**

	Population estimate	Fat in diet			Starch and fibre in diet		
		Concerned and taking action	Concerned but not taking action	Not concerned	Concerned and taking action	Concerned but not taking action	Not concerned
	('000)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**23,914**	**59**	**9**	**32**	**26**	**17**	**57**
Male	11,762	50	10	40	20	17	63
Female	12,152	67	9	24	32	18	51
Age 12–14, total	1,310	29	16	54	10	14	77
Male	684	26	#	59	#	16	75
Female	626	33	18	49	#	11	78
Age 15–19, total	2,088	33	13	54	10	15	74
Male	1,082	19	11	70	7	14	79
Female	1,006	48	15	37	14	17	70
Age 20–24, total	1,705	54	9	37	21	15	64
Male	826	43	8	50	14	15	70
Female	879	64	10	26	28	14	58
Age 25–34, total	4,747	58	8	34	24	16	60
Male	2,340	50	9	41	18	14	67
Female	2,407	65	8	27	30	17	52
Age 35–44, total	4,855	62	10	28	29	17	54
Male	2,470	53	12	36	22	17	60
Female	2,384	71	9	20	35	17	48
Age 45–54, total	3,448	69	10	21	31	18	50
Male	1,775	61	13	26	26	20	54
Female	1,673	77	7	16	37	17	46
Age 55–64, total	2,516	70	6	24	36	17	47
Male	1,192	58	7	34	26	18	55
Female	1,324	80	4	15	44	16	40
Age 65–74, total	2,064	70	5	25	32	24	45
Male	927	62	7	32	25	22	52
Female	1,137	77	4	19	37	25	38
Age 75+, total	1,180	61	7	32	30	24	47
Male	465	59	#	35	28	20	52
Female	715	62	8	31	30	26	44
Less than high school	7,851	51	9	40	21	17	62
High school	9,113	60	8	32	27	17	56
College	3,775	63	8	30	28	20	52
University	3,142	60	8	17	29	15	42
Newfoundland	483	59	11	30	23	20	56
Prince Edward Island	110	54	12	34	24	21	55
Nova Scotia	764	60	9	31	24	20	56
New Brunswick	626	56	10	35	24	20	56
Quebec	6,020	61	6	33	27	17	56
Ontario	9,034	57	11	32	26	18	56
Manitoba	887	58	10	32	24	17	59
Saskatchewan	792	53	11	35	21	18	61
Alberta	2,166	59	11	31	26	18	57
British Columbia	3,033	61	10	29	26	15	58

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1994–95 (Supplement)*, special tabulations.

48

Breast-feeding

Introduction

Twenty years ago, the Nutrition Committee of the Canadian Paediatric Society officially recommended that breast milk be the only source of nutrients for most infants in the first 3–6 months of life.[1] More recently, federal and provincial/territorial health departments have campaigned to encourage breast-feeding by new mothers and to change societal attitudes towards breast-feeding in public.

This topic describes the breast-feeding of Canadian babies born up to two years prior to the 1996–97 *National Population Health Survey*.

Prevalence of breast-feeding, 1996–97

In 1996–97, 79% of all recently pregnant women age 15–49 reported that they had breast-fed their last child. This amounts to approximately 650,000 mothers (Table 48).[2] Although the only previous survey on this topic used a different approach to the question, it appears that breast-feeding in the mid-1990s may be substantially more common than breast-feeding in the 1980s, when approximately two-thirds of mothers breast-fed.[3]

Of those new mothers who were also current or former smokers, 26% smoked while breast-feeding.[2] This is less than the 36% of ever-smokers who smoked while *pregnant* (Topic 40) but is still cause for concern, as environmental tobacco smoke (ETS) in such close quarters, especially with a small infant, elevates the normal risk of exposure to ETS that is associated with having a smoker in the home (Topic 13).

There are no international data with which to compare Canadian breast-feeding practices.

Differences among groups

There is a relationship between breast-feeding practices and the age of the mother. Only two-thirds to three-quarters (66–76%) of young mothers (under age 25) breast-fed their last child, compared with over 80% of recent mothers age 25–44 (Table 48).

There is a strong relationship between mothers' education and the prevalence of breast-feeding. Recent mothers with less than a high school education were least likely (60%) to have breast-fed their last child, while university-educated mothers were by far the most likely (95%) to have done so (Table 48). There was also a very strong association between education level and smoking while breast-feeding, mothers who had not finished high school being more than three times as likely as university graduates to be smokers (Fig. 48).[2] Although these results are not age-standardized owing to the small sample size, they apply to a somewhat restricted age range compared with other topics in this *Report*.

There is also a relationship between mothers' income adequacy and the prevalence of breast-feeding, although it is not as pronounced as the relationship between mothers' education and breast-feeding. About three-quarters (72–75%) of recent mothers in the two lowest income groups breast-fed their last child, compared with over 80% of recent mothers in the two highest income groups (Table 48).

Of the recent mothers whose child or children were still living in their household at the time of the survey, single mothers were slightly less likely to have breast-fed than mothers who were part of a couple (74% vs. 81%) (Table 48). The recent mothers (in a couple or unattached) who were not living with their child or children were much less likely to have breast-fed their last child.

There was a great deal of variation in breast-feeding practices across provinces and regions. Recent mothers from Quebec were by far the least likely, at 60%, to have breast-fed their last child, while almost all (98%) of the recent mothers in British Columbia did so (Table 48). Also, only two-thirds (67%) of recent mothers in the Atlantic provinces breast-fed their last child, well under the Canadian average (provincial data for these provinces were suppressed because of high sampling variability).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions.[4] The questions related to this topic were asked only of mothers between the ages of 15 and 49 who were recently pregnant (since 1994–95 for all provinces except Alberta, where the reference period was five years). The question on smoking while breast-feeding was asked of current and former smokers; it is not clear if this was understood by respondents to refer to simultaneously smoking and breast-feeding, or more generally to being both a smoker and a breast-feeding mother. The small sample size of such mothers does not allow for much breakdown into sub-groups.

Data on education, income adequacy, and household type were not age-standardized owing to the small sample sizes involved. As noted, however, the somewhat limited age range (15–49 years) of those questioned reduces the likelihood that age differences, rather than genuine differences in socio-economic status or household composition, explain these findings.

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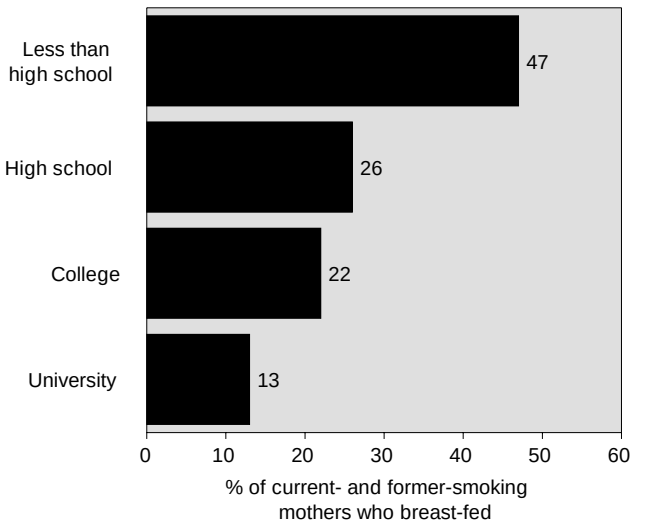
Figure 48. **Smoking while breast-feeding, by education, women age 15–49, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 48. **Breast-feeding practices, by age, by education, by income adequacy, by household type, and by province/region, recent mothers age 15–49, Canada, 1996–97**

	Population estimate	Breast-fed last child	
		Yes	No
	('000)	(%)	(%)
Total, age 15–49	**811**	**79**	**21**
Age 15–17	2	#	#
Age 18–19	17	66	#
Age 20–24	115	76	24
Age 25–34	516	80	20
Age 35–44	158	82	18
Age 45–49	2	#	#
Less than high school	96	60	39
High school	372	78	22
College	184	79	21
University	156	95	5
Lowest income	23	75	24
Lower middle income	100	72	28
Middle income	262	78	22
Upper middle income	251	83	17
Highest income	69	82	18
Income not stated	106	81	19
Couple with children	696	81	19
Single mother	89	74	25
Couple alone	5	57	43
Unattached	13	24	76
Atlantic	52	67	33
Quebec	172	60	40
Ontario	312	84	16
Manitoba	28	86	14
Saskatchewan	23	#	#
Alberta	146	85	15
British Columbia	78	98	#

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

49

Helmet and seatbelt use

Introduction

Head injuries arising from mishaps on bicycles affect both adults and children (Topic 62) and can be prevented or reduced in severity by the consistent use of a helmet. For some years now, the Canadian Medical Association has been promoting the use of helmets by young cyclists. The provinces of Ontario, British Columbia, and Nova Scotia have legislation involving the use of bicycle helmets; a number of individual municipalities may also have laws requiring helmet use.[1]

This topic describes consistency of helmet use by Canadians age 12 and older who ride bicycles, based on their own report. It also describes the consistency of Canadian motorists age 16 and older in insisting that their passengers wear their seatbelts.

Prevalence of safety helmet and seatbelt use, 1996–97

About 29% of Canada's 6 million cyclists claim to always wear a helmet when riding a bike.[2] If those who often wear a helmet are included, this figure rises to only 36%. However, the number of cyclists wearing helmets is up significantly from 1994–95, when only 19% always wore a helmet and only 23% always or almost always wore a helmet when riding.[3] The largest proportion by far (59%) reported that they never wear a bicycle helmet (Table 49a),[2] but this is down from 73% who never wore helmets in 1994–95.[3]

An analysis of the main reason why individuals did not wear helmets in 1994–95 revealed that 47% did not have a helmet, 14% claimed that helmets were uncomfortable, 9% said helmets were unnecessary, and 4% said they were subject to ridicule as a result of wearing a helmet (25% claimed other reasons).[3] (These reasons were not ascertained again in 1996–97.)

Eighty-six percent of Canada's 18.7 million motorists age 16 and older reported that they always insist that all passengers are safely fastened with seatbelts (including children in car seats) (Table 49b).[2] About 94% of motorists always or often insisted that their passengers wear seatbelts. Only 4% of Canadian motorists rarely or never insisted on such precautions.

There are no international data on helmet or seatbelt use available for comparison purposes.

Differences among groups

Overall, there is little difference between helmet use by males and females. However, women age 20–34 and 55 and older were slightly more likely to wear helmets, compared with men the same age (Table 49a).

When both sexes are considered together, the most consistent helmet wearers were age 12–14 (40% of cyclists) and 25–64 (about one-third of cyclists) (Table 49a). Less than one in six teens age 15–19 and less than one in four Canadians age 20–24 always wore helmets while cycling.

Differences in helmet use associated with education are very pronounced (Table 49a). There is an almost 2.5-fold difference between the least and most educated groups — one of the steepest gradients related to education of all the topics in the *Statistical Report*.[2] This difference was also noted in the previous *Report*, although the disparity has decreased slightly.[3]

In 1996–97, less than 25% of Canadian cyclists in the two lowest income adequacy groups always wore their helmets, compared with 30% of cyclists in the upper middle income group and 40% in the highest income group (data not shown).[2] This disparity is consistent with analysis from the 1994–95 survey.[3]

Differences were also striking among provinces. Consistent use of a helmet ranged from 12% of cyclists in Manitoba to 53% in British Columbia.

Along with the strict helmet regulations in British Columbia (and other provinces and cities), these ranges in values between provinces may also be a reflection of differences in the type of cycling popular in these provinces and the hazards perceived to be associated with varying conditions.

Overall, women were more likely than men to always insist that their passengers use their seatbelts (92% vs. 80%); this was consistent among all age groups (Table 49b). Only 60% of men age 20–24 always insisted on their passengers wearing seatbelts, the lowest level of all age and sex groups; in fact, 17% of these men rarely or never insisted on the use of seatbelts, the highest level of all age and sex groups. Overall, almost 90% of Canadian motorists age 45 and older always insisted on their passengers wearing their seatbelts.[2]

Interestingly, there were virtually no differences among education levels for insisting that passengers wear seatbelts (Table 49b). People in the lowest income adequacy group were more likely to always insist that their passengers wear their seatbelts compared with people in the highest income group (89% vs. 83%, respectively) (data not shown).[2]

Individuals living as part of a couple with children and single parents were more likely to always insist that their passengers wear seatbelts compared with unattached individuals or individuals in couples without children (Fig. 49).[2] This is likely due to the fact that the passengers of the former groups were often their own young children, where safety was considered to be an even greater issue than with adult or unrelated passengers.

There are some noteworthy differences among provinces regarding seatbelt use. The proportion of motorists always insisting that their passengers wear their seatbelts ranged from lows of 77–78% in Manitoba and Alberta to highs of 88–89% in Newfoundland, New Brunswick, and British Columbia (Table 49b).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[4]

Questions on helmet use were self-reported and asked of everyone who rode a bicycle. Questions on reasons for not wearing a helmet were not repeated in 1996–97. Questions on insistence on seatbelt use were self-reported and asked only of those individuals age 16 and over who had a valid driver's licence.

References

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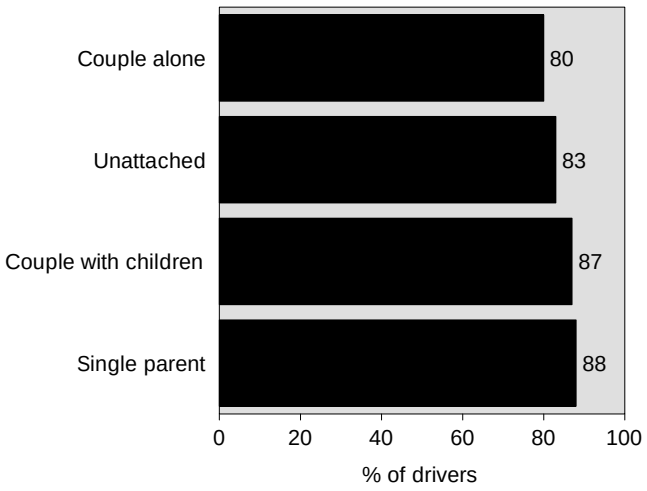
Figure 49. **Always insist on passengers' use of seatbelts, by household type (age-standardized), drivers age 16+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 49a. **Regularity of helmet use, by age and sex, by education (age-standardized), and by province, bicycle riders age 12+, Canada, 1996–97**

	Population estimate	Always	Often	Rarely	Never
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**6,043**	**29**	**7**	**6**	**59**
Male	3,411	28	7	7	59
Female	2,632	31	7	6	56
Age 12–14, total	561	40	14	14	31
Male	311	41	13	13	33
Female	250	40	16	15	29
Age 15–17, total	597	15	8	12	65
Male	382	16	8	13	63
Female	214	14	7	9	70
Age 18–19, total	351	14	8	9	69
Male	188	14	7	#	67
Female	163	14	#	#	72
Age 20–24, total	607	23	8	5	64
Male	337	20	8	4	67
Female	271	28	8	5	60
Age 25–34, total	1,268	33	5	4	57
Male	690	30	6	5	60
Female	577	37	5	4	54
Age 35–44, total	1,383	32	5	5	58
Male	760	32	5	5	59
Female	623	32	5	5	57
Age 45–54, total	697	32	7	3	58
Male	408	34	5	3	57
Female	289	28	9	#	59
Age 55–64, total	366	31	6	#	60
Male	208	28	#	#	62
Female	158	36	#	#	58
Age 65–74, total	173	29	#	#	60
Male	104	27	#	#	61
Female	69	31	#	#	58
Age 75+, total	41	#	#	#	77
Male	24	#	#	0	68
Female	17	#	#	#	89
Less than high school	1,845	16	6	8	71
High school	2,221	23	5	7	65
College	982	23	6	3	49
University	979	36	7	4	34
Newfoundland	85	#	#	#	69
Prince Edward Island	18	#	#	#	68
Nova Scotia	133	37	#	#	50
New Brunswick	145	21	#	#	67
Quebec	1,778	19	7	6	69
Ontario	1,935	33	8	7	52
Manitoba	220	12	5	4	79
Saskatchewan	197	#	#	#	82
Alberta	596	26	8	8	58
British Columbia	935	53	#	#	36

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 49b. **Frequency of insisting on seatbelt use by passengers, by age and sex, by education (age-standardized), and by province, motorists age 16+, Canada, 1996–97**

	Population estimate	Always	Often	Sometimes	Rarely/ never
	('000)	(%)	(%)	(%)	(%)
Total, age 16+	**18,656**	**86**	**8**	**3**	**4**
Male	9,809	80	10	4	7
Female	8,847	92	5	1	2
Age 16–17, total	361	80	10	5	5
Male	195	74	12	7	8
Female	166	87	8	#	#
Age 18–19, total	575	75	11	5	9
Male	305	68	12	7	14
Female	270	84	10	3	3
Age 20–24, total	1,563	71	12	6	11
Male	809	60	14	9	17
Female	754	84	10	3	4
Age 25–34, total	3,952	82	9	3	6
Male	2,001	74	12	4	10
Female	1,952	90	6	2	2
Age 35–44, total	4,774	89	7	1	3
Male	2,496	85	9	2	4
Female	2,278	93	5	1	1
Age 45–54, total	3,349	89	6	2	3
Male	1,755	84	9	3	4
Female	1,594	94	3	1	1
Age 55–64, total	2,094	89	6	1	3
Male	1,115	84	9	2	5
Female	979	95	3	#	1
Age 65–74, total	1,407	92	4	2	2
Male	772	90	5	2	3
Female	635	93	3	#	1
Age 75+, total	581	91	4	1	3
Male	361	89	5	2	4
Female	220	95	3	#	#
Less than high school	3,750	85	8	2	5
High school	7,845	86	8	2	4
College	3,758	86	7	2	5
University	3,199	85	8	3	4
Newfoundland	326	88	8	#	#
Prince Edward Island	91	83	10	#	#
Nova Scotia	588	82	8	#	8
New Brunswick	492	88	4	#	#
Quebec	4,571	87	6	3	4
Ontario	6,977	86	7	2	4
Manitoba	681	77	12	4	7
Saskatchewan	634	82	9	#	7
Alberta	1,735	78	12	3	7
British Columbia	2,564	89	6	#	3

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

50

Sexual practices

Introduction

Healthy sexual practices are becoming increasingly important, as unsafe sexual behaviours may lead to consequences such as infertility or serious illnesses such as AIDS (Topic 71) or other sexually transmitted diseases (Topic 70). Among the safe-sex practices widely promoted is the routine use of condoms, especially in short-term relationships where the partner's sexual history may be unknown. Having multiple partners compounds the risk.

This topic describes regularity of condom use with a new sexual partner and number of partners in the previous year.

Prevalence of risky sexual practices, 1996–97

The results of the 1996–97 *National Population Health Survey* suggest that many Canadians are at risk for HIV and other sexually transmitted diseases because of their sexual behaviour. Among those Canadians age 15–59 in a relationship of less than 12 months' duration, one sixth (16%) did not use a condom the last time they had sex, and 8% reported *never* using a condom. Three percent of Canadians had three or more sexual partners in the 12 months before the survey (Table 50).[1]

Differences among groups

Men appear to be at greater risk than women, as they were twice as likely to have had three or more partners in the last year, though they were equally likely not to have used a condom the last time they had sex with a partner in a relationship of less than 12 months' duration (16%) (Table 50).

The percentage reporting that they did not use a condom the last time they had sexual intercourse with a partner of less than 12 months ranged from 8% among 50–59 year olds and 15-17 year olds, to 26% among 18–19 year olds (Table 50). The 35–44 year age group had the highest proportion (10%) of respondents who reported that they *never* used a condom with a partner of less than 12 months.

By province, the percentage reporting that they had not used a condom the last time they had sexual intercourse with a partner of less than 12 months ranged from 8% in Ontario to 31% in Alberta (Table 50).

There is a relationship among level of risk and the likelihood of HIV testing (see Topic 20). For example, HIV testing was at least twice as high among those who had two or more partners in the prior year than among those who did not have any sexual partner and those who had one partner (Fig. 50).[2]

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the sample of respondents age 15–59, and only direct (non-proxy) reports were accepted.[3]

References

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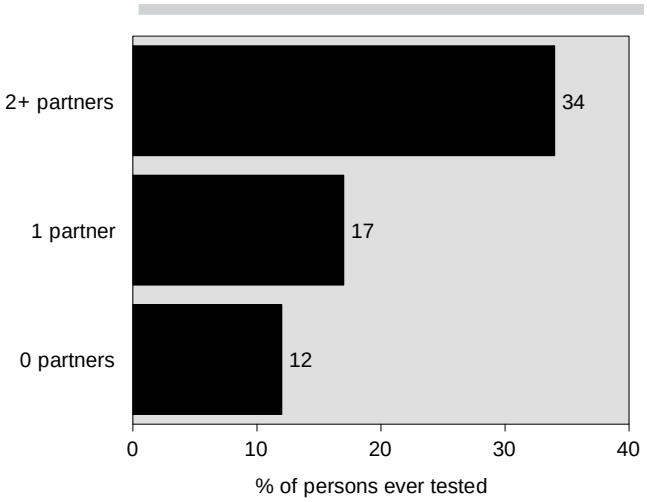
3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 50. **Likelihood of an HIV test, by number of sexual partners in past year, age 18–59, Canada, 1996–97**



Source: Health Canada, Laboratory Centre for Disease Control, *National Population Health Survey, 1996–97*, special tabulations.

Table 50. **High-risk sexual behaviours, by age and sex, by education (age-standardized), and by province, age 15–59, Canada, 1996–97**

	Population estimate	Use a condom with a sexual partner of less than 12 months[a]			3+ sexual partners last year[b]
		Occasionally	Never	Not last time	
	('000)	(%)	(%)	(%)	(%)
Total, age 15–59	**18,835**	**6**	**8**	**16**	**3**
Male	9,454	8	8	16	5
Female	9,381	5	9	16	2
Age 15–17, total	1,268	#	#	8	8
Male	666	#	#	#	#
Female	601	#	#	#	#
Age 18–19, total	822	9	#	26	12
Male	394	#	#	25	16
Female	428	#	#	27	8
Age 20–24, total	1,870	12	9	23	9
Male	950	14	8	21	11
Female	920	7	11	27	6
Age 25–34, total	4,434	8	9	18	4
Male	2,189	9	8	17	6
Female	2,246	7	9	20	2
Age 35–44, total	5,275	6	10	15	2
Male	2,665	8	9	18	3
Female	2,610	#	11	12	1
Age 45–49, total	2,049	#	9	12	1
Male	1,057	#	11	16	2
Female	992	#	#	#	#
Age 50–59, total	3,118	#	7	8	1
Male	1,533	#	8	9	1
Female	1,585	#	6	6	#
Less than high school	4,197	3	8	12	3
High school	7,963	6	7	14	3
College	3,544	5	8	14	2
University	3,043	4	4	9	2
Newfoundland	370	#	#	#	#
Prince Edward Island	86	#	#	#	#
Nova Scotia	580	#	#	#	#
New Brunswick	491	#	#	#	#
Quebec	4,750	#	14	23	3
Ontario	7,128	3	4	8	2
Manitoba	667	4	7	13	4
Saskatchewan	567	#	#	#	#
Alberta	1,740	#	#	31	4
British Columbia	2,457	#	#	23	5

Data suppressed because of high sampling variability

[a] As a percentage of those in such relationships. The rate of non-response was close to 50%.

[b] As a percentage of those who had sexual intercourse in the previous year. The rate of non-response was 12%.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

51

Sun exposure and protection

Introduction

In 1999, estimates called for 3,500 new cases of melanoma and 770 deaths from melanoma, both incidence and mortality having steadily increased since 1969. Deaths among males were 1.5 times the rate for females, and the 1999 figures were all-time highs for males, but not for females.[1,2] Cataracts were reported by 659,000 Canadians age 18 and older in 1996–97.[3] Since melanoma and cataracts are long-term outcomes of excessive sun exposure, dermatologists and other public health authorities have been actively advising the population for the last few years to limit their midday exposure. This is especially important for children, whose skin may be more susceptible and who have more years of potential exposure with reduced natural protection from the ozone layer.

This topic describes the extent of exposure to the sun and the protective measures taken by Canadians as of 1996.

Sun exposure and protection, 1996

Prolonged exposure to the sun is the norm for many Canadians — at work, at play, and during southern travel in the winter. Exposure of more than 30 minutes daily during June through August was reported for 92% of the 4.6 million persons who are obliged to work outdoors and 79% of those at play; similar amounts of exposure were reported by 89% of the 3.3 million Canadians who travelled south during the winter months.[4]

A majority of those spending 30 or more minutes in the sun during their summertime *leisure* hours take protective measures of some form, but large proportions do not do so regularly. Indeed, some of the easiest measures — using sunscreen on the face and body and wearing a hat — are *rarely or never* used by almost half of these persons (Table 51).[4] The measures most widely used by adults are staying in the shade (72% at least do it sometimes), wearing sunglasses (70%) and protective clothing such as a long-sleeved shirt (67%), and avoiding the sun between 11 a.m. and 4 p.m. (66%).

Parents are much more conscientious about protecting their children from exposure, as sunglasses appear to be the only measure that is substantially under-utilized (Fig. 51).[4]

Differences among groups

Although males were more likely than females to report 30 or more minutes' exposure to sun at work, at play, and during travel, the vast majority of both genders were exposed in all three settings. There was little variation in exposure related to age, education, or region (data not shown).

The more extensive and important variation among groups was in the use — or under-use — of specific protective measures (Table 51). With the exception of wearing a hat and protective clothing, men were more likely than women to routinely *avoid* sun protection measures. This difference was most striking for the use of sunblock, which men were only half as likely as women to use sometimes. In contrast to these gender differences, there was no consistent pattern in protective measures related to age. With increases in income, there was increased use of sunscreen and sunglasses, but, generally, *less* tendency to seek shade or avoid the midday sun.

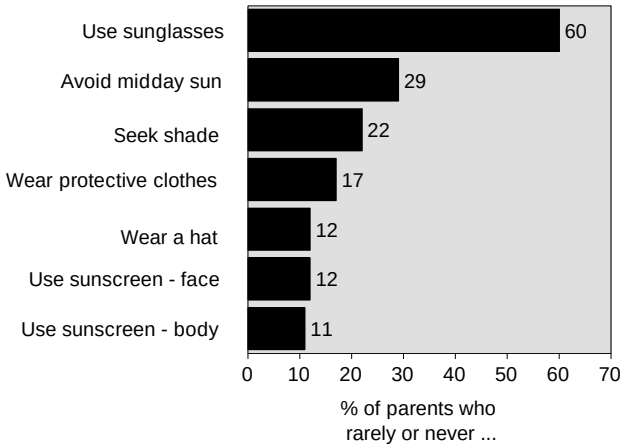
Regional comparisons suggest that residents of British Columbia and Ontario are most consistent in their use of protective measures (Table 51). Quebeckers were, by a large margin, least likely to wear a hat or protective clothing, Prairie residents were the least consistent users of sunblock, and Atlantic Canadians were least likely to stay in the

shade. Measures to protect children also varied somewhat, but comparisons are hampered by small sample sizes. Children in Atlantic Canada were least likely to avoid the midday sun, while children in Quebec were least likely to wear sunglasses (data not shown).

On definitions and methods

Statistics Canada conducted the *Sun Exposure Survey* for the National Cancer Institute of Canada, the Canadian Dermatology Association, the Canadian Association of Optometrists, and other organizations in order to assess exposure levels and describe the measures taken by Canadians to protect themselves. Telephone interviewing of a sample of slightly over 4,000 persons age 15 and older took place during September and October 1996. Respondents answered for themselves except for children age 12 and under, for whom a parent provided information. The protective measures described here are only for those persons spending 30 or more minutes in the sun daily, a level that was predetermined as part of the interview procedure.[5]

Figure 51. **Under-used measures for reducing children's sun exposure, Canada, 1996**



Source: Statistics Canada, *Sun Exposure Survey, 1996*, special tabulations.

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Table 51. **Rarely or never used measures to protect against the sun during leisure time, by age and sex, by income (age-standardized), and by region, persons age 15+ exposed 30+ minutes daily during June–August, Canada, 1996**

	Population estimate	Seek shade	Avoid midday sun	Wear a hat	Protective clothing	Sunglasses	Sunscreen on face	Sunscreen on body
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 15+	**18,540**	**28**	**34**	**41**	**33**	**30**	**47**	**48**
Male	9,891	32	39	31	30	34	63	62
Female	8,649	22	27	53	35	26	29	32
Age 15–19, total	1,842	32	39	46	37	38	41	42
Male	952	36	38	30	33	48	57	60
Female	890	27	40	62	41	27	24	23
Age 20–24, total	1,641	36	45	50	45	26	51	44
Male	852	43	52	33	40	23	60	55
Female	789	29	36	69	51	29	42	33
Age 25–34, total	3,952	29	34	47	32	27	45	40
Male	2,030	34	41	36	30	33	62	54
Female	1,922	23	27	58	34	20	26	25
Age 35–44, total	4,087	26	32	44	32	26	42	42
Male	2,221	29	37	34	29	29	57	53
Female	1,866	22	26	56	35	22	23	29
Age 45–54, total	2,952	27	32	41	32	27	48	52
Male	1,618	33	38	37	29	30	67	70
Female	1,334	20	25	46	36	23	26	30
Age 55–64, total	1,772	22	27	30	28	38	47	56
Male	1,026	29	36	24	30	44	63	74
Female	746	#	#	37	25	29	26	31
Age 65–74, total	1,476	21	30	31	30	40	56	68
Male	776	21	37	#	#	39	68	77
Female	700	#	#	45	36	42	43	57
Age 75+, total	818	29	29	23	24	39	67	76
Male	416	#	#	#	#	#	83	88
Female	402	#	#	#	#	35	51	64
Lowest income	942	23	31	48	33	39	63	72
Lower middle income	2,789	26	33	44	32	39	54	55
Middle income	3,373	29	35	43	31	32	49	51
Upper middle income	5,945	26	30	40	33	29	46	46
Highest income	3,213	36	40	36	37	25	40	41
Income not stated	2,279	28	33	42	34	29	49	49
Atlantic	1,533	33	36	37	27	34	49	51
Quebec	4,414	29	39	52	41	36	45	47
Ontario	6,883	26	30	38	30	27	45	46
Prairies	3,206	30	32	37	31	32	55	55
British Columbia	2,503	25	34	39	30	24	44	47

Data suppressed because of high sampling variability

Source: Statistics Canada, *Sun Exposure Survey, 1996*, special tabulations.

52

Health behaviour changes

Introduction

The importance of individual behaviour as a determinant of health status has been recognized officially in federal government policy for at least a quarter century.[1] While the focus has shifted away from behaviour in recent years towards socio-economic determinants,[2] health education directed at individual behaviour remains one of the predominant health promotion strategies on a population level — and one of the challenges (Topics 36–38).

At the individual level, there is a strong consensus that personal behaviours — nutrition, smoking, exercise — are the key determinants of health and are much more influential than health services, the environment, or genetics.[3] Given this mind-set and a fairly constant barrage of advice and encouragement regarding healthy lifestyles, it is hardly surprising that the population makes and contemplates behavioural changes to improve health. This topic examines the extent and nature of these changes.

Actual, needed, and intended behaviour changes, 1996–97

Almost half (47%) of the Canadian population age 12 and older reported changing some behaviour to improve their health in the year before the 1996–97 *National Population Health Survey*, and a slightly larger proportion (54%) reported feeling that some future change was needed. Of this latter group, however, over two thirds (69%) reported the intention to change their behaviour in the coming year (Table 52).[4]

Among those recognizing the need for future change, more exercise was the need cited most often, followed by reduced smoking, better nutrition, and losing weight (Fig. 52a).[4] A lack of will and a lack of time seem to be the main barriers to improved lifestyles (Fig. 52b).[4]

This compares with 1990, when 49% of adult Canadians reported some change in the previous year and 51% intended a change in the coming year, with more exercise the most frequently mentioned initiative.[5]

Differences among groups

Females were more likely than males to report changes in the past year, to recognize the need for more changes, and to intend to make these changes in the coming year (Table 52). While consistent, these gender differences were less pronounced than those related to age, however. There was a general decline in behaviour change — whether actual, needed, or intended — with increasing years. For example, Canadians age 20–44 were about twice as likely as seniors to believe that they needed to make a change for their health. This is similar to the trend in 1990.[5]

There is little systematic relationship between education and behaviour change (Table 52), which is a contrast to 1990, when actual and intended change became more common with increasing education.[5]

Behaviour changes in the previous year were most often reported in Ontario (50%) and least often in Saskatchewan (39%), yet Saskatchewan residents were the least likely to report intentions to change in the next year (56%) and British Columbia residents among the most likely (73%) (Table 52). If these intentions are acted upon, it would increase the existing discrepancies among the provinces in behaviours such as smoking and exercise (see Topics 40 and 46). Ontarians appear to feel they have made sufficient changes, as they were *least* likely to see any need for more change in the coming year, and their intentions were correspondingly modest. Albertans were most likely to report the need for change (61%), and Quebeckers reported the greatest intention to make changes (79%).

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[6]

The questions about behaviour changes were asked at the beginning of the interview, before detailed questioning on specific behaviours might influence responses, especially to the questions about needed or intended changes. No third-party answers were accepted for this set of questions. Questions on *actual* and *needed* changes were asked of everyone and were independent of each other; however, the questions about *intended* change were confined to those who reported feeling the need to make a change.

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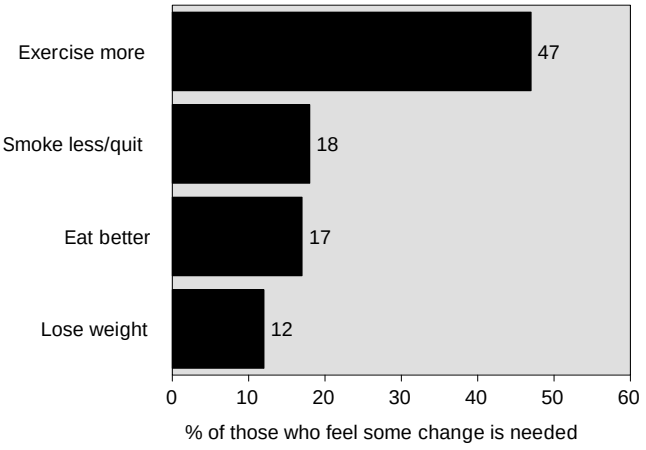
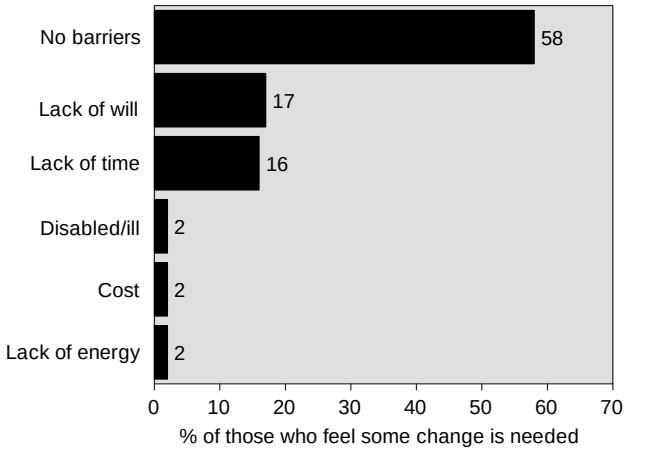
6. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 52a. **Self-reported changes needed to improve health, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Figure 52b. **Barriers to needed changes, age 12+, Canada, 1996–97**



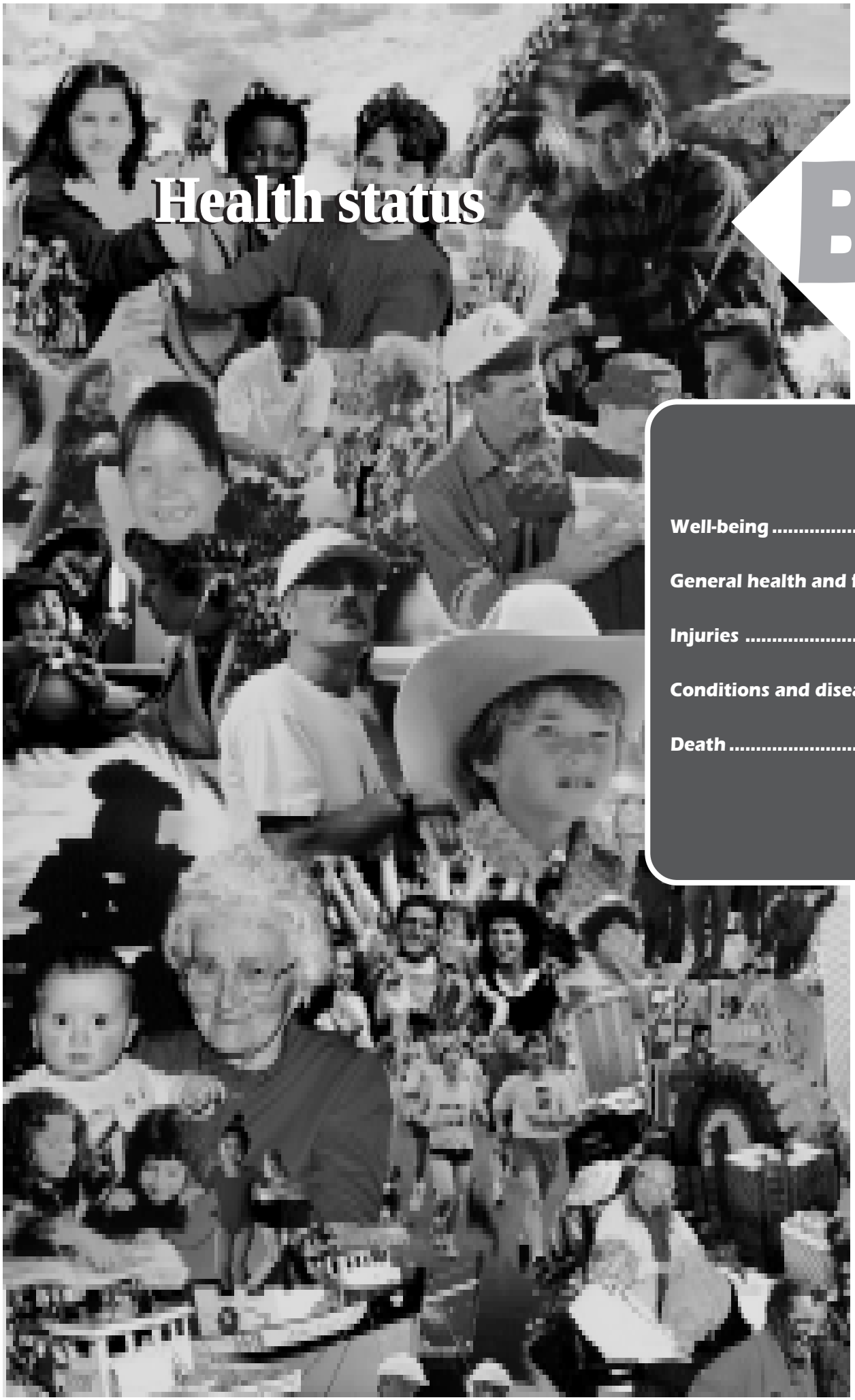
Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 52. **Changes to benefit health, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Last year	In the future	
		Took action to improve health	Feel some action needed	Intend to take needed action[a]
	('000)	(%)	(%)	(%)
Total, age 12+	**24,595**	**47**	**54**	**69**
Male	12,099	44	53	67
Female	12,495	50	56	70
Age 12–14, total	1,175	55	45	67
Male	604	58	42	70
Female	571	51	49	64
Age 15–17, total	1,268	56	55	73
Male	666	56	49	76
Female	601	56	62	70
Age 18–19, total	822	57	59	71
Male	394	58	56	67
Female	428	56	62	74
Age 20–24, total	1,870	59	62	72
Male	950	55	61	70
Female	920	63	63	74
Age 25–34, total	4,434	50	61	73
Male	2,189	47	59	70
Female	2,246	53	64	75
Age 35–44, total	5,275	44	62	69
Male	2,665	40	62	68
Female	2,610	48	62	70
Age 45–54, total	3,795	48	59	68
Male	1,949	42	57	66
Female	1,846	53	62	70
Age 55–64, total	2,540	46	48	65
Male	1,203	41	46	61
Female	1,337	50	50	69
Age 65–74, total	2,085	39	35	58
Male	926	35	33	53
Female	1,159	41	36	62
Age 75+, total	1,331	24	20	51
Male	552	24	17	47
Female	779	24	22	53
Less than high school	7,550	39	48	65
High school	9,407	46	55	70
College	4,050	45	52	62
University	3,444	46	54	63
Newfoundland	478	41	57	60
Prince Edward Island	113	43	59	64
Nova Scotia	775	46	57	67
New Brunswick	632	44	55	68
Quebec	6,131	44	57	79
Ontario	9,323	50	49	62
Manitoba	902	46	53	65
Saskatchewan	801	39	52	56
Alberta	2,244	48	61	70
British Columbia	3,196	49	59	73

[a] Expressed as a percentage of those reporting some change was needed.

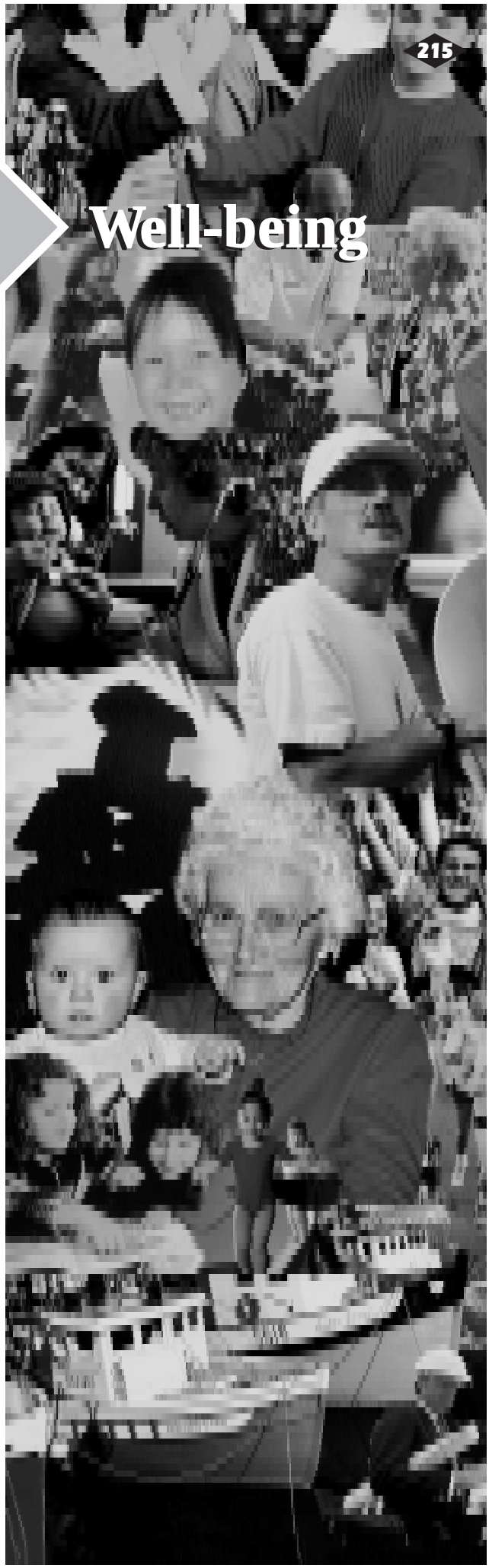
Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.



Health status

B

Well-being



Most governments have by now adopted definitions of health similar to that of the World Health Organization, which recognizes health as "more than the absence of disease, as a resource for everyday living." Federal and provincial/territorial health departments in Canada are no exception to this rule. In practical measurement terms, however, the vast majority of health status indicators are oriented to disease and death, and the absence of disease or the postponement of death are the only indicators of good health generally possible. The significance of this brief section on well-being is that it presents the only statistics currently available on positive aspects of health. That this section consists of three topics out of 32 describing health status illustrates how rare such indicators truly are.

Overview

One-quarter of Canadians define their health as "excellent," a proportion that is unchanged since 1985 (Topic 53). Half the working population described themselves as "very satisfied" with their work in 1994–95, which represents a modest decline from the early 1990s, especially for women (Topic 55). While three satisfactory measures of psychological well-being now exist, no precise trends are yet available (Topic 54). However, one general pattern is clear: a generation ago, happiness *declined* as age increased. In the 1990s, in sharp contrast, a range of mental health measures reveal that psychological well-being *increases* with age. Unhappiness, stress, and depression are now conditions of youth much more than of old age.

There is a very strong social status gradient in self-rated health and a more modest one in two indicators of psychological well-being — namely, self-esteem and sense of mastery. Job satisfaction is positively related to income. Provincial differences are found only in self-rated health among these measures of well-being, and they are not particularly pronounced, compared with some other measures of health status described in later sections of this *Report*.

On data sources and gaps

All of the indicators in this section are based on self-reports, of necessity, and thus are obtained through population surveys. With the advent of the *National Population Health Survey*, Canada now has reasonably current national data for many of the extant indicators of positive health. Continuity into the future is essential for producing time series for these indicators. This is particularly important for scales such as the psychological well-being measures, which lack an agreed-upon cut point or definition of truly positive health.

Two areas of positive health not currently covered should be considered for surveys in the near future: physical fitness, which has not been measured nationally since 1988, and social well-being, which has been measured in many other countries with the SF-36 scale. Such future developments should be undertaken with a backward glance, however: the 1978–79 *Canada Health Survey* assessed physical fitness and happiness, and updating these measures would provide valuable insights into changes in the personal health resources of the Canadian population during a period of turbulent economic and social change (see Topic 11).

53

Self-rated health status

Introduction

Self-rated health status is a good predictor of the presence of more "objectively" measured health problems (Topics 56, 59, and 68), as well as health care utilization (Topics 19 and 26) and longevity (Topics 82 and 84).[1] Self-rated health status summarizes physical and mental health as experienced by the individual according to the individual's values and, in the format usually found in population surveys, permits some assessment of positive health as more than just the absence of health problems.

This topic describes the results of asking a large sample of Canadians age 12 and older to rate their own health in 1996–97.

Self-rated health status, 1996–97

In 1996–97, one-quarter (25%) of Canadians described their health as excellent, and more than a third (38%) rated it as very good. Only 9% described their health as fair or poor (Table 53).[2] Among persons age 15 and older, self-rated health was virtually unchanged since 1985, although there was a small decrease in the percentage of people rating their health as fair or poor (Fig. 53a).[2,3,4]

Although international comparability is limited owing to the lack of standardization in the measurement of perceived health status, there is a group of OECD countries that could be reasonably compared, with some degree of caution.[5] In 1995, out of eight countries, only Norway had a "good" or better rate of self-reported health status that was higher than Canada's rate in 1996–97 (Fig. 53b).[2,5] Of these western countries, the lowest rate was found among Germans, where only 46% of people rated their health status as "good" or better. South Koreans had the lowest rating of all eight countries for "good" or better self-reported health status, at 44%. However, these differences may reflect alternative conceptions of health as much as they do actual differences in health status.

Differences among groups

Males are slightly more likely than females to rate their health status as excellent, but the differences are generally confined to younger age groups (Table 53). There is a definite deterioration in self-rated health status in successive age groups. For example, fair self-rated health status increased with each successive age group, from 2% of 12–14 year olds to 19% of Canadians age 75 and older.

There is a definite gradient in self-rated health that corresponds to one's level of income adequacy: only 18–19% of Canadians in the two lowest income groups rated their health as excellent, compared with 33% of Canadians in the highest level of income. Further, 21% of low-income Canadians stated that their health was fair or poor, compared with only 5% of Canadians with the highest income (Table 53).

Considering the general consistency in self-rated health over time, the provincial differences in self-rated health are surprising (Table 53). Only 17% of Saskatchewan residents viewed their health as excellent, compared with 27% of Quebeckers. Nova Scotians were most likely to see their health as fair (10%), while residents of Newfoundland, Quebec, Ontario, Alberta, and British Columbia were the least likely to rate it so low (7%). These differences correspond to those reported for other indicators, such as the risk of depression (Topic 75) or two-week disability days (Topic 57), on both of which Nova Scotians are highest, and psychological well-being (Topic 54), which is lowest in Nova Scotia.

There is no recent information on the self-rated health status of Aboriginals for comparison.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[6]

Survey respondents were asked to rate their own health in five categories; unlike earlier versions of this question (before 1994–95), they were not asked to rate their health relative to that of other persons their own age. However, since self-rated health declines with age regardless of wording (Table 53), it is not unreasonable to compare results over time, as in Figure 53a.

References

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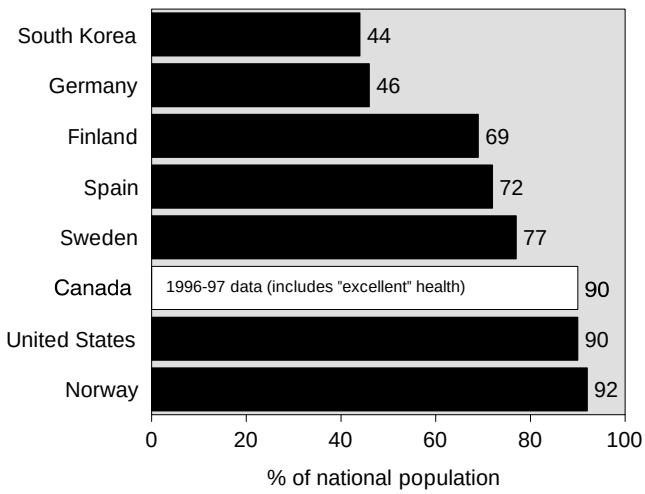
Figure 53a. **Self-rated health status, age 15+, Canada, 1985 to 1996–97**

Sources: Adams O, Health status, in Health and Welfare Canada, Stephens T, Fowler Graham D (eds.), *Canada's Health Promotion Survey 1990: Technical Report*, Ottawa: Minister of Supply and Services Canada, 1993 (Cat. No. H39-263/2-1990E); Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

Figure 53b. **Good or better self-rated health, age 15+, selected OECD countries, 1995**



Sources: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM); Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 53. **Self-rated health status, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Excellent	Very good	Good	Fair	Poor
	('000)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**24,595**	**25**	**38**	**27**	**7**	**2**
Male	12,099	26	39	26	7	2
Female	12,495	24	38	27	8	2
Age 12–14, total	1,151	32	41	25	2	#
Male	580	37	39	22	2	#
Female	571	26	43	27	3	#
Age 15–17, total	1,284	29	43	23	4	#
Male	683	36	41	20	3	#
Female	601	20	45	27	6	#
Age 18–19, total	826	25	50	22	3	#
Male	403	29	51	17	3	#
Female	424	22	49	26	3	#
Age 20–24, total	1,873	34	40	22	3	0
Male	948	38	37	21	3	#
Female	924	30	43	24	3	#
Age 25–34, total	4,472	31	42	22	4	1
Male	2,209	30	44	21	4	1
Female	2,263	31	41	23	5	1
Age 35–44, total	5,238	26	41	26	5	1
Male	2,645	26	42	26	5	1
Female	2,593	27	40	26	5	1
Age 45–54, total	3,771	24	38	27	8	2
Male	1,922	25	39	26	7	2
Female	1,849	23	38	27	9	2
Age 55–64, total	2,565	19	33	32	12	5
Male	1,231	20	32	31	12	5
Female	1,334	18	34	31	12	5
Age 65–74, total	2,096	13	29	38	15	5
Male	930	14	30	34	17	6
Female	1,166	13	28	41	13	4
Age 75+, total	1,320	10	26	37	19	8
Male	549	9	26	39	17	8
Female	771	11	26	35	21	7
Lowest income	970	19	28	32	16	5
Lower middle income	2,262	18	32	32	14	5
Middle income	6,194	22	39	29	8	2
Upper middle income	7,962	26	41	26	6	1
Highest income	3,107	33	40	22	4	1
Income not stated	4,100	27	37	27	8	3
Newfoundland	478	26	45	20	7	#
Prince Edward Island	113	22	45	23	8	#
Nova Scotia	775	20	43	25	10	#
New Brunswick	632	21	37	31	9	#
Quebec	6,131	27	37	28	7	1
Ontario	9,323	25	39	25	7	3
Manitoba	902	21	39	29	8	2
Saskatchewan	801	17	39	34	8	#
Alberta	2,244	25	38	26	7	2
British Columbia	3,196	25	38	29	7	2

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey*, *1996–97*, special tabulations.

54

Positive mental health

Introduction

One of the common shortcomings of measures of health status is their failure to provide much insight into *positive* states of health beyond the absence of infirmity and illness. Well-being, or positive health, can be defined as consisting of those physical, mental, and social attributes that permit the individual to cope successfully with challenges to health and functioning.[1] Three measures that closely fit this conception of well-being on the psychological dimension are *sense of coherence*, *self-esteem*, and *mastery.* Sense of coherence is a view of the world that events are comprehensible, challenges are manageable, and life is meaningful. There is ample evidence that a strong sense of coherence is important for maintaining good health, including good physical health.[2] Self-esteem refers to the general sense of self-worth as a person, while mastery measures the extent to which individuals feel their life chances are under their own control (see below for further detail on the definitions used here). All three of these psychological attributes are conducive to coping successfully with stressors (Topics 8 and 9).[3]

This topic describes results for these three psychological attributes as measured in the 1994–95 *National Population Health Survey.*

Prevalence of positive mental health, 1994–95

All three of these measures use scales that produce a range of scores, and there is no consensus on the definition of "high" or "adequate" sense of coherence, self-esteem, or mastery. This topic thus uses arbitrary scores to define high levels of these attributes. This allows for intergroup comparison, but statements about absolute levels of positive mental health are not meaningful. For this purpose, 28% of Canadians are defined as having a high sense of coherence, 49% high self-esteem, and 21% a high sense of mastery.

Further, as the 1994–95 *National Population Health Survey* was the first national survey in Canada to use these measures, no time trends can be examined.

Differences among groups

Males are slightly more likely than females to report a high sense of mastery, but the difference is small for this attribute and non-existent for the other two (Table 54).[4] The more important pattern is that psychological well-being is, on average, lowest among the youngest age groups (Fig. 54).[4] An increase with age is most pronounced for sense of coherence, which is the most general of these three measures: seniors age 75 and older are about *three times* as likely as 18–19 year olds to score high on sense of coherence. These age-related patterns are consistent with measures of psychological *ill*-health such as *depression*, the prevalence of which *declines* with age (Topic 75). This generally positive association between good mental health and age is a complete reversal from a generation ago, when seniors were more likely than younger Canadians to be depressed, for example.[3]

There is little or no relationship between sense of coherence and education, after age-standardizing, but self-esteem and mastery are both positively related to education. This is especially true of mastery (Table 54).

Interprovincial differences in positive mental health are modest for sense of coherence and mastery, but notable for self-esteem (Table 54). Quebeckers are well above average in self-esteem, while residents of the Atlantic provinces, Manitoba, and Saskatchewan are generally below the national average in self-esteem and sense of mastery. These results suggest some relationship, in the aggregate, between positive mental

health and economic health, although there are undoubtedly many other variables at play, and further analysis is required to explain them.

On definitions and methods

These data are from the personal interview portion of the *National Population Health Survey*, conducted by Statistics Canada in June, August, and November 1994 and March 1995. The survey visited over 22,000 households; these data are based on the sample age 12 and older for self-esteem, age 13 and older for mastery, and age 18 and older for sense of coherence.[5] (The population figures in Table 54 for education and province are for age 12+.)

The sense of coherence scores reported here are based on the short version of that scale, which consists of 13 questions. "High" scores are defined as 67 or greater (the approximate 70th percentile) on a scale of 4–78. Self-esteem, which is based on the standard scale for this attribute,[6] is defined as high for scores of 20 or more out of a possible 24, while mastery, based on seven questions,[7] is treated as high when the score is 23 or more out of a maximum of 28. These cut points are based on peaks in the distribution of scores and should not be interpreted as having any clinical significance.

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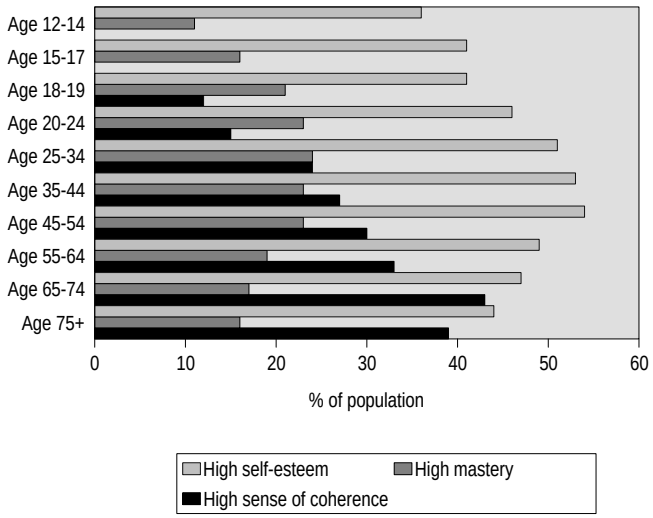
Figure 54. **Three indicators of positive mental health, by age,* Canada, 1994–95**



* Age 12+ for self-esteem; age 13+ for mastery; age 18+ for sense of coherence.

Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

Table 54. **Three indicators of psychological well-being, by age and sex, by education (age-standardized), and by province, 1994–95**

	Population estimate	High self-esteem	High mastery	High sense of coherence
	('000)	(%)	(%)	(%)
Total, age 12+	**23,949**	**49**	**21[b]**	**28[a]**
Male	11,780	49	22	29
Female	12,168	49	20	28
Age 12–14, total	1,326	36	11[c]	–
Male	706	34	13	–
Female	620	38	#	–
Age 15–17, total	1,235	41	16	–
Male	588	47	18	–
Female	647	35	14	–
Age 18–19, total	811	41	21	12
Male	469	40	22	12
Female	342	42	18	#
Age 20–24, total	1,740	46	23	15
Male	837	48	25	16
Female	902	45	20	15
Age 25–34, total	4,755	51	24	24
Male	2,338	51	25	23
Female	2,418	50	24	25
Age 35–44, total	4,864	53	23	27
Male	2,474	54	24	28
Female	2,390	51	22	26
Age 45–54, total	3,504	54	23	30
Male	1,817	52	24	30
Female	1,687	55	21	31
Age 55–64, total	2,462	49	19	33
Male	1,152	48	22	39
Female	1,309	50	17	28
Age 65–74, total	2,060	47	17	43
Male	920	44	19	44
Female	1,140	49	16	43
Age 75+, total	1,191	44	16	39
Male	478	43	14	39
Female	713	45	17	38
Less than high school	7,986	41	15	26
High school	9,007	51	21	28
College	3,806	47	21	30
University	3,109	53	29	32
Newfoundland	483	35	14	36
Prince Edward Island	110	40	18	33
Nova Scotia	764	37	20	28
New Brunswick	626	41	14	27
Quebec	6,030	62	22	25
Ontario	9,050	47	22	30
Manitoba	891	34	13	31
Saskatchewan	792	34	15	34
Alberta	2,166	44	22	28
British Columbia	3,037	46	22	28

Note: The rate of non-response was 7%.

Data suppressed because of high sampling variability

[a] Age 18+: population estimates for the first three rows are Total, age 18+: 21,388; Male: 10,486; Female: 10,901.

[b] Age 13+: population estimates for the first three rows are Total, age 13+: 23,498; Male: 11,542; Female: 11,956.

[c] Age 13-14: population estimates for the three rows are Total, age 13-14: 876; Male: 467; Female: 408.

Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

55

Job satisfaction

Introduction

Almost two-thirds of Canadians (15.4 million persons) are in the labour force (Topic 7), and job satisfaction is an integral part of their emotional well-being (Topic 54). Work stress (Topic 9), which is widespread, and conditions of employment (Topic 7) are important determinants of satisfaction with work.

This topic examines working Canadians' satisfaction with their work.

Prevalence of job satisfaction, 1994–95

In 1994–95, half of the working population age 15 and older (50%) reported that they were very satisfied with their work. Another 41% were somewhat satisfied, while 9% indicated that they were not satisfied (Table 55).[1]

Between 1991 and 1994–95, the proportion of working Canadians who were very satisfied with their work declined (Fig. 55).[1,2]

Differences among groups

Overall, there are minimal sex differences in job satisfaction, although 1994–95 is different from 1991, when women were more likely than men to be very satisfied with their job (Fig. 55).

Job satisfaction increases significantly with age. Working seniors (age 65–74) were by far the most satisfied with their work, while youth age 15–24 were the least likely to indicate that they were very satisfied with their job (Table 55). This pattern is similar to that seen for depression (Topic 75), work stress (Topic 9), and psychological well-being (Topic 54).

Although there is not a strong relationship between educational attainment and high job satisfaction, high school graduates were more likely than the average Canadian to report that they were not satisfied with their job (Table 55). There is not a strong relationship between income adequacy and high job satisfaction either, although people within the lowest income adequacy group were more likely (14%) to be not satisfied with their job, while people in the highest income group were least likely (8%) to be not satisfied (data not shown).[1]

There are some striking interprovincial variations in job satisfaction. Overall, workers in the Atlantic provinces are more likely than the average Canadian to indicate that they are very satisfied with their jobs. Among workers in New Brunswick, 58% were very satisfied with their work. The working population in the three largest provinces (Quebec, Ontario, and British Columbia) are the least likely to report that they are very satisfied with their jobs (47%, 50%, and 50%, respectively).

On definitions and methods

These data are from the personal interview portion of the *National Population Health Survey*, conducted by Statistics Canada in June, August, and November 1994 and March 1995. The survey visited over 22,000 households; these data are based on the sample of working persons age 15 and older, which consisted of almost 10,000 persons.[3]

"Not satisfied" is a combination of "not very satisfied" and "not at all satisfied," neither of which was large enough to report by itself.

This measure was not repeated in the 1996–97 *National Population Health Survey*.

References

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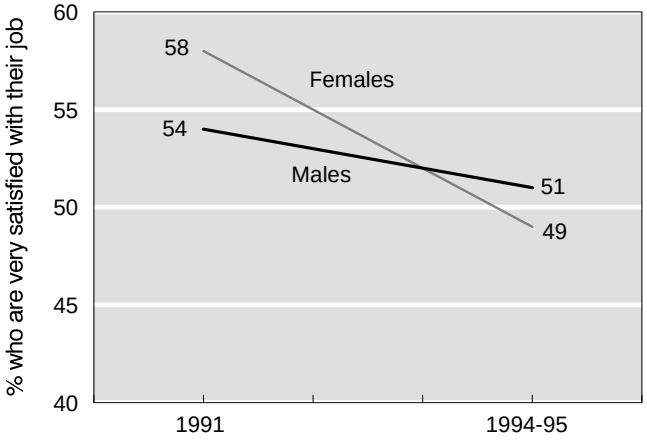
Figure 55. **Very high job satisfaction, working population age 15+, Canada, 1991 to 1994–95**



Sources: Statistics Canada, *General Social Survey, 1991*, special tabulations; Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

Table 55. **Work satisfaction, by age and sex, by education (age-standardized), and by province, working population age 15+, Canada, 1994–95**

	Population estimate	Very satisfied	Somewhat satisfied	Not satisfied
	('000)	(%)	(%)	(%)
Total, age 15+	**12,222**	**50**	**41**	**9**
Male	6,611	51	40	9
Female	5,611	49	42	10
Age 15–17, total	424	40	47	#
Male	181	45	41	#
Female	243	36	52	#
Age 18–19, total	423	37	49	14
Male	237	40	48	#
Female	186	33	51	#
Age 20–24, total	1,023	37	51	12
Male	500	36	53	12
Female	523	38	50	12
Age 25–34, total	3,330	45	44	11
Male	1,758	45	44	11
Female	1,572	44	44	11
Age 35–44, total	3,497	53	38	8
Male	1,907	54	39	7
Female	1,591	52	37	10
Age 45–54, total	2,372	57	37	7
Male	1,346	58	35	8
Female	1,026	55	39	5
Age 55–64, total	966	60	33	7
Male	551	59	30	#
Female	415	62	36	#
Age 65–74, total	173	72	#	#
Male	120	68	#	#
Female	53	80	#	0
Age 75+, total	15	#	#	0
Male	12	#	#	0
Female	3	#	0	0
Less than high school	2,291	55	36	8
High school	5,248	52	38	11
College	2,520	52	41	7
University	2,153	55	37	8
Newfoundland	197	53	40	#
Prince Edward Island	57	55	38	7
Nova Scotia	391	54	39	7
New Brunswick	270	58	37	#
Quebec	2,374	47	45	8
Ontario	5,005	50	40	10
Manitoba	505	51	40	8
Saskatchewan	422	51	41	9
Alberta	1,327	52	39	9
British Columbia	1,675	50	40	10

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1994–95*, special tabulations.

General health and function

This brief section presents four indicators of general health and function. The McMaster Index (Topic 56), two-week disability days (Topic 57), and activity limitation (Topic 58) are comprehensive measures of health and the ability to function at a "normal" level and carry out everyday tasks. The major focus of these measures, although it is usually implicit, is physical *health. This is clear from the description of the conditions that cause activity limitation (Topic 59) and the questions that constitute the McMaster Index. While the three are comprehensive measures of health, in not being condition-specific, they are like the traditional measures in the following sections in that the best health can only be defined here as an absence of problems.*

Overview

In 1996–97, one-third of Canadians described themselves as problem-free on the McMaster Index, which was a modest improvement from two years earlier. Similarly, there was a reduction over this time period, from 20% to 16%, in the proportion reporting an activity limitation. In contrast, the average Canadian had 0.85 days of reduced activity in the previous two weeks, an *increase* of 20% from 1978–79. Back problems and nervous system disorders continued to be the major causes of activity limitation.

All three of these comprehensive health measures — the McMaster Index, disability days, and activity limitation — are clearly related to social status. The prevalence of problems as revealed by each of these indicators declines as income and/or education increases. Provincial disparities are also more pronounced than for the measures of well-being reported in the previous section: health problems by these measures are 32–78% more prevalent in the lowest-ranked province than in the highest. As with other sets of health indicators, however, the specific provinces varied in their ranks on the different indicators.

On data sources and gaps

Activity limitation and two-week disability days have been measured in Canadian population surveys since the *Canada Health Survey*, while the McMaster Index (also known as the Comprehensive Health Status Measurement System) is a recent addition. Each is useful as a broad measure of health, despite the absence of a true positive dimension. The McMaster Index is unique in having a scoring system that incorporates weights for the importance attached to various states of ill-health.

As with all measures of health status, consistency over time in the use of these indicators is crucial. In this regard, changes to the activity limitation questions that preclude comparisons to any survey prior to 1994–95 are a limitation, but not an insuperable one.

56

Functional health status

Introduction

Functional health status refers to a global assessment of health with an emphasis on functional abilities required for the performance of daily tasks. The 1996–97 *National Population Health Survey* measured functional health with the Comprehensive Health Status Measurement System developed at McMaster University.[1] The Comprehensive Health Status Measurement System combines a description and a valuation of health to give a score ranging from 0 (death) to 1 (perfect health).

Functional health status, 1996–97

Most adult Canadians either have perfect scores on the health index or have ailments of a minor nature that can be fully corrected, such as near- or far-sightedness or a slight hearing loss. The overall mean score for the population age 12 and older is 0.91 (Table 56).[2] According to the Comprehensive Health Status Measurement System, 90% of men and 86% of women have a score of 0.80 or greater, indicative of a high level of health. This represents an increase from 1994–95, when 88% of men and 83% of women had such index scores.[3] About one-third of adults (38% of men and 31% of women) in 1996–97 reported perfect scores on the health index (a score of 1.00 or 100%).[2]

Differences among groups

As might be expected, overall health is related to age: the proportion who scored as perfect declined from over 50% of males and over 45% of females age 12–24 to only 8% of men and 6% of women age 75 and older (Table 56). However, among people age 75 and older, at least 60% of both men and women reported having a very good level of health. About 80% of older adults age 55–74 reported having a very good level of health.

Health problems for all of the eight attributes tended to be more prevalent among older age groups. The extent to which functional health status declines with age, however, differs for each health attribute. Emotional problems, vision and hearing loss, and pain increase most with age (data not shown).

Men and women of all ages reported a lower level of emotional health than all of the other components of health. In addition, men's scores for emotional state declined more from younger to older age groups than did scores for any other components of men's health (data not shown). Women's scores for emotional state also declined sharply from younger to older age groups. This age-related trend is in contrast to measures of psychological well-being (Topic 54) or job satisfaction (Topic 55), which generally improve with age. Problems with vision, hearing loss, and pain increased steadily for both men and women from younger to older age groups. Mobility difficulties, on the other hand, varied little by age until age 75. Among those age 75 and older, mobility difficulties were more severe for women than for men. Men and women of all ages reported a high level of thinking and memory as well as dexterity (although this result is likely also sensitive to the omission of the institutionalized population from these results).

Functional health status is related to income adequacy: mean scores increase with each successive income adequacy group, and 91% of upper middle and highest income earners reported their health status as very good (0.80 or better) compared with 77% of Canadians in the lowest income group (Table 56). Only three-quarters of men (75%) and almost 80% of women in the lowest income group reported very good health, compared with 93% of men and 90% of women in the highest income group (Fig. 56).[2]

These findings coincide with studies that illustrate the consistency of the relationship between functional health status and unemployment, being an unskilled worker, or having a low income.[4]

There are interprovincial differences in functional health status. Perfect scores are most likely to be reported in Newfoundland (41%) and are least likely (31%) in British Columbia, Saskatchewan, and New Brunswick (Table 56). These relative positions of Newfoundland and British Columbia contrast with their rankings on some key determinants of health, including education (Topic 5), low income (Topic 6), and unemployment (Topic 7). However, they are consistent with their relative positions on stress (Topic 8). This illustrates the complexity of the factors affecting health status.

On definitions and methods

As noted above, the Comprehensive Health Status Measurement System measures functional health by combining two components: a description and a valuation of functional health. The description of an individual's overall functional health is based on eight attributes: vision, hearing, speech, mobility (ability to get around), dexterity (use of hands and fingers), cognition (memory and thinking), emotion (feelings), and pain and discomfort. An individual's health status description is the vector (i.e., set of eight numbers) indicating which of the levels of functional ability apply for each attribute.

The valuation component was derived from responses to a survey conducted by McMaster University[1] asking individuals to rank various health conditions in order of the severity of their effects on a person's health. The descriptive and valuation components for each health attribute are combined to produce an overall score for each respondent. The score maps any one of the vectors of eight health attribute levels into a summary health value between 0 and 1. For example, an individual who is near-sighted yet fully healthy on the remaining seven attributes receives a score of 0.95, or 95% of full health. This score thus embodies the views of society concerning health status, which were elicited from a representative sample of individuals.

The specific values calculated in this paper are provisional. The valuations were derived from the small-scale Childhood Cancer Study using a precursor of the Comprehensive Health Status Measurement System measured in the *National Population Health Survey*. Consequently, the results should be considered preliminary and approximate. The Comprehensive Health Status Measurement System has been used previously in the 1990 *Ontario Health Survey*, the 1991 *General Social Survey*, and the 1994–95 *National Population Health Survey*. Even though certain differences exist in the wording of the questions among the different surveys, the results obtained are regarded as comparable.

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[5] The many adults with serious health problems who reside in institutions such as nursing homes and hospitals were not part of this analysis.

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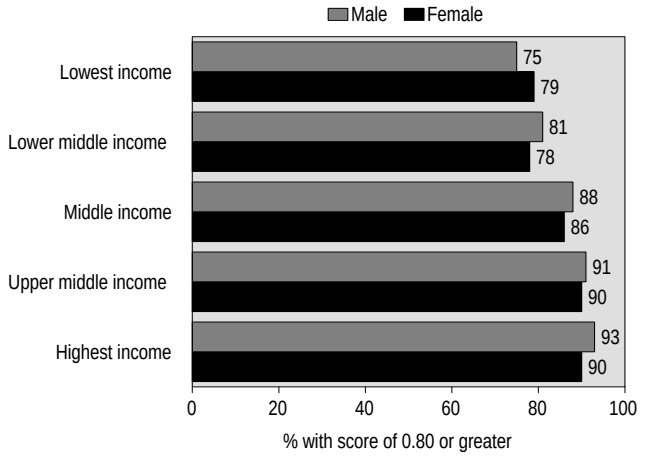
Figure 56. **Functional health status, by income adequacy (age-standardized) and sex, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 56. **Functional health status, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Mean score	Very good health[a]	Perfect score[b]
		(%)	(%)
Total, age 12+	**0.91**	**88**	**35**
Male	0.92	90	38
Female	0.90	86	31
Age 12–14, total	0.96	97	57
Male	0.96	98	59
Female	0.96	96	55
Age 15–17, total	0.95	95	51
Male	0.95	97	52
Female	0.95	92	49
Age 18–19, total	0.95	94	47
Male	0.95	97	55
Female	0.94	92	40
Age 20–24, total	0.95	95	50
Male	0.96	96	54
Female	0.94	93	46
Age 25–34, total	0.94	93	49
Male	0.95	94	52
Female	0.94	93	47
Age 35–44, total	0.93	91	44
Male	0.93	92	46
Female	0.93	90	41
Age 45–54, total	0.90	87	21
Male	0.91	89	25
Female	0.89	85	16
Age 55–64, total	0.88	81	12
Male	0.88	83	14
Female	0.88	79	11
Age 65–74, total	0.87	78	9
Male	0.88	79	10
Female	0.87	77	8
Age 75+, total	0.81	62	7
Male	0.82	65	8
Female	0.81	60	6
Lowest income	0.86	77	29
Lower middle income	0.87	79	28
Middle income	0.91	87	34
Upper middle income	0.93	91	34
Highest income	0.94	91	37
Income not stated	0.92	88	39
Newfoundland	0.92	91	41
Prince Edward Island	0.91	89	35
Nova Scotia	0.89	85	33
New Brunswick	0.90	87	31
Quebec	0.92	90	33
Ontario	0.91	88	38
Manitoba	0.91	87	34
Saskatchewan	0.90	86	31
Alberta	0.91	88	35
British Columbia	0.90	86	31

[a] Score of 0.80–1.00.

[b] Score of 1.00.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

57

Two-week disability days

Introduction

Measures of health status may be subjective, such as self-rated health status (Topic 53), or objective, such as instrumented measures of blood pressure. They may describe health directly, such as cancer incidence (Topic 73), or indirectly, such as when health care utilization is a proxy for the existence of a health problem (e.g., causes of hospitalization, Topic 77). Health status measures may focus on physical conditions, such as activity limitation (Topics 58 and 59), or on mental disorders and emotional conditions (Topics 75, 76, and 81).

In this topic, *two-week disability days* introduces yet another concept into the measurement of health status by focussing on the *impact* of health problems. The importance of this measure is that it quantifies the impact on regular activity of *all* of the health problems experienced in the previous 14 days. Like activity limitation, it provides a personal perspective on the importance and effect of health problems at the level of the individual.

Two-week disability days, 1996–97

One or more disability days in the previous two weeks were reported by 13% of Canadians in 1996–97. Health reasons forced the average person to cut down on regular activities for the better part of a day (0.85 days) during the two weeks preceding the *National Population Health Survey* (Table 57).[1] Although the mean days were slightly higher than in 1994–95, the number of Canadians who reported one or more disability days dropped from the 1994–95 level of 15%.[2] For Canadians age 15 and older, there was an 18% increase in mean disability days since 1978–79; the value is at its highest level in almost 20 years, although it roughly stabilized between 1994–95 and 1996–97 (Fig. 57).[1,2,3,4,5] These values are not age-standardized and thus reflect the aging of the population.

Differences among groups

Females reported more disability days than males for each age group starting at age 15–17 and, overall, were somewhat more likely to report one or more days (Table 57). By this measure, then, one could say that young girls are healthier than young boys and men are healthier than women. The relationship of two-week disability days to age is U-shaped; the fewest days are reported for 12–14 year olds (0.49) and teens (0.54 for 15–17 year olds and 0.53 for teens age 18–19), values lower than that reported for younger children. With increasing years beyond the teens, there is also a steady increase in two-week disability days, reaching a maximum value of 1.65 days for Canadians age 75 and older.

Amount of education is *inversely* related to this measure of health: university graduates reported 0.65 disability days, compared with the 0.99 disability days reported by those with less than a high school education (Table 57). Similarly, there is a large inverse relationship by income: the lowest income group reported a mean of 1.65 disability days, compared with 0.65 days for people in the highest income adequacy group (data not shown). Around 18% of people in the lowest income group reported one or more disability days, compared with 12% of people in the highest income group.[1]

Considering that age composition does not vary greatly from province to province (Topic 1), it is surprising that provincial averages for disability days cover such a wide range (Table 57). By this measure, Quebeckers were by far the healthiest (0.64 mean

disability days), while British Columbians and Nova Scotians were at the other extreme (1.05 days, on average). This is an impressive difference of 1.6 times between the highest and lowest provincial means, while there is a corresponding difference of 1.8 times in the proportion of residents reporting one or more days.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households; the sample consisted of 173,000 respondents age 12 and older and another 37,000 under age 12.[6] Because the data collection periods covered the entire year, there is no concern that these results are affected by seasonal illness.

As an indicator of health status, two-week disability incorporates questions on staying in bed or cutting down on normal activities because of illness or injury for all or part of any day. Unlike most topics on the survey (and all *National Population Health Survey* topics reported elsewhere in this *Statistical Report*), data on two-week disability days were collected for all household members from a household representative who was at least 12 years of age. Education, however, was not determined for anyone younger than 15 years of age.

References

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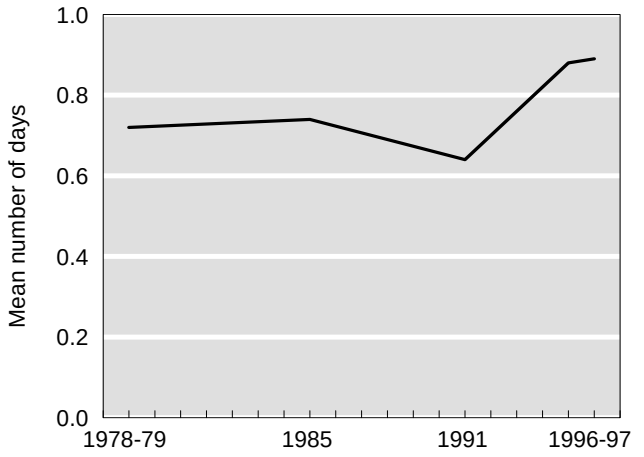
Figure 57. **Two-week disability days, age 15+, Canada, 1978–79 to 1996–97**



Sources: Statistics Canada, *Canada Health Survey, 1978–79*, special tabulations; Statistics Canada, *General Social Survey, 1985* and *1991*, special tabulations; Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

Table 57. **Disability days in the two previous weeks, by age and sex, by education (age-standardized), and by province, age 0+, Canada, 1996–97**

	Population estimate	Two-week disability days	
		Mean days	1+ days
	('000)		(%)
Total, all ages	**28,642**	**0.85**	**13**
Male	14,171	0.73	12
Female	14,471	0.96	14
Age 0–11, total	4,047	0.60	18
Male	2,071	0.62	19
Female	1,976	0.57	16
Age 12–14, total	1,151	0.49	16
Male	580	0.50	15
Female	571	0.48	17
Age 15–17, total	1,284	0.54	11
Male	683	0.47	10
Female	601	0.63	12
Age 18–19, total	826	0.53	10
Male	403	0.47	10
Female	424	0.59	11
Age 20–24, total	1,873	0.68	11
Male	948	0.50	8
Female	924	0.83	14
Age 25–34, total	4,472	0.68	12
Male	2,209	0.54	10
Female	2,263	0.81	14
Age 35–44, total	5,238	0.74	11
Male	2,645	0.63	9
Female	2,593	0.86	13
Age 45–54, total	3,771	0.91	12
Male	1,922	0.78	10
Female	1,849	1.04	14
Age 55–64, total	2,565	1.02	12
Male	1,231	0.88	8
Female	1,334	1.14	15
Age 65–74, total	2,096	1.21	14
Male	930	1.09	13
Female	1,166	1.31	14
Age 75+, total	1,320	1.65	18
Male	549	1.68	19
Female	771	1.63	17
Less than high school[a]	6,376	0.99	12
High school	9,307	0.83	12
College	4,134	0.89	13
University	3,461	0.65	11
Newfoundland	549	0.81	12
Prince Edward Island	132	0.80	11
Nova Scotia	896	1.05	16
New Brunswick	728	1.02	15
Quebec	7,048	0.64	10
Ontario	10,840	0.80	12
Manitoba	1,086	1.02	16
Saskatchewan	949	0.93	14
Alberta	2,728	1.00	15
British Columbia	3,686	1.05	18

[a] Education standardized on population age 15+.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

58

Long-term activity limitation

Introduction

Limitation of activity differs from most other measures of health status by focussing on the *impact* of health problems. In this sense, it is similar to two-week disability days (Topic 57). Implicit in both these indicators is the premise that health problems, especially the more objectively measured problems, can exist with little or no discernible impact on daily life. The converse may also be true: individuals may report that their daily functioning is impaired for health reasons, but few or no health conditions are actually identified (see Topic 59).

This topic reports the results of asking Canadians to describe whether they find they are limited in their "normal" activities at home, school, or work. The limitation is specified as lasting at least six months, while "normal activities" are left for the individual to define.

Prevalence of long-term activity limitation, 1996–97

Almost 4 million Canadians (16%) age 12 and older reported a disability or handicap or being limited on a continuing basis because of a health problem. Ten percent were limited in home activities, 3% of students were limited in school activities, and 6% of working persons were limited on the job (Table 58).[1] In 1994–95, activity limitation was somewhat higher: 20% of Canadians age 12 and older had long-term limitations, 13% were limited in home activities, 5% of students were limited in school activities, and 8% of workers were limited in work activities.[2]

Differences among groups

Across all age groups combined, females were slightly more likely to report an activity limitation at home and any type of limitation or handicap (Table 58).[1] For both sexes combined, the rates of limitation increased sharply with age, until one-third (33%) of seniors age 75 and older reported some limitation of activity at home and 44% reported some type of overall limitation or handicap. Only school-related limitations were stable across age groups. Among working Canadians, the age group of people most likely to report a limitation at work was age 55–64 (9%).

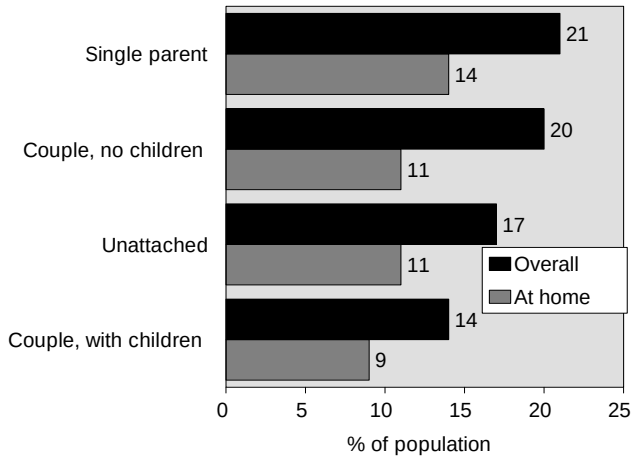
Overall limitations as well as specific limitations were each more common among those Canadians with lower income adequacy than among those who had higher income (Table 58). Over one-quarter of Canadians in the two lowest income adequacy groups reported some kind of long-term disability or handicap, compared with 14% of those in the two highest income groups. In addition, 15% of working Canadians in the lowest income group had a long-term limitation that affected their work, compared with only 4% of working Canadians in the highest income group. Although cause-and-effect relationships cannot be tested with these cross-sectional data, these findings certainly raise the possibility that activity limitations have a negative effect on income. Similarly, activity limitation is inversely related to education (data not shown).[1]

Overall, limitations or long-term handicaps of all kinds were most likely to be reported (25%) in Nova Scotia and least likely (14%) in Ontario (Table 58). Limitations in home activities were most

common in Nova Scotia (15%) and rarest in Quebec (8%) and Ontario (9%). The working populations in Nova Scotia, Saskatchewan, and British Columbia were most likely to report limitations at work (9% each), while such limitation was least common in Ontario (4%). As with work-related injuries (Topic 61), these contrasts may reflect differences in workers' compensation regimes as much as the health of working people.

Interestingly, long-term limitations were most prevalent among single parents compared with people in any other household type (Fig. 58).[1] While 14% of single parents were limited at home and 21% had some type of overall limitation, only 9% and 14% (respectively) of people in a couple with children were similarly affected.

Figure 58. **Long-term activity limitation, by household type (age-standardized), age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[3]

Restriction of activity is reported for every household member by a household spokesperson at least age 12, with separate questions for activity at home, school, and work, as appropriate. The other column in Table 58 refers to the population for whom any restriction *or* long-term disability/handicap is reported.

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3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Table 58. **Long-term limitation of activity at home, school, or work, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Any limitation or handicap	Limited at home	Limited at school[a]	Limited at work[b]
	('000)	(%)	(%)	(%)	(%)
Total, age 12+	**24,595**	**16**	10	3	6
Male	12,099	15	9	3	6
Female	12,495	17	11	3	6
Age 12–14, total	1,151	7	2	4	#
Male	580	8	#	5	#
Female	571	5	#	3	#
Age 15–17, total	1,284	8	3	4	2
Male	683	6	2	3	#
Female	601	11	3	6	#
Age 18–19, total	826	11	4	4	4
Male	403	8	#	#	#
Female	424	13	6	6	#
Age 20–24, total	1,873	8	4	2	3
Male	948	8	3	#	3
Female	924	8	4	3	3
Age 25–34, total	4,472	11	6	2	6
Male	2,209	10	5	2	5
Female	2,263	11	6	3	6
Age 35–44, total	5,238	13	8	2	6
Male	2,645	12	6	2	6
Female	2,593	14	9	3	7
Age 45–54, total	3,771	17	11	2	8
Male	1,922	15	9	2	8
Female	1,849	18	13	1	7
Age 55–64, total	2,565	26	17	2	9
Male	1,231	26	16	#	10
Female	1,334	26	19	#	7
Age 65–74, total	2,096	28	20	3	6
Male	930	29	21	#	8
Female	1,166	26	19	#	4
Age 75+, total	1,320	44	33	4	6
Male	549	44	30	#	6
Female	771	45	35	#	5
Lowest income	970	29	19	6	15
Lower middle income	2,262	25	17	5	11
Middle income	6,194	18	11	3	7
Upper middle income	7,962	14	8	2	5
Highest income	3,107	14	7	3	4
Income not stated	4,100	14	9	3	5
Newfoundland	478	16	11	#	#
Prince Edward Island	113	20	13	#	6
Nova Scotia	775	25	15	#	9
New Brunswick	632	19	12	#	6
Quebec	6,131	15	8	#	5
Ontario	9,323	14	9	2	4
Manitoba	902	18	12	2	7
Saskatchewan	801	22	13	#	9
Alberta	2,244	18	12	4	8
British Columbia	3,196	21	13	#	9

Data suppressed because of high sampling variability

[a] As a percentage of those attending school (approximately 37% of total population age 12+).

[b] As a percentage of those employed (approximately 72% of total population age 12+).

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

59

Conditions causing activity limitation

Introduction

Since 4 million Canadians are limited in their normal activities because of a health condition (Topic 58), it is important to identify the nature of these conditions in order to plan appropriate remedial action that will permit fuller participation in daily activities.

This topic describes the main conditions reported by a household spokesperson as affecting the daily activity of a household member.

Prevalence of conditions causing limitations, 1996–97

Of the 16% of Canadians who reported a limitation at home, work, or school or who indicated that they had a long-term disability or handicap (Topic 58), the largest proportions reported that the main cause was a (non-arthritic) back problem or a condition of the nervous system, such as vision or hearing difficulties.[1] Other musculoskeletal problems, respiratory conditions, and heart conditions other than coronary heart disease were also important causes of activity limitation (Fig. 59).[1] The proportion of each of the main causes of activity limitation is essentially the same as in 1994–95.[2]

Differences among groups

Unlike most indicators of health status, the prevalence of these conditions does not increase systematically with age. For example, nervous system problems among people with limitations generally declined with age, at least until age 75 and older (Table 59).[1] Back problems increased to a maximum of 27% of 35–44 year olds with limiting conditions and then declined, while limb problems were most likely to affect 20–24 year olds. Respiratory conditions, which include allergies and asthma (see Topic 68), were the main cause of activity limitation for one-third of teens age 12–17, a proportion that diminished steadily with age to 6% of limited persons age 75 and older. Only arthritis and heart problems increased steadily with age.

Arthritis was reported as a cause of activity limitation by more than twice the proportion of women as men (16% vs. 7%), while men were somewhat more likely than women to cite heart, back, and limb problems. The other main causes of limited activity were reported in roughly equal proportions by both sexes (Table 59).

There is no consistent pattern of association between education and the prevalence of these various conditions; however, there are many interprovincial differences of note (Table 59). Where data were not suppressed because of high sampling variability, Nova Scotians with activity-limiting conditions were the most likely to be limited by nervous system problems and heart conditions. British Columbians with limitations were the most likely to report back problems but the least likely to report arthritis. Manitobans with limitations were least likely to report limb problems. The conditions reported by limited people in Quebec, Ontario, and Alberta were roughly equal to the proportions of the Canadian average.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The

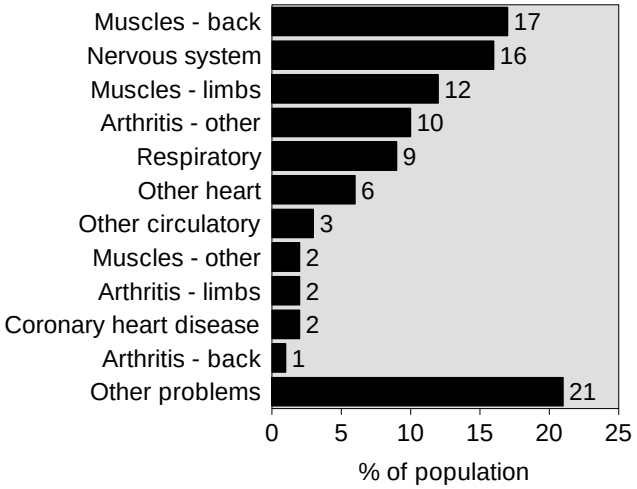
findings for this topic are based on a sample of 18,000 respondents age 12 and older. The survey also included a sample of 2,000 respondents under 12 years of age.[3] Conditions causing restriction of activity were reported for every household member by a household spokesperson at least age 12.

"Heart problems" in Table 59 is a combination of coronary heart disease and other heart problems, which appear separately in Figure 59. "Back problems" and "limb problems" in the table refer to non-arthritic conditions. In asking about underlying conditions as reported here, the survey included persons with a "long-term disability or handicap."

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Statistics Canada. *National Population Health Survey, 1994–95*. Special tabulations.
3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 59. **Primary condition responsible for activity limitation, persons with activity limitation age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 59. **Primary condition responsible for activity limitation, by age and sex, by education (age-standardized), and by province, persons with activity limitation age 12+, Canada, 1996–97**

	Population estimate	Nervous system	Back problem[a]	Limb problem[a]	Respiratory problem	Arthritis	Heart problem[b]
	('000)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**4,014**	**16**	**17**	**12**	**9**	**12**	**8**
Male	1,847	16	20	14	9	7	10
Female	2,166	15	15	10	9	16	7
Age 12–14, total	78	34	#	#	32	#	0
Male	47	#	#	#	#	#	0
Female	31	#	#	#	#	0	0
Age 15–17, total	103	23	#	9	33	#	#
Male	39	32	#	#	#	#	#
Female	64	#	#	#	34	#	#
Age 18–19, total	88	23	#	17	17	#	#
Male	33	#	#	#	#	#	0
Female	55	#	#	#	#	#	#
Age 20–24, total	146	17	15	22	19	#	#
Male	76	21	12	32	15	#	#
Female	70	14	19	12	24	#	#
Age 25–34, total	475	21	21	15	9	3	4
Male	217	19	26	21	6	#	#
Female	259	22	17	11	11	3	#
Age 35–44, total	673	17	27	12	7	8	1
Male	310	15	33	16	7	7	#
Female	363	18	21	9	7	10	#
Age 45–54, total	624	16	23	11	6	11	7
Male	293	16	24	15	5	7	9
Female	331	15	23	8	7	14	5
Age 55–64, total	663	13	18	10	6	17	11
Male	319	11	23	11	7	9	16
Female	344	14	14	9	6	24	7
Age 65–74, total	578	10	9	6	8	21	16
Male	272	10	10	6	10	10	20
Female	306	10	9	7	6	32	14
Age 75+, total	585	13	7	13	6	17	13
Male	241	15	#	13	8	11	16
Female	344	11	5	13	5	21	12
Less than high school	1,513	18	16	11	8	11	8
High school	1,402	14	19	11	10	11	8
College	677	11	17	14	7	13	8
University	389	15	14	11	10	13	6
Newfoundland	78	#	#	#	#	#	#
Prince Edward Island	22	17	17	#	#	18	#
Nova Scotia	190	19	19	#	#	16	14
New Brunswick	122	#	#	#	#	#	#
Quebec	919	16	16	12	8	13	#
Ontario	1,271	15	17	13	7	12	9
Manitoba	161	17	16	9	11	13	8
Saskatchewan	174	#	18	#	#	14	#
Alberta	412	16	16	12	11	11	7
British Columbia	664	16	20	14	10	10	#

Data suppressed because of high sampling variability

[a] Non-arthritic.

[b] Ischemic (coronary) heart disease and other heart problems.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Injuries

This section describes unintentional injuries arising from work, play, traffic, and other causes. Injuries are a major cause of hospitalization (Topic 77), and accidents are still a major contributor to potential years of life lost (Topic 83), although there have been impressive declines in accidental death rates in the past 25 years. Unintentional injuries are the second leading cause of potential years of life lost before age 70 and cost an estimated $8.7 billion annually, excluding the costs of violence and suicide.[1] The indicators in this section are drawn exclusively from administrative sources.

Overview

In 1995–96, over 2 million patient-days in acute care hospitals were due to more than 217,000 admissions for injuries (Topic 60). Falls accounted

for more than half of these admissions, and the rate for injury admissions among seniors was more than double the rate for the population as a whole. Among Canadians age 15–34, motor vehicle crashes were the principal cause of hospital admission. Such crashes caused 762 injuries per 100,000 persons in 1996 and resulted in over 3,000 deaths (Topic 63). Traffic injuries and fatalities were concentrated in the age group 15–24. Injuries resulting in time off work (Topic 61) exceeded 377,000 in 1996, the lowest figure ever recorded. This is down about a third from the peak a decade earlier. Childhood injuries resulted in 1,397 deaths and 47,228 hospitalizations (Topic 62).

Because injury statistics come from administrative sources, there is only limited description of the victims' personal characteristics (usually just age and province of residence) and nothing on social status. However, it is apparent that specific types of injury are clustered in specific age groups (falls among the elderly, traffic crashes among youth) and in certain industries (forestry). Injury rates also vary from province to province, and the contrasts can be dramatic. There is more than a two-fold difference in rates of hospital admissions and traffic injuries between the first- and the last-ranked provinces, and over a three-fold difference in work-loss injuries. This clustering clearly identifies areas and groups where further improvement in the injury rate can be sought, although differences in record-keeping or administrative characteristics may be factors as well.

On data sources and gaps

As noted, the sources for injury statistics are typically administrative. While this results in efficiency of data collection, it is at the expense of desirable detail. On the other hand, most attempts to collect accident data with population surveys suffer from sample size problems. Given this trade-off and the existence of some useful time series for accidents, the administrative sources would appear to be the first choice on an ongoing basis, with periodic surveys to supplement the available detail.

References

1. SmartRisk Foundation. *The Economic Burden of Unintentional Injury in Canada.* Toronto: SmartRisk Foundation, 1998.

60

Hospitalization due to trauma

Introduction

Injuries are among the most serious of all major health problems (Topic 83),[1] and it is estimated that 90% of them are preventable.[2] Injuries are the leading cause of death between the ages of 1 and 44 years in Canada (Topic 82), the United States, and many developing countries.[3,4,5,6] Injuries are also a serious cause of disability and affect children (Topic 62), workers (Topic 61), and persons who have been drinking (Topic 80).

This topic presents data for the Canadian population from the National Trauma Registry on admissions to acute care hospitals resulting from injury.

Nature and type of injury admissions, 1995–96

Nationally, there were 217,396 injury admissions to acute care hospitals in 1995–96 (Table 60),[7] resulting in 2,187,305 patient-days. Injury admissions on average involved 10 days' stay in hospital, and most (77%) were discharged home, while 3% (6,382) died in hospital (data not shown). These deaths did not include those who died at the scene or en route to the hospital.

Unintentional falls accounted for the majority (52%) of injury admissions for all ages (Fig. 60).[7] Injury admissions due to unintentional falls also accounted for 67% of all hospital days due to injury and 75% of all in-hospital injury deaths (data not shown). The second most common cause of injury admissions was motor vehicle collisions (16%), followed by being struck by objects, persons, or falling objects (5%), injury purposefully inflicted by another person (5%), and self-inflicted injury, excluding poisoning (2%). All other causes accounted for 21% of injury admissions, including 7,859 admissions due to overexertion and strenuous physical movements (data not shown).

More than one injury can be reported per admission. In 1995–96, 321,696 injuries were documented for the 217,396 injury admissions.[7] Sixty-seven percent of injury admissions had one injury documented, 20% had two injuries, and 13% had three or more. Orthopedic injuries accounted for 64% of injury admissions. Unintentional falls accounted for 62% of all orthopedic injuries. The most common injuries were fractures and dislocations of the lower limbs (37%), followed by fractures and dislocations of the upper limbs (20%). Forty-eight percent of all fractures and dislocations of the lower limbs and 27% of all fractures and dislocations of the upper limbs occurred in those 65 years of age and older (data not shown).

Differences among groups

Injury admissions are highly concentrated among seniors, whose chances of being admitted to hospital are almost three times those of the population as a whole and four times higher than those of children under 15 (Table 60).[7] Over all age groups, admission rates are slightly higher for males than for females, but this masks an interaction with age: female rates of injury admission are much higher for those age 65 and older and markedly lower for all younger age groups.

The highest injury admission rates per 10,000 population were in the Northwest Territories (136.3) and Yukon (111.3). In sharp contrast was the rate in Prince Edward Island (57.7). The national rate was 72.2.

Unintentional falls were the leading cause of admissions for all age groups except the 15–34 year old age group. The leading cause of injury for 15–34 year olds was motor vehicle collisions, which accounted for 29% of injury admissions in this age

group. In those 65 years of age and older, unintentional falls accounted for 84% of injury admissions (data not shown).

On definitions and methods

The National Trauma Registry includes demographic, diagnostic, and procedural information for all acute care hospital admissions due to injury. The source of this information is the Canadian Institute for Health Information's Discharge Abstract Database for provinces that submit 100% of in-patient discharge abstracts to the Institute. For those provinces not submitting 100% of in-patient discharge abstracts to the Institute in 1995–96 (i.e., Quebec, Manitoba, and Saskatchewan), injury admission information is based on data submitted to the provincial ministries of health.

The data do not include injuries not requiring hospitalization (i.e., treated in emergency wards and released) or injury deaths that occur at the scene or during transport to hospital (see Topic 63), nor do the data include injury admissions due to poisoning. Poisoning is excluded because trauma is defined as resulting from the transfer of energy.

Rates reported in Table 60 have been age- and sex-standardized using the 1991 population of Canada as the reference.

References

1. Baker SP. Injuries: the neglected epidemic; Stone Lecture, 1985 American Trauma Society Meeting. *Journal of Trauma* 1987; 27(4): 343–348.
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3. Selya RM. Deaths due to accidents in Taiwan: a possible indicator of development. *Social Science and Medicine* 1980; 14D: 361–367.
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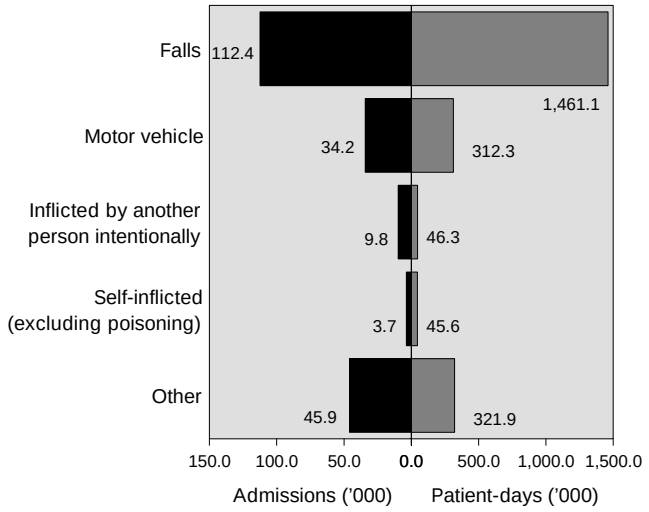
5. Pan American Health Organization. *Health Conditions in the Americas, 1981–1984. Volume I.* Washington, D.C.: Pan American Health Organization, 1986 (Scientific Publication No. 500). Cited in Charyk ST. *Pediatric Trauma in Ontario: An Epidemiologic Description and Evaluation of Two Outcome Models.* London: University of Western Ontario, 1997 (Master's Thesis).
6. Gu XY, Chen ML. Vital statistics (of Shanghai County). *American Journal of Public Health* 1982; 72(Suppl.): 19–23.
7. Canadian Institute for Health Information. *National Trauma Registry Report — Hospital Injury Admissions 1995–96.* Ottawa: CIHI, 1998.

Figure 60. **Injury admissions to hospitals and patient-days, by cause, all ages, Canada, 1995–96**



Source: Canadian Institute for Health Information, *National Trauma Registry Report — Hospital Injury Admissions 1995–96*, Ottawa: CIHI, 1998.

Table 60. **Admissions to hospital due to injuries, by age and sex and by province/territory, Canada, 1995–96**

	Injury admissions[a]	Admissions per 10,000 population[b]	Patient-days
Total, all ages	**217,396**	**72.2**	**2,187,305**
Male	119,383	80.9	942,567
Female	98,011	63.5	1,244,732
Age <15, total	28,250	47.2	107,176
Male	17,729	57.8	66,545
Female	10,521	36.0	40,631
Age 15–34, total	54,269	60.4	293,681
Male	39,166	85.9	202,460
Female	15,103	34.2	91,221
Age 35–64, total	62,374	56.3	446,771
Male	39,308	70.9	271,053
Female	23,065	41.8	175,717
Age 65+, total	72,472	199.8	1,339,212
Male	23,168	152.2	402,400
Female	49,303	234.3	936,807
Newfoundland	3,739	66.0	32,157
Prince Edward Island	832	57.7	7,255
Nova Scotia	6,054	61.5	53,668
New Brunswick	6,343	81.0	50,955
Quebec	45,265	60.9	570,323
Ontario	71,629	63.3	680,042
Manitoba	10,801	89.1	204,585
Saskatchewan	11,622	106.3	120,448
Alberta	24,810	93.6	172,531
British Columbia	35,336	91.7	292,204
Yukon	273	111.3	1,006
Northwest Territories	692	136.3	2,131

[a] There are 31 injury admissions with an unknown age (12 males, 19 females) accounting for 465 hospital days (males, 109; females, 356) and two admissions with an unknown sex accounting for six hospital days.

[b] Directly standardized for age and sex using the 1991 Canadian population as the standard population.

Source: Canadian Institute for Health Information, *National Trauma Registry Report — Hospital Injury Admissions 1995–96*, Ottawa: CIHI, 1998.

61

Time-loss work injuries

Introduction

Most Canadians work (Topic 7), and most claim to get considerable satisfaction from their work (Topic 55). However, levels of chronic work stress are cause for concern (Topic 9). Injuries and the prospect of injuries can be a source of stress to workers in many occupations, as well as a significant cause of lost productivity and health care costs.

This topic describes the number and rate of injuries suffered on the job that result in compensation to the injured worker.

Incidence of work injuries, 1996

In 1996, there were more than 377,000 time-loss work injuries in Canada, a rate of 27.6 injuries for every 1,000 workers (Table 61).[1]

There were two key trends of reported work injuries over the period 1982–1996 (Fig. 61a).[1] There was a steady increase from an injury rate per 1,000 workers of 43.5 in 1982 to a peak of about 48.5 in 1987. A steady *decrease* in the number of reported injuries followed, to the all-time recorded low for 1996.

Differences among groups

In 1996, men had more than two and a half times as many work injuries as women. The rate of injuries per 1,000 workers was highest among young workers age 15–29 (Table 61). The age–sex group most at risk was men age 15–29, whose injury rate was 43.3 per 1,000, or 57% above the average for all ages and both sexes. In contrast, women of this age group had the lowest injury rate of any age–sex category. Trends over time were virtually identical for work injuries to men and women, with the changes mostly occurring among male workers (Fig. 61a).

The rate of compensated injuries in forestry and logging was far higher than in any other industry, although transportation, wholesale trade, manufacturing, and construction were also well above average (Table 61). Among white-collar industries, government and health had the two highest rates of time-loss injuries in 1996 (Fig. 61b).[1]

Provincial rates for time-loss injury vary widely, from a low of 12.5 per 1,000 in New Brunswick to a high of 40.6 per 1,000 in Prince Edward Island. Quebec and British Columbia also had very high rates of injuries as well as high total numbers of injuries. These variations reflect not only the nature of the provincial economy (e.g., the prominence of the forestry industry in Quebec and British Columbia) but also the workers' compensation schemes in place in each province and thus the availability of compensation. As a result, interprovincial and inter-industry comparisons should take these factors into consideration.

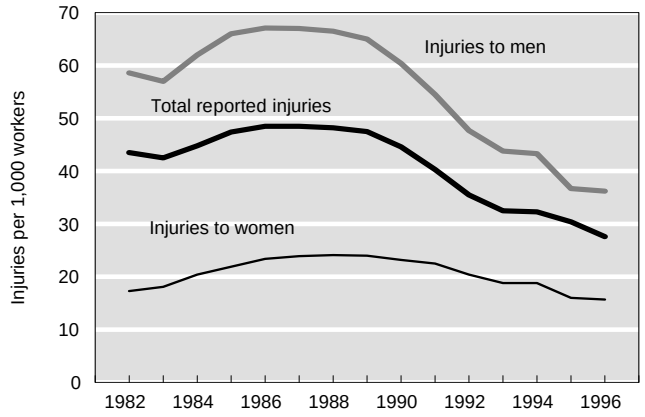
On definitions and methods

A time-loss injury is defined as an injury resulting in compensation for lost wages due to time off work or for a permanent disability, regardless of time lost. Differences in reporting requirements and standards may well account for some of the differences among provinces and industries seen in Table 61. The data are collected by Statistics Canada on behalf of the Association of Workers' Compensation Boards of Canada.

References

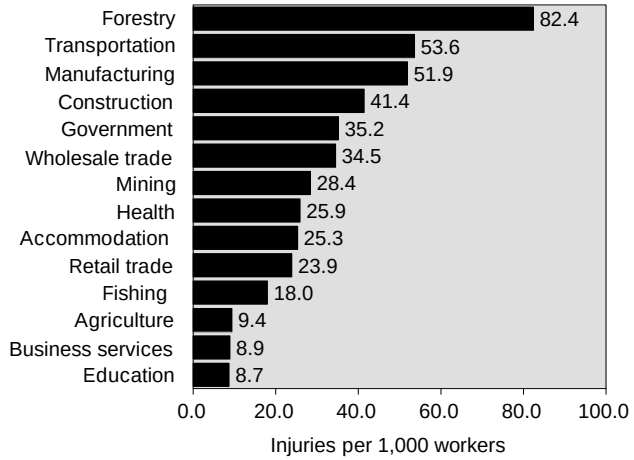
1. Statistics Canada, Health Statistics Division. Special tabulations of data from the Association of Workers' Compensation Boards of Canada (collected by Statistics Canada) and the *Labour Force Survey* subdivision of Statistics Canada.

Figure 61a. **Time-loss work injuries, employed persons age 15+, Canada, 1982–1996**



Source: Statistics Canada, Health Statistics Division, special tabulations of data from the Association of Workers' Compensation Boards of Canada (collected by Statistics Canada) and the *Labour Force Survey* subdivision of Statistics Canada.

Figure 61b. **Time-loss work injuries, by industry, employed persons age 15+, Canada, 1996**



Source: Statistics Canada, Health Statistics Division, special tabulations of data from the Association of Workers' Compensation Boards of Canada (collected by Statistics Canada) and the *Labour Force Survey* subdivision of Statistics Canada.

Table 61. **Time-loss work injuries,[a] by age and sex, by industry, and by province/territory, age 15+, Canada, 1996**

	Number of injuries	Rate per 1,000 workers
Total, age 15+	**377,885**	**27.6**
Male	270,751	36.2
Female	97,056	15.7
Age 15–29, total	109,717	29.8
Male	83,468	43.3
Female	24,326	13.9
Age 30–49, total	207,744	27.7
Male	149,336	36.8
Female	55,091	16.0
Age 50+, total	55,616	22.2
Male	37,359	25.0
Female	17,335	17.3
Agriculture	4,278	9.4
Fishing and trapping	642	18.0
Logging and forestry	6,255	82.4
Mining	4,784	28.4
Manufacturing	108,072	51.9
Construction	29,771	41.4
Transportation	28,565	53.6
Wholesale trade	21,857	34.5
Retail trade	41,289	23.9
Health and social services	36,862	25.9
Accommodation, food and beverage	22,589	25.3
Newfoundland	5,272	27.7
Prince Edward Island	2,436	40.6
Nova Scotia	7,940	20.6
New Brunswick	3,906	12.5
Quebec	119,633	37.2
Ontario	103,071	19.4
Manitoba	17,255	32.8
Saskatchewan	13,465	29.2
Alberta	31,835	22.5
British Columbia	71,602	39.7
Yukon	975	n/a
Northwest Territories	495	n/a

n/a = not available

[a] The sum of Male plus Female does not equal the Total because of some injury cases where the sex was not identified.

Source: Statistics Canada, Health Statistics Division, special tabulations of data from the Association of Workers' Compensation Boards of Canada (collected by Statistics Canada) and the *Labour Force Survey* subdivision of Statistics Canada.

62

Childhood injuries

Introduction

Injuries are a leading cause of death (Topic 82) and a major contributor to potential years of life lost (Topic 83) because of their concentrated impact upon young people. In recent years, the importance of childhood injuries has received increased recognition, and comprehensive data on the incidence and circumstances of these injuries are now available. These data are being used to develop intervention programs and to evaluate the results of such programs.

This topic presents data for the Canadian population of children and youth up to 19 years of age. Child abuse, including death from child abuse, is covered more extensively in Topic 10.

Injuries treated in emergency departments, 1997

In 1997, almost 96,000 injured children were treated in the emergency department of hospitals participating in the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). More than half (57%) of these children were injured while they were involved in play activities. Only 8% of these injuries took place on roads (Table 62).[1] Adolescents sustained more sports-related injuries than younger children, and younger children were injured much more frequently in their homes than older children and adolescents.

The most common injuries (Fig. 62a)[1] were fractures, open wounds, and superficial injuries (20% for each category). Injuries to the head and neck (35%) and to the arm (34%) accounted for two-thirds of all injuries (Fig. 62b).[1]

Fatal injuries and hospitalizations, 1995

In 1995, 1,397 Canadian children and youth (0–19 years of age) died as a result of injuries, and 47,228 were hospitalized.[2] Injuries are the leading cause of death among Canadian children. The burden of injuries is not limited to these outcomes. It has been estimated that for every Canadian who dies from an injury, a further 1,300 are seen in hospital emergency departments, and an unknown number have their injury treated outside hospitals or do not seek treatment. All too often, these non-fatal injuries result in impairment and disability.

Injury-related death rates among children and youth (0–19 years of age) have declined dramatically in the last 20 years. In 1991, rates were 28.7 per 100,000, less than half the rate reported in the early 1970s. Injury-related hospitalizations among children have had a less dramatic but nonetheless steady decline of almost 20% during the 1980s, and that trend continues.[3]

In addition to the impact of human suffering and death caused by injuries, the financial cost to society is large. The economic burden of injury to Canadians of all ages is estimated to be in excess of $14 billion, ranking third among health problems.[4] Costs related to property damage and insurance claims related to injury add further billions to the total cost.

On definitions and methods

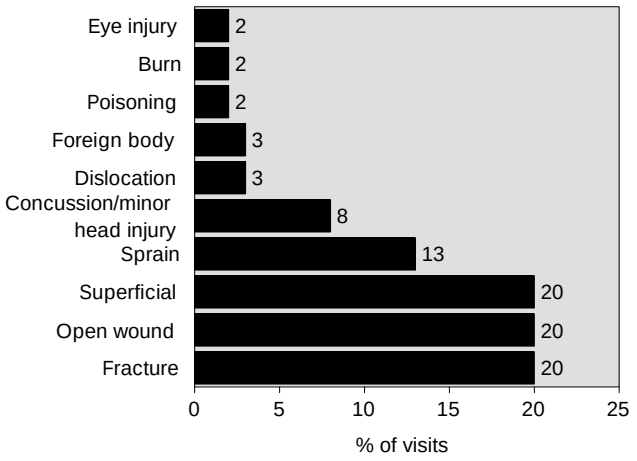
CHIRPP is a surveillance database collecting information on circumstance and outcome of injuries treated in the emergency departments of all 10 pediatric hospitals and six general hospitals across

Canada.[1] Information on the injury event is provided by the injured child or care-giver bringing the child to the emergency department, while the attending physician completes information on the nature of the injury and treatment provided. CHIRPP contains cumulative information on injuries to children and some adults (treated at the general hospitals) over almost 10 years.

References

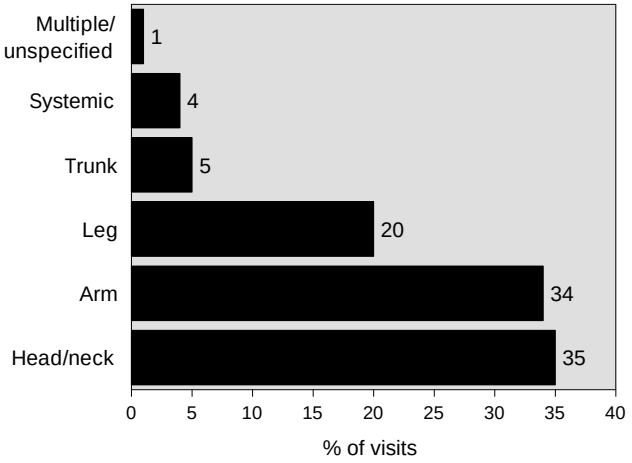
1. Health Canada, Laboratory Centre for Disease Control. *Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) Database, 1998*.
2. Mackenzie SG. Framework of E-code groupings for presenting injury mortality data. *CHIRPP News* 1998; 12. Ottawa: Health Canada, 1998.
3. Health Canada. *For the Safety of Canadian Children and Youth: From Injury Data to Preventive Measures.* Ottawa: Health Canada, 1997 (Cat. No. H39-412/1997E).
4. Moore R, Mao Y, Zhang J, et al. *Economic Burden of Illness in Canada, 1993.* Ottawa: Health Canada, Laboratory Centre for Disease Control, 1997 (Cat. No. H21-136/1993E).

Figure 62a. **Leading types of childhood injuries: emergency department visits, age 0–19, Canada, 1997**



Source: Health Canada, Laboratory Centre for Disease Control, *Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) Database, 1998*.

Figure 62b. **Most frequent sites of childhood injuries: emergency department visits, age 0–19, Canada, 1997**



Source: Health Canada, Laboratory Centre for Disease Control, *Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) Database, 1998*.

Table 62. **Emergency department visits, activity at time of injury, and location at time of injury, by age, age 0–19, Canada, 1997**

	Total emergency room visits		Activity at time of injury[a]		Location[a] at time of injury		
			Transportation	Sports/ leisure	Home	Schools	Sports facilities
	Number	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 0–19	**95,908**	**100**	**8**	**57**	**44**	**19**	**13**
Age <1	4,091	4	6	24	81	1	1
Age 1–4	28,133	29	3	55	73	5	5
Age 5–9	24,159	25	10	62	42	22	13
Age 10–14	27,883	29	10	63	23	30	20
Age 15–19	11,642	12	9	53	19	23	21

[a] Activities and locations are distinct classifications, not all categories are presented above, and percentages do not add to 100%.

Source: Health Canada, Laboratory Centre for Disease Control, *Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) Database, 1998*.

63

Motor vehicle traffic crashes

Introduction

Accidents remain one of the leading causes of hospitalization (Topic 77) and of potential years of life lost (Topic 83), despite declines in recent years. Motor vehicle crashes are one of the major contributors to this toll, and alcohol plays a role in a substantial minority of such accidents (Topic 80). This topic presents data on injuries and deaths resulting from motor vehicle traffic crashes.

Incidence of traffic injuries and deaths, 1996

In 1996, there were more than 230,000 injuries and 3,000 deaths due to motor vehicle crashes (Table 63).[1] This amounts to 762 injuries and 10 fatalities per 100,000 population. There was one death for every 75 injuries and 7.7 deaths per 100,000 licensed drivers (Fig. 63).[1]

Differences among groups

Injury and fatality rates are very strongly clustered in two age groups — 15–19 and 20–24. Their rates, which are virtually identical, are approximately double the rates for the population as a whole (Table 63). Injuries and fatalities among children age 0–4 and 5–14 are the lowest of all age groups, suggesting strongly that the acquisition of a driver's licence at the age of 16 is the factor underlying the sudden and dramatic rise in collisions. No gender-specific statistics are available.

Provincial rates for traffic injuries and fatalities vary widely. Newfoundland has the lowest rate of injuries per 100,000 population and of fatalities per 100,000 *licensed drivers* (Fig. 63). Among the provinces, British Columbia has by far the highest rate for injuries, while Prince Edward Island has the most fatalities per population and per driver. Fatalities, by both measures, are higher still in the territories.

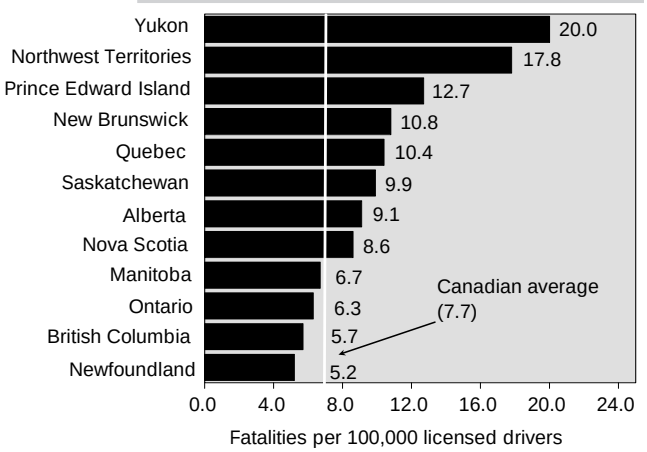
On definitions and methods

These data are compiled by Transport Canada from provincial police sources. They describe injuries requiring hospitalization or fatalities arising from a traffic collision within a year of the event. Victims may be drivers, passengers, or pedestrians as long as a motorized vehicle is involved. Population rates were calculated with data from the 1996 Census (Topic 1); driver rates were based on provincial data. (Some, but not all, provinces also publish estimated total kilometres driven by all drivers.)

References

1. Transport Canada. *1996 Canadian Motor Vehicle Traffic Collision Statistics*. Special tabulations.

Figure 63. **Fatally injured drivers, by province/territory, Canada, 1996**



Source: Transport Canada, *1996 Canadian Motor Vehicle Traffic Collision Statistics*, special tabulations.

Table 63. **Motor vehicle traffic deaths and injuries, by age and by province/territory, Canada, 1996**

	Number of fatalities	Fatalities/ 100,000 population	Number of injuries	Injuries/ 100,000 population
Total, all ages	**3,082**	**10**	**230,885**	**762**
Age 0–4	39	2	3,660	191
Age 5–14	129	3	15,678	385
Age 15–19	380	19	29,805	1,473
Age 20–24	393	19	30,188	1,484
Age 25–44	966	10	89,174	897
Age 45–64	611	9	40,365	614
Age 65+	544	15	15,604	419
Newfoundland	47	8	2,612	463
Prince Edward Island	19	14	847	618
Nova Scotia	113	12	6,288	663
New Brunswick	94	12	4,781	627
Quebec	877	12	47,588	641
Ontario	929	8	88,445	775
Manitoba	93	8	10,467	914
Saskatchewan	133	13	6,791	664
Alberta	349	12	22,268	728
British Columbia	406	10	40,188	1,022
Yukon	7	22	346	1,081
Northwest Territories	15	22	264	388

Source: Transport Canada, *1996 Canadian Motor Vehicle Traffic Collision Statistics*, special tabulations.

Conditions and diseases

Health status and, in particular, the existence of health problems can be ascertained directly, by probing for the existence of specific conditions such as depression (Topic 75) or being overweight (Topic 67), or indirectly, by inference from the use of health services, such as rates of psychiatric hospitalization (Topic 76). This section reports on a range of specific conditions and diseases, using data from administrative and survey sources. The administrative sources provide direct as well as indirect evidence of conditions, the most complete and consistent being the registries of congenital defects (Topic 65), notifiable diseases (Topics 69–72), and cancer (Topic 73), along with the routine administrative reports of pregnancy outcomes (Topic 64). The data also vary between person level (all survey and registry sources) and condition level, where an administrative record is based on an event such as a hospital discharge (e.g., causes of hospitalization, Topics 76 and 77).

Overview

Some of these indicators of health problems that have been tracked for a decade or more reveal clear improvements: fewer congenital anomalies (Topic 65), sexually transmitted diseases (Topic 70), new AIDS cases (Topic 71), and male cancer deaths (Topic 73) and less coronary heart disease and stroke (Topic 74). Others, such as low birth weight and teen pregnancies (Topic 64), declined until 1993 and may have increased subsequently. Other trends are negative: increased prevalence of overweight population (Topic 67), more allergies (Topic 68), a levelling off of the decline in tuberculosis (Topic 71), and stubborn cancer death rates for women (Topic 73). Still others defy easy interpretation: more abortions (Topic 66), more psychiatric patient-days but fewer cases (Topic 76), and reduced rates of overall hospitalization (Topic 77).

Only very limited detail on personal characteristics is available for this set of indicators. Depression and being overweight are both known to be inversely associated with education and income, but the existence of a social status gradient in the other indicators is only suspected.

Disparities among the provinces/territories in these health conditions are more demonstrable, and some of these are substantial: differences of 40–50% between the lowest- and highest-ranked in low birth weight, probable health risk associated with being overweight, and new male cancer cases and a 100% difference in chlamydia rates. Variations in hospitalization rates are also marked (66–80%), although these do not necessarily reflect corresponding differences in health status.

On data sources and gaps

The strength of this section of indicators is their diversity and coverage of many aspects of health; their shortcoming is the impossibility of summarizing them. It should be clear that the more direct measures are preferable as indicators of health status, and that the statistics originating from the health care system may reflect more than health status. As an (extreme) example, it seems unlikely that the *89-fold* difference in rates of therapeutic abortion between the Northwest Territories and Prince Edward Island (Topic 66) accurately indicates the relative incidence of unwanted pregnancies. More likely, this reflects the availability of a specific service. In contrast, data from registries and surveys are relatively unambiguous and thus should receive more weight in assessing the population's health. There are no long-term care data in this section, as they do not exist on a national basis.

64

Teen pregnancy and underweight births

Introduction

The weight of infants at birth is a principal determinant of their chances for survival and good health. Low birth weight (less than 2,500 grams) can result in mental and physical disabilities and, in the most extreme cases, death (Topic 78). Over half of low birth weights are due to premature births (before the 37th week). The rest are due to lack of nourishment *in utero*, preeclampsia (pregnancy-induced hypertension), or heavy smoking by the mother during pregnancy (see Topics 36 and 40). Low birth weights are also clustered among the youngest and oldest mothers. This topic therefore presents data on both underweight births and teen pregnancy. Not only is young parenthood a risk to the newborn, but it also increases the chances of single-parent status (Topic 2) and the low income that single-parent status often implies (Topic 6).

Incidence of underweight births and teen pregnancy, 1996

In 1996, 5.8% of all infants born alive were underweight. This amounts to 21,025 low birth weight newborns (Table 64).[1,2] About 5.3% of boys were born with a low birth weight, compared with 6.2% of girls.[2]

From 1970 to 1993, the prevalence of underweight births declined fairly steadily, from 7.1% of all male infants and 8.6% of all female infants in 1970 to the current levels (Fig. 64a).[2,3] There has consistently been a higher percentage of female newborns than male newborns under 2,500 grams. Until 1993, there had been little change in the rate of low birth weights since the early 1980s. However, the proportion of low birth weight babies increased for three consecutive years before returning to the 1993 level in 1996.[1]

In 1996, Canada was in the middle of other industrialized countries in terms of underweight births (Fig. 64b),[2,4] as reported by the OECD. Finland had the lowest percentage of births below 2,500 grams (4.1%), while Japan had the highest (7.5%).

There were 38,502 teenage pregnancies (births, abortions, and stillbirths) in 1995.[2,5] Although the totals have increased slightly since a low of 34,584 pregnancies in 1993, they are still below teen pregnancy levels from 1975 to 1984 (Fig. 64c).[3,5] Similarly, teen births and abortions (see also Topic 66) have rebounded from their recent respective lows, but are below their historic highs. This is especially true of teen *births*, which in 1995 were at 60% of the level of 20 years earlier.

Differences among groups

Low birth weights are more common among very young or older mothers (Table 64). Mothers less than 15 years of age and 45 and older were almost twice as likely as the average Canadian woman to have an underweight newborn.

There were some differences in low birth weight by province/territory. The variation in percentage of underweight births ranged from a low of 4.3% (Yukon) to a high of 6.1% (Newfoundland and Alberta) (Table 64).[1]

In 1995, there were 621 pregnancies of young women age 13–14, 13,498 for age 15–17, and 24,383 for age 18–19 (Fig. 64d).[2,5] The number of pregnancies for age 13–14 decreased slowly from the mid-1970s to a low of 573 in 1988; since then, it has remained at around 600 pregnancies per year. Pregnancies among women age 15–17 and age 18–19 have followed a similar trend over this time period, although with much higher numbers.

On definitions and methods

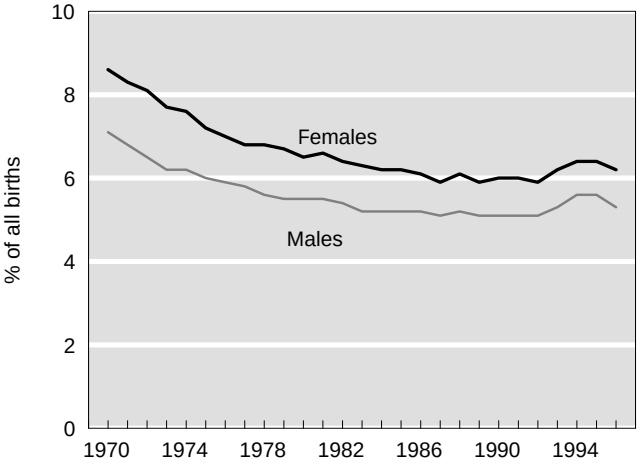
The standard definition of low birth weight newborns is infants who are born weighing less than 2,500 grams (5.5 pounds).[6] The average full-term infant weighs 3,400 grams (7.5 pounds). The original source for birth weight is the birth certificate.

Teen pregnancy data came from *Health Indicators, 1996*[5] as well as special tabulations from the Health Statistics Division of Statistics Canada[2]. The number of pregnancies each year was determined by adding the number of births, abortions, and stillbirths (after 20 weeks of gestation).

References

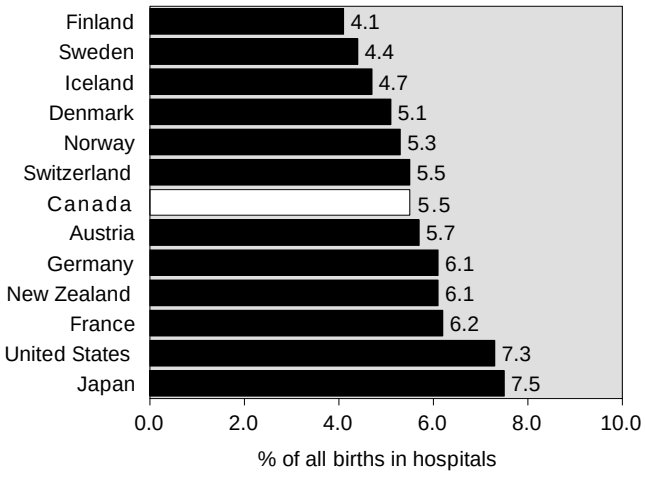
1. Statistics Canada. Births 1996. *The Daily*, July 8, 1998 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.
2. Statistics Canada, Health Statistics Division. Special tabulations.
3. Statistics Canada. *Births and Deaths, 1995*.
4. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).
5. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).
6. Statistics Canada. *Compendium of Vital Statistics 1996.* Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).

Figure 64a. **Births less than 2,500 grams, by sex, Canada, 1970–1996**



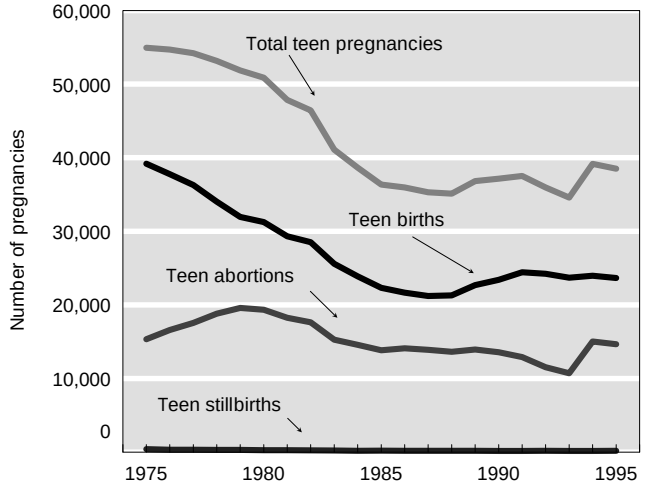
Sources: Statistics Canada, Health Statistics Division, *Births and Deaths, 1995*; Statistics Canada, Health Statistics Division, special tabulations (for 1996 data).

Figure 64b. **Births less than 2,500 grams, selected OECD countries, 1995**



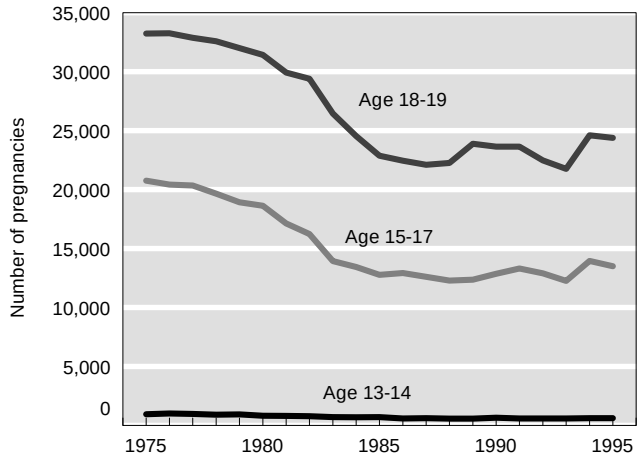
Sources: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM); Statistics Canada, Health Statistics Division, special tabulations.

Figure 64c. **Teenage pregnancies, age 13–19, Canada, 1975–1995**



Sources: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Statistics Canada, Health Statistics Division, *Births and Deaths, 1995.*

Figure 64d. **Teen pregnancies, by age, age 13–19, Canada, 1975–1995**



Sources: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Statistics Canada, Health Statistics Division, special tabulations.

Table 64. **Low birth weight newborns, by age of mother and by province/territory, age 10+, Canada, 1996**

	Number of births <2,500 grams	% of all live births
Total, age 10+	**21,025[a]**	**5.8**
Age 10–14	21	9.3
Age 15–19	1,516	7.0
Age 20–24	3,934	5.9
Age 25–29	6,107	5.3
Age 30–34	6,195	5.6
Age 35–39	2,730	6.4
Age 40–44	487	8.1
Age 45+	23	10.0
Newfoundland	349	6.1
Prince Edward Island	90	5.3
Nova Scotia	571	5.4
New Brunswick	419	5.1
Quebec	4,920	5.9
Ontario	8,361	6.0
Manitoba	845	5.5
Saskatchewan	664	5.0
Alberta	2,300	6.1
British Columbia	2,401	5.2
Yukon	19	4.3
Northwest Territories	86	5.5

[a] Births excluded in age groupings where age of mother is unknown.

Sources: Statistics Canada, Births 1996, *The Daily*, July 8, 1998 (Statistics Canada Cat. No. 11-001-XIE); Statistics Canada, Health Statistics Division, special tabulations.

65

Stillbirths and birth defects

Introduction

In addition to the possibility of infertility, couples contemplating a family must consider the potential of a birth defect or stillbirth. Although the odds for a normal birth are overwhelming, stillbirths and anomalies are not unknown in modern-day Canada.

This topic presents data on the incidence of both stillbirths and congenital anomalies (see also Topic 78 on perinatal mortality).

Incidence of stillbirths and birth defects, 1995

There were 1,844 stillborn fetuses in 1995, or 65.4 for every 10,000 births (Table 65).[1] Among the children born, there were 13,629 anomalies, which is 483.5 for every 10,000 births. This rate is the lowest recorded since surveillance began in 1989 (Fig. 65a).[1]

By far the most common anomalies are musculoskeletal (130.6 per 10,000 births) and congenital heart defects (78.8 per 10,000). Other forms of anomaly are relatively rare (Fig. 65b).[1] The most frequent musculoskeletal defects are congenital dislocation of the hip and clubfoot (Fig. 65c),[1] each of which is more common than anomalies of the digestive system, genital organs, and central nervous system and Down's syndrome (Table 65).

There are no adequate international data with which to compare the Canadian situation.

Differences among groups

The only breakdown available for stillbirths and birth defects from this surveillance system is by province/territory (Table 65). Excluding Yukon, which reported no stillbirths in 1995, provincial/territorial rates range from a low of 31.3 per 10,000 in the Northwest Territories to a high of 78.2 per 10,000 in Manitoba and 70.4 per 10,000 in Prince Edward Island — that is, double the rate from the highest to the lowest. Total anomalies are lowest in New Brunswick (326.7 per 10,000) and Alberta (343.3 per 10,000), although the Northwest Territories (359.7 per 10,000) and Prince Edward Island (404.7 per 10,000) are also substantially below the Canadian average of 483.5 per 10,000. In 1995, birth defects were most often reported in Newfoundland (800.6 per 10,000). Manitoba (633.0 per 10,000) and Saskatchewan (608.2 per 10,000) were also well above the Canadian average.

On definitions and methods

Data on stillbirths and births for the provinces of Alberta and Manitoba were obtained from Statistics Canada; data for all other provinces and territories were obtained from the Canadian Institute for Health Information. Data on birth defects in Alberta were obtained from the Alberta Congenital Anomalies Surveillance System, and in Manitoba from their Hospitalisation Database; for all other provinces and territories, the data were obtained from the Canadian Institute for Health Information. These data are compiled by the Canadian Congenital Anomalies Surveillance System in the Laboratory Centre for Disease Control at Health Canada. The provinces of Nova Scotia and Quebec are not included because their birth coverage by the Canadian Institute for Health Information is not comprehensive.

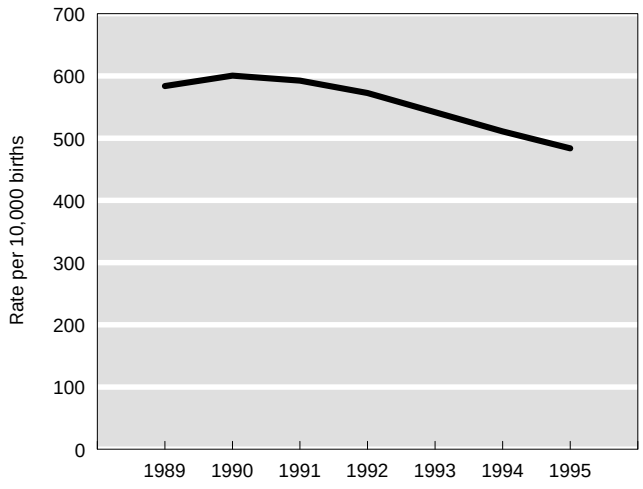
The designation of province/territory reflects the place of birth, not the mother's place of residence; thus, interprovincial/territorial migration in the event of a difficult pregnancy or suspected anomaly could affect rates between neighbouring jurisdictions — for example, British Columbia and Yukon.

Data used in this topic should not be confused with those collected by the provincial/territorial vital statistics registries, which may differ somewhat from these figures.

References

1. Health Canada, Laboratory Centre for Disease Control, Canadian Congenital Anomaly Surveillance System. *Birth Defect Prevalences in Canada, 1995.* Ottawa: Health Canada, 1997.

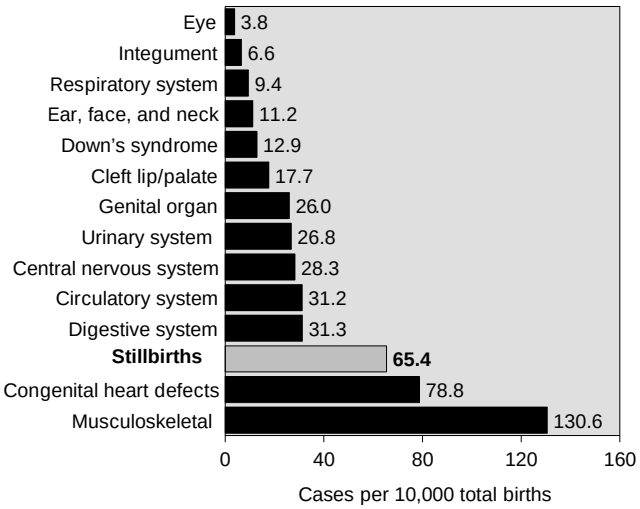
Figure 65a. **Total birth anomalies, Canada,* 1989–1995**



* Excluding Nova Scotia and Quebec.

Source: Health Canada, Laboratory Centre for Disease Control, Canadian Congenital Anomaly Surveillance System, *Birth Defect Prevalences in Canada, 1995*, Ottawa: Health Canada, 1997.

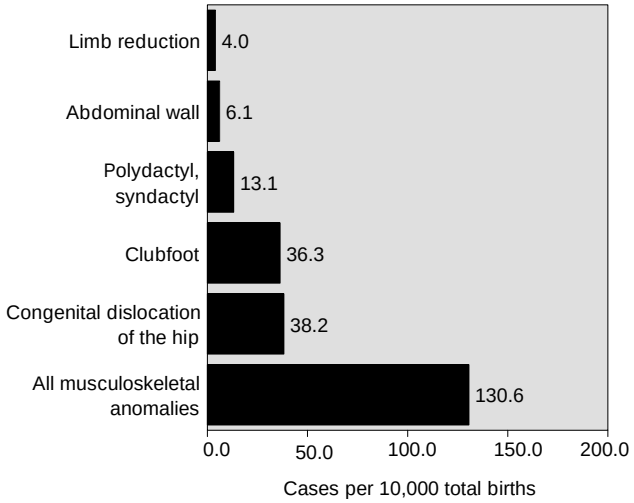
Figure 65b. **Birth defects and stillbirths, Canada,* 1995**



* Excluding Nova Scotia and Quebec.

Source: Health Canada, Laboratory Centre for Disease Control, Canadian Congenital Anomaly Surveillance System, *Birth Defect Prevalences in Canada, 1995*, Ottawa: Health Canada, 1997.

Figure 65c. **Musculoskeletal anomalies, by type, Canada,* 1995**



* Excluding Nova Scotia and Quebec.

Source: Health Canada, Laboratory Centre for Disease Control, Canadian Congenital Anomaly Surveillance System, *Birth Defect Prevalences in Canada, 1995*, Ottawa: Health Canada, 1997.

Table 65. **Incidence of stillbirths and birth defects per 10,000 total births, by province/territory,[a] Canada, 1995**

	Stillbirths		Total anomalies		Rate per 10,000 births					
	Number	Rate per 10,000 births	Number	Rate per 10,000 births	Musculo-skeletal	Heart	Digestive	Genital	Central nervous system	Down's syndrome
Canada, total	**1,844**	**65.4**	**13,629**	**483.5**	**130.6**	**78.8**	**31.3**	**26**	**28.3**	**12.9**
Newfoundland	26	44.8	465	800.6	229.0	142.9	65.4	24.1	58.5	20.7
P.E.I.	12	70.4	69	404.7	93.8	134.9	17.6	29.3	5.9	17.6
New Brunswick	31	35.3	287	326.7	66.0	75.1	36.4	19.4	30.7	9.1
Ontario	978	65.8	6,878	462.6	111.4	80.8	32.6	25.8	27.6	11.0
Manitoba	127	78.2	1,028	633.0	176.1	86.8	27.7	38.8	33.9	13.5
Saskatchewan	78	60.6	783	608.2	156.1	117.3	35.0	17.1	41.9	12.4
Alberta	262	66.9	1,345	343.3	92.4	44.9	17.9	19.4	19.7	12.0
British Columbia	326	69.5	2,706	577.1	201.3	77.8	33.9	31.6	28.6	19.4
Yukon	0	0	22	540.5	319.4	73.7	0	98.3	0	0
N.W.T.	4	31.3	46	359.7	93.8	86.0	39.1	7.8	31.3	0

[a] Of reporting institution, not necessarily of patient's residence.

Source: Health Canada, Laboratory Centre for Disease Control, Canadian Congenital Anomaly Surveillance System, *Birth Defect Prevalences in Canada, 1995*, Ottawa: Health Canada, 1997.

66

Therapeutic abortions

Introduction

Abortion is a sensitive issue, and public opinion is sharply divided on it. Numbers and rates of induced (therapeutic) abortion are useful measures of available abortion facilities and the extent of induced pregnancy terminations for health and other reasons. This topic describes the number of Canadian abortions, rates per 100 live births, and rates per 1,000 women age 15–44.

Incidence of abortion, 1995

In 1995, 70,549 Canadian women had therapeutic abortions in hospitals. Another 35,650 abortions were performed in clinics in seven provinces, and 459 abortions on Canadian women were reported from the United States. The total abortion rate per 100 live births was 28.2 (Fig. 66a).[1] The rates for hospital therapeutic abortions were 18.7 per 100 live births and 10.3 per 1,000 women age 15–44 (Table 66).[1]

Following amendments to abortion laws in 1969, the numbers and rates of therapeutic abortions increased significantly from 1970 to 1982: abortions increased from 11,152 to 75,071 (data not shown), and the abortion rate per 100 live births in hospitals increased from 3.0 to 17.8 (Fig. 66a). In 1983, both the numbers and rates of abortions dropped by about 8% and remained stable for the next couple of years. This was followed by increases in the following eight years, accentuated by an increased number of clinical abortions between 1989 and 1995. The year-to-year abortion rate increases have slowed since 1993 in hospitals. Although total abortions and the abortion rate both reached all-time highs in 1995, the total hospital abortions declined for the second consecutive year after peaking in 1993 at 72,434.[2]

The number and rate of abortions rose substantially after 1989, primarily because of those performed in clinics. The first abortion clinics were opened in Quebec in 1978. Before the January 1988 Supreme Court decision to strike down the 1969 abortion law, abortion clinics operated only in Quebec.[2] By the end of 1994, abortion clinics were operating in all provinces except Prince Edward Island and Saskatchewan (but not in the two territories).[2] By 1995, almost one-third of the total abortions were performed in the clinics of the eight provinces, up from one-quarter in 1991.[2] The increase in clinical abortions may partly explain the decrease in those performed in hospitals and in those taking place in the United States (Fig. 66a).[1]

There are no recent data available for international comparisons.

Differences among groups

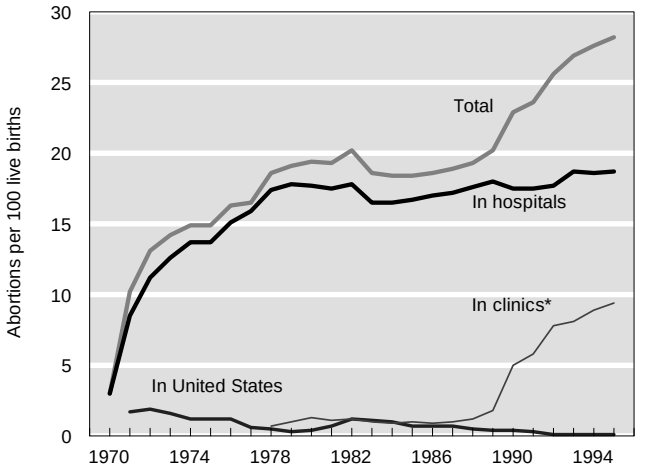
As a proportion of all abortions, the number of teenage abortions decreased significantly between 1975 and 1995. Abortions in Canadian hospitals for girls less than 15 years of age accounted for just over 1% of the total abortions in 1975 and only 0.5% of the total in 1995. The decrease was even more marked among teens age 15–19, falling from a high of 30% of all abortions in Canadian hospitals in 1975 to a low of 19% in 1992 and 1993.[1] The level for teens peaked in 1979 at about 19,757 hospital abortions and declined to a low of 13,939 in 1995 (Fig. 66b).[1]

The incidence of abortion is highly variable among the non-teenage groups. About 50% of women who received abortions were in their 20s (Table 66). In fact, women most likely to have received a hospital abortion in 1995 were single, in their 20s, and with at least one baby.[2] While only 38% of women having hospital abortions in 1985 had had at least one previous delivery, the proportion increased to 50% in 1995.[2] While the proportion of married women having hospital abortions in 1995 was about the same as in 1985 and the proportion of single women

receiving abortions fell from 67% to 63% over that same time period, the proportion of common-law, separated, divorced, or widowed women receiving abortions increased from 11% in 1985 to 16% in 1995.[3] In abortion clinics, the average woman was single, with no previous delivery, and with at least one prior induced abortion.

There are striking interprovincial/territorial differences in hospital abortion rates. They are lowest in Prince Edward Island, which is not surprising, since there are no facilities for therapeutic abortions in this province. Newfoundland, New Brunswick, and Saskatchewan all have hospital abortion rates that fall well below the national average. Quebec, Ontario, and Yukon all have higher than average abortion rates per 100 live births, while the Northwest Territories is also well above average in rates per 1,000 women (Table 66). British Columbia experienced the largest decline in hospital abortions (a drop of 12%) from 1994 to 1995,[1] to fall just below the national average in both rate per 100 live births and rate per 1,000 women age 15–44.

Figure 66a. **Therapeutic abortions, Canadian residents, 1970–1995**



* For 1978–1989, information pertains to Quebec only. For 1990, clinics in Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, and British Columbia are included. Alberta clinics are added in 1991–1995 data, and New Brunswick clinics are included in 1994 and 1995.

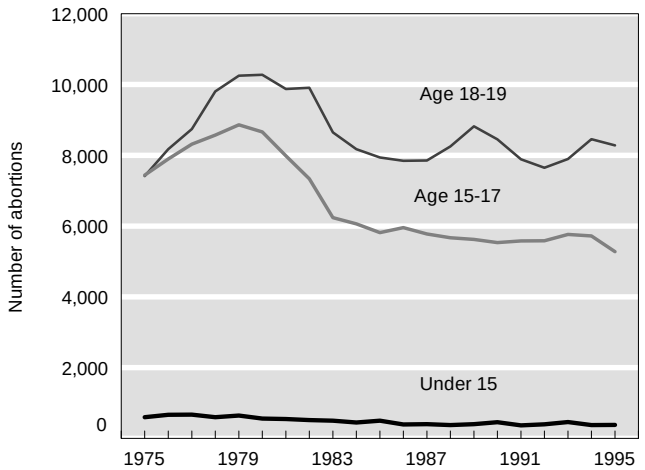
Source: Statistics Canada, *Therapeutic Abortions, 1995* (Statistics Canada Cat. No. 82-219-XPB), Table 11.

On definitions and methods

Although Table 66 shows abortions for women under 15 years of age and 40 and over, the conventional basis for rates is to calculate the abortions as a proportion of women age 15–44, arbitrarily defined as the childbearing years.

Interprovincial/territorial comparisons are complicated by differences in the availability of independent clinics, ease of travel to the United States, and other local factors. The data for hospital abortions should not be taken as a simple reflection of all abortion activity in any given jurisdiction. Similarly, international comparisons are complicated by differences in laws and access to facilities. They are not shown here, as the most recent international data are for 1987.

Figure 66b. **Therapeutic teenage abortions in hospitals, by age,* Canada, 1975–1995**



* Includes redistribution where the age of women was unknown.

Source: Statistics Canada, *Therapeutic Abortions, 1995* (Statistics Canada Cat. No. 82-219-XPB), Table 5.

References

1. Statistics Canada. *Therapeutic Abortions, 1995* (Statistics Canada Cat. No. 82-219-XPB).
2. Statistics Canada. Therapeutic abortions 1995. *The Daily*, November 5, 1997 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.
3. Wadhera S, Millar WJ. Marital status and abortion. *Health Reports* 1997; 9(3): 19–26 (Statistics Canada Cat. No. 82-003-XPB).

Table 66. **Therapeutic abortions in Canadian hospitals, by mother's age and province/territory of residence, Canada, 1995**

	Therapeutic abortions			
	Number	%	Number per 100 live births	Number per 1,000 women[a]
Total	**70,549**	**100**	**18.7**	**10.3**
Age <15[b]	381	0.5	–	1.9
Age 15–17	5,277	7.5	–	9.1
Age 18–19	8,281	11.7	–	21.3
Age 20–24	21,042	29.8	–	20.9
Age 25–29	15,352	21.8	–	13.8
Age 30–34	11,255	16.0	–	8.5
Age 35–39	6,802	9.6	–	5.3
Age 40–44[c]	2,159	3.1	–	1.9
Newfoundland	527	0.7	9.0	3.7
Prince Edward Island	9	0.01	0.5	0.3
Nova Scotia	1,804	2.6	16.8	8.3
New Brunswick	624	0.9	7.3	3.5
Quebec	18,203	25.8	20.8	10.8
Ontario	29,093	41.2	19.9	11.3
Manitoba	2,833	4.0	17.6	11.2
Saskatchewan	1,830	2.6	13.6	8.4
Alberta	6,620	9.4	17.0	10.1
British Columbia	8,552	12.1	18.3	9.8
Yukon	128	0.2	27.2	16.1
Northwest Territories	276	0.4	17.1	26.7
Residence unknown	50	–	–	–

[a] Rate per 1,000 women for the Canadian and provincial/territorial totals are for women age 15–44.

[b] Rate per 1,000 women is based on females age 14 years.

[c] Includes therapeutic abortions for women over 44 years of age. Rate is based on females age 40–44 years.

Source: Statistics Canada, *Therapeutic Abortions, 1995* (Statistics Canada Cat. No. 82-219-XPB), Tables 5 and 17.

67

Body weight

Introduction

Body weight depends on a combination of factors, including genetics, dietary practices (Topic 47), and other aspects of lifestyle, such as active living (Topic 46). Overweight and obesity are linked to a wide range of health problems, especially cardiovascular disease (Topic 74), diabetes (Topic 68), and some forms of cancer (Topic 73). While overweight and obesity are best measured with special equipment, body mass index (BMI) is an acceptable indicator of relative weight (weight for height).[1] It is also the most common indicator, because it can be derived from self-reported data, although this method tends to underestimate measured values.

Underweight, acceptable weight, and overweight, 1996–97

In 1996–97, 44% of Canadians age 20–64 were an acceptable weight for their height (BMI between 20.0 and 24.9). A significant proportion had some excess weight to the point of p*ossible* health risk (19% with a BMI between 25.0 and 26.9) or were overweight to the point of a *probable* health risk (29% with a BMI of 27.0 or greater). Close to one-tenth (8%) of the population were underweight (BMI less than 20.0) (Table 67).[2]

Since 1985, the proportion of the Canadian population between the ages of 20 and 64 that is definitely overweight has increased steadily (Fig. 67a).[2,3,4] This is true for both men and women, although the prevalence of overweight did not increase from 1994–95 to 1996–97. Since 1985, there has been a decrease in *underweight* women but no clear trend among men; these proportions have remained low throughout the period.

The proportion of adults who are definitely overweight is greater in Canada than in Australia or Scotland, but excess body weight is becoming more prevalent with time in all three countries as well as the United States.[5]

Differences among groups

There are significant gender differences in BMI. Women are about five times more likely than men to be underweight (14% vs. 3%) and are also substantially more likely to have an acceptable weight (49% compared with 39%). Men are almost twice as likely to have some excess weight (24% vs. 14%) and are also more likely to be definitely overweight (35% vs. 23%) to the level of probable health risk (BMI = 27.0+) (Table 67).

Age differences in BMI are striking, but not surprising. The younger age groups have a greater concentration of low or acceptable body weight than the older age groups. Twice as many Canadians age 45–64 either have some excess weight or were definitely overweight compared with Canadians age 20–24 (Table 67).[2] It is worth noting that the proportion of overweight Canadians age 45–54 dropped from 39% in 1994–95 to 36% in 1996–97; all other age groups between these two periods remained the same.[2,3]

The chances of being definitely overweight decrease with each successive level of education. One and a half times as many Canadians with less than a high school education faced a probable health risk because of their weight compared with university graduates (36% and 22%, respectively) (Table 67).

When some excess weight and definite overweight are combined, the three middle income groups face a slightly higher health risk (49%) than the lower (43%) and highest (47%) income groups (Fig. 67b).[2] However, as income increases, there is a decreasing likelihood that excess weight constitutes probable health risk. Being definitely overweight is more common among the low-income groups.

There are large interprovincial variations in BMI, with people in British Columbia, Quebec, and Ontario most likely to have acceptable weights (47%, 45%, and 44%, respectively) (Table 67). New Brunswick has the highest prevalence of overweight (42%), while British Columbia and Quebec residents have the lowest (27%). From 1994–95 to 1996–97, New Brunswick and Nova Scotia had the highest *increase* in the number of overweight people (four and three percentage points, respectively), while there was a two percentage point *decrease* in the number of overweight people in Ontario and Manitoba.[2,3] Compared with the national average of 8% who were underweight, women in Quebec and Ontario were twice as likely to have weights *below* acceptable levels (17% and 15%, respectively; data not shown).[2]

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[6] Only non-pregnant Canadians age 20–64 were asked this question, or about 50,000 respondents.

Body mass index or BMI is calculated only for adults under age 65 with the standard formula (weight in kilograms/[height in metres, squared]) and interpreted with the standard groupings.[1] The two categories of excess weight reported here are labelled with respect to the health risk; unlike some reports using the BMI, the term "obesity" is not used for BMI = 27.0+, because obesity requires the measurement of fat as well as relative weight.[1]

Gender comparisons should be made with caution, because men tend to be more muscular than women, and muscle tissue is more dense than fat. This tends to increase the BMI value of a muscular person.

References

1. Health and Welfare Canada. *Canadian Guidelines for Healthy Weights: Report of an Expert Group Convened by Health Promotion Directorate.* Ottawa: Minister of Supply and Services Canada, 1989.
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5. Stephens T. *International Trends in the Prevalence of Physical Activity and Other Health Determinants.* Presentation to the 1998 FIMS (Fédération internationale de médecine sportive) World Congress of Sport Medicine, Orlando, Florida, May 1998.
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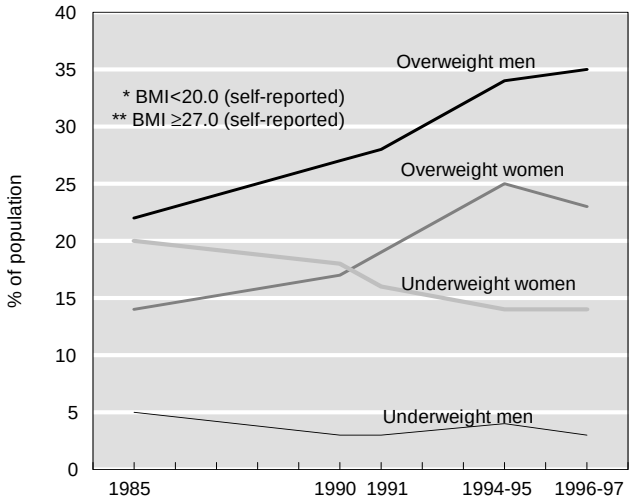
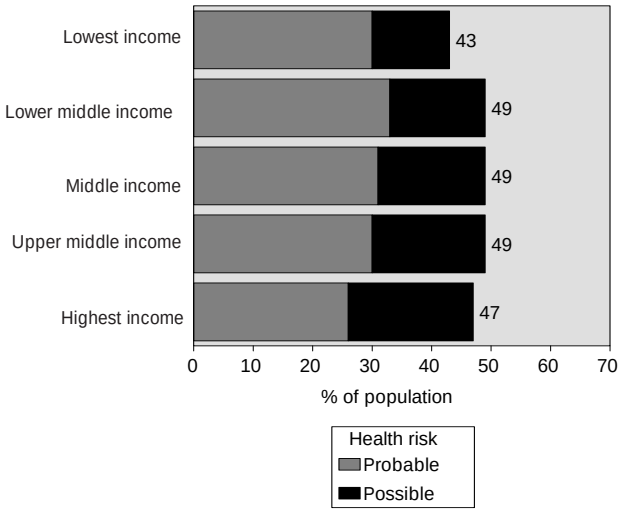
Figure 67a. **Underweight* and overweight,** by sex, age 20–64, Canada, 1985 to 1996–97**



Sources: Millar WJ, Weight and height, in Statistics Canada, Housing, Family and Social Statistics Division, *Health Status of Canadians: Report of the 1991 General Social Survey*, General Social Survey Analysis Series, Ottawa: Minister of Industry, Science and Technology, 1994 (Statistics Canada Cat. No. 11-612E, No. 8); Statistics Canada, *National Population Health Survey, 1994–95* and *1996–97*, special tabulations.

Figure 67b. **Overweight, by income adequacy, age 20–64, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 67. **Body mass index (BMI),[a] by age and sex, by education (age-standardized), and by province, age 20–64, Canada, 1996–97**

	Population estimate	Underweight BMI < 20.0	Acceptable weight BMI = 20.0–24.9	Some excess weight BMI = 25.0–26.9	Overweight BMI = 27.0+
	('000)	(%)	(%)	(%)	(%)
Total, age 20–64	**17,165**	**8**	**44**	**19**	**29**
Male	8,825	3	39	24	35
Female	8,339	14	49	14	23
Age 20–24, total	1,801	15	56	13	15
Male	938	6	57	17	20
Female	863	26	55	9	10
Age 25–34, total	4,202	11	46	18	24
Male	2,181	4	43	23	30
Female	2,021	19	50	12	19
Age 35–44, total	5,041	8	45	18	29
Male	2,615	2	37	24	36
Female	2,426	13	53	12	21
Age 45–54, total	3,641	5	38	21	36
Male	1,881	2	31	25	43
Female	1,760	9	45	17	29
Age 55–64, total	2,480	4	36	21	39
Male	1,210	2	32	25	41
Female	1,270	6	40	17	36
Less than high school	3,068	7	39	19	36
High school	7,337	9	43	19	30
College	3,601	8	44	19	29
University	3,069	9	51	18	22
Newfoundland	333	#	39	18	39
Prince Edward Island	77	5	36	21	37
Nova Scotia	549	6	38	18	38
New Brunswick	442	5	34	19	42
Quebec	4,357	10	45	18	27
Ontario	6,434	9	44	19	29
Manitoba	603	6	40	19	35
Saskatchewan	519	5	36	23	36
Alberta	1,582	8	43	20	30
British Columbia	2,268	8	47	19	27

Data suppressed because of high sampling variability

[a] Weight in kilograms/(height in metres, squared).

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

68

Chronic conditions

Introduction

Certain chronic conditions attract attention because they are major causes of death (Topic 82), potential years of life lost (Topic 84), or hospitalization (Topics 76 and 77). Cancer and cardiovascular disease are examples of such chronic conditions (Topics 73 and 74). Other conditions may affect functional health (Topic 56) or quality of life of many more people, although their effects are less severe for the individual.

This topic examines the prevalence of chronic conditions as revealed by a population survey, in contrast to the administrative statistics that are the other principal source of information about health conditions (Topic 77). For this purpose, "chronic conditions" refers to conditions with a duration of at least six months.

Prevalence of chronic conditions, 1996–97

The most common condition among the household population age 12 and older was non-food allergies, affecting 22%, or more than 5.5 million Canadians (Table 68).[1] This is up from the level of 17% in 1994–95, when such allergies were also ranked first.[2] Arthritis/rheumatism and back problems were the second-ranked conditions (14% each), followed by high blood pressure (10%). Back problems, which were cited as the main cause for restricted activity (Topic 59), were reported by 3.5 million Canadians. Other conditions, such as migraine headaches (8%), asthma (7%) and food allergies (7%) also affected significant numbers. Indeed, there were several conditions with a reported prevalence approximately equal to or greater than that of heart disease or cancer, as revealed by the survey self-report (Fig. 68).[1] All chronic conditions were more common in 1996–97 than two years earlier.[1,2]

Differences among groups

Most conditions were more likely to be reported by females than by males, a difference that is particularly distinct for allergies, migraine headaches and arthritis/rheumatism (Table 68). Sex differences tended to become more pronounced with increasing years.

Some, but not all, chronic conditions increased in prevalence with age. Non-food allergies were concentrated among the younger age groups (Table 68). Asthma was most prevalent at the youngest (12–19) age groups.[1] Arthritis, back problems and high blood pressure were most prevalent among those 45 and older. The only condition that was distributed almost evenly across all age groups is food allergies.

There was no systematic relationship between these chronic conditions and education (Table 68).

Provincial comparisons reveal that Newfoundlanders were least likely to have allergies of either type and that Quebeckers and Newfoundlanders were least likely to have back problems (Table 68). Residents of Nova Scotia were the most likely to have non-food allergies, high blood pressure and arthritis/rheumatism compared with residents of the other provinces, and people in New Brunswick and Saskatchewan were most likely to have food allergies.

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The

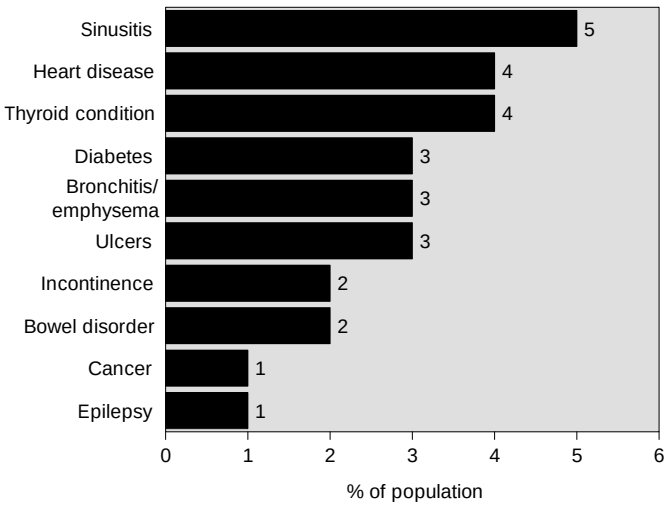
findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[3]

As noted above, these conditions were defined for the respondent as having a duration of six months or more. They were read from a list and were supposed to have been diagnosed by a health professional, unlike earlier surveys. This qualification makes it impossible to establish temporal trends for these conditions.

References

1. Statistics Canada. *National Population Health Survey, 1996–97*. Special tabulations.
2. Statistics Canada. *National Population Health Survey, 1994–95*. Special tabulations.
3. Statistics Canada. *National Population Health Survey Overview, 1996–97*. Ottawa: Minister of Industry, 1998 (Statistics Canada Cat. No. 82-567-XPB).

Figure 68. **Prevalence of selected chronic conditions, age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 68. **Prevalence of diagnosed chronic conditions, by age and sex, by education (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Non-food allergies	Food allergies	Arthritis/ rheumatism	Back problems	High blood pressure	Migraine headache	Asthma
	('000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Total, age 12+	**24,595**	**22**	**7**	**14**	**14**	**10**	**8**	**7**
Male	12,099	19	5	10	13	9	4	6
Female	12,495	26	9	18	15	11	11	8
Age 12–14, total	1,151	21	6	#	2	#	4	12
Male	580	23	6	#	#	#	3	12
Female	571	20	6	#	#	#	4	12
Age 15–17, total	1,284	27	8	#	7	#	6	14
Male	683	25	4	#	5	#	3	13
Female	601	30	13	#	9	#	8	16
Age 18–19, total	826	27	8	2	7	#	6	14
Male	403	28	5	#	4	#	#	14
Female	424	26	10	#	10	#	9	15
Age 20–24, total	1,873	28	7	2	10	1	7	9
Male	948	27	6	1	7	#	4	7
Female	924	30	9	4	12	#	10	11
Age 25–34, total	4,472	26	7	4	13	1	10	8
Male	2,209	23	5	3	13	1	5	6
Female	2,263	28	9	5	13	1	15	9
Age 35–44, total	5,238	23	7	8	15	4	10	6
Male	2,645	19	7	6	15	5	6	4
Female	2,593	27	7	10	15	4	14	7
Age 45–54, total	3,771	20	7	15	18	12	10	5
Male	1,922	14	5	11	17	11	5	4
Female	1,849	25	8	20	19	13	15	7
Age 55–64, total	2,565	19	7	28	20	22	7	5
Male	1,231	12	4	20	20	21	3	3
Female	1,334	26	9	36	20	24	10	7
Age 65–74, total	2,096	17	6	40	17	31	4	6
Male	930	11	3	32	15	28	2	6
Female	1,166	23	8	46	18	34	6	6
Age 75+, total	1,320	14	5	47	17	34	3	6
Male	549	9	4	37	14	26	1	5
Female	771	18	7	54	19	40	4	6
Less than high school	7,526	16	5	16	15	12	7	7
High school	9,307	23	7	14	15	10	8	7
College	4,134	22	6	14	15	10	9	6
University	3,461	24	7	10	11	8	7	6
Newfoundland	478	15	4	14	11	11	6	5
Prince Edward Island	113	18	7	18	12	12	7	6
Nova Scotia	775	25	7	20	14	16	9	6
New Brunswick	632	22	9	16	13	11	8	6
Quebec	6,131	22	5	12	11	9	7	7
Ontario	9,323	23	7	14	15	10	8	7
Manitoba	902	18	7	15	16	11	7	7
Saskatchewan	801	23	9	19	17	11	5	7
Alberta	2,244	21	7	13	15	8	7	7
British Columbia	3,196	25	8	14	16	10	8	8

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey*, *1996–97*, special tabulations.

69

Vaccine-preventable diseases

Introduction

Many childhood and adult diseases are prevented through proper vaccination (see Topic 15), and the tremendous decrease in vaccine-preventable diseases in Canada demonstrates the effectiveness of provincial and territorial immunization programs. Compared with the pre-vaccine era, Canada has witnessed a 95% decrease in the incidence of childhood measles and invasive infections due to *Haemophilus influenzae* type b and the total elimination of polio. However, in spite of public health's best efforts, cases of disease continue to occur.

This topic examines the incidence of nine diseases that are prevented through vaccination: diphtheria, measles, mumps, pertussis, polio, rubella, congenital rubella, tetanus, and *Haemophilus influenzae* type b.

Incidence of disease, 1996

Diphtheria

No cases were reported in 1996 (Fig. 69).[1] Diphtheria incidence has remained at a very low level since the early 1980s; only 2–5 cases were reported annually from 1986 to 1995. Classic diphtheria is rare in Canada; no deaths have been reported since 1983.[1]

Measles

In 1996, 335 cases were reported nationally, and the rate was 1.1 cases per 100,000 population (Table 69).[1] Since 1990, the annual incidence rate of reported cases of measles has fluctuated from a high of 22.9 cases per 100,000 population in 1991 to a low of 0.7 cases per 100,000 population in 1993. In 1993, 203 cases of measles were reported in Canada, representing an almost 15-fold decrease in incidence compared with 1992. This was also the lowest total reported for any year since national notification began in 1924. However, the incidence of reported measles in 1994 increased about 2.5 times over that in 1993 and, in 1995, 4.4 times over that in 1994. The 1996 incidence was a seven-fold decrease from 1995. Mass catch-up campaigns and the implementation of routine two-dose measles immunization programs across Canada in 1996 account for this decreased incidence. This puts Canada in a very good position to achieve its goal of eliminating measles by 2005 and allows for the potential elimination of measles by 2000 as per the goal of the Pan American Health Organization.[1]

Mumps

From 1990 to 1996, 367 cases on average were reported annually, a dramatic decrease from the average of 30,000 cases reported annually during the 1940s and 1950s.[1] In recent years, the incidence rates have ranged from 1.6 cases per 100,000 population in 1990[1] to 1.0 per 100,000 population in 1996 (Table 69).

Pertussis

Overall, the average annual incidence has decreased by approximately 90%, from 157 cases per 100,000 population (17,463 cases) in the immediate pre-vaccine era of the mid-1930s to 24 cases per 100,000 (4,900 cases) for 1990–1996. In 1996, there were 18.0 cases of pertussis per 100,000 population (Table 69). In recent years, the incidence of pertussis has increased across Canada, and epidemics have increased in size. The reported incidences in 1994 and 1995 (34.7 and 33.2 cases per 100,000 population, respectively) have been the highest in a decade, which will make it difficult for Canada to reach its disease reduction target.[1]

Poliomyelitis

The last case of paralytic poliomyelitis due to indigenous wild virus infection in Canada occurred in 1977; polio-free status was certified officially in 1994,

when the elimination of the disease in the World Health Organization's Region of the Americas was announced.

Rubella
There were 302 rubella cases in 1996 (Table 69). Approximately 990 cases (ranging from 237 — in 1994 — to 2,265) on average were reported annually from 1990 to 1996; this represents a mean rate of 2.7 cases per 100,000 population. The incidence increased slightly in 1995 and 1996.[1]

Congenital rubella
Thirty-two cases of congenital rubella were reported in Canada from 1986 to 1995[1]; however, this disease is believed to be grossly under-reported.

Tetanus
Three cases of tetanus were reported in 1996. The incidence of the disease decreased significantly with the introduction of tetanus toxoid in Canada in 1949: 29 cases have been reported since 1990.[1]

Haemophilus influenzae type b (Hib)
There were 55 cases of Hib in 1996. Before the introduction of the first line of Hib vaccines in 1987, approximately 200 cases of invasive Hib disease were reported annually; over 50% were meningitis. Only 117 cases were reported in 1993, the first year after introduction of the infant conjugate vaccines. From 1991 to 1996, the incidence decreased from 1.4 cases per 100,000 population (370 cases) to 0.2 cases per 100,000 (55 cases); this represents a seven-fold reduction. The incidence of Hib invasive disease is expected to decrease further, because more children receive immunization against Hib in infancy.[1]

Differences among groups

There are few differences between males and females, except for rubella, but there are pronounced age-related differences in many vaccine-preventable diseases (Table 69). For example, more than 75% of mumps cases occur among children age 1–14 years, with peak incidence in those 5–9 years of age, while the highest age-specific incidence of pertussis is reported in infants. In contrast, a number of college and university outbreaks of rubella have been reported in recent years, and about one-third of the rubella cases reported in the last five years have been among adolescents 10–19 years of age.[1] Overall, 50–60% of reported cases in Canada occur in persons between the ages of 10 and 39 years.

Interprovincial differences in rates for measles, mumps, and rubella are generally low, but there are notable exceptions, such as rubella rates in Manitoba and rates for pertussis and mumps in Yukon (Table 69). The increased incidence of measles in 1994, which is still reflected in the 1996 rates to a small extent, was mainly reported from Quebec and Ontario.[1]

There is much more interprovincial variability in pertussis (Table 69), the rate in Yukon being an impressive 65.9 times the rate in Ontario.

Only three provinces have legislation or regulations under their health protection acts requiring proof of immunization for school entrance. Ontario and New Brunswick require proof for diphtheria, tetanus, polio, measles, mumps, and rubella immunization. In Manitoba, only measles vaccination is covered. Exceptions are permitted for medical or religious grounds and reasons of conscience; legislation and regulations thus do not guarantee immunization. All provinces and territories have regulations that allow for the exclusion of unvaccinated children from school during outbreaks of vaccine-preventable diseases.

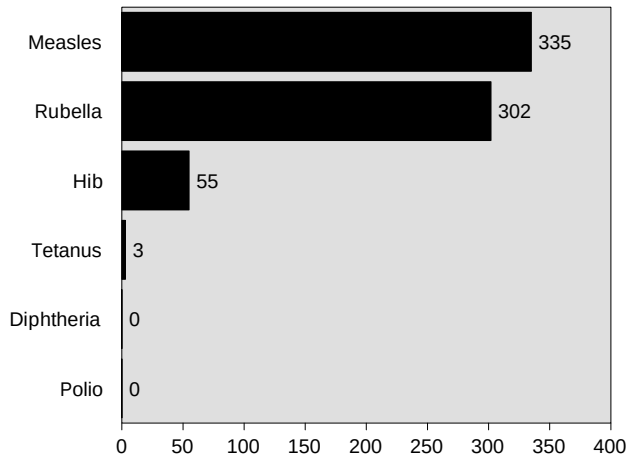
On definitions and methods

The incidence data on vaccine-preventable diseases are reported by the provinces and territories to the National Notifiable Diseases Registry, maintained by the Division of Disease Surveillance, Bureau of Infectious Diseases, Laboratory Centre for Disease Control, Health Canada.

References

1. Health Canada. The Canadian national report on immunization, 1996. *Canada Communicable Diseases Report* 1997; 23(Suppl.).

Figure 69. **Cases of vaccine-preventable disease, Canada, 1996**



Source: Health Canada, The Canadian national report on immunization, 1996, *Canada Communicable Diseases Report* 1997; 23(Suppl.).

Table 69. **New cases of vaccine-preventable diseases, by sex, by age, and by province/territory, Canada, 1996**

	Measles	Mumps	Rubella	Pertussis
Total cases, all ages	**335**	**313**	**302**	**5,400**
	Rate per 100,000 population			
Total	**1.1**	**1.0**	**1.0**	**18.0**
Male	1.2	1.2	1.4	17.0
Female	1.1	0.9	0.6	19.0
Age <1	6.8	0.5	5.4	153.5
Age 1–4	4.3	3.9	2.5	101.0
Age 5–9	3.0	5.0	1.1	91.2
Age 10–14	3.3	2.4	0.3	37.2
Age 15–19	3.1	1.1	4.7	6.1
Age 20–24	0.9	1.1	2.0	2.8
Age 25–29	0.4	0.6	1.0	3.5
Age 30–39	0.3	0.3	0.6	4.0
Age 40–59	0.1	0.3	0.3	1.9
Age 60+	0.0	0.1	0.0	0.5
Newfoundland	0.0	0.0	0.3	10.7
P.E.I.	0.0	0.0	0.0	24.9
Nova Scotia	0.3	0.7	0.1	24.3
New Brunswick	0.0	0.4	0.5	16.4
Quebec	1.1	1.1	0.7	17.9
Ontario	1.7	0.7	0.6	6.4
Manitoba	0.0	0.4	8.2	17.4
Saskatchewan	0.8	1.9	0.1	52.2
Alberta	0.3	2.1	2.0	36.9
British Columbia	1.1	1.3	0.5	25.4
Yukon	6.4	16.0	0.0	421.7
N.W.T.	0.0	1.5	0.0	72.0

Source: Health Canada, The Canadian national report on immunization, 1996, *Canada Communicable Diseases Report* 1997; 23(Suppl.).

70

Sexually transmitted diseases

Introduction

The repercussions of becoming infected with any of the major sexually transmitted diseases (STDs) can be severe; infection can result in infertility in both sexes, severe illness, and, in the case of AIDS (Topic 71), death.

The most important impact of infection by *Chlamydia trachomatis* is non-specific urethritis; gonorrhea may lead to prostate inflammation in men, and both chlamydia and gonorrhea can lead to pelvic inflammatory disease and eventually tubal infertility in women. Syphilis can damage tissues and organs, including the brain, spinal cord, and heart valves. In an attempt to control the spread of AIDS, as well as other STDs, public awareness campaigns over the past decade have sought to inform the public of the dangers of unsafe sexual activity (Topic 50).

This topic describes the incidence of the principal bacterial STDs — chlamydia, gonorrhea, and infectious syphilis — all of which are notifiable.

Incidence of STDs, 1996

As of 1996, chlamydia was the most common STD. The rate of infection was 114.8 per 100,000 population. In contrast, the gonorrhea infection rate was 16.8 per 100,000, and the syphilis infection rate was significantly lower, at 0.4 per 100,000 population (Table 70).[1]

Between 1986 and 1996, rates of both gonorrhea and syphilis infection decreased (Fig. 70).[1] The decrease was much more significant for gonorrhea (from 153.8 to 19.2 per 100,000 for men and from 121.7 to 14.3 per 100,000 for women) than for syphilis. Chlamydia infection has been systematically monitored only since 1991, but there was a decrease between that time and 1996. The incidence of chlamydia infection still remains high, especially for women (172.4 per 100,000 in 1996), who can become infertile as a result.

Differences among groups

The chances of having an STD other than AIDS are highest among youth age 15–24 (Table 70). This is true for chlamydia and gonorrhea; however, syphilis incidence is highest in the 25–29 year age group. Historically, men were more likely than women to be infected with gonorrhea and syphilis; however, analysis of the 1996 data indicates that this may now be true only for ages 20 and over for gonorrhea and 30 and over for syphilis. Up until age 60 and over, women are much more likely than men to be infected with chlamydia; however, much of this may reflect the fact that women are more likely than men to get tested. Recent developments in non-invasive test methods may have an equalizing effect on the gender differential.

Chlamydia and gonorrhea infection rates are highest among female 15–19 year olds (998.6 and 86.4 per 100,000, respectively), while the highest male incidence is found in the 20–24 year age group (302.7 per 100,000 for chlamydia and 66.6 per 100,000 for gonorrhea). Syphilis infection is most common in the 25–29 year age group, with minimal gender differential (1.2 per 100,000 for males and 1.3 per 100,000 for females) (Table 70), but it is important to remember that the overall incidence of infectious syphilis is now very low in Canada. In 1980, the incidence rate of syphilis (primary, secondary, and early latent) in Canada was 12.5 per 100,000[1]; by 1996, this had declined to 0.4 cases per 100,000 (Table 70).

Gonorrhea and chlamydia infection rates are highest in the Northwest Territories (187.8 and 1,344.9 per 100,000, respectively) and lowest in Newfoundland (0.4 and 48.8 per 100,000, respectively). Syphilis

is most common in Saskatchewan (1.0 per 100,000), while several provinces/territories had no reported cases of syphilis in 1996 (Alberta, Newfoundland, New Brunswick, Prince Edward Island, Northwest Territories, and Yukon).

On definitions and methods

Data on these and other STDs are collected by provincial/territorial health departments at the time of first diagnosis and forwarded to the Laboratory Centre for Disease Control of Health Canada, where national statistics are produced.

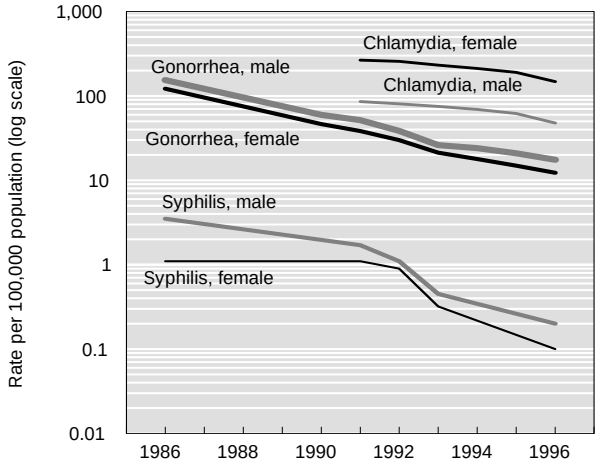
Interprovincial/territorial comparisons should be made with caution owing to the possibility of double-counting anonymous cases and the possibility of one individual having more than one STD.

It should be noted that there are sparse data available on the incidence and prevalence of viral STDs in Canada. It is important to recognize HIV (see Topic 71), human papillomavirus, genital herpes, and hepatitis B — all viral STDs — as serious STDs, although the numbers of cases in Canada may not be readily available for all of these infections.

References

1. Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, Division of STD Prevention and Control. Special tabulations.

Figure 70. **Incidence of gonorrhea and syphilis, 1986–1996, and chlamydia, 1991–1996, by sex, Canada**



Source: Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, Division of STD Prevention and Control, special tabulations.

Table 70. **Sexually transmitted diseases, by age and sex and by province/territory, Canada, 1996**

	Rate per 100,000 population		
	Chlamydia	Gonorrhea	Syphilis[a]
Total, all ages	**114.8**	**16.8**	**0.4**
Male	56.0	19.2	0.5
Female	172.4	14.3	0.3
Age <1, total	6.2	0.8	0
Male	4.8	0.5	0
Female	7.8	1.1	0
Age 1–4, total	0.6	0.3	0
Male	0.1	0.3	0
Female	1.2	0.4	0
Age 5–9, total	0.7	0.2	0
Male	0.0	0.1	0
Female	1.4	0.2	0
Age 10–14, total	22.7	3.4	0
Male	2.2	0.5	0
Female	44.0	6.5	0
Age 15–19, total	563.3	59.4	0.6
Male	148.5	33.6	0.3
Female	998.6	86.4	0.9
Age 20–24, total	617.4	65.9	0.8
Male	302.7	66.6	0.7
Female	941.2	65.0	0.9
Age 25–29, total	238.1	42.0	1.2
Male	155.6	54.8	1.2
Female	322.0	29.0	1.3
Age 30–39, total	66.2	19.5	0.7
Male	51.2	30.6	1.0
Female	81.5	8.0	0.4
Age 40–59, total	12.8	5.0	0.3
Male	11.5	8.5	0.6
Female	14.0	1.6	0.1
Age 60+, total	1.0	0.6	0.1
Male	1.0	1.2	0.1
Female	1.0	0.1	0
Newfoundland	48.8	0.4	0
Prince Edward Island	95.8	0.7	0
Nova Scotia	113.9	10.3	0.3
New Brunswick	109.3	5.4	0
Quebec	90.1	6.5	0.2
Ontario	94.2	20.5	0.7
Manitoba	224.4	48.4	0.1
Saskatchewan	219.3	39.5	1.0
Alberta	174.3	16.9	0
British Columbia	106.7	13.7	0.5
Yukon	458.6	31.8	0
Northwest Territories	1,344.9	187.8	0

[a] Early symptomatic syphilis.

Source: Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, Division of STD Prevention and Control, special tabulations.

71

HIV/AIDS/TB

Introduction

Acquired immune deficiency syndrome (AIDS) is perhaps the deadliest communicable disease in modern times. Public health campaigns have sought to educate the public about the principal means of infection and have promoted safe sex and sterile needle use in an attempt to slow the transmission of the human immunodeficiency virus (HIV) and thus the incidence of new cases of AIDS (see Topic 50).

In its own right, tuberculosis (TB) continues to be one of the most important infectious diseases worldwide. As a leading global cause of disability and death, it has been estimated that one-third of the world's population is infected with *Mycobacterium tuberculosis* and that this disease is responsible for 7–8 million new active cases and 2–3 million deaths each year.

A major concern is that the spread of HIV has intensified, and continues to intensify, the impact of the worldwide TB epidemic. The proportion of HIV-associated TB is becoming increasingly important, and it has been estimated that 1.5 million or 15% of all TB cases by the year 2000 will be among individuals living with HIV/AIDS.[1] Already, TB is the leading worldwide cause of death among individuals with HIV infection.

Prevalence of HIV infection, 1996, incidence of AIDS, 1997, and incidence of TB, 1996

HIV

An estimated 50,000–54,000 cumulative HIV infections had occurred in Canada by the end of 1996, for a population rate of 175 per 100,000. Approximately 40,100 Canadians were living with HIV infection at this date.[2]

There were an estimated 4,200 new HIV infections in Canada during 1996. This is lower than the peak in annual HIV incidence of about 5,000–6,000 that occurred in the mid-1980s, but higher than a previous estimate of 2,500–3,000 per year for the period 1989–1994. The majority of this recent increase in HIV infections is among injection drug users (IDUs).[2]

The character of the HIV epidemic in Canada has changed from an early epidemic that affected primarily men who have sex with men (MSM) to the current epidemic that affects primarily IDUs. This shift is clearly shown in the surveillance data of new HIV diagnoses (new HIV-positive test reports). The percentage of new HIV diagnoses attributed to MSM declined from 75% in the period 1985–1994 to 38% in 1997; correspondingly, the percentage of new HIV diagnoses attributed to IDUs increased from 8% in 1985–1994 to 33% in 1997. Over this same time interval, the percentage of new diagnoses among women increased from 10% to 22%, and diagnoses attributed to heterosexual transmission increased from 7% to 22%.[3]

AIDS

As of December 31, 1997, a total of 15,528 cumulative AIDS cases had been reported in Canada (approximately 20,000 after adjustment for reporting delay). Almost three-quarters (73%) of all reported AIDS cases — more than 11,000 persons — had died by this date (Table 71).[3] The trend in delay-adjusted AIDS cases has declined sharply since 1995 (Fig. 71a),[3] and this decrease may be attributed at least in part to the new anti-retroviral treatments that prevent or delay the onset of AIDS. Canada's cumulative rate of AIDS cases is 511.8 per 1 million persons. This puts Canada in the middle of a group of industrial nations, among whom the reported rates range widely (Fig. 71b).[4,5]

The proportion of new AIDS cases attributed to MSM has steadily declined from nearly 80% in the 1980s to just over 50% in 1997. By contrast, 20% of adult AIDS cases were attributed to intravenous drug use transmission in 1997, compared with only 5% in 1993 and less than 2% prior to 1990. The proportion of annual AIDS cases among women has increased from 4–6% during 1982–1991 to 8% in 1994 and to 14% in 1997.[6]

TB

In 1996, there were 1,849 cases of TB in Canada, for an overall rate of 6.2 per 100,000. The country continues to have one of the lowest reported incidence rates of TB in the world. However, it is recognized that the epidemiology of TB is changing in Canada, as the reported incidence rate has essentially levelled off since 1987 after decades of declining rates (Fig. 71c).[6]

There are limited national data available to date regarding the interaction between TB and HIV. One recent study indicated that 4.2% of the cumulative reported AIDS cases in Canada to the end of 1996 also had TB.[7]

Differences among groups

HIV

HIV incidence rates among MSM in Canada's major cities have declined from a range of 7–11 new infections per 100 person-years in the 1980s to 1–2 per 100 person-years in 1995–1997. HIV prevalence among inner-city IDUs has increased dramatically in many Canadian cities (in Ottawa, from 10% in 1993 to 21% in 1997), and estimated HIV incidence is high (6.5 per 100 person-years in Montreal in 1995–1997 and 18.2 in Vancouver in 1996–97).[7]

Aboriginal persons are over-represented in inner-city IDU communities, and AIDS cases in this group are more likely than non-Aboriginal cases to be attributed to intravenous drug use (19% vs. 3% for men, 50% vs. 17% for women).[8]

About 17% of adult Canadians have ever been tested for HIV, and approximately 11,000–17,000 (30–40%) of the 40,100 Canadians living with HIV infection are unaware of their infection (not tested positive for HIV).[9]

AIDS

Of the 15,528 AIDS cases reported to the end of 1997, 15,358 (99%) were diagnosed among adults and 170 (1%) were among children less than 15 years old. Of the 11,373 reported AIDS deaths, 105 (1%) were among children (Table 71).

Males outnumber females by approximately 14 to 1 (Table 71) in both number of reported AIDS cases and number of reported deaths, but this ratio is changing. In 1997, adult women comprised 13% of adult cases diagnosed. In 1996, the figure was 11%, and in 1995, it was 8%. Prior to 1995, adult women comprised only 6% of all adult cases diagnosed.[3]

Reported cases and reported deaths due to AIDS in the provinces are roughly proportionate to their populations (Topic 1) with the exception of Quebec, which reports 33% of the cases (Table 71) but has 24% of the population.

TB

With increasing travel, trade, and migration between countries, it is not surprising that Canada is being impacted by the global TB epidemic. This is reflected by the fact that the proportion of the total reported cases that have occurred among individuals born outside of Canada has been steadily increasing over the years. In 1980, there was a total of 976 foreign-born cases, representing 35% of the total of 2,762. In 1996, 1,159 or 63% of the total of 1,849 cases were born outside of Canada (data not shown). Aboriginal peoples continue to be another group at increased risk for this disease, with reported incidence rates several times greater than that of the general population (Fig. 71d).[6]

On definitions and methods

As is the case with other notifiable diseases (see Topics 69, 70, and 72), records of new AIDS cases are obtained from provincial and territorial public health authorities and forwarded to the Laboratory Centre for Disease Control of Health Canada, where national statistics are produced.

The reporting delay-adjusted number of AIDS cases takes into consideration delays that occur between the date of diagnosis and the date when the Laboratory Centre for Disease Control receives the information.[3]

Person-years is a measurement combining persons and time and is used as a denominator in person-time incidence and mortality rates. For example, an HIV incidence rate of five per 100 person-years means that for every 100 uninfected persons in the population at the start of a year, five will become infected with HIV by the end of the year.

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2. Archibald CP, Remis RS, Farley J, et al. *Estimating HIV Prevalence and Incidence at the National Level: Combining Direct and Indirect Methods with Monte-Carlo Simulation*. XII International Conference on AIDS, Geneva, June–July 1998 (Abstract 43475).
3. Health Canada. *HIV and AIDS in Canada, Surveillance Report to December 31, 1997*. Ottawa: Health Canada, Health Protection Branch, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, April 1998. For updates, see the Laboratory Centre for Disease Control Internet site: www.hc-sc.gc.ca/hpb/lcdc.
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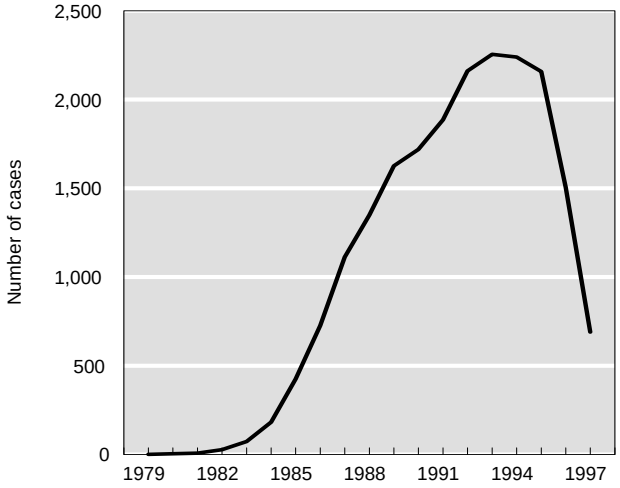
5. Central Intelligence Agency. *World Factbook, 1997*. See the Central Intelligence Agency Internet site: www.ocdi.gov/cia/publications/factbook/index/html (26 June 1998).
6. Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB. Special tabulations.
7. Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB. *Inventory of HIV Incidence/Prevalence Studies in Canada, April 1998.*
8. Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB. *Epi Updates: HIV/AIDS Epidemiology Among Aboriginal People in Canada, May 1998.*
9. Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB. *Epi Updates: HIV Testing Among Canadians: An Estimated 11,000–17,000 Current HIV Infections May Not Be Diagnosed.*

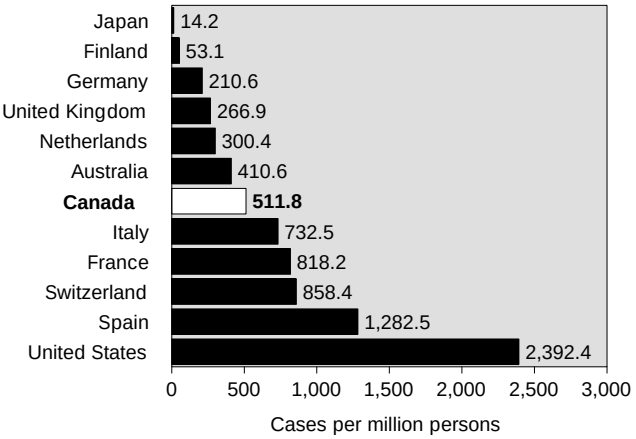
Figure 71a. **Estimated number of new AIDS cases,* Canada, 1979–1997**



* Adjusted for reporting delay to the end of 1997 and under-reporting.

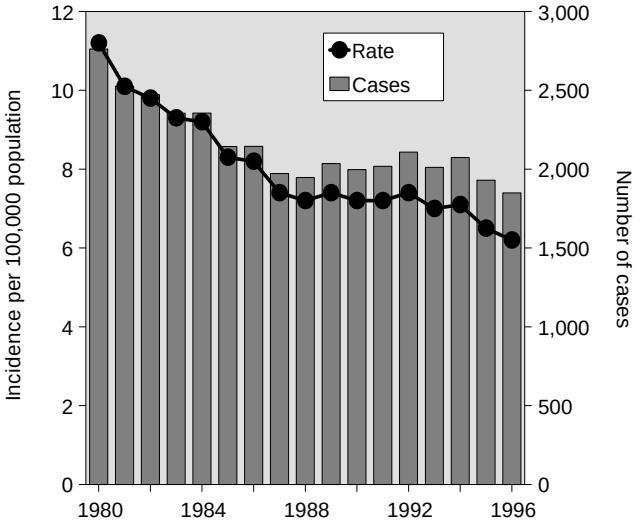
Source: Health Canada, *HIV and AIDS in Canada, Surveillance Report to December 31, 1997*, Ottawa: Health Canada, Health Protection Branch, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, April 1998.

Figure 71b. **Prevalence of AIDS, selected countries, 1997**



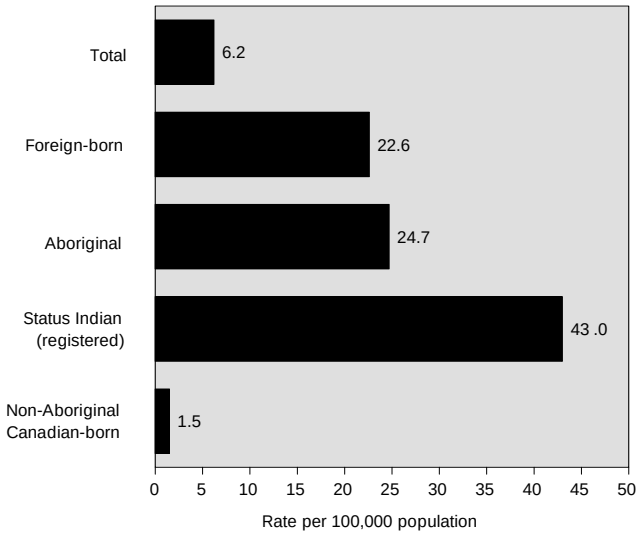
Sources: World Health Organization, Global AIDS Surveillance, *Weekly Epidemiological Record/Rélève Epidémiologique Hebdomadaire, 26 June 1998*, Geneva: World Health Organization, 1998, Table 1, pp. 193–194; Central Intelligence Agency, *World Factbook, 1997* (see the Central Intelligence Agency Internet site: www.ocdi.gov/cia/publications/factbook/index/html, 26 June 1998).

Figure 71c. **Reported TB cases, Canada, 1980–1996**



Source: Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, special tabulations.

Figure 71d. **Reported TB cases, by population sub-group, Canada, 1996**



Source: Health Canada, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, special tabulations.

Table 71. **Number of HIV-positive tests, by age and by province/territory, and reported cases of AIDS and deaths due to AIDS, by age and sex and by province/territory, Canada, cumulative total to December 31, 1997**

	HIV positive	AIDS cases	AIDS deaths
Total, all ages	**41,049**[a]	**15,528**[b]	**11,373**[b]
Male	–	14,414	10,643
Female	–	1,113	729
Age <1, total	–	76	57
Male	–	36	25
Female	–	40	32
Age 1–4, total	–	56	28
Male	–	25	15
Female	–	31	13
Age 5–9, total	–	18	9
Male	–	13	6
Female	–	5	3
Age 10–14, total	–	20	11
Male	–	16	9
Female	–	4	2
Age <15, total	625	170	105
Age 15–19, total	567	52	35
Male	–	44	32
Female	–	8	3
Age 20–29, total	10,599	2,623	1,865
Male	–	2,323	1,673
Female	–	300	192
Age 30–39, total	15,219	6,819	4,920
Male	–	6,425	4,665
Female	–	394	255
Age 40–49, total	6,843	4,137	3,109
Male	–	3,959	2,993
Female	–	178	116
Age 50+, total	2,655	1,727	1,339[b]
Male	–	1,573	1,225
Female	–	153	113
Newfoundland	178	64	51
P.E.I. and Nova Scotia	531	247	189
New Brunswick	217	125	79
Quebec	8,553[c]	5,154	3,325
Ontario	18,552	6,211	5,247
Manitoba	621	147	116
Saskatchewan	378	118	96
Alberta	2,976	927	350
British Columbia	8,993	2,515	1,910
Yukon	21	4	1
Northwest Territories	29	16	9

[a] Age is unknown for 4,541 HIV-positive tests.

[b] Gender is unknown for one AIDS death.

[c] Does not include 1997.

Source: Health Canada, *HIV and AIDS in Canada, Surveillance Report to December 31, 1997*, Ottawa: Health Canada, Health Protection Branch, Laboratory Centre for Disease Control, Bureau of HIV/AIDS, STD and TB, April 1998.

72

Enteric, foodborne, and waterborne diseases

Introduction

Enteric, foodborne, and waterborne diseases are caused by a variety of microorganisms (bacteria, viruses, and parasites) and their toxins. Symptoms may range from mild diarrhea, vomiting, and stomach cramps to severe life-threatening illness. Some groups in the population are at greater risk of severe illness, including infants, the elderly, people with existing serious illness, or individuals whose immune systems are depressed either because of illness (e.g., people with AIDS) or because of treatment they are receiving (e.g., people receiving chemotherapy). A small proportion of individuals who have enteric infections may go on to develop long-term health problems, including arthritis-like symptoms and kidney failure. Infections usually result when the microorganism or its toxins enter the body through the mouth, either by the consumption of contaminated food, beverages, or water or via contaminated fingers or objects. These may have been contaminated directly by human or animal feces or indirectly by contact with a contaminated surface. In many instances, thorough cooking, correct storage of foods (keeping foods either very cold or very hot), and good hygiene practices will greatly reduce the risk of illness.

The diseases described in this topic are some of the most common enteric, foodborne, and waterborne diseases reported in Canada, and all are nationally notifiable. Although all of them can be spread by the mechanisms outlined above, the bacteria *Salmonella*, *Campylobacter*, and *E. coli* O157 are usually foodborne; *Campylobacter* may also be waterborne, along with the parasite *Giardia*; and the hepatitis A virus and the bacterium *Shigella* are often associated with spread in situations of poor personal hygiene.

Incidence of enteric, foodborne, and waterborne diseases, 1996

In 1996, *Campylobacter* (42.7 per 100,000 population) was the most commonly notified infection, followed by *Salmonella* (22.0 per 100,000) and *Giardia* (20.3 per 100,000) (Table 72).[1] Notification rates for the remaining three infections were much lower (<10.0 per 100,000 population).

There have been no dramatic changes in the notification rates for the six diseases in the period 1990–1996. Apart from annual fluctuations, the trends in notification for all but *Salmonella* and *Giardia* infection remained fairly consistent or declined slightly (Fig. 72).[1] Notifications of *Salmonella* and *Giardia* have, however, declined by about 25% since 1991.

Public health scientists acknowledge that these illnesses are far more common than the reported numbers suggest. Estimates from studies in North America and Europe indicate that as few as 1–10% of cases are recorded. This may in part reflect the mild nature of many infections, which are managed at home, or the fact that only a small proportion of patients have specimens taken for laboratory tests.

Differences among groups

The likelihood of having a reported enteric, foodborne, or waterborne infection is greatest in young children, followed by young adults (Table 72). Rates of reported cases of *Salmonella* infection are highest in infants, in children under 9 years, and in young adults in their 20s. Among infants, *Salmonella* infection is reported more often (128.1 per 100,000 population) than any other of these diseases. *Campylobacter*, *Shigella*, *Giardia*, and *E. coli* O157 infections are reported most often for age 1–4.

Hepatitis A infections are highest in the age group 5–9 years. It is unclear, particularly in young children, to what extent these trends reflect actual incidence or the increased likelihood that physicians test young children. The higher incidence of hepatitis A in the 5–9 year age group corresponds with the elementary school years and may reflect increased risk of infection in a setting where attention to personal hygiene is poor.

Rates of reported cases of *Campylobacter*, *Giardia*, and hepatitis A infection are consistently higher in males than in females. Rates of reported cases for all six infections for males and females are similar for *Salmonella* and *Shigella* infection but are higher in females in most age groups for *E. coli* O157 infection.

Reported rates vary by province/territory and disease. In 1996, *Campylobacter* infection was most common in British Columbia (67.9 per 100,000 population); *Salmonella* in the Northwest Territories (41.9 per 100,000 population); *Giardia* in Yukon (70.1 per 100,000 population); hepatitis A and *Shigella* in Saskatchewan (44.1 and 11.3 per 100,000 population, respectively); *E. coli* O157 in Manitoba (9.1 per 100,000 population). Rates of reported cases for all six infections were low in Newfoundland. Rates of hepatitis A, *Shigella*, and *E. coli* O157 were lower in the Atlantic provinces and the territories.

On definitions and methods

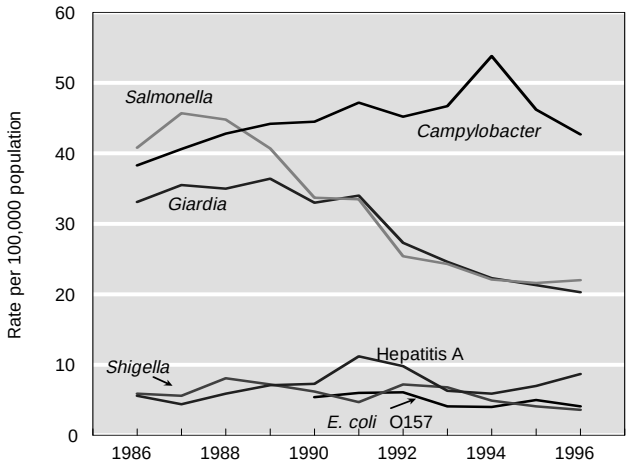
Data on all nationally notifiable diseases, including these six enteric, foodborne, and waterborne diseases, are reported to provincial and territorial health departments on confirmation of diagnosis. These are forwarded to the Laboratory Centre for Disease Control of Health Canada, where national statistics are collated.

These data are subject to a number of potential biases and inconsistencies relating to local or provincial/territorial testing and reporting practices. As noted, only a small fraction of cases are thought to result in reports. Any comparisons of reporting trends between provinces/territories and age groups should thus be interpreted with caution.

References

1. Health Canada. Notifiable diseases annual summary, 1996. *Canada Communicable Diseases Report* 1998; 24–20 (October).

Figure 72. **Incidence of enteric, foodborne, and waterborne infections, Canada, 1986–1996**



Source: Health Canada, Notifiable diseases annual summary, 1996, *Canada Communicable Diseases Report* 1998; 24–20 (October) .

Table 72. **Enteric, foodborne, and waterborne diseases, by age and sex and by province/territory, Canada, 1996**

	Cases per 100,000 population					
	Campylobacter	*Salmonella*	*Giardia*	Hepatitis A	*Shigella*	*E. coli* O157
Total, all ages	**42.7**	**22.0**	**20.3**	**8.7**	**3.6**	**4.1**
Male	45.9	21.8	21.7	10.8	3.5	3.9
Female	39.3	22.0	18.7	6.5	3.7	4.3
Age <1, total	69.4	128.1	21.6	1.9	6.5	10.8
Male	77.6	124.6	16.9	1.1	7.9	12.1
Female	60.9	131.2	26.6	2.8	5.0	9.4
Age 1–4, total	91.4	72.9	71.3	9.7	13.2	18.7
Male	101.5	73.5	81.0	9.9	12.8	18.3
Female	80.6	72.0	61.1	9.6	13.6	19.1
Age 5–9, total	39.5	29.5	31.8	20.6	5.5	8.0
Male	46.9	31.9	31.3	18.3	4.7	7.9
Female	31.7	27.0	32.4	22.9	6.3	8.0
Age 10–14, total	28.1	15.3	13.8	9.6	2.3	4.2
Male	35.3	17.1	15.4	8.5	2.2	5.0
Female	20.6	13.4	12.0	10.6	2.3	3.1
Age 15–19, total	37.1	14.3	11.0	9.3	2.4	3.8
Male	43.1	15.1	11.9	9.8	1.9	3.5
Female	30.8	13.4	10.0	8.7	2.9	4.2
Age 20–24, total	64.6	22.9	21.7	10.0	5.2	3.0
Male	68.2	20.8	20.4	12.6	4.3	2.7
Female	60.9	25.1	23.0	7.3	6.1	3.3
Age 25–29, total	62.0	20.1	24.0	12.1	4.7	1.9
Male	63.8	20.7	25.3	17.3	4.2	1.6
Female	60.1	19.5	22.6	6.8	5.3	2.2
Age 30–39, total	43.7	16.6	22.7	11.9	3.7	1.9
Male	45.5	15.9	24.5	18.7	3.4	1.3
Female	41.9	17.2	20.8	4.9	3.9	2.4
Age 40–59, total	33.7	15.0	14.7	5.3	2.4	2.2
Male	34.3	14.1	15.9	6.9	2.5	1.8
Female	33.0	15.9	13.5	3.8	2.3	2.6
Age 60+, total	27.9	16.7	8.2	2.5	1.1	4.0
Male	28.3	15.4	8.0	2.4	1.3	3.7
Female	27.5	17.7	8.2	2.5	1.0	4.3
Newfoundland	17.7	8.9	7.3	0.2	0.2	0.3
Prince Edward Island	31.5	11.0	6.6	0.7	1.5	7.3
Nova Scotia	22.5	15.6	15.8	1.2	0.6	3.9
New Brunswick	33.6	21.0	14.6	1.0	0.5	0.7
Quebec	38.1	21.8	12.6	8.0	3.8	4.1
Ontario	47.8	23.7	22.5	5.5	2.8	4.1
Manitoba	17.5	18.9	NR	21.4	8.5	9.1
Saskatchewan	24.4	25.5	39.2	44.1	11.3	3.0
Alberta	32.0	21.2	19.5	7.1	2.1	5.1
British Columbia	67.9	21.7	33.7	12.6	5.2	3.6
Yukon	28.7	25.5	70.1	0.0	0.0	0.0
Northwest Territories	29.9	41.9	32.9	3.0	0.0	0.0

NR = not reported

Source: Health Canada, Notifiable diseases annual summary, 1996, *Canada Communicable Diseases Report* 1998; 24–20 (October).

73

Cancer

Introduction

Cancer in its many forms was the second leading cause of death in 1996 (Topic 82) and accounted for over 310,000 years of potential life lost in 1996 (Topic 83). As a cause of hospitalization, cancer ranked sixth in hospital care in 1995–96, accounting for 774 separations per 100,000 population (Topic 77).

This topic describes the incidence of both new cases of cancer and deaths caused by cancer. Data are presented for cancer of all types (excluding non-melanoma skin cancer) and for specific cancers of particular interest, such as breast, prostate, and lung cancer.

Estimated incidence of cancer, 1998

In 1998, there will be an estimated 129,200 new cases of cancer and 62,700 deaths from cancer in Canada.[1] The most common site of new cancer among men will be the prostate (16,100 estimated cases, compared with 12,200 new lung cancer cases). However, deaths due to lung cancer among men (an estimated 10,600) will far exceed the deaths due to prostate cancer (4,300). Among women, breast cancer will be the most common newly diagnosed cancer (19,300 estimated cases), followed by lung (8,200) and colorectal cancer (7,600). The leading cause of cancer death for women, however, will be lung cancer (6,500 deaths in 1998, compared with 5,300 for breast cancer).[1]

Differences among groups

Well over half of all new cancers in each sex are accounted for by just three sites: prostate, lung, and colorectal in men, and breast, lung, and colorectal in women. Lung cancer alone accounts for 32% of male cancer deaths and 22% of female cancer deaths.[1]

The incidence of all forms of cancer for males has been steadily increasing since the early 1970s (Fig. 73a),[1] while the incidence in females has remained relatively stable since the early 1980s. Mortality rates for males have decreased slightly since the late 1980s, while female cancer mortality has remained relatively stable over the same period.

Lung cancer incidence and mortality for males have decreased slightly since the mid-1980s (Fig. 73b).[1] Prostate cancer incidence for males has increased substantially since the early 1970s, although prostate cancer mortality has been relatively stable over that time period. The sharp peak of increased prostate cancer incidence from 1990 to 1993 is explained by better use of early detection and screening techniques; the slow increase that occurred prior to 1990 is expected to be the trend in the future.[1] Breast cancer incidence as well as lung cancer incidence and mortality for women have been increasing since the early 1970s, while breast cancer mortality has been relatively stable over the same period, with a slight decrease since 1986 (Fig. 73c).[1]

In general, the incidence of cancer and mortality due to cancer among males exceeded those of females (Fig. 73a). Men had a much higher incidence rate of cancer per 100,000 population at age 60 and older compared with women the same age, and men accounted for many more deaths per 100,000 population due to cancer at age 60 and older than women the same age (Table 73).[1,2] Even though there are more women than men age 60 and older, men still exceed women in total incidence of cases and total deaths due to cancer in 1998. The preponderance of cancer among older age groups and the much higher rates of new cases and deaths in males at these ages account for the overall greater impact of cancer on males than on females.

Provincial differences in new cancer incidence and deaths are rather marked. Nova Scotia has the

highest male age-standardized incidence and death rates (Table 73), due largely to lung cancer (incidence 30% above the Canadian average and mortality 35% higher than the Canadian average).[1] Among females, the highest new case incidence rate is also in Nova Scotia, and the highest death rates, in Nova Scotia and Prince Edward Island. The lowest incidence of new cancers is in Newfoundland for both males and females, while the lowest death rates are in British Columbia for males and in Saskatchewan for females.

On definitions and methods

The cancer mortality figures for 1996–1998 and cancer incidence figures for 1994–1998 are estimates and should be interpreted with some caution. Data for actual and estimated incidence and mortality (Table 73, age and sex rates) are summarized by Statistics Canada from the National Cancer Incidence Reporting System and mortality files.

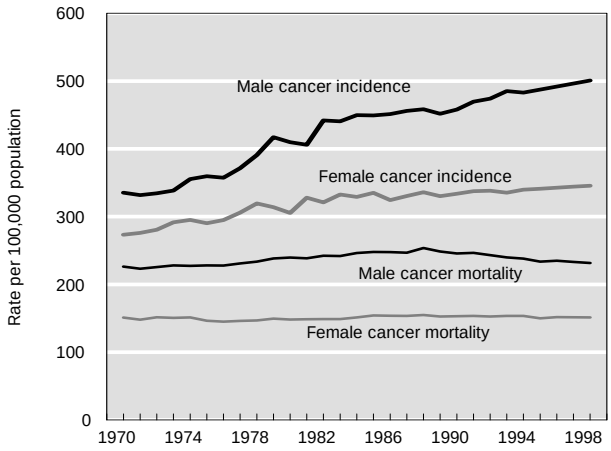
The rapid increases in incidence rates through the 1970s (Fig. 73a) largely reflect improved registration of new cases during this period by several provincial registries. Registration levels, however, have generally stabilized since 1981 owing to increasing consistency of cancer reporting procedures across Canada.[1]

Prior to 1995, rates were adjusted to the World Standard Population; they are now standardized to the 1991 Canadian population. As such, it is not appropriate to compare age-standardized rates presented in *Canadian Cancer Statistics 1998* with those presented prior to 1995, or to other publications that employ a different standard population.

References

1. National Cancer Institute of Canada. *Canadian Cancer Statistics 1998*. Toronto: National Cancer Institute of Canada, 1998.
2. Statistics Canada, Health Statistics Division. Special tabulations.

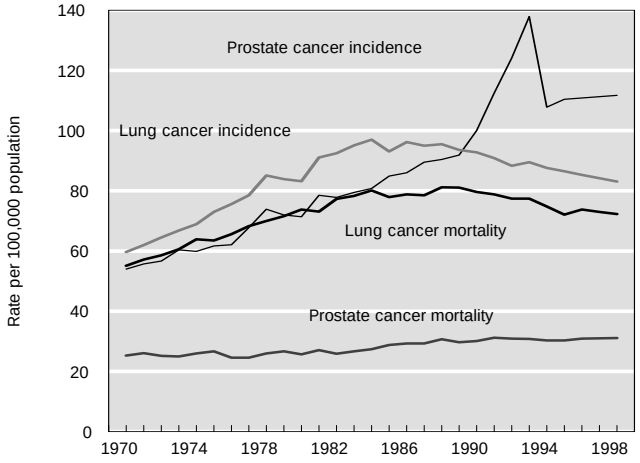
Figure 73a. **Cancer* incidence and mortality, age-standardized, Canada, 1970–1998**



* Excluding non-malignant melanoma; mortality for 1996–1998 and incidence from 1994 to 1998 are estimates.

Source: National Cancer Institute of Canada, *Canadian Cancer Statistics 1998*, Toronto: National Cancer Institute of Canada, 1998.

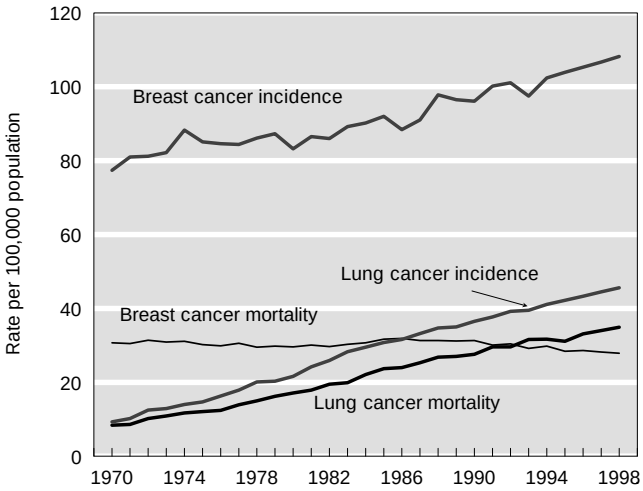
Figure 73b. **Incidence and mortality rates for selected cancer sites, age-standardized, males, Canada, 1970–1998***



* Incidence rates from 1994 to 1998 are estimated. Mortality rates from 1996 to 1998 are estimated.

Source: National Cancer Institute of Canada, *Canadian Cancer Statistics 1998*, Toronto: National Cancer Institute of Canada, 1998.

Figure 73c. **Incidence and mortality rates for selected cancer sites, age-standardized, females, Canada, 1970–1998***



* Incidence rates from 1994 to 1998 are estimated. Mortality rates from 1996 to 1998 are estimated.

Source: National Cancer Institute of Canada, *Canadian Cancer Statistics 1998*, Toronto: National Cancer Institute of Canada, 1998.

Table 73. **Estimated rates of new cases of cancer and deaths due to cancer per 100,000 population,[a] by age and sex and by province (age-standardized),[b] Canada, 1998**

	New cases, 1998		Deaths, 1998	
	Male	Female	Male	Female
Total, all ages	**501**	**346**	**232**	**151**
Age 0–19	18	17	3	2
Age 20–29	37	42	6	6
Age 30–39	69	114	14	21
Age 40–49	163	309	59	78
Age 50–59	597	654	235	218
Age 60–69	1,894	1,155	740	493
Age 70–79	3,282	1,597	1,485	868
Age 80+	3,719	1,818	2,592	1,378
Newfoundland	390	286	273	149
Nova Scotia	563	384	281	168
P.E.I.	478	354	264	167
New Brunswick	532	335	255	158
Quebec	511	334	260	157
Ontario	493	350	223	151
Manitoba	549	360	228	154
Saskatchewan	451	329	217	139
Alberta	453	338	211	143
British Columbia	447	332	201	143

[a] Excluding non-melanoma skin cancer.

[b] Provincial data are age-standardized to the 1991 Canadian population.

Sources: National Cancer Institute of Canada, *Canadian Cancer Statistics 1998*, Toronto: National Cancer Institute of Canada, 1998; Statistics Canada, Health Statistics Division, special tabulations.

74

Heart disease and stroke

Introduction

Cardiovascular disease is the major cause of death, disability, and illness in Canada. It has a significant impact on the health care system, accounting for more discharges from hospital than any other major disease group (Topic 77). The costs of hospitalization, medical care, drugs, and research related to cardiovascular disease in 1993 were estimated at $7.3 billion or 17% of the total direct costs of illness[1] (see also Topic 29). The two major components of cardiovascular disease are ischemic heart disease, including acute myocardial infarction or heart attack, and cerebrovascular disease (stroke).

Burden of cardiovascular disease, 1996

In 1996, cardiovascular disease accounted for 79,447 deaths, or 37% of all deaths in Canada (Table 74),[2] compared with 79,117 in 1995.[2] Although the absolute number of cardiovascular deaths increased modestly, the growth of the population and the increasing number of elderly persons mean that the toll of cardiovascular disease remained the same. Ischemic heart disease accounted for 20.7% and stroke accounted for 7.3% of all deaths in Canada in 1996 (Fig. 74a).[2] In 1996, cardiovascular disease accounted for 25,604 potential years of life lost (Topic 83).

When the mortality rate is adjusted for age, cardiovascular disease still has the highest death rate, at 226 deaths per 100,000 population, followed by cancer at 185 deaths per 100,000 (Topic 82). However, the cardiovascular disease mortality rate has been declining in Canada since the mid-1960s.[1] In particular, ischemic heart disease has been declining by about 2% each year since the early 1970s; stroke declined by about 2% from the 1950s to 1988 and has remained relatively stable since then (Fig. 74b).[3] The decline in cardiovascular disease is partly due to the reduction in smoking (Topic 40) and the consumption of dietary fat (Topic 47), more exercise (Topic 46), improved identification and control of high blood pressure (Topic 68), and improved medical and surgical procedures.[1]

The 1996–97 *National Population Health Survey* asked people 12 years of age and older if they had a chronic health problem lasting more than six months that had been diagnosed by a health professional.[4] Results showed that 10% reported high blood pressure, 4% reported heart disease, and under 1% of respondents reported the effects of a stroke as a chronic condition (Topic 68). However, the prevalence of high blood pressure may be under-reported when it is under control.

Incidence data on cardiovascular disease are very difficult to obtain, in contrast to those on cancer (Topic 73). Longitudinal data from the *National Population Health Survey* (using 1994–95 and 1996–97 cycles) make it possible to estimate *self-reported* incidence for certain diseases. One study using these self-reported data estimated the two-year incidence rates for heart disease to be 2.07 and 1.93 cases per 100 population for males and females, respectively.[5] Another study that used national hospitalization data estimated that during the 1993–94 fiscal year, there were 44,800 men and 28,653 women who were hospitalized for acute myocardial infarction.[6]

Differences among groups

In 1996, cardiovascular disease accounted for 36% of male deaths and 39% of female deaths. While more men than women die of ischemic heart disease (22% vs. 19%), more women die of stroke (9% vs. 6%) (Table 74).

The Atlantic provinces have had consistently higher mortality rates than the western provinces for

cardiovascular disease.[1] In 1996, the highest age-standardized mortality rate for cardiovascular disease for males was in Prince Edward Island (365 per 100,000), and the lowest rate was in British Columbia (265). For women, the highest rate was in Newfoundland (225 per 100,000), and the lowest in British Columbia (164) (Topic 82). Provincial prevalence rates of smoking, high blood pressure, and obesity run parallel to the rates for cardiovascular disease.[1]

Study results using the longitudinal files of the *National Population Health Survey* (1994–95 and 1996–97 cycles) showed that the estimated incidence rate of heart disease, as for all other chronic diseases studied, was higher for people in the two lowest income adequacy groups than for those in the upper three income groups.[4]

Although cardiovascular disease is the leading cause of death throughout the world, the rates vary widely (Fig. 74c).[1,7] In the countries selected for comparison, the rates for men range from a high of 1,130.7 deaths per 100,000 population in the Russian Federation to a low of 232.7 deaths per 100,000 in Japan. For women, much the same pattern is seen. Of the selected countries, Canada has the fifth lowest cardiovascular mortality rate overall — fourth lowest for men and ninth lowest for women.

On definitions and methods

Cardiovascular disease refers to all diseases of the circulatory system. Two major components of this disease are ischemic heart disease and stroke. Ischemic heart disease, also known as coronary heart disease, includes any condition in which the muscles of the heart are damaged by insufficient blood supply, usually as a result of atherosclerosis. Ischemic heart disease includes angina pectoris, acute myocardial infarction (heart attack), chronic ischemic heart disease, and sudden death. Cerebrovascular disease, or stroke, as it is more commonly known, is any sudden development of focal brain damage due to disease of the blood vessels, usually due to atherosclerosis and high blood pressure.

There is no provincial/territorial or national registry that tracks the incidence or prevalence of cardiovascular disease in Canada. Consequently, proxy estimates must be calculated, using available sources such as the longitudinal data files from the *National Population Health Survey* and national hospital morbidity files. When looking at data from the *National Population Health Survey*, it is important to remember that these data are based on self-reported information. Hospital morbidity data used to calculate the incidence of acute myocardial infarction did not include individuals who died prior to reaching hospital.

The values shown in Figure 74c are adjusted to the standard European age composition. This adjustment is essential for such international comparisons. The comparisons are also for various years, depending upon when the statistics were collected.

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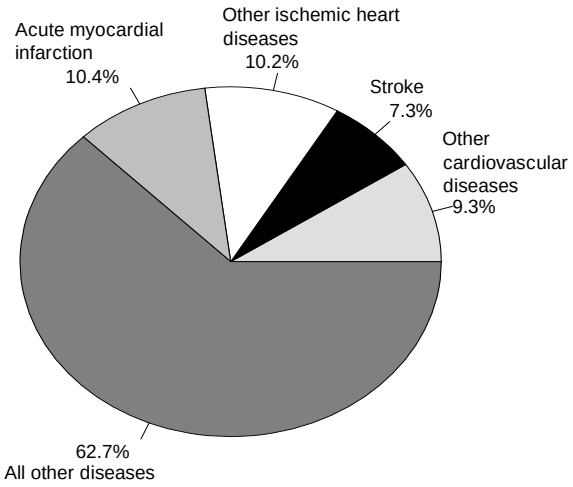
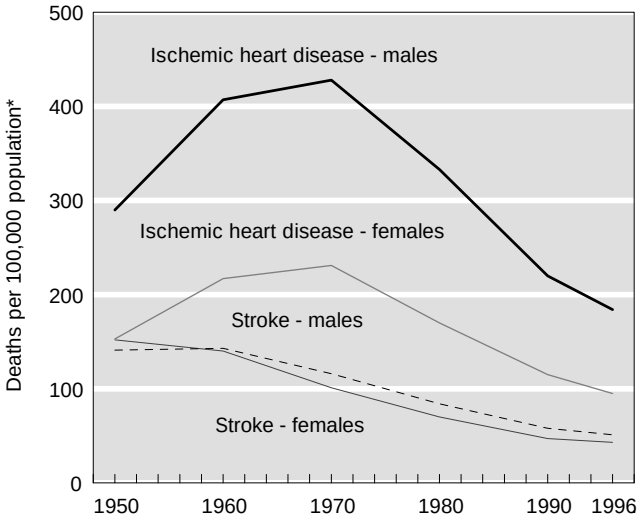
6. Johansen H, Nargundkar M, Nair C, et al. At risk of first or recurring heart disease. *Health Reports* 1998; 9(4): 19–29 (Statistics Canada Cat. No. 82-003-XPB).
7. World Health Organization. *1995 World Health Statistics Annual*. Geneva: World Health Organization, 1995.

Figure 74a. **Cardiovascular disease as a cause of mortality, Canada, 1996**



Source: Statistics Canada, Health Statistics Division, unpublished vital statistics standard tables for 1996, special tabulations.

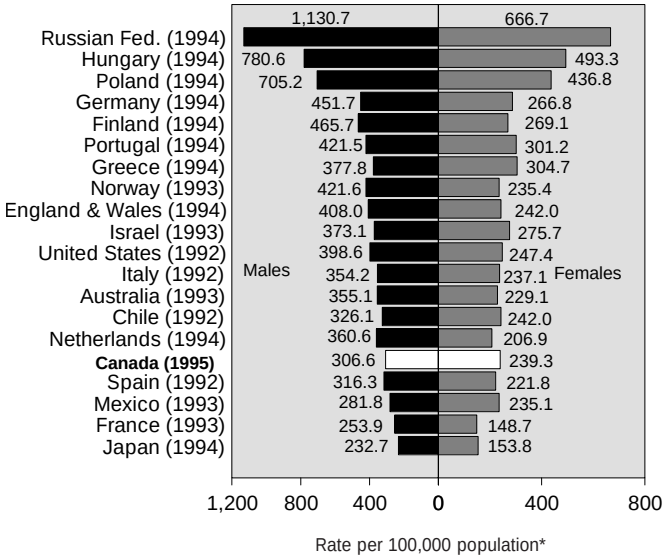
Figure 74b. **Deaths due to ischemic heart disease and stroke, Canada, 1950–1996**



* Age-standardized to the 1991 Canadian population.

Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Figure 74c. **Age-standardized mortality rates, cardiovascular disease, selected countries, mid-1990s**



* Standardized to the European population.

Source: Heart and Stroke Foundation of Canada, *Heart Disease and Stroke in Canada*, Ottawa: Heart and Stroke Foundation of Canada, 1997; World Health Organization, *1995 World Health Statistics Annual*, Geneva: World Health Organization, 1995.

Table 74. **Deaths due to cardiovascular disease, Canada, 1996**

	All deaths	All CVD[a]	IHD[b]	AMI[c]	Stroke[d]
		(%)	(%)	(%)	(%)
Total	**212,855**	**37.3**	**20.7**	**10.4**	**7.3**
Male	111,383	35.9	21.8	11.4	5.8
Female	101,472	38.9	19.4	9.4	9.0
Age <35, total	9,375	4.8	0.9	0.5	0.9
Male	6,291	4.0	1.0	0.6	0.6
Female	3,084	6.4	0.6	0.5	1.5
Age 35–44, total	7,226	13.8	7.6	4.6	2.4
Male	4,668	14.8	9.4	5.5	1.7
Female	2,558	12.0	4.3	3.0	3.6
Age 45–54, total	11,916	22.9	15.0	9.0	3.1
Male	7,350	28.1	20.3	12.2	2.6
Female	4,566	15.0	6.6	4.0	3.9
Age 55–64, total	21,697	29.2	19.5	11.5	3.7
Male	13,569	33.5	23.7	13.9	3.5
Female	8,128	22.0	12.5	7.5	3.9
Age 65–74, total	46,433	35.2	21.4	12.0	5.7
Male	28,164	37.3	24.2	13.3	5.3
Female	18,269	32.0	17.1	10.0	6.4
Age 75–84, total	63,844	43.0	22.3	12.4	9.0
Male	32,754	42.2	24.6	12.6	7.8
Female	31,090	44.0	19.9	12.1	10.2
Age 85+, total	52,364	48.0	23.2	9.2	11.1
Male	18,587	43.8	22.6	9.4	8.9
Female	33,777	50.0	23.6	9.0	12.3
Newfoundland	3,928	42.5	23.4	11.0	8.6
Prince Edward Island	1,268	41.2	22.4	10.4	9.0
Nova Scotia	7,751	36.7	19.4	9.3	6.5
New Brunswick	5,896	37.9	18.9	10.0	6.8
Quebec	52,336	35.2	20.4	11.8	6.3
Ontario	79,099	38.1	21.9	10.1	7.6
Manitoba	9,497	40.0	21.8	11.0	8.3
Saskatchewan	8,765	39.5	20.2	10.6	7.8
Alberta	16,391	38.2	19.9	8.6	7.6
British Columbia	27,539	36.4	18.5	10.0	8.0

[a] All CVD: all cardiovascular diseases (International Classification of Diseases, 9th revision [ICD-9], codes 390–459).

[b] IHD: ischemic heart disease (ICD-9 codes 410–414).

[c] AMI: acute myocardial infarction (heart attack) (ICD-9 code 410). Note: AMI is a sub-category of IHD.

[d] Stroke (also known as cerebrovascular disease) (ICD-9 codes 430–438).

Source: Statistics Canada, Health Statistics Division, unpublished vital statistics standard tables for 1996, special tabulations.

75

Depression

Introduction

Depression is a disabling condition that accounts for an important proportion of psychiatric hospitalizations (Topic 76) and, arguably, the majority of suicides (Topic 81).[1] It is a condition characterized by feelings of sadness, sometimes accompanied by a sense of helplessness, irritability, and hopelessness. Depression is often linked with other conditions, such as alcoholism (Topic 43) or substance abuse (Topic 45), eating disorders, or anxiety disorders.

This topic describes the prevalence of depression in the household population of Canada, based on a non-clinical interview that indicates the probability of being classified as depressed with a more thorough clinical examination. It does not include the institutionalized population, who are described in the following topic.

Prevalence of depression, 1996–97

Overall, 4% of Canadians age 12 and older — approximately 1 million people — reported a major depressive episode and were probably clinically depressed in 1996–97 (Table 75a).[2] This is down from the 6% reported in the 1994–95 *National Population Health Survey*.[3] Another 2% had some tendency to depression and could possibly be rated as depressed; the vast majority (94%) showed no symptoms of depression.[2]

Over 1 million Canadians reported that they were blue, were depressed, or had lost interest in things for at least two weeks in the previous year (Table 75b).[2] Their depression lasted an average of 7.5 weeks. About two-fifths (42%) were depressed for only 2–4 weeks, while over one-tenth (13%) were blue for more than half the year. The remainder of depressed Canadians (45%) were in that state for 5–26 weeks.

There are no international data using this measure with which to make comparisons.

Differences among groups

Despite the fact that men are more likely to commit suicide (Topic 81), women were twice as likely as men to be depressed (Table 75a), and the duration of their depression is likely to be longer (Table 75b).

Young women age 15–19 are the most likely of any age–sex group to exhibit symptoms of depression (8–9%). For both sexes, depression is most likely in the younger years (especially age 18–19), and the probability declines with age, starting at age 55. However, the situation is reversed for the duration of depression; the mean number of weeks increases with each successive age group, from a low of about five weeks for youths 12–19 to a high of 10.3 weeks for seniors 75 and older. About two-thirds of youths who were blue or depressed stayed that way for only about 2–4 weeks in total, compared with less than half of seniors age 75 and older (Table 75b).

There is an inverse relationship between depression and income. About 9% of people in the lowest income adequacy group were depressed (along with 3% possibly at risk), compared with 3% of Canadians in the highest income group (along with 1% possibly at risk) (Table 75a). In addition, sad people in the lower middle income group were by far the most likely (23%) to be blue for more than half the year, while sad people in the highest income group were the least likely (6%) to be blue for the same length of time (Table 75b).

Although some data are suppressed because of high sampling variability, there are no pronounced differences in depression between provinces (Table 75a). The lone minor exception is that people who were sad, blue, or depressed in Quebec tended to be in

that state for one week longer than the Canadian average (Table 75b).

Canadians in a couple with children were least likely to be probably depressed (3%), while single parents were most likely (9%) (Fig. 75).[2] Unattached depressed people were least likely (12%) to be blue for more than half the year, while single parents who were depressed were most likely (18%) to be blue for this long (data not shown). This may reflect the higher level of social support received by unattached individuals compared with single parents (Topic 30).

These findings are consistent with multivariate analyses on the 1994–95 data, showing that being young, single, and female are independent risks for depression.[4]

On definitions and methods

These data are from the personal interview portion of the second cycle of the *National Population Health Survey*, conducted by Statistics Canada from June 1996 to August 1997. The survey visited over 20,000 households that had also participated in the first cycle two years earlier, for a total of 16,000 respondents who provided full information; an additional 66,000 respondents (who were not part of the longitudinal panel) were also surveyed to provide detailed cross-sectional data on the in-depth health questions. The findings for this topic are based on the full sample of 82,000 respondents age 12 and older.[5]

Depression scores are based on direct (non-proxy) responses to 27 questions and a scoring algorithm that establishes the probability of suffering a major depressive episode. Individuals classified here as depressed have at least a 90% probability of such an episode.[6] Those defined as possible cases have a probability greater than zero but less than 90%. It is important to remember that this component of the *National Population Health Survey* provides data on the household population only; anyone institutionalized with depression (or for any other reason) would not be included in these results[5] (see Topic 76).

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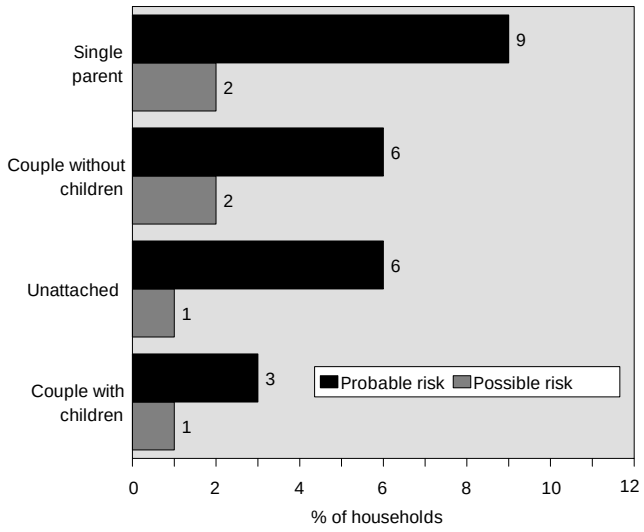
Figure 75. **Prevalence of depression, by household type (age-standardized), age 12+, Canada, 1996–97**



Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 75a. **Risk of clinical depression, by age and sex, by income adequacy (age-standardized), and by province, age 12+, Canada, 1996–97**

	Population estimate	Risk level	
		Possible	Probable
	('000)	(%)	(%)
Total, age 12+	**23,671**	**2**	**4**
Male	11,562	2	3
Female	12,109	2	6
Age 12–14, total	1,036	#	2
Male	506	#	#
Female	530	#	3
Age 15–17, total	1,245	2	5
Male	663	#	2
Female	583	#	8
Age 18–19, total	807	2	7
Male	394	#	4
Female	413	#	9
Age 20–24, total	1,817	2	5
Male	908	2	3
Female	909	2	7
Age 25–34, total	4,386	2	5
Male	2,156	2	3
Female	2,230	2	7
Age 35–44, total	5,120	2	5
Male	2,578	2	4
Female	2,542	2	7
Age 45–54, total	3,637	1	5
Male	1,834	1	3
Female	1,803	1	6
Age 55–64, total	2,470	2	3
Male	1,181	#	2
Female	1,289	2	3
Age 65–74, total	1,981	1	2
Male	874	#	1
Female	1,107	1	2
Age 75+, total	1,171	1	2
Male	468	#	#
Female	703	#	1
Lowest income	935	3	9
Lower middle income	2,169	2	8
Middle income	5,940	1	4
Upper middle income	7,753	2	4
Highest income	3,030	1	3
Income not stated	3,844	1	3
Newfoundland	458	#	#
Prince Edward Island	109	#	#
Nova Scotia	751	#	5
New Brunswick	616	#	5
Quebec	5,933	2	4
Ontario	8,921	1	4
Manitoba	869	1	5
Saskatchewan	778	#	5
Alberta	2,112	2	5
British Columbia	3,124	#	5

Data suppressed because of high sampling variability

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

Table 75b. **Average number of weeks depressed in previous 52 weeks, by age and sex, by income adequacy (age-standardized), and by province, depressed people age 12+, Canada 1996–97**

	Population estimate	Number of weeks depressed in past 52 weeks [a]				
		Mean	2–4	5–11	12–26	27–52
	('000)		(%)	(%)	(%)	(%)
Total, age 12+	**1,314**	**7.5**	**42**	**24**	**21**	**13**
Male	480	8.0	51	21	16	12
Female	834	7.0	36	26	24	14
Age 12–14, total	27	4.6	70	#	#	#
Male	9	4.7	#	0	#	0
Female	18	4.4	62	#	#	#
Age 15–17, total	86	5.0	51	24	#	#
Male	26	5.0	77	#	#	0
Female	60	5.0	40	25	#	#
Age 18–19, total	70	5.4	69	18	#	#
Male	22	5.3	#	#	#	0
Female	48	5.4	70	#	#	#
Age 20–24, total	122	6.1	43	30	23	#
Male	42	6.4	55	#	#	#
Female	80	6.0	37	33	26	#
Age 25–34, total	294	6.2	43	28	19	9
Male	110	6.0	54	19	18	9
Female	184	6.3	37	34	20	9
Age 35–44, total	344	6.9	37	27	24	12
Male	134	6.8	42	27	17	13
Female	210	6.9	34	27	29	11
Age 45–54, total	200	7.8	31	22	27	20
Male	78	8.0	41	25	13	22
Female	122	7.7	24	21	36	19
Age 55–64, total	95	8.4	38	10	28	24
Male	29	8.9	51	#	#	#
Female	66	8.1	32	11	29	28
Age 65–74, total	48	9.1	38	17	16	#
Male	18	9.2	#	#	#	#
Female	30	9.0	31	#	#	#
Age 75+, total	28	10.3	46	#	#	#
Male	12	10.8	#	#	#	#
Female	16	10.0	#	#	#	#
Lowest income	107	8.3	43	22	20	15
Lower middle income	185	8.0	35	21	20	23
Middle income	323	7.5	38	23	22	17
Upper middle income	391	6.7	45	23	21	11
Highest income	150	6.8	46	21	28	6
Income not stated	158	7.6	40	22	19	19
Newfoundland	22	8.0	#	#	#	#
Prince Edward Island	3	7.3	#	#	#	#
Nova Scotia	48	7.8	#	#	#	#
New Brunswick	39	8.4	#	#	#	#
Quebec	299	8.6	39	27	25	#
Ontario	448	7.4	46	21	20	12
Manitoba	49	7.6	37	24	28	11
Saskatchewan	50	7.7	#	#	#	#
Alberta	139	7.4	43	26	20	11
British Columbia	217	7.1	42	#	#	#

Data suppressed because of high sampling variability

[a] Asked only of people who were reported as feeling sad, blue, or depressed or as having lost interest in things.

Source: Statistics Canada, *National Population Health Survey, 1996–97*, special tabulations.

76

Psychiatric hospitalization

Introduction

Mental disorders were an important cause of hospitalization in 1995–96, with a rate of 709 per 100,000 population,[1] which was similar to the rate for cancer (772 per 100,000) and genitourinary disorders (709 per 100,000) (Topic 77). Depression is a condition that affects large numbers of Canadians (Topic 75), and suicide is a major cause of death (Topics 81 and 82) and especially of potential years of life lost (Topic 83). Dementia is a major problem among the elderly, especially those 75 and older, in both community and institutional settings.[2]

This topic describes the mental disorders treated in psychiatric and general hospitals and the rates of separation from these institutions.

Psychiatric hospitalization, 1995–96

Between 1994–95 and 1995–96, there was a decrease in the rate of psychiatric hospitalization from 722 to 709 per 100,000 population. The most notable change occurred in affective psychoses, with a 2% decrease over this time period. Other conditions either stayed at the same level or had a smaller change.[1] From 1982–83 through 1993–94, there was also a steady increase in patient-days for mental disorders (Fig. 76a)[3]; combined with a decrease in the number of discharges, this indicates a clear trend towards longer hospital stays for fewer patients — that is, towards hospitalizing the more serious cases.[3]

In 1995–96, affective psychoses including manic-depressive disorder accounted for 23% (48,429) of psychiatric separations — more than any other single category of mental disorder; schizophrenia and alcohol and drug dependence were also responsible for large numbers — more than 15% (31,027) and 12% (25,854) of separations, respectively (Fig. 76b).[1]

There are no comparable international data for this topic.

Differences among groups

Across all ages, female rates of separation are markedly higher than male rates for neurotic disorders (a ratio of 1.9:1), depressive disorders (1.8:1), affective psychoses (1.7:1), and adjustment reaction (1.4:1) (Table 76).[1] In contrast, males are much more likely than females to be hospitalized due to alcohol/drug dependence (2.4:1) and schizophrenia (1.4:1).[1]

The relationship with age varies somewhat from condition to condition: separations for affective psychoses and alcohol/drug dependence peak at age 35–44, but schizophrenia separations are most common at age 25–44. Senile psychoses and depressive disorders are the only conditions for which the rate of separations is clearly highest for the oldest group (Table 76).[1] Although definitions are not the same, this contrasts with the prevalence of depression in the household population, which *declines* with age (Topic 75).

Provincial/territorial rates vary widely, possibly reflecting a number of factors in addition to the incidence of specific illness. These factors could include access to facilities, policies on length of stay, and diagnostic biases. Prince Edward Island has the highest rate of separation (1,182 per 100,000), and Alberta has the lowest (647 per 100,000). The Northwest Territories has the lowest rates of separation for senile and pre-senile conditions, schizophrenic psychoses, and affective psychoses but the highest rates for two other conditions — neurotic disorders and alcohol/drug dependence (Table 76). Quebec rates are lowest for neurotic disorders, while Yukon has the

lowest rate of separation for adjustment reaction. Manitoba and British Columbia have the highest separation rates for senile and pre-senile conditions. Saskatchewan has the highest rate for affective psychoses, whereas Prince Edward Island has the highest rate for depression.[1]

No data are available on separations classified by the patient's education level or income.

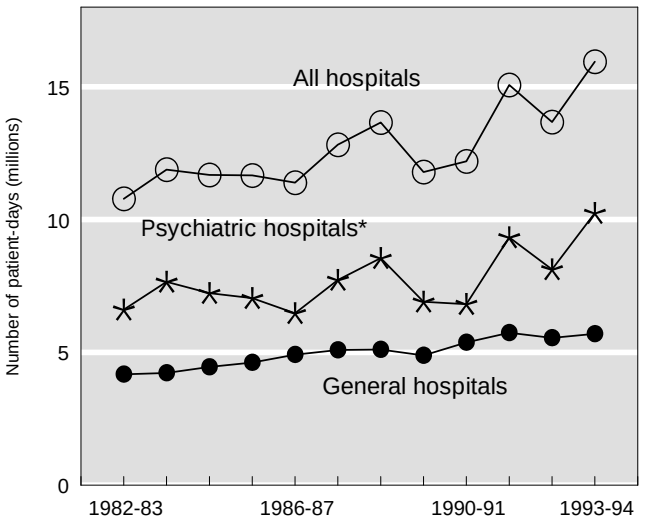
On definitions and methods

Data on hospital separations (discharges and deaths) are collected as administrative records from hospitals and provincial/territorial health departments by the Canadian Institute for Health Information and then forwarded to Statistics Canada, where national summaries are prepared and, for the purpose of this *Report*, rates were calculated.[1]

References

1. Canadian Institute for Health Information. *Mental Health Database, 1995–96.*
2. Canadian Study of Health and Ageing Working Group. Canadian Study of Health and Ageing: study methods and prevalence of dementia. *Canadian Medical Association Journal* 1994; 150(6): 899–913.
3. Statistics Canada. *Mental Health Statistics, 1993–94.* Ottawa: Statistics Canada, 1996 (Statistics Canada Cat. No. 83-245-XPB).

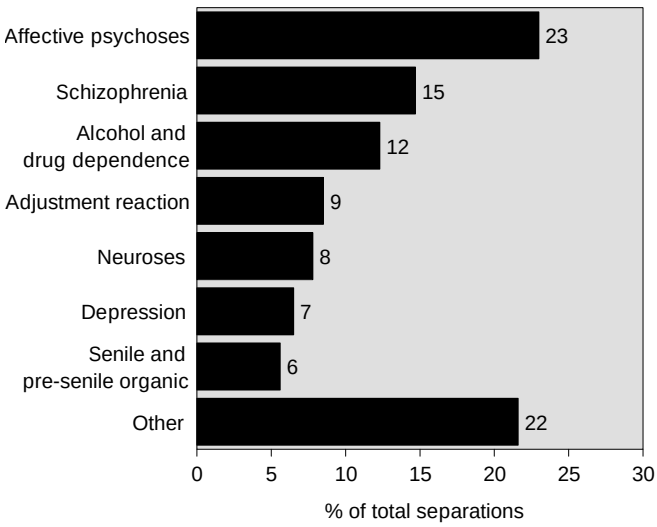
Figure 76a. **Patient-days for mental disorders, by type of hospital, Canada, 1982–83 to 1993–94**



* Excluding Manitoba and New Brunswick.

Source: Statistics Canada, *Mental Health Statistics, 1993–94,* Ottawa: Statistics Canada, 1996 (Statistics Canada Cat. No. 83-245-XPB).

Figure 76b. **Mental health problems treated in hospitals, Canada, 1995–96**



Source: Canadian Institute for Health Information, *Mental Health Database, 1995–96.*

Table 76. **Separations in psychiatric hospitals and general hospitals, by diagnosis, by age and sex, and by province/territory, Canada, 1995–96**

	Rate per 100,000 population								
	Total	Senile and pre-senile organic psychotic conditions	Schizo-phrenic psychoses	Affective psychoses	Neurotic disorders	Alcohol and drug dependence	Adjustment reaction	Depressive reaction disorder	Other
Total, all ages	**709.1**	**39.5**	**104.4**	**162.9**	**55.2**	**87.0**	**60.6**	**46.2**	**153.3**
Male	663.4	33.0	121.6	120.1	38.1	123.2	50.5	32.6	144.3
Female	753.9	45.8	87.4	205.0	72.0	51.4	70.5	59.7	162.1
Age <4, total	17.7	0.0	0.0	0.0	0.3	0.1	0.6	0.0	16.9
Male	22.9	0.0	0.0	0.0	0.3	0.1	0.8	0.0	21.7
Female	12.2	0.0	0.0	0.0	0.2	0.0	0.3	0.0	11.7
Age 5–9, total	53.6	0.0	0.1	0.8	3.3	0.1	4.0	0.7	44.5
Male	79.5	0.0	0.1	1.5	3.3	0.1	5.5	1.2	67.9
Female	26.6	0.0	0.1	0.1	3.4	0.1	2.6	0.3	20.0
Age 10–14, total	239.2	0.0	2.9	22.1	26.9	3.9	42.2	14.5	126.6
Male	207.1	0.0	2.9	13.9	17.9	3.2	26.1	7.7	135.3
Female	272.8	0.0	2.8	30.7	36.3	4.6	59.0	21.7	117.6
Age 15–17, total	671.0	0.0	28.8	116.8	68.4	29.7	130.5	58.0	238.9
Male	493.7	0.0	36.1	77.8	38.9	37.6	75.5	29.9	198.0
Female	858.1	0.0	21.0	158.0	99.4	21.4	188.5	87.6	282.1
Ages 18–19, total	655.0	0.0	82.4	107.1	62.7	59.8	101.4	43.9	197.8
Male	641.9	0.0	114.5	84.5	47.5	82.2	86.2	32.7	194.3
Female	668.8	0.0	48.9	130.7	78.5	36.3	117.3	55.6	201.5
Ages 20–24, total	666.2	0.1	124.1	125.4	56.8	65.9	83.4	39.6	170.8
Male	702.7	0.2	183.7	107.5	44.0	89.1	74.7	29.4	174.1
Female	628.5	0.0	62.7	144.0	69.9	42.0	92.4	50.2	167.3
Ages 25–34, total	861.6	0.1	183.3	182.9	64.9	108.7	91.9	53.2	176.5
Male	858.8	0.1	244.0	140.7	48.2	142.4	79.3	37.8	166.3
Female	864.3	0.1	121.2	226.2	82.1	74.1	104.7	68.9	186.9
Ages 35–44, total	973.9	0.1	179.8	255.6	75.9	146.5	91.0	62.4	162.6
Male	915.6	0.1	211.1	180.6	53.9	204.8	77.4	42.7	145.0
Female	1,032.3	0.2	148.3	331.1	98.0	87.8	104.7	82.1	180.1
Ages 45–54, total	799.0	1.5	135.6	241.7	63.6	128.6	58.9	53.2	116.0
Male	716.3	1.9	123.2	170.5	43.8	184.9	49.7	39.0	103.3
Female	882.4	1.0	148.1	313.5	83.5	71.9	68.2	67.5	128.7
Ages 55–64, total	679.7	12.6	104.1	206.2	54.1	118.0	30.9	46.8	107.0
Male	628.8	14.5	88.9	155.0	33.2	176.3	26.0	35.1	99.8
Female	729.4	10.7	118.9	256.3	74.6	61.0	35.7	58.2	114.0
Ages 65–74, total	796.0	91.0	63.7	215.7	60.1	109.9	25.9	61.0	168.8
Male	773.9	102.2	43.9	166.4	41.2	178.9	21.4	46.5	173.5
Female	814.7	81.6	80.4	257.3	76.0	51.6	29.8	73.3	164.8
Age 75+, total	1,581.1	634.3	34.0	186.6	93.1	62.1	31.3	97.0	442.8
Male	1,586.8	656.4	26.5	159.4	60.8	110.8	30.1	84.5	458.1
Female	1,577.8	621.0	38.4	202.8	112.4	33.0	32.0	104.6	433.7
Newfoundland	749.9	26.5	90.3	198.1	58.9	84.7	74.6	53.7	163.0
P.E.I.	1,181.9	14.7	104.5	174.4	113.3	150.1	37.5	343.7	243.6
Nova Scotia	749.0	23.9	85.0	140.8	66.7	109.6	94.9	46.9	181.4
New Brunswick	857.0	43.2	86.0	179.3	98.6	72.9	89.6	85.5	202.0
Quebec	706.7	45.2	124.0	139.8	47.7	79.9	65.5	34.9	169.8
Ontario	676.9	30.8	104.0	168.2	47.8	85.3	62.3	48.1	130.5
Manitoba	857.0	59.4	108.9	153.7	74.4	114.7	48.2	63.4	234.4
Saskatchewan	797.2	29.0	106.3	213.1	78.4	131.2	39.4	51.5	148.2
Alberta	647.3	37.8	73.5	175.2	61.4	82.0	47.1	36.2	134.1
British Columbia	721.7	59.0	99.9	169.7	59.1	82.5	49.7	43.3	158.5
Yukon	653.1	6.5	61.4	168.1	97.0	158.4	32.3	22.6	106.7
N.W.T.	811.7	6.0	33.3	130.0	166.3	173.8	72.6	80.1	149.6

Source: Canadian Institute for Health Information, *Mental Health Database, 1995–96.*

77

Causes of hospitalization

Introduction

Data on the main causes of hospitalization provide information on which health problems contribute most to morbidity requiring hospitalization. This information can be used to determine where prevention efforts should be concentrated to prevent illness and perhaps reduce some of the costs of a financially strained health care system.

This topic describes the main causes of hospitalization in Canada as indicated by data on separations (discharges and deaths) from allied and general hospitals, but excludes some provincial psychiatric facilities. For further information on hospital use in Canada, see Topic 26 on emergency clinic visits, Topic 27 on average length of hospital stays, and Topic 76 on psychiatric hospitals.

Hospital separations, 1995–96

In 1995–96, there were 3.3 million hospital separations in Canada. This amounts to a rate of 11,171 separations per 100,000 population. The highest rate of separations was for pregnancy (1,609 per 100,000 population, or 3,190 per 100,000 females), followed by circulatory diseases (1,588 per 100,000) and digestive diseases (1,268 per 100,000) (Table 77).[1] Hospitalization for perinatal care (54 per 100,000), congenital anomalies (69 per 100,000), and diseases of the blood (87 per 100,000) was significantly less common (Fig. 77a).[1]

Between 1990–91 and 1995–96, there was a decrease in both the total *number* of hospital separations (i.e., from 3,618,533 in 1990–91 to 3,320,789 in 1995–96) and the *rate* of separations per 100,000 population (i.e., from 13,865 to 11,171). The *number* of hospital separations decreased among all age groups with the exception of age 65 and older (Fig. 77b).[2] The *rate* of separations per 100,000 population decreased for all age groups. This contrasts with the period 1979–80 to 1990–91, during which there was an increase in the total *number* of hospital separations (i.e., from 3,553,621 in 1979–80 to 3,618,533 in 1990–91), although the *rate* of separations per 100,000 population decreased (i.e., from 14,964 to 13,865) (data not shown).[3]

Differences among groups

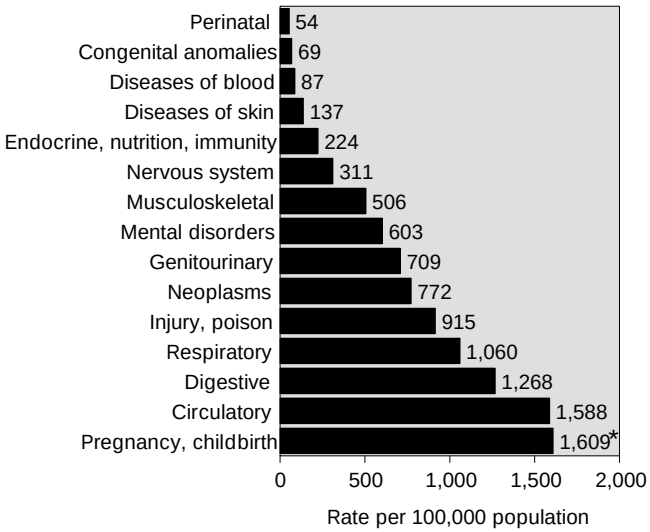
Overall, women were more likely than men to be hospitalized in 1995–96 (12,874 vs. 9,438 per 100,000 population). Although a large part of this difference is due to hospitalizations for pregnancy, women were also more likely to have been hospitalized for cancer (Topic 73), some mental disorders (Topic 76), and digestive, genitourinary, and musculoskeletal diseases. Men were more likely than women to have been hospitalized for injuries or poisoning (Topic 60) and circulatory (Topic 74) and respiratory diseases (Table 77).[1] In 1990–91, men were more likely than women to be admitted for digestive diseases,[2] whereas in 1995–96, women were more likely than men to be hospitalized for digestive diseases.

The relationship between various hospitalization causes and age is predictable. After the age of 12 years, the rate of hospitalization for neoplasms and circulatory, digestive, genitourinary, and musculoskeletal diseases increases with age. Hospitalization for respiratory diseases was most common among children (less than age 12) and seniors (age 65+). Hospital separations for injury or poisoning also had a bimodal relationship with age, with youth age 15–24 and seniors being the most likely to be hospitalized for this reason (Topic 60). Hospitalization for pregnancies was mainly confined to the age group 15–44. Overall, hospitalization rates increase with age, which is consistent with the trend towards longer average stays (Topic 27), adding up to more patient-days with increasing age.

There are some striking interprovincial/territorial variations in hospital separations. Overall, Saskatchewan and New Brunswick had the highest rates of hospitalization (15,710 and 15,416 per 100,000 population, respectively), and Yukon, Quebec, and Ontario had the lowest rates (9,191, 10,540, and 10,610 per 100,000, respectively). The lowest provincial/territorial rate, across all diagnoses, was thus only 59% of the highest.

New Brunswick was well above average in the rate of hospital separations for cancer and circulatory, respiratory, digestive, and genitourinary diseases, and Saskatchewan residents were more likely than the average to be hospitalized for respiratory and musculoskeletal diseases and injury or poisoning. Ontario had the lowest hospital separation rate for respiratory diseases, followed closely by British Columbia. Quebec had the lowest separation rate for injury and poisoning. The Northwest Territories had the lowest separation rate for cancer.

Figure 77a. **Hospital separations, by cause, Canada, 1995–96**



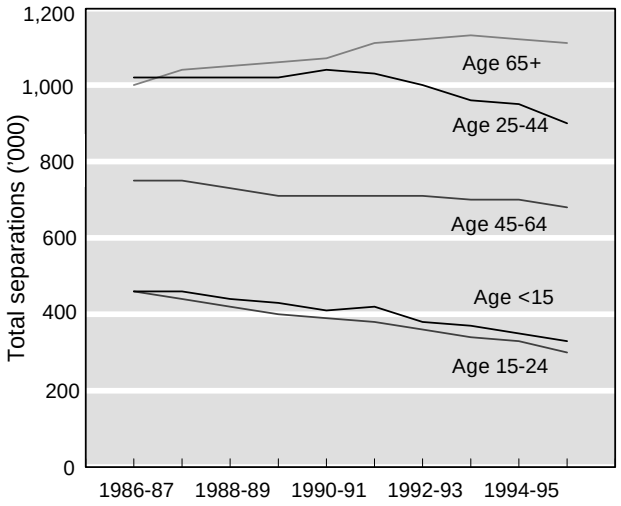
* Pregnancy rate calculated using entire population. Rate using female population only is 3,190.

Source: Canadian Institute for Health Information, *Hospital Morbidity Database, 1995–96.*

On definitions and methods

Hospital separation records are completed by the hospital for each patient who is discharged or dies in hospital. Hospital separation records provide data on the relative frequency of the principal causes of hospitalization for those who leave hospital. For a more complete picture of the economic significance of each disease group, data on separations must be combined with data on average length of stay (Topic 27). The data in this report exclude newborns.

Figure 77b. **Total separations from hospital, by age, Canada, 1986–87 to 1995–96**



Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

References

1. Canadian Institute for Health Information. *Hospital Morbidity Database, 1994–95* and *1995–96.*
2. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).
3. Statistics Canada, Health Statistics Division. *Hospital Morbidity and Surgical Procedures, 1986–87* to *1993–94*.

Table 77. **Hospital separations, by diagnostic group, by age and sex, and by province/territory, Canada, 1995–96**

	Rate per 100,000 population									
	Total	Neo-plasms	Mental disorders	Circula-tory diseases	Respira-tory diseases	Digestive diseases	Genito-urinary diseases	Preg-nancy[a]	Musculo-skeletal diseases	Injury and poisoning
Total, all ages	**11,171**	**772**	**603**	**1,588**	**1,060**	**1,268**	**709**	**1,609**	**506**	**915**
Male	9,438	700	546	1,796	1,145	1,238	509	0	470	976
Female	12,874	842	659	1,383	977	1,298	906	3,190	542	855
Age <12, total	5,987	74	41	36	2,188	623	205	0	80	54
Male	6,786	74	57	38	2,607	691	194	0	85	628
Female	5,149	74	24	34	1,750	553	217	0	75	451
Age 12–14, total	3,209	76	279	33	557	389	139	34	152	709
Male	3,179	75	198	34	486	397	121	0	141	890
Female	3,241	76	363	31	632	380	158	69	164	519
Age 15–17, total	5,308	87	580	55	633	556	284	1,014	218	899
Male	3,685	81	405	61	448	499	116	0	190	1,066
Female	7,020	94	764	49	828	617	460	2,085	249	723
Age 18–19, total	7,246	92	558	67	565	655	408	2,819	232	868
Male	4,070	87	525	71	464	567	106	0	259	1,127
Female	10,565	96	592	64	670	748	723	5,766	205	59
Age 20–24, total	8,970	92	558	88	423	731	469	4,660	235	778
Male	3,847	70	570	84	370	576	125	0	266	1,038
Female	14,246	116	546	91	478	890	823	9,459	203	511
Age 25–34, total	10,799	183	714	171	351	832	602	5,585	317	693
Male	4,275	102	683	177	331	670	181	0	363	879
Female	17,484	266	745	165	371	998	1,034	11,917	270	50
Age 35–44, total	7,425	481	811	467	339	996	780	1,189	426	688
Male	5,586	195	733	596	329	948	276	0	473	825
Female	9,275	770	889	338	348	1,044	1,287	2,387	379	550
Age 45–54, total	8,713	936	671	1,405	450	1,395	787	8	557	728
Male	8,456	564	588	1,904	426	1,380	439	0	554	818
Female	8,973	1,312	754	903	475	1,410	1,137	16	560	638
Age 55–64, total	14,196	1,676	579	3,344	964	2,023	987	0	875	972
Male	15,497	1,705	526	4,472	977	2,126	969	0	823	1,054
Female	12,925	1,647	631	2,242	950	1,923	1,005	0	926	892
Age 65–74, total	24,207	2,880	696	6,424	2,101	2,894	1,538	0	1,417	1,531
Male	27,923	3,469	674	8,239	2,509	3,357	1,956	0	1,227	1,521
Female	21,069	2,383	715	4,891	1,757	2,503	1,185	0	1,577	1,540
Age 75+, total	40,475	3,417	1,458	11,010	4,280	4,151	1,910	0	1,766	3,502
Male	46,742	4,800	1,443	12,947	5,856	4,832	2,985	0	1,452	2,815
Female	36,724	2,589	1,467	9,850	3,337	3,744	1,267	0	1,955	3,912
Newfoundland	12,239	740	506	1,801	1,240	1,538	946	1,453	489	903
Prince Edward Island	13,683	743	932	1,571	1,938	1,708	948	1,654	469	885
Nova Scotia	12,352	870	603	1,976	1,270	1,502	747	1,431	597	924
New Brunswick	15,416	882	814	2,142	2,000	1,975	1,096	1,445	658	1,071
Quebec	10,540	843	614	1,629	964	1,233	701	1,457	453	768
Ontario	10,610	779	541	1,547	924	1,152	670	1,642	493	810
Manitoba	12,690	814	605	1,605	1,334	1,424	701	2,100	494	1,094
Saskatchewan	15,710	873	773	2,072	2,063	1,918	989	1,762	774	1,332
Alberta	10,899	598	565	1,265	1,137	1,234	644	1,775	507	1,111
British Columbia	11,194	672	703	1,514	928	1,226	692	1,580	536	1,167
Yukon	9,191	310	653	734	983	1,077	495	1,865	220	1,047
Northwest Teritories	11,795	168	812	472	2,051	1,416	488	2,595	343	1,214

[a] Pregnancy rate calculated using entire population. Rate using female population only is 3,190.

Source: Canadian Institute for Health Information, *Hospital Morbidity Database, 1995–96.*

Death

Measured in various ways, death is the oldest and most widely used of health indicators; as a summary measure, it can be both comprehensive and objective. Good health may be inferred from the postponement of death, as indicated by life expectancy (Topic 84) and age-standardized mortality rates (Topic 82), or by its avoidance altogether, as in infant mortality (Topic 78). Approaches to the measurement of death as a health status indicator may emphasize different life stages, such as infancy (Topic 78) or the productive years (potential years of life lost, Topic 83), or they may focus on causes (Topics 79–82 as well as Topic 62). This final section presents seven different measures of death as indicators of population health.

Overview

Most of these mortality indicators are at their best levels ever in Canada's history, and on many, Canada compares very well with other industrialized countries. This impressive overall picture puts some of the negative developments into stark relief.

On the positive side, infant mortality, at 5.6 per 1,000 births, is at its lowest level ever and has declined 60% in a generation. Perinatal and neonatal mortality decreased about 50% during this same period. Age-standardized mortality rates are among the lowest in the world, as are potential years of life lost. Life expectancy of 78.6 years at birth is the highest it has ever been in Canada and is exceeded in only a few other countries.

While these are impressive accomplishments, they contrast with other trends and raise questions about future developments:

- improvements in infant mortality have been relatively modest since 1991, and Canada's performance is falling relative to that of other OECD countries;
- Canada's youth suicide rate has not recovered from its dramatic climb that began in the 1970s, and this country remains the exception in the OECD for having youth suicide rates above those of the general population;
- more than 45,000 deaths annually are attributable to smoking, and women are claiming an increasing share of these.

Mortality data shed light on the causes of death, and the top-ranking causes vary according to the measure of death that is used. Cardiovascular disease and cancer remain the principal causes of death, while cancer and accidents are the major reason behind the loss of potential years of life. Mortality data can also be used to shed light on the burden of specific risks, such as smoking (Topic 79), drinking (Topic 80), and traffic crashes (Topics 63 and 80). All or most of these deaths are theoretically preventable.

Death certificates are the basis for all of these statistics, and they provide little personal information other than sex, age, and place of residence. Social status, which has to be inferred from the deceased's place of residence, is known to be inversely related to life expectancy, although that is not apparent in this *Report*. Aboriginal status is associated with a 150% increase in risk of suicide.

Provincial differences in mortality are negligible for age-standardized mortality rates, potential years of life lost, and life expectancy, but substantial for infant mortality and suicide (factors of almost two and three, respectively, separating the lowest and highest provincial rates). When the territories are included in these comparisons, the contrasts are even more marked: suicide rates in the Northwest Territories are five times, and infant mortality almost three times, those of the province with the lowest rates. These are striking contrasts within a country as advanced internationally as Canada.

On data sources and gaps

This set of health indicators is impressive for the variety of perspectives it incorporates. At this time, the principal omission is an updated calculation of disability-free life expectancy. At the level of data collection, the most desirable development would be the addition of a measure of social status on death certificates. This would enable conclusive and routine analyses of the distribution of deaths in Canadian society.

78

Infant and perinatal death

Introduction

Infant deaths are doubly tragic because they mean not only the loss of a young life but also grief for the new parents. Perinatal deaths are the combination of stillbirths (Topics 64 and 65) and early neonatal deaths — deaths within the first seven days following the birth. Infant deaths, strictly speaking, are those that occur within one year of birth and do not include stillbirths. Infant mortality is often used as a basic indicator of social and economic development, while perinatal mortality is a better indicator of level of care.[1]

Infant and perinatal mortality, 1996

In 1996, the rate of infant mortality was 5.6 per 1,000 births, a little over half of these deaths occurring within the first seven days (3.3 per 1,000). Canada's infant mortality rate dropped below the level of six infant deaths per 1,000 live births for the first time (and down from 6.1 in 1995).[2] The rate of perinatal mortality was 6.7 (Table 78).[3] All three rates have declined substantially since 1974, although early neonatal mortality increased slightly in 1994 over the rate a year earlier (Fig. 78a).[3,4]

Perinatal complications were the most important single cause of both infant mortality and perinatal death in 1996 (Fig. 78b; also see Topic 65).[3] Congenital anomalies were also prominent, causing 430 perinatal deaths and 575 infant deaths overall. Sudden infant death syndrome (SIDS) was the cause of three perinatal deaths in 1996 and, overall, 166 infant deaths.

Although Canada's infant mortality rate has decreased steadily, the rate of improvement may have been lower than that of most other industrialized countries. In 1990, Canada ranked fifth among 17 OECD countries; by 1996, it ranked 12th.[3] Canada's rate was only lower than that of the United States, New Zealand, Greece, the United Kingdom, and Australia (Fig. 78c).[3,5] However, this more recent ranking may be largely due to changes in the way infant mortality is reported in these countries.

Differences among groups

Infant mortality, perinatal mortality, and early neonatal mortality are all higher for boys than for girls (Table 78).[3] The most pronounced sex ratio among these three is for infant death: 1.22:1.

Provincial/territorial variations in these rates are quite striking (Table 78).[3] Infant mortality is lowest in Quebec (4.6 per 1,000) and highest in Saskatchewan (8.4) and the Northwest Territories (12.2). Quebec also has the lowest rate of perinatal mortality (5.7), with the exception of Yukon (4.5). In contrast, Manitoba (7.6), the Northwest Territories (7.6), and Prince Edward Island (7.7) have the highest rates of perinatal mortality. New Brunswick has the lowest rate of early neonatal mortality (2.4), while Saskatchewan (4.5), Newfoundland (4.5), and Prince Edward Island (4.7) have the highest rates. (Data from Prince Edward Island, Yukon, and the Northwest Territories should be interpreted with caution, given the small numbers involved.[2])

On definitions and methods

Infant and early neonatal mortality are calculated per 1,000 live births during the same time period, while perinatal mortality is calculated on all births, including stillbirths (28 weeks or more) and infant deaths under one week.

Differences in registration systems that complicate international comparisons of infant mortality include inconsistent inclusion of infants weighing less than 1,000 grams and differences in the classification of births as live births or stillbirths. While the World Health Organization recommends that international comparisons of infant mortality be restricted to live births 1,000 grams and over, this has not become established practice. For example, Canadian rates of registration of live births under 500 grams are much higher than the rates observed in some OECD countries, but are not as high as in the United States.

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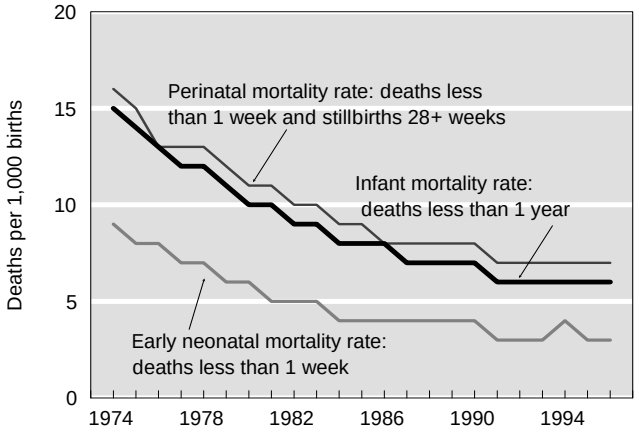
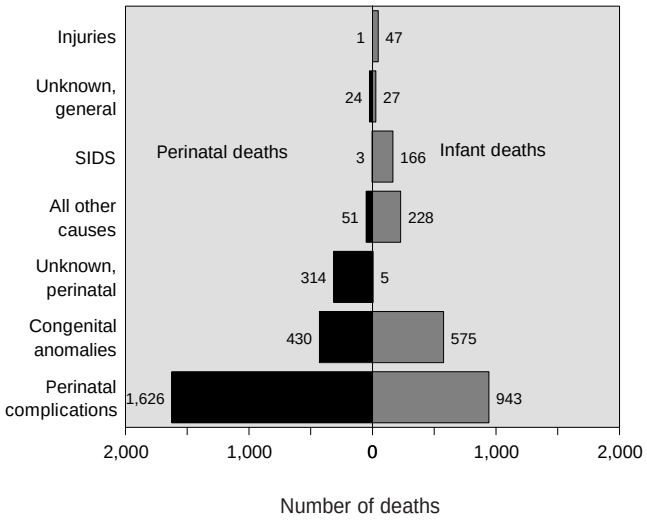
4. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).
5. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).

Figure 78a. **Infant, perinatal, and early neonatal mortality rates, Canada, 1974–1996**



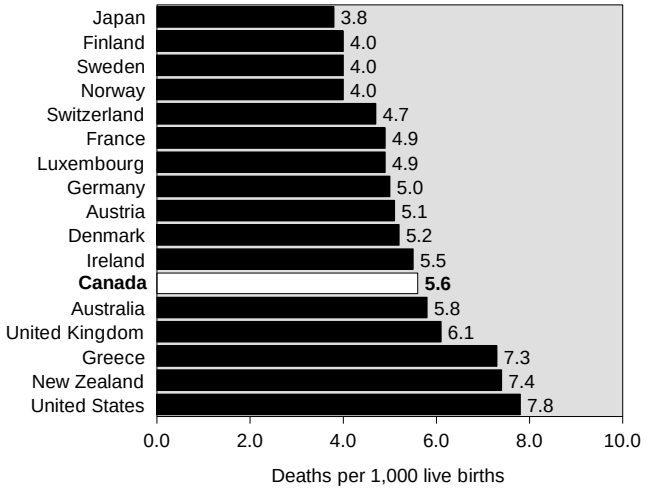
Sources: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Statistics Canada, *Compendium of Vital Statistics 1996*, Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).

Figure 78b. **Perinatal and infant deaths, by cause, Canada, 1996**



Source: Statistics Canada, *Compendium of Vital Statistics 1996*, Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).

Figure 78c. **Infant mortality rates, selected OECD countries, 1996**



Source: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM); Canadian rate is from Statistics Canada, *Compendium of Vital Statistics 1996*, Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).

Table 78. **Infant, perinatal, and early neonatal mortality rates, by sex of infant and by province/territory, Canada, 1996**

	Mortality rates (deaths per 1,000 births)		
	Infant[a]	Perinatal[b]	Early neonatal[a]
Total	**5.6**	**6.7**	**3.3**
Male	6.7	7.0	3.6
Female	5.5	6.3	3.0
Newfoundland	6.6	6.9	4.5
Prince Edward Island	4.7	7.7	4.7
Nova Scotia	5.6	6.2	3.2
New Brunswick	4.9	6.2	2.4
Quebec	4.6	5.7	2.9
Ontario	5.7	7.2	3.4
Manitoba	6.7	7.6	3.8
Saskatchewan	8.4	7.1	4.5
Alberta	6.2	7.0	3.4
British Columbia	5.1	6.2	2.9
Yukon	#	4.5	#
Northwest Territories	12.2	7.6	2.6

Data suppressed because of high sampling variability

[a] Per 1,000 live births.

[b] Perinatal includes stillbirths at 28 weeks or more and infant deaths under one week.

Source: Statistics Canada, *Compendium of Vital Statistics 1996*, Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).

79

Mortality attributable to smoking

Introduction

Despite declines in the past 30 years in the prevalence of smoking and the average amount smoked daily, over 7 million Canadians continue to smoke (Topic 40), thus risking their own lives and the health of others around them. Lung cancer is the most predictable and best-known outcome of smoking; it is also the most common cancer among men and the leading cause of cancer death among women. Lung cancer alone accounts for almost one-third of male cancer deaths and over one-fifth of female cancer deaths (Topic 73). Smoking is also a significant risk factor for coronary heart disease (Topic 74) and a major cause of hospitalization (Topic 77) and death (Topic 84).

Deaths attributable to smoking

As a cause of early death, smoking far outweighs the combined impact of suicide (Topic 81), vehicle crashes (Topic 63), AIDS (Topic 71), and murder (Fig. 79).[1] Smoking is estimated to be responsible for at least one-quarter of all deaths in Canada between the ages of 35 and 84[2]; in 1991, over 45,000 deaths were attributed to smoking.[3]

In a hypothetical cohort of 100,000 male and 100,000 female cigarette smokers now age 15, more than 20,000 deaths among males and over 12,000 deaths among females are projected before the age of 70 due to smoking (Table 79).[1] Over one-half of all premature deaths (before age 70) among smokers are estimated to result from cigarette smoking. The principal causes of death for smokers are cancer (41% of the total) and coronary heart disease (19%) (data not shown).

Differences among groups

Males and females are both affected by smoking (Table 79), but the expected smoking-related deaths among males will be almost 80% higher than those among females, since males are still more likely to smoke and to smoke heavily (Topic 40). However, this sex difference can be expected to disappear as smoking rates converge. A similar modelling exercise using 1990 data noted a more than two-fold male–female difference in smoking-attributable deaths.[4] Lung cancer incidence rates continue to rise for women while declining for men (Topic 73).

On definitions and methods

Abridged life tables were constructed to calculate the expectations of death for smokers and non-smokers from various causes. Relative risks were derived from the *CPS II Survey* of the American Cancer Society, and prevalence estimates were taken from the 1996–97 *National Population Health Survey*[5] (see Topic 40). Age–sex–cause-specific mortality rates for 1996 were retrieved from the *Canadian Mortality Database* of Statistics Canada.

References

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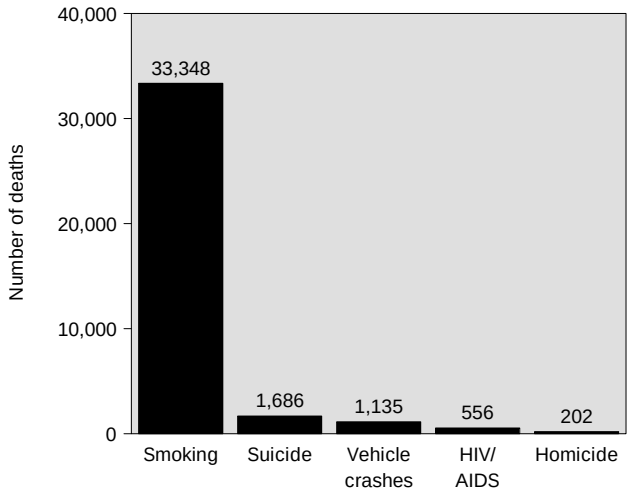
Figure 79. **Future causes of premature death among 100,000 smokers age 15, Canada, 1996**



Source: Ellison L, Morrison HI, de Groh M, et al., *Health Consequences of Smoking Among Canadian Smokers: An Update*, Laboratory Centre for Disease Control, Health Canada, 1998.

Table 79. **Expected number of deaths before age 70 among 100,000 individuals age 15, by sex and cigarette smoking status, Canada, 1996–97**

	Males		Females		Attributable to smoking	
	Current smokers	Never smokers	Current smokers	Never smokers	Males	Females
Smoking-related diseases						
Coronary heart disease	7,788	3,577	3,430	1,339	4,211	2,091
Other cancers	6,725	4,738	5,659	6,309	1,987	5,201
Lung cancer	13,827	314	10,737	458	13,513	4,428
Chronic obstructive pulmonary disease	970	82	959	77	888	882
Selected other causes[a]						
Homicide	141	145	61	61	–	–
Car accidents	786	810	349	354	–	–
Suicide	1,303	1,343	380	385	–	–
HIV/AIDS	510	520	46	47	–	–
All causes	**36,812**	**16,295**	**23,529**	**12,067**	**20,746**	**12,602**

[a] Estimated deaths from selected other causes were lower for the smoking cohort than for the non-smoking cohort because of competing mortality. The same risks by sex and age for smokers and non-smokers were assumed.

Source: Ellison L, Morrison HI, de Groh M, et al., *Health Consequences of Smoking Among Canadian Smokers: An Update*, Laboratory Centre for Disease Control, Health Canada, 1998.

80

Alcohol-related deaths

Introduction

While the use of alcohol (Topic 42), particularly in moderation, is not a risk factor equivalent to smoking in its toll on health and life (Topic 79), drinking has its share of negative health and social consequences (Topic 43). The direct health consequences result from *chronic* use of alcohol and include liver disease and cirrhosis, as well as some mental disorders (Topic 76), poisoning, gastritis, and cardiomyopathy related to alcohol. Deaths due to these causes are 100% attributable to alcohol.[1] The most significant effect of *acute* alcohol use is motor vehicle crashes (Topic 63), deemed indirect since "only" 45% of the resulting deaths are attributable to alcohol.[1] Because of the large number of deaths and potential years of life lost to crashes and other accidents (Topics 82 and 83), alcohol involvement in motor vehicle crashes is examined in some detail in this topic. Topic 44 describes driving after drinking.

Incidence of alcohol-related death, 1996

In 1996, there were an estimated 1,903 deaths *directly* due to alcohol use. This toll has fluctuated since 1991, with no clear trend (Fig. 80a).[1,2] Further, of the almost 2,000 drivers who were killed in 1995, 43% had been drinking, and over a third (35%) were legally impaired (Table 80).[3] However, there has been a modest decline since 1987 in the proportion of drivers killed who were *legally impaired* and an increase among those tested who had a zero blood alcohol level (Fig. 80b).[3] Legal impairment when killed as a driver varied considerably with the type of vehicle driven; in 1995, drivers of light trucks, off-road vehicles, and snowmobiles were more than twice as likely as cyclists and heavy truck drivers to be legally impaired when killed (Fig. 80c).[3]

Differences among groups

Among drivers who were fatally injured in 1995, men were 65% more likely than women to be legally impaired (Table 80). There was also a heavy concentration of legal impairment in the age range 20–45. This contrasts with acknowledged driving after drinking too much, which was most common among 18–19 year olds and declines with age (Topic 44).

Blood alcohol levels indicating legal impairment in killed drivers ranged widely from province to province and from territory to territory (Table 80), from more than half of drivers in Prince Edward Island (56%) to a quarter (25%) in Yukon and none in the Northwest Territories. As these results are based on drivers *tested*, however, and as testing rates are inconsistent across the country, some caution is called for in these comparisons.

On definitions and methods

Mortality directly attributable to alcohol is the sum of the deaths due to chronic liver disease and cirrhosis, alcoholic cardiomyopathy, alcohol poisoning, alcoholic gastritis, and alcohol-related mental disorders.[1] Apart from motor vehicle crashes, *indirect* alcohol-related causes of death, including homicides, accidental falls, deaths due to fire, accidental drowning, suicides, respiratory system diseases, cancer, and circulatory system diseases,[1] are not included here.

As noted, the results for blood alcohol levels among fatally injured drivers are restricted to those drivers who were tested. On a Canada-wide basis, this amounts to over 84% of such drivers. Testing varies among the provinces, from 75–79% in Prince Edward Island, Nova Scotia, Manitoba, and Quebec to 100% in both territories.[3]

Legal impairment is defined as having a blood alcohol concentration greater than 80 mg %.

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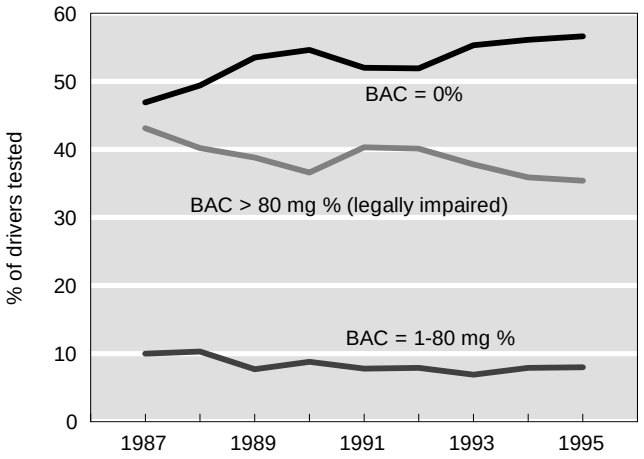
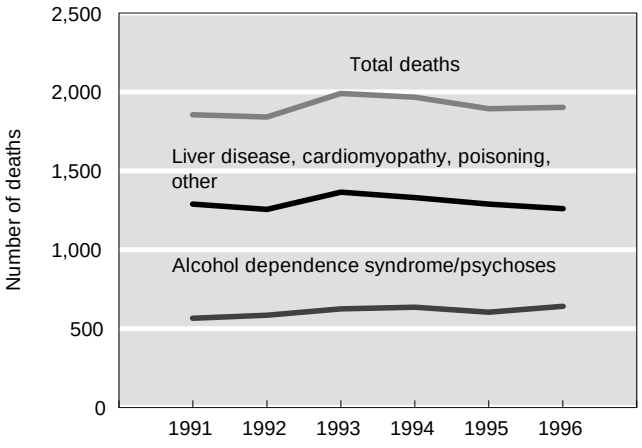
3. Traffic Injury Research Foundation. *Alcohol Use Among Drivers and Pedestrians Fatally Injured in Motor Vehicle Accidents — Canada, 1995*. Ottawa: Traffic Injury Research Foundation, June 1997.

Figure 80b. **Fatally injured drivers, by blood alcohol concentration (BAC), Canada, 1987–1995**



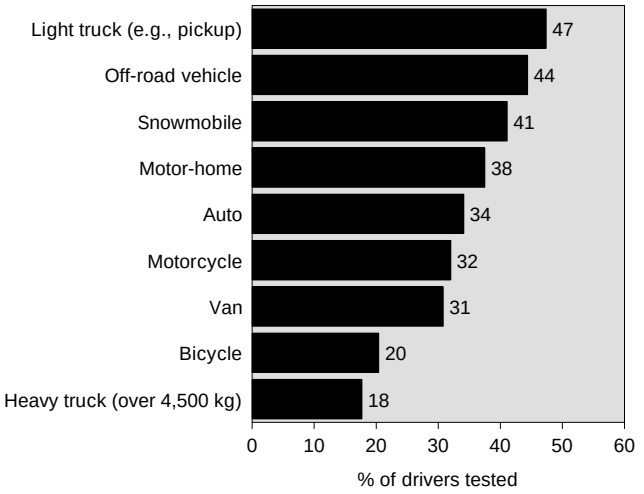
Source: Traffic Injury Research Foundation, *Alcohol Use Among Drivers and Pedestrians Fatally Injured in Motor Vehicle Accidents — Canada, 1995*, Ottawa: Traffic Injury Research Foundation, June 1997.

Figure 80a. **Deaths directly attributable to alcohol, Canada, 1991–1996**



Sources: Single E, MacLennan A, MacNeil P, *Horizons 1994: Alcohol and Other Drug Use in Canada*, Ottawa: Health Canada and the Canadian Centre on Substance Abuse, 1994 (Cat. No. H39-307/1994E); Statistics Canada, *Vital Statistics, Causes of Death*, special tabulations.

Figure 80c. **Fatally injured impaired* drivers, by type of vehicle, Canada, 1995**



* Impaired is blood alcohol concentration >80 mg %.

Source: Traffic Injury Research Foundation, *Alcohol Use Among Drivers and Pedestrians Fatally Injured in Motor Vehicle Accidents — Canada, 1995*, Ottawa: Traffic Injury Research Foundation, June 1997.

Table 80. **Alcohol use among fatally injured drivers, by sex, by age, and by province/territory, Canada, 1995**

	Drivers killed[a]	Blood alcohol concentration (mg %)		
		0	1–80	>80
		(% of those tested)[b]	(% of those tested)[b]	(% of those tested)[b]
Total, all ages	**1,924**	**57**	**8**	**35**
Male	1,537	53	8	38
Female	387	70	7	23
Age <16	11	78	11	11
Age 16–17	66	73	6	21
Age 18–19	122	56	10	34
Age 20–25	319	42	12	47
Age 26–35	439	44	8	48
Age 36–45	319	51	6	43
Age 46–55	224	69	6	25
Age >55	424	81	7	12
Newfoundland	11	70	0	30
Prince Edward Island	12	44	0	56
Nova Scotia	67	49	11	40
New Brunswick	70	54	7	39
Quebec	465	56	8	37
Ontario	630	58	9	33
Manitoba	70	59	15	26
Saskatchewan	81	53	8	39
Alberta	225	66	5	30
British Columbia	287	49	8	33
Yukon	4	75	0	25
Northwest Territories	2	100	0	0

[a] Excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

[b] Percentage of drivers tested; an average of 84% of all fatally injured drivers are tested.

Source: Traffic Injury Research Foundation, *Alcohol Use Among Drivers and Pedestrians Fatally Injured in Motor Vehicle Accidents — Canada, 1995*, Ottawa: Traffic Injury Research Foundation, June 1997.

81

Suicide

Introduction

Suicide is an important preventable cause of death (Topic 82) and of potential years of life lost, particularly among youth (Topic 83). Among the many factors believed to contribute directly or indirectly to suicide are a recent history of mental disorder or substance abuse[1] (Topics 42–45 and 80).

This topic examines the incidence of suicide in Canada in terms of both total suicides and the suicide rate per 100,000 population.

Incidence of suicide, 1996

In 1996, there were 3,941 suicides in Canada — almost 11 each day. The national rate was 13 suicides per 100,000 population (Table 81).[2,3] Between 1970 and 1978, the suicide rate increased significantly, from a low of 11 per 100,000 population to 15 per 100,000. During the 1980s, the rate fluctuated between 13 and 15 per 100,000, and by 1989 it had decreased again to 13 per 100,000, where it remained through 1996 (Fig. 81a).[2]

There are no recent data available for international comparison of entire populations (but see below regarding youth suicide).

Differences among groups

Sex differences in suicide rates are dramatic. In 1996, males were four times more likely than females to commit suicide (Table 81).[2,3] Of the 3,941 suicides in Canada, 78% were committed by men. The male suicide rate remained significantly higher than the female rate throughout the period 1970–1996; both rates have declined modestly since the early 1980s, the drop in rates being somewhat greater in males than in females (Fig. 81a).[2]

There are age differences between the sexes in suicide rates, as well. The highest rate for male suicides was among 20–24 and 35–44 year olds, while the highest rate for females was among those age 35–54 (Table 81).

Compared with other countries, there is a significant concentration of suicides among youth in Canada. In 1973, Canada was the only one among 21 western countries where the suicide rate for male youth age 15–24 equalled or exceeded the rate for the general population of males. By 1987, only four other countries shared this pattern.[1] In 1991–1993, the suicide rate for Canadian male youth was exceeded only in Australia and the Russian Federation among 10 industrialized countries; the female rate was higher than that in all other countries except Sweden and the Russian Federation.[4]

Figure 81b[2] shows trends in youth suicide rates in Canada between 1970 and 1996. There has been a steady and significant increase in the suicide rate for 15–19 year olds, which *doubled* from 1970 to 1983 (from 7 per 100,000 to 14 per 100,000). This dramatic growth was entirely accounted for by males; the suicide rate among females in this age group actually declined slightly during this period. The current rate of 13 per 100,000 remains almost twice the 1970 rate.

Youth between the ages of 20 and 24 have a higher rate of suicide than 15–19 year olds, but they have not experienced the same increases as the younger cohort. There was a significant increase in suicide rates among 20–24 year olds in the late 1970s, followed by a gradual decrease. The 20–24 year old suicide rate has slightly decreased to 16 or 17 per 100,000 for the years 1993–1996 from the rate of 18 per 100,000 during the years 1989–1992 (Fig. 81b).[2] During the 1990s, there has been an average of almost 39 suicides per year by children age 10–14, up from an average of 27 per year during the 1980s. Among this

age, as well, the suicide rate for boys is much higher than that for girls.[2]

Although the current databases do not allow for the calculation of precise suicide rates for Aboriginal people in Canada, it is estimated that the suicide risk for registered Indians averages two and a half times that of the general population, with wide variations according to age and community.[5] The 1995 Royal Commission on Aboriginal Peoples acknowledged that the rate of suicide among First Nations and Inuit peoples is well above the national average.[6]

There is significant interprovincial variation in suicide rates. The lowest rates are found in Newfoundland (7 per 100,000) and Ontario (10 per 100,000). Although Prince Edward Island had a rate of 9 per 100,000, there were only 12 suicides in total. The rates in Quebec are the highest (20 per 100,000), followed by Alberta (16 per 100,000). In fact, 37% of all suicides were committed by Quebeckers (Table 81), although that province had 24% of the Canadian population. In 1996, the Northwest Territories had the highest suicide rate in Canada (34 per 100,000); however, the total number of suicides in the sparsely populated territory was only 23 (and there were only six in the Yukon), meaning that the rates in these territories should be interpreted cautiously (Table 81).[2,3]

Other groups with high suicide risks include people who suffer from depression (Topic 75) and those with substance abuse problems (Topic 43). Some studies have found gay men and lesbians to be up to six and two times, respectively, more likely to attempt suicide than comparable male and female unmarried heterosexuals.[1] Childhood sexual abuse may also be a risk factor for suicide (Topic 10).

On definitions and methods

Statistics on suicide depend upon the accuracy of the cause indicated on death certificates. In the absence of any compelling evidence and standard guidelines, many coroners and other physicians may list an alternative to suicide as the official cause of death, resulting in underestimation of the true suicide rate. This may account for part of the changes in trends in Canadian suicide rates over time. It is also one of the reasons why international comparisons are not very reliable.[1]

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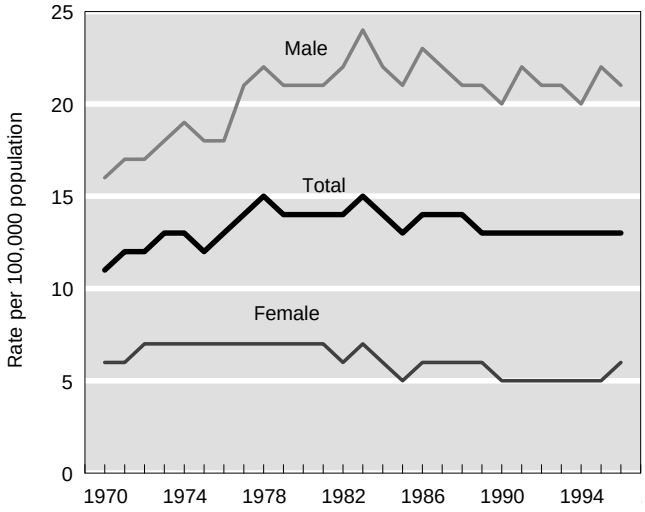
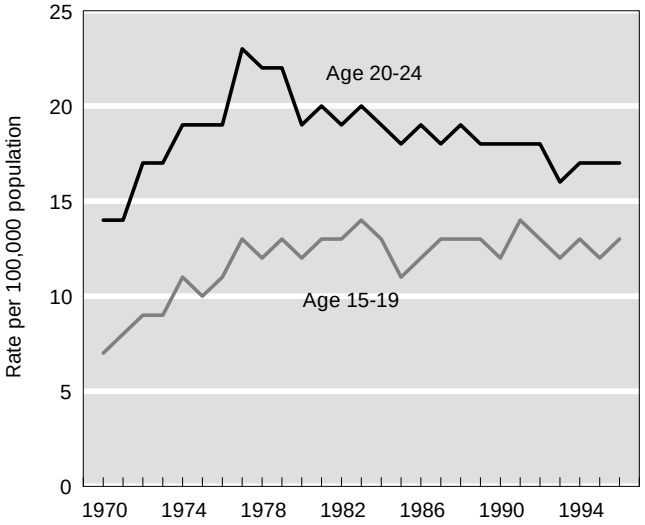
6. Leenaars AA, Wenckstern S, Sakinofsky I, et al. (eds.). *Suicide in Canada*. Toronto: University of Toronto Press, 1998.

Figure 81a. **Suicide rates, by sex, Canada, 1970–1996**



Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Figure 81b. **Suicide rate among youth, by age, 15–24, Canada, 1970–1996**



Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Table 81. **Suicide, by age and sex and by province/territory, Canada, 1996**

	Number	Rate per 100,000 population
Total, all ages	**3,941**	**13.2**
Male	3,093	20.8
Female	848	5.6
Age <14, total	41	0.7
Male	32	1.1
Female	9	0.3
Age 15–19, total	231	11.5
Male	190	18.5
Female	41	4.2
Age 20–24, total	350	17.2
Male	300	29.0
Female	50	5.0
Age 25–34, total	767	14.5
Male	630	25.6
Female	137	5.7
Age 35–44, total	1,003	19.8
Male	760	30.0
Female	243	9.6
Age 45–54, total	704	18.4
Male	513	26.7
Female	191	10.0
Age 55–64, total	356	14.0
Male	273	21.7
Female	83	6.4
Age 65+, total	489	13.4
Male	395	25.6
Female	94	4.5
Newfoundland	38	6.7
Prince Edward Island	12	8.8
Nova Scotia	116	12.3
New Brunswick	95	12.5
Quebec	1,468	19.9
Ontario	1,087	9.7
Manitoba	118	10.4
Saskatchewan	139	13.7
Alberta	454	16.3
British Columbia	385	10.0
Yukon	6	19.1
Northwest Territories	23	34.4

Sources: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB); Statistics Canada, Health Statistics Division, special tabulations.

82

Age-standardized mortality rates

Introduction

Other topics of this *Statistical Report* describe life expectancy (Topic 84), suicide (Topic 81), infant mortality (Topic 78), and deaths due to smoking (Topic 79) and drinking (Topic 80). This topic presents data on age-standardized mortality rates, also known as the standardized death rate. This indicator allows comparisons among groups of the annual number of deaths per 100,000 population as if they all had the same age structure. This standardizing is useful for male–female and provincial/territorial comparisons, since age composition differs subtly from group to group (Topic 1).

Age-standardized mortality, 1996

In 1996, there were 653 deaths per 100,000 population in Canada (Table 82).[1] Canadian rates are among the lowest in the industrialized world, behind only those of South Korea, Japan, Iceland, and Switzerland (Fig. 82a).[2]

The highest death rates were for all cardiovascular diseases (226 per 100,000) and all cancers (185 per 100,000); as general causes, these were by far the most important, while coronary heart disease (133 per 100,000) was the most important specific cause of death (Fig. 82b; see also Topic 74).[1] Death rates for most of the major causes have declined since 1970, particularly in the case of heart disease generally and coronary heart disease in particular (Fig. 82c).[1] The major exception to this improving trend is the increase in cancers, although these have also declined in recent years (see also Topics 73 and 79).

Differences among groups

The male mortality rate in 1996 was considerably higher than the female rate: 836 vs. 517 per 100,000, respectively (Table 82)[1]; this is a ratio of 1.62:1. The male rate is higher than the female rate in every province and territory. Males in all provinces and territories have a higher death rate for every cause, except for lung cancer in Yukon and the Northwest Territories.

Overall, provincial mortality rates in 1996 dropped from east to west. They varied from a high of 753 per 100,000 in Prince Edward Island to a low of 623 per 100,000 in British Columbia[1] — a difference of 21% for this basic indicator of health status. The territorial mortality rates are much higher than any provincial rates: 887 per 100,000 in Yukon and 1,005 per 100,000 in the Northwest Territories. Men in Yukon have by far the highest mortality rates in Canada (1,665 per 100,000), while women in Yukon have the lowest (421 per 100,000).[1] Some other interesting observations include the higher than average levels of respiratory ailments (especially in men) in Prince Edward Island, Nova Scotia, and the two territories, the higher than average levels of coronary heart disease and stroke in Newfoundland and Prince Edward Island, and the much lower level of coronary heart disease in British Columbia (Table 82).[1]

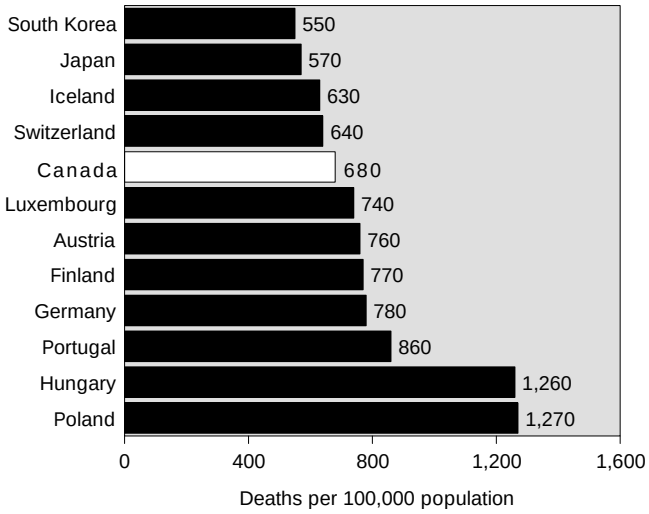
On definitions and methods

Data in Table 82 and Figures 82b and 82c are based on age-specific deaths occurring in 1996, calculated by Statistics Canada as a rate per 100,000 population, standardized to the 1991 Canadian population. Values in Figure 82a are for 1994 and are adjusted to the standard European age composition. Since this population is different from Canada's, the Canadian value in Figure 82a is quite different from that used elsewhere in this topic. This adjustment is essential for such international comparisons.

References

1. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).
2. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).

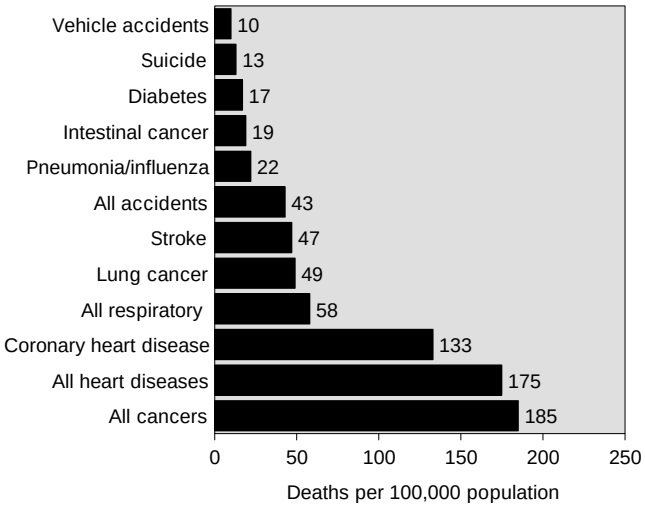
Figure 82a. **Age-standardized* mortality rates, selected OECD countries, 1994**



* Standardized to the European population structure.

Source: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM).

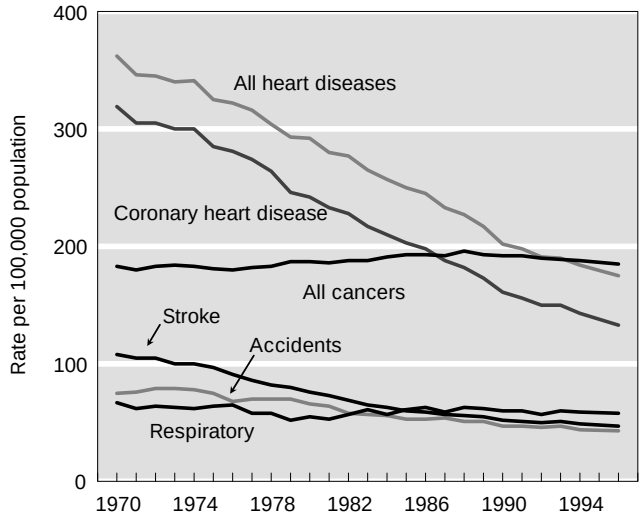
Figure 82b. **Age-standardized* mortality rates, by cause of death, Canada, 1996**



* All values age-standardized to the 1991 Canadian population.

Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Figure 82c. **Age-standardized* mortality rates for selected causes, Canada, 1970–1996**



* All values age-standardized to the 1991 Canadian population.

Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Table 82. **Deaths per 100,000 population (age-standardized[a]), by cause, by province/territory, and by sex, Canada, 1996**

	Deaths per 100,000 population										
	Total	Cancer (all)	Lung cancer	Breast cancer	CVD[b]	CHD	Stroke	Respiratory (all)	Pneumonia/ influenza	Accidents (all)	Suicide (all)
Total	**653**	**185**	**49**	**–**	**226**	**133**	**47**	**58**	**22**	**43**	**13**
Male	836	231	72	0	288	184	51	82	29	63	21
Female	517	153	33	29	179	95	43	4	18	25	6
Newfoundland	710	189	50	–	281	165	62	50	18	36	7
Male	910	236	78	0	350	220	68	84	31	53	21
Female	562	159	28	28	225	122	56	30	11	19	1
Prince Edward Island	753	207	57	–	277	165	63	76	41	45	9
Male	1,014	274	77	0	365	231	77	114	6	70	15
Female	559	158	45	24	207	110	52	55	29	21	3
Nova Scotia	700	210	58	–	233	134	42	68	28	46	12
Male	902	260	82	0	308	199	44	96	36	68	20
Female	550	176	40	30	176	85	41	51	23	24	4
New Brunswick	680	193	55	–	236	127	44	59	18	42	12
Male	886	247	86	0	304	171	52	84	20	64	21
Female	528	156	33	33	186	94	38	43	16	22	4
Quebec	666	203	61	–	220	135	41	56	16	49	19
Male	869	268	96	0	281	185	46	85	21	71	31
Female	514	158	35	29	173	96	38	39	12	27	8
Ontario	648	180	45	–	229	140	48	55	23	38	9
Male	823	223	63	0	290	191	52	78	30	53	15
Female	519	151	31	29	183	102	45	42	19	24	4
Manitoba	668	185	48	–	241	141	51	58	27	45	11
Male	841	220	63	0	309	197	57	82	37	67	18
Female	541	161	37	30	191	100	47	44	22	25	3
Saskatchewan	640	172	43	–	222	122	45	61	28	50	14
Male	829	214	58	0	291	176	50	91	37	73	24
Female	501	144	33	25	169	82	41	43	22	28	5
Alberta	639	174	42	–	233	127	49	58	22	53	16
Male	803	206	58	0	294	174	53	82	29	77	25
Female	515	154	32	29	185	92	45	42	18	30	8
British Columbia	623	166	45	–	207	112	48	61	26	41	10
Male	793	202	60	0	265	157	53	81	33	60	16
Female	495	142	35	26	164	79	45	49	22	23	4
Yukon	887	210	83	–	243	136	11	59	20	126	35
Male	1,665	248	69	0	478	230	0	152	62	271	83
Female	421	193	86	12	93	74	19	12	0	18	0
Northwest Territories	1,005	285	66	–	216	58	45	179	78	128	32
Male	1,117	311	45	0	296	122	49	170	85	152	55
Female	874	260	75	11	165	16	43	180	74	88	8

[a] Age-standardized to the 1991 Canadian population.

[b] Cardiovascular disease: All heart disease plus stroke and atherosclerosis.

Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

83

Potential years of life lost

Introduction

Different measures of health status are developed in order to focus discussion on different aspects of health or illness. "Causes of hospitalization" (Topics 76 and 77) places the focus on conditions that require health care resources; "causes of death" (Topic 82) focusses on quantity of life; and disability-free life expectancy shifts the focus to quality of life. "Potential years of life lost" (PYLL) emphasizes the loss of life at an early age; attention to the major causes of PYLL should thus make a major contribution to life expectancy and health status generally.

This topic describes the major causes of PYLL prior to age 70.

Potential years of life lost (PYLL), 1996

In 1996, there were over 1 million PYLL due to all causes (Table 83a),[1] the most important being cancer (30% of the total), accidents (19%), and heart disease (13%).

Cancer has been the leading cause of PYLL since 1984 and, with suicides, is the only major cause of PYLL to have increased since 1970 (Fig. 83a).[1] PYLL due to accidents have declined dramatically since 1979. PYLL due to heart disease have also declined steadily since 1977, and respiratory conditions and stroke have shown slow but steady declines in their share of PYLL over two decades.

Compared with other OECD countries in 1995, Canada ranks second lowest in PYLL per 100,000 population (under age 70) excluding suicide (Fig. 83b),[2] for which international comparisons are problematic (see Topic 81).

Differences among groups

Despite their near-equal numbers in the population, males and females do not contribute equally to PYLL. Rather, males accounted for 65% of PYLL in 1996, and the male rate per 100,000 persons was almost twice the female rate (Table 83b). This was largely a function of sex differences in rates of heart disease (Topic 74), suicide (Topic 81), and accidents (Topic 82). PYLL due to suicide were concentrated in the age group 25–44, and PYLL due to accidents were concentrated in the age group 25–34. PYLL for cancer and heart disease were greatest for age 45–64.

There have been great improvements in PYLL due to accidents among young Canadians from 1970 to 1996 (Fig. 83c).[1] The improvements have been particularly pronounced for age 10–19 and less so for ages 1–9 and 20–24.

Total PYLL for the provinces/territories were distributed in almost exact proportion to the provincial/territorial populations in 1996[3] (Table 83a). However, PYLL per 100,000 population varies widely, from a low of 3,453 in Ontario to a high of 7,695 in the Northwest Territories. Accidents in both territories and suicide in the Northwest Territories account for much of their high ranking (Table 83b). This suggests that Ontario has been relatively successful in postponing death, while early mortality is most common in the two territories.

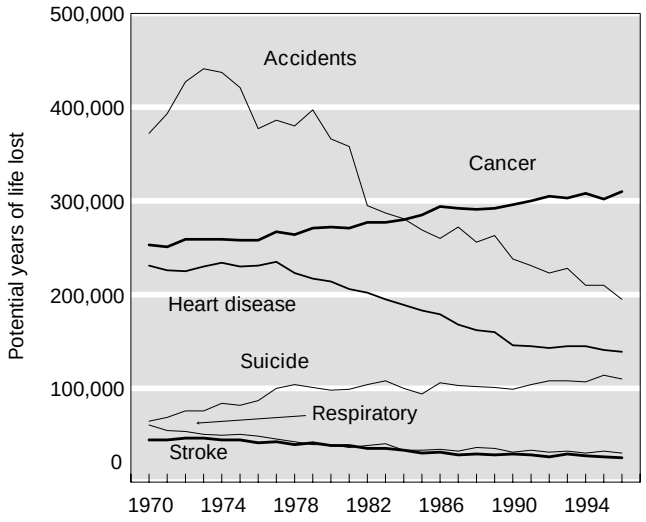
On definitions and methods

PYLL for each cause are calculated from age-specific death rates (Topic 82); deaths prior to age 70 are considered "early" or potential years of life that have been lost.

References

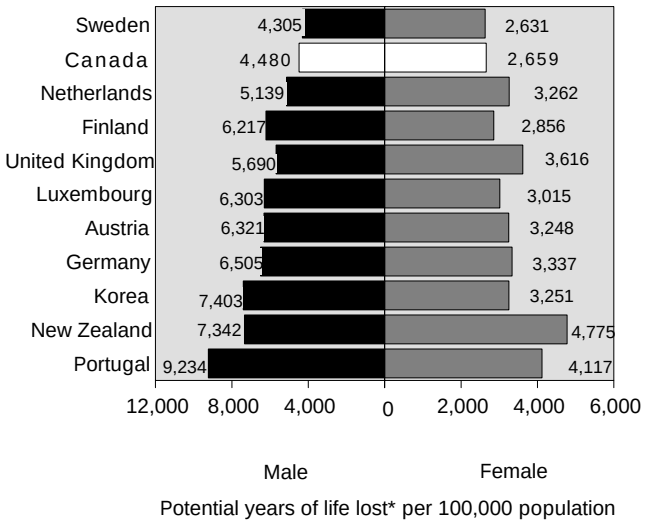
1. Statistics Canada, Health Statistics Division. *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).
2. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).
3. Statistics Canada. 1996 Census: Population and dwelling counts. *The Daily*, April 15, 1997 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.

Figure 83a. **Potential years of life lost, by cause of death, Canada, 1970–1996**



Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

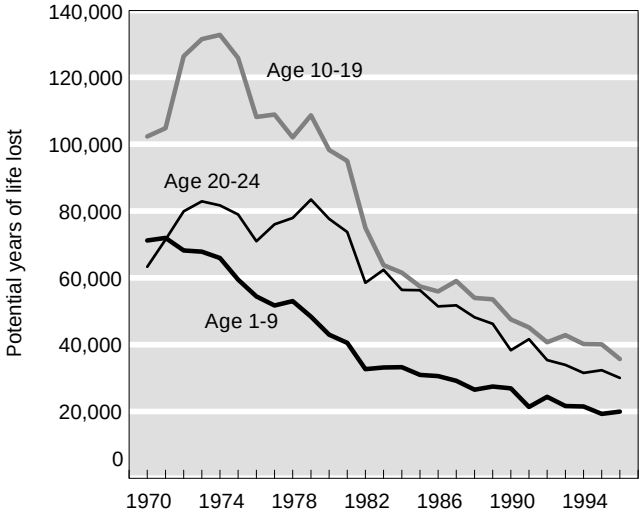
Figure 83b. **Potential years of life lost, selected OECD countries, age 0–69, 1995**



* All causes except suicide.

Sources: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM); Canadian data calculated from data in Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Figure 83c. **Potential years of life lost in accidents, age 1–24, Canada, 1970–1996**



Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Table 83a. **Potential years of life lost, by major causes of death, by age and sex, and by province/territory, Canada, 1996**

	Potential years of life lost							
	Total	Neoplasms	Accidents	Suicide	Respiratory	Heart diseases	Stroke	All others
Total, all ages	**1,043,952**	**310,468**	**195,229**	**110,210**	**31,167**	**138,813**	**25,604**	**232,464**
Male	678,069	154,888	143,652	87,585	18,640	103,694	13,498	156,114
Female	365,883	155,580	51,578	22,625	12,527	35,119	12,106	76,350
Age 1–4, total	30,887	4,690	9,849	0	2,144	1,005	201	12,998
Male	17,219	2,278	6,164	0	1,407	536	0	6,834
Female	13,668	2,412	3,685	0	737	469	201	6,164
Age 5–9, total	18,563	3,688	9,375	63	438	375	63	4,564
Male	9,875	2,000	5,250	63	313	313	0	1,938
Female	8,688	1,688	4,125	0	125	63	63	2,626
Age 10–14, total	19,493	3,565	6,498	2,300	518	633	115	5,866
Male	11,845	2,013	4,083	1,783	230	288	58	3,393
Female	7,648	1,553	2,415	518	288	345	58	2,473
Age 15–19, total	55,073	3,360	29,190	12,128	525	1,470	368	8,033
Male	38,325	2,153	20,265	9,975	368	735	210	4,620
Female	16,748	1,208	8,925	2,153	158	735	158	3,413
Age 20–24, total	64,220	4,893	30,020	16,625	903	1,188	380	10,214
Male	49,115	3,135	23,608	14,250	475	998	285	6,365
Female	15,105	1,758	6,413	2,375	428	190	95	3,849
Age 25–34, total	150,995	18,940	47,540	30,503	2,625	7,403	2,388	41,599
Male	108,718	9,106	37,760	25,071	1,633	4,803	988	29,361
Female	42,278	9,836	9,780	5,432	993	2,601	1,400	12,239
Age 35–44, total	214,315	57,161	36,721	30,203	3,900	22,353	5,105	58,876
Male	138,890	22,956	27,583	22,946	2,088	16,903	2,363	44,056
Female	75,425	34,205	9,138	7,258	1,813	5,451	2,743	14,821
Age 45–54, total	234,750	97,350	18,463	14,316	6,948	43,093	7,156	47,429
Male	144,675	45,881	13,785	10,408	4,171	34,398	3,716	32,321
Female	90,075	51,471	4,678	3,908	2,778	8,696	3,440	15,109
Age 55–64, total	206,643	95,880	6,630	3,686	9,813	48,728	7,435	34,474
Male	128,828	53,151	4,515	2,793	5,928	36,073	4,448	21,923
Female	77,816	42,731	2,115	893	3,886	12,656	2,988	12,551
Age 65–69, total	49,015	20,943	945	390	3,355	12,568	2,395	8,420
Male	30,580	12,220	640	300	2,030	8,650	1,433	5,308
Female	18,435	8,723	305	90	1,325	3,918	963	3,113
Newfoundland	19,235	6,130	3,882	1,158	380	3,448	558	3,682
Prince Edward Island	4,627	1,513	1,018	228	175	810	183	702
Nova Scotia	34,235	11,288	6,968	3,043	1,237	5,257	573	5,871
New Brunswick	26,030	7,969	5,095	2,705	528	4,213	588	4,934
Quebec	278,363	86,779	46,978	42,833	7,566	37,861	7,029	49,319
Ontario	355,578	113,708	58,804	28,278	11,394	50,205	9,697	83,495
Manitoba	40,872	11,699	9,284	3,393	1,422	5,550	1,215	8,310
Saskatchewan	36,967	9,737	8,335	4,240	1,452	4,668	738	7,800
Alberta	99,033	25,010	24,571	13,463	3,170	12,070	2,153	18,598
British Columbia	142,938	35,753	28,157	9,728	3,665	14,353	2,730	48,553
Yukon	1,425	223	543	148	18	173	0	323
Northwest Territories	4,651	663	1,596	998	162	208	143	883

Source: Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

Table 83b. **Potential years of life lost per 100,000 population (age-standardized[a]), by cause, by age and sex, and by province/territory, Canada, 1996**

	Total	Neoplasms	Accidents	Suicide	Respiratory	Heart diseases	Stroke	All others
Total, all ages	**3,804**	**1,098**	**746**	**417**	**113**	**491**	**91**	**848**
Male	4,962	1,110	1,088	660	137	737	97	1,133
Female	2,641	1,088	395	169	91	250	86	562
Age 1–4, total	1,949	296	622	0	135	63	13	820
Male	2,120	280	759	0	173	66	0	841
Female	1,770	312	477	0	95	61	26	798
Age 5–9, total	920	183	465	3	22	19	3	226
Male	956	194	508	6	30	30	0	188
Female	883	171	419	0	13	6	6	267
Age 10–14, total	970	177	323	114	26	31	6	292
Male	1,148	195	396	173	22	28	6	329
Female	782	159	247	53	29	35	6	253
Age 15–19, total	2,736	167	1,450	602	26	73	18	399
Male	3,703	208	1,958	964	36	71	20	446
Female	1,712	123	913	220	16	75	16	349
Age 20–24, total	3,194	243	1,493	827	45	59	19	508
Male	4,797	306	2,306	1,392	46	97	28	622
Female	1,531	178	650	241	43	19	10	390
Age 25–34, total	3,168	393	1,007	646	56	154	50	863
Male	4,519	375	1,587	1,050	68	196	41	1,201
Female	1,786	411	414	232	42	110	58	517
Age 35–44, total	4,287	1,144	734	604	78	447	102	1,177
Male	5,553	919	1,102	916	84	677	95	1,761
Female	3,018	1,369	366	290	73	218	110	593
Age 45–54, total	6,209	2,577	487	377	184	1,142	190	1,252
Male	7,668	2,436	728	549	221	1,826	197	1,710
Female	4,755	2,718	246	205	147	460	182	796
Age 55–64, total	8,135	3,774	260	144	388	1,920	293	1,356
Male	10,284	4,245	358	221	476	2,880	356	1,748
Female	6,044	3,316	164	69	303	985	232	975
Age 65–69, total	4,365	1,865	84	35	299	1,120	213	750
Male	5,738	2,292	120	56	381	1,624	269	995
Female	3,124	1,479	52	15	225	664	163	527
Newfoundland	3,721	1,152	759	224	77	663	110	737
Prince Edward Island	3,687	1,189	829	188	144	642	138	557
Nova Scotia	3,983	1,264	860	367	147	592	64	689
New Brunswick	3,736	1,126	758	394	77	589	82	711
Quebec	4,032	1,192	735	660	108	521	98	717
Ontario	3,453	1,079	601	284	110	475	93	810
Manitoba	4,066	1,147	936	351	140	546	121	824
Saskatchewan	4,203	1,086	964	508	161	523	82	879
Alberta	3,943	1,009	963	529	129	492	86	735
British Columbia	3,986	960	828	279	102	385	75	1,357
Yukon	4,742	775	1,788	457	86	559	0	1,078
Northwest Territories	7,695	1,479	2,309	1,480	370	481	269	1,308

Note: Small differences occur between the total and the sum of the cause columns because of rounding.

[a] Age-standardized to the 1991 Canadian population.

Source: Health Canada, Laboratory Centre for Disease Control. Calculated from Statistics Canada, Health Statistics Division, *Health Indicators, 1999* (Statistics Canada Cat. No. 82-221-XCB).

84

Total life expectancy

Introduction

Life expectancy has long been regarded as a basic reliable indicator of the overall health of the population, although it has sometimes been criticized as placing too much emphasis on "quantity of life" and not enough on "quality of life." Nevertheless, life expectancy allows for reliable comparisons over time and among jurisdictions. It is complemented by other measures, such as potential years of life lost (Topic 83) and disability-free life expectancy, although the latter is not routinely available and has not been calculated since 1991.

Life expectancy, 1996

Based on current mortality patterns, a Canadian child born in 1996 could expect to live to the age of 78.6 (Table 84).[1,2] This life expectancy represents new highs (Fig. 84a),[2,3] largely due to declines in the mortality rates for the leading causes of death (Topic 82).

For combined male and female life expectancy at birth, Canada ranks third of 12 selected OECD countries (Fig. 84b),[3,4] behind Switzerland and Japan. This is a considerably better ranking than for infant mortality (Topic 78).

Differences among groups

At all ages, females have a greater total life expectancy than males (Table 84), although the 5.7-year advantage that exists at birth declines to 2.6 years by age 75.[2] The difference in life expectancy at birth between men and women continues to narrow slowly — from 7.5 years in 1978 to 5.9 in 1995 and to 5.7 in 1996 (Fig. 84a).[2,3]

With increasing years, total life expectancy grows, so that a person age 35 in 1996 could expect to live another 45.0 years, to age 80.0, a person age 50 could expect to live another 31.0 years, to age 81.0, while a person age 65 could expect to live another 18.4 years, to age 83.4 (Table 84).[1,2]

In 1996, in most provinces, life expectancy for both sexes combined was 78 years (Table 84).[1,2] In Newfoundland, Prince Edward Island, and Nova Scotia, life expectancy at birth was marginally shorter at 77 years, and British Columbia was the highest at 79 years. Life expectancy in the two territories was below that of the provinces. This life expectancy pattern across provinces and territories remained similar for those age 65 in 1996.

On definitions and methods

The data — both published and unpublished — were provided by the Health Statistics Division of Statistics Canada.

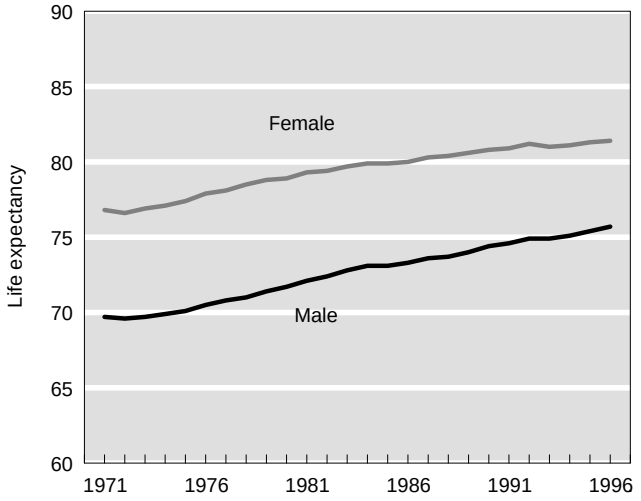
Life expectancy is based on current mortality rates and reflects the number of years an individual of a given age is expected to live if current rates continue to apply.

The comparison of international data should be interpreted with some degree of caution, as the different countries may use slightly different calculations to determine life expectancy.

References

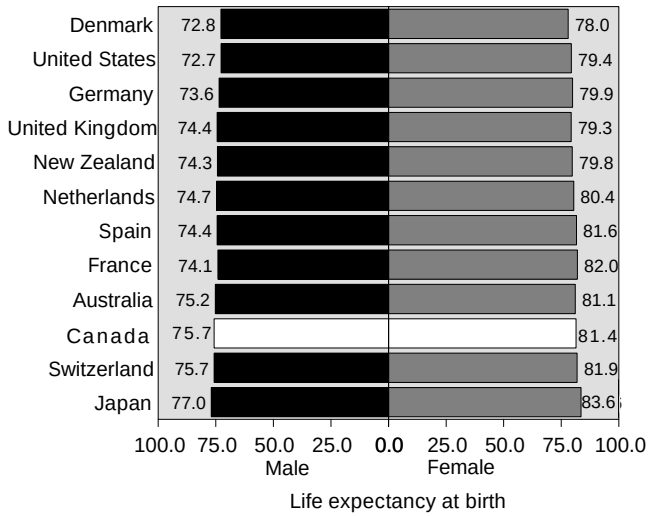
1. Statistics Canada. *Compendium of Vital Statistics 1996.* Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE).
2. Statistics Canada, Health Statistics Division. Special tabulations.
3. Statistics Canada. Deaths 1996. *The Daily*, April 16, 1998 (Statistics Canada Cat. No. 11-001-XIE). See the Statistics Canada Internet site: www.statcan.ca.
4. Organisation for Economic Co-operation and Development. *OECD Health Data 98* (CD-ROM).

Figure 84a. **Life expectancy at birth, Canada, 1971–1996**



Sources: Statistics Canada, Health Statistics Division, special tabulations; Statistics Canada, Deaths 1996, *The Daily*, April 16, 1998 (Statistics Canada Cat. No. 11-001-XIE).

Figure 84b. **Life expectancy at birth, selected OECD countries, 1996**

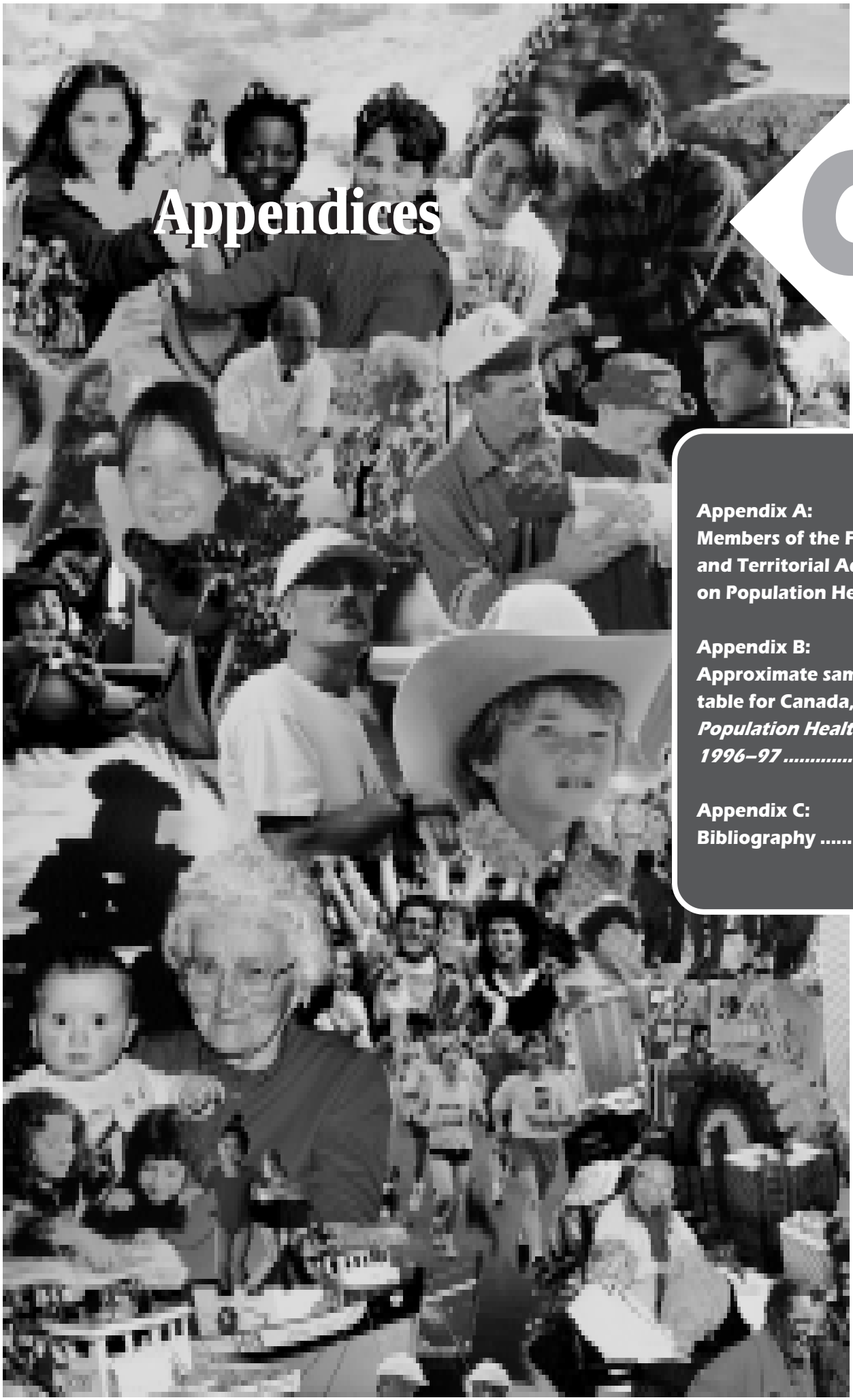


Sources: Organisation for Economic Co-operation and Development, *OECD Health Data 98* (CD-ROM); Statistics Canada, Deaths 1996, *The Daily*, April 16, 1998 (Statistics Canada Cat. No. 11-001-XIE).

Table 84. **Total life expectancies (years) at specified ages, by sex and by province/territory, Canada, 1996**

	Life expectancy (years)		
	Total	Male	Female
Age 0	**78.6**	**75.7**	**81.4**
Age 1	78.0	75.2	80.8
Age 5	74.1	71.3	76.9
Age 10	69.2	66.3	72.0
Age 15	64.2	61.4	67.0
Age 20	59.4	56.6	62.1
Age 25	54.6	51.9	57.2
Age 30	49.8	47.1	52.3
Age 35	45.0	42.4	47.4
Age 40	40.2	37.7	42.6
Age 45	35.6	33.1	37.9
Age 50	31.0	28.5	33.2
Age 55	26.5	24.2	28.7
Age 60	22.3	20.1	24.3
Age 65	18.4	16.3	20.2
Age 70	14.8	13.0	16.3
Age 75	11.6	10.1	12.7
Age 80	8.8	7.6	9.6
Age 85	6.6	5.7	7.0
Age 90	4.9	4.4	5.1
At birth			
Newfoundland	77.7	75.0	80.5
Prince Edward Island	77.2	73.9	80.7
Nova Scotia	77.8	74.9	80.7
New Brunswick	78.2	75.2	81.2
Quebec	78.4	75.2	81.5
Ontario	78.9	76.1	81.4
Manitoba	78.2	75.5	80.8
Saskatchewan	78.4	75.5	81.4
Alberta	78.7	76.0	81.3
British Columbia	79.0	76.1	81.9
Yukon	76.1	72.3	84.7
Northwest Territories	72.7	69.9	75.8
Age 65			
Newfoundland	17.4	15.3	19.5
Prince Edward Island	17.1	14.7	19.3
Nova Scotia	17.8	15.7	19.6
New Brunswick	18.0	15.7	20.0
Quebec	18.3	16.0	20.3
Ontario	18.3	16.3	20.0
Manitoba	18.3	16.4	19.9
Saskatchewan	18.8	16.7	20.8
Alberta	18.7	16.8	20.4
British Columbia	18.9	17.1	20.5
Yukon	15.9	12.9	24.0
Northwest Territories	15.8	14.8	16.6

Sources: Statistics Canada, *Compendium of Vital Statistics 1996*, Ottawa: Statistics Canada, 1999 (Statistics Canada Cat. No. 84-214-XPE); Statistics Canada, Health Statistics Division, special tabulations.



Appendices

C

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Appendix

Approximate sampling variability table for Canada, *National Population Health Survey, 1996–97*

Notes on use of the *National Population Health Survey* tables in the *Statistical Report*

For confirming data release

Tables appearing in this *Statistical Report* based on data from the *National Population Health Survey* have been reviewed for reliability, based on sample sizes. The coefficients of variation (CV) in the table below may be used for further reliability checks of Canada-level (not province-level) data, using the following criteria:

- CV = 16.6–33.3%: moderate sampling variability; interpret with caution
- CV > 33.3%: data should not be used because of high sampling variability.

For calculating 95% confidence limits

The coefficient values represent one standard error (SE), expressed as a proportion of the percentage of interest (estimated % × CV); thus, the approximate 95% confidence interval around any estimated percentage is (x% ± 2SE). These limits can be used to compare the statistical significance of two percentages at the Canada level (e.g., genders or age groups). They cannot be used for comparing provinces, as this requires different CV tables.[1]

References

1. Statistics Canada. *National Population Health Survey*, 1996–97. Public use microdata files. Ottawa: Statistics Canada, 1998 (Statistics Canada Cat. No. 82M0009XCB).

Approximate sampling variability table for Canada, *National Population Health Survey*, 1996–97

Numerator of percentage	Estimated percentage													
('000)	0.1%	1.0%	2.0%	5.0%	10.0%	15.0%	20.0%	25.0%	30.0%	35.0%	40.0%	50.0%	70.0%	90.0%
1	122.7	122.2	121.6	119.7	116.5	113.2	109.8	106.4	102.8	99.0	95.1	86.8	67.3	38.8
2	86.8	86.4	86.0	84.6	82.4	80.1	77.7	75.2	72.7	70.0	67.3	61.4	47.6	27.5
3	70.9	70.5	70.2	69.1	67.3	65.4	63.4	61.4	59.3	57.2	54.9	50.1	38.8	22.4
4	61.4	61.1	60.8	59.9	58.3	56.6	54.9	53.2	51.4	49.5	47.6	43.4	33.6	19.4
5	54.9	54.6	54.4	53.5	52.1	50.6	49.1	47.6	46.0	44.3	42.5	38.8	30.1	17.4
6	50.1	49.9	49.6	48.9	47.6	46.2	44.8	43.4	41.9	40.4	38.8	35.5	27.5	15.9
7	46.4	46.2	46.0	45.2	44.0	42.8	41.5	40.2	38.8	37.4	36.0	32.8	25.4	14.7
8	43.4	43.2	43.0	42.3	41.2	40.0	38.8	37.6	36.3	35.0	33.6	30.7	23.8	13.7
9	40.9	40.7	40.5	39.9	38.8	37.7	36.6	35.5	34.3	33.0	31.7	28.9	22.4	12.9
10	38.8	38.6	38.4	37.9	36.8	35.8	34.7	33.6	32.5	31.3	30.1	27.5	21.3	12.3
11	37.0	36.8	36.7	36.1	35.1	34.1	33.1	32.1	31.0	29.9	28.7	26.2	20.3	11.7
12	35.4	35.3	35.1	34.6	33.6	32.7	31.7	30.7	29.7	28.6	27.5	25.1	19.4	11.2
13	34.0	33.9	33.7	33.2	32.3	31.4	30.5	29.5	28.5	27.5	26.4	24.1	18.7	10.8
14	32.8	32.7	32.5	32.0	31.1	30.3	29.4	28.4	27.5	26.5	25.4	23.2	18.0	10.4
15	31.7	31.6	31.4	30.9	30.1	29.2	28.4	27.5	26.5	25.6	24.6	22.4	17.4	10.0
16	30.7	30.5	30.4	29.9	29.1	28.3	27.5	26.6	25.7	24.8	23.8	21.7	16.8	9.7
17	29.8	29.6	29.5	29.0	28.3	27.5	26.6	25.8	24.9	24.0	23.1	21.1	16.3	9.4
18	28.9	28.8	28.7	28.2	27.5	26.7	25.9	25.1	24.2	23.3	22.4	20.5	15.9	9.2
19	28.2	28.0	27.9	27.5	26.7	26.0	25.2	24.4	23.6	22.7	21.8	19.9	15.4	8.9
20	27.4	27.3	27.2	26.8	26.1	25.3	24.6	23.8	23.0	22.1	21.3	19.4	15.0	8.7
21	26.8	26.7	26.5	26.1	25.4	24.7	24.0	23.2	22.4	21.6	20.8	18.9	14.7	8.5
22	26.2	26.1	25.9	25.5	24.8	24.1	23.4	22.7	21.9	21.1	20.3	18.5	14.3	8.3
23	25.6	25.5	25.4	25.0	24.3	23.6	22.9	22.2	21.4	20.6	19.8	18.1	14.0	8.1
24	25.1	24.9	24.8	24.4	23.8	23.1	22.4	21.7	21.0	20.2	19.4	17.7	13.7	7.9
25	24.5	24.4	24.3	23.9	23.3	22.6	22.0	21.3	20.6	19.8	19.0	17.4	13.5	7.8
30	–	22.3	22.2	21.9	21.3	20.7	20.1	19.4	18.8	18.1	17.4	15.9	12.3	7.1
35	–	20.7	20.6	20.2	19.7	19.1	18.6	18.0	17.4	16.7	16.1	14.7	11.4	6.6
40	–	19.3	19.2	18.9	18.4	17.9	17.4	16.8	16.2	15.7	15.0	13.7	10.6	6.1
45	–	18.2	18.1	17.8	17.4	16.9	16.4	15.9	15.3	14.8	14.2	12.9	10.0	5.8
50	–	17.3	17.2	16.9	16.5	16.0	15.5	15.0	14.5	14.0	13.5	12.3	9.5	5.5
55	–	16.5	16.4	16.1	15.7	15.3	14.8	14.3	13.9	13.4	12.8	11.7	9.1	5.2
60	–	15.8	15.7	15.5	15.0	14.6	14.2	13.7	13.3	12.8	12.3	11.2	8.7	5.0
65	–	15.2	15.1	14.8	14.5	14.0	13.6	13.2	12.7	12.3	11.8	10.8	8.3	4.8
70	–	14.6	14.5	14.3	13.9	13.5	13.1	12.7	12.3	11.8	11.4	10.4	8.0	4.6
75	–	14.1	14.0	13.8	13.5	13.1	12.7	12.3	11.9	11.4	11.0	10.0	7.8	4.5
80	–	13.7	13.6	13.4	13.0	12.7	12.3	11.9	11.5	11.1	10.6	9.7	7.5	4.3
85	–	13.3	13.2	13.0	12.6	12.3	11.9	11.5	11.1	10.7	10.3	9.4	7.3	4.2
90	–	12.9	12.8	12.6	12.3	11.9	11.6	11.2	10.8	10.4	10.0	9.2	7.1	4.1
95	–	12.5	12.5	12.3	12.0	11.6	11.3	10.9	10.5	10.2	9.8	8.9	6.9	4.0
100	–	12.2	12.2	12.0	11.7	11.3	11.0	10.6	10.3	9.9	9.5	8.7	6.7	3.9
125	–	10.9	10.9	10.7	10.4	10.1	9.8	9.5	9.2	8.9	8.5	7.8	6.0	3.5
150	–	10.0	9.9	9.8	9.5	9.2	9.0	8.7	8.4	8.1	7.8	7.1	5.5	3.2
200	–	8.6	8.6	8.5	8.2	8.0	7.8	7.5	7.3	7.0	6.7	6.1	4.8	2.7
250	–	7.7	7.7	7.6	7.4	7.2	6.9	6.7	6.5	6.3	6.0	5.5	4.3	2.5
300	–	–	7.0	6.9	6.7	6.5	6.3	6.1	5.9	5.7	5.5	5.0	3.9	2.2
350	–	–	6.5	6.4	6.2	6.1	5.9	5.7	5.5	5.3	5.1	4.6	3.6	2.1
400	–	–	6.1	6.0	5.8	5.7	5.5	5.3	5.1	5.0	4.8	4.3	3.4	1.9
450	–	–	5.7	5.6	5.5	5.3	5.2	5.0	4.8	4.7	4.5	4.1	3.2	1.8
500	–	–	5.4	5.4	5.2	5.1	4.9	4.8	4.6	4.4	4.3	3.9	3.0	1.7
750	–	–	–	4.4	4.3	4.1	4.0	3.9	3.8	3.6	3.5	3.2	2.5	1.4
1,000	–	–	–	3.8	3.7	3.6	3.5	3.4	3.2	3.1	3.0	2.7	2.1	1.2
1,500	–	–	–	–	3.0	2.9	2.8	2.7	2.7	2.6	2.5	2.2	1.7	1.0
2,000	–	–	–	–	2.6	2.5	2.5	2.4	2.3	2.2	2.1	1.9	1.5	0.9
3,000	–	–	–	–	–	2.1	2.0	1.9	1.9	1.8	1.7	1.6	1.2	0.7
4,000	–	–	–	–	–	1.8	1.7	1.7	1.6	1.6	1.5	1.4	1.1	0.6
5,000	–	–	–	–	–	–	1.6	1.5	1.5	1.4	1.3	1.2	1.0	0.5
6,000	–	–	–	–	–	–	–	1.4	1.3	1.3	1.2	1.1	0.9	0.5
7,000	–	–	–	–	–	–	–	1.3	1.2	1.2	1.1	1.0	0.8	0.5
8,000	–	–	–	–	–	–	–	–	1.1	1.1	1.1	1.0	0.8	0.4
9,000	–	–	–	–	–	–	–	–	–	1.0	1.0	0.9	0.7	0.4
10,000	–	–	–	–	–	–	–	–	–	1.0	1.0	0.9	0.7	0.4
12,500	–	–	–	–	–	–	–	–	–	–	–	0.8	0.6	0.3
15,000	–	–	–	–	–	–	–	–	–	–	–	–	0.5	0.3

– Not applicable.
Note: For further use of this table, please refer to microdata documentation.

C

Appendix

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Index of topics

Entries are topic numbers, not page numbers.
Bold underlined entries identify topics for which the indexed entry is a main subject.
Not included in this index are the standard variables (age, sex, province, etc.)
that appear in most topics.

Reader Feedback

The Federal, Provincial and Territorial Advisory Committee on Population Health invites you to answer a few questions about the *Statistical Report on the Health of Canadians (1999)*. Your answers will provide feedback on the content and usefulness of this report.

Please return the completed questionnaire to:

Quantitative Analysis and Research Section
Policy Development and Coordination Division
Health Promotion and Programs Branch
Health Canada
Jeanne Mance Building
Tunney's Pasture (AL 1917C1)
Ottawa, ON K1A 1B4

Alternately, you may return the questionnaire by e-mail to Serge Tanguay at serge_tanguay@hc-sc.gc.ca

Overall Satisfaction with the Statistical Report

For each of the following questions, please place an X beside the *most appropriate* response.

1. How did you obtain your copy of the *Statistical Report*?

   ☐ It was mailed to me as part of the initial distribution

   ☐ I obtained my copy at work

   ☐ I accessed it through the Internet

   ☐ I ordered my own copy

   ☐ Other (please specify)

   _____

   _____

   _____

2. To what extent have you read or browsed through the *Statistical Report*?

   ☐ Have not read or browsed through the document

   ☐ Have browsed through the entire document

   ☐ Have browsed through the document and have read specific chapters

   ☐ Have read the entire document

3. How satisfied are you with the following aspects of the *Statistical Report*?

   a. Length

   ☐ Too short ☐ About right ☐ Too long

   b. Clarity/readability of technical information

   ☐ Excellent ☐ Good ☐ Fair ☐ Poor

   c. Organization/format

   ☐ Excellent ☐ Good ☐ Fair ☐ Poor

   d. Use of graphs and figures

   ☐ Excellent ☐ Good ☐ Fair ☐ Poor

   f. Quality of data analysis

   ☐ Excellent ☐ Good ☐ Fair ☐ Poor

   g. Quality of discussion

   ☐ Excellent ☐ Good ☐ Fair ☐ Poor

4. How can the *Report* be improved (e.g. other data sources that could be used, format, etc.)?

   _____

   _____

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   _____

Usefulness of the Statistical Report

5. One of the goals of the *Statistical Report* is *to provide a description of health determinants and the health status of Canadians, across a large number of indicators. These descriptions were provided in a consistent fashion in order to allow patterns to emerge*. Overall, how successful do you think the *Statistical Report* was in achieving this goal?

   ☐ Very successful

   ☐ Fairly successful

   ☐ Limited success

   ☐ Not successful

6. Have you used, or will you likely use, the information in the report for any of the following? (Place an X beside *all* the appropriate responses.)

   ☐ Research and/or evaluation

   ☐ Briefing notes

   ☐ For information only

   ☐ Policy development

   ☐ Educational activities

   ☐ Program planning

   ☐ Public awareness activities

   ☐ Other (please specify)

   _____

   _____

   _____

7. How useful did you find each section of the *Report*? (For each section, please place an X beside the *most appropriate* response.)

	Very useful	Somewhat useful	Not useful
Part A:			
Social/Economic Environment	☐	☐	☐
Physical Environment	☐	☐	☐
Health Services	☐	☐	☐
Personal Resources/Coping	☐	☐	☐
Health Knowledge	☐	☐	☐
Lifestyle Behaviours	☐	☐	☐
Part B:			
Well-being	☐	☐	☐
General Health and Function	☐	☐	☐
Injuries	☐	☐	☐
Conditions and Diseases	☐	☐	☐
Death	☐	☐	☐

8. Do you also have a copy of the public, policy-oriented version of this document entitled *Toward a Healthy Future: Second Report on the Health of Canadians*?

   ☐ Yes ☐ No

   If you have both documents, which do you find more useful?

   ☐ *Statistical Report*

   ☐ *Toward a Healthy Future*

   ☐ Both are useful

   ☐ Unsure

9. Do you have other comments about the *Statistical Report on the Health of Canadians* or suggestions for future reports?

   _____

   _____

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Reader Information

For each of the following questions, please place an X beside the *most appropriate* response.

10. What is your geographic region (e.g. province, territory)?

    ☐ Nfld. ☐ N.B.

    ☐ N.S. ☐ P.E.I.

    ☐ Yukon ☐ Que.

    ☐ Ont. ☐ Man.

    ☐ Sask. ☐ Alta.

    ☐ B.C. ☐ N.W.T.

    ☐ Nunavut

11. What sector are you most closely associated with?

- ☐ Health
- ☐ Social services
- ☐ Education
- ☐ Environment
- ☐ Housing
- ☐ Other (please specify)

_____

_____

_____

12. What is your affiliation?

- ☐ Federal government
- ☐ Provincial government
- ☐ Local or regional government
- ☐ Library
- ☐ General public
- ☐ Academic and/or policy research institute
- ☐ Non-government (e.g. voluntary) organization
- ☐ Service provider (e.g. clinician)
- ☐ Media
- ☐ Other (please specify)

_____

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13. What is your position or role within your organization?

- ☐ Policy analyst
- ☐ Program manager
- ☐ Service deliverer
- ☐ Researcher
- ☐ Administrator
- ☐ Board member
- ☐ Other (please specify)

_____

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Thank you for taking the time to complete this questionnaire.