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Health Care in Canada

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Canadian Institute for Health Information
Institut canadien d'information sur la santé

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About the Canadian Institute for Health Information

Since 1994, the Canadian Institute for Health Information (CIHI), a pan-Canadian, independent, not-for profit organization, has been working to improve the health of the health system and the health of Canadians by providing reliable and timely health information. The Institute's mandate, as established by Canada's health ministers, is to develop and maintain a common approach for health information in this country. To this end, CIHI provides information to advance Canada's health policies, improve the health of the population, strengthen our health system, and assist leaders in the health sector to make informed decisions.

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Statistics Canada is authorized under the Statistics Act to collect, compile, analyze, abstract, and publish statistics related to the health and well-being of Canadians. The Health Statistics Division's primary objective is to provide statistical information and analyses about the health of the population, determinants of health, and the scope and utilization of Canada's health care sector.

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Particularly we would like to express our appreciation to the members of the Expert Group who provided invaluable advice throughout the process. Members included:

- Mr. Steven Lewis (Chair), President, Access Consulting Ltd.
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It should be noted that the analyses and conclusions in the report do not necessarily reflect those of the individual members of the Expert Group or their affiliated organizations.

The editorial committee for the 2003 report included Steven Lewis, Jennifer Zelmer, and Kira Leeb. Core members of the project team also included Dalila Bakhti, Gary Bellamy, Jack Bingham, Lisa Brazeau, Paulina Carrion, Lorraine Cayer, Zeerak Chaudhary, Ruth Diaz, Margaret Duarte, Lynne Duncan, Patricia Finlay, Luisa Frescura, Glenda Gagnon, Lise Gagnon, Cheryl Gula, Sandra Kopmann, Jason Lan, Anne Lauzon, Anick Losier, Laura MacLeod, Haider Mannan, Geneviève Martin, Christina Mathers, Christa Morley, Lise Poirier, Joan Porter, Marie Pratte, Indra Pulcins, Elizabeth St. Aubin, Serge Taillon, Linda Turner, Eugene Wen, Juliann Ju Yang, and Scott Young.

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Report Highlights

Part A: Primary Health Care

Primary health care is the level of care through which individuals, families, and the community first come in contact with the health system. The term covers a range of essential health services and is often the gateway to other, more specialized care.

How best to organize and deliver these everyday health services is one of the enduring challenges of Canadian health policy. For more than three decades, many different approaches have been tried in small pilot projects and larger on-going programs. A major section of this year's report focuses on what we know and don't know about primary health care in Canada.

What We Know

- Recent reports on health care affirm that primary health care renewal is central to the sustainability and revitalization of Canada's health care system. While specific recommendations differ, there is consensus on some major primary health care reform objectives such as expansion of access to services 24 hours a day, seven days a week in community non-hospital settings; more emphasis on prevention and health promotion; and better continuity of care and chronic disease management.
- Many jurisdictions have set targets for primary health care reform. In the February 2003 Health Accord, the first ministers committed to ensuring that at least 50% of their residents have access to an appropriate health care provider, 24 hours a day, seven days a week, by no later than 2011.
- Most Canadians (94% of those aged 15 and over in 2001) seek "first contact" health care services every year. While there are a variety of providers that Canadians consult on an annual basis, physicians' offices remain the most common point of first contact for primary health care services. During regular office hours, 80% of those seeking routine or on-going care and 49% of those requiring immediate care for a minor health problem go to a physician's office. During evenings and weekends, Canadians turn to a mix of settings for care. If the need for care arises at night, almost everyone (93%) seeks help at a hospital or its emergency department.
- Across the country, "ambulatory care sensitive condition rates" (ACSC) have fallen in recent years. Between 1995–1996 and 2000–2001, ACSC hospitalization rates dropped by 26%, after adjusting for population growth and aging. The decline appears to be driven primarily by a drop in the number of hospitalizations related to asthma and some psychiatric conditions. ACSC rates also fell faster for Canadians under the age of 20 than for others.

- Most Canadians (88% in 2001) aged 15 and older have a regular family doctor, but percentages range from 76% in Quebec to 95% in New Brunswick. Of the 12% of Canadians who reported **not** having a regular family doctor, 63% said they had not tried to contact one; 29% cited reasons related to physician availability; and 8.5% gave other reasons. The proportions varied in different parts of the country.
- Rural doctors are more likely than those working in urban areas to provide a number of services such as obstetrical care, chronic disease management, palliative care, and emergency medicine. The range of services offered by all family doctors is also changing over time. For example, family doctors were less likely to care for patients in hospital in 1999 (63% did so at least once) than in 1989 (70%). In contrast, more are providing certain types of in-office care, such as mental health services (86% in 1999 vs. 81% in 1989).
- Most Canadians (91% aged 15 and over in 2001) who used health care services in the last year reported being very or somewhat satisfied with the care they received from their family doctor or other physician. Satisfaction with community-based health care services (excluding services in a hospital or a physician's office) is somewhat lower: 83% of females and 80% of males reported being very or somewhat satisfied with this type of care in 2001.

What We Don't Know

- How is the use of different forms of first-contact health services changing over time? How is this affecting the extent to which first contact care is integrated with other parts of the health care system? What effect are these changes having on health outcomes, access to care, satisfaction, and health care expenditures?
- What is the optimal mix and number of primary health care providers for different settings and populations? How would changes to this mix or overall numbers affect health status, cost, quality of care, and provider satisfaction?
- How has the number of Canadians who are served by various forms of primary health care changed over time? How does this compare with goals established by provincial and federal governments and other groups? What strategies are most effective in facilitating a transition between different models of primary health care?
- How can information and management systems cost effectively minimize duplication of services, facilitate high quality care, and ensure that patient problems are not missed when the patients are receiving services from multiple care providers in different settings? What systems are in use today?

Part B: Beyond Primary Health Care

The Health Care Dollar

What We Know

- For the sixth straight year, total public and private spending on health care per person, adjusted for inflation, rose in Canada. We spent an estimated $112 billion (forecast) overall in 2002, an average of $3,572 per person. Hospitals, retail drug sales, and payments to doctors accounted for over 60% of total spending (forecast).
- Canada spends more on health care than many countries. As of 2001, about 9.3% of our economic output (GDP) went to health care, up from 7.3% in 1981. Three G8 countries spent more in 2000—the United States (13.0% of GDP), Germany (10.6%), and France (9.5%).
- Between 1997 and 2002, Canada's combined public and private health care bill rose by over 43%, an increase of almost $34 billion. Inflation alone accounted for a quarter (25%) of this increase. Population growth explains a further 11%. Rising levels of public and private spending per person account for the rest of the increase (49% and 16%, respectively).
- Ill health costs Canada far more than what is spent to treat disease. Recent estimates of the economic burden of illness ($159.4 billion in 1998) include the loss of potential economic output due to time away from work or school and premature death. Time spent caring for sick friends and family, pain and suffering, and related consequences of illness were not included in these estimates.

What We Don't Know

- How do changes in health expenditures affect the health of Canadians?
- To what extent do different factors (e.g. geography, population health status, and wage differences) explain variations in health spending between jurisdictions?
- How might different mixes of public and private funding and service delivery affect costs, access, quality of care, patient outcomes, and satisfaction?
- How much is spent on health promotion and prevention activities and programs in Canada each year? What about complementary and alternative therapies, such as massage therapy and homeopathy?

The Changing Hospital

What We Know

- The number of nights that Canadians spent in acute care hospitals fell by about 10% between 1995–1996 and 2000–2001. When population growth and aging are taken into account, in-patient hospitalization rates fell 16.5%. At the same time, day surgery rates are rising. For instance, the number of day surgery hospitalizations in Ontario increased by over 20% in the same period. Other changes include increases in certain procedures. For example, between 1994–1995 and 2000–2001, the number of total knee replacements performed on people under the age of 55 rose by 90%, while total hip replacements for the same age group increased by 30%. However, seniors still receive most (70%) of all hip and knee replacement procedures in Canada.

- Older Canadians are less likely today than in the past to live in nursing homes and other long-term care facilities. Between 1981 and 2001, the proportion of those aged 75 and older living in nursing homes and other institutions fell from 17% to 14%.
- Patients tend to rate the care they received in hospitals more highly than the public rates the system as a whole. Of the Canadians aged 15 and older who were hospitalized 85% said they had received good or excellent hospital care in 2000–2001. More detailed studies show that satisfaction tends to be higher for care by doctors and other health professionals than for hospital food, housekeeping, and some other aspects of care (e.g. information provided on follow-up care).
- Wait times remain important for Canadians. Overall, one in five patients who received specialized services in 2001 reported that waiting for care had had a negative impact on their lives (e.g. stress, increased pain, poorer health, loss of work, or loss of income).

What We Don't Know

- Why do rates for different procedures differ among regions across the country? What effect do rising day surgery rates have on services outside the hospital, including home care and self care? How well are the changing ways that hospitals deliver services meeting community needs?
- What factors help explain higher and lower levels of patient satisfaction? How do hospitals use patient satisfaction survey results to improve patient care? What strategies are most effective?
- How do wait times compare across the country? What percentages of wait times fall within recommended guidelines for different treatments? What is the emotional and physical impact of waiting for different types of care?
- How many Canadians have used diagnostic imaging technologies in the last year? What was the impact on their course of treatment, satisfaction, and other outcomes? What proportion of these scans occurred in hospitals versus independent health facilities? How many were paid for through public insurance programs?

Part C: Learning, Understanding, and Acting for Our Health

What We Know

- The Canadian Task Force on Preventive Health Care (CTFPHC) lists 250 recommendations which are graded on "strength of evidence", ranging from "A" (good evidence to support it) to "E" (good evidence against it). The largest number of recommendations fall in the "C" category, meaning the evidence is not yet conclusive either way. The frequency with which these recommendations are followed varies significantly.
- Overall, 12.2% of people admitted to a hospital with a new AMI between 1998–1999 and 2000–2001 died in hospital within 30 days.* The rates in most provinces (adjusted for differences in age, sex, and co-existing illnesses) were similar to the Canadian average, but some regional rates differed. Death rates

* Excludes British Columbia, Quebec, and Newfoundland and Labrador

for stroke patients were higher. Overall, 18.9% of people admitted to a hospital with a new stroke between 1998–1999 and 2000–2001 died in hospital within 30 days. Once again, the rates in most provinces were similar to the national average, but there were variations at the regional level. If death rates in large regions with higher rates had been the same as the overall average, there would have been over 800 fewer deaths between 1998–1999 and 2000–2001 (about 397 among heart attack patients and 438 among stroke patients).

- Researchers have found that the underuse of effective interventions, unnecessary or inappropriate care (sometimes referred to as "overuse"), and adverse events can cause illness, death, and increased costs. Pockets of information about levels of health system error in Canada exist and more studies are underway.

What We Don't Know

- How often is each of the CTFPHC recommendations followed, both by family doctors and other health professionals? If all recommendations were followed, what would be the impact on the health of Canadians and on current and future health care costs? For each of the 96 areas where evidence is equivocal, what is the best course of action to take?
- What explains regional differences in mortality, readmissions, and survival? What strategies are most effective in reducing rates of death and unplanned readmissions?
- How many Canadians die or are disabled due to health system error each year? How many near misses occur? How can we best prevent such errors?
- When do surgeries done at hospitals with low volumes put patients at higher risk of complications and death? For these surgeries, what is the optimal or minimum number of cases a hospital should perform? How many deaths could potentially be prevented by ensuring that surgery is provided at high-volume centers? What would be the trade-offs if such procedures were centralized?

Contents

About This Report

Looking back, many Canadians may remember 2002 as a time when health care issues dominated the national scene. Two major federal commissions published their findings, launching a nation-wide debate about Canada's health care system. The reports of the federal Standing Senate Committee on Social Affairs, Science and Technology (Kirby Commission) and of the Commission on the Future of Health Care in Canada (Romanow Commission) came on the heels of a series of provincial reviews. Each offered an analysis of health care, and proposed various reforms. Together they helped set the direction that health care reform may take in the future.

As we map the path forward, it helps to understand where we are now. That's what the Health Care in Canada reports are all about. This year's report is the fourth in an annual series launched by CIHI and Statistics Canada in 2000. Each year, CIHI researchers gather the most recent data about the Canadian health system and, where possible, compare them to those of other countries. We try to cover issues of the day, as well as to provide updated data and expanded analyses of topics of ongoing importance. The reports also include data on various health indicators.

New reports build in part on those that went before, ensuring continuity. They also highlight the latest research at local, regional, provincial, territorial, national, and international levels. Feedback from health professionals, researchers, policymakers, individual Canadians, the media, and others also helps us identify new topics.

With every new report we also become better aware of what information gaps still exist. We believe that it is important to continue identifying those gaps, and we try to do so each year by highlighting examples of what we know and what we don't know about featured topics. This has proven to be one of the report's most popular features. We hope that it will continue to act as a bridge to help us work with our partners on filling those gaps.

This year the report is divided into three sections:

Part A: *Primary Health Care* includes information on primary health care reform, models of care, and who is using primary health care services.

Part B: *Beyond Primary Health Care* takes a fresh look at several topics presented in earlier reports, including hospital care, health expenditures, wait times, and patient satisfaction.

Part C: *Learning, Understanding, and Acting for our Health* examines ways and means of preventing illness, as well as outcomes of treatment.

The report also includes *Health Indicators 2003*. This convenient reference offers comparative data on a range of health and health system indicators for health regions with populations of 75,000 and more—comprising more than 95% of Canada's total population—and for provinces and territories. Wherever the icon to the right appears beside the text, it indicates that related regional or provincial/territorial data can be found in *Health Indicators 2003*.

New for 2003

Every year *Health Care in Canada* introduces new information about selected aspects of the health care system. Our choices are based on feedback received since the last report and on the availability, reliability, and relevance of new data. This year our main focus is primary health care. However, we also provide new or updated information on topics such as expenditures, health technologies, and outcomes. Examples of new information for 2003 include:

- Where Canadians are most likely to turn for routine care and immediate care for minor health problems.
- The extent to which nurse practitioners work with physicians in inner cities or remote areas compared to other parts of the country.
- The extent to which physicians have electronic access to their patients' records.
- Trends in hospitalizations for conditions where effective community care may reduce the need for hospital stays.
- How different factors (population growth; inflation; and changes in private and public sector spending) explain the overall growth in health care expenditures over the last six years.
- The percent of family physicians and Canadians who report following selected recommendations of the Canadian Task Force on Preventive Health Care.
- How health outcomes, such as deaths after a heart attack or stroke and unplanned readmissions to hospital, compare in regions with 75,000 or more people.

For More Information

Highlights and the full text of *Health Care in Canada 2003* are available free of charge in both official languages on the CIHI Web site at www.cihi.ca. To order additional copies of the report (a nominal charge applies to cover printing, shipping, and handling costs), please contact:

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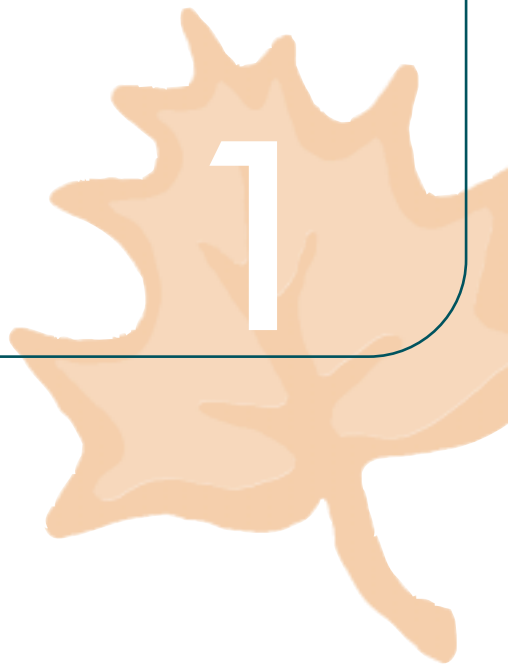
We welcome comments and suggestions about this report and about how to make future reports more useful and informative. For your convenience a feedback sheet, "It's Your Turn", is provided at the end of this report. You can also email your comments to healthreports@cihi.ca.

There's More on the Web!

The print version of this report is only part of what you can find at our Web site (www.cihi.ca). On the day that *Health Care in Canada 2003* is released and in the weeks and months following, we will be adding much more information to what is already available electronically. For example, it will be possible to:

- Download free copies of the report and the Indicators in English or French.
- Sign up to receive regular updates to the report via email.
- View a presentation of the report's highlights.
- Look at previous annual reports; related reports, such as *Canada's Health Care Providers*; CIHI's regular series of reports on aspects of health spending, health human resources, health services, and population health; and reports produced with Statistics Canada.
- Learn about upcoming reports, including *Improving the Health of Canadians* (check out the Canadian Population Health Initiative at our Web address), and special reports on medical imaging technology and on maternal and child care.
- The PDF version of *Health Care in Canada 2003* offers an added feature not available in the paper copy. Under each chart or graph, a View data link will give readers connected to the Internet access to the underlying data tables. These tables open as Microsoft Excel spreadsheets and can be saved to the user's personal computer.
- A public report is also available on the Web site which presents highlights of the report in a more readable format.

A Year in the Life of Canada's Health Care System



1 A Year in the Life of Canada's Health Care System

Health care in Canada is always eventful, but the last year has been particularly newsworthy. All of the elements of a good story—money and politics, conflict and resolution, tragedy and triumph—appeared in abundance. It was a year of reports, negotiations, and major funding agreements. New chapters were added to the ongoing effort to address public issues. Research advanced, and new science challenged accepted truths. Provinces reorganized their health regions. Everyone wrestled with health human resources issues.

Continuing a tradition begun last year, this first chapter of the report weaves together some of the major stories that defined the year in the life of Canada's health system. The rest of the report is a more in-depth look at the system: what it does, what it spends, how it performs. Some items have appeared in all editions of *Health Care in Canada*, while others rotate out to make way for new material. Deciding which items bear updating and which new items are worthy of inclusion is an ongoing challenge. We welcome readers' feedback (on the form at the back of the report) on how well we have done, and those interested in the now four-year history of this report can consult the consolidated index on the Web.

The key theme chosen for an in-depth look in this year's report is primary health care (PHC). PHC is a centrepiece of the February 2003 First Ministers' Accord. It has been central to almost all major health reports in the country in the last 15 years or more, and health care leaders and policy-makers have hailed it as the key to health reform and sustainability. Yet the public remains confused about what it means and what it promises, while the term means different things to different people within the system. This year we explore the issues, describe what has taken place, and as always, present the data where data exist. Doubtless future reports will examine how the new funding influenced the course of PHC development across the country.

Romanow, Kirby, and a New Approach

In Canada, hockey, the weather, and debating health care issues vie for pre-eminence as our national pastime. In health care, we establish task forces, inquiries, and commissions to fine-tune the diagnoses and recommend solutions. The provincial reports of the 1980s coalesced around major themes, such as regionalization of health care delivery; an emphasis on wellness, prevention, and population health; and calls for primary health care reform.

Then came the fiscal restraint of the 1990s, culminating in a four-year period—from 1993 to 1997—where pan-Canadian public sector health care budgets were frozen or reduced for the first time since Medicare was adopted by all provinces in 1972. Since 1997, health spending has increased at an unprecedented rate and is at an all-time high, even after taking into account inflation and population growth.

History teaches us that money alone neither causes problems in health care nor solves them. Public spending on health care is $17.5 billion higher in 2002 than it was in 1997 and most patients are satisfied with the care that they receive, yet no one would claim the system is trouble-free. Recently, several provinces and Ottawa saw fit to re-examine the structure of a system that had become the number one source of public demands for government action.

The turn of the 21st century saw the publication of three major provincial reports: Clair in Quebec, Mazankowski in Alberta, and Fyke in Saskatchewan. While all three reaffirmed earlier commitments to a population health perspective, the emphasis was clearly on getting the health care house in order. These reports collectively revealed a growing diversity of opinion on how the system should be organized and financed. Both Clair and Mazankowski expressed some degree of pessimism about the sustainability of the system in light of constant pressures for governments to add more money, potentially crowding out other public programs. As a result, both called for more private financing, through measures such as the purchase of long term care insurance (Clair) and the examination of ideas such as medical savings accounts (Mazankowski). Fyke took another tack, arguing that the main problem with the system was an inattention to quality improvement, which if addressed would also save money. All three agreed on the importance of reforming primary health care and improving information systems.

Not one, but two federal inquiries were also announced. The Standing Senate Committee on Social Affairs, Science and Technology, chaired by the Hon. Michael Kirby, began its work in 2001. In addition, the government appointed former Saskatchewan Premier Roy Romanow to head the Commission on the Future of Health Care in Canada. Kirby issued the last of his six volumes in October 2002; Romanow reported a month later.

The two reports agree on some fundamental issues and disagree on others. Among them:

- Kirby maintains that the current system is unsustainable while affirming that a single payer, the public system, is most efficient and equitable. Romanow contends that the system is as sustainable as Canadians want it to be and points out that the system still consumes less of the GDP than it did in 1992.
- Both call for more money from Ottawa—on the order of $2 to $5 billion a year. Kirby advocates a dedicated tax to pay for the additional funding, while Romanow does not.
- Romanow argues strongly against greater for-profit roles in publicly-financed health care on the grounds that it provides inferior quality at higher cost. Kirby says we should be open to any arrangement that improves quality and efficiency.
- Both—Romanow emphatically—add their voices to the call for primary health care reform, and both call for improved palliative care. They also recommend a significant expansion of entitlements to cover catastrophic drug costs and more comprehensive home care, albeit with some differences in program design.
- Both argue for a national Health Council to strengthen accountability, although their proposed structures differ.

Polls consistently show that Canadians want both levels of government involved in, and accountable for, health care. In February 2003, the provincial First Ministers and the Prime Minister reached a new Accord, followed quickly by the federal budget of

February 18. In the lead-up to the agreement (termed an "arrangement" by some provinces), the main point of contention was conditionality: the provinces in the main argued for more money with no strings attached, while Ottawa indicated that having added major and mostly unconditional funding in September 2000, this time around there must be a quid pro quo.

The Accord did build in a number of conditions, some of which picked up on the Romanow and Kirby recommendations, including major funding and targets for primary health care reform, catastrophic drug coverage, some types of home care, and a Health Council. There was also an expansion of plans to report on comparable health indicators (the first reports on indicators agreed to in 2000 having been issued in September 2002). In the end, the federal government committed to spending several billion a year more than had already been promised in 2000. Notably, the three territorial leaders initially declared their opposition to the Accord on the grounds that the promised funding increases would not adequately address their populations' poor health status and costs associated with their geography. Subsequently, Ottawa added a $60 million cash floor for health care in the short-term to the per capita transfers under the Accord.

Health Human Resources

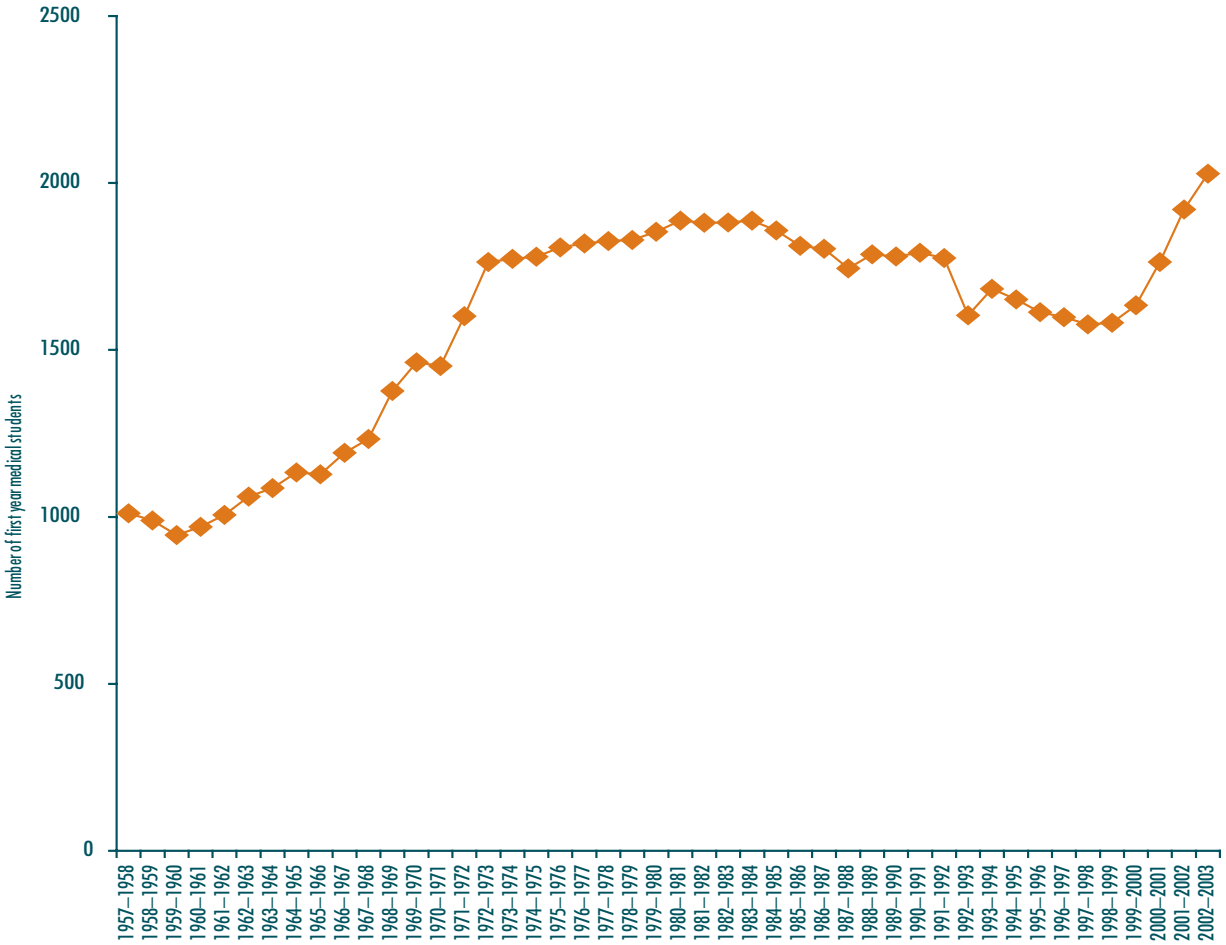
For those working in the system, a major issue continues to be health human resources (HHR). Have we enough personnel in the right places to provide care? Is the system using people's skills to the fullest? Is the health care workplace healthy? How quickly can we increase capacity? Improving HHR planning and capacity has been a consistent theme in recent provincial and national reports. Last year we outlined some of the factors that appear to be affecting HHR supply. Among the major initiatives that have happened since:

- Plans to double medical school enrolment (from 128 to 256 first year students) within four years moved ahead at the University of British Columbia, in partnership with the University of Northern British Columbia and the University of Victoria, making it Canada's largest. Several other medical schools also have plans to expand. The number of training spaces for other health professions in some colleges and universities is also increasing.
- The government of Quebec, concerned by the lack of service in emergency rooms in rural areas, introduced draft legislation that if passed would obligate doctors to work in designated settings to ensure continuous coverage. The announced plans sparked major opposition from the medical societies, resulting in an attempt to negotiate rather than legislate a solution.
- A new national report on improving the quality of nursing life added to the calls for urgent action to address nursing shortages. The report also focused on the need to improve nurses' education, maximize their scope of practice, and enhance working conditions.[1]
- There is growing awareness of the prominent role International Medical Graduates (IMGs) play in serving many parts of Canada. As of 1997, they were almost 26% of the total physician workforce, but ratios are much higher in some communities. Many more graduates live in Canada but are not licensed to practice in this country. There are active programs in several parts of the country to address licensing issues. For instance, Ontario announced that it will launch its own accreditation process for IMGs, a function previously left to the Royal College of Physicians and Surgeons of Canada.

- Questions continue to be raised about what should be the minimum entry-to-practice requirements for different health professions and how broad each profession's scope of practice should be after licensure. In some cases, pushes for higher entry-level credentials to reflect changes in health care and advances in science were countered by concerns about the impact of such measures on the ability to attract and retain adequate numbers of personnel whose training is well-matched to the work they will be doing.

Becoming a Doctor 1

Just over 1,000 students entered medical school in 1957–1958.
Numbers are higher now, but there have been increases and decreases over time.



Notes: No students were admitted at the University of Saskatchewan in 1987–1988 or University of Montreal in 1992–1993.
Counts for the University of Western Ontario were estimated in 1997–1998.

Source: Canadian Medical Education Statistics, 2001, Association of Canadian Medical Colleges, www.acmc.ca (data for 2001–2002 and 2002–2003 by special request)

View Data

The Science—and Controversy—of Medicine

Rarely a week goes by without major news stories of medical breakthroughs and setbacks, sometimes turning conventional wisdom upside down. It is impossible to do justice to the research and therapeutic advances on so many fronts in a short summary. But some stories stood out as especially relevant to patients and the public. Among them:

- A major trial on the effects of long-term hormone replacement therapy (HRT) shook both clinicians and patients. Researchers terminated the estrogen-plus-progestin trial of the Women's Health Initiative three years early because data revealed that women were at elevated risk for invasive breast cancer, pulmonary embolism, and heart disease (while benefiting from a reduced risk of colorectal cancer and hip fracture).[2,3,4] Statistics Canada data suggest that around 1.2 million Canadian women age 30 and older reported using HRT in 1998–1999. In a January 2003 poll commissioned by Eli Lilly, 44% of women over age 50 who had used HRT reported discontinuing the therapy in the past year and another 32% said they plan to in the coming months.
- On the clinical front, we learned again that sometimes remarkably effective therapy is old and cheap. Researchers at 70 centres in 17 countries studied the effect of aspirin therapy following coronary artery bypass graft (CABG) surgery. Aspirin reduced mortality by two-thirds, fatal and non-fatal heart attacks by 44%, fatal and non-fatal strokes by 62%, and renal failure by 60%.[5]
- Recent research on obesity heightened awareness of what has been described as North America's emerging pandemic. An American study published in January 2003 reported that serious obesity greatly diminishes life expectancy (by as much as 20 years among black males).[6] A Canadian study charted the increase, over a 45 year period, in the proportion of the adult population either overweight (an estimated 51%) or obese (an estimated 15%).[7] Among children the obesity rate tripled between 1981 and 1996.[8] These findings raise the alarm that the continuous improvement in overall population health status that has occurred since good data became available in the last century may not continue.

Making Healthier Choices

Imagine a world where everyone had enough good food to eat, no one smoked, no one drank alcohol excessively, people got enough exercise, and there was no such thing as "unsafe sex". Next imagine how this would change our health and our need for health care services. According to the World Health Organization's (WHO) newest report on world health,[9] this dream is a long way off—people in all walks of life continue to "live dangerously". And the gap between the "haves" and the "have-nots" is widening even in some of the world's wealthiest countries.

Did You Know That... 2

- In 2000 there was about an 11-year gap in life expectancy among the OECD countries. Japan had the highest (81 years) and Turkey the lowest (69 years).
- In the same year, there was an almost 11-year gap in life expectancy between Canada's provinces and territories. For example, people living in British Columbia had a life expectancy of about 81 years, whereas those living in Nunavut had a life expectancy of 70.
- Important differences also exist between regions of a province. For example, life expectancy in the Laval region of Quebec was 79 years between 1995 and 1997, compared with 65 years for the Nunavik region.
- Even within a region, there are sometimes gaps of a decade or more. For example, between 1997 and 1999, life expectancy in different municipalities on the island of Montreal ranged from 71.6 to 82.3 years.

Sources: Organization for Economic Development. (2000). OECD Health Data 2002: Comparative Analysis of 30 Countries (CD-ROM). Paris: OECD and CREDES.

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Making Healthier Choices

While most Canadians can expect to have a long life (79 years in 2000), according to the WHO's newest report, all countries in the world could add many more years to their life expectancy if they were to reduce the effects of the 20 leading risk factors affecting health. The top 10 worldwide are:

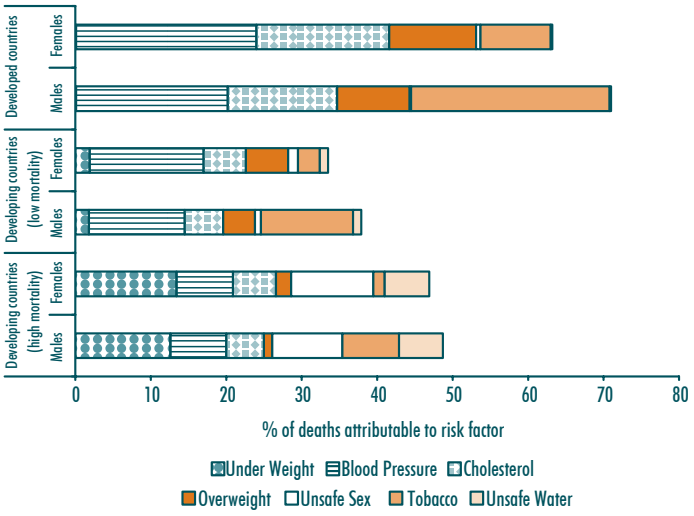
- underweight
- unsafe sex
- high blood pressure
- tobacco consumption
- alcohol consumption
- unsafe water, sanitation, and hygiene
- indoor smoke from solid fuels
- iron deficiency
- obesity
- high cholesterol

According to WHO, these 10 risk factors account for more than one-third of all deaths worldwide. But, these risk factors aren't distributed evenly. While deaths in developed countries are more likely to be attributable to factors like high blood pressure, high cholesterol, obesity, and tobacco use, deaths in developing countries with high mortality are more often related to factors such as underweight, unsafe water and sanitation, and unsafe sex.

Overall, if Canadians were to eliminate these and other risk factors, WHO estimates that we might add as much as about six years to our life expectancy. That's more than some countries (such as Australia at four years) but less than many developing countries. It has been estimated that an equivalent increase in life expectancy would require the elimination of all deaths from the two leading causes of death, cardiovascular disease and cancer.[10]

Living Healthier Lives 3

How we live affects how long we live. In their latest report, the World Health Organization focused on 20 risk factors that affect health. They considered these risk factors in relation to their impact on life expectancy and found that the risk factors are distributed unevenly across rich and poor countries. The percent of deaths attributable to seven of the top 10 risk factors for males and females in developing and developed countries is shown below.

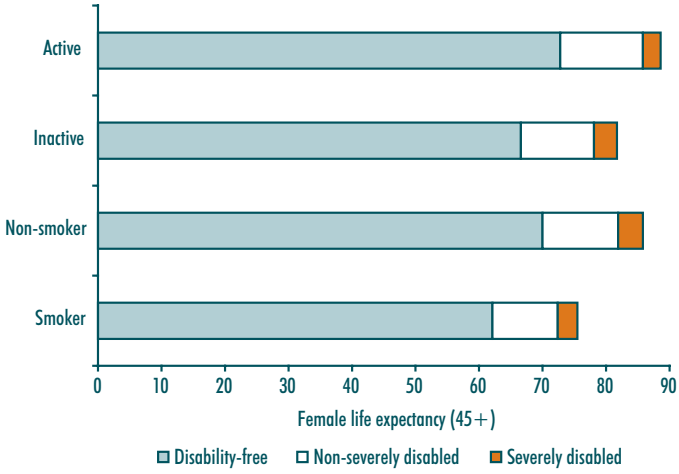


View Data

Source: World Health Organization. (2002). *The World Health Report 2002: Reducing Risks, Promoting Healthy Life.* Switzerland: WHO

Life Expectancy, Lifestyle, and Disability 4

Recent research by Statistics Canada shows the difference that even one or two risk factors can make. For example, as shown below, inactivity and smoking among Canadian women may have an effect not only on life expectancy but also on how long women live disability-free.



Source: Belanger A, Martel L, Berthelot JM, Wilkins R. (2002). Gender differences in disability-free life expectancy for selected risk factors and chronic conditions in Canada. *Journal of Women & Aging,* 14(1–2), 61–83.

View Data

Regionalization of Health Care

5

In the late 1980s and the 1990s, most provinces and territories regionalized the delivery of health care. In some areas, the restructuring has continued to evolve. The table below updates the information on regionalization from last year's report.

Jurisdiction	No. of Regional Health Authorities (or Equivalent)	Established	Restructured	Governance Model
N.L.	Two parallel structures: one for community health, the other for institutional health. There are 12 boards in total with 6 Institutional Health Boards (IBs), 4 Health and Community Services Boards (HCSBs), and 2 Integrated Boards.	1994	1998 (restructured to include selected social services)	Appointed
P.E.I.	4 Regional Health Authorities (RHAs) and one Provincial Health Services Authority.	1993 and 1994	2002	Elected/appointed
N.S.	9 District Health Authorities.	1996	2001	Appointed
N.B.	8 RHAs. One region has two RHAs, one French speaking and one English speaking.	1992	2002	Currently appointed, but will move to elected/appointed by 2004
Que.	18 régies régionales de la santé et des services sociaux (RRSSS).	Between 1989 and 1992	2001 (governance changed from elected board to appointed board)*	Appointed
Ont.	Not regionalized, 16 District Health Councils (advisory role).	(1974)	(2001)	(Appointed)
Man.	11 RHAs.	1997 and 1998	2002	Appointed
Sask.	12 RHAs and 1 Northern Health Authority.	1992	2001–2002	Appointed
Alta.	9 RHAs.	1994	2003	Appointed
B.C.	5 RHAs, 16 Health Service Delivery Areas, and 1 Provincial Health Services Authority.	1997	2001	Appointed
Nun.	Not regionalized.	N/A	N/A	N/A
N.W.T.	7 Health and Social Services Authorities.	1988	Will move from 7 to 8 Health and Social Services Authorities during 2003	Appointed
Y.T.	Not regionalized.	N/A	N/A	N/A

* The recently elected Quebec Liberal Party has announced further restructuring plans.

Source: Adapted from Canadian Centre for Analysis of Regionalization and Health

Public Health Challenges

Public health is a never-ending challenge. Instead of waterborne disease outbreaks in Walkerton and North Battleford, public attention is now focusing on the West Nile Virus (WNV) and Severe Acute Respiratory Syndrome (SARS). Almost predictably, new threats to public health surface adding to those of previous years. Sometimes the concerns are seasonal: flu in winter, insect-borne viruses in summer.

The WNV is a mosquito-borne flavivirus originally isolated in 1937 in the West Nile district of Uganda. It was first detected in the Western Hemisphere in 1999, and in Canada in 2001. As of March 14, 2003, Health Canada reported 398 confirmed or probable WNV infections and 17 deaths in 2002.[11] Public health officials are also gearing up for the 2003 season. In February, hundreds of experts met in Minneapolis to devise strategies for reducing risks and protecting the population. Health Canada, in cooperation with provincial governments and several agencies, has developed a multi-pronged WNV control strategy that includes surveillance, public and provider education, and response and prevention. The goals are to inform the general public to adopt protective measures and to reduce the mosquito population in the environment.

At the time of writing, considerable public and health sector attention was also focused on SARS. Questions remain about the nature of the SARS virus, but it may be part of a family known to cause diseases like mumps, measles, pneumonia, and even the common cold.[12] As of April 27, 2003, Health Canada was reporting 343 probable or suspect cases in Canada—143 probable and 200 suspected. At that

time, 20 deaths had been attributed to the recent outbreak. In response to the infectious nature of the syndrome, British Columbia, Ontario, and P.E.I. have made SARS a reportable disease.[13] This means that managing the disease falls under legislation such as Ontario's Health Protection and Promotion Act, allowing public health officers to track its movement and issue orders to stop infected people from engaging in activities that may transmit the disease. Increasingly, attention is also being focused on the economic impact of SARS.

Regionalization—Redrawing the Map

Regionalization is one of Canada's longest-running innovations in health care organization. As has become the norm, a number of provinces reconfigured their regions over the past year. Alberta collapsed its 17 Regional Health Authorities (RHAs) into nine, effective April 1, 2003. They also changed their governance model. In the fall of 2001 Alberta had become the second province (after Saskatchewan) to have two-thirds of its board members elected by popular vote. The nine new boards, however, are currently all appointed, mirroring the experience in Saskatchewan when it collapsed 32 district boards into 12 RHAs in August 2002. In contrast, New Brunswick has announced plans to move to elected boards in 2004. Prince Edward Island recently carried out its plan to amalgamate two health authorities and establish a Provincial Health Services Authority for specialized services. British Columbia and Nova Scotia reconfigured their regions in 2001—British Columbia reducing to five, while Nova Scotia increased the number from four to nine. Ontario remains the only province without regional health authorities, although its District Health Councils have an advisory role.

In December 2002, the Canadian Centre for the Analysis of Regionalization and Health (CCARH) released the results of its second cross-country survey of regional health authority (RHA) board members, senior managers, and government officials.[14] The response rates were 50% for board members, 52% for regional CEOs, and 38% for health ministry officials. Among the major findings:

- Support for health reform remains strong across the country, but a third of respondents believe that service quality has declined as a result of rapid changes and inconsistent funding. Respondents from the west are generally more positive than those in Quebec and Atlantic Canada.
- RHA respondents tend to believe they are too restricted by provincial governments; health ministry officials generally disagree.
- Only half of board members, and a third of RHA CEOs and health ministry officials, believe the division of authority between RHAs and provincial governments is clear. In the Centre's previous (1997) survey, Saskatchewan health ministry respondents disagreed with this perception, but in 2002 they, too, sensed the uncertainty.
- The longer one serves on a board, the rosier the outlook. For example, only 24% of board respondents with less than a year of service believe health reform has improved quality, compared to 56% of those with at least three years of experience.
- 71% of all government respondents, but only a quarter of those with RHAs, believe vested interests have too big a say in board decisions.

Regionalization, like health care in general, is a work in progress. As information systems and evaluation methods improve, the successes and challenges of this and other "natural experiments" should become more apparent.

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Primary Health Care

Twenty-five years ago, international experts gathered in Alma-Ata to craft a vision of universal, quality health care for all. Since then, the world map has changed dramatically. Alma-Ata, then part of the Soviet Union, is now the capital of independent Kazakhstan. In contrast, the principles laid down at the conference continue to be a point of reference for developing and developed nations.

Alma-Ata participants defined primary health care as:

> *Essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and [the] country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part of both the country's health system, of which it is the central function and [the] main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and [the] community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.*[1]

How best to organize and deliver these everyday health services is one of the enduring challenges of Canadian health policy. Even before Alma-Ata, a federal report promoted the development of community health centres. It also recommended multidisciplinary teams, integration of prevention and health promotion, and strong consumer participation.[2] Since then, many different approaches have been tried, from small pilot projects to larger on-going programs. Nevertheless, physician-centred private practice continues to be the dominant model of primary health care delivery in Canada today.

That said, recent federal and provincial commission reports continue to call for change. They have identified primary health care renewal as key to the future of our health care system. Chapter 2 explores their proposals and how they relate to both previous reform efforts and current practice. Chapter 3 profiles the thousands of health professionals who provide primary health care across the country. It also describes some of the many settings in which they work. Finally, Chapter 4 offers snapshots of what we know and don't know about family doctors and the care that they provide.

2

Primary Health Care in Transition?

2 Primary Health Care in Transition?

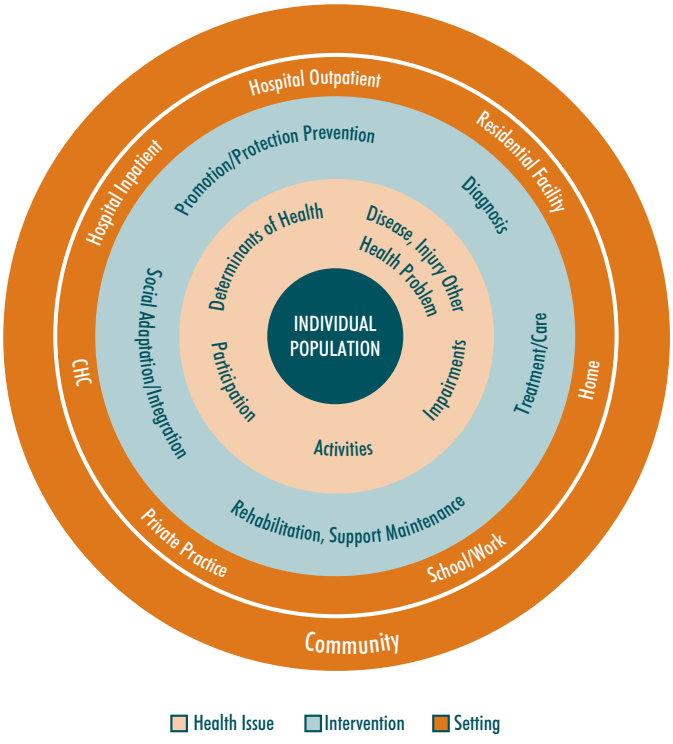
In many ways, primary health care is to the health sector what the three R's are to education. Just as reading, writing, and arithmetic are fundamental skills that open the door to further learning, primary health care services are the basic tools for health improvement and illness care, and are often the gateway to other health services.

The term "primary health care" describes the services we receive at first contact with the health system—perhaps in a physician's office, health clinic, pharmacy, or community health centre. Well-baby visits, initial tests to screen for disease, telephone help lines, and routine care for minor and on-going health problems are examples of this level of care.

Many different health professionals provide primary health care in a wide variety of settings. Primary health care providers can also refer patients to secondary and tertiary levels of care. Somewhere in between are services such as home, long-term, and palliative care, potential focus topics for future reports. Ultimately, as **Figure 6** shows, there is a continuum of health services.

Bringing Together Health and Health Care 6

Individuals and populations are at the centre of the model of health and health services shown below. Also identified in the model are issues or factors that can be associated with how we develop health problems; that relate to diseases, injuries, illnesses, or other health problems; and that are pertinent to the consequences of diseases. Primary health care providers are active throughout, promoting health, preventing disease, managing chronic diseases, and caring for those who have minor illnesses or injuries.



Source: Canadian Institute for Health Information

Achieving The Vision: The Long Road Forward

In February 2003, first ministers agreed to accelerate primary health care reform. Their decision followed a series of recent federal and provincial commission reports[3,4,5,6,7,8] that concluded that primary health care renewal was essential.

This degree of consensus on the need for primary health care renewal and its objectives is not new, either in Canada or around the world. Researchers funded by the Canadian Health Services Research Foundation, the New Brunswick Department of Health and Wellness, the Quebec Ministry of Health and Social Services, Saskatchewan Health, and Health Canada recently reviewed the global literature and identified six commonly-cited objectives for physician delivered primary health care:[9]

- **Effectiveness:** Ability to maintain or improve the health of individuals and populations.
- **Continuity:** Service delivery without interruption from start to end of a care episode.
- **Quality:** Perception and degree of conformity with recognized professional standards.
- **Productivity:** Relationship between the services produced and the resources used to produce them, measured in terms of cost reduction and declines in use of other levels of care.
- **Responsiveness:** Consideration and observance of the expectations and preferences of users or service providers.
- **Accessibility:** Ability to make contact with health services without distinction based on characteristics such as age, socio-economic status, and ethnic origin.

Primary Health Care: A Report on the Reports 7

Recent reports on shaping the future of Canada's health care system agree that primary health care reform is needed. While their specific recommendations differ, there is consensus on some of the major objectives of primary health care reform. The table below summarizes features of the approaches recommended in six recent reports on health care renewal. Other jurisdictions have also issued more focused studies on primary health care.

	Romanow (2002)	Kirby (2002)	NB (2002)	AB (2001)	SK (2001)	QC (2000)
Why reform?						
Expansion of 24/7 access	✓	✓	✓	✓	✓	✓
Prevention and health promotion	✓	✓	✓	✓	✓	✓
Better continuity of care & chronic disease management	✓	✓	✓	✓	✓	✓
Recommendations for action						
Interdisciplinary teams	✓	✓	✓	✓	✓	✓
Electronic health record	✓	✓	✓	✓	✓	✓
Integration of health and social services	✓	✓	✓	✓	✓	✓
Alternative payment methods for physicians	✓	✓	✓	✓	N/A*	✓
Family medicine groups/ networks	N/A	N/A	N/A	N/A	✓	✓
Community health centres/ primary health centres	N/A	N/A	✓	N/A	✓	N/A

* The report notes that fee-for-service payment is a problem but does not specifically recommend alternative forms of payment for physicians.

Source: Compiled by CIHI

A Transition from Primary Medical Care to Primary Health Care

8

Achieving the Alma-Ata vision for primary health care means major changes in health care systems, according to experts. The chart below shows one view—that of Barbara Starfield, a Professor at Johns Hopkins University—of the transition from primary medical care to primary health care.

Primary Medical Care	Primary Health Care
Focus	
Illness	Health
Cure	Prevention, care, cure
Content	
Treatment	Health promotion
Episodic care	Continuous care
Specific problems	Comprehensive care
Organization	
Physicians in solo practice	Health professionals working in teams
Responsibility	
Health sector alone	Intersectoral collaboration
Professional dominance	Community participation
Passive reception	Joint responsibility

Source: Adapted from Starfield B. (1998). *Primary Care: Balancing Health Needs, Services, and Technology*. 2nd Ed. New York: Oxford University Press. (Adapted from Vuori, 1985)

Similar objectives have inspired considerable innovation in primary health care since the 1960s, although many argue that there has been little widespread, lasting change. Researchers have identified three waves of reform leading up to current initiatives:[10]

1970s: Alternative Delivery and Organization Models Emerge

Following early primary health care projects (e.g. community clinics in Saskatchewan and the Group Health Centre in Sault Ste. Marie) in the 1960s, several new models of primary health care surfaced in the 1970s. Examples include Quebec's CLSCs (Centres locaux de services communautaires), Ontario's HSOs (Health Services Organizations) and CHCs (Community Health Centres), and similar initiatives in other provinces. Most programs emphasized the involvement of teams of health care providers, particularly nurses and nurse practitioners.

1980s: Primary Health Care Teams Expand

In the 1980s, various initiatives in different provinces supported expanded roles for non-physician primary health care providers. For example, new scope of practice legislation was passed for optometrists, physiotherapists, and other allied health professionals in some jurisdictions (see also Chapter 3, "Many Providers, Many Settings"). The late 1980s also saw the beginning of regionalization. Nevertheless, although regional health authorities became responsible for the delivery of many types of health services, fee-for-service funding for physicians remained the responsibility of provincial governments.

1990s: The Age of Pilot Projects—Testing Change

Along with other health reform initiatives, all provinces undertook pilot and demonstration primary health care reform projects in the 1990s. The projects focused generally on alternative methods of organization, delivery, governance, funding, and/or remuneration. Most included interdisciplinary practice or an expanded role for nurses. Between 1997 and 2002, the $150 million federal Health Transition Fund supported a number of these projects. Provincial governments and other sources also provided funding for pilot projects.

What lessons have been learned? Researchers recently summarized results from the Health Transition Fund projects.[11] Under this program, a range of projects addressed the needs of different populations in different ways. The synthesis of results captured a variety of insights about the effects of focusing on health promotion and prevention, group practice and multidisciplinary teams, and expanded nursing roles. Evaluations of the pilot projects also brought to light common issues, such as under what circumstances different models of care work best and how to address legal barriers to collaborative practice among different types of health professionals.

Primary Health Care Models: Research Suggests One Size Does Not Fit All

Many of the pilot projects and earlier initiatives shared similar objectives, but they used a wide variety of approaches to try to achieve their goals. Researchers funded by the Canadian Health Services Research Foundation (CHSRF), the New Brunswick Department of Health and Wellness, the Quebec Ministry of Health and Social Services, Saskatchewan Health, and Health Canada recently grouped the many different models of care that include family physicians into four categories:[9]

- "Integrated" and "Non-Integrated" Community-Based Models: Community-based models aim to meet the health needs of people living in a particular area and to support community development. Integrated and non-integrated organizations generally offer the same range of services and both include caregivers from many professions. The difference lies in the degree to which they have links with the broader health care system. Researchers suggested that information technology and/or service contracts with other health care providers may facilitate these links.
- "Coordinated Professional" and "Professional Contact" Primary Health Care Models: In both "professional" models, individual physicians or a group of physicians aim to offer medical services to patients who contact the practice or to individuals who subscribe to primary health care services from the practice. In the coordinated professional model, physicians are often paid by capitation. The focus is on providing continuous service to the patients who have signed up with the practice. In the professional contact model, physicians are usually paid on a fee-for-service basis. Researchers suggest that this model tends to have less integration with the other parts of the health care system.

The Models in Action 9

Researchers suggest each of the four models of primary health care identified in the CHSRF policy synthesis exists in Canada today. While Canada has a predominantly professional contact model of primary health care, countries such as Sweden and Finland have predominantly community models. Most of their residents receive primary care services in health centres run by municipal governments. They differ in their level of integration with other levels of care. Examples are shown below.

Community Models		Professional Models	
Non integrated	Integrated	First contact	Coordination
CLSCs in Quebec (urban areas)	CLSCs in Quebec (rural areas)	Predominant in Canada Family physician in the community	Health Services Organizations in Ontario
Sweden	Finland	Belgium US (open models)	Denmark Netherlands UK (after fundholding) US (HMO staff model)

Source: Lamarche PA, Beaulieu MD, Pineault R, Contrandiopoulos AP, Denis JL, Haggerty J. (2003). *Policy Synthesis on Primary Healthcare*. Prepared for the Canadian Health Services Research Foundation, New Brunswick Department of Health and Wellness, Saskatchewan Health, Quebec Ministry of Health and Social Services, and Health Canada

After reviewing the literature and gathering expert opinion, the researchers concluded that no single model performed best on all six objectives of primary health care. In their opinion, the integrated community-based model and, to a lesser degree, the coordinated professional model came closest. Nevertheless, these models still had weaknesses. For example, the former did not score as well as others on accessibility (which includes both overall access and equal access) and responsiveness. Researchers felt that the professional models performed better in these areas, but not as well on effectiveness, continuity, and equal access.

For more information, see www.chsrf.ca.

A New Century

Seen as a way to achieve better use of resources, access, coordination, and quality of care,[3] primary health care renewal is at the heart of plans to reform health care for the 21st century. The architects of these reforms aim to transform health care as we know it. Their plans for change touch every aspect of the health system.

Where We Are Starting From

Almost everyone experiences primary health care. In 2001, more than 23 million Canadians aged 15 and older (94%) accessed at least one type of "first contact" health service. They sought routine or on-going care, immediate care for a minor health problem, and/or health information or advice.

Where Canadians turn first for these types of care depends on when they need help. Family doctors' offices are the leading place for care during regular office hours (9 to 5, Monday to Friday). Outside these hours, the picture changes. For example, Canadians who need immediate care for minor health problems on weekends and evenings are most likely to go to a walk-in clinic or emergency department. If problems arise in the middle of the night, almost everyone (93%) seeks help at a hospital or its emergency department.[12]

A recent study compared patient satisfaction and quality of care in 12 walk-in clinics, 16 fee-for-service family practices, and 13 emergency departments in Ontario cities.[13] Patients seeking initial care for one of eight common acute conditions were included in the study. Quality of care was measured as the proportion of guidelines agreed to by a consensus panel of expert clinicians that were followed. It tended to be highest in emergency departments (mean score of 73%) followed by walk-in clinics (70%), and family practices (64%), after adjusting for a range of patient characteristics. In contrast, walk-in clinic patients were more satisfied with patient-centred communication, the physician's attitude, and delays in the waiting room than emergency department patients. Family practice patients tended to be more satisfied than those cared for in walk-in clinics, but the difference was only statistically significant for waiting times.

Accessing Care 10

Canadians who need care tend to seek first contact services in different places at different times of the day. The chart below shows where Canadians aged 15 and older reported that they were most likely to seek routine care and immediate care for minor health problems for themselves or a family member during regular office hours (9 a.m. to 5 p.m., Monday to Friday), evenings (5 p.m. to 9 p.m.) and weekends, and at night in 2001.

Setting	Routine or On-Going Care			Immediate Care for Minor Health Problems		
	DAY	EVENING/ WEEKENDS	NIGHT	DAY	EVENING/ WEEKENDS	NIGHT
Family doctor's office	80%	20%	N/A	49%	8%	**
Walk-in clinic	12%	42%	N/A	23%	34%	1%*
Hospital or emergency department	4%	32%	N/A	23%	53%	93%
Community health centre	3%	4%*	N/A	4%*	3%*	**
Other	1%*	2%*	N/A	1%	1%*	**

Notes: * Interpret with caution due to high sampling variability.
** Data too unreliable to be published due to high sampling variability.
May not add up to 100% due to rounding or non-response.

Source: Statistics Canada. (2001). Access to *Health Care Services in Canada, 2001*. Catalogue no. 82-575-XIE. Ottawa: Statistics Canada.

Such large-scale reform is rarely easy, as previous change architects have found. For example, the Romanow Commission argued that primary health care reform goes "against entrenched practices in the prevailing culture of our health care system and it sometimes runs into powerful interests and long-standing privileges."[3] The report cited a range of obstacles to reform, including:

- The central and predominant focus on hospital and medical care;
- Increasing professional specialization;
- Fragmented health care delivery;
- Lack of health information;
- Limited control by patients over their own care; and
- The marginal nature of prevention and promotion activities.

The Senate Committee chaired by Senator Kirby identified some of the same structural weaknesses in our current primary health care system. Witnesses who appeared before the Committee also focused on specific barriers to reform, including:[4]

- Shortages of qualified personnel;
- The vested interests of various professional groups (although other witnesses argued that primary health care reform will only succeed if adopted voluntarily by health professionals);
- Fee-for-service as the dominant method of physician remuneration;
- High start-up costs; and
- The absence of electronic information infrastructure.

These challenges have not stopped the development of plans to move ahead. First ministers have repeatedly identified primary health care renewal as a priority for action and initiatives are already underway in many jurisdictions. Appendix I describes current activities across the country. Additional resources have also been earmarked for further primary health care reform. For example, first ministers identified primary health care reform as a priority for investment under the new five-year $16 billion Health Reform Fund (part of the February 2003 Accord on Health Care Renewal).[14]

11

Targets for Reform

Several governments have recently set multi-year targets for future reform efforts. Examples are shown below. Many represent ambitious steps beyond where we are today.

Jurisdiction	Target	Target Date
Federal/Provincial First Ministers	• 50% of residents in each province and territory with access to appropriate health care providers, 24 hours a day, seven days a week	2011
Newfoundland and Labrador	• 100% of residents registered with a primary health care network • 95% of people within 60 minutes of 24/7 primary health care	2007 2007
Nova Scotia	• Evaluation of five pilot multidisciplinary health care teams that include nurse practitioners • Development of a telecare phone line, interactive Web site, and audio-tapes in both official languages (in partnership with the other Atlantic provinces) • Implementation of a province-wide hospital information system that supports a shared electronic health record across levels of care	2003 2004 2005
New Brunswick	• First four community health centres established	2003
Quebec	• 100 primary care organizations (Family Medicine Groups) offering 24/7 services • CLSCs open seven days a week for a minimum of 70 hours a week	2003 2003
Ontario	• 80% of Ontario's family physicians practicing in Family Health Networks	2004
Manitoba	• Develop a regional primary health care plan based on Manitoba Health's Primary Health Care Policy Framework	2004
Saskatchewan	• Province-wide access to a telephone advice service • Health services networks and teams available 24/7 which can be accessed by 100% of the population • 80% of family physicians participating in primary health care models	2003 2011 2011
Alberta	• Province-wide access to telephone based health information • Development of province-wide health information technology standards • Increase the use of care groups and take on new approaches to care for people with chronic diseases • 50% of physicians moving into alternative payment plans, such as rosters, contracts, or salaries	2003 2003 2005 2005
Northwest Territories	• A self-care handbook published and distributed to all households in the NWT • Establish a 1-800 family health and social supports call centre • Formalize an integrated Health and Social Services Delivery Model for the NWT • Establish integration demonstration projects based on the Primary Health Care model	2003 2003 2003 2003

Source: Compiled by CIHI

What do Canadians Think about Primary Health Care Reform?

Recent polling data collated for the Romanow Commission from various sources suggest that many Canadians would be supportive of some key aspects of primary health care reform.[15] For example:

- More than half (54%) of those polled by EKOS in 2000 said they would be willing to consult with a general or specialized nurse working with a doctor for routine care such as regular check-ups for blood pressure monitoring, diabetes care, and ear and throat infections.
- Of those polled by the Saskatchewan Commission on Medicare in 2001, 49% felt that Primary Health Service Teams would improve the quality of health services, while 14% felt they would have a negative effect on quality. The remaining 37% were not sure or did not respond.
- Of those polled in 1999 by EKOS, 74% said they would prefer having a family physician who worked as part of a team rather than solo.

Information Gaps: Some Examples

What We Know

- Recent reports on the future of health care recognize primary health care renewal as central to the sustainability and revitalization of Canada's health system. Many other countries are also embarked on or are debating primary health care reform.
- Many different primary health care models have been, and are, used across the country and around the world. Research suggests that no single model is best in all circumstances.
- Physicians' offices remain the most common point of first contact for primary health care services during regular office hours. During evenings and weekends, Canadians turn to a mix of settings for their care. Hospitals or their emergency departments take the lead for care at night.

What We Don't Know

- How is Canadians' use of different forms of first contact health services changing over time? How is this affecting the extent to which first contact care is integrated with other parts of the health care system? What effect are these changes having on their health outcomes, access to care, satisfaction, and health care expenditures?
- How will current and planned primary health care renewal initiatives affect population health, costs, patient and provider satisfaction, and quality of care? What are the appropriate means and indicators with which to monitor implementation and evaluate the performance of primary health care models?

What's Happening

- Provincial/territorial initiatives are underway to pilot and implement new models of primary health care. In some cases, these initiatives are supported through the new Primary Health Care Transition Fund (PHCTF), an $800 million investment ending March 2006. They may also be supported by provincial/territorial investments and other funding sources.
- First ministers have committed to ensuring that at least 50% of their residents have access to an appropriate health care provider, 24 hours a day, seven days a week, by no later than 2011.

For More Information

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3

Many Providers—Many Settings

3 Many Providers—Many Settings

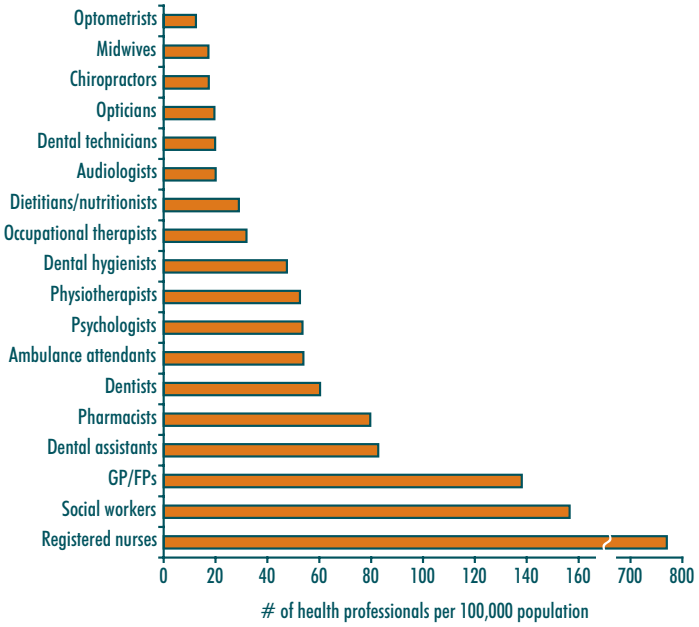
Primary health care is delivered throughout the communities in which we live. It takes place in schools, workplaces, homes, health centres or clinics, practitioners' offices, and elsewhere. It is also available through phone, Internet, and other health information and advice services.

The types of people providing care vary as much as the settings in which services are offered. When Canadians need primary health care services, they often contact family doctors. But they may also consult dentists, nurse practitioners, pharmacists, physiotherapists, complementary and alternative care providers, or others.

As plans for primary health care renewal move forward across the country, it is important to understand the current situation. This chapter looks at what we know about people involved in delivering primary health care, the places that they work, and the services that they provide. More detailed information for family doctors is presented in Chapter 4.

Canada's Primary Health Care Providers 12

The chart below shows the rate of practitioners per 100,000 Canadians in 2001 for selected health occupations who may provide primary health care. In some cases, these professionals also provide other levels of care. For example, over 60% of registered nurses worked in hospitals in 2001.



View Data

Source: 2001 Census, Statistics Canada

Providers of Primary Health Care Services

Thousands of professionals, drawn from dozens of different occupations, provide primary health care. This wide range includes, but is not limited to, many types of regulated and some unregulated health professionals.

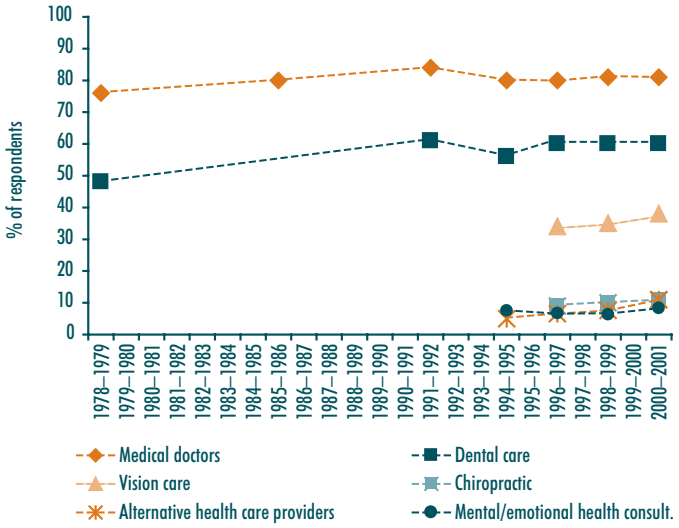
The skills and roles of these primary health care providers vary across the country. In some provinces, legislation may only allow licensed members of a particular profession to perform specific tasks.[1] Others have recently adopted a "task-based" approach which specifies certain tasks that may carry risks if performed incorrectly, such as setting bones or prescribing and mixing medications. Legislation then sets out which type or types of health care professionals are appropriately trained to carry out each task. Some are distinct; others are shared. In British Columbia, for example, physicians, podiatrists, and dentists can all set broken bones. But podiatrists can only set broken bones of the foot or lower leg, while dentists can set broken jaws or other bones around the mouth.[2]

The roles of different types of health professionals are also changing over time. For example:

- The 23,900 pharmacists who practiced across the country in 2001 did much more than package and dispense medications. Many also act as drug information specialists, providing advice to other health professionals and the public, or have other roles. Researchers recently reviewed evidence from around the world on expanded roles for pharmacists in primary health care.[3] They included 25 studies, involving more than 16,000 patients. First, they looked at studies where pharmacists advised and counseled patients (versus provision of no comparable service). Although results varied from study to study, most found that the interventions were beneficial. For example, patients tended to make fewer non-scheduled visits to emergency rooms and health professionals. They also generally used fewer medications or their medication spending was lower. Next, the researchers looked at studies where pharmacists provided information to other health professionals (again compared to the provision of no comparable service). In general, researchers found that interaction between pharmacists and physicians resulted in a decrease in prescribing as well as in drug costs. According to the authors, questions remain in terms of how widely the results can be generalized, how interventions by pharmacists compare to similar services delivered by other health professionals, and other issues.
- Providing care in remote areas is a challenge. In Nova Scotia, paramedics have begun providing non-emergent care during their "down-time".[4] Residents of Long and Brier Islands have been receiving care such as specialized services (e.g. immunizations), public education, and injury prevention from these paramedics. An evaluation of the project found that most of its goals have been met. Authors suggested that the addition of a nurse practitioner will add to the project's overall capacity to provide primary health care services. This phase of the project is now moving ahead.
- About 19,000 registered nurses cared for patients in community health and ambulatory care settings in 2001. Some were working in expanded roles as primary care nurse practitioners, advanced practice nurses, RN extended class or clinical nurse specialists (different titles are used in different parts of the country).

Trends in Contacts with Health Professionals 13

Most Canadians receive some "first contact" health services each year. The graph below shows how the proportion of those age 15 and older who report having contacted different types of health professionals in the previous year has varied over time.



Notes:
(1) Alternative health care providers include massage therapists, acupuncturists, homeopaths or naturopaths, Feldenkrais or Alexander teachers, relaxation therapists, biofeedback teachers, rolfers, herbalists, reflexologists, spiritual healers, religious healers, etc.
(2) Consultations for mental or emotional health may occur with a variety of professionals, including family doctors, psychiatrists, psychologists, social workers, and counselors.
(3) Medical doctors includes family or general practitioners as well as specialists such as surgeons, allergists, orthopaedists, gynaecologists, or psychiatrists.

Sources: 1978–1979 Canada Health Survey; 1985 and 1991 General Social Surveys; 1990 Health Promotion Survey; 1994–1995, 1996–1997, and 1998–1999 National Population Health Surveys; and 2000–2001 Canadian Community Health Survey, Statistics Canada.

View Data

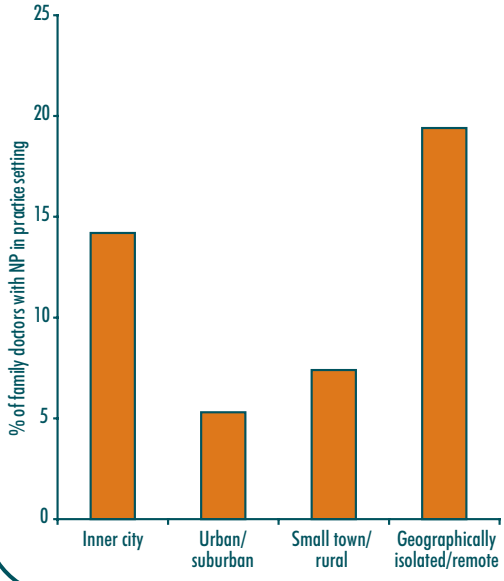
Expanding Roles—Nurse Practitioners as One Primary Health Care Provider

Wider use of Nurse Practitioners (NPs) is part of many visions for primary health care renewal. NPs are registered nurses who have additional training to provide some services formerly reserved for physicians, such as ordering tests, diagnosing illnesses, and prescribing drugs. Nurses may bring a unique perspective and expertise to these tasks. For example, where physicians' education may tend to emphasize diagnosis and treatment of diseases, nurses may focus more on the patient (and family) as a whole, both physically and psychosocially.[5,6] In this way, the role of nurses in primary health care is complementary to those of other health providers, rather than a substitute for them.

Nurse practitioners work in most parts of the country, but Canadians in rural and remote areas are more likely to receive care from these professionals. For example, about 60% of nurses in the Northwest Territories and Nunavut work in expanded roles in primary health care settings.[7] In some parts of Canada (Ontario, Alberta, Newfoundland and Labrador, Nova Scotia, and New Brunswick), nurse practitioners can practice autonomously. Elsewhere, tasks performed by nurses that fall outside of their traditional scope of practice must be delegated by a physician.[8] Nursing associations in many of these jurisdictions are working to change legislation to enable independent practice for NPs.

Nurse Practitioners Who Work with Family Physicians 15

According to the 2001 National Family Physician Workforce Survey, approximately 7% of family doctors who reported that their main practice setting is a private office, community clinic, academic family medicine teaching unit, or free-standing walk-in clinic said there was a nurse practitioner in that setting. Physicians who practice primarily in inner cities and in remote areas were most likely to report that they worked with nurse practitioners.



Source: 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada

View Data

Who Does What: A View From Ontario? 14

Primary health care involves a wide range of different services, many of which can be provided by more than one type of health professional. In 2000, a physician-nurse practitioner team summarized their view on shared and separate functions for family physicians (FP) and nurse practitioners (NP) for the Ontario College of Family Physicians (see table below). (The list of services was adapted from work by the Subcommittee on Primary Care of the Provincial Co-ordinating Committee on Community and Academic Health Science Centre Relations.)

Service	FP	NP
Health Assessment		
• History taking	✓	✓
• Physical exam	✓	✓
• Lab/diagnostic evaluation	✓	✓
Illness Prevention		
• Periodic exam	✓	✓
• Primary prevention	✓	✓
• Secondary prevention	✓	✓
• Tertiary prevention	✓	✓
Health Promotion		
• Lifestyle counseling	✓	✓
• Determinants of health	✓	✓
Education & Support for Self-Care		
• Health education	✓	✓
• Telephone advice	✓	✓
Diagnosis & Treatment of Episodic Illness & Injuries		
• Acute minor illness	✓	✓
• Acute minor injury	✓	✓
• Acute complex illness	✓	
• Acute complex injury	✓	
Primary Reproductive Care		
• Birth control counseling	✓	✓
• STD screening & treatment	✓	✓
• Pregnancy diagnosis	✓	✓
• Options counseling	✓	✓
• Ante-natal care to 32 weeks	✓	✓
• Ante-natal care after 32 weeks	✓	
• Labour & delivery	✓	
• Immediate maternal care	✓	
• Immediate newborn care	✓	

Service	FP	NP
Palliative Care		
• Home visits	✓	✓
• Individual & family support	✓	✓
• Initial treatment	✓	
• Treatment adjustment unstable	✓	
• Monitor stable condition	✓	✓
Primary Mental Health Care		
• Stress management	✓	✓
• Adaptation to illness	✓	✓
• Acute/chronic psychiatric illness		
-Initial diagnosis & treatment	✓	
-Treatment adjustment unstable	✓	
-Monitor stable condition	✓	✓
Coordination & Provision of Rehabilitation Services		
• Referral to rehab services	✓	
• Participate in planning & follow-up	✓	✓
• Education & advocacy	✓	✓
Coordination of Referral and Other Health Care Services		
• To community resources	✓	✓
• To medical specialists	✓	✓
• To hospital for admission	✓	
Diagnosis and Treatment of Chronic Illness & Injury		
• Initial diagnosis & treatment	✓	
• Treatment adjustment unstable	✓	
• Monitor stable condition	✓	✓
Supportive Care		
• In hospital	✓	✓
• At home	✓	✓
• In long-term care facilities	✓	✓

Source: Way D, Jones L, Busing N. (2000). *Implementation Strategies: "Collaboration in Primary Care-Family Doctors and Nurse Practitioners Deliver Shared Care."* Toronto: Ontario College of Family Physicians

Expanding Roles—Nurse Practitioners as One Primary Health Care Provider *continued*

Many researchers have studied whether primary health care by nurse practitioners differs from that provided by family physicians.[e.g. 9,10,11,12,13,14,15,16,17] A 2002 study systematically reviewed world-wide studies that compared first contact care by both groups provided at the same or similar sites.[17] Most recent studies focused on care for patients who had an acute but minor illness and wanted a same-day appointment. Overall, researchers found that nurses spent more time with patients and carried out more investigations than physicians. Patient satisfaction was also higher among patients who saw nurses or nurse practitioners at the point of first contact. However, no differences in patient health status were found. Researchers also concluded that the studies did not provide enough information to assess relative costs of care.

Training and Regulation Across The Country

16

Across Canada, many registered nurses work in expanded roles. The availability of (and requirements for) training for these roles varies among the provinces and territories. So does the legal recognition of nurses in advanced nursing practice roles.

Province	Training Availability*	Legal Recognition
B.C.	Beginning in September 2003, the University of Victoria will offer a Master of Nursing: Advanced Nursing Practice program. University College of the Cariboo offers a Primary Care Clinical Nursing Program for extended practice nurses.	The Registered Nurses Association of British Columbia and the Ministry of Health Planning are currently working together with other partners on initiatives related to the regulation of nurse practitioners.
Alta.	University of Alberta offers a Master of Nursing program designed to prepare nurses for leadership roles, including advanced nursing practice. Athabasca University offers a Master of Health Studies program, Advanced Nursing Practice Stream and an Advanced Graduate Diploma- Advanced Nursing Practice. University of Calgary offers an Integrated Master of Nursing/Nurse Practitioner or a Post-Master's Nurse Practitioner Certificate.	Under changes to *Alberta's Public Health Act 1995*, registered nurses are authorized to provide services beyond the usual scope of practice. Qualifying registered nurses are entitled to use the designation Registered Nurse/Extended Practice (RN/EP).
Sask.	University of Saskatchewan has a Master of Nursing program. The Institute of Applied Science and Technology offers a Primary Care Nurse Practitioner advance certificate program.	As of March 2003, the Minister of Health approved new legislation for the legal recognition of the title Registered Nurse (Nurse Practitioner) RN (NP). Licensing of RN (NP)s is expected to begin in the fall of 2003.
Man.	University of Manitoba offers a Master of Nursing degree with a Nurse Practitioner major.	The province is currently amending their legislation to allow RNs with the required education to undertake additional controlled acts.
Ont.	The Ontario Primary Health Care Nurse Practitioner Program is offered at 10 universities: Queen's University, McMaster University, Lakehead University, Laurentian University, University of Ottawa, University of Western Ontario, University of Toronto, University of Windsor, Ryerson University, and York University.	In 1998, The Ontario *Nursing Act* was amended to permit a separate class of RNs to carry out certain additional controlled acts. They are registered as Registered Nurses (Extended Class) or RN (EC).
Que.	Nurses who work in primary care can be trained in a program offered at L'Université du Québec in Trois-Rivières.	Since January 2003 nurse practitioners can engage in five additional activities traditionally reserved for a physician. Quebec anticipates registering their first nurse practitioner in 2004.
N.S.	Dalhousie University offers a Master of Nursing program with a Specialty Nurse Practitioner option and a Primary Health Care Nurse Practitioner program.	The 2002 *Registered Nurses Act* authorizes nurse practitioners working in collaborative practice arrangements with a physician or group of physicians to take on additional controlled acts.
N.B.	University of New Brunswick offers a Master of Nursing program with an Advanced Nurse Practitioner stream. L'Université de Moncton offers a Master of Nursing Program in French.	In July 2002, the *Nurses Act* was amended to enable the practice of nurse practitioners in New Brunswick.
P.E.I.	No programs currently exist.	Draft legislation is under consideration.
N.L.	Memorial University of Newfoundland offers a Master of Nursing program designed to prepare students in advanced practice nursing. The Newfoundland and Labrador Centre for Nursing Studies offers a Nurse Practitioner program.	In 1998, Newfoundland implemented the Advanced Practice Nurse Practitioner Primary Health Care role. Amendments to the *Registered Nurses Act* in 2001 allow nurse practitioners to be licensed for specialty practice.
N.W.T./ Nun.	Aurora College in Yellowknife offers a Primary Health Care-Nurse Practitioner program in collaboration with the Centre for Nursing Studies in Newfoundland and Labrodor.	In June 2002, the Legislative Assembly approved Bill 8 to amend the *Nursing Professions Act*. Provisions allowed for a separate register for nurse practitioners.
Y.T.	No programs currently exist.	The role of a registered nurse can extend to that of a community nurse practitioner under the current legislation.

*Some programs may not provide training for primary health care practice.

Source: Compiled by CIHI as of March 2003

Working Together

Some primary health care professionals work independently; others are part of health care teams. Many experts argue that interdisciplinary primary health care teams are key to effective health reform. For example, the World Health Organization's Declaration of Alma-Ata points to the importance of teamwork in primary health care.[18] The authors of recent Commission reports at both the federal and provincial levels concurred. There is widespread support for multidisciplinary and collaborative approaches to the delivery of primary health care[19, 20, 21, 22, 23, 24] although some argue that more evidence is needed to establish whether they result in more effective and efficient care.[25]

While federal and provincial reports talk about teams of health care providers working closely together to provide a full array of primary health care services, this is not currently the reality for many professionals and their patients. However, some health care settings—such as community health centres—have long incorporated many types of primary health care professionals.

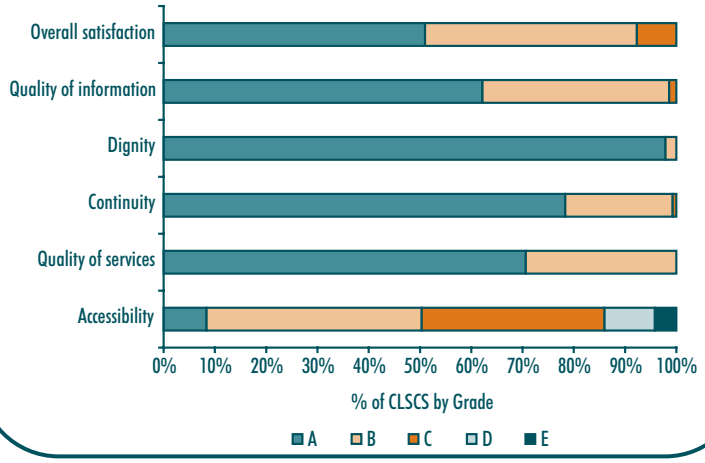
Many such models are in place across the country and more are planned (see Appendix). For example, Ontario's Community Health Centre (CHC) model was created in the 1970s. CHCs were developed to improve access to health care for populations who are often hard to reach, such as people living in rural and remote areas and disadvantaged groups in inner cities.[26] Currently, there are 55 CHCs in Ontario. Together, they serve about 2% of the population. CHC physicians, nurse practitioners, and other members of the health care team are paid a salary. Likewise, Quebec's first Centre local de services communautaires (CLSC) opened in 1972.[27] Today, 147 CLSCs cover the province, providing a range of health and social services in a defined geographic area. Together, they employ about 22% of Quebec's family physicians and general practitioners. Many other health professionals also work in CLSCs. For instance, nurse practitioners care for many mothers and babies before and after birth, manage stable chronic diseases, and triage walk-in patients.

In 2001, Quebec's CLSCs provided a broad range of services throughout the province, including:

- more than 1,730,000 individual consultations
- more than 5,400,000 home care services for over 264,000 clients
- group programs for over 1,000,000 participants
- over 2,370,000 calls to Info-Santé advice lines.

What Users of CLSCs Think 17

A 2002 survey of 42,800 Centres locaux de services communautaires (CLSC) users (or parent/alternate respondents) found that most were satisfied (28%) or very satisfied (67%) with the last service that they received in the previous year. A "Bill of Health" produced by the Quebec Ministry of Health and Social Services used the questionnaire responses to grade 143 CLSCs on six dimensions. Results were presented as letter grades from A to E, as shown below.



View Data

Source: Quebec Ministry of Health and Social Services. (2003). *Bill of Health*. Quebec: Ministry of Health and Social Services

Training Together

How can health professionals with different, sometimes overlapping, roles learn to work together? Some professional groups and educators feel that teamwork needs to be emphasized from the start. They argue that universities should encourage students from different programs to learn together.[28]

The College of Health Disciplines at the University of British Columbia, for example, provides opportunities for students from a range of health professions to learn about and from each other. Strategies include sharing courses and fieldwork placements.[28]

Does this approach work? Researchers recently reviewed dozens of studies to see whether having health professionals train together affects patient outcomes or health care practice. The overall results, however, were not conclusive.[29]

Taking Care of Ourselves—Taking Care of Each Other

Individuals also play an important part in primary health care. For example, when the Canadian Community Health Survey asked people aged 12 and over in most parts of the country* whether they had taken action in the past year to improve their health, 54% said yes. The most common actions reported were increasing physical activity and losing weight.

Working at the Same Site 18

In a 2001 survey, family doctors were asked whether other care providers worked in their main practice setting. The proportion who reported working alongside others varied depending on whether the physician worked mainly in solo or in group practice, walk-in clinics, or community clinics/community health centres. The table below includes results for doctors working 35 hours per week or more, with at least 20 hours in direct patient care.

Main Practice Setting	Other Family Physicians	Specialist Physicians	Nurse Practitioners	RNs and Other Nurses	Other Health Professionals*
Solo (private practice)	14%**	8%	2%	27%	10%
Group practice (private practice or family medicine teaching unit)	98%	23%	6%	44%	27%
Freestanding walk-in clinic	98%	32%	7%	46%	27%
Community clinic/community health centre	97%	22%	36%	71%	73%

Notes: *"Other health professionals" may include dietitians/nutritionists, psychologists, occupational therapists, physiotherapists, alternative and complementary medicine providers, massage therapists, acupuncturists, chiropractors, audiologists/speech-language pathologists, chiropodists/podiatrists, dentists, kinesiologists, midwives, optometrists, pharmacist/pharmacy assistants, psychotherapist/counselors, and social workers.
**It is unclear why some physicians who reported that another family physician worked in their main practice setting indicated that they were in solo private practice. Possible explanations include working with a resident or locum, being in the same location (i.e. same building but not same practice) as another family physician, and misinterpretation of the question.

Source: 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada

Self-Care Gets a Helping Hand in British Columbia

From coast to coast, in remote communities and large cities, unique programs exist to connect people with health information and health care. For example, the British Columbia Ministry of Health Services recently launched a new program to help people get the health information they need at home. The program includes:

- BC HealthGuide Handbook—a 400-page health information resource guide distributed to 1.5 million British Columbia households;
- BC HealthGuide OnLine—a Web site of health information on over 2500 health topics (www.bchealthguide.org);
- BC NurseLine—a toll-free 24-hour telephone advice line staffed by registered nurses.

The handbook and Web site contain facts about the symptoms, prevention, and treatment of common health conditions. As well, there are tips about when to seek help from a health care professional, when to go to the emergency room, and when to treat minor ailments at home. The handbook also provides information about complementary or alternative medicine. The Web site and handbook caution that the information is not meant to replace any prescribed treatments or consultation with health care professionals.

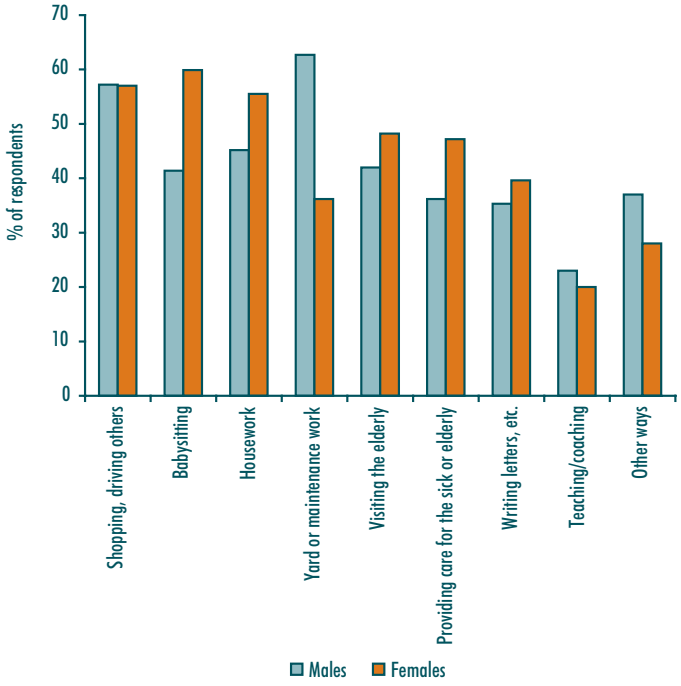
BC Ministry of Health Services data show that between April and December 2001, there were over 67,000 calls to the Nurseline. Most (51%) were made by individuals for themselves, but just over a quarter (28%) were from parents on behalf of their children. Most users did not require further professional care, but some were referred to 911 (<1%), emergency departments (11%), and physicians (23%).[30]

Other provinces and the federal government are also making health information available online. For example, the Canadian Health Network (CHN) is a national, bilingual Internet-based health information service. CHN features consumer-oriented information for 26 major health topics and demographic groups (www.canadian-health-network.ca; www.reseau-canadien-sante.ca).

*Excludes Nova Scotia, Quebec, Manitoba, Northwest Territories, and Nunavut.

Lending a Helping Hand 19

In 2000, 77% of Canadians aged 15 and over reported helping one another on a one-to-one basis. The types of activities that they helped with varied. For example, more men than women reported helping with yard and maintenance work, teaching, and coaching. On the other hand, more women than men reported having helped with housework, babysitting, visiting, and providing direct care to the sick or elderly.

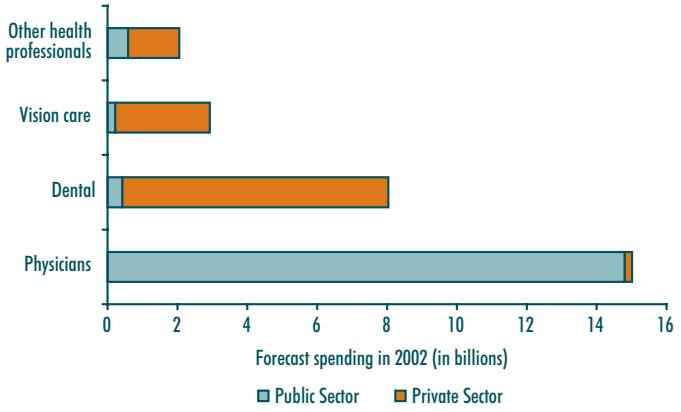


Source: Hall M, McKeown L, Roberts K. (2001). *Caring Canadians, Involved Canadians: Highlights from the 2000 National Survey of Giving, Volunteering and Participating.* Ottawa: Minister of Industry

View Data

Who Pays? 20

Governments and other public sector payers funded the vast majority of physicians' services in 2002. In contrast, most dental care, vision care, and services of other health professionals were paid for by private insurers or out-of-pocket payments.



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Source: National Health Expenditure Database, CIHI

Canadians are also often helped by family and friends. In 2000, 77% of Canadians said that they helped other people on a one-to-one basis with activities such as caring for the sick or elderly, shopping, and home maintenance, up from 73% in 1997.[31]

Policies are being developed to support family caregivers. For example, the federal government recently announced a "compassionate care" benefit for people who need to temporarily leave their job to care for a seriously ill or dying parent, spouse, or child.[32] The benefit will be provided through the Employment Insurance Program, while job protection will be ensured under the Canada Labour Code.

Spending on Primary Health Care

Canada's universal health insurance system was first set up to cover hospital care, then physicians' services. Over time, provinces and territories have added a mixed basket of other services to this core. As a result, the public sector now covers almost all physicians' services, but less than half of the costs of services provided by a variety of other health professionals.* The private share of spending also varies by type of service. Insurance firms pay for more than half of privately funded dental care (56% of the total in 2000). In contrast, most private spending on vision care (80% in 2000) came from out-of-pocket payments by Canadian households.

Some researchers suggest that how we organize and deliver primary health care affects not only the costs of those services but also overall health care costs and outcomes. A recent study[33] rated 13 countries with populations of over five million on 15 characteristics deemed to facilitate primary care:

- Extent to which the system regulates the distribution of resources country-wide
- Strength of academic departments of family medicine
- How primary care services are financed
- First contact
- Most common type of primary care practitioner

*In all cases, numbers reported here do not include spending on professionals' services by hospitals or other health care institutions.

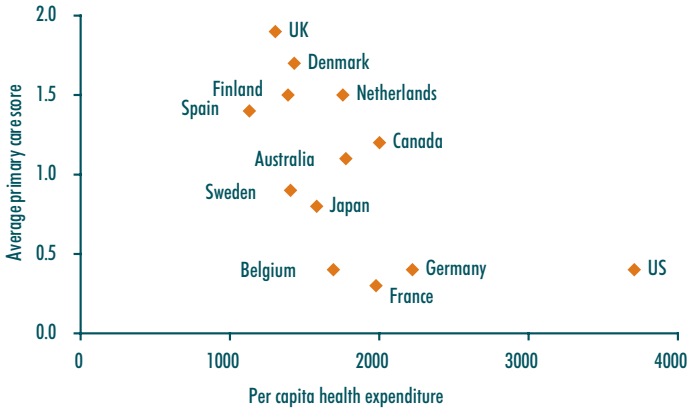
- Longitudinality (person-focused care over time)
- Percentage of active physicians involved in primary care versus those in conventional "specialty care"
- Comprehensiveness
- Professional earnings of primary care physicians relative to specialists
- Coordination
- Cost sharing by patients for primary care
- Family-centredness
- Rostering to identify the community served by practices
- Community orientation
- 24 hour access arrangements

Using data from the OECD and a survey of expert opinion, researchers gave each country a score of 0 (absence or poor development), 1 (moderate development), or 2 (high level of development) for each characteristic. They then added the unweighted scores together to obtain a total primary care score. Researchers classified countries such as the United States and Germany, which scored 5.5 and 6.0 respectively, as having poor primary care infrastructures. Canada ranked in the middle group with a score of 17.5. The United Kingdom (29.0) and Denmark (26.0) obtained the highest scores.

The researchers then compared health costs in countries with high, medium, and low overall scores. They found that countries with higher scores (reflecting stronger primary care) tended to spend less on health care overall.

Primary Care and Health Spending 21

Barbara Starfield and Leiyu Shi contend that countries with stronger primary care systems spend less on health care. They base their conclusions on a comparison of per capita health care expenditures in 1997 and countries' scores on 15 health system and practice characteristics deemed to facilitate primary care. These scores below are total average primary care scores, which reflect countries' experiences in the early to mid 1990s. For details on how they were calculated, please refer to the report text and the reference below.



Source: Starfield B, Shi L. (2002). Policy relevant determinants of health: An international perspective. *Health Policy*, 60(3), 201–218

The authors also compared health outcomes across the 13 countries. They found that people living in countries with very low primary care scores tended to have poorer health. In contrast, countries with middle-strength systems generally had health results that were at least as good as those with the highest scores, except for some measures of health in early childhood. Starfield and Shi argue that their results suggest that "a certain level of health care expenditures may be required to achieve overall good health levels, even in the presence of strong primary care infrastructures."

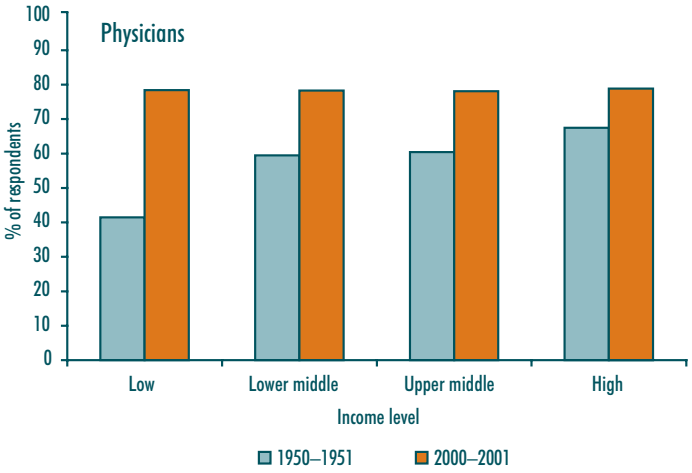
For Richer…For Poorer: Use of Primary Health Care Services

How we pay for health services has fundamentally changed in the last fifty years. So has the way health services are used. For example, in 1950–1951, before the introduction of universal health insurance, higher-income Canadian households were more likely to have paid for and received physician and dental services in the previous year than those with lower incomes.

Then and Now— Use of Physician and Dental Services

22 and 23

Using survey data from 1950–1951 and 2000–2001, Canadian households were divided into four equally-sized income groups. At each income level, Canadians aged 12 and over were more likely to have reported visiting a doctor or dentist in the past year in 2000–2001 than households were to have reported paying for such services a half-century earlier.



Note: *In 2000–2001 data, paediatricians for those <18 years of age are included.

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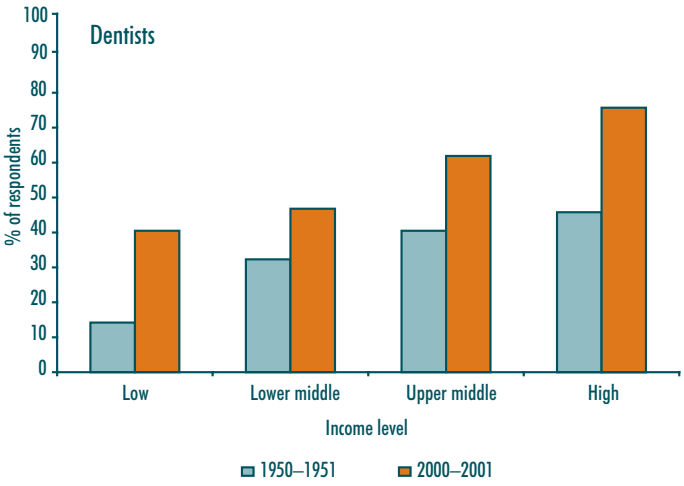


Note: The 1950–1951 survey asked respondents about three classes of physician services: "office calls," "home calls," and "clinic visits" during the survey year. Dentist services were classified as "care received by patients from qualified dentists" during visits to "dentists' offices or clinics," including hospital out-patient clinics. The 2000–2001 survey asked somewhat different questions of individuals: "Not counting when you were an overnight patient, in the past 12 months, how many times have you seen or talked on the phone, about your physical, emotional or mental health with a family doctor or general practitioner?" The same question was also asked for dentists or orthodontists.

View Data

Source: 1950–1951 data: Canadian Sickness Survey, Statistics Canada
2000–2001 data: Canadian Community Health Survey, Statistics Canada

Fifty years later, Canadians of all income levels are about as likely to have visited a family doctor in the past year. The same is not true for dental care. With each step up the income ladder, Canadians were more likely to report having visited a dentist in the past year in 2000–2001. Rates for Canadians living in the one-fourth of households with the highest incomes were almost double those for the lowest income group (76% compared with 41%).

Internationally, a recent study used survey data from the mid-1990s to compare patterns of visits to doctors (both GPs and specialists) in 14 OECD countries.[34] In all countries, researchers found that people with lower socioeconomic status tended to visit physicians more frequently than those in higher income brackets. After adjusting for differences in need, however, use of physician services was found to be fairly equitable across all income groups (Portugal, the United States, Austria, and Greece were exceptions). That said, people with higher incomes tended to use more specialist services; those with lower incomes were more likely to use general practitioner care. Likewise, a number of studies have found that differences in the use of some health services persist in most countries, despite universal health insurance. For example, lower-income Canadians are less likely to be screened for breast and cervical cancer and to receive some specialist services.[35]

Links Between Income and Preventable Hospitalization: An Ontario Study

Research from around the world has shown that health status, and sometimes access to health care, tends to be linked to a person's socioeconomic status. A recent study[36] explored this relationship for the more than 600,000 Ontarians with diabetes. The study covered the period between 1992 and 1999.

Researchers found that low-income diabetics tended to experience more complications related to their illness. For example, diabetics in the lowest income group were 44% more likely to visit an emergency department or have a "preventable" hospitalization than those in the highest income group. The relationship between income, emergency department visits, and preventable hospitalizations remained after adjusting for other predictors (age, sex, comorbidity, urban vs. rural residence, frequency of physician visits, continuity of care, physician specialty, and geographic region). On the other hand, hospital admission rates for non-ambulatory care sensitive conditions, such as appendicitis and hip fractures, were not related to income level.

The study found that the income-related differences represented a significant health burden. For example, if emergency department visits and hospitalization rates for the entire diabetic population had been equal to those of the higher income group, as many as 40,000 episodes might have been avoided over the seven year observation period.

Did you know?

In 1999–2000, it cost an average of $1,706 to treat a person under the age of 18 who was hospitalized with diabetes with no significant complications in an acute care hospital in Ontario. Average costs rose with age. They were $1,884 for those aged 18 to 69 and $2,699 for those aged 70 and over.

Accessing Primary Health Care

Most Canadians (94% of those age 15 and over in 2001) use "first contact" health services each year. Nevertheless, almost one in five of those who sought "first contact" health services in 2001 for themselves or a family member (18% of those age 15 and older) said that they had difficulties in accessing care at some time during the year.[37] That's about 4.3 million Canadians.

How likely Canadians were to report access issues depended on the type of service they were seeking and when they needed help. For example regardless of time of day or night, 11% of those seeking routine care, 13% trying to get health information and advice, and 19% of those wanting immediate care for a minor health problem reported access difficulties some time in the last year.

Reported barriers to care also varied by type of care and time of the day. For example:

- **For routine or on-going care:** During regular office hours, the time when people are most likely to seek care at a family doctor's office, difficulties in getting an appointment (42% of those who reported barriers) or long waits for an appointment (33%) were the most common barriers reported. In the evening and on weekends, almost half (47%) of those who reported access difficulties said that they had waited too long to see a physician.

Difficulties Accessing Care 24

In 2001, Statistics Canada asked Canadians aged 15 and over who had sought first contact health services in the past year for themselves or a family member whether they had encountered difficulties in accessing care. Most said no, but 18% of those who accessed services said yes. The proportion who reported difficulties varied depending on what type of service they sought and when, as the chart below shows. It includes three time periods: regular office hours (9 a.m. to 5 p.m., Monday to Friday), evenings (5 p.m. to 9 p.m.) and weekends, and night.

Service Sought	Day	Evening/ Weekends	Night
Routine or on-going care	9%	8%	N/A
Health information or advice	10%	11%	6%*
Immediate care for a minor health problem	11%	16%	12%*

Notes: Analysis excludes non-response
*Interpret with caution due to high sampling variability

Source: Statistics Canada. (2002). *Access to Health Care Services in Canada, 2001*. Catalogue no. 82-575-XIE. Ottawa: Statistics Canada

- **For health information or advice:** Canadians were most likely to seek this type of service during regular office hours. More than a third (39%) of those who had difficulties getting health information at this time said that it was because they did not get adequate information. Another 38% reported difficulties in contacting a physician or nurse, and more than a quarter (30%) said that they waited too long to speak to someone.
- **Immediate care for a minor health problem:** The most commonly reported barrier at all times of the day was waiting too long to see a physician (38% of those who reported difficulties during regular office hours, 57% on evenings and weekends, and 59% at night).

Telephone triage services have been touted as one way to improve 24/7 access to primary health care. These services connect patients by phone, 24 hours/day, 7 days a week to trained nurses. The names of the services may differ, but telephone help lines are now available in British Columbia, Manitoba, Ontario, Quebec, New Brunswick, and the cities of Edmonton and Calgary. There are plans underway to extend existing services or offer additional ones in some of these and other provinces and territories.

Evaluating Telehealth

Capital Health Link is Edmonton's telephone triage service, receiving an estimated 7,200 calls weekly. Each quarter, they survey 386 callers for their opinions about the service.[38] Evaluations to date indicate that 91% of callers rate the service as excellent or very good. Most callers (87%) also said they felt they could handle a similar situation on their own in the future.

By using the service, Capital Health Link estimates that each year Edmontonians avoid:

- 14,600 emergency room visits;
- 17,910 visits to family physicians; and
- 8,170 visits to drop-in clinics.

Similarly, the telephone triage services in northern Ontario prior to the introduction of the Telehealth Ontario program was also evaluated.[39] During its 22 months of operation from June 1999 to March 2001, over 100,000 calls were received.

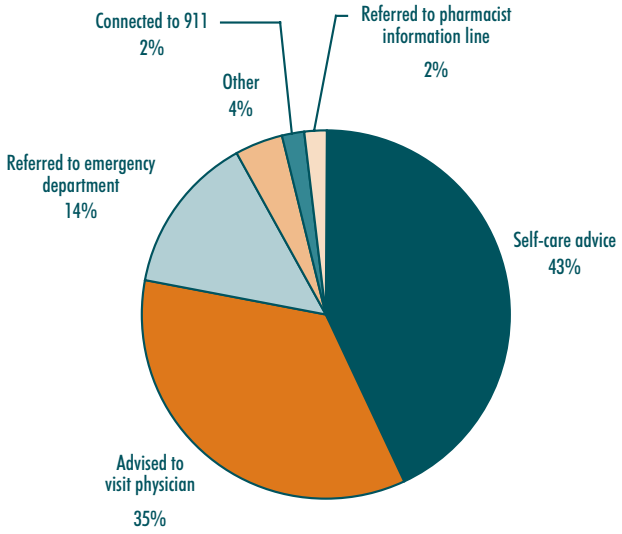
Using information from approximately 28,000 calls recorded between July 2000 and March 2001, the Centre for Rural and Northern Health research evaluated the teletriage pilot project. They found:

- the peak call times were between 4pm and 8pm, with only 10% of calls made between midnight and 8am;
- 90% of calls were for advice on symptoms, 7% were for information, and 3% were for both;
- most callers were between 17 and 34 years old (fewer than 5% were 65 and older), were women (89%), and had a regular doctor (93%).

The evaluators noted an under-representation of some populations among the callers. For example, seniors, men, francophones, and rural northern residents were all less likely to call. In a separate mailed survey, 90% of users said they were very satisfied or satisfied with the services.

"Dialed in" 25

What kind of advice is most often given to those who use telehealth services? An evaluation of Ontario's Telehealth Network conducted between December 2001 and June 2002 determined that many calls (43%) result in self-help advice. Most other callers are advised to seek further medical care, as the graph below shows.



Source: Government of Ontario. (December 2002). *One Million Ontarians Call Telehealth in First Year.* www.newswire.ca/government/ontario/english/releases/December2002/18/c4973.html

View Data

Improving Continuity of Care

Most proposals for primary health care renewal talk about improving round-the-clock access to care. Many also suggest that we should be working to provide better continuity of care and management of chronic diseases. Continuity of care is a broad concept and can be achieved in many different ways. Authors of a recent research report[40] identified three distinct types of continuity:

- **Relational continuity:** the maintenance of patient-provider relationships over time and consistency of personnel;
- **Informational continuity:** information on prior events is used to give care that is appropriate to the patient's current circumstance; and
- **Management continuity:** care received from different providers is connected in a coherent way.

In this section, we focus on management and informational continuity. Aspects of relational continuity, such as having a regular family doctor, are addressed in Chapter 4.

Managing Chronic Diseases

Continuity of care is particularly important for people with chronic illnesses, such as diabetes, asthma, congestive heart failure, and depression. Because they often see a wide range of health care providers in a variety of settings, navigating through different parts of the health system can be a challenge.

Across the country and around the world, new approaches to bridge gaps between services (and avoid duplication of effort) continue to emerge. Chronic disease management is one approach to help individuals "maintain independence and keep as healthy as possible through prevention, early detection, and management of chronic conditions".[41] For example, the British Columbia government, in collaboration with a range of stakeholders, has launched a province-wide chronic disease management program. Some of the activities include:[41]

- publishing report cards on disease prevalence, incidence, patient survival, costs, and performance gaps using information from new chronic disease registries;
- creating a provincial Web site that is intended to become an electronic distribution centre for knowledge and experience in chronic disease management;
- developing guidelines and protocols to assist physician and patient decision-making, including a Diabetes Care Patient Flow Sheet designed to be included in the patient chart as a reminder and record of whether care objectives have been met; and
- conducting a survey of the top 100 performing physicians to find out how their clinical practice is structured in order to achieve optimal diabetes care performance.

Coordination of Care 26

Everyone can benefit from well-integrated care, but it is perhaps most important for those with serious health problems. A 2002 survey by the Commonwealth Fund asked adults with health problems in five countries to rate their care over the last two years on four measures of care coordination. Adults were included in the survey if they said that their health status was fair or poor; they had had a serious illness in the past two years; and/or they had been hospitalized or had had major surgery in the past two years (not including normal deliveries).

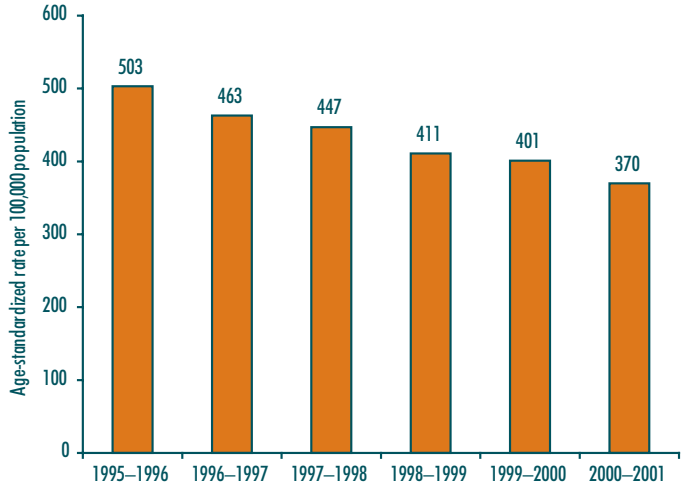
	Australia	Canada	New Zealand	UK	US
Sent for duplicate tests by different health professionals	13%	20%	17%	13%	22%
Had to tell the same story to multiple health professionals	49%	50%	47%	49%	57%
Medical records/test results did not reach doctor's office in time for appointment	14%	19%	16%	23%	25%
Received conflicting information from different health professionals	23%	23%	24%	19%	26%

Note: margins of error are approximately plus or minus four percentage points for differences between countries.

Source: Commonwealth Fund 2002 International Health Policy Survey

Preventable Hospitalizations? 27

Since 1995–1996, the age-standardized rate of hospitalization in acute care facilities related to ambulatory care sensitive conditions such as diabetes, asthma, and hypertension has been declining in Canada. In 2000–2001, these conditions represented 4.1% of all admissions, down from 4.6% in 1996–1997.



View Data

Source: Hospital Morbidity Database, CIHI

Such programs are intended to support patients in taking an active role in their own care, with help from their physicians and other health care providers. Studies show that for many chronic conditions, such as diabetes, asthma, and hypertension, hospital admissions are not usually needed, as long as patients have timely access to high quality care in the community. Not all hospitalizations are avoidable, but research suggests that higher hospitalization rates of "ambulatory care sensitive conditions" (ACSC) may reflect problems in access to disease prevention initiatives or appropriate primary health care.[42]

Across the country, ACSC hospitalization rates have fallen in recent years.❖ Between 1995–1996 and 2000–2001, they dropped by 26%, after adjusting for population growth and aging. At the end of this period, there were 370 ACSC hospitalizations per 100,000 Canadians. The recent decline appears to be driven primarily by falling rates of hospitalization related to asthma and some psychiatric conditions.

ACSC rates also fell faster for Canadians under the age of 20 than for adults aged 20–55 or 55 plus.

While the national rate has been falling, ACSC hospitalization rates continue to vary significantly from region to region across the country. For example, 32 of Canada's largest health regions had preventable admission rates under the national average (370 per 100,000 population) for 2000–2001. But a number had rates that were at least twice the national rate. These differences may reflect variations in disease rates, social conditions, the organization of community care and other services, and many other factors.

Continuity of Care for the Frail Elderly: An Example from Montreal

Many experts have suggested that a coordinated approach to care is essential for the effective management of patients with complex health problems, such as the frail elderly. Over the past decade, several models have been developed to address their care challenges. Many of these programs aim to break down the boundaries between care in the community, long-term care, and hospitals. They tend to rely on multidisciplinary teams and often use case managers to coordinate care, perhaps including on-call services 24 hours a day, seven days a week. The goal is typically to use resources efficiently, rapidly, and flexibly to respond to patient needs.

One such model, SIPA (Services intégrés pour les personnes âgées) was developed between 1995 and 1997 in the Montreal area. To evaluate the program, researchers recently compared a group of patients who participated to one who did not.[43] They found that health outcomes and costs were similar in both groups. SIPA participants had lower emergency department and long-term care costs, but these savings were offset by increased spending on home/community services. In addition, participants tended to:

- Spend less time in acute care hospitals while waiting for housing;
- Have fewer visits to emergency departments (and when they did go, they were more likely to return home instead of being admitted to hospital);
- Make more visits to primary health care practitioners and CLSCs, as well as to various community services (e.g. physiotherapy, occupational therapy);
- Use more home nursing and home support services; and
- Perceive that they received a better quality of care.

❖Based on a definition of ambulatory care sensitive conditions developed in Alberta.

Rates Across the Country

28

The map below shows the hospitalization rates for ambulatory care sensitive conditions (ACSC) in 2000–2001. The rates are age-standardized per 100,000 residents for health regions with a population of 75,000 or more.

View Data

Source: Hospital Morbidity Database, CIHI

In the Know

The ability of primary health care providers to work effectively in teams depends on good information flow. Connecting with specialists and other care providers is also important. The challenge is to gather relevant information, communicate it clearly, and share it with those who need to know, all while protecting the patient's privacy. Today, this information is often paper-based and forms the clinical chart or record. It can also be stored electronically.

Electronic health records are a key part of the vision laid out in recent provincial and federal commissions on the health care system.[19, 20, 21, 22, 23, 24] The Federal/Provincial/Territorial Advisory Committee on Health Infostructure defines electronic health records as:

> *A longitudinal collection of personal health information of a single individual, entered or accepted by health care providers, and stored electronically. The record may be made available at any time to providers, who have been authorized by the individual, as a tool in the provision of health care services. The individual has access to the record and can request changes to its content. The transmission and storage of the record is under strict security.*

Electronic health records are intended to store key information about our health and our interactions with the health care system. For example, family doctors could find out about their patients' hospital stays and follow-up care or about whether their patients' had received recommended screening tests on schedule. Pharmacists

Wired In

29

Family physicians and general practitioners who responded to the 2001 National Family Physician Workforce Survey were more likely to say they used computers in their offices for billing than for other functions. The table below reflects responses from physicians who reported working 35 or more hours per week in total and 20 or more hours per week in direct patient care. Physicians who did not respond to all four survey questions about computer access were excluded from the table.

Main Practice Setting	Billing	Appointment Scheduling System	Electronic Patient Record System	Computer Linkage to External System
Solo (private practice)	91%	38%	17%	19%
Group practice (private practice or family medicine teaching unit)	92%	62%	25%	29%
Freestanding walk-in clinic	72%	44%	20%	20%
Community clinic/community health centre	40%*	66%	23%	40%

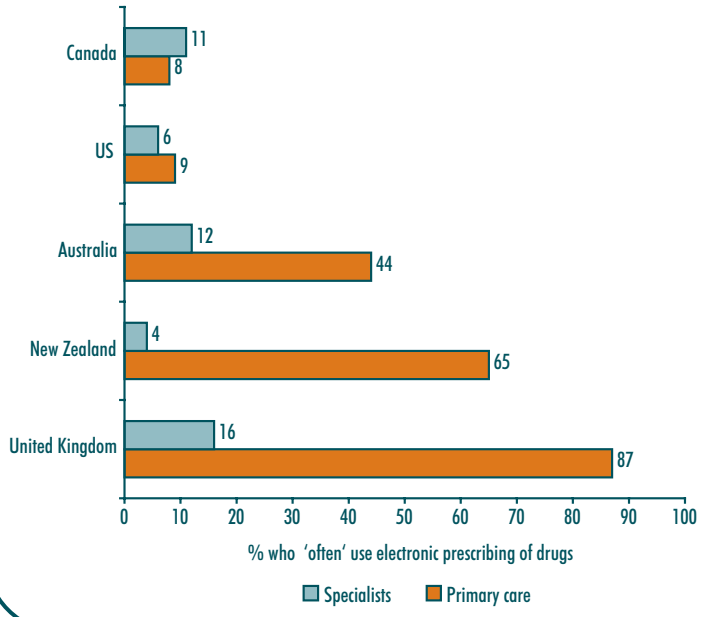
* The low rate of use of computers to support billing processes in community clinics may reflect the fact that alternate payment systems (e.g. salaries) are commonly used in these settings.

Source: 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada

Prescribing Drugs Online

30

In a 2000 survey, less than one in 10 primary care physicians in Canada reported "often" prescribing drugs electronically, about the same level as in the United States but significantly less than in Australia, New Zealand, and the United Kingdom.



Source: Commonwealth Fund 2000 International Health Policy Survey

View Data

could also check to make sure that new prescriptions are compatible with current medications. Similarly, emergency department staff could save precious minutes by accessing a patient's medical history.

The concept of electronic health records is not new but its implementation in primary health care remains limited. Where systems have been developed, as with most new technologies, there have been successes and challenges. For example, a recent study of electronic sharing of patients' clinical data from a hospital computer-based record system with off-site physicians in emergency departments showed evidence of cost savings in one of the two facilities involved. But physicians felt that it sometimes took too long to access information on-line, and they also reported some problems with printers, downed networks, and forgotten passwords.[44]

To date, relatively few researchers have studied the effects that electronic health records and associated tools have on patient care and outcomes. Nevertheless, early results are emerging in some areas. For example, a recent systematic review of the literature[45] found 15 (mostly small) studies that explored the effect of computer systems that provide advice to hospital staff on optimal drug dosages. The results of the review suggest that e-prescribing systems that provide computer support for drug dosage have many benefits, including reducing toxic drug levels, adverse reactions, and length of hospital stay. At the same time, there was a tendency for computer support to result in higher drug dosages.

Information Gaps: Some Examples

What We Know

- Various models of primary health care exist across the country and the organization of primary health care services is evolving over time. Many different types of health professionals provide primary health care in a variety of settings. In some cases, their scopes of practice are changing.
- The percentage of Canadian households who reported helping family members and friends with tasks such as providing direct care for the sick or elderly, housework, and shopping has increased slightly.
- Rates of hospitalizations related to ambulatory care sensitive conditions have fallen in recent years, but significant variations in regional rates persist.
- Public sector payers cover most of the costs of physicians' services. Private sector payers fund the majority of services provided by a number of other health professionals, such as dentists and optometrists.
- In the 1950s, Canadians living in higher income households were more likely than others to have paid for physician services and dental care. Today, Canadians in all income groups are about equally as likely to have visited a family doctor at least once in the last year but Canadians living in lower income households are less likely to have seen a dentist.
- Most family doctors have computers in their offices, but they are more often used for billing than to support patient care.

What We Don't Know

- What is the optimal mix and number of primary health care providers for different settings and populations? How would changes to this mix or overall numbers affect health status, cost, quality of care, and provider satisfaction?
- How has the number of Canadians who are served by various forms of primary health care changed over time? How does this compare with goals established by provincial and federal governments and other groups? What strategies are most effective in facilitating a transition between different models of primary health care?
- How are barriers to access to primary health care changing over time? What are the most effective strategies for addressing these challenges?
- What are the most effective programs for health professionals to use in teaching patients with chronic diseases, such as diabetes and asthma, how to manage their conditions?
- What information and management systems minimize duplication of services, facilitate high quality care, and ensure that patient problems do not fall between the cracks when they are receiving services from multiple care providers in different settings? What systems are in use today?

What's Happening

- Canada's first ministers have agreed to the goal of ensuring that at least 50% of their residents have access to an appropriate health care provider, 24 hours a day, seven days a week, as soon as possible and that this target be fully met within eight years. The February 2003 Accord included a pledge to track and report on progress made toward this goal.
- In the 2003 First Ministers' Accord on Health Care Renewal, the federal government announced a "compassionate care" benefit for people who need to temporarily leave their job to care for a seriously ill or dying parent, spouse, or child. The benefit will be provided through the Employment Insurance Program. Job protection will also be provided under the Canada Labour Code.
- Initiatives to increase the use of electronic health records in primary health care and other settings are underway at a number of levels. Canada Health Infoway Inc. is an independent, not-for-profit corporation, incorporated in 2001 whose goal is to have the main components of compatible electronic health information systems in place within five to seven years.

For More Information

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4

A Focus on Family Doctors

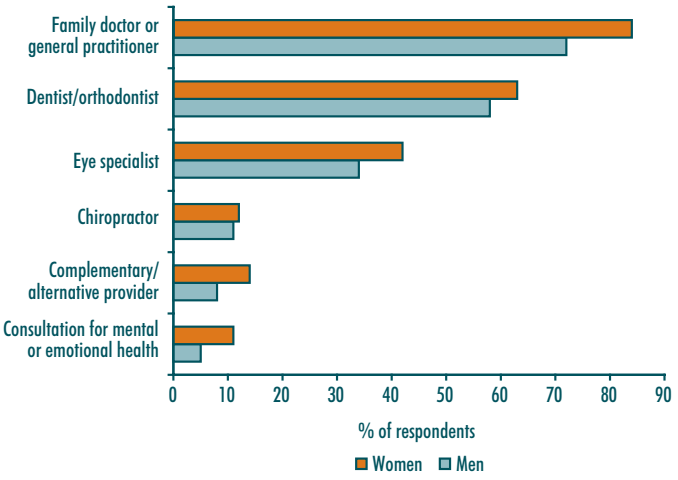
4 A Focus on Family Doctors

We heard arguments for and against writing this chapter. On the one hand, many visions of primary health care renewal strongly emphasize the full spectrum of care providers and the importance of teams. This might suggest less of a focus on individual professional groups.

The fact remains, however, that while many models of primary health care exist, physician-centred solo and small group practice is the norm.[1] Most Canadians turn to family doctors for both routine/on-going care and immediate care for minor health problems. Furthermore, the information base about family doctors and the services that they provide is richer than for other care providers. Accordingly, this chapter provides highlights of what we know and don't know in this area.

Who Canadians Consult 31

The graph below shows the percentage of Canadians aged 12 and over who reported having consulted selected types of care providers during the past year in 2000–2001.



Notes: 1) Consultations for mental or emotional health may involve a variety of professionals, including family doctors, psychiatrists, psychologists, social workers, and counselors.

2) Complementary and alternative health care providers include massage therapists, acupuncturists, homeopaths or naturopaths, Feldenkrais or Alexander teachers, relaxation therapists, biofeedback teachers, rolfers, herbalists, reflexologists, spiritual healers, religious healers, etc.

Source: Canadian Community Health Survey, Statistics Canada, 2000–2001

View Data

Canada's Family Doctors in 2001: Quick Facts

- 35% are female, up from 32% in 1996
- average age is 46 (3.5% are under 30 years of age but 12% are 60 or older)
- 22% are graduates of medical schools outside of Canada

Source: Southam Medical Database, CIHI

The Supply of Family Doctors in Canada

Counting the *number* of family doctors in Canada is relatively easy. Just over 29,600 were practicing in 2001. That's about half (51%) of all physicians in the country, about the same percentage as in Australia and France, for example. By comparison, in the United States and Germany, 20%–30% of physicians are in general practice.[2,3]

Understanding the supply of family medicine *services* is more difficult. Calculations must take into account changes in the patient and provider populations, as well as other trends. Ben Chan, a researcher at the Institute for Clinical Evaluative Sciences in Ontario, recently investigated changes in effective physician supply (including GP/FPs and specialists) between 1981 and 2000.[4] First, he measured the number of physicians per capita (the "unadjusted" physician-population ratio). This ratio rose steadily in the 1980s, peaking in 1993. It then fell for several years, followed by a slight rise after 1997.

Chan's study also explored the effects of changes in population demographics and the profile of the physician workforce. For example, his analysis took into

account the fact that more women are now entering medicine, which is important because female physicians tend to work fewer hours. Overall, the study found that the effective physician-population ratio in 2000 was about 5% lower than in 1993, but about equal to what it had been in 1987 (**see Figure 33**).

Another part of the study examined inflows and outflows of the physician workforce before and after 1993. Additional time spent in postgraduate training accounted for about 25% of the change in physician supply after 1993. Fewer foreign doctors entering practice in Canada explained another 22%. The cuts to medical school places in the 1990s, in contrast, had a smaller effect, accounting for about 11% of the overall decline after 1993. That said, the full effect of these cuts will be felt in future years as more students from affected classes graduate.

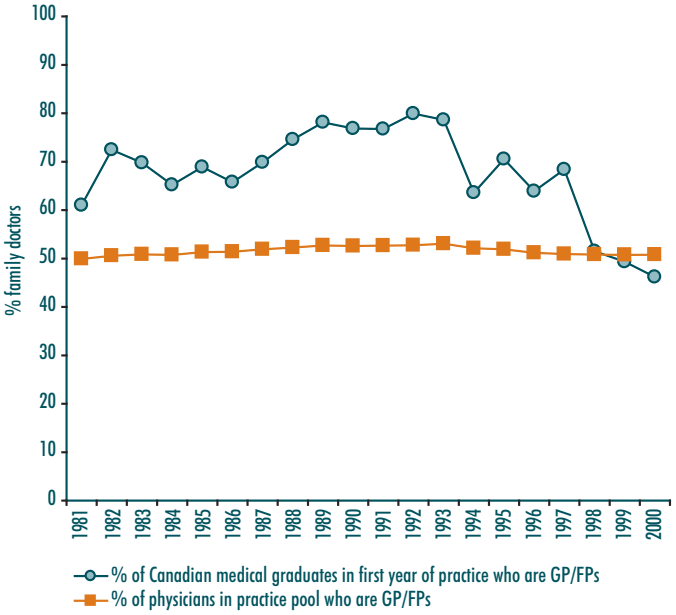
The pendulum is now swinging back. Medical school enrolment has increased in recent years and governments have announced plans for future growth (see Chapter 1).

These recent decisions underscore the fact that matching the supply of physicians and other primary health care providers with projected needs for care is a recurring health policy challenge. Patient demographics and policy decisions are only two of the factors that can affect the balance between numbers of practitioners and patient needs. Others include changes in the health of the population, in who provides care and how it is provided, and in the geographic distribution of health professionals.

In the 1960s, for example, researchers forecast a shortage of physicians based on projections of a continued baby boom. As a result, four new medical schools were opened.[5] When the population increase was not as large as expected, a concern that there would be too many physicians developed. In response, researchers in the early 1990s recommended a number of policy changes.[6] Governments adopted some (but not all) of these measures, including cuts to medical school admissions and restrictions on licenses to practice for international medical graduates.[5]

Specialty Mix 32

Approximately half of Canada's physicians are family doctors. Although the overall ratio has remained fairly constant over the last two decades, the proportion of physicians starting practice as GP/FPs has dropped from a high of 80% in 1992 to about 45% in 2000.



Source: Chan B. (2002). *From Perceived Surplus to Perceived Shortage: What Happened to Canada's Physician Workforce in the 1990s?* Ottawa: Canadian Institute for Health Information.

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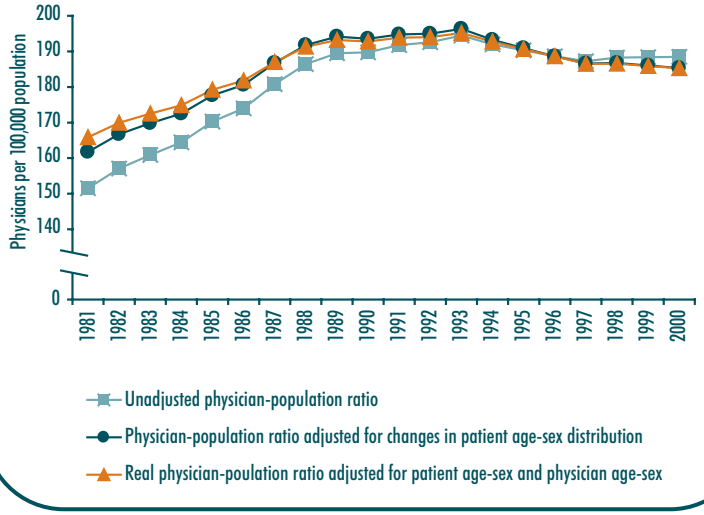
Estimating Changes in Physician Supply 33

The graph below shows the results of a study that examined the effects of three factors—population growth, patient demographics, and the profile of the physician workforce—on physician supply between 1981 and 2000.



Source: Chan B. (2002). *From Perceived Surplus to Perceived Shortage: What Happened to Canada's Physician Workforce in the 1990s?* Ottawa: Canadian Institute for Health Information.

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Becoming a Family Doctor

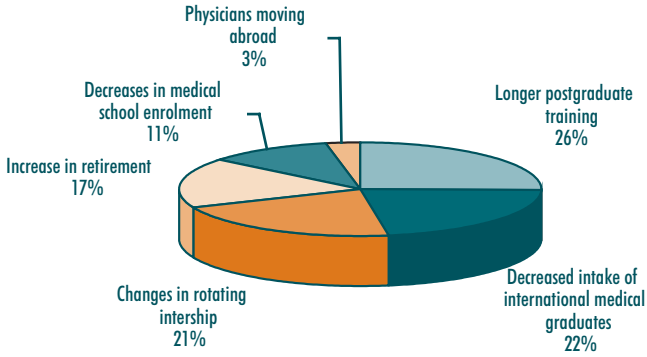
About 45% of Canadian medical graduates started their careers in family medicine in 2000, down from a high of about 80% in 1992.[4] Entry to family medicine requires both a medical degree and supervised clinical practice. Before 1993, medical school graduates could enter family practice after a one-year internship. Today, they must complete two to three years of further training and pass a certification exam.

In 2002, 428 first-year training positions in family medicine were available across the country.[7] While most were filled, for many applicants family medicine was not the first choice. Fewer than 30% of Canadian medical school graduates indicated a preference for family medicine in 2002.

Understanding Recent Changes in Physician Supply

34

According to a recent study, longer postgraduate training alone accounted for about one-quarter of the decline in net physician inflow into the practice pool between 1994 and 2000. Other factors explaining the decrease are also shown below.



Source: Chan B. (2002). *From Perceived Surplus to Perceived Shortage: What Happened to Canada's Physician Workforce in the 1990s?* Ottawa: Canadian Institute for Health Information

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Where Family Doctors Work

How many primary health care providers there are matters, but so does who they work with, the way services are organized and delivered, and how they are distributed (particularly in a country as large and diverse as Canada).

In 2000, there were 95 GP/FPs per 100,000 population in Canada. However, rates varied across the regions, from a low of 22 per 100,000 to a high of 168 per 100,000. Regions with large urban areas—such as Toronto, Montreal, and Vancouver—tend to have more family doctors (and specialists) per capita, while regions with large rural areas tend to have fewer.

Attracting and Keeping Rural Family Doctors

Researchers in the US recently reviewed studies on recruitment and retention of rural general practitioners published between 1990 and 2000. Their main findings, based on the 21 studies identified, are shown below.

	# of Studies	Factors Increasing Likelihood of Recruitment	Factors Increasing Likelihood of Retention
Before medical school	6	-A rural upbringing -Having an intention to practice as a family doctor	None identified
At medical school	15	-Specialized programmes that offer experience in rural primary care -Specialized curriculum -Physician shortage programmes	-Specialized programmes for experience in rural primary care -Specialized curriculum
After medical school	6	-Residence programmes with more rural rotations and obstetrical training	-Rural rotation and residency emphasizing underserved health care -Preparedness for small-town living

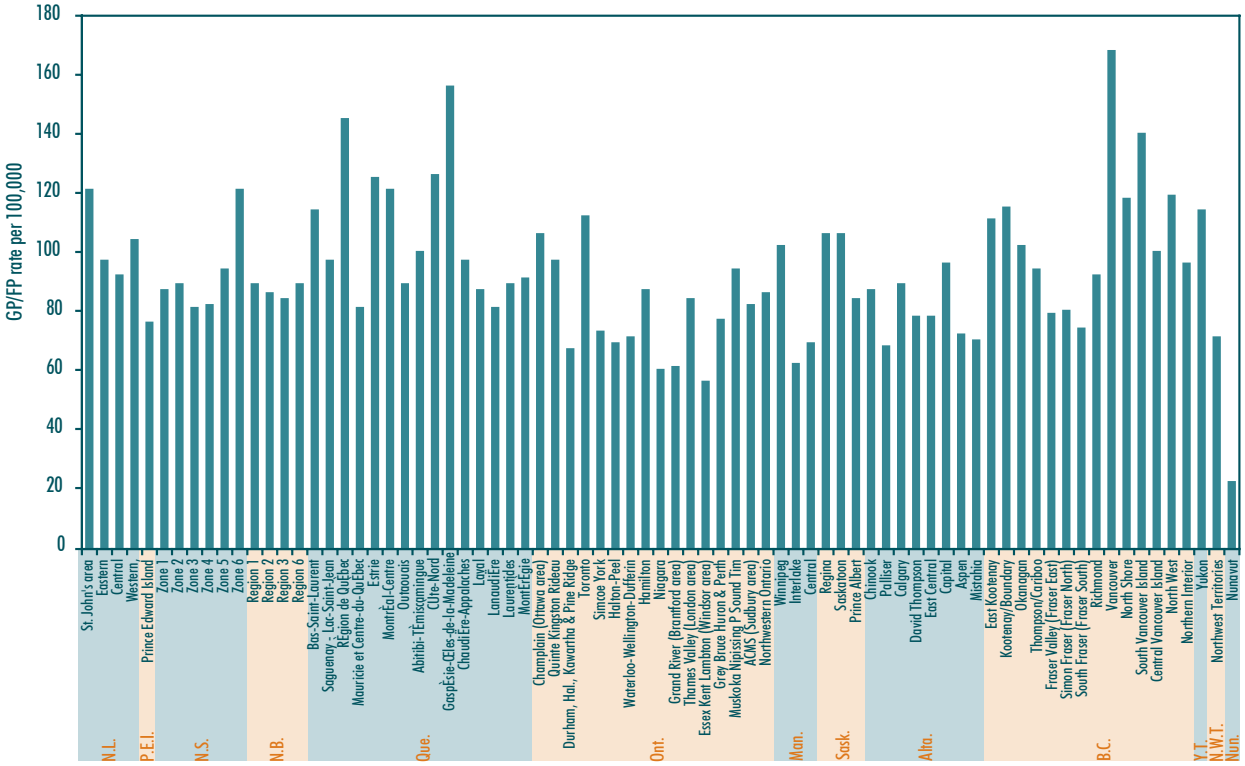
Source: Brooks RG, Walsh M, Mardon RE, Lewis M, Clawson A. (2002). The roles of nature and nurture in the recruitment and retention of primary care physicians in rural areas: A review of the literature. *Academic Medicine*, 77(8), 790–798.

Recruiting and retaining health care professionals in rural and remote areas is a challenge in Canada and elsewhere. A variety of strategies have been explored to address this issue. Examples include restriction of practice locations, offers of special bonuses or funding arrangements, and situating training and clinical placements in rural areas.[8]

Regional Differences in GP/FPs

35

The number of general practitioners and family physicians per 100,000 population varied considerably from region to region across the country in 2000. In some cases, this may reflect the fact that health facilities and personnel may provide services to a larger community than the residents of the immediate region. Residents of a region may also seek care from physicians outside the region where they live. Physician to population ratios reflect the number of doctors in a region and have not been adjusted to take these movements into account. The extent to which this affects individual regions is likely to vary.



Note: Figures include civilian physicians (including those that provide non-clinical services, e.g. health research, administration, and teaching) but exclude interns and residents. At a regional level, records with invalid, missing, or partial postal codes were excluded from the totals. Reporting is generally based on the region of the physician's office or hospital address (over 80% of cases), not region of residence. Reporting is based on total number of physicians on December 31 of the reference year (full or part time), not full time equivalent figures. Physician per 100,000 rates use updated population estimates and may differ slightly from previously published figures.

Source: Southam Medical Database, CIHI

View Data

To fully understand the situation in rural areas and to evaluate whether these types of initiatives are succeeding, researchers suggest that we must look beyond simple population-to-physician ratios.[9] For example, it may be important to consider the distances that patients may have to travel, whether they would choose to travel to different regions for care,[❖] and differences in physician workload and practice patterns. Distribution and access can also be affected by the ways that health care is delivered (e.g. the introduction of telehealth services).

A Look at Access to Primary Care in Toronto

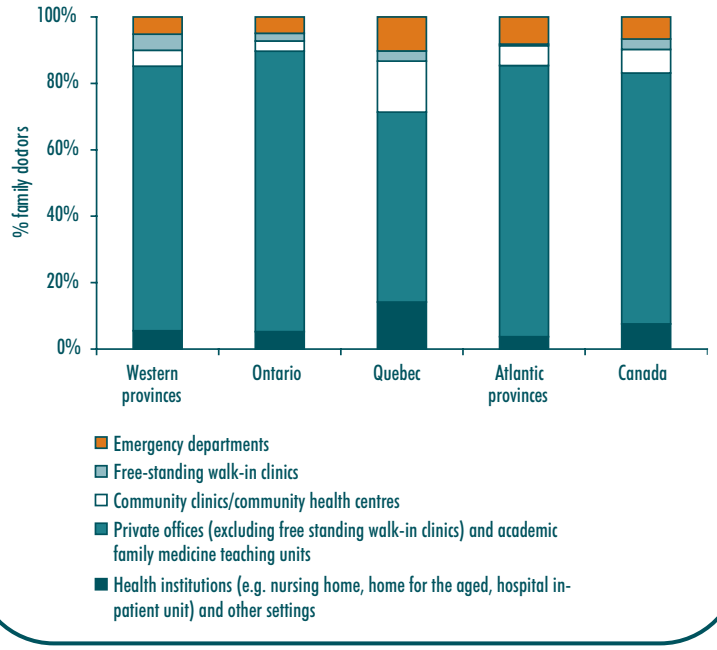
The distribution of health care providers is not just an issue for rural areas. Consider the case of Toronto. It's a diverse and densely populated city, home to 2.5 million people or about 21% of Ontario's population. Almost half of its residents are immigrants; more than a quarter speak a language other than English or French at home. Poverty, homelessness, and other social issues also contribute to the city's special health needs.[10]

Family doctors are one group among a range of health professionals who try to meet these needs. Toronto *does* have more than most parts of the country—in 2000, there were 112 GP/FPs per 100,000 city residents. However, physicians' offices are not spread evenly across Toronto. A study by the Toronto District Health Council found that there were pockets of the city with much lower physician-to-population ratios.[10] In addition, not all family doctors provide all services. For example, the study found that one in six Toronto GP/FPs has a practice limited to specific types of care, such as sports medicine or psychotherapy.

❖ The "inflow/outflow ratio" measures the extent to which people come into and leave a region for different types of hospital care. Data can be found in *Health Indicators 2003*.

Where Most Time is Spent 36

The 2001 National Family Physician Workforce Survey asked family doctors to indicate their main practice settings (i.e. the clinical setting where they spend most of their work time). Private offices are the most common practice settings, but the situation varies across the country. For example, Quebec respondents were more likely to list community clinics and emergency departments as main practice settings than those in other regions of the country.



Source: 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada

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Practice Settings

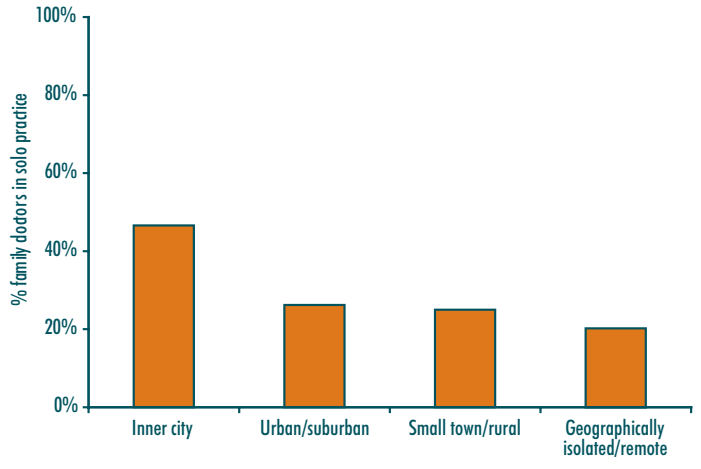
In the city and the country, family doctors work in a variety of settings. These include private practice, walk-in clinics, community health centres, emergency rooms, and other environments. According to the 2001 National Family Physician Workforce Survey, 73% of family doctors said that private offices were their main practice setting.[11] A quarter (25%) said that they sometimes practiced in an emergency department, but only 7% said that an emergency department was their main practice setting.

The Janus Project Methodology

The 2001 National Family Physician Workforce Survey (NFPWS), sometimes known as the Janus Project, is a census survey of all practicing family physicians and general practitioners in Canada. Between February and May 2001, questionnaires were sent to 28,340 family practitioners across the country. Of the 25,520 determined eligible to participate, 13,088 (51%) responded. National level estimates based on 2001 NFPWS study results are considered accurate to within ±0.64%, 19 times out of 20.

Working in Solo Practice 37

According to the 2001 National Family Physician Workforce Survey, family doctors in more densely populated parts of Canada are more likely to be in solo practice than are their colleagues in rural and remote areas.



Source: 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada

View Data

A quarter (25%) of family doctors who work full time or part time said that they worked solo in 2001, down from 31% in 1997.[11] Solo practice is more common in urban than in rural areas: 46% of family doctors in Canada's inner cities reported working solo, compared with 19% in geographically isolated or remote areas. Overall, solo practitioners are more likely than those working in group practices to be male (82% versus 72%) and older (average age of 52 versus 46 years).

Finding a Doctor

Across the country, most Canadians—88% of those aged 15 and older in 2001—report having a regular family physician. Rates do, however, vary significantly across provinces. In 2001, they ranged from 76% in Quebec to 95% in New Brunswick.

The reasons that Canadians gave for not having a regular family doctor also varied from coast to coast.[12] For example, although people from Quebec were more likely than other Canadians to report not having a regular doctor, they were also most likely to state that it was because they had not tried to contact one (reason cited by 74%). This was also the top reason given by those living in Manitoba, Alberta, and British Columbia. In contrast, the 8% of Atlantic Canadians who did not have a regular family doctor were most likely to say that it was because of physician availability (reason cited by 70%).

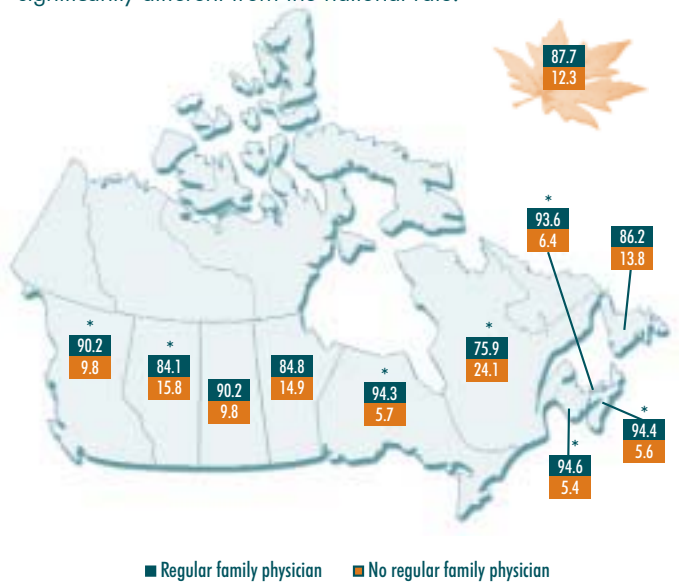
Did you know?

Data from the 2000–2001 Canadian Community Health Survey suggest that Canadians with regular doctors were more likely to receive certain screening tests and other types of preventive health care. For example:

- 75% of women aged 18 to 69 with a regular doctor reported having a pap test in the last three years (compared with 57% of those who did not have a regular family doctor)
- 72% of women aged 50 to 69 with a regular doctor reported having a mammogram in the last two years (compared with 42%)
- 29% of those aged 12 and over with a regular doctor reported having a flu shot in the last year (compared with 10%)

A Doctor to Call Your Own 38

Almost nine in 10 Canadians aged 15 and older (88%) reported having a regular doctor in 2001, but results varied from province to province. An asterisk (*) indicates that the provincial rate is significantly different from the national rate.

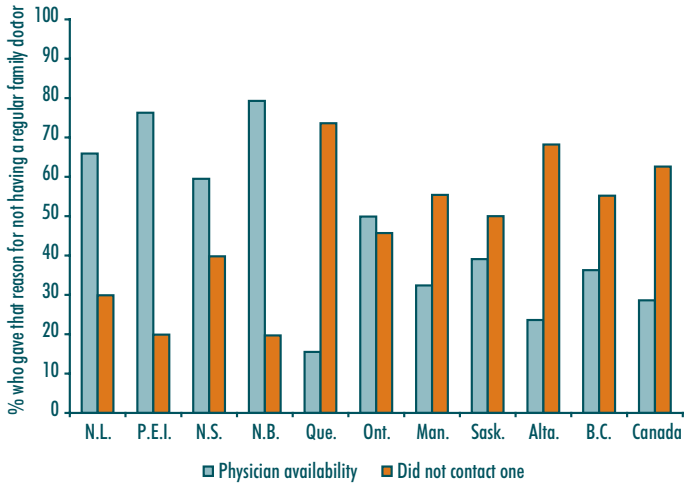


Note: Survey does not include territorial residents.

Source: Statistics Canada. (2001). *Access to Health Care Services in Canada, 2001.* Catalogue no. 82-575-XIE. Ottawa: Statistics Canada.

Reasons for Not Having a Family Doctor 39

In a 2001 survey, just over 12% of Canadians reported that they did not have a family doctor. The graph below shows the proportion of people 15 and older in each province who reported that they do not have a family doctor because of physician availability or because they did not try to contact one in the last year. These were the two main reasons given for not having a family doctor.



Note: Because of high sampling variability, physician availability data in Quebec, Ontario, Manitoba, and Saskatchewan and the contact data in Prince Edward Island, Nova Scotia, New Brunswick, and Ontario should be interpreted with caution.

Source: Statistics Canada. (2001). *Access to Health Care Services in Canada, 2001.* Catalogue no. 82-575-XIE. Ottawa: Statistics Canada.

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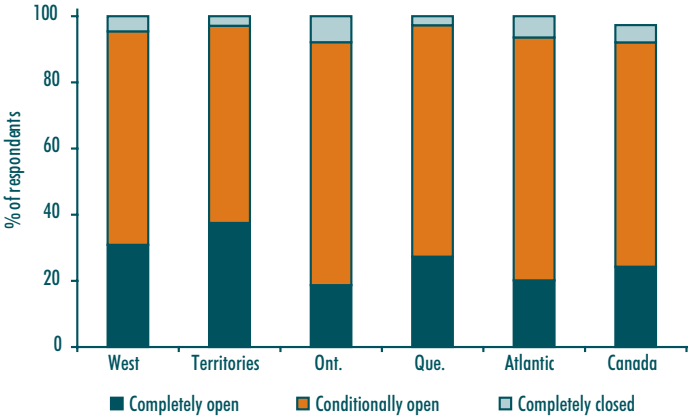
Doctors Accepting New Patients 40

The 2001 National Family Physician Workforce Survey asked family doctors whether they were accepting new patients. Nationally, about a quarter (24%) of those who responded said yes. Most, however, said their practices were conditionally open. This means that they only accept new patients under certain circumstances (e.g. family members or friends of current patients or referrals from other physicians). In addition, some physicians only accept patients with certain medical conditions; others may reject patients for the same reason. Only 5% reported that their practices were completely closed.



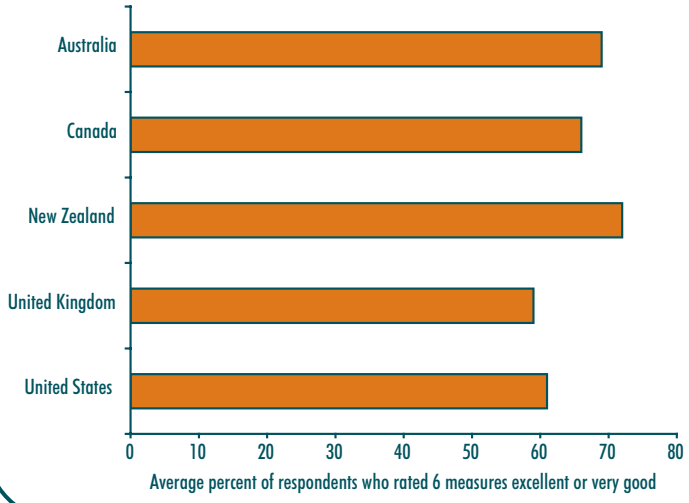
Note: Nationally, 3% of respondents did not indicate whether they were accepting new patients.

View Data

Source: 2001 National Family Physician Workforce Survey , Part of the JANUS Project, College of Family Physicians of Canada

How Canada Compares 41

Each year, the Commonwealth Fund asks people from Australia, Canada, New Zealand, the United Kingdom, and the United States about their country's health care systems. In 2001, they asked a series of questions about physician care. Respondents were asked to rate their physician according to six measures: treating them with dignity and respect, listening carefully, being accessible by phone or in person, spending enough time, knowing them, and providing them with all the information that they want. The graph below represents an average of very good and excellent ratings for the six measures.



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Source: 2001 International Health Policy Survey, Commonwealth Fund

Overall, 63% of those who did not have a regular family doctor said that they had not tried to contact one; 29% cited reasons related to physician availability; and 8.5% mentioned other reasons.

Whether they had a regular doctor or not, most Canadians (91% aged 15 and over in 2001) who used health care services in the last year reported being very or somewhat satisfied with the care they received from their family doctor or other physician.[13] Those with a regular family doctor also tended to give positive ratings to the quality of that care. In 2001, 91% rated it as excellent or very good. Satisfaction with community-based health care services (excluding services in a hospital or a physician's office) is somewhat lower: 83% of females and 80% of males reported being very or somewhat satisfied with this type of care in 2001.

The Care That Family Doctors Provide

Although family doctors most often practice in their offices, they may also work in—or liaise with—emergency departments, hospitals, nursing homes, home care, and palliative care. The range of services offered by individual doctors differs across the country. For example, in 2001, 64% of Toronto family doctors said that they provided obstetrical care. That compares with 77% of those working in the North. Rural doctors were also more likely than those in urban areas to provide a number of other services, such as chronic disease management, palliative care, emergency medicine, substance abuse/addiction medicine, anaesthesia, casting/splinting, skin biopsies, and suturing.

The mix of services that family doctors provide is also changing over time. For example, researchers in Ontario recently studied changes in GP/FP care between 1989–1990 and 1999–2000.[14] At the beginning of this period, about 14% of family doctors had "office-only" practices. That is, they did not visit patients in hospitals or nursing homes, make house calls, work in emergency departments, or provide

anaesthesia or obstetrical services. A decade later, 24% of Ontario's family doctors were in this group. This change occurred among male and female family doctors of all ages in both rural and urban settings.

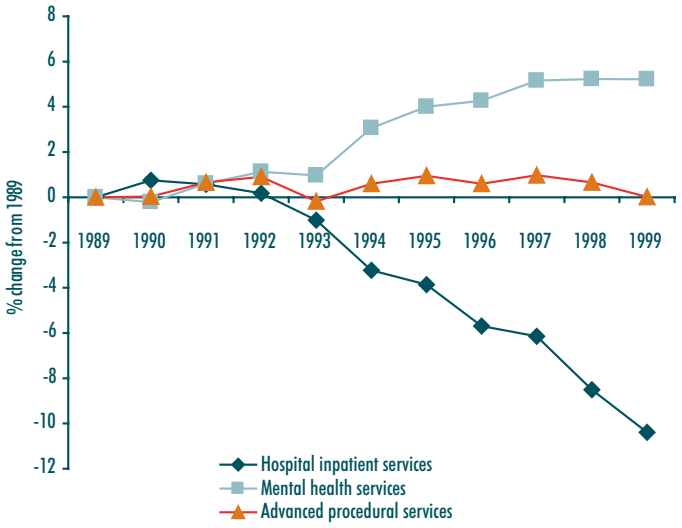
To find out what is happening in the rest of the country, we explored how many Canadian family doctors provided three types of services between 1989 and 1999—hospital inpatient assessments or visits, advanced procedures (e.g. vasectomies, suturing wounds, and setting fractures), and mental health care. The analysis was based on fee-for-service billing data.

By 1999, family doctors were less likely to have billed for visits to patients in hospitals than at the beginning of the period. In contrast, they were more likely to bill for mental health care, typically an in-office activity. Billings for advanced services sometimes done in the office and sometimes in the hospital stayed relatively constant.

Overall, however, average fee-for-service practice activity is increasing. Between 1989 and 1999, it rose 5% to 6%. A number of factors may explain this increase, including productivity improvements and heavier workloads (possibly resulting from recent changes in effective physician supply).[4]

What Work are Family Physicians Doing? 42

The services that family doctors provide are changing over time. For example, they were less likely to care for patients in the hospital in 1999 (63% of those paid on a fee-for-service basis did so) than in 1989 (70%). In contrast, more are providing certain types of in-office care, such as mental health services (86% in 1999 vs. 81% in 1989). The percentage of family doctors who do certain advanced procedures (e.g. vasectomies, setting fractures, and rectal examinations) changed little over the decade (81% in both years). The graph below shows the percentage change in the proportion of family doctors that billed for each type of service compared to 1989.



View Data

Source: National Physician Database, CIHI

Frequent Users of Ontario's Emergency Departments

Emergency departments (EDs) care for thousands of Canadians each year. Some will visit only once; others return on a regular basis. A recent Ontario study[15] set out to discover if frequent users (those with 12 or more visits per year) use more or less community-based primary health care services than other ED patients.

Researchers found that frequent users tend to have complex medical problems. They are more likely to be young to middle-aged adults (62%) and to live in disadvantaged neighbourhoods. Almost all frequent users had also contacted a community-based family doctor during the year.* In fact, most (78%) made at least six visits to family doctors' offices.

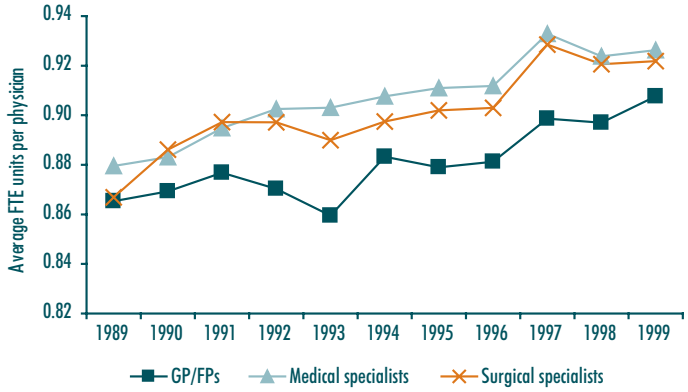
Although frequent users received most of their primary health care (73% of visits) from the GP/FP they saw most often, they tended to see more family doctors than less frequent ED users. On average, they saw 4.2 GP/FPs (compared with 1.6 for the control group). ED physicians were also more likely to refer frequent users to specialists.

These findings led the researchers to conclude "the opportunity to improve care through communication and coordination between EDs and primary care physicians is encouraging, because in most cases, frequent users of EDs seek most of their care from one principal ED and one primary care physician."

* The study was based on an analysis of fee-for-service billing data. Emergency department users who contacted salaried physicians in community health centres or similar settings would not be captured here.

Physician Practice Activity 43

While the physician to population ratio fell in the late 1990s, family doctors are providing more services, on average, than in the past. (So are their counterparts in medical and surgical specialties.) Practice activity is based on the amount that doctors bill under fee-for-service payment plans. Those with the middle 20% of total billings (adjusted for province, specialty, and changes in fee schedules) receive an FTE value of 1, representing a typical full-time workload. Those with higher billings are assigned a value greater than 1; those with lower billings receive lower FTE values. The graph below shows how the average of these FTE values compare over time.

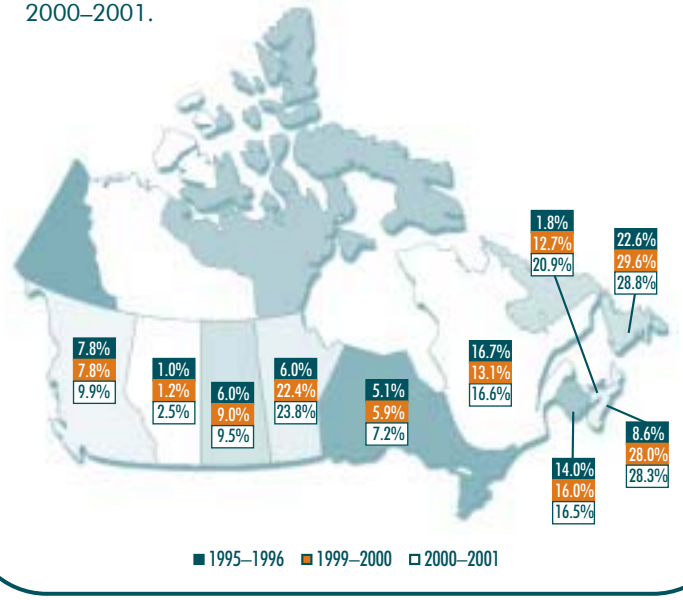


Source: Chan B. (2002). From Perceived Surplus to *Perceived Shortage: What Happened to Canada's Physician Workforce in the 1990s?* Ottawa: Canadian Institute for Health Information.

View Data

Growth in Alternative Payment Plans 44

Most physicians in Canada derive most of their income from fee-for-service payments. Together, alternative payments added up to $1.3 billion in 2001. This accounts for about 11% of the value of physicians' clinical services in the 10 provinces, although the proportion varies across the country. The map below shows data for 1995–1996, 1999–2000, and 2000–2001.



Source: Compiled by CIHI

How Family Doctors are Paid

Most family doctors in Canada are paid on a fee-for-service basis, a situation that some have identified as a challenge to achieving primary health care reform.[16, 17, 18, 19, 20, 21] Under fee-for-service, physicians in private practice bill provincial/territorial health insurance plans for each patient service that they provide. The amount that they are paid is based on a fee schedule, negotiated between governments and medical associations.

Alternative payment plans (other than fee-for-service) have gained popularity in Canada in recent years. In 2002, 37% of respondents to a Canadian Medical Association survey preferred to be remunerated through fee-for-service payments, down from 50% in 1995.[26] Blended remuneration (23%) and salaries (26%) were the next two most popular approaches.

Alternative payment plans accounted for 11% of total clinical payments to physicians in 2000–2001, up from 9% in 1999–2000.[27] However, only about 7% of physicians received most of their earnings through these plans in 2000–2001.

That said, the situation varies considerably by province. In Alberta and Ontario, for example, the vast majority of physicians are paid on a mainly fee-for-service basis (99% and 95% respectively). But the situation is different in other jurisdictions, such as Newfoundland and Labrador, where 28% of physicians are paid mainly through alternative payment modes.

In addition, in every province, physicians in private practice may "opt out" of their right to bill the public plan. They can then bill patients directly. In some jurisdictions, physicians who opt out cannot bill at a higher rate than would be possible under the public plan. In other provinces, patients who pay for services of opted-out physicians cannot be reimbursed from public funds.[22] According to Health Canada, few physicians are known to have opted out of public health plans.[23] They counted 187 opted-out specialists and general practitioners in Ontario and six in British Columbia in 2001–2002. They did not find any in other jurisdictions (information for Quebec was not available).

Untangling the Language

Under **fee-for-service (FFS)** arrangements, physicians submit claims for individual services provided to patients. In each jurisdiction, governments and physician associations negotiate standard fee schedules for different types of services.

With **capitation**, physician payment is based on the number of patients under the care of their practice. The amount of funding per patient may be adjusted based on the patient's age, sex, and/or health status. A recent Manitoba study found that the average health of patients seen in different physician practices varies significantly, particularly in urban areas.[24]

Capitation usually involves **rostering**; that is, patients sign-on with a particular physician or practice and agree to consult the practice for ongoing primary care or to obtain referrals to more specialized care. In return, the practice agrees to provide comprehensive care to rostered patients.[25] In most circumstances, patients are free to leave the practice ("de-register") or occasionally to obtain care elsewhere. In such cases funding may be reallocated from the original practice to the sites where care is actually provided. The practice may also agree or be required to provide patients with on-call service or telephone access 24 hours a day, seven days a week.

In contrast, **salaries** offer payment for all services delivered during a specified period of time as a lump sum, paid at regular intervals.

Blended funding approaches combine fee-for-service payments, capitation, salary, and/or other funding arrangements.

Information Gaps: Some Examples

What We Know

- About half (51%) of all practicing physicians in Canada are general practitioners or family physicians, down from 53% in 1993. Research studies have quantified the impact of various factors that affect recent trends in effective physician supply.
- The number of general practitioners and family physicians per capita varies considerably across the country. Many other factors, such as population health status and the types of services provided, also affect the balance between the supply of family medicine services and patient need in a community.
- Most Canadians have a regular doctor; they generally feel that the quality of their care is very good or excellent. Others are most likely to say that they are without a regular doctor because they did not try to contact one, although leading reasons differ across the country.
- A minority of family doctors in private practice work mainly as solo practitioners. Other family doctors work in various types of settings, such as group private practices, emergency departments, community health centres, and walk-in clinics.

What We Don't Know

- What is driving the changes in the proportion of family doctors providing different types of services? What effects do these changes have on access to care, physicians' worklife, specialist workloads, health care costs, and patient outcomes?
- How has patient satisfaction with family physician care changed over time? What are the key factors that affect satisfaction with care? What strategies for improving satisfaction are most effective?
- How many family doctors receive payments through alternative payment plans? What effect do various payment mechanisms have on access to care, long-term health outcomes, health care costs, and patient and provider satisfaction?

What's Happening

- Dozens of initiatives are underway to pilot and implement new models of primary health care across the country, many of these initiatives involve family doctors. In some cases, they are supported through the Primary Health Care Transition Fund (PHCTF), an $800 million investment ending March 2006.
- The federal, provincial, and territorial governments published their first reports on common health indicators in 2002, including information on the proportion of the population with regular doctors.
- Research into models of care, patient and provider preferences and outcomes, and other aspects of primary health care continues across the country and around the world.

For More Information

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Beyond Primary Health Care

From birth to death, interactions with the health care system mark many of the milestones in our lives. In Part A of this report, we focused on primary health care in Canada, the first step in a continuum of health services. In Part B, we explore this continuum further.

Chapter 5 looks at the cost of providing care that spans the continuum and includes both primary health care spending as well as spending that extends beyond it. Chapter 6 focuses on institutional care, services that are at the opposite end of the continuum from primary health care. In this chapter, we consider the care Canadians recieve within hospitals and how that care is changing. As well, we explore what we know and don't know about satisfaction with care and how long Canadians wait for different types of care.

5

The Health Care Dollar

The Health Care Dollar

Health care sustainability and renewal have been at the top of the agenda for governments across the country in the past year. Their deliberations drew on findings from two new federal studies, as well as recent provincial task forces and commissions. One of the common themes running through many of these reports was the need for any new investments in health care to be used to buy lasting change in the system. To help inform the debate about future plans, this chapter outlines how much we currently spend on health care, how we use that money, and how our spending patterns are changing over time.

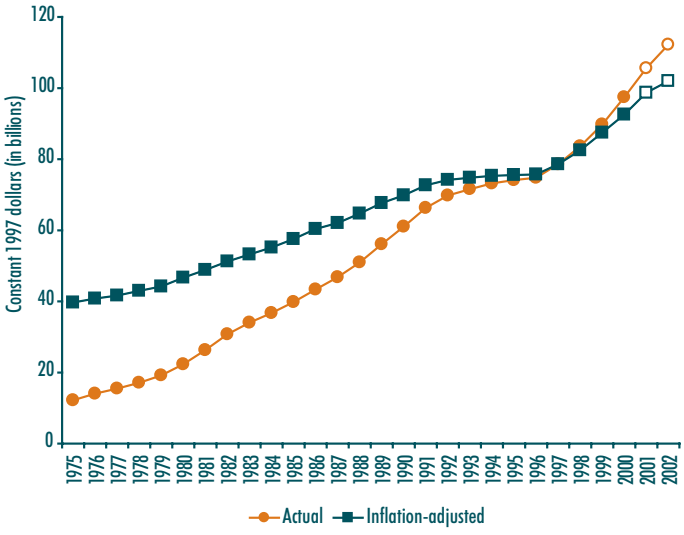
Spending on Health Care

In 2002, CIHI forecast an increase in total public and private spending on health care per person, adjusted for inflation, for the sixth straight year. Overall, we spent an estimated $112 billion to improve or maintain our health, an average of $3,572 per person.[1] Recent increases followed a relatively lean period in post-Medicare funding history. Overall, spending increases over the last decade average out to about the long-term historical growth rate.

Canada spends more on health care than most countries. As of 2001, about 9.3% of our economic output (GDP) went to health care, up from 7.3% in 1981. Three G8 countries spent more in 2000—the United States (13.0% of GDP), Germany (10.6%), and France (9.5%). In all three cases, life expectancy was lower than in Canada (based on 1999 data).[2] This suggests that higher spending on health doesn't translate directly to better life expectancy.

Trends in Health Care Spending 45

Growth in total public and private spending on health care has regularly outpaced inflation over the last 30 years. The graph below compares actual and inflation-adjusted spending (in constant 1997 dollars) between 1975 and 2002 (forecast).



Note: Open data points are forecasted numbers.

Source: National Health Expenditure Database, CIHI

View Data

Who Pays?

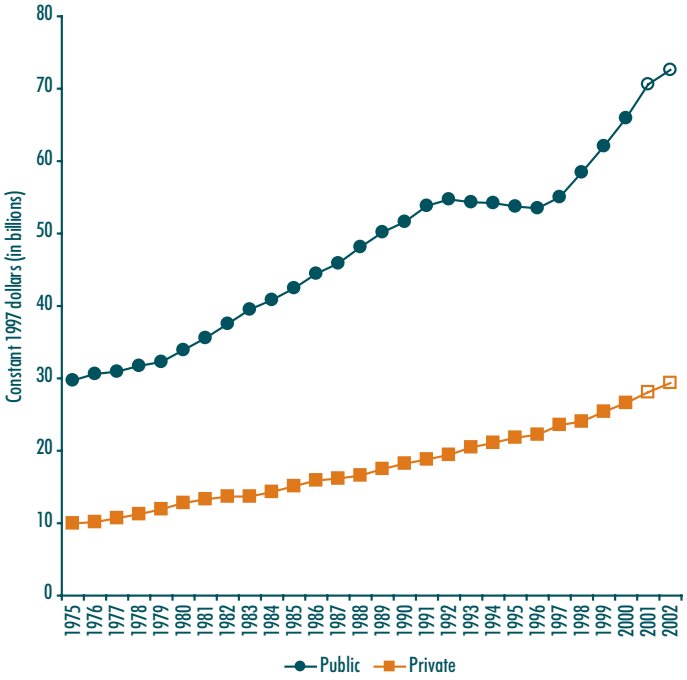
In 2002, seven out of every 10 dollars spent on health care came from the public purse. In total, governments and social security programs spent just over $79 billion. Public spending covers most public health programs, hospital care, physician services, and care for Status Indians and Inuit. The public sector also pays part of the cost of other services, such as home care, prescription drugs, and ambulances. The provinces and territories administer the bulk of the public sector health budget, part of which is financed through federal transfers of cash and tax points. Since the Canada Health and Social Transfer's introduction in 1996, precise data on federal and provincial/territorial shares of health spending have not been available. This will likely change when the recently announced Canada Health Transfer is introduced (scheduled for 2008–2009).

The rest—a total of $32.9 billion in 2002—comes from private sources, such as insurance plans or out-of-pocket payments. Drugs, dental care, and vision care account for most private spending. Indirectly, governments bear part of these costs through foregone tax revenues. For example, firms can deduct insurance premiums from their taxable income, but employees do not pay taxes on these benefits.

Public and private payers cover part of the cost of health care in all OECD countries, but the proportion for which they pay varies widely. The private sector share in the United States (56% in 2000) is about double Canada's (28%). The private share in other OECD countries ranged from 8.6% in the Czech Republic to 56% in Korea.

Public/Private Spending 46

Total health spending in Canada, adjusted for inflation, has increased since 1975, but the public share has fluctuated over time. Since 1996, public sector health care spending has grown faster than spending by the private sector.



Note: Open data points are forecasted numbers.

View Data

Source: National Health Expenditure Database, CIHI

Going Without 47

In 2001, the Commonwealth Fund asked adults in five countries, including Canada, whether they had foregone care in the past year because of cost. In all countries, the proportion of people with below average (BA) incomes who reported cost-related access issues was higher than for those with above average (AA) incomes. However, the percentage reporting foregoing care due to cost varied from country to country and by type of care, as shown below.

	Australia		Canada		New Zealand		UK		US	
	BA	AA	BA	AA	BA	AA	BA	AA	BA	AA
Did not fill a prescription	21	18	22	7	20	11	7	7	39	18
Did not get recommended test, treatment, or follow-up	17	14	9	4	18	11	4	1	36	14
Needed dental care but did not see a dentist	38	31	42	15	40	36	20	19	51	24
Had a medical problem but did not visit a doctor	14	10	9	3	24	18	4	2	36	15
Problems paying medical bills	17	8	14	3	20	7	4	2	35	11

Source: Blendon RJ, Schoen C, DesRoches CM, Osborn R, Scoles KL, Zapert K. (2002). Inequities in Health Care: A Five-Country Survey. *Health Affairs*, 21(3), 182–191

The $34 Billion Question

Between 1997 and 2002, Canada's combined public and private health care bill increased by over 43%, up almost $34 billion. This period followed one of slower spending growth in the early to mid-1990s.

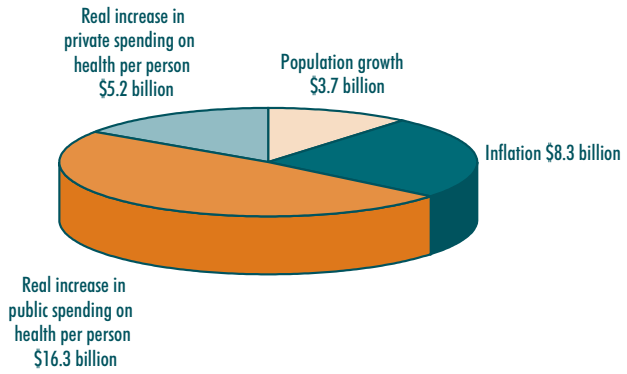
To better understand recent patterns, we looked at the extent to which four factors explain spending increases since 1997:

- Canada's **population** grew by 1.4 million over the five years. Just maintaining 1997 per person spending levels ($2,620) would have required an extra $3.7 billion in 2002. That's about 11% of the overall increase in health spending.
- **Inflation** accounted for about $8.3 billion or 25% of the growth in total spending.❖
- After a brief dip in the mid 1990s, **public sector spending per person**, adjusted for inflation, rose steadily. The result was that we spent $16.3 billion "more" on health care (48% of overall growth) through the public sector in 2002 than in 1997.
- **Private sector spending** per person also rose between 1997 and 2002, accounting for the remaining 16% of the increase in total health expenditures.

We then looked in more detail at the $16.3 billion increase resulting from real public sector spending growth, per person. Most of the increase was due to changes in spending on hospitals (29% of the growth), drugs (15%), and capital investment (14%). An upsurge in public spending per person on other services, such as physician services and home care, accounted for the rest. In contrast, drugs (46%) and payments to other health professionals, such as dentists and optometrists, (33%) accounted for most of the growth in real private sector expenditure per person.

Accounting for Spending Growth 48

Between 1997 and 2002, total health spending in Canada grew by almost $34 billion. Why the increase? Many factors—from population growth and inflation to a rise in real (inflation-adjusted) public and private spending on health per person—contributed. Their relative importance is shown below.



Source: National Health Expenditure Database, CIHI

View Data

❖ This calculation is based on the health component of the consumer price index (for private sector spending) and implicit price indices for government current expenditure (for public sector health care spending), both from Statistics Canada. A 2000 review showed that the latter corresponds closely to the sub-component related to government health expenditure, which is not publicly available. [Hicks V, Fortin G, Ballinger G. (2001). *Price Indexes Used in National Health Expenditures: Feasibility Study.* Ottawa: CIHI. (www.cihi.ca/cihiweb/en/downloads/spend_nhexenhance_e_PriceIndexes.pdf)]

Wage Trends

The people who provide care are the core of our health care system. Their wages and other payments for their services account for a large part of what we spend on health care. Between 1997 and 2001, Statistics Canada's Labour Force Survey shows that, on average, weekly wages for full-time workers in the health sector increased by just under 9%, compared to 10% for workers in all parts of the economy.[3] Likewise, Census data show that, on average, employment incomes for full-time workers in health occupations rose at about the rate of inflation between 1995 and 2000. That compares to a 5.7% after-inflation increase for all earners.[4]

Spending from Coast to Coast

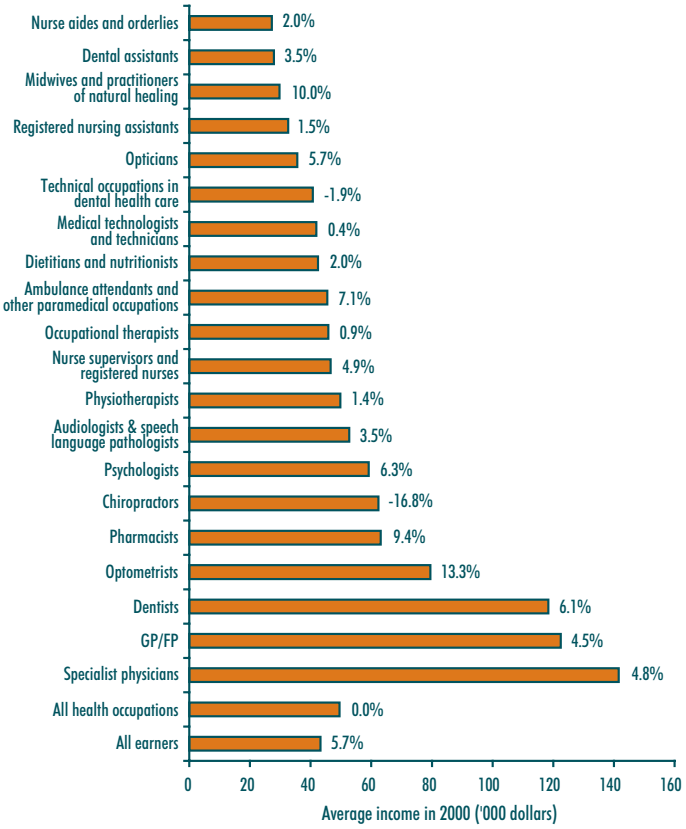
In 2002, health spending per person continued to be highest in the territories. This partly reflects the cost of serving relatively small populations scattered over large areas. Among the provinces, total public and private spending per person varied between $3,182 in Québec and $3,955 in Manitoba.

What explains the difference? Many factors—geography, health needs, how care is organized and delivered, what services are covered by public programs, and how much health professionals are paid, among others—can affect costs. Another potential factor (although age-standardized spending estimates suggest that it has relatively little impact at the provincial level) is the age distribution of the population served.[1] For example, provincial and territorial governments tend to spend much more per person on infants than on older children. Spending then rises for adults, with higher average costs for women than men (at least partly because of care during

Changing Incomes

49

The average income for health professionals in some occupations is more than three times that in others. The figure below shows average annual employment incomes for Canadians who worked full time for the full year in selected health occupations in 2000 compared with the overall averages for health occupations and all earners. It also shows the percent change in those averages since 1995, adjusted for inflation.



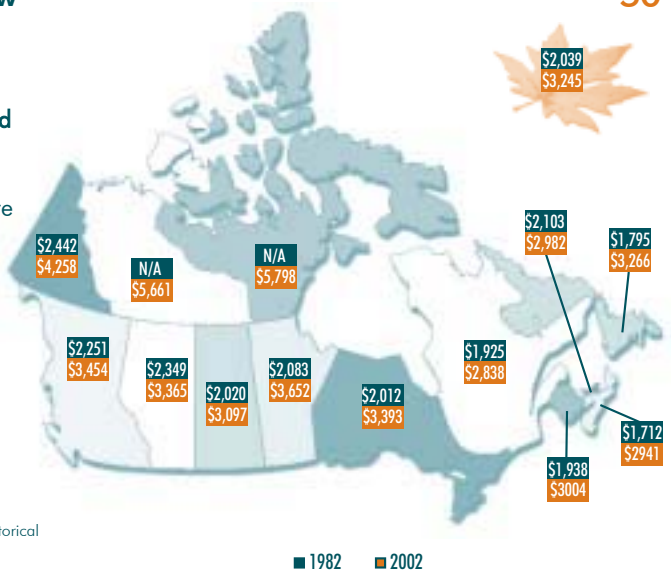
View Data

Source: Census of Population, Statistics Canada

Spending Then and Now

50

Health spending varies from place to place and year to year. The graph below shows spending per person, **adjusted for inflation**, in the provinces and territories in 1982 and 2002 (forecast). All figures are in constant 1997 dollars.



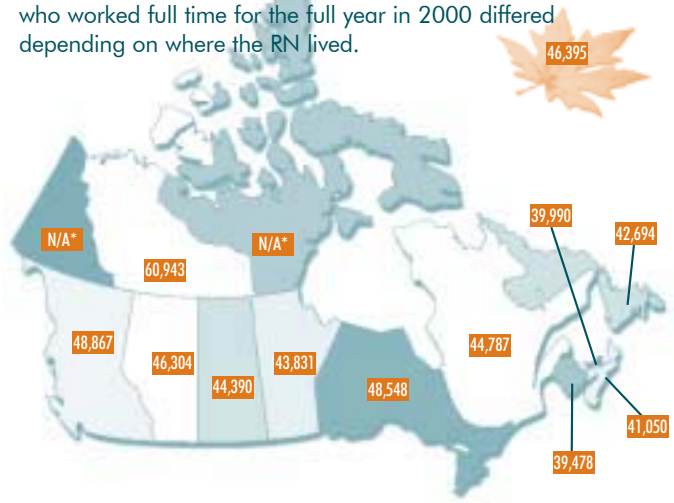
Note: Data for the Northwest Territories and Nunavut Territory are not shown because historical spending comparisons are not available.

Source: National Health Expenditure Database, CIHI

Registered Nurses' Incomes Across the Country

51

Some experts have suggested that differences in wage rates and benefits may partly explain variations in health spending across the country. For example, average employment incomes for members of the largest health occupation, registered nurses, who worked full time for the full year in 2000 differed depending on where the RN lived.



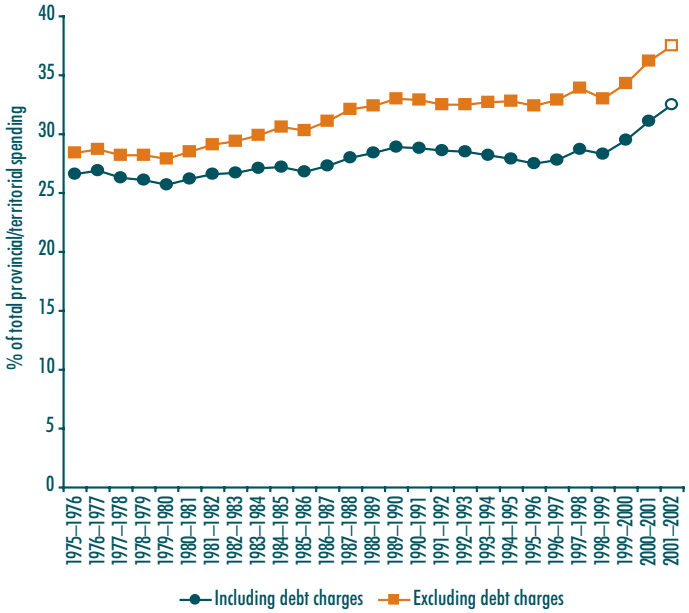
* Due to small cell sizes, data were suppressed.

Source: Census of Population, Statistics Canada

Health's Share of the Budget

52

Since 1998, provincial/territorial governments have spent an increasing share of their budgets on health care. The graph below shows the percent of combined provincial/territorial spending, including and excluding debt charges, going towards health care.



Notes: 1) Open data points are forecasted numbers.
2) Total provincial and territorial government spending includes expenditures by sovereign and non-sovereign bodies of provincial-territorial ministries, departments, and agencies; autonomous boards, commissions, and funds; and autonomous non-commercial non-profit education, health, and social service agencies controlled by provincial-territorial governments.

Source: National Health Expenditure Database, CIHI

View Data

pregnancy and childbirth). Health expenditures per person are highest for seniors. In 2000, over 40% of provincial/territorial government health spending was for those aged 65 and older.

The public/private split of health spending also varies from coast to coast, but in all parts of the country the share of government budgets devoted to health care is on the rise. In 2001–2002, health accounted for almost one third (33%) of provincial/territorial government spending, including debt charges, up from 27% in 1975–1976. It represented about 38% of program spending (excluding debt charges) in 2001–2002. Across the country, health's share varied from 16.1% in the Yukon to 43.5% in Ontario.

Where Health Care Dollars Go

Today's spending profile reflects the results of on-going changes in our health system. Hospitals, drugs, and doctors are now the three largest areas of health expenditure. Together, they accounted for over 60% of public and private spending in 2002 (forecast).

Hospitals remain the largest single category of health spending, accounting for $35 billion in 2002. Their share of the total, however, continues to fall—from 45% in 1975 to 31% in 2002. Hospitals are also spending their funds differently. For example, the proportion going towards staff salaries has decreased in recent years, but more is being spent on benefits, drugs, and medical supplies.

Unlike hospitals, nursing homes and other health care institutions account for about the same share of total spending as they did two decades ago. Canada spent just over $10 billion in this area in 2002. That's just over 9% of total health expenditures, about the same proportion as in 1975. Most funding for these institutions comes from the public purse (74% in 2002), and the public share has risen. It was 71% in 1975.

Retail sales of prescribed and non-prescribed drugs are the second largest category of health spending. Canadians spent about $18 billion on drugs in 2002, just over 16% of total health expenditure. Most of this spending (64%) came from private insurance and out-of-pocket

payments, but the public share is increasing. From 15% in 1975, it rose to 36% in 2002.

Most public funding for drugs comes through provincial/territorial government health programs. Coverage under these programs varies across the country. All jurisdictions provide some benefits to seniors and to some recipients of low-income assistance, but co-payments, deductibles, and which drugs are included vary. In 2000, provincial/territorial government plans paid out just under $3 billion for seniors' drug expenditures alone.* Some jurisdictions also cover other groups, such as those with very high drug costs or particular health conditions. For example, they may include organ transplant donors and recipients, people who are HIV positive, or patients receiving palliative care.[5, 6, 7] First ministers also recently agreed to provide universal access to catastrophic drug coverage by the end of 2005–2006.[8]

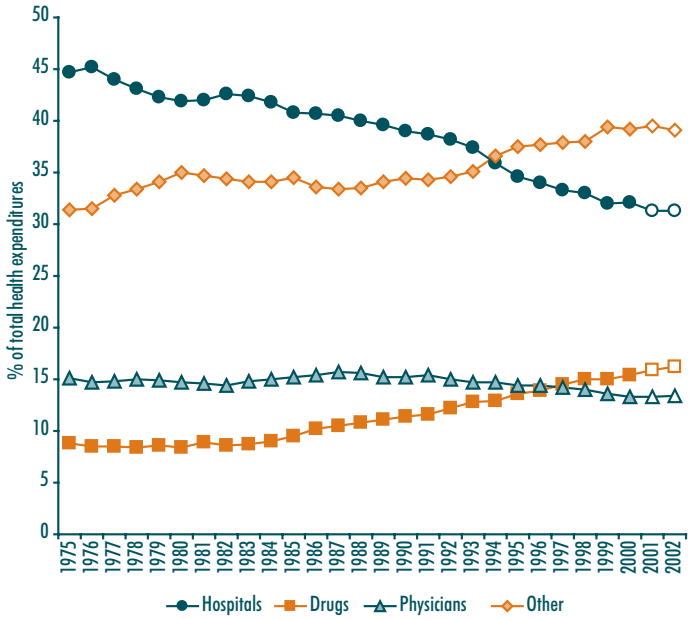
As for drugs, a combination of public programs, private insurance companies, and individual Canadians pays for home care services. In recent years, this has become one of the fastest growing sectors of health spending. By 2000–2001, provincial and territorial government expenditures had risen to more than $2.5 billion, from just over $205 million in 1980–1981. Private sector spending on home care is also growing.[9]

Many factors have likely contributed to the increase in home care spending. A recent national study suggested that possibilities include changing demands for home care services; more

Shifting Shares

53

As the health care system changes, so does health spending. The graph below shows how the allocation of total health care spending has shifted over time.



Notes: 1) Open data points are forecasted numbers.
2) The uses of health dollars are grouped into eight major categories based on how payments are made (e.g. the hospital category includes salaries paid to physicians on hospital payrolls and drugs dispensed in hospital).
3) "Other" includes: capital, public health and administration, other health professionals, other institutions, and other health spending.

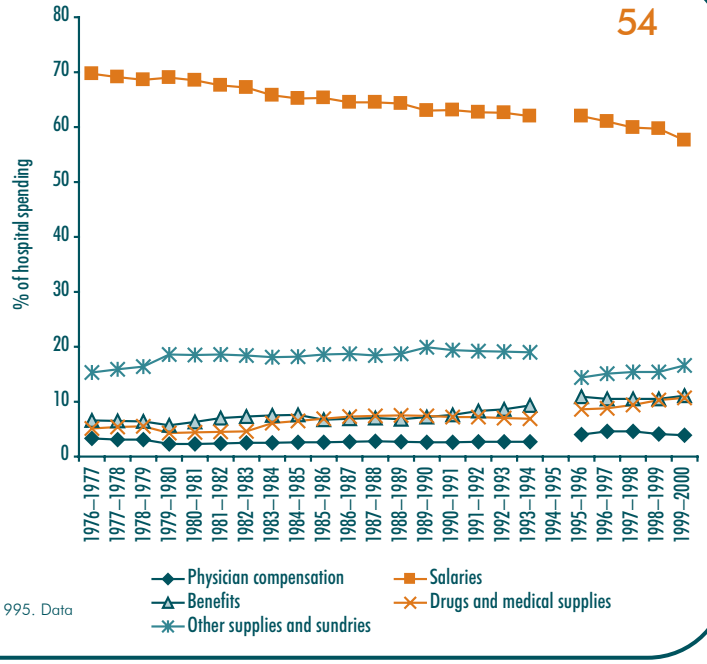
View Data

Source: National Health Expenditure Database, CIHI

What are Hospitals Doing with their Dollars ?

54

The bulk of hospital spending goes towards staff salaries and benefits. How hospitals divide their funds between these and other costs—such as medical supplies and drugs—is shifting gradually over time, as this graph shows.



*Reporting structures changed in 1994–1995. Data are not available for that year.

View Data

Sources: Annual Return of Health Care Facilities—Hospitals, Statistics Canada (1976–1977 to 1993–1994)
Canadian MIS Database, CIHI (1995–1996 to 1999–2000)

* Drug claim information by age and sex was not available for Newfoundland and Labrador, PEI, and Nunavut Territory.

reliance on home care as an alternative to hospital care; changes in the availability of informal care; more emphasis on self-managed care; and the evolving mix of both services available through home care programs and the health professionals who provide them.[10]

What Ill Health Costs Canada

Ill health costs Canada far more than what we spend to treat disease. The economic burden of illness includes time away from work or school and time spent caring for sick friends and family. As well, premature death results in the loss of potential economic output.

According to a 2002 study by Health Canada, Statistics Canada, and CIHI,[11] these "indirect" costs almost doubled the country's health bill in 1998. The study counted direct costs for disease prevention, treatment, and rehabilitation, as well as indirect costs resulting from premature death and short- or long-term disability. (The economic value of time spent caring for friends and family and the burden of pain and suffering or the psychosocial consequences of illness were not captured.)

Researchers estimated that the total economic burden of illness in 1998 was $159.4 billion. Direct costs were $83.9 billion; indirect costs were $75.5 billion. Cardiovascular disease ($18.5 billion in total), musculoskeletal disease ($16.4 billion), cancer ($14.2 billion), and injuries ($12.7 billion) were the highest cost diseases. Together, they accounted for more than one-third (39%) of all costs. (An additional 26% could not be classified by type of illness.) In terms of direct costs, these four conditions accounted for 36% percent of hospital expenditures and 23% of total drug spending.

Information Gaps: Some Examples

What We Know

- How health care spending has changed over time.
- How Canada's health spending compares internationally.
- How much of the rise in health care spending can be explained by inflation, population growth, and real per capita increases in spending.
- How changes in spending over time differ from one part of the country to the other.

What We Don't Know

- How do changes in health expenditure affect the health of Canadians?
- How much is spent on health promotion and prevention activities and programs in Canada each year? What about complementary and alternative therapies, such as massage therapy and homeopathy?
- To what extent do different factors (e.g. geography, population health status, and wage differences) explain variations in health spending between jurisdictions?
- How might different mixes of public and private funding and service delivery affect costs, access, quality and patient outcomes, and satisfaction?

What's Happening

- Many recent Commission reports have recommended that any new money invested in health care be used to buy change. Canada's first ministers have recently committed to a series of health care renewal initiatives, including new agreements on federal transfers to support health programs.
- CIHI released updated information about drug expenditures in the spring of 2003.
- CIHI is planning to release updated information about home care expenditures in the summer of 2003.
- Hospitals and community health services organizations will soon be able to better track dollars spent on information technology thanks to upcoming improvements in the Management Information Systems Guidelines.

For More Information

[1] Canadian Institute for Health Information. (2002). *National Health Expenditure Trends, 1975-2001*. Ottawa: CIHI.

[2] Organization for Economic Cooperation and Development. (2002). *OECD Health Data 2002: A Comparative Analysis of 30 Countries* [CD-Rom]. Paris: OECD and CREDES.

[3] Statistics Canada. (2001). *Labour Force Historical Review*. Ottawa: Statistics Canada.

[4] Statistics Canada. (2003). 2001 *Census of Population: Release 7, March 11, 2003*. www12.statcan.ca/english/census01.

[5] Strathdee SA, Palepu A, Cornelisse PG, Yip B, O'Shaughnessy MV, Montaner JS, Schechter MT, Hogg RS. (1998). Barriers to use of free antiretroviral therapy in injection drug users. *Journal of American Medical Association*, 280(6), 547-549.

[6] Colpitts DB, Freitag CL. (1997). Organ donation and transplantation in the Canadian healthcare system. *Journal of Transplant Coordination*, 7(2), 59-66.

[7] Government of Saskatchewan. (2000). *Programs and Services: Palliative Care*. www.health.gov.sk.ca/ps_palliative_care.html.

[8] Federal/Provincial/Territorial First Ministers. (2003). *First Ministers' Accord on Health Renewal*. www.scics.gc.ca/pdf/800039004_e.pdf.

[9] Health Canada. (2001). *Health Expenditures in Canada by Age and Sex, 1980-1981 to 2000-2001. Statistical Annex*. Ottawa: Health Canada.

[10] Canadian Institute for Health Information. (2001). *Home Care Estimates in National Health Expenditure: Feasibility Study*. Ottawa: CIHI.

[11] Health Canada. (2002). *Economic Burden of Illness in Canada, 1998*. Ottawa: Health Canada.

6 The Changing Hospital

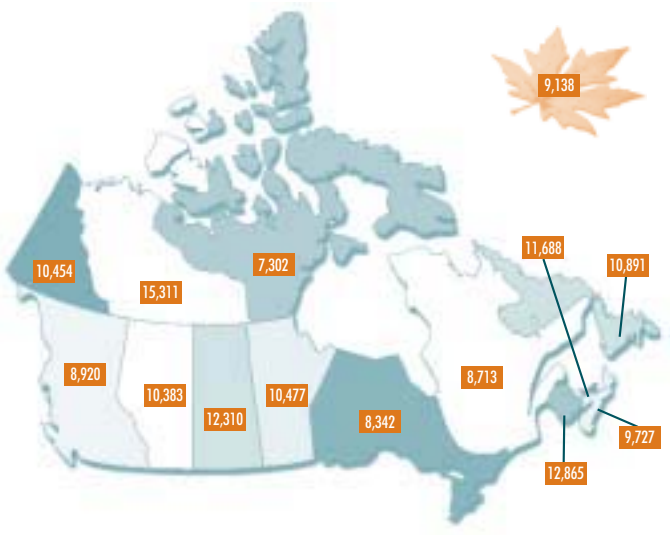
The Changing Hospital

Hundreds of "H" signs still line Canada's highways, but the hospitals they point travelers to are very different than they were a decade—or even five years—ago. For example, fewer patients are staying overnight, but day surgeries are on the rise. The number of hospital beds—and the number of hospitals—have also fallen. Between 1995–1996 and 1999–2000, 275 hospitals closed, merged, or changed to provide other types of care. Administration of hospitals has changed as well. In most parts of the country, health regions are now responsible for providing acute care services. They also manage long-term care, public and community health services, some mental health programs, and other types of care.

Hospital Stays Across the Country

55

How often people stay overnight in acute care hospitals varies across the country. The rates below exclude newborns and are adjusted for differences in the age structure of each population.



Note: Age-standardized rates per population are standardized to the age distribution of the 1991 Canadian population.

Source: Hospital Morbidity Database, CIHI

Inside These Four Walls

The number of nights that Canadians spent in acute care hospitals fell by about 10% between 1995–1996 and 2000–2001. Hospitalization rates fell 16.5%, after taking population growth and aging into account. Even so, acute care hospitals provided about 21 million days of care in 2000–2001, an average of 7.2 days per patient. This represents just under 2.9 million inpatient discharges from acute care hospitals (excluding newborns and patients in other types of care such as emergency wards, chronic care and rehabilitation units, and day surgery programs). While seniors are more likely to be hospitalized than younger Canadians, their rates are still falling. In 2000–2001, about 27 per 100,000 seniors were hospitalized, down from 31 per 100,000 in 1994–1995.

Most, but not all, patients return home at the end of their stay. While a recent Manitoba study[1] showed that the longer people stayed in hospital, the less likely they were to be sent home; the researchers also found that half (50%) of patients with stays of more than 30 days did return home. The others were transferred to a nursing home (16%), went to another institution (14%), or died (20%). Where patients went after their hospital stay was related to their age. For example, 70% of those under 65, but only 38% of those 85 and older, went home.

Living Where You Get Care

Just as fewer people now stay overnight in hospitals, so older Canadians are less likely today than in the past to live in nursing homes and other long-term care facilities. In 2001, only 2% of those between 65 and 74 and 14% of those 75 and older lived in health care institutions. Twenty years ago, the census counted 3% and 17% respectively.[2]

In a Quebec study that investigated the relationship between regulatory status of long-term care facilities and quality of care over a three year period, researchers found that residents who rated their care as poor at the start of the study tended not to live as long as those who rated it as good. That was true whether or not the long-term care facility was regulated by the province.[3]

Rates Rising for Some Procedures

While hospitalization rates are down overall, that's not true for all types of care. For example, more Canadians than ever before are having knee replacements—66.8 per 100,000 population in 2000–2001 compared to 55.6 per 100,000 population only six years before.

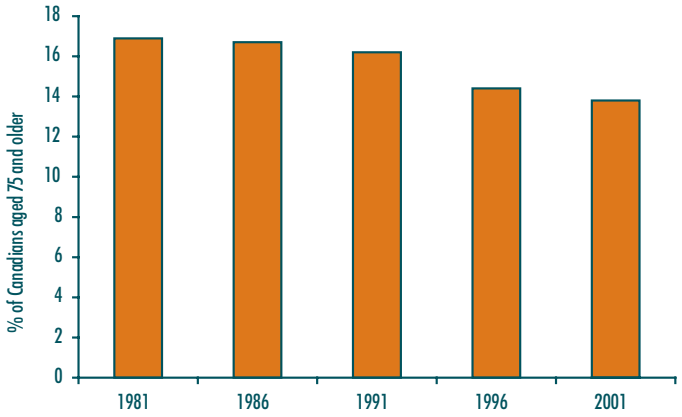
Although seniors receive most (70%) of these procedures, rates are also rising for younger Canadians. Between 1994–1995 and 2000–2001, the number of total knee replacements performed on people under the age of 55 rose by 90% (from 938 to 1,779), while total hip replacements increased by 30% (from 2,310 to 3,013).

Joint replacement rates have increased across the country, but there are differences among provinces. And rates vary even more between regions within some provinces. For example, knee replacement rates within regions in Ontario ranged from 59.2 to 121.5 per 100,000 in 2000–2001. A full list of hip and knee replacement rates for large health regions across Canada is available in *Health Indicators 2003*.

Recently, researchers from Ontario tried to understand why rates vary within provinces.[4] To do so, they compared two regions—one with a high rate of hip and knee surgery and one with a low rate. They found that the need of patients (based on severity of their arthritis) for the surgery was indeed higher in the region with the highest rate of procedures. However,

Living in Long-Term Care 56

Every five years, the Census counts how many people live in Canada and where they live. For those over 75, the picture is gradually changing. Between 1981 and 2001, the proportion living in nursing homes and other institutions fell from 17% to 14%.

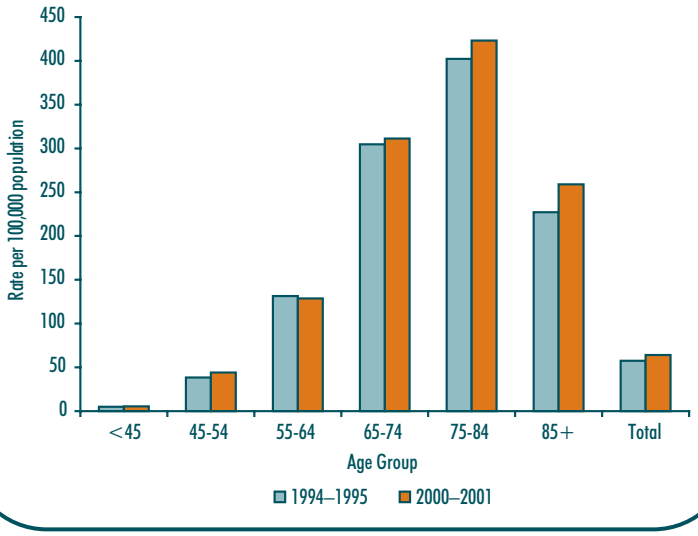


View Data

Source: Census, Statistics Canada

Replacing Hips 57

The first joint replacements were done in the 1930s. Now, hip and knee replacements are common procedures. As the graph indicates, the rate of hip replacements in Canada rose slightly between 1994–1995 and 1999–2000 both overall and for most age groups (includes first-time replacements and revisions).



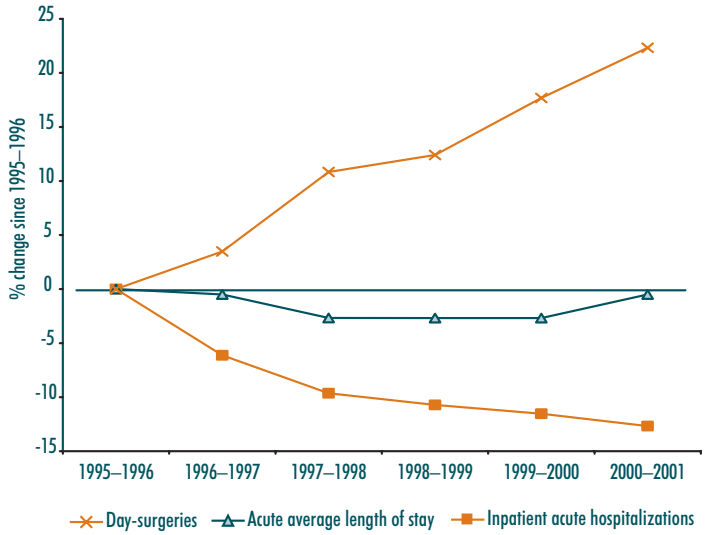
View Data

Source: Hospital Morbidity Database, CIHI

Day Surgery in Ontario

58

Thanks to changes in the way we can treat various diseases, many more Canadians are spending less time in hospital for minor procedures. For example, between 1995–1996 and 2000–2001 the use of day surgery in Ontario hospitals increased by over 20%. Over the same period there was a decline in the number of overnight hospitalizations in acute care facilities.



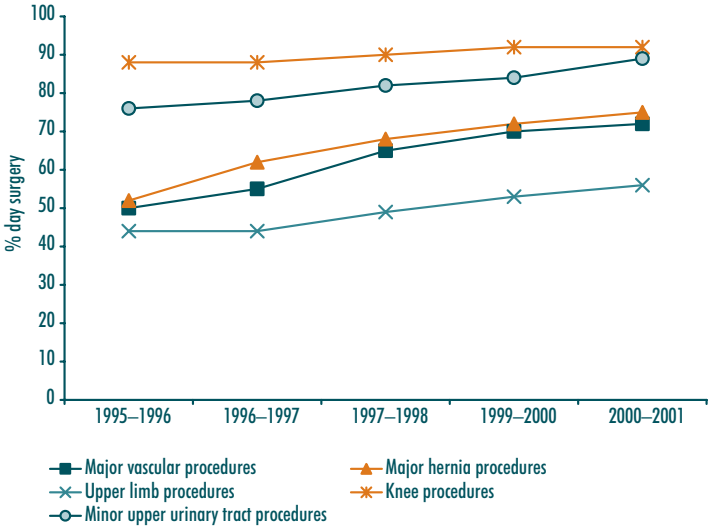
Source: Discharge Abstract Database, CIHI

View Data

Same Day Procedures

59

For some operations—like basic knee procedures*—day surgery has been the most common form of care for many years. The use of day surgery for other procedures continues to increase. The graph below includes data for all jurisdictions that reported full day-surgery and inpatient data between 1995–1996 and 2000–2001 (Ontario, British Columbia, Nova Scotia, New Brunswick, Newfoundland, Yukon, and the Northwest Territories).



* Basic knee procedures excludes knee replacement surgery.

Source: Discharge Abstract Database, CIHI

View Data

they also found that willingness to undergo surgery was higher in the high-rate area. For example, of those who researchers thought were likely candidates for surgery (based on severity of their arthritis), 15% in the high-rate area versus 9% in the low-rate area said that they were definitely willing to undergo the procedure. The researchers concluded that both need and patient preferences help explain part of the difference in rates across Canada.

No Overnights Required?

Hip and knee replacements still usually require several days in hospital, but more and more types of care do not. In fact, in some parts of the country, surgery not requiring an overnight stay (or "day-surgery") now accounts for more than half of all surgery undertaken.

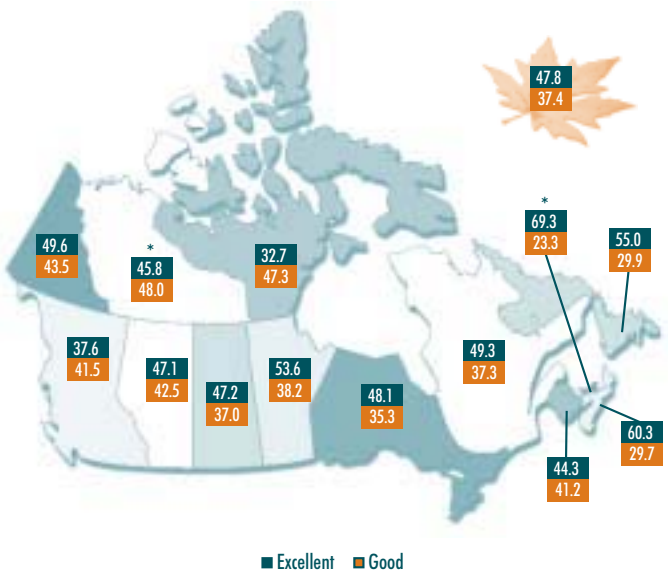
Day surgery is well established for some procedures. For example, in the past patients who had their gall bladders removed remained in hospital for several days. Thanks to new surgical techniques and other developments, most patients now return home on the day of their operation. In addition, doctors and hospitals continue to develop new procedures that do not require an overnight stay in many cases.

Satisfaction with Hospital Care

Patients tend to rate the care they received more highly than the public rates the system as a whole. For example, in 1988, only 5% of Canadians surveyed by the Commonwealth Fund[5] said that our health system needed to be rebuilt. By 1998, that percentage had risen to 23%, but fell to 18% by 2001. Canadians with below average incomes were more likely to feel this way than those with above average incomes—23% versus 13% of others. In contrast, 85% of Canadians (aged 15 and over) who reported using health care services in the past 12 months, rated the quality of care received as good or excellent in 2000–2001.[6]

Who Is Satisfied with Care 60

According to the 2000–2001 Canadian Community Health Survey, more than eight in 10 respondents (85%) aged 15 and older who reported having stayed overnight in hospital in the last year said that they had received good or excellent quality care.



* Significantly different from Canadian average.

Source: Canadian Community Health Survey, Statistics Canada, 2000–2001

Further Information About Patient Satisfaction With Hospital Care

Hospitals in several provinces are tracking and comparing patient satisfaction albeit in different ways and at different points in time. Examples of results from recent surveys include:

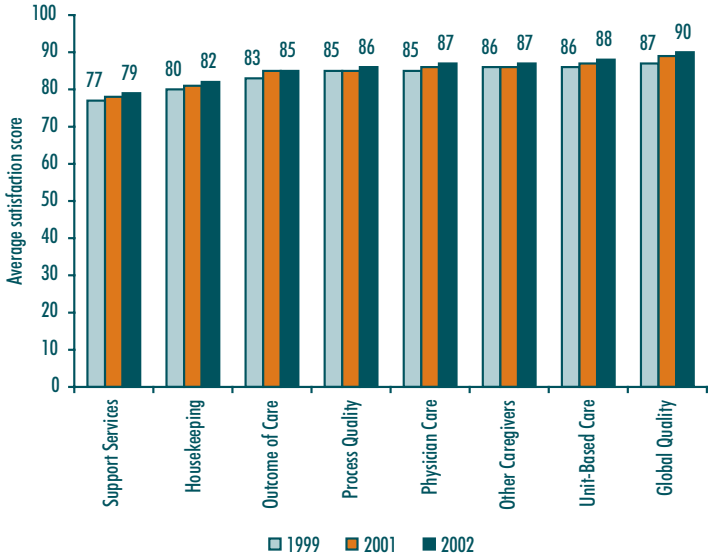
- Overall, 95% of **Quebec** residents said they were satisfied with the services they received in hospital in 2002. Most were satisfied with several different aspects of the care, from the health care staff (94% satisfied) to the information that they received about their treatment (89% satisfied). However, opinions were not as positive about some other aspects. For example, patients were less likely to be satisfied with hospital meals (72%) and the complaint process (58%).[10]
- Over several years, researchers have asked **Ontario** patients their opinions about their hospital care. The 2002 acute care survey went to just under 75,000 patients. About 37,500 responded. Of those, 89% said that the overall quality of their care was excellent or good. The ratings were high for care provided by physicians (an average of 85.7 out of 100 points) and unit-based care (84.8 points on average), while satisfaction with housekeeping services tended to be lower (78.3 points).[11]
- **Alberta:** More than eight out of 10 Albertans (83%) rated the care that they had most recently received (within the last 12 months) in hospital as good or excellent in 2001. Patients who visited the emergency room, had undergone day-surgery, or spent at least one night in hospital were included. Of those who were dissatisfied with the quality of care (about 20%), the most common issues reported were waiting too long for care, shortages of and overworked staff, and a lack of respect and communication from physicians and other health care providers.[12]

Overall, Canadians report being satisfied with the care they receive in hospital. More than eight in 10 (85%) of those 15 and older said that they had received good or excellent care in 2000–2001. That said, more detailed studies show that satisfaction with specific aspects of care varies. It tends to be higher for care by doctors and other health professionals than for hospital food, housekeeping, and some other aspects of care. In Montreal, for instance, cardiology patients were generally satisfied with their hospital care but were less likely to give high marks to the information that they received when leaving the hospital.[7] This situation is not unique to Canada. In an Australian study, cancer patients who were satisfied with their opportunities to discuss their needs with their doctors, and with the doctors' technical abilities tended to be less satisfied with what they were told about their follow-up care.[8] Likewise, in a US study, dialysis patients who reported being satisfied with the care they had received were, nevertheless, concerned about the lack of information they had received about their follow-up care.[9]

Changing Satisfaction with In-hospital Care in Ontario

61

Over the past three years, Ontario's acute care hospitals have achieved rising levels of satisfaction for patients hospitalized overnight. For example, the "process quality" indicator score—which reflects both the quality of care and the provision of services—increased each year. Trends varied somewhat from hospital to hospital, some having improved ratings and others falling scores. This graph illustrates how patients rated different aspects of hospital care between 1999 and 2002.



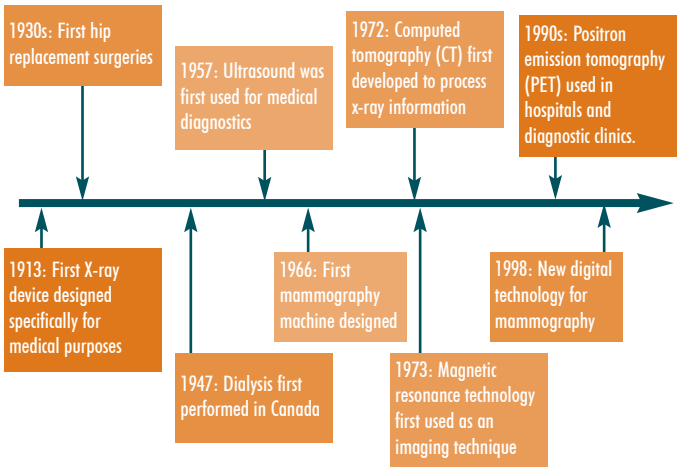
View Data

Source: Canadian Institute for Health Information. (2002). *Hospital Report 2002: Acute Care.* Ottawa: CIHI

How We Got Here: Technology Timeline

62

Over the last century, a wide range of new medical technologies has fundamentally changed the nature of diagnosis and clinical care for many health conditions. Examples of innovations are shown below.



Source: Compiled by CIHI

High Tech Care— In and Out of Hospital

The invention and application of new technologies, including drugs, are constantly changing the ways in which health care is delivered. Although high tech innovations—such as the first remote surgery—may receive more attention, the development of (or improvements to) basic technologies can be just as important. For example, wheelchairs, walkers, and raised toilet seats can increase the independence of persons with disabilities.[13]

Because many new technologies have associated benefits as well as costs and risks, there have been calls for their evaluation before they are widely used.[14] These evaluations depend on a broad range of research from around the world. For example, antiretroviral drugs have now become the accepted standard of care for patients with HIV infections, partly because of studies showing that they reduce the risk of mother-to-child transmission of HIV,[15] improve patient survival,[16] and decrease hospitalizations due to HIV infection.[17]

Various technology assessment groups weigh the latest evidence in their evaluations of new and existing technologies. For example, the Canadian Coordinating Office for Health Technology Assessment (CCOHTA) recently reviewed the use of digital radiography mammography versus conventional film screen mammography.[18] They concluded that the ability of the two technologies to detect cancer is comparable, but that the digital approach is more costly.

Some e-technologies are already widely used. According to Statistics Canada, more than 5.8 million Canadian households (49%) had at least one member that regularly used the Internet from home in 2001. And today's doctors are also signing on-line. According to a Canadian Medical Association questionnaire,[19] many physicians reported using the Internet for searches on Medline (44%) and for accessing patient-oriented Web sites (27%) in 2001. Some physician practices (17%) also have Web sites. Patients are also presenting many physicians with medical information obtained from the Internet.

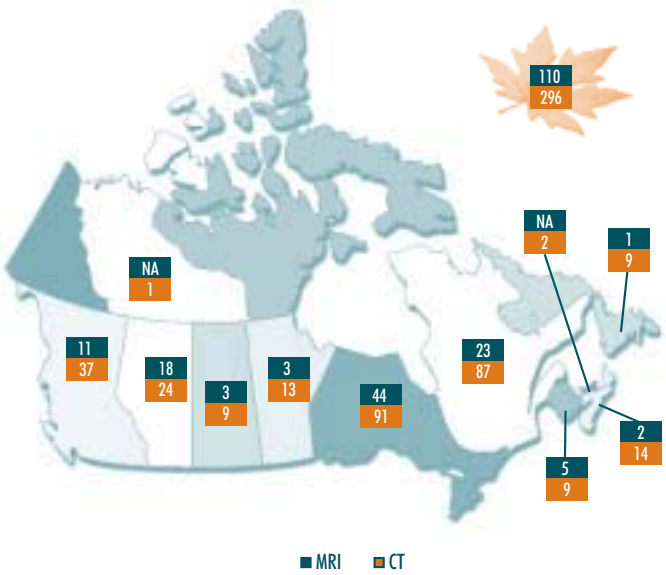
Bringing Diagnostic Imaging into Focus

Diagnostic imaging technologies—which range from older tools (e.g. basic x-rays), to newer ones such as digital mammography techniques—allow doctors to look inside the body. Many newer technologies build on or incorporate older technologies. For example, **Computed Tomography** (CT), also known as Computerized Axial Tomography or the CAT Scan, reveals soft tissue structures not usually shown by conventional x-rays. It may also be used to track the circulation of a dye to assess function of a given system.[20] **Magnetic Resonance Imaging** (MRI) machines use a large magnetic field instead of radiation to produce an image based on the energy of living cells.[21] They are often used for areas of soft tissue in the body, as well as for the brain and spinal cord. And, **Positron Emission Tomography** (PET) is used to show the function of a given organ or system, unlike other scans which target structures. It produces colour-coded images of metabolic activity using low-dose radiation.[22]

Diagnostic imaging technology is also being used to transform other types of care. For example, **Gamma Knife Surgery**—also known as stereotactic radiosurgery (SRS)—uses MRI or CT scanners, as well as a unique frame around the head, to help surgeons operate on the brain more accurately.[23] It has been used to operate on people with conditions such as epilepsy or brain tumors. A regional centre of excellence has recently been established in Winnipeg, Manitoba to continue to evaluate this technology.

Diagnostic Imaging Across Canada 63

The Canadian Coordinating Office for Health Technology Assessment counted 110 Magnetic Resonance Imaging (MRI) machines and 296 Computed Tomography (CT) scanners operating in Canadian hospitals or health authorities as of July 15th, 2001. The map below shows the location of the scanners, as well as the number of MRI and CT machines.



Source: Compiled by CCOHTA

Want to Know More?

CIHI is producing a report on medical imaging technology in Canada due to be released in the summer of 2003.

Waiting for Care

Wait times remain a key issue for Canadians. For example, respondents to a November 2002 Ipsos-Reid poll said that reducing wait times for diagnostic services such as MRIs and CT scans should be the number one priority for new health care spending.[24]

Comparable data about who is waiting for what, and for how long, are starting to emerge. This information is beginning to give us insight into the factors that affect wait times. These include:

- What type of care you need. For example, in British Columbia, waiting times varied from seven days for radiotherapy to just over three and a half months for corneal transplants between October 2002 and January 2003.[25]
- Whose list you are on and where you are waiting. In general, there is no single nation-wide or even province-wide wait list for care. Wait lists are typically managed at the regional, hospital, or physician level. Where comparable data are collected, they often show wait time variations. For example, in British Columbia in December 2002 median wait times for some surgeons doing hip replacements were less than three weeks, while for others they were over a year.[26]
- How urgently you need care. For example, the Western Canada Wait List (WCWL) project has developed a series of prioritization tools to capture information about all patients waiting for care. The questions reflect clinical as well as personal and social prioritization criteria. This information can then be used to establish a patient's priority for cataract surgery, children's mental health services, general surgery, and hip and knee replacement. In Ontario, open heart surgery wait times are already tracked by urgency level. Between 1999 and 2002, wait times averaged three days for urgent cases, about nine days for semi-urgent cases, and 36 days for non-urgent cases.[27]
- How a wait is measured. Inconsistencies in calculating wait times affect the ability to compare and determine acceptable waits.
- When you are waiting. For example, wait times in hospital emergency departments often vary by time of the day, day of the week, and season of the year.
- Special Factors related to individual patients or conditions. For example, critically ill patients may need to be stabilized before they have surgery. In the case of elective surgery, on the other hand, patients may wish to schedule the procedure to take work or family events into account. In addition, a range of other factors may also play a key role for some types of care. For instance, waiting times for transplants depend heavily on the availability of appropriate organs.

In contrast, a recent study suggests that socio-economic status is not related to waiting times for non-urgent surgery.[28] Researchers examined waiting times for 22 common procedures between 1992 and 1999. In most cases, they found that patients living in lower socio-economic areas did not generally experience longer waiting times. The exception was prostatectomies, for which patients living in higher socio-economic areas waited four fewer days, on average.

Overall, one in five patients aged 15 and older who received specialized services in 2001 reported that waiting for care had a negative impact on their lives. People identified pain (37%); poorer health (31%); trouble doing everyday tasks (24%); worry, anxiety, stress (59%); and loss of work (4%) or income (8%) as the most common ways that waiting affected their lives.[29]

Researchers have also explored outcomes for particular types of care. For example, a recent study in Ontario tracked wait times and outcomes for 8,000 patients waiting for cardiac catheterization between 1998 and 2000.[30] Researchers found that only 37% of patients received the procedure within the time requested by the referring physician. Overall, 1.4% of patients had a major cardiac event during their wait. Likewise, as the demand for transplants outstrips the supply of organs, waiting lists have grown. In 2001, 195 Canadians died while waiting to have at least one of their organs transplanted. Most were adults waiting for kidneys (71), livers (56), and hearts (28).

Waiting for Rehab Care

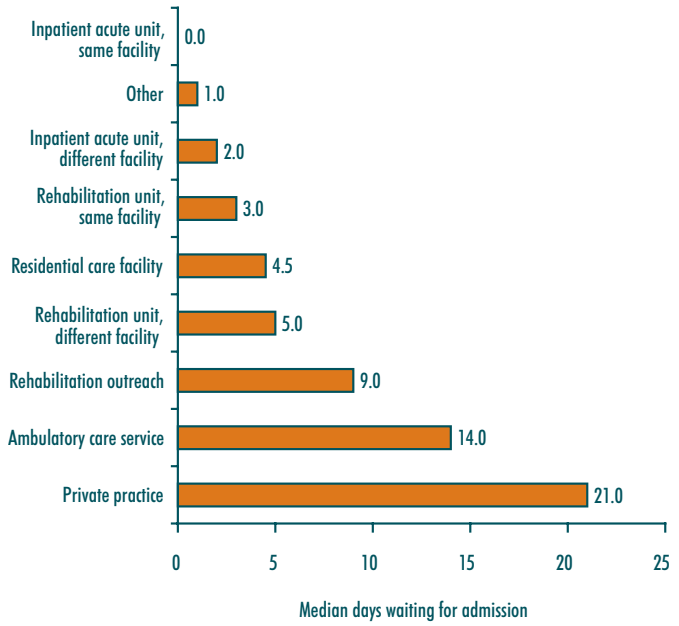
Sometimes people need specialized care to help them recover from an illness or accident. For example, if you have recently suffered a stroke or a hip replacement you may need to learn how to walk again or regain your strength and balance.

Between July 2000 and December 2002, CIHI's new National Rehabilitation Reporting System received data from 70 participating rehabilitation facilities in six provinces. The data show that over a third (about 4,500 or 37%) of the total number of patients were admitted on the day that they were deemed eligible for the program. More (about half or over 6,200 people) waited between one and 10 days. At the other end, less than 4% waited 30 days or more. The data further show that the number of days waiting for admission varies depending on who refers the patient.

The Difference a Referral Makes

64

Clients enter inpatient rehabilitation programs in several different ways. Between 2000 and 2002, half of all patients cared for by the 70 programs participating in the National Rehabilitation Reporting System (NRS) waited between one and 10 days for admission after they were deemed eligible for the program. The other half waited longer. Median wait times varied by referral source, as the chart below shows.



View Data

Source: National Rehabilitation Reporting System (NRS), CIHI

Measuring Wait Times: A Comparison of Methods

It's hard to manage what you can't measure—and measuring wait times is a complex task. A researcher from Manitoba recently reviewed several frequently used methods. Her findings include:[31]

- **Surveys:** Ad hoc or regular surveys provide information about people's perceptions of wait times and their satisfaction with the system. The challenges include achieving high response rates and designing questions to capture comparable data. Other factors may affect a person's response to the survey, such as comfort answering the questions and ability to recall past experiences accurately.
- **Administrative data analyses:** Data routinely collected by doctors, health regions, hospitals, or others could be used to track the time between two events (such as a patient's last pre-operative visit with a surgeon and the surgery). Challenges include putting these systems in place and defining methods to accurately capture comparable wait times from existing data systems.

Untangling the Evidence: Wait Times

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Comparable data about who is waiting for what, for how long, and the factors influencing waiting are rare. Nevertheless, there are many on-going and new initiatives aimed at collecting data about wait times. The results of these studies sometimes seem contradictory, partly because of variations in the methods and data sources used. The table below outlines some of the key differences between selected recent Canadian wait list studies and registry reports. While most studies using administrative data include all patients who received care, coverage for physician surveys varies.

	Study	Data Sources/Coverage	General Finding	Wait(s) Measured	Time Period
Administrative Data	B.C. Surgical Wait List Registry: Provincial Trends	Actual patient experience reported by hospitals	Waits have fluctuated up and down in recent years	Surgery booking to surgery	1995–June 2002
	Alberta Health & Wellness Performance Indicators	Actual patient experience reported by Regional Health Authorities (joint replacement) and Alberta Cancer Board (cancer care)	Waits vary across regions, with some below and others above provincial targets	Prescription to first treatment for radiation and chemotherapy; decision or booking of surgery to surgery for joint replacement	Quarterly reports 2001–2002
	Surgical Wait List Management Report to Saskatchewan Health	Saskatoon: wait list data managed by the health district administration Regina: surgeons manage wait lists and provide information to health district	There are substantial wait time differences between individual surgeons in Regina and Saskatoon for the same procedure, however, caution should be taken in comparing results	Surgery booking to surgery	January to September 2001
	Cardiac Care Network of Ontario	Actual patient experience reported by hospitals	Regional differences, but in all areas urgent/emergent patients have much shorter waits than elective patients	Surgery booking to surgery	November 2001–present
	Nova Scotia Department of Health	Proxy retrospective wait times from administrative physician claims data for 16 procedures	According to the Nova Scotia government, Nova Scotia waiting times have shown no dramatic increases for the procedures selected. For example, potentially life-saving cancer surgery wait times remained consistent throughout the study period.	Date of prior visit with physician to procedure	1992–1999
Patient Survey	Health Services Access Survey (National)	Patient-reported wait times for specialized services including specialist visits, diagnostic tests and non-emergency surgeries (cardiac, cancer, joint replacement, cataract, and other non-emergency)	Over 53% of patients waiting for cardiac and cancer related surgery received services within one month compared to about 20% of those waiting for joint replacement or cataract surgery	Surgery booking to surgery	November–December 2001 survey based on reported wait times for services received in past 12 months
Physician Survey	Fraser Institute (National)	Survey of physician opinion on waits across 12 specialties and 10 provinces	Actual waits were often longer than respondents considered reasonable in 2001–2002 in most parts of Canada	Median of physician responses since 1995	2001–2002

Source: Compiled by CIHI

Did you know?

Recent provincial and federal reports made several recommendations about improving access to quality care. For example, the Romanow Commission recommended better wait-list management through centralizing lists, standardizing criteria, and providing information to patients about expected wait times for certain procedures. The Kirby Commission supported the "care guarantee" model (also suggested by Alberta's Mazankowski report). With this approach, patients who wait longer than a predetermined maximum waiting period could seek care at another facility, perhaps in another jurisdiction, with costs covered by public health insurance plans.

- **Hospital booking systems:** These track the number of patients waiting for surgical procedures. To be useful for calculating wait times, booking systems must be updated regularly to make sure that those waiting for surgery are indeed still waiting and that patients registered on more than one list are counted only once.
- **Registries:** These are usually province-wide and disease or procedure specific. They often combine information from administrative data, hospital booking systems, and other sources.

Surfing for Wait Times

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In many parts of the country, province-wide surgical wait time information is becoming publicly available. For example, patients in Ontario, British Columbia, and Saskatchewan can now access details about wait times for various procedures on a Web site. Alberta is currently developing a similar registry. In some cases, residents in other parts of the country can access similar information for their local health region or hospital, or for specific types of care.

Province	Organization or Registry/Website	Procedures	Level of Data
B.C.	B.C. Surgical Wait List Registry www.healthservices.gov.bc.ca/waitlist/provdata.html.	Cancer treatment, corneal transplants, organ transplants	Province
		Cardiac; carotid endarterectomy; cataract; dental; ear, nose, & throat; eye; general; gynecological; hip & knee replacement; neurosurgery; orthopedic; plastic; urological; and vascular surgery	Province/Hospital/Physician
	British Columbia Transplant Society www.transplant.bc.ca.	Organ transplants	Province
Alta.	Alberta Wait List Registry (available Spring 2003)	Various surgeries and diagnostic procedures	Urban and Rural Hospitals
Sask.	Saskatchewan Surgical Care Network www.sasksurgery.ca.	Cardiovascular; dental; general; neurosurgery; urology; obstetrical & gynaecological; eye; orthopaedic; ear, nose, & throat; and plastic surgery	Province/Regional Health Authority
Ont.	Ontario Cardiac Care Network www.ccn.on.ca/access/waittimes.html.	Cardiac catheterization, angioplasty, cardiac surgery	Province/Geographic Region/Hospital

Source: Compiled by CIHI

Toward Better Comparisons

Comparing wait time information across the country is a challenge, but recently Canada took a step forward in making wait times data more consistent. In September 2000, Canada's premiers and the prime minister agreed to report to Canadians by 2002 on waiting times as a measure of quality of service. Four types of care were covered: cardiac surgery, hip and knee replacement surgery, and radiation therapy. By 2002, federal, provincial, and territorial governments had agreed on common definitions. Reporting has now begun, although wait time data are not yet fully comparable across Canada.

Surgical Wait Times in British Columbia

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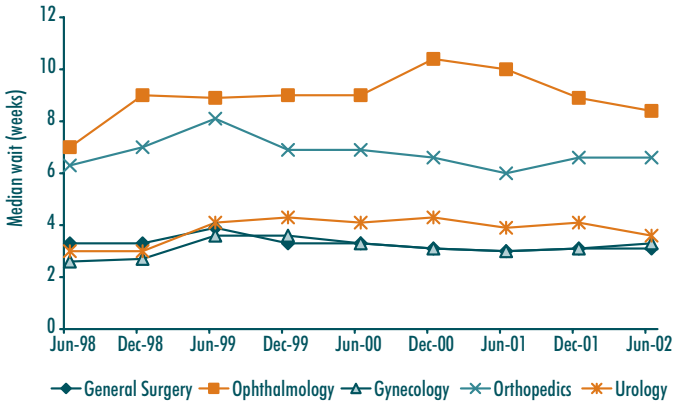
British Columbia maintains a computerized registry that tracks and monitors surgical volumes and wait times reported by hospitals. This database covers 95% of all surgeries booked by referring physicians in British Columbia. Wait times are calculated from the booking date to the surgery date for all surgeries performed in the three months prior to the reporting date. The median number of weeks that patients waited for the five most common categories of surgery is shown below. Of these procedures, general and gynecological surgeries had the shortest median wait times.



View Data

Source: BC Surgical Wait List Registry. (2002). *Provincial Trends.* www.healthservices.gov.bc.ca/waitlist/provdata.html

Waiting for Cardiac Surgery

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Canada's premiers and prime minister agreed to track and report on wait times in their jurisdictions by September 2002. As part of this process, governments agreed on a standard way to measure the time waited between cardiac catheterization and coronary artery bypass graft (CABG) surgery for adults (aged 20 and older). Some jurisdictions can already report results based on this standard; others are working towards it. For example there is a commitment to report cases by level of urgency but not everyone is able to do this now. The table below summarizes data on median wait times released in provincial reports in September 2002. The median wait time is the point at which half of all patients had longer waits and half had shorter waits. Due to differences in the inclusion/exclusion criteria, caution should be taken when comparing median waits.

Province	Time Period	Cases Included	Median Wait (days)
B.C.	Fiscal 2001–2002	• Emergent and non-emergent cases • Excludes surgery complicated by other procedures • Only BC residents treated within the province • Excludes surgeries delayed due to medical or other reasons	April–June: 18 July–September: 33 October–December: 15 January–March: 25
Alta.	Fiscal 2001–2002	• Emergent, urgent in-patient, urgent out-patient, and planned out-patient cases	Data are presented by urgency level. Emergency: 0–1 Urgent in-patient: 7–13 Urgent out-patient 93–153 Planned out-patient: 84–150
Sask.	Fiscal 2000–2001	• Emergent and non-emergent cases • Excludes surgery complicated by other procedures • Excludes cases without prior cardiac catheterization • Includes surgeries delayed due to medical or other reasons	April–June: 10 July–September: 10 October–December: 10 January–March: 11
Man*	Fiscal 2001–2002	• Emergent and elective cases • Includes patients whose surgery was delayed due to personal choice or other illness • Excludes surgery complicated by other procedures • Only patients having surgery in Winnipeg	April–June: 12 July–September: 12 October–December: 9 January–March: 14
Ont.	April 2001 to June 2002	• Emergent and non-emergent cases • Excludes Ont. residents treated out of province	23
N.B.	Fiscal 2000–2001	• Excludes surgery complicated by other procedures • Only N.B. residents treated within the province • Excludes cases where catheterization and CABG happened on the same day	April–June: 7 July–September: 10 October–December: 6 January–March: 5
N.S.	Fiscal 2001–2002	• Excludes emergent and urgent cases • Only N.S. residents treated within the province • Excludes surgery complicated by other procedures • Includes cases that were delayed/deferred for a trial of medical management	Approx. 35–75
N.L.	Fiscal 2001–2002	• Urgent and emergent cases • Excludes surgery complicated by other procedures	9.5–18

Notes: Data from the territories, Quebec, and Prince Edward Island are not available.
*Manitoba's definition differs from the other provinces. They measure wait times from the time that a surgeon, with the patient's agreement, decides the patient needs surgery to the time of surgery.

Sources: How Healthy Are We? British Columbia's Report on Nationally Comparable Performance Indicators. www.healthplanning.gov.bc.ca

Alberta's Report on Comparable Health Indicators. www.health.gov.ab.ca

Saskatchewan Comparable Health Indicators Report. www.health.gov.sk.ca

Manitoba's Health Indicators Report. www.gov.mb.ca/health/pirc/

Ontario's Health System Performance Report. www.gov.on.ca/health/english/pub/ministry/pirc/pirc_mn.html

HEALTH Performance Indicators: A Report to New Brunswickers on Comparable Health and Health System Indicators. www.gnb.ca/

Reporting to Nova Scotians on Comparable Health and Health System Indicators. www.gov.ns.ca/health/pirc/

HealthScope: Reporting to Newfoundlanders and Labradorians on Comparable Health and Health System Indicators. www.gov.nf.ca/health/

Information Gaps: Some Examples

What We Know

- Hospital care is changing in Canada. Fewer people are being hospitalized overnight, while more people are having surgeries on an outpatient basis.
- Older seniors are less likely to live in health care institutions than 20 years ago.
- There are pockets of information on wait times for different types of care across the country.
- Overall most Canadians are satisfied with their most recent stay in hospital, but patient satisfaction varies for specific aspects of care.
- Where selected medical imaging technologies are located throughout the country.

What We Don't Know

- Why do rates of different types of hospital procedures differ from one region to the next across the country? What effect do variations have on health, health care costs, and other factors?
- What effect do rising day-surgery rates have on services outside the hospital including home care and self care? How well are the changing ways in which hospitals are delivering services meeting community needs?
- What factors explain higher and lower patient satisfaction? How do hospitals use patient satisfaction survey results to change how they care for their patients? What strategies are most effective?
- How do wait times compare across the country? What percentages of wait times fall within recommended guidelines for different treatments? What is the emotional and physical impact of waiting for different types of care?
- How many Canadians have used various diagnostic imaging technologies in the last year? What was the impact on their course of treatment, satisfaction, and other outcomes? What proportion of these scans occurred in hospitals versus independent health facilities? How many were paid for through public health insurance programs?

What's Happening

- The Ontario Waiting List Project is preparing a report about the trial use of three priority-rating tools developed by the Western Canada Wait List Project: MRI, Cataract Removal Surgery, and General Surgery.
- In September 2002, provinces and territories began to report wait times using common definitions developed by the Federal/Provincial/Territorial Performance Indicator Reporting Committee (PIRC).
- In 2001, the Organisation for Economic Cooperation and Development (OECD) started a three-year project to evaluate the impact of new and emerging health-related technologies. They are also conducting a separate two-year project to investigate and compare measures taken by OECD members to deal with excessive waiting times and to determine the causes of variations in waiting times.

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Learning, Understanding, and Acting for Our Health

All you have to do is open a newspaper, turn on the radio, or watch the TV news. Almost every day you'll hear new—sometimes inconsistent—information about health and how to care for disease. That's because clinical issues can be very complex and difficult to resolve. Science evolves as new discoveries force us to re-evaluate existing knowledge. The on-going challenge for health professionals, policy-makers, and the public is determining how to apply new information to individual circumstances or to more general policy decisions.

In 2001 alone, the US National Library of Medicine tracked over 516,000 new journal articles and research reports worldwide, a figure that doesn't include most reports by governments, health organizations, and institutions such as CIHI.[1] In Canada and elsewhere, various groups have been formed to help us review this mountain of information. Through the global Cochrane Collaboration, for example, health experts and others summarize the results of new and old studies on what works and what does not. Likewise, the Canadian Task Force on Preventive Health Care (CTFPHC) weighs the evidence on what should—or should not—be included in periodic health exams.

Most of us are familiar with examples of how new knowledge can change attitudes and care. Not so long ago, doctors bled patients who had fevers and other illnesses. Now these conditions are treated in different ways. The benefits of hygiene were also once debated, but the importance of hand washing, clean water, and sterile operating rooms are now taken for granted. In Part C of this report, we look at some past and present debates, as well as how often current recommendations for action to prevent disease are followed. We also explore how patients fare once they are sick.

Health services can make important differences in these health behaviours and outcomes, but broader factors are also involved. For example, people with higher incomes are more likely to be screened for disease using tests such as pap smears and mammography. They also have better chances of surviving heart attacks and strokes. Research also shows that other factors—from early childhood development to social support—are often associated with better health.[2]

7

Debating the "Should" in Preventive Health Care—Past and Present

Debating the "Should" in Preventive Health Care—Past and Present

7

Ways of thinking are often resistant to change. That's as true in health care as elsewhere. For example, basic hygiene precautions were resisted when first proposed. In the 1840s, Ignaz Phillip Semmelweis wondered why pregnant women treated by medical students in Vienna died more often than those cared for by midwives in training. He theorized that medical students transmitted contamination from autopsies to the pregnant women. After he required medical students to wash their hands with a chlorine solution, fewer women died.[3] But neither other doctors nor those running the hospital accepted Semmelweis' ideas.

Sir Thomas Roddick
Source: Osler Library, McGill University Montreal, Quebec, Canada

It wasn't until after 1867 that the importance of disinfection gained wide acceptance in the medical community. At that time, Joseph Lister—influenced by Pasteur's discovery of germs and bacteria—recommended a new way to prevent wound infections. Lister also insisted that operating theatres be kept extremely clean. He demanded that surgical instruments be sterilized between uses and that surgeons wear clean clothes.[4] At first, Lister's ideas were considered eccentric, but his recommendations were eventually followed. And when they were, deaths from infection fell substantially.

A few years later, Sir Thomas Roddick brought Lister's ideas to Canada, introducing an antiseptic system to Montreal hospitals in 1877.[4] At a time when many patients who survived surgery died afterward from infections, most of Roddick's patients survived.

More than a century later, knowledge and clinical practice continue to evolve. So do recommendations about what we should do to promote health and prevent disease.

What Can You Do to Prevent Illness or Catch it Early?

There are many ways to prevent disease. Primary prevention focuses on eliminating risk factors and preventing disease before it develops. Activities include education, immunization, and general health promotion campaigns. For example, many experts recommend women capable of becoming pregnant take folic acid supplements to reduce the risk of spina bifida, stillbirths, and other serious health problems in newborns.[5, 6] Naturally found in foods like broccoli, spinach, peas, corn, beans, lentils, and oranges, folic acid is a B vitamin. Health Canada and the Canadian Task Force on Preventive Health Care (CTFPHC) recommend that:

- women who are planning on becoming pregnant take a folic acid supplement at least two or three months before they conceive;
- pregnant women continue taking the supplement during the first three months of their pregnancy;
- because pregnancies are sometimes unplanned, all women capable of becoming pregnant take a folic acid supplement regularly.

Secondary prevention is concerned with early detection and treatment of disease in people who do not yet show symptoms. Screening programs are an example of secondary prevention. These programs can help find disease early, but they do not catch all disease and they do not prevent disease.

In some cases, the best course of action based on potential benefits and costs or risks is clear. In others, experts disagree on what should be done, or even on how to evaluate the scientific evidence on the effectiveness of different programs.[7] Emerging research evidence may help to resolve some of these debates. For example, almost half (12 of 28) of the issues of the *Canadian Medical Association Journal* between February 2002 and March 2003 had an article related to screening tests.

For More Information on Public Health

Last year's report, included a chapter on public health services and practices across the country. It covers broader public health issues such as water safety, immunization, and smoking cessation (see Chapter 5, "Public Health: On Guard Year After Year" in *Health Care in Canada 2002*).

Learning About and Evaluating Risk

It's one thing to read the latest research. It's quite another to decide how new health information applies to us as individuals or members of a community. Are we at risk? Should we take action?

The word "risk" inherently implies a degree of uncertainty. Clinicians and others have developed decision aids to help patients understand personal risk and make choices about their care. Decision aids can take many forms, from information about the disease or treatment, to guidance and coaching from health care providers, to specific exercises for patients to work through. These tools have been used to help patients considering various types of care (e.g. mastectomy, prostatectomy, dental surgery, and hormone therapy). A 1999 review of the research on decision aids showed that they tended to:[8]

- improve patients' knowledge about treatment options;
- reduce conflicts they might feel about their choice;
- stimulate them to be more active in their own treatment decisions;
- have little effect on patient satisfaction and mixed effects on patients' decisions.

One tool to help people interpret new health information comes from researchers at Harvard University's Center for Risk Analysis. They suggest 10 questions patients should ask to help determine their true risk and interpret new health information:[9]

1. What is the actual message?
2. Is the source credible and reliable?
3. How does the new evidence fit into what we already know?
4. Does the new information really matter to you?
5. Do you understand the data and analysis presented?
6. How does it compare to other risks?
7. Taking the new information into account, what actions can you now take to improve your health that were not options previously?
8. Do the benefits outweigh the costs?
9. Is there other information needed before you can make an informed choice?
10. Where can you get more information?

Some of these questions are easier to answer than others. For example comparing relative risks can be challenging. "Relative risk" is a way to measure how strong the association is between two things, such as smoking and lung cancer or obesity and diabetes.[10] The higher the relative risk, the stronger the association. For example, recently over 1,000 studies published between 1985 and 2002 on the association of smoking and various cancers were reviewed.[11] Researchers found that the relative risk of developing lung cancer in smokers versus nonsmokers was 3.0 on average (it ranged from 2.8–16.9). This means that smokers were three times more likely to develop lung cancer than non-smokers of the same age, a statistically significant increase in risk. Relative risk can also be used to quantify risk reduction, for example the relative risk reduction of taking one medication versus another.

Understanding absolute risk is also important. For example, cutting the risk of a very rare adverse event in half may have less effect on overall population health than a smaller drop in the risk of a common event.

In this report, we highlight general information on a sample of preventive measures, ranging from cancer screening to oral health care. Sometimes, the evidence about how to reduce the risk of disease or to catch it early when treatment is more effective is clear. Sometimes the evidence leaves room for debate about what we should do to protect our health. It's important to weigh the potential risks and benefits in particular circumstances, in consultation with health care providers, before deciding what action to take.

Early Detection of Breast Cancer

Breast cancer is the most commonly diagnosed cancer in Canadian women, although lung cancer is the leading cause of cancer deaths.[12] There were about 20,500 new cases of breast cancer and 5,400 breast cancer deaths among Canadian women in 2002.[12] Canada's breast cancer death toll in 1997 (27 per 100,000 women) was higher than the OECD median (25 per 100,000).

There are many ways of detecting breast cancer in its early stages. These include screening mammography, clinical breast exams (CBE), and breast self exams (BSE). Experts agree about what should be done in many—but not all—areas. For example, there continues to be debate about when women should start getting regular mammograms (see Chapters 1 and 5 in last year's *Health Care in Canada 2002* for more information).

There are also other options. One is "prophylactic mastectomy". This is an often controversial operation, where women at high risk for breast cancer have their breasts removed before cancer is detected. A recent survey of Ontario women who had prophylactic mastectomies found that most significantly overestimated their lifetime risk of breast

Trends in New Cases of Breast Cancer and Prostate Cancer

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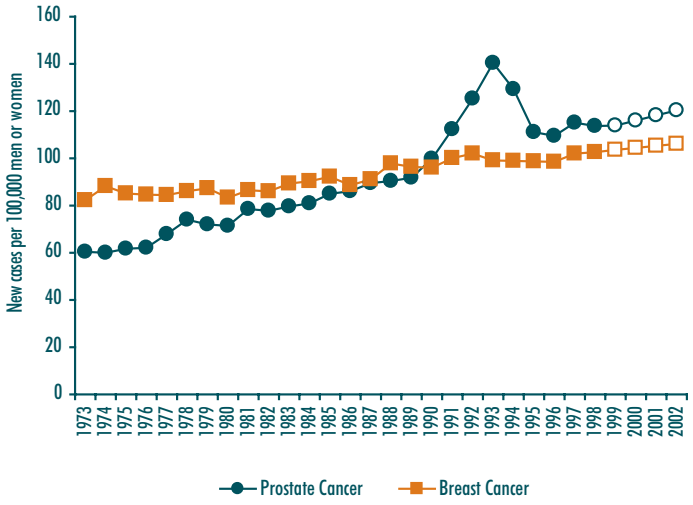
The number of new cases of breast and prostate cancer has increased in the last 30 years, even after adjusting for population growth and aging.



Notes: • Open symbols are estimates.
- The graph shows breast cancer rates for women only, but breast cancer can also affect men. About 140 men were diagnosed with it in 2002, and 40 died of the disease.[12]
- In the early 1990s, there was a spike in new prostate cancer cases. This may partly be a screening artifact, reflecting the increasing use of prostate specific antigen (PSA) testing at that time.[17]
- All rates are standardized to the 1991 Canadian population.

Source: National Cancer Institute of Canada, 2002

View Data

Breast Cancer Screening—What Experts Suggest 70

The body of knowledge about breast cancer is constantly growing. Several groups have weighed this evidence and made recommendations about what women should do to prevent the disease. In many areas, experts agree. For example, the Canadian and American Cancer Societies and the Canadian Task Force on Preventive Health Care all recommend a screening mammogram at least every two years and a clinical breast exam every one or two years for women aged 50–69. But experts also disagree in other areas, as the table below shows.

Organization and Date Last Reviewed	Screening Mammography	Clinical Breast Exam	Breast Self Exam
American Cancer Society (2002)	Yearly starting at age 40	Every 3 years, ages 20-39; yearly starting at age 40	Regular monthly starting at age 20
Canadian Cancer Society (2002)	Every 2 years, ages 50–69	Every 2 years for all women	Regular monthly for all women
Canadian Task Force on Preventive Health Care (1994–2000)	Strong evidence for screening every 1 to 2 years, ages 50–69 (1998) Evidence insufficient to recommend for or against for non-symptomatic women ages 40-49 (1999)	Strong evidence for screening every 1 to 2 years, ages 50–69 (1998) Fair evidence to exclude from periodic health examination of non-symptomatic women ages 40–49 (1994)	Fair evidence to exclude from periodic health examination (2000)
US Preventive Services Task Force (2002)	Every 1 to 2 years starting at age 40	Evidence insufficient to recommend for or against	Evidence insufficient to recommend for or against

Source: Compiled by CIHI

cancer.[13] Researchers found that almost a quarter of the women in the study who had the procedure (24%) were not at high risk for the disease. (The authors defined women at high risk as those who carried the BRCA-1 or BRCA-2 genetic mutation or who had a strong family history of breast cancer.) They stated that it was possible the women received inappropriate advice from their health care providers, but suggested that extreme worry over the possibility of developing cancer was the true factor underlying the women's decisions.

Early Detection of Prostate Cancer

Prostate cancer is the most frequently diagnosed cancer in Canadian men, although as for women, lung cancer is the leading cause of cancer deaths. In 2002, it was estimated that about 18,200 men were diagnosed with prostate cancer.[12] There were also an estimated 4,300 prostate cancer deaths. Canada's prostate cancer death toll in 1997 was 26 cases for every 100,000 men, compared to an OECD median of 27 per 100,000.

Two tests are commonly used to screen for prostate cancer: the prostate specific antigen (PSA) test and the digital rectal exam (DRE). Research on the benefits versus the risks of testing is mixed, particularly for PSA.[15, 16, 17]

Prostate Cancer Screening—What Experts Suggest 71

As for breast cancer, there are areas where prostate cancer screening recommendations concur and others where debate exists. The chart below includes recommendations related to prostate specific antigen (PSA) testing and digital rectal exams (DRE).

Organization and Date Last Reviewed	Prostate Cancer Screening
American Cancer Society (1997)	Yearly PSA and DRE starting at age 50 for men expected to live at least 10 years; high risk men (e.g., those with a strong family history of prostate cancer) should initiate testing earlier.
Canadian Cancer Society (2002)	Men over 50 at average risk should discuss benefits and risks with their doctors. If decision to test is made, yearly testing starting at age 50; high risk men (e.g. those with a strong family history of prostate cancer) should consider initiating testing earlier.
Canadian Task Force on Preventive Health Care (1994)	There is fair evidence to exclude PSA from a periodic health exam. There is poor evidence to either include or exclude DRE from the periodic health exam.
US Preventive Services Task Force (2002)	Evidence is insufficient to recommend for or against PSA and DRE.

Note: The recommendations for DRE in this table are only in reference to its use for prostate cancer screening. These tests are also sometimes used for other purposes, such as to check for the cause of rectal bleeding, blood in the stool, abnormal growths in the rectum, abdominal or pelvic pain, changes in bowel habits, or difficulty urinating.

Source: Compiled by CIHI

Colorectal Cancer Screening

Family doctors are not the only health professionals who are involved in disease screening. For example, medical specialists help with screening and follow-up for colorectal cancer. This type of cancer develops in the bowel or rectum. In 2002, it was one of the most commonly diagnosed cancers in Canada. There were about 17,600 new cases and 6,600 deaths that year.[12]

The Canadian Task Force on Preventive Health Care (CTFPHC) recommends that people over 50 be screened for colorectal cancer, even if they have no symptoms. Usually, the CTFPHC recommends either testing the stool for blood (called "fecal occult blood testing") or flexible sigmoidoscopy. For those at high risk (e.g. people with a family history of polyps or colorectal cancer), they suggest colonoscopy. Other options also exist.

A National Committee on Colorectal Cancer Screening recently reviewed the latest evidence on screening.[14] They recommended fecal occult blood testing (testing the stool for blood) for all Canadians 50–74 every two years. They also said that any positive tests should be followed up by a colonoscopy.

In making these recommendations, the committee weighed estimates of the benefits and costs/risks of a national screening program, including:

- Screening may detect cancer more often and sooner (when it is easier to treat). They estimated that 7,740 deaths could be averted over a 10 year period with screening every two years. Those diagnosed after screening would gain about 1.75 years of life. That's about 38 days on average for people who participate in the screening program from age 50 to 74.
- The committee costed the screening program at over $112 million per year. That's an average of $40 per screen.
- There are also potential risks associated with follow-up colonoscopies (bleeding, bowel perforation, or even death), and false positive screens can cause patient stress.

Overall, the national committee concluded that the expected benefits of a screening program for those aged 50 to 74 outweigh the potential costs and risks.

Colonoscopies and Sigmoidoscopies in Canada, 1996 to 1999

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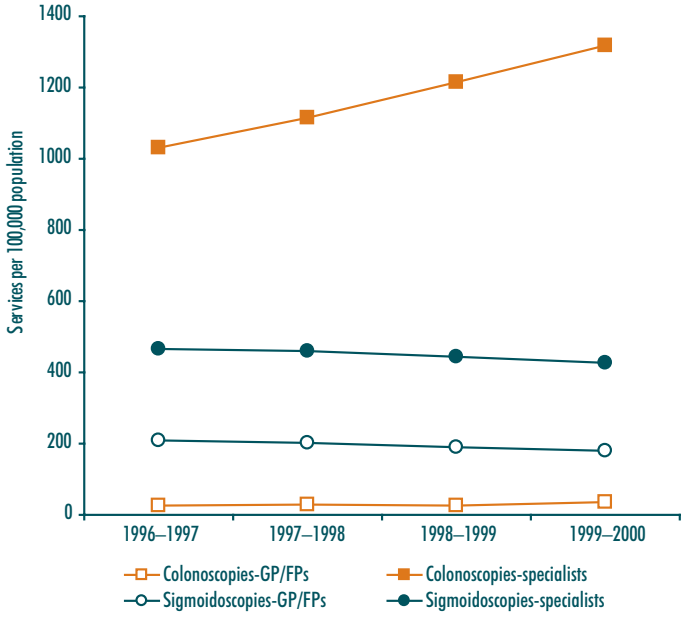
Colonoscopies and sigmoidoscopies are done for many reasons, including cancer screening, diagnosis, or surveillance. The graph below shows the number of procedures per 100,000 Canadians performed by family doctors (GP/FPs) and by specialists on a fee-for-service basis between 1996–1997 and 1999–2000. The number of colonoscopies per 100,000 Canadians done by specialists rose over this period.



Note: Data from the territories are not included.

View Data

Source: National Physician Database, CIHI

In the Doctor's Office—Recommendations and Actions

The Canadian Task Force on Preventive Health Care (CTFPHC) advises doctors about what they should—and should not—do to help their patients stay healthy. The task force has reviewed over 250 recommendations. Some, like education on poison control, apply to everyone. Others apply only to specific groups. For example, the recommendation on folic acid supplementation applies only to women who may become pregnant. The CTFPHC aims to review and change their recommendations as needed based on the results of new, well-designed studies.

The CTFPHC recommendations are organized into five grades (A through E). The grades are based on the strength of the scientific evidence about the effectiveness of the intervention:

A: there is good evidence that the intervention is worthwhile
B: there is fair evidence that the intervention is worthwhile
C: the evidence is inconclusive
D: there is fair evidence that the intervention is not worthwhile
E: there is good evidence that the intervention is not worthwhile

The quality of available research is one factor that the CTFPHC considers when it evaluates the evidence. In their opinion, the highest quality data come from randomized controlled trials, where study participants are randomly selected and assigned to treatment and control groups. Random selection means that each member of the population of interest has an equal chance of being selected, ensuring that the study participants reflect the population that they are drawn from. In this way, the study results can be generalized to the entire population of interest. Random selection also helps ensure that any differences in results between the study and control groups come from a difference in the treatments being studied, not from pre-existing differences in the people participating.

So Many Ways To Promote Health or Prevent Illness

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The table below shows the number of Canadian Task Force on Preventive Health Care recommendations by strength of evidence, for adults 21 years and older and for people of all ages. There are many recommendations in the C grade, where the evidence for or against is not conclusive.

Recommendation Grade (i.e., Strength of Evidence)	Number of Recommendations for Adults 21+ (Excluding Recommendations for Pregnant Women)	Number of Recommendations for all Ages (Including Pregnant Women)
A good evidence for	17	42
B fair evidence for	37	69
C evidence equivocal	60	96
D fair evidence against	24	38
E good evidence against	4	6

Source: Compiled by CIHI from Canadian Task Force on Preventive Health Care, www.ctfphc.org

What's Being Done in the Doctor's Office?

With over 250 CTFPHC recommendations, it's hard to look at how often all are followed. That's particularly true since many only apply to specific groups. Research studies offer snapshots for some specific recommendations. Recent surveys and other data sources also track a handful comprehensively over time. Here we present data primarily drawn from two national surveys: the 2001–2002 Canadian Community Health Survey (CCHS) from Statistics Canada and the 2001 National Family Physician Workforce Survey (NFPWS). The CCHS tells us what patients report they are doing. Family doctors report what actions they are taking in the NFPWS.

Prevention of Cavities, Gum Disease, and Mouth Cancer

The Canadian Task Force on Preventive Health Care (CTFPHC) makes several oral health recommendations about keeping our teeth, gums, and mouths healthy. They include:

- To help prevent cavities, the CTFPHC suggests drinking fluoridated water or using a fluoride toothpaste or supplement. Fluoridated water was introduced in Canada in the 1940s and 1950s. By 1992, the only large Canadian cities that did not add fluoride to their water were Montreal, Regina, and Vancouver.[18]
- To help prevent bleeding gums, the CTFPHC recommends brushing and flossing teeth on a regular basis. In a telephone survey conducted in 1999, most Canadians (78%) reported that they brush their teeth to prevent bleeding gums.[19] However, less than half (42%) reported regular flossing.
- To help prevent mouth cancer and other mouth diseases—as well as for other reasons—the CTFPHC recommends doctors and dentists provide counseling to their patients to help them quit smoking. Doctors are more likely than dentists to report counseling their patients on how to stop smoking.[20] But when researchers surveyed Albertans in 1999, 59%—smokers and nonsmokers alike—thought their dentists should provide such counseling.[21] However, almost 62% of Alberta dentists thought patients did not expect this service.

What's Being Done To Promote Health and Prevent Illness?

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For most Canadian Task Force on Preventive Health Care (CTFPHC) recommendations, little pan-Canadian information is available. The table below presents results for some of the exceptions. There is good (grade A) or fair (grade B) evidence that most of these interventions should be carried out as part of periodic health exams. For some, however, the CTFPHC says there is not clear evidence either for or against (grade C). For others—such as Prostate Specific Antigen testing—they say that the evidence is fairly strong against (grade D). Uptake of both recommended and non-recommended interventions varies, as the table below shows.

Recommendations[1]	Grade (i.e., Strength of Evidence)	Population[1]	% Canadians[2] who Recently and Family Physicians[3] (FPs) who Frequently or Very Frequently Carried Out This Activity
Childhood immunizations	A	• Infants and children	• UNICEF reports 89–97% of 1 year old children immunized in 2001[4] • 80% of FPs who generally serve children 0–12 reported providing immunizations frequently or very frequently[3]
Annual flu shots	A C	• High risk groups and seniors • Everyone age <65	• 63% of seniors and 26% age 12+ had a flu shot in the last year[2] • 93% FPs reported providing flu shots frequently or very frequently[3]
Screening mammography to prevent breast cancer (Women 50–69)	A C	• Women age 50–69 • Women age 40–49	• 70% of women age 50–69 in 2000–2001 said that they had had a mammogram in the past 2 years for any purpose[2] • 94% of FPs who indicated 40% or more of their patients were women reported providing screening mammography frequently or very frequently[3]
Clinical breast exam (Women 50–69)	A	• Women age 50–69	• 84% of women age 50–69 who were surveyed, reported that they had a clinical breast exam within the last 2 years[*2] • 91% of FPs reported providing clinical breast exams for women age 50–69 frequently or very frequently[3]
Counseling on folic acid supplementation to prevent neural tube defects	A	• Women capable of becoming pregnant	• 47% of women age 15–55 who gave birth in the past 5 years reported taking vitamin supplements with folic acid before their last pregnancy[2] • 72% of FPs who indicated 40% or more of their patients were women age 19–64 reported frequently or very frequently counseling on folic acid supplementation[3]
Counseling on seat belt use to prevent car accident injury	A	• General population	• In 2001, an estimated 90% of all occupants in light duty vehicles reported using seat belts. This proportion has been the same each year since 1998.[5]
Smoking cessation counseling	A	• Smokers any age	• 90% of FPs reported frequently or very frequently counseling on smoking cessation[3]
Drug treatment for high blood pressure	A C	• Those age 21–64 with diastolic blood pressure >90 mmHg • Those age 21–64 with systolic blood pressure >140 mmHg	• 77% of Canadians age 20–64 who had been told by a health care provider that they had high blood pressure reported taking drugs for high blood pressure in the last 12 months[**6]
Counseling on breast feeding	A	• Pregnant women	• 81% of women 15–55 who gave birth in the past 5 years reported having breastfed or tried to breastfeed[2] • 74% of FPs who provided obstetrical care and who indicated 40% or more of their patients were women age 19–64 reported that they frequently or very frequently carried out counseling on breastfeeding[3]
HIV/AIDS voluntary screening and prevention counseling	A B C	• High risk groups • Infants of HIV positive women • General population & non symptomatic pregnant women	• 41% of all FPs indicated they provide HIV testing and counseling in addition to care for non-HIV related health needs[3]
Blood pressure measurement/monitoring	B	• People age >65	• 96% of Canadians age 65+ reported that their blood pressure was checked in the past 2 years[2] • 97% of FPs who generally serve seniors reported frequently or very frequently taking patients' blood pressure[3]
Pap smear to prevent cervical cancer	B	• Sexually active women	• 73% of women aged 18–69 reported a pap smear within the last 3 years [2] • 93% of FPs who indicated 40% or more of their patients are women reported that they frequently or very frequently performed pap smears[3]
Counseling on prevention of head injury through use of bike helmet	B	• General population	• 39% reported that they wore a bike helmet always or most of the time[*** 2]
Counseling on moderate physical activity	B	• General population	• 89% 12+ reported at least one type of physical activity in the last 3 months[2] • 87% of FPs reported frequently or very frequently counseling patients about physical activity[3]
Counseling on safe sexual practice	C	• General population	• 72% age 15–59 who were in relationships lasting less than 12 months reported always or usually using a condom in the last year[†2] • 75% of FPs reported frequently or very frequently counseling on safe sexual practices[3]
PSA test	D	• Males age >50	• 38% of men age 50+ reported having had a PSA test in the last year[2]

Notes: *Only women in Newfoundland and Labrador, New Brunswick, Ontario, and 3 health regions in Saskatchewan were surveyed. **The survey did not distinguish between high diastolic and high systolic blood pressure diagnoses. ***Only those in Alberta, Ontario, and 5 health regions in Saskatchewan were surveyed. †Only those in Ontario (expect for the Brant health region), Prince Edward Island, the Yukon, and Nunavut were surveyed.

Sources: 1. Adapted from Canadian Task Force on Preventive Health Care recommendations (see www.ctfphc.org for details) 2. Canadian Community Health Survey, Statistics Canada, 2000–2001 3. 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada, 2001 4. United Nations Children's Fund. (2002). *The State of the World's Children 2003.* New York: United Nations Children's Fund 5. Road Safety and Motor Vehicle Regulation Directorate. (2001). *Results of Transport Canada's July 2001 Survey of Seat Belt Use in Canada.* Ottawa: Transport Canada 6. National Population Health Survey, Statistics Canada, 1998–1999

Getting Your Flu Shot

For most people, the flu is an annoyance. For some, it's much more serious. Each year between 500 and 1,500 Canadians—mostly seniors—die from complications related to the flu.[22]

The Canadian Task Force on Preventive Health Care (CTFPHC) recommends yearly flu shots for high risk groups. This includes people with diabetes, cancer, HIV/AIDS or other immune system disorders, or other chronic illnesses; health care providers; and seniors. About 63% of seniors reported having had a flu shot in the previous year on the 2000–2001 CCHS. That's below the National Advisory Committee on Immunization's target of 70%. There's further to go for other high risk groups—only 38% of people with chronic diseases that place them at high risk and 55% of health care workers got a shot in 2001.[23]

Many people who are not considered to be at high risk—such as healthy young adults—also choose to get a flu shot. The National Immunization Guide concluded that vaccination of healthy young adults was appropriate, as long as there was enough vaccine available to cover those at high risk.[24] The CTFPHC's latest assessment of the evidence (1993) was that it was insufficient to recommend for or against immunization for the general population.

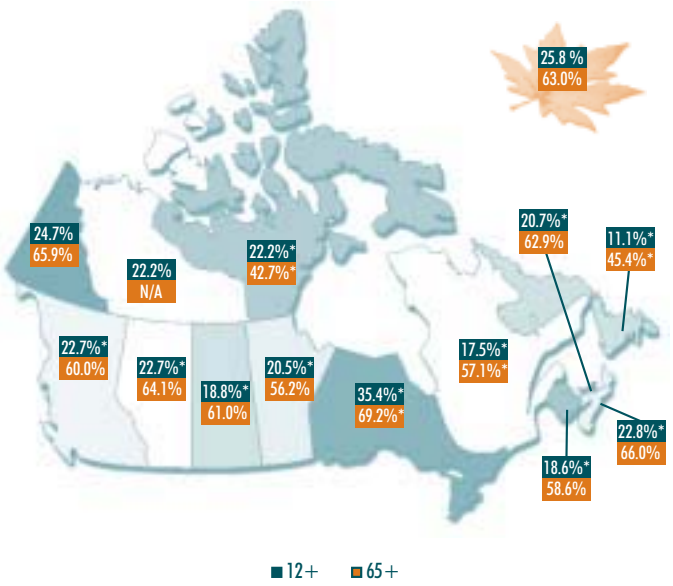
The CTFPHC does, however, recommend outreach to high risk groups to promote vaccination. According to the task force, there is good evidence that counseling by doctors and nurses results in higher vaccination rates. For example, a recent Ontario study compared rates of vaccination for children whose parents talked about flu shots with their doctors to rates for those who did not. Children whose parents spoke with their doctor were seven times more likely to have had a flu shot.[25]

Did you know?

In Ontario, it costs about $2,284 for a 70 year old to be hospitalized with the flu (with no major complications). For the same amount, the government could pay for 269 flu shots. The hospitalization estimate is based on CIHI data on average Canadian (excluding Quebec and Manitoba) resource use and Ontario's average cost per weighted case. The flu shot costs are based on the 2002 Ontario flu shot program. These types of figures, as well as other information on expected benefits, costs, and risks, can be helpful in evaluating cost effectiveness of immunization.

Who's Getting Flu Shots? 75

According to the 2000–2001 Canadian Community Health Survey, 26% of Canadians over the age of 12 had a flu shot in the last year. Rates for seniors were higher—63%. In both cases, immunization rates varied across the country, as the map below shows. An asterisk indicates rates that are significantly different from the Canadian average.



Note: The data for the population aged 65+ from N.W.T. could not be published.

Source: Canadian Community Health Survey, Statistics Canada

Information Gaps: Some Examples

What We Know

- What screening and disease prevention measures various agencies recommend.
- How often patients and family physicians report following the CTFPHC recommendations for a limited number of interventions (e.g. flu shots, mammograms, and smoking cessation advice).

What We Don't Know

- How often are each of the CTFPHC recommendations followed, both by family doctors and other health professionals? If all recommendations were followed, what would be the impact on the health of Canadians and on current and future health care costs? What is the cost benefit of prevention?
- For each of the 96 recommendations where evidence is equivocal, what is the best course of action to take?

What's Happening

- Recommendations for strengthening Canada's health promotion and prevention activities were made in Romanow's *Building on Values: The Future of Health Care in Canada* report. It also recommends integrating public health activities with front line medical care. In *The Health of Canadians—The Federal Role*, Kirby similarly recommends strengthening disease prevention, health promotion, and public health infrastructure.
- Recent provincial reports have also stressed the value of prevention. For example, in 2001 Quebec's Clair Commission recommended that prevention of diseases and social problems should be the central element of health and welfare policy. Likewise, Saskatchewan's *Commission on Medicare* recommended continued development of public health and health promotion and disease prevention.
- In its 2003 federal budget, the Canadian government provides $45 million over five years as part of a national immunization strategy to improve the safety and effectiveness of vaccines, coordination and efficiency of immunization, and collection of information on immunization coverage rates across the country.

For More Information

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8

Outcomes of Hospital Care

8 Outcomes of Hospital Care

Illness cannot always be prevented. When it does occur, it is important to understand the best ways to manage it. Data on outcomes of care tell us about the results of treatment, including whether symptoms were relieved, disease was cured, the degree of disability suffered, and how often people die. Patient safety data can also help us to learn more about how to care for patients in the future, including informing decisions about how to best organize and deliver care.

Surviving Illness

The most famous image of Florence Nightingale is probably that of "the lady with a lamp" nursing soldiers in the Crimean War. But she also spent many hours poring over death statistics and used her findings to lobby for changes that would improve care and reduce illness.

Death rates are still used today to track patient outcomes. In this report, we look at heart attack (also called acute myocardial infarction or AMI) and stroke death rates over the short- and longer-term. Studies show that in the short-term (i.e. 30 day in-hospital deaths) these rates reflect many factors. For instance, how sick the patients are to begin with can have an effect on their outcomes. Other examples include their acute care and treatment, the quality of their care, their health-related behaviours, and their socioeconomic status.[1, 2, 3, 4]

Overall, 12.1% of people admitted to a hospital with a new AMI between 1998–1999 and 2000–2001 died in hospital within 30 days. The rates in most provinces (adjusted for differences in age, sex, and co-existing illnesses) were similar to the Canadian average. However, variations between regional rates within a province can be as—or even more—important than differences between provinces. These variations can be masked when data for several regions are combined into an overall average.

Death rates for stroke patients were higher. Overall, 18.9% of people admitted to a hospital with a new stroke between 1998–1999 and 2000–2001 died in hospital within 30 days. Once again, the rates in most provinces were similar to the national average, but there were variations at the regional level.

If death rates in regions with higher rates had been the same as the Canadian average, there would have been 397 fewer deaths among heart attack patients between 1998–1999 and 2000–2001. An additional 438 deaths would have been averted among stroke patients.

What about the longer-term? Statistics Canada data suggest that AMI patients age 45 and older who survive the first 30 days are likely to still be alive one year later. Net AMI survival rates ranged from about 91% to 93% in 1998 (1997 for British Columbia). There was little difference among the four provinces (British Columbia, Alberta, Nova Scotia, and New Brunswick) where comparable data were available.

Surviving a Heart Attack—the First 30 Days

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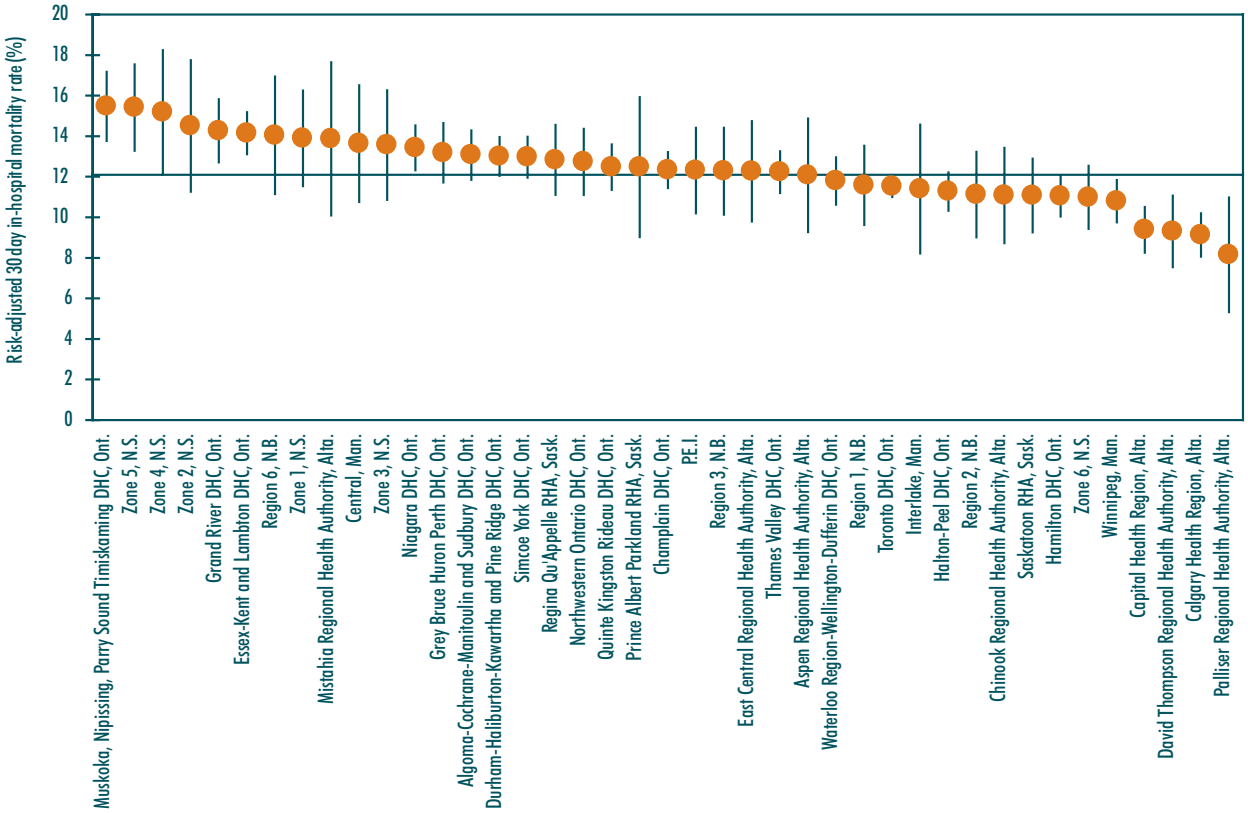
Overall, 12.1% of patients hospitalized with a new heart attack died within 30 days of their admission between 1998–1999 and 2000–2001. Most regions had rates similar to the Canadian average. But the rates in some regions were higher or lower, even after adjusting for age, sex, and co-existing illness. Results for regions with 75,000 or more people are shown below. The rates are estimated to be correct to within the range shown by the vertical bars 19 times out of 20. The solid line shows the overall average.



Notes: Comparable data are not currently available for Newfoundland and Labrador, British Columbia, and Quebec due to differences in how data are collected. Some jurisdictions have redefined regional boundaries since those used in last year's report. Comparisons should be made cautiously.

View Data

Source: Hospital Morbidity Database, CIHI

Similarly, stroke patients age 45 and older who survived the first 30 days are likely to still be alive six months later. 180-day net stroke survival rates ranged from about 85% to 88%.

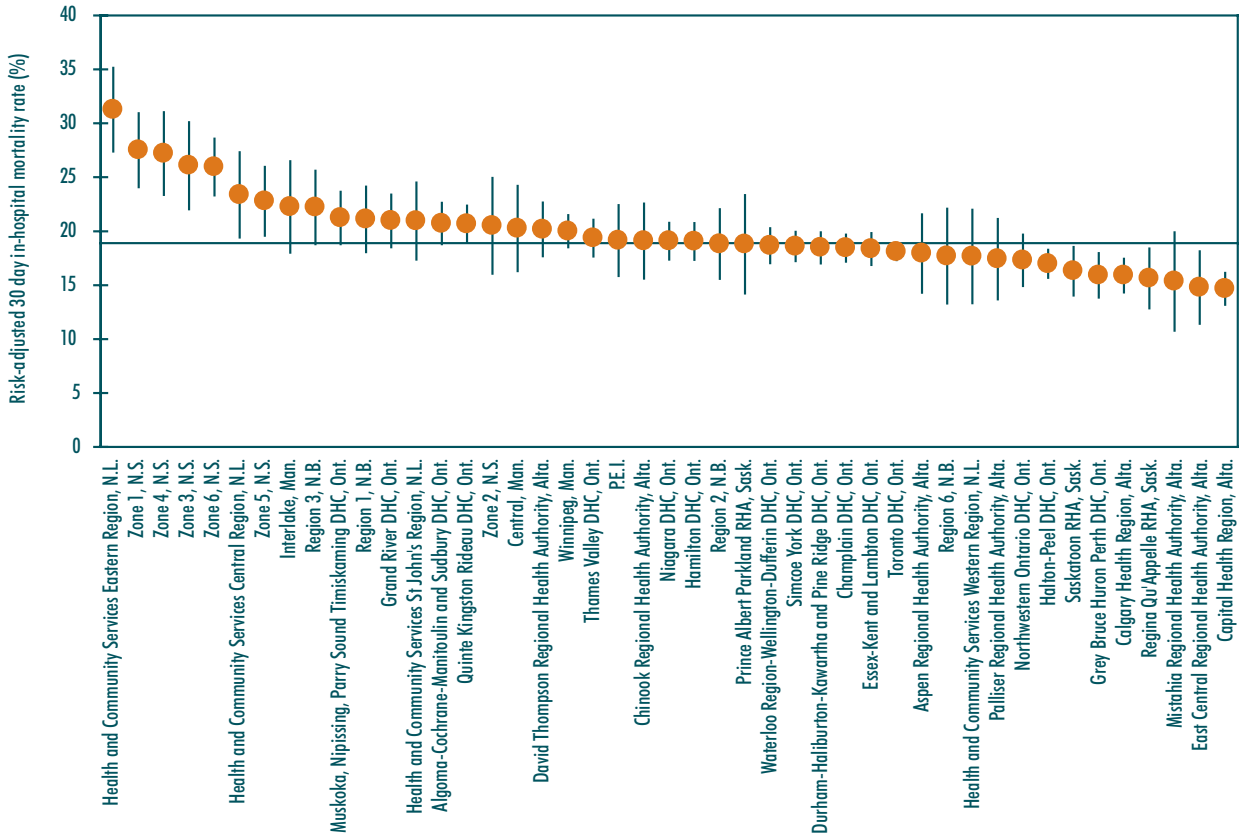
Nevertheless, there are important differences in longer-term survival within provinces. For example, the percent of AMI patients age 20 and older in Alberta who died within one year (1995–1996) ranged from 15% to 31% depending on the health region (adjusted for differences in age, sex, and co-existing illnesses).[5] British Columbia had a similar range (14% to 29%). Differences were smaller in Nova Scotia (18% to 22%) and Saskatchewan (23% to 24%).

Several factors may drive the differences in survival rates between regions within a province. As with short-term survival, care in hospital matters.[1] But a variety of factors also come into play as time passes. These include patient demographics, family and social support, the severity of illness, preventive interventions, patients' socioeconomic status, and the underlying health of the population within a region.[4, 6, 7, 8, 9, 10]

Surviving a Stroke—the First 30 Days

77

Overall, 18.9% of patients hospitalized with a new stroke died within 30 days of their admission. Most regions had rates similar to the Canadian average. But the rates in some regions were higher or lower, even after adjusting for age, sex, and co-existing illness. Results between 1998–1999 and 2000–2001 for regions with 75,000 or more people are shown below. The rates are estimated to be correct to within the range shown by the vertical bars 19 times out of 20. The solid line shows the overall average.



Notes: Comparable data are not currently available for British Columbia and Quebec due to differences in how data are collected. Some jurisdictions have redefined regional boundaries since those used in last year's report. Comparisons should be made cautiously.

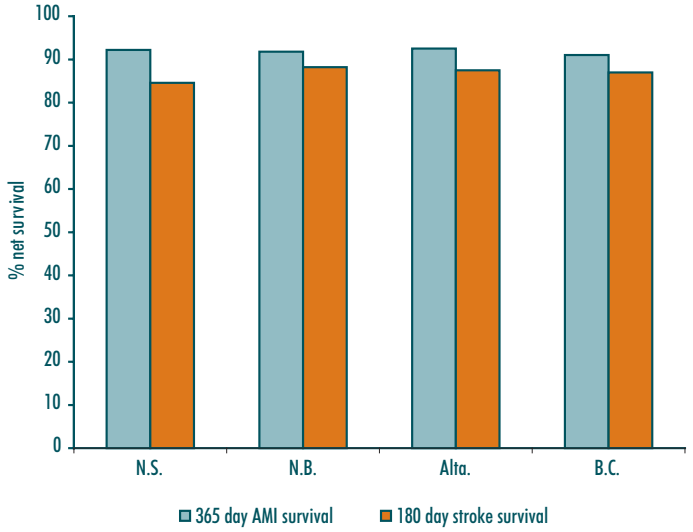
View Data

Source: Hospital Morbidity Database, CIHI

Longer-Term Survival After a Heart Attack or Stroke

78

Statistics Canada reviewed the experiences of people aged 45 or older admitted to the hospital with new heart attacks or strokes in Nova Scotia, New Brunswick, Alberta, and British Columbia in 1998 (1997 for BC). They found that one year survival rates were over 90% for heart attack patients. Six month survival rates were over 80% for those with strokes. Provincial rates were not significantly different from each other.



Note: Estimates of net survival for British Columbia are adjusted for different inpatient reporting practices for hospital discharge data in that province.

View Data

Source: Health Statistics Division, Statistics Canada

Understanding Mortality Measures

Strict definitions were used to define eligible AMI and stroke cases. Accordingly, these results cannot directly be generalized to all patients. Further details are provided in the technical notes for Health Indicators found in the Health Indicators e-Publication on our Web site at www.cihi.ca.

30 Day In-hospital Mortality

These calculations are adapted from methods developed by researchers at the Institute for Clinical Evaluative Sciences.[2] Rates and confidence intervals for AMI and stroke deaths for regions with at least 75,000 people are reported in *Health Indicators 2003* (located at the back of this report).

- These data are from CIHI's Hospital Morbidity Database.
- The results are based on where patients live, not where they are treated.
- Only patients who had a new AMI or stroke were included. Those hospitalized in the past year with the same condition were excluded.
- Deaths from any cause within 30 days in any hospital were included, not just deaths in the hospital where the patient was first treated. Patients who were initially discharged but then died after being readmitted were included.
- Deaths within 30 days outside of hospital (e.g. patients who died before reaching hospital) were excluded. Data from Statistics Canada's Health Person-Oriented Information Project show that 94%–98% of AMI deaths and 93%–99% of stroke deaths occur in hospital during this period (based on 1996–1999 data for New Brunswick, Nova Scotia, Alberta, and British Columbia).
- The effects of age, sex, and other illnesses the patients had (called co-morbidities) were taken into account in a risk-adjustment model.
- The 95% confidence intervals for mortality rates tend to be larger (i.e., the rate estimate is less precise) for regions that treat fewer people in a given year. For example, Toronto's AMI rate is estimated to be accurate within ± 0.52% 19 times out of 20. The rate in the Mistahia Regional Health Authority in Alberta is estimated to be accurate within ±3.78% 19 times out of 20. Rates are therefore based on data pooled over three years (1998–1999 to 2000–2001).

180 and 365 Day Survival

- These data come from Statistics Canada's Health Person-Oriented Information Project (for more details, see www.statcan.ca).
- Deaths in and out of hospital are included. The Kaplan-Meier method was used to calculate the cause-specific survival rates.
- Deaths from underlying causes other than the disease in question are excluded.
- The survival data are not risk-adjusted. They are standardized to a 1991 reference population using the direct method for five-year age groups.
- For AMI survival, patients hospitalized in the past three years for the same condition were excluded. For stroke survival, patients hospitalized in the past year for the same condition were excluded.

Returning to Hospital

In some cases, patients who are discharged from the hospital have to return unexpectedly for a related condition. This is called an unplanned readmission. Researchers have identified many factors related to the likelihood of readmissions. These include care in and out of the hospital, patient demographics, discharge arrangements, and compliance with discharge plans.[2, 6, 11, 12]

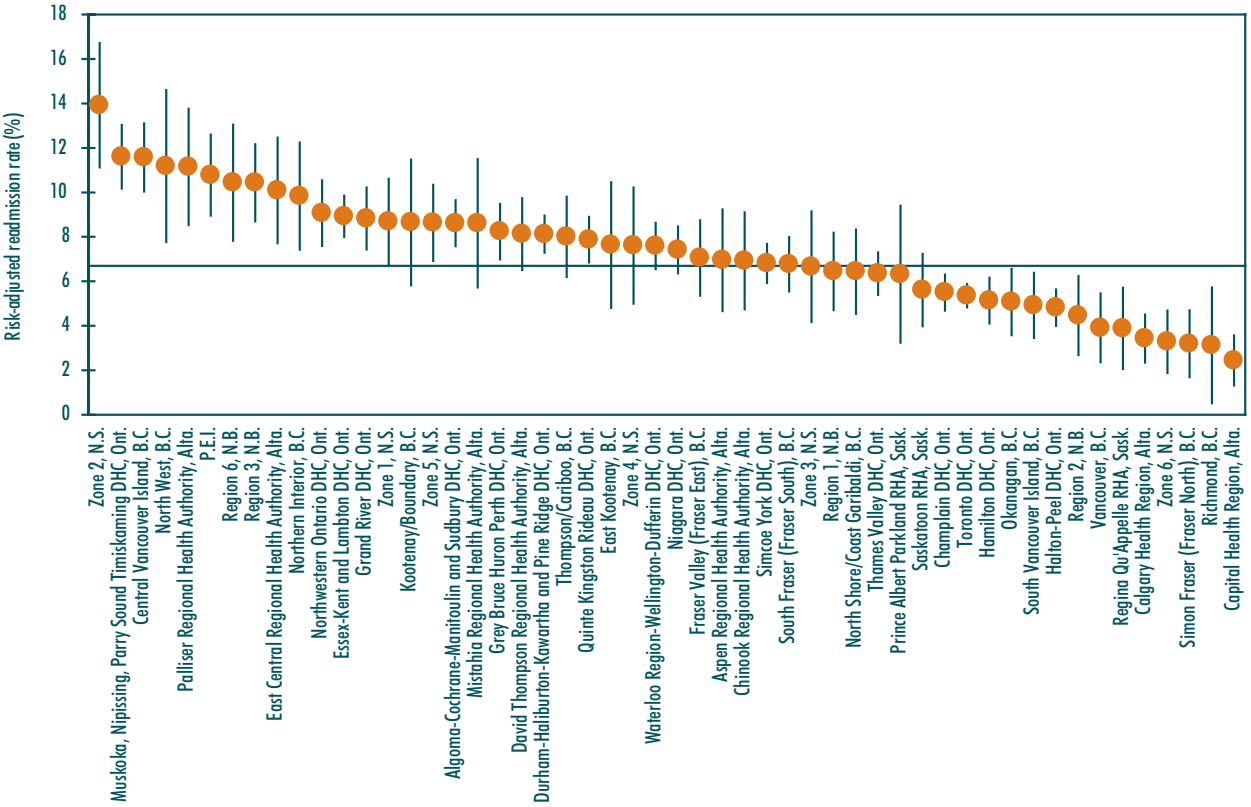
Overall, 6.7% of AMI patients hospitalized between 1998–1999 and 2000–2001 were readmitted within 28 days because of an unplanned, related health problem. As with death and survival rates, differences in readmission rates between regions within a province can be as or more important than differences between provinces. For example, the AMI readmission rate in British Columbia (6.6%) was similar to the overall average. However, the Central Vancouver Island and Northwest regions had rates significantly higher than the overall average. In contrast, Richmond and Simon Fraser (Fraser North) had significantly lower rates.

In *Health Indicators 2003* (included with this report) you will find unplanned readmission rates for AMI, asthma, pneumonia, hysterectomy, and prostatectomy. In all cases, most regions are about the same as the overall average but some have higher or lower rates. If regions with higher rates had been able to reduce their rates to the overall average, the result would have been about 1,046 fewer unplanned returns to hospital (603 for AMI, 137 for asthma, 125 for pneumonia, 98 for hysterectomy, and 83 for prostatectomy).

Returning to Hospital After a Heart Attack

79

The chances of a patient being readmitted to hospital unexpectedly within 28 days of an initial hospitalization for a heart attack (adjusted for age, sex, and other co-existing illness) vary from region to region. Data for patients hospitalized between 1998–1999 and 2000–2001 for regions with 75,000 or more people are shown below. The rates are estimated to be correct to within the range shown by the vertical bars 19 times out of 20. The solid line shows the overall rate of 6.7%.



Notes: Comparable data are not currently available for Newfoundland and Labrador, Manitoba, and Quebec due to differences in how data are collected. Some jurisdictions have redefined regional boundaries since those used in last year's report. Comparisons should be made cautiously.

View Data

Source: Discharge Abstract Database, CIHI

Understanding Readmission Measures

These calculations are adapted from methods originally developed by the Hospital Report Research Collaborative at the University of Toronto.[13, 14] Rates and confidence intervals for AMI, asthma, hysterectomy, pneumonia, and prostatectomy readmissions for regions with at least 75,000 people are in *Health Indicators 2003*. More details are on the CIHI Web site: www.cihi.ca.

- The data are from CIHI's Discharge Abstract Database.
- Results are based on where patients live, not where they are treated.
- Only unplanned readmissions for a related health problem were included.
- Transfers from one acute care hospital to another within the first 12 hours of discharge from the first were not counted as readmissions. If there was more than one readmission within the 28 days, only the first was counted.
- The effects of age, sex, and other illnesses the patients had (called co-morbidities) were accounted for in a risk-adjustment model.
- The 95% confidence intervals for readmission rates tend to be larger (i.e. the rate estimate is less precise) for regions that treat fewer people in a given year. For example, Toronto's AMI readmission rate is estimated to be accurate to within ±0.53% 19 times out of 20. The rate in the North West region of British Columbia is estimated to be accurate within ±3.42% 19 times out of 20. The rates are therefore based on data pooled over three years (1998–1999 to 2000–2001).

First Do No Harm—Patient Safety and Health System Errors

Questions about patient safety have recently come to the forefront in Canada and around the world. Every year our health care system improves the lives and health of thousands of Canadians. But researchers have also shown that underuse of effective interventions, unnecessary or inappropriate care (sometimes referred to as "overuse"), and adverse events cause illness, death, and increased costs.

In some areas, significant improvements have already been made. For example, researchers estimate that there used to be between 25 and 50 deaths per million surgical anesthesia cases in the United States. Systematic attention to quality brought that down to five per million, according to a 1998 study.[15]

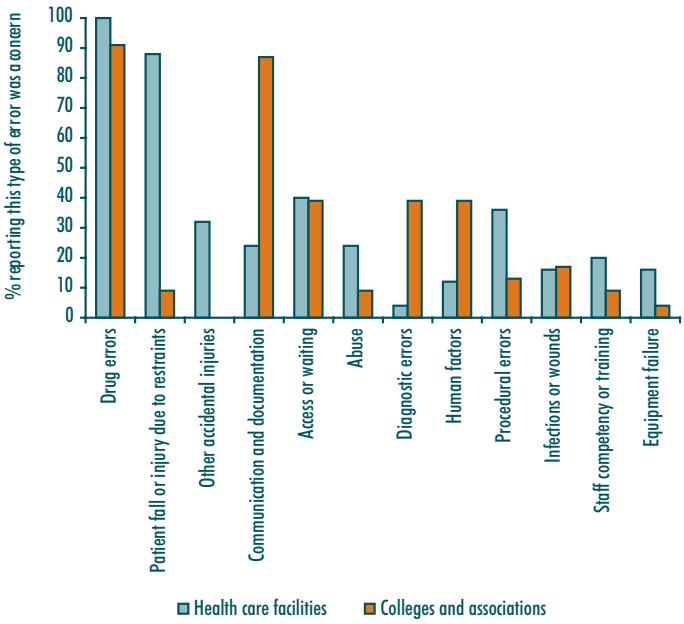
Nevertheless, challenges remain. For example, an estimated 4% of acute hospital admissions in the US involve adverse events.[16] The US results are similar to studies from the UK[17] and Australia.[18] Researchers estimate that at least 14% of these errors may result in death.[16] Based on this study and other research, the Committee on the Quality of Health Care in America of the Institute of Medicine concluded that preventable adverse events (medical errors) are a leading cause of death in the United States.[19]

To find out more, Canadian researchers recently carried out a patient safety survey.[20] They asked dozens of health care facilities and colleges/associations about patient safety in their organizations. One-third (33%) responded. Drug errors were the most commonly cited patient safety or health care error concern in health care facilities.

The organizations were also asked about obstacles to identifying and reporting errors. A culture of fear of reprisals and blame was identified as an issue by 72% of the health care facilities and 48% of colleges/associations. Colleges/associations most frequently cited legal issues (63%), such as legislation and regulations, as an obstacle. System factors such as these have also been identified internationally as key to understanding—and reducing—health system errors.[21]

What Are the Main Patient Safety Concerns? 80

In a recent survey, researchers asked Canadian health care organizations and professional colleges/associations about the patient safety issues they, or their members, face. Some issues—such as drug errors—were concerns for almost all organizations. The frequency with which others were reported varied considerably.



Note: Percentages add up to more than 100% because respondents could give more than one answer.

Source: Baker GR, Norton P. (2002). *Patient Safety and Healthcare Error in the Canadian Healthcare System. A Systematic Review and Analysis of Leading Practices in Canada with Reference to Key Initiatives Elsewhere. A Report to Health Canada.* Ottawa: Health Canada. www.hc-

View Data

Must You Tell?

The rules about disclosure of health system error vary across the country. In some provinces, legislation requiring disclosure has been enacted, or at least proposed. In others, disclosure is voluntary and at the discretion of the treating clinician or institution. Examples of recent action include:

- In the fall of 2002, the Quebec National Assembly passed Bill 113. The first legislation of its kind in Canada, it requires hospitals to tell patients when accidents happen. They must also explain what steps are being taken to correct the mistake and to prevent similar errors in the future.
- New legislation enacted in Saskatchewan requires that errors be reported to the province's Department of Health. (Reporting was voluntary before this legislation was introduced.) As well, the College of Physicians and Surgeons of Saskatchewan has introduced new rules requiring physicians to report errors to their patients.
- The College of Physicians and Surgeons of Ontario enacted a new policy on disclosure of harm in February 2003. Under this policy, all physicians have an obligation to disclose any harm a patient has suffered as a result of treatment. The disclosure must take place as soon as reasonably possible, and the news must be given in a sensitive manner.

The survey also asked health care facilities about their ability to identify health care errors. Most (64%) felt they did a good job of identifying errors. But almost half (46%) felt that, once identified, they could only do a poor or fair job of reducing those errors.

Although there is little pan-Canadian data on health system error, pockets of information do exist. For example:

- A study was published in 2003 wherein researchers looked at **adverse events** among 400 patients discharged from a large urban hospital (the study period was not published). They found 19% of patients suffered adverse events that affected them after discharge; about 30% were preventable.[22]
- In 2002 it was estimated that there are 700 deaths each year from preventable **drug errors** in Canada.[23]
- Hospitals reported about 31 **adverse transfusion reactions** per 10,000 transfusions to CIHI (excluding British Columbia, Manitoba, and Quebec) in 2000–2001. Researchers studied 819 **transfusion errors** reported between February 1999 and August 2000 in one Toronto hospital.[24] None of these errors permanently injured any patient. Nevertheless, the study's authors recommended implementing a "near miss" reporting system to track and learn from each incident.
- A Quebec study found that seniors and welfare recipients used fewer "essential" drugs, experienced more serious **adverse events**, and had more visits to emergency departments after an increase in cost-sharing for prescription drugs in the mid-1990s.[25]
- In 1996, another Toronto hospital studied **adverse events in surgical patients**.[26] Researchers found that 39% of surgical patients suffered complications. Eighteen percent of the 144 complications identified were potentially attributable to error.
- In 1995, researchers surveyed all registered members of the Canadian Anesthesiologists' Society. They found that 85% reported making at least one **drug error** during their career.[27] Most errors (98%) were minor, but four deaths were reported.

The Safety of Canada's Blood Supply

Tainted blood scandals rocked the country in the 1990s. In 1997, the Krever Commission released its report on the safety of the blood supply. Two new blood agencies were subsequently created—Canadian Blood Services (CBS) and Héma-Québec. They are responsible for collecting and distributing all blood and blood products in Canada. One of Justice Krever's recommendations was that governments also be part of the system. For example, Health Canada is responsible for inspecting the agencies' operations, issuing guidelines, and licensing.

The blood agencies use many strategies to protect the blood supply. Examples include ongoing donor screening, blood testing, and disease surveillance. All blood is currently tested for five transmissible diseases: human immunodeficiency virus, hepatitis B, hepatitis C, human T-cell lymphotropic virus, and syphilis. Nevertheless, even with testing and the extensive donor screening, infectious blood is occasionally transfused (see figure 81).

To protect against other diseases, the blood agencies have rules about who can and cannot donate blood. These evolve over time as circumstances change. For example, new restrictions were introduced in 2001 in an attempt to protect the blood supply from the human form of "Mad Cow" or variant Creutzfeldt-Jakob Disease. Similarly, frozen blood products collected in Ontario during the 2002 mosquito season were recalled because there was a risk that they might have been infected with West Nile Virus (WNV). (Although there is currently no commercially available screening test for WNV, CBS has announced plans to implement WNV screening as soon as a reliable test is available.[28])

Safety of Blood Supplies Around the World 81

In developed countries, health authorities test donated blood to try to reduce the spread of disease. The tests used vary from country to country. They also evolve over time as new methods are developed. Nevertheless, these tests are not perfect. The chart below compares recent estimates of the number of units of infected blood per million donations in Canada and five other countries.

	Canada excluding Quebec (1990–2000)	American Red Cross Blood Centres (1995–2001)	Italy (1994–1999)	Australia (2000–2001)	Spain (1997–1999)	France (1998–2000)
HIV	0.24	0.47	2.45	0.17–0.30	1.95	0.73
Hepatisis B	11.76	n/a	15.78	0.47–1.01	13.51	2.13
Hepatitis C	0.70	0.52	4.35	1.20–5.55	6.71	1.16

Note: Each country has different standards for testing of blood donations. As well, the tests used change over time as new methods are developed. This may explain part of the variation among the different countries. The methods for calculating these estimates also differ somewhat between studies, although all those shown here take disease incidence in the donor population and test window periods into account in their models. Some also take testing error and test sensitivity and specificity into account. As a result, comparisons between countries should be made with caution. For more details see the references on the right.

Sources: Canada: Chiavetta J, Deeks SL, Escobar M, Newman AM, He YH. (2002). Residual risk of transfusion transmitted infection (1999-2000). Presented at the *27th Congress of the International Society of Blood Transfusion*. Vancouver, British Columbia, August 24–29, 2002

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France: Pillonel J, Laperche S, Saura C, Desenclos JC, Couroucé AM. (2002). Trends in residual risk of transfusion-transmitted viral infections in France between 1992 and 2000. *Transfusion*, 42(8), 980–988

Work is also underway to expand what we know about patient safety and health system error in Canada. For example, the largest-ever study of adverse events in Canadian hospitals was launched in 2002. It is cosponsored by CIHI and the Canadian Institutes of Health Research. Health care providers and institutions in British Columbia, Alberta, Ontario, Quebec, and Nova Scotia are participating. Nurses and physicians will review patients' charts to detect adverse events. An evaluation tool will then be used to look at the errors and see whether or not improved care could have prevented the problem.[29] Study results are expected in 2004.

The study will also help quantify the importance of factors that contribute to health system error. Previous international research suggests that many are system factors.[19] Examples include management and staffing practices, business organization, and cultures where mistakes are not dealt with openly. Other factors are more individual, although these too can be influenced by system factors. Examples include lack of training, work overload, stress and fatigue, and negligence.

The National Steering Committee on Patient Safety

The National Steering Committee on Patient Safety was created in September 2001 to improve patient safety in Canadian health care. The Steering Committee's 2002 report, *"Building a Safer System: A National Integrated Strategy for Improving Patient Safety in Canadian Health Care"*, outlines 19 recommendations grouped into five broad categories:

- Establish a Canadian Patient Safety Institute to facilitate a national integrated strategy for improving patient safety.
- Improve legal and regulatory processes.
- Improve measurement and evaluation processes.
- Establish educational and professional development programs.
- Improve information and communication processes.

Surgical Volumes and Patient Outcomes—The Research Continues

Researchers continue to study the possible relationship between how many patients a hospital treats and their patients' outcomes. Since last year's report, journals published a new systematic review of research findings, a large-scale study of US experience, and several studies.

Volumes and Health Outcomes: Recent Research 82

Many researchers have looked at the relationship between outcomes and surgical volumes. Two recent reviews summarizing this research are described below. New findings also continue to emerge, like those from a large US-based study led by Birkmeyer. Based on the research to date, most experts agree that people treated in hospitals caring for more patients tend to have better outcomes for many types of surgery, but the strength of this relationship varies depending on the procedure.

Study	Journal and Year of Publication	Data Source/Coverage	General Findings
Is Volume Related to Outcome in Health Care? A Systematic Review and Methodologic Critique of the Literature (Halm)	Annals of Internal Medicine, 2002	English-language, population-based studies in Medline between 1980 and 2000. Covers 135 articles and 27 procedures and clinical conditions.	High volume is associated with better outcomes, but the degree of the association varies greatly. Differences in case mix and processes of care between high and low volume providers may partly explain this difference.
Selective Referral to High-Volume Hospitals—Estimating Potentially Avoidable Deaths (Dudley)	The Journal of the American Medical Association, 2000	Literature in Medline, Current Contents and First Search Social Abstracts databases between 1983 and 1998. Covers 72 articles and 14 procedures.	Referral of patients to high-volume hospitals can potentially reduce hospital mortality for 11 procedures and conditions. For knee replacement, AMI, and emergent abdominal aortic aneurysm repair, there was no relationship between volume and mortality.
Hospital Volume and Surgical Mortality in the United States (Birkmeyer)	The New England Journal of Medicine, 2002	The national Medicare claims database and the Nationwide Inpatient Sample between 1994 and 1999. Covers 14 cancer and cardiovascular procedures.	Deaths decreased as volumes increased for all 14 procedures. The relative importance of volume varied a great deal.

The new research reinforces the findings of past studies, wherein many types of care and many different surgeries have been studied. The outcome most often tracked is patient mortality. Research suggests that patients treated in hospitals with higher numbers of cases are often less likely to die after surgery. However, the degree of association varies greatly.

Other research has looked at outcomes other than mortality. For example, a study of pancreatic cancer patients in Ontario compared lengths of stay for patients treated at low (fewer than 22 cases), medium (22-42), and high (more than 42) volume hospitals.[30] Researchers found that average lengths of stay were significantly longer in low (7.7 days longer) and medium (9.2 days longer) volume hospitals as compared to high volume hospitals.

Experts suggest that many factors may play a part in the volume-outcome relationship, and their relative importance is still being debated. For example, some researchers suggest that "practice makes perfect". That is, hospitals that care for more patients develop better skills.[31] Others think that patients may be sent more often to surgeons or centres with the best reputations. As a result, the number of patients that go to these centres remains high. This is called "selective referral."[30]

Regardless of which theory is right (or if both have some truth), the exact nature of the relationship between volumes and outcomes is still unclear. For example, is there a specific number of cases needed to achieve the best outcomes? Do outcomes get steadily better with higher case volumes? In most cases, we don't know, partly because different researchers have studied different volume cut-offs in different

The Volume/Outcome Relationship: What the Research Shows

83

Many researchers explore volume/outcome relationships by comparing patient death rates. Recent papers led by Dudley and Halm both reviewed published studies for several conditions and procedures. Birkmeyer took a different approach. In what journal editors called the largest such study to date, researchers compared results in very low volume and very high volume hospitals in the US using the National Medicare Claims database and the Nation-Wide Inpatient Sample. The table below compares what the three studies found for the procedures they all included.

Procedure	Dudley (2000)		Halm (2002)		Birkmeyer (2002)		
	# of studies included	# with statistically significant better outcomes	# of studies included	# with statistically significant better outcomes	Mortality rate in very low volume hospitals	Mortality rate in very high volume hospitals	% risk of death reduced if patient is treated in very high versus very low volume hospital
Coronary artery bypass surgery	11	9	8	6	5.6%	4.5%	20%*
Lower extremity arterial bypass surgery (i.e., use veins from legs for coronary bypass surgery)	1	1	2	1	5.1%	4.1%	20%*
Elective abdominal aortic aneurysm repair	9	9	Unruptured-8 Ruptured-8	Unruptured-7 Ruptured-2	6.5%	3.9%	40%*
Carotid endarterectomy (i.e., remove plaque buildup in carotid arteries)	9	6	15	7	1.7%	1.5%	12%*
Esophageal cancer surgery	2	2	3	3	20.3%	8.4%	59%*
Pancreatic cancer surgery	8	8	10	9	16.3%	3.8%	77%*
Colorectal surgery	For cancer-6	5	10	4	For cancer-5.6%	4.5%	20%*
Gastric cancer surgery	Gastrectomy-5	4	3	1	11.4%	8.6%	25%*

Note: * statistically significant difference between very low and very high volume hospitals.

Source: 1. Adapted from Dudley RA, Johansen KL, Brand R, Rennie DJ, Milstein A. (2000). Selective referral to high-volume hospitals: Estimating potentially avoidable deaths. *Journal of the American Medical Association*, 283(9), 1159–1166
2. Adapted from Halm EA, Lee C, Chassin MR. (2002). Is volume related to outcome in health care? A systematic review and methodologic critique of the literature. *Annals of Internal Medicine*, 137(6), 511–520
3. Adapted from Birkmeyer JD, Siewers AE, Finlayson EVA, Stukel TA, Lucas FL, Batista I, Welch HG, Wennberg DE. (2002). Hospital volume and surgical mortality in the United States. *New England Journal of Medicine*, 346(15), 1128–1137

ways. There are also questions about how best to balance the development of regional centres of excellence with providing access to care close to home and other considerations. This balance is likely to vary from procedure to procedure and place to place.

Across the country, policy-makers continue to face these issues. For example:

- In 1994, several children died from complications from heart surgery in Winnipeg. An inquest was held into their deaths. It found that "the limited number of cases [of paediatric cardiac surgery] that can be undertaken in a province like Manitoba, with a population of just over one million, represents an increased risk of morbidity and mortality."[32] As a result, children in Western Canada now receive their heart surgery at one site in Edmonton.
- In May 1999, the First Ministers from the Western provinces held their 26th annual meeting. They agreed to develop Centres of Excellence for highly specialized medical care. Services such as paediatric and cardiac surgery would be centralized at these Centres.

- In 2001, the Clinical Services Steering Committee tabled a report on the state of acute care in Nova Scotia. Among other issues, the report addressed which services should be provided where. The Committee considered how many cases were needed to sustain high quality of care, what related services were required, and other factors. For instance, they recommended that basic lab services and pre- and post-natal care be offered at community hospitals; general surgery and anesthesia be offered at district centres; and services like burn intensive care units and transplants be offered at provincial hospitals.
- In 2002, a recommendation was made to the Ontario Minister of Health and Long-Term Care that children's cardiac surgery be performed only at one hospital in the province. The Minister accepted the findings of the report.

Systematic reviews of the research literature, an understanding of current Canadian volume patterns, and better information about patient outcomes at individual hospitals can all provide evidence to inform these types of decisions.

Information Gaps: Some Examples

What We Know

- How death rates (adjusted for age, sex, and co-morbidities) in the first 30 days after initial hospitalization with an AMI and stroke compare across the country.
- For some provinces, one-year survival of AMI patients and survival of stroke patients six months after their stroke.
- How readmission rates (adjusted for age, sex, and co-morbidities) in the first 28 days after initial hospitalization for AMI, asthma, pneumonia, hysterectomy, and prostatectomy compare across the country.
- The estimated risk of transfusion-transmitted infection of HIV, HBV, and HCV.

What We Don't Know

- What explains regional differences in mortality, readmissions, and survival?
- What strategies are most effective in reducing rates of death and unplanned readmissions?
- How many Canadians die or are disabled due to health system error each year? How many near misses occur? How can we best prevent such errors?
- Which, if any, surgeries done at hospitals with low volumes put patients at higher risk of complications and death? For these surgeries, what is the optimal or minimum number of cases a hospital should perform? How many deaths could potentially be prevented by ensuring that surgery is provided at high-volume centers? What would be the trade-offs if such procedures were centralized?

What's Happening

- The Saskatchewan Health Quality Council was launched on January 1st, 2003. The first agency of its kind in Canada, it is led by an appointed panel of provincial, national, and international health leaders. The council will report on and recommend innovative ways to improve quality within Saskatchewan's health system.
- Alberta established a Health Services Utilization and Outcomes Commission in 2002, following a recommendation of the *Premier's Advisory Council on Health*.
- In September 2002, the National Steering Committee on Patient Safety recommended creating a national patient safety institute to monitor and prevent medical errors and preventable adverse events.
- The Institute for Safe Medication Practices-Canada is a nonprofit agency established to study drug errors and develop recommendations for increasing patient safety. In July 2002, it started collecting drug error data from several hospitals. Initial results will be available in the spring or summer of 2003.
- Researchers from Canada, US, UK, Australia, and New Zealand are working together on a new Commonwealth Fund project. The goal is to develop a broad range of health indicators—including outcomes of health care—for international comparisons.
- Several studies are underway to improve information on health outcomes and patient safety. The study on health system error mentioned in the chapter is one example. CIHI is also planning a study to look more closely at high and low volume surgical procedures.

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9

Looking Back, Looking Ahead

9

Looking Back, Looking Ahead

These days special capsule-sized cameras that take video images as they pass through the digestive tract are now being tested. These M2A capsules are just one example of the rapidly developing technologies that offer new ways of looking inside the human body.

The information systems that allow us to look inside the health system are also progressing. This year, our challenge was not so much what to put in the report as what to leave out. It's a nice problem to have—one that reflects recent improvements in information about health and health care in Canada. For example, for the first time, we can compare what patients think about hospital, physician, and community-based care across the country (see Chapter 6). New information on quality of care, regional health indicators, and many other topics also offers an improved information base to support the many complex decisions that must be made to better health and health care.

Canada's health information base also took a step forward this year with the publication of the first reports on comparable health indicators. A promise made by First Ministers in September 2000, these 14 reports (one for each province and territory and one for the federal government) included indicators of health status, health outcomes, and quality of service. Some were previously available; others, such as wait times for bypass surgery, reflected new agreements on how to track and report comparable health information.

What Else is Coming

The *Health Care in Canada* series provides highlights of what we know and don't know about Canada's health care system, with a focus this year on primary health care. The companion *How Healthy are Canadians?* series and the upcoming *Improving the Health of Canadians* have a broad population health perspective. Other reports drill-down to provide more detailed information on specific topics. For more information on CIHI's regular reports on health human resources, health expenditures, and health services; collaborative reports on health conditions, such as cardiovascular disease and arthritis; and planned special reports on medical imaging and health and health care for Canada's mothers and babies, please see the CIHI Web site at www.cihi.ca.

Governments have already begun work on the next round of reports, due in 2004. These reports will build on the first series, as well as new reporting commitments made by First Ministers in February 2003. As these efforts and other initiatives to improve health information progress, we look forward to reflecting the results in future *Health Care in Canada* reports.

Reports on Comparable Health Indicators 84

The federal, provincial, and territorial governments reported to their citizens on a series of comparable health indicators in September 2002. The reports can be found on the Web sites listed below. Many of the indicators, from life expectancy and low birth weight to readmission rates and patient satisfaction, can also be found at: http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=pirc_e.

Jurisdiction	Web site
British Columbia	www.healthplanning.gov.bc.ca/cpa/publications/how_healthy_sept2002.pdf
Alberta	www.health.gov.ab.ca/public/document/pircReport.pdf
Saskatchewan	www.health.gov.sk.ca/info_center_comparable_health_indicators_report.html
Manitoba	www.gov.mb.ca/health/pirc/
Ontario	www.gov.on.ca/health/english/pub/ministry/pirc/pirc_tech.pdf
Quebec	www.msss.gouv.qc.ca/f/documentation/cerir/
Nova Scotia	www.gov.ns.ca/health/pirc/
New Brunswick	www.gnb.ca/0391/pdf/HEALTHPerformanceIndicators2002-e.pdf
Prince Edward Island	www.gov.pe.ca/photos/original/hss_common_high.pdf
Newfoundland and Labrador	www.gov.nf.ca/publicat/healthscope/healthscope_report.pdf
Yukon Territory	www.hss.gov.yk.ca/docs/health_indicators_2002.pdf
Northwest Territories	www.hlthss.gov.nt.ca/content/Publications/reports/reports_index.htm
Nunavut	www.gov.nu.ca/Nunavut/English/news/2002/sept/pirceng.pdf
Federal	www.hc-sc.gc.ca/iacb-dgiac/arad-draa/english/accountability/indicators.html

Appendix

Information from Provinces and Territories on Primary Health Care Initiatives

The following table outlines information on selected primary health care sites across the country provided or verified by key contacts in each provincial or territorial ministry of health. It focuses on organizations where different primary health care providers work together. We included Family Medicine Groups in Quebec and Family Health Networks in Ontario, but some other groups of family doctors working together were not included. It also outlines some initiatives currently underway in each jurisdiction.

Province/Territory	Primary Health Care Sites	Date Established	Examples of Current Initiatives
Newfoundland and Labrador	3 primary health enhancement sites	1997	The Office of Primary Health Care has finalized a provincial Primary Health Care Framework and Implementation Plan.
	3 community health centres	1984 , 1995, 1997	Letters of intent have been received and reviewed, and there is a move towards proposals to establish primary health care teams.
Prince Edward Island	4 community health centres	1995–2000	The provincial government plans to: • establish family health centres which include a collaborative practice of multi-disciplinary health care provider teams; • develop and implement a strategy for healthy living and an improved drug utilization strategy; • expand an integrated palliative care strategy; • implement videoconferencing for clinical care, as well as patient and provider education.
Nova Scotia	4 primary care organizations (Formerly the four demonstration sites of the "Strengthening Primary Care Initiative" that now have funding for the next three years)	1999–2000	The Strengthening Primary Care Initiative supported:· • more nurse practitioners working in collaboration with family physicians; • adoption of information technology; • alternative funding arrangements in four communities in Nova Scotia. The Advisory Committee on Primary Health Care Renewal was established in September 2001 to advise the Department of Health (DOH) on the development of a community-based primary health care system.
	9 community health centres (CHC) (These are members of the NS Federation of CHCs. There are other organizations in NS that call themselves a community health centre but they do not necessarily meet the Federation's definition of a CHC.)	1971–2002	The DOH is working with the District Health Authorities in the allocation of Nova Scotia's $17 million share of Health Canada's Primary Health Care Transition Fund. These initiatives include: • implementing enhancements to primary health care services and creating new ways to develop sustainable primary health care networks/organizations; • supporting the cost of change; • supporting the transition to an electronic patient record. The Diversity and Social Inclusion in Primary Health Care Initiative is a three-year plan to raise awareness of diversity and social inclusion issues in primary health care and to consult with stakeholders, including culturally diverse populations, to develop guidelines and policies for the primary health care system.
	Camp Hill Family Medicine Centre	Early 1970s	The DOH is also working with District Health Authorities to support more nurse practitioners working in collaboration with family physicians. (There are currently 13 funded primary health care nurse practitioner positions in NS). The DOH and Dalhousie University (Unit on Population Health and Chronic Disease Prevention) are in the early stages of working together with various stakeholder groups to develop a Chronic Disease Prevention Strategy for Nova Scotia.

Information from Provinces and Territories on Primary Health Care Initiatives *continued*

Province/Territory	Primary Health Care Sites	Date Established	Examples of Current Initiatives
New Brunswick	In October 2002, it was announced that 4 community health centres would be established in Saint John, Lamèque, Doaktown, and Minto.	By June 2003	TeleCare is an important component of primary health care in New Brunswick. Since 1999, primary health care reform in NB has focused on: • stabilizing or increasing the supply of health providers through recruitment and retention strategies (e.g. nurses and physicians); • better utilization of nurses (e.g. nurse practitioners, full scope registered nurses, and licensed practical nurses).
	An earlier community health centre model was implemented in McAdam	1993	Work is also underway on wellness and chronic disease management. New Brunswick will use money from the provincial envelope of the Primary Health Care Transition Fund to implement CHCs and other provincial initiatives. New Brunswick is also working with Atlantic Health Ministries on proposals for the PHCTF multi-jurisdictional envelope. In addition to the CHC model, a collaborative health practice approach will also be implemented where fit and need are demonstrated. The Provincial Health Plan, to be released later in 2003, will further detail primary health care renewal initiatives for New Brunswick.
Quebec	21 accredited Family Medicine Groups distributed in 15 health regions (as of April 1st, 2003)	2002–2003	Continue to expand the number of Family Medicine Groups (FMGs), where family physicians work in teams with nurses and other health care professionals to deliver primary health care to patients. FMGs can also agree on service contracts with CLSCs. 100 new FMGs are forecast for next year.
	147 Centres locaux de services communautaires (CLSC)	1972	Improve access to some primary health care services on a 24 hour a day, seven day a week basis, e.g. extending the hours of some CLSCs to 70 hours a week.
Ontario	16 family health networks (as of May 1st, 2003)	2002–2003	Continue the Family Health Network initiative which offers improved access to primary health care services on a 24-hour-a-day, seven-day-a-week basis.
	14 primary care networks	1999	Support projects designed to facilitate and evaluate the integration of non-physician providers into primary health care practices.
	23 community sponsored contracts (for underserviced areas only)	1999	
	13 northern group funding programs	1999	
	55 community health centres	1970s	
	50 health service organizations	1970s	
	The Group Health Centre in Sault Ste. Marie	1963	
Manitoba	28 sites including health centres, community nurse resource centres, primary health centres, and community health centres	1926–today	Regional Health Authorities are required to develop and submit Primary Health Care Operational Plans, demonstrating consistency with the Primary Health Care Policy Framework, as part of the 2003–2004 RHA Performance agreements. A Provincial Primary Health Care Network was organized by the Regional Health Authorities to develop recommendations regarding primary health care on a provincial basis. A Primary Care Renewal Group has been meeting regularly since 2001. This forum provides an opportunity for open exchange of information, ideas, and opinions. Under the leadership of Burntwood Regional Health Authority and Manitoba Keewatinowi Okimakanak (MKO), 65 partner organizations consisting of governmental and non-governmental organizations have come together to work towards improving the health and wellness of northern and aboriginal populations. Winnipeg Regional Health Authority, Manitoba Family Services and Housing, and Manitoba Health are working collaboratively to integrate community health and social services in 12 defined communities in Winnipeg (Winnipeg Integrated Services Initiative). Initiatives funded under the Primary Health Care Transition Fund (PHCTF) are underway in Manitoba. Phase 1 initiatives include: • expansion of the Misericordia Health Centre's Health Links into a real-time, protocol based health contact centre; • collaborative practice training for health professionals; • integration of information technology in rural and urban primary health care sites; • primary care paramedic training for rural and northern emergency medical services staff; • raising primary health care public awareness. Manitoba Health is participating with other provinces/territories on 2 multi-jurisdictional proposals and 1 national proposal under other PHCTF envelopes.

Information from Provinces and Territories on Primary Health Care Initiatives *continued*

Province/Territory	Primary Health Care Sites	Date Established	Examples of Current Initiatives
Saskatchewan	22 primary health service sites 3 community clinics	1998–2003 1962	The provincial government plans to establish: • primary health care teams and networks; • a province-wide telehealth service accessible 24 hours a day, seven days a week.
Alberta	At least 8 community health centres	1980–today	Key initiatives to be funded over the next four years include the establishment of a 24/7 province-wide, telephone triage and health information line, and a number of capacity building initiatives throughout the province. After stakeholder consultation in late 2002, Alberta Health and Wellness expects to release its Primary Health Care Reform Strategy to stakeholders and the general public sometime in 2003.
British Columbia	8 primary health care organizations At least 25 community health centres	1998 1970	Through the Health Authorities, examples of initiatives to strengthen primary health care include: • supporting a range of practice models, e.g.: patient care networks, shared care, interdisciplinary practice, BC HealthGuide, nurse first call, electronic medical summary, and primary health care organizations; • improving health outcomes, for example through quality improvement collaboratives, and chronic disease management, including patient registries and clinical practice guidelines; • professional development, evidence, and evaluation.
Yukon Territory	14 health centres	1992–1998	Planning of multi-level care facilities in Watson Lake and Dawson City. Fetal Alcohol Spectrum Disorder (FASD) assessment and diagnostic team coordinator, as well as prevention activities for adults with FASD. Reorganization and integration of primary health care services and structures, with an emphasis on health promotion. Improvement and enhancement of existing primary health care information systems.
Northwest Territories	23 community health centres	1992–1998	As of 2002, the Department of Health and Social Services (DHSS) has been developing an integrated services delivery model. This model will describe core services and the applicable distribution, placement, and delivery of primary health services. The NWT Primary Health Care Transition Fund proposal includes 11 individual projects designed to collectively support the NWT's primary community care approach and advance primary health care in the NWT. Projects are from the DHSS and 6 of 7 regional health and social services authorities. • 3 projects are intended to provide public/staff education and coordination of primary health care reforms. A Self-Care Handbook has been adapted to the NWT and sent to all NWT households. • 3 projects are aimed at developing integrated primary health care teams/ services (Inuvik, Rae-Edzo, and Yellowknife). • 2 projects support improved women's reproductive health services. • 3 projects provide training for various health care providers, including nurse practitioners, dental service providers, and community health workers.
Nunavut	26 health centres	1999	Expansion of telehealth and health promotion activities.

Source: Adapted from Appendix F in Commission on the Future of Health Care in Canada. (2002). *Building on Values: The Future of Health Care in Canada.* Ottawa: Commission on the Future of Health Care in Canada.

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We welcome comments and suggestions on *Health Care in Canada 2003*, and on how to make future reports more useful and informative. Please complete this questionnaire or email ideas to healthreports@cihi.ca.

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For each question, please put an "X" beside the most appropriate response. There are no right or wrong answers, we are only interested in your opinions. Our goal is to improve future reports. Individual responses will be kept confidential.

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Primary Health Care in Transition?	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Many Providers, Many Settings	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
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Looking Back, Looking Ahead	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Appendix	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Health Indicators 2003	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read

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