

Major Health Funding Investments

Money



• 1999

Annual Federal Budget

- \$11.5 billion to the provinces and territories over five years, specifically for health care (largest single new investment this government has ever made)

• 2000

Agreements on Health Renewal and Early Childhood Development

- \$23.4 billion in additional funding (includes \$500 million to Canada Health Infoway; Canada Health and Social Transfer [CHST]; primary health care [PHC] reforms; diagnostic and treatment equipment; and early childhood development)

• 2003

First Ministers' Accord on Health Care Renewal

- \$36.8 billion over five years to improve accessibility, quality and sustainability of the public health care system and enhance transparency and accountability in health care spending (includes CHST, health reform transfer, diagnostic and medical equipment, and federal health programs)

• 2004

First Ministers' 10-Year Plan to Strengthen Health Care

- \$41.3 billion in increased cash transfers to the provinces and territories for health care over 10 years (includes Canada Health Transfer [CHT], wait times reduction transfer, and medical and diagnostic equipment)

• 2007

Annual Federal Budget

- \$612 million to the provinces and territories to support meeting their commitments to implement patient wait times guarantees + \$30 million over three years for patient wait times guarantee pilot projects
- \$400 million to Canada Health Infoway

• 2009

Annual Federal Budget

- \$500 million to Canada Health Infoway for electronic health records (EHRs)

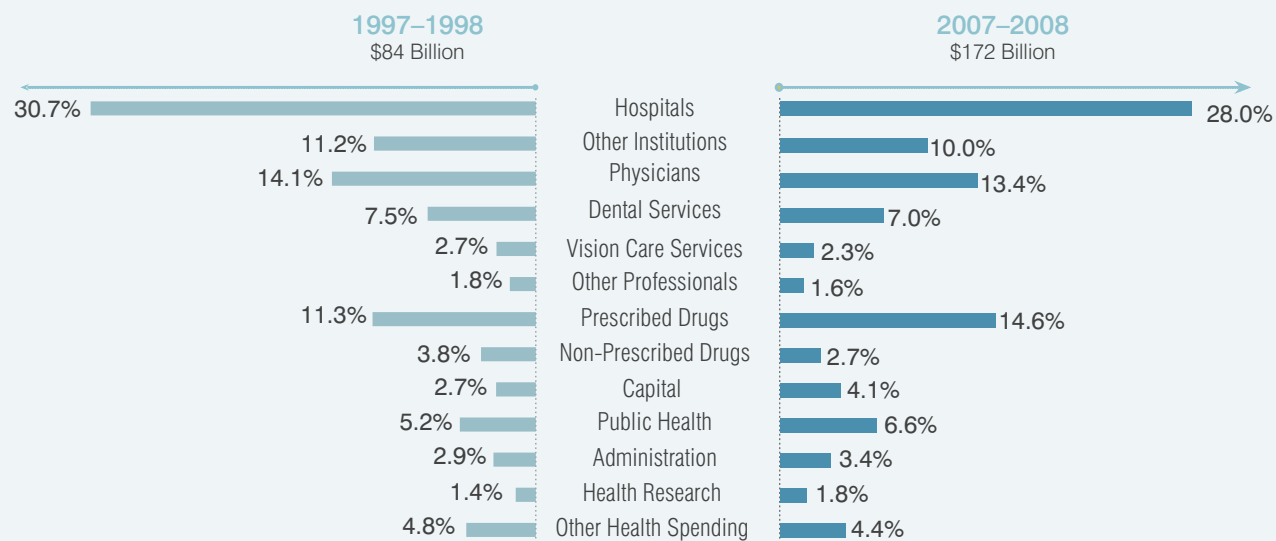




Chapter 3

Follow the Money:
What We Spent, Where
It Went, What We Got

Breakdown of Health Expenditure by Use of Funds, 1997–1998 and 2007–2008



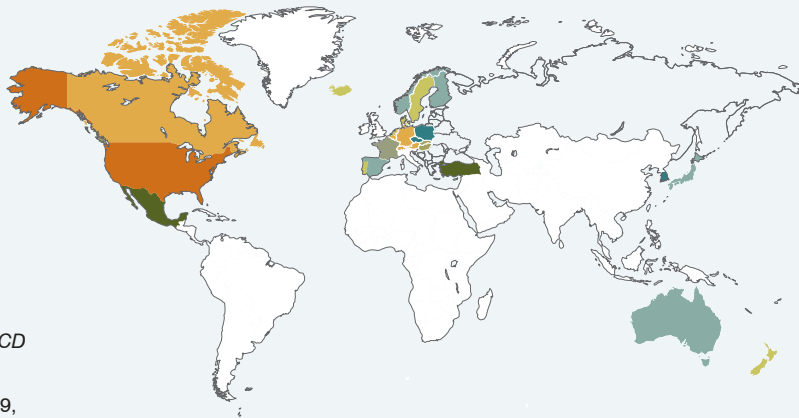
Health care is big business—over 10% of the GDP and about \$172 billion a year in Canada.¹

And it was never bigger business than in the past decade when spending rose faster than ever before. It was a far cry from the mid-1990s, when real, per capita spending declined over a four-year period as a result of government fiscal restraint.

In isolation, the numbers by themselves are not terribly meaningful, and it is easy to get overwhelmed by the sheer volume of financial data available. This chapter explores how money is used in health care, how patterns have changed over the past decade and—where possible—what we got for the money.



Figure 6. Total Health Expenditure as a Percent of GDP in 26 Selected OECD Countries, 2007



United States	16.0
France	11.0
Switzerland†	10.8
Germany	10.4
Belgium†	10.2
Austria	10.1
CANADA	10.1 — ●
Portugal*	9.9
Denmark	9.8
the Netherlands†	9.8
Iceland	9.3
New Zealand	9.2
Sweden	9.1
Norway	8.9
Australia*	8.7
Spain	8.5
Finland	8.2
Japan*	8.1
Slovak Republic	7.7
Hungary	7.4
Luxembourg**†	7.3
Czech Republic	6.8
Korea	6.8
Poland	6.4
Mexico	5.9
Turkey†	5.7

Notes

* Data for 2006.

† Data for 2005.

‡ Estimate.

Source

Organisation for Economic Co-operation and Development. *OECD Health Data 2009—Frequently Requested Data*. Paris, France: OECD, 2009. Cited June 29, 2009, from <http://www.oecd.org/document/16/0,3343,en_2649_34631_2085200_1_1_1_1,00.html>.

What We Spent

It is hard to make \$172 billion comprehensible. This sum is, by any standards, an enormous amount of money. It amounts to:

- \$5,170 per person, annually.¹
- Nearly half a billion dollars per day, every day.
- Nearly 60% more in real terms than a decade ago.

Among the 20 or so richest nations in the world, Canada's spending levels and growth patterns are not unusual. Depending on the year and the method of calculation, we are in the top 5 to 10 countries in terms of proportion of GDP spent on health care and per capita health spending. Most OECDⁱ countries have spent heavily on health care during the

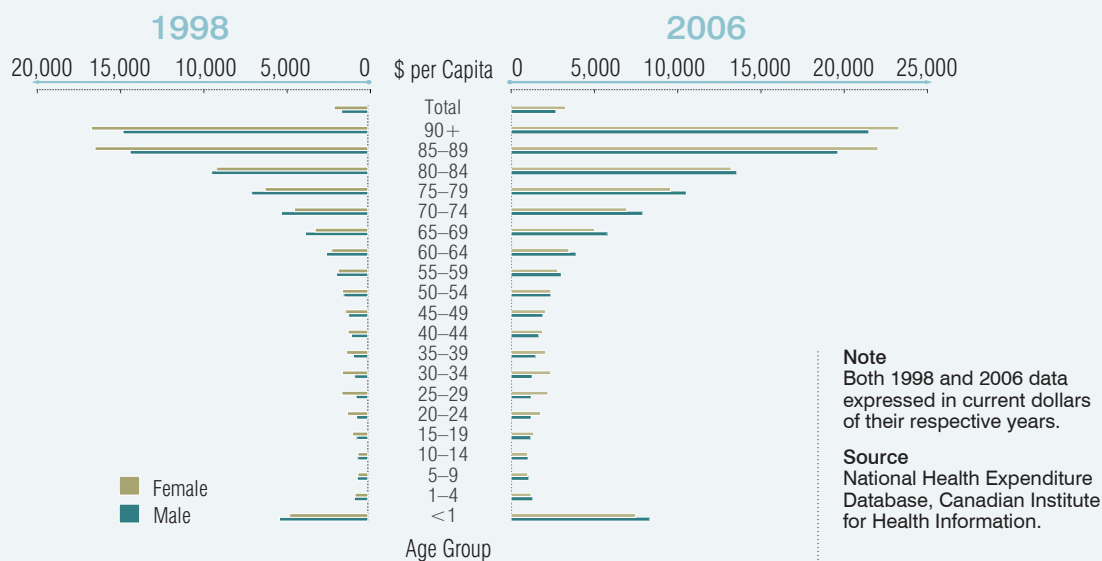
past decade. We spend a lot less than the United States, and about the same as other developed countries in our economic league.

Where Canada did appear to lead the pack in the last decade was in the amount of energy focused on the discussion of cost and sustainability. And a major driver of this conversation is the nature of federalism. Health care in Canada is mainly a provincial or territorial responsibility. It now consumes over 40% of some provincial and territorial government budgets. Health care spending has risen faster than government revenues. Governments and other sources have produced projections that show health care consuming even higher percentages in the future.²⁻⁴ Concerned about essentially becoming—in an extreme scenario—ministries of health with other responsibilities, provincial and territorial governments are now focusing more on efficiency, value for money and accountability.

i. The Organisation for Economic Co-operation and Development (OECD) is composed of 30 countries and is committed to the production of highly comparable statistics in the economic, health and social fields.



Figure 7. Total Health Expenditure per Capita, by Age and Sex, Canada, 1998 and 2006



Who Uses Health Care, and How Much

Almost all Canadians use some health care services in any given year. The average per capita figure of \$5,170 is high, but it is not typical. Health care use is distributed very unevenly across the population. Citizens with serious conditions and high health care needs consume tens of thousands of dollars worth of services in relatively short periods of time. But most of the time, people need modest amounts of care, which does not cost anywhere near the average annual per capita amount.

As one would expect, spending concentrates among the elderly, and toward the end of life. Figure 7 shows per capita spending by age group, which rises steeply after age 70. This phenomenon has led to the erroneous but popular belief that the needs of an aging population will unavoidably drive spending increases and create unsustainable pressures on resources. This is an enduring myth that persists despite

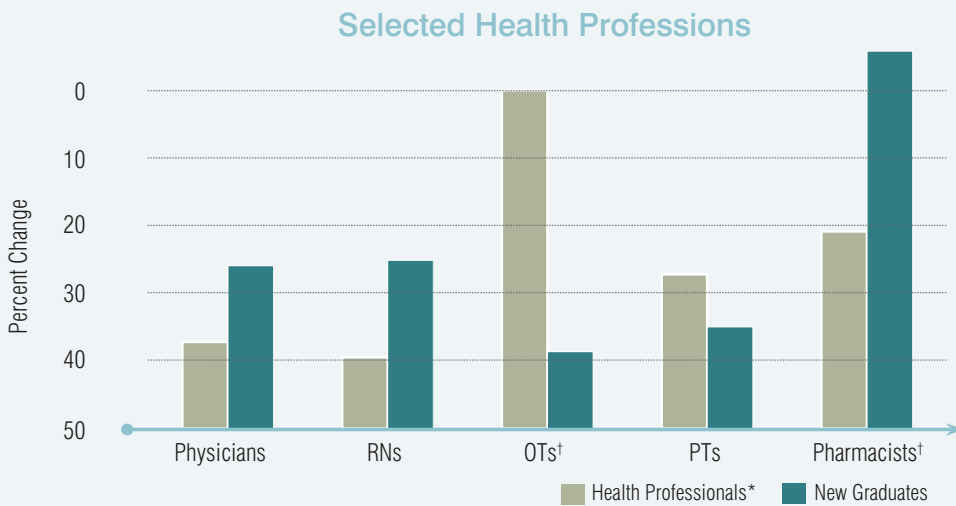
being frequently and articulately debunked in the literature.⁵⁻⁷ The aging population, on its own, is responsible for no more than a 1% annual increase in health spending.⁸ The rest comes from higher prices, higher volumes of some types of services and more intensive services for various conditions.

There are also spending bulges in two other age categories: children in the first year of life and child-bearing women. Since women live longer, there are more older women than older men, and therefore women account for greater proportions of health spending among older age groups.

What this does not tell us is whether spending is distributed according to need. The answer is a qualified yes. Less healthy people use more health care, and low income—associated with worse health status—is not a barrier to the use of tax-funded services. For example, there are 54% more per capita admissions to hospital for stroke from bottom-income quintile neighbourhoods than from those of the top quintile.⁹ Lower-income



Figure 8. Percent Change in Number of Health Professionals and New Graduates for Selected Health Professions, 1997 to 2006



Notes

* The employment status of the health professionals varies in this graph. Physicians (excluding residents), occupational therapists (OTs), physiotherapists (PTs) and pharmacists are those listed as “active registered”; RNs are those listed as “employed active registered.”

† Data for numbers of “health professionals” for both OTs and pharmacists is reported from 1997 to 2005 due to changes in data collection methodology from 2006 onward.

Source

Canadian Institute for Health Information, *Canada’s Health Care Providers, 1997 to 2006, A Reference Guide* (Ottawa, Ont.: CIHI, 2008).

people visit family doctors more often than their wealthier counterparts.¹⁰ In other words, health care use and costs are inversely proportional to income and health status. Simply put: the better off you are, the healthier you are—and the less health care you use.

But there is an important wrinkle in this data. There are big variations in health care use by region for specific procedures. Some Ontario regions do twice as many knee procedures per capita as others, and Quebec stands out for its low rates of hip and knee surgery compared to other provinces (see Chapter 4). But because public health care dollars are generally allocated by geographic area in Canada, it is highly unlikely that there are huge variations in overall per capita spending between cities in the same province. The highest-spending province spends 23% more per person on health care than the lowest spender. By contrast, there are major variations in total per capita spending in the U.S. Seniors in Miami use three times as much health care as seniors in Honolulu, just as seniors in McAllen, Texas, use twice as

much as seniors in Minneapolis.¹¹ The U.S. studies found no differences in outcomes or patient satisfaction associated with these very different service use patterns.¹²

What We Bought

Health care spending buys things, often referred to as *inputs* (personnel, equipment, buildings), *outputs* (surgical procedures, office visits) and *outcomes* (health results). There are many ways to categorize inputs, but two predominate: personnel and drugs.

Personnel

There have been two dominant and related themes in health human resources over the past decade. One is the steady increase in the numbers of practitioners, with large increases in some occupations and more modest growth in others. The second is the ongoing debate about the nature, extent and consequences of personnel shortages, and how to address them.



Both the numbers of practising professionals and new graduates from education programs have risen significantly in recent years. Many more people are working in health care than a decade ago, with especially marked growth in chiropractic, dental hygiene, social work and occupational therapy. There were smaller increases in nursing—by far the largest group numerically—with some variations among categories. Between 2003 and 2007, the number of licensed practical nurses (LPNs) increased by 15.9%, and registered nurses (RNs) increased by 6.9%, with no increase in the number of registered psychiatric nurses (Western Canada only). We do not yet have comprehensive data on enrolment for the past three years, but in nursing and medicine in particular, educational enrolment is up considerably. There have also been off-shore (international) recruitment programs, especially in nursing.¹³

Note that the numbers represent active registrants according to professional associations; they are not full-time equivalents. Systematic data on casual, part-time and full-time employment status does not exist. But among active registrants, in the largest profession—nursing—employers have prioritized a shift to more full-time jobs. This suggests that the growth in health care spending has created a lot of new capacity over the 10-year period.

The numbers by themselves do not mean much; the real question is whether Canada will have *enough* health care providers. Data on the supply of health care workers in OECD countries suggests that there is no one “magic” number. For example, in 2007, Canada had about as many

physicians per 1,000 population as the U.S. but less than many European countries. By contrast, Canada had more practising nurses per 1,000 population than many other countries—but fewer than the U.S. Regardless, since 1998, the focus on the impending “shortages” of doctors^{14–16} and nurses^{17, 18} in Canada has been intense.

In health care, the meaning of a perceived shortage is not straightforward. It could mean any or all of the following:

- There are more jobs than qualified people, resulting in persistent vacancy rates.
- Qualified people have, for various reasons, left the workforce.
- The need for service is growing faster than the capacity to address it.
- Overall capacity is sufficient, but is poorly distributed (for example, some areas are over-served while others are under-served).
- The division of labour is inefficient (for example, nurses doing work that could be done by a licensed practical nurse, or doctors doing work that could be done by a nurse practitioner).
- Work is not organized efficiently, resulting in wasted time and lower productivity (for example, no telephone consultations, difficulties in finding supplies on hospital wards).
- People are getting services that they do not need (for example, for many, an annual complete physical examination is not necessary), which effectively crowds out services they do need.



Making plans and projections without fully understanding which of these is at work may fail to solve the problem, or solve it inefficiently. Furthermore, both health needs and service delivery options are constantly changing. More sophisticated modelling shows how anticipated needs can change dramatically if the system becomes more efficient. A recent report indicated that a 1% annual increase in nursing productivity would eliminate half of the projected shortage of nurses by 2022.¹⁹ By international standards, this is a modest goal: in the early stages of implementation, the United Kingdom's Releasing Time to Care²⁰ initiative has shown up to a 30% increase in time devoted to direct patient care. A number of Canadian jurisdictions have introduced the program. If this effort is similarly successful, the supply of *nursing* will increase significantly without any increase in the number of *nurses*.

Analysts often cite two other potential causes of the perceived shortages: the looming retirement of large numbers of baby boomers and the desire for greater work-life balance in some professions, notably medicine. In the 2007 National Physician Survey, for example, over 6% of doctors stated that they intended to leave their practice, and 35% said they would reduce their hours of work in the next two years. (By contrast, 8% said that they would increase their hours of work.) However, fewer than 1% of doctors left work annually, and while 27% reduced their work hours, 21% *increased* their work hours.²¹ Intention does not always lead to action, and uncertainty invariably clouds the future. Health human resource planning has always been notoriously difficult because the only constant in the environment is change.

The assumptions made and the data consulted affect decisions about educational program seats and off-shore recruitment practices, targets and regulations. Governments have significantly increased health science program enrolments. The entering class of medical students in 2008–2009 was 68.3% larger than the class of 1998–1999.²² For nursing, the increase from 1997²³ to 2007²⁴ was 51.4%.

Regardless of its overall merits, increasing enrolment is not a short-term fix because it takes several years to produce new graduates. The full effects of today's decisions will play out in the coming years and decades. For example, physicians must complete residency programs and pass examinations to become full-fledged licensed practitioners. Enrolment increases and enhanced opportunities for international medical graduates (IMGs) have boosted the number of first-year residents by 58%, from 1,582 in 1999–2000 to 2,504 in 2008–2009.²⁵ The number will grow substantially in the next few years—the first-year medical class size reached 2,653 in 2008–2009²⁶ and it will increase further because some medical schools have already announced their intentions to add seats in the future.

Already the discourse has started to change. Early in 2009, Alberta Health Services stated that previous projections of large nursing shortages were wrong.²⁷ Any prolonged period of spending constraint will have an impact on the labour market, and it is not inconceivable that new graduates in some professions will experience difficulties finding full-time work, as they did in the 1990s.



Figure 9. Public Drug Expenditure as a Percentage of Total Drug Expenditures[§] in 24 Selected OECD Countries, 2007

Notes

* Data for 2006.

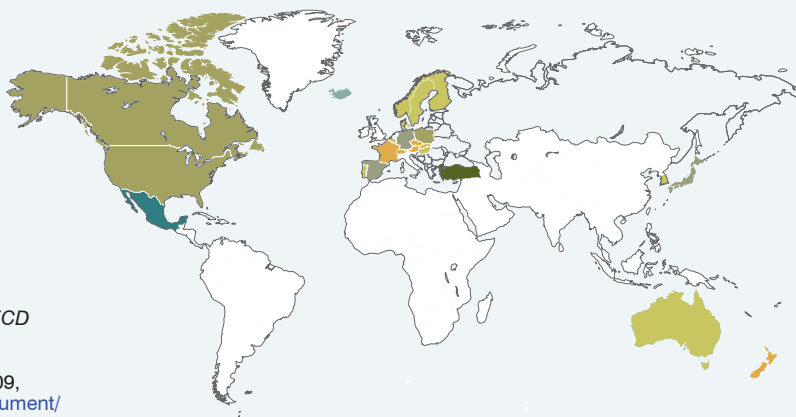
† Data for 2005.

‡ Estimate.

§ Includes prescription and non-prescription information.

Source

Organisation for Economic Co-operation and Development. *OECD Health Data 2009—Frequently Requested Data*. Paris, France: OECD, 2009. Cited June 29, 2009, from <http://www.oecd.org/document/16/0,3343,en_2649_34631_2085200_1_1_1_1,00.html>.



Luxembourg†	83.5
Germany	75.9
Spain	72.7
Japan*	71.7
Slovak Republic	69.1
France	69.4
Switzerland‡	67.6
New Zealand	66.8
Czech Republic	66.0
Austria	65.3
Hungary	58.5
Sweden	58.1
Belgium†	56.3
Portugal*	55.9
Denmark	55.8
Finland	55.1
Australia*	55.0
Korea	54.6
Norway	53.7
Iceland	44.8
CANADA	38.0 —●
Poland	37.5
United States	31.4
Mexico	21.2

Drugs

Overall, drugs are the fastest-growing expenditure item in health care, having increased by about 136% since 1998. Some factors that influence the growth in spending include the replacement of older, cheaper drugs with newer and more expensive drugs, as well as increased use of certain categories of drugs—notably, cardiovascular drugs.²⁸

Canadian drug-spending patterns and policies are notable in several respects. First, the publicly financed proportion of drug expenditures is comparatively low. Canada ranked 21st of 24 OECD countries in 2007.²⁹ Second, drug coverage is uneven across populations. Some Canadians have relatively good public coverage—for example, seniors in some provinces but not others³⁰—while others have good private coverage through employer-based benefit plans. But many have only catastrophic drug coverage with high deductibles. Third, drug spending varies by 55% between the lowest-cost province (British Columbia) and the highest (Quebec).²⁸

A significant development in the past decade has been the adoption of a more coordinated approach to drug evaluation. All jurisdictions except Quebec participate in and support the Common Drug Review (CDR), under the auspices of the Canadian Agency for Drugs and Technologies in Health (CADTH). The process culminates in non-binding recommendations to list or exclude a drug from provincial formularies. The generally accepted principle is that no means no, and yes means maybe. Provinces follow the CDR recommendations over 90% of the time, resulting in greater consistency across the country.³¹



Services and Technology

Health care dollars bought changing arrays of services over the decade (see Chapter 2 for a fuller account of these changes). Among the notable changes with major financial implications are the following:

- **Drug Use.** As discussed, expenditures are increasing rapidly with newer drugs frequently replacing older ones. The question facing policy-makers, benefits plan administrators, physicians and patients is the extent to which the new drugs are more effective, and at what price.
- **Diagnostic Imaging Capacity.** In the last 10 years, this has grown. The rate has been steepest for MRI scanners—over 300%—on top of 71% for CT scanners.³²
- **Hospital Stays.** The number of overnight hospitalizations continues a decade-long trend downward, but length of stay has ceased declining. A continuing factor in the decline is the shift from inpatient (down 16.5% for the decade) to outpatient surgery (up 30.6%).³³

What We Achieved

About half of the increase in health care spending over the decade was due to a combination of population growth (14%), aging (11%) and inflation (27%).⁷ So \$85 billion in spending in 1998 would have had to grow to about \$130 billion in 2008 just to provide the *same* services in the *same* way. We actually spent another \$42 billion. As noted, this new money bought more personnel, technology, innovation and services. So, what were the results?

This is the hardest question to answer. Health status in Canada is good overall, but it is not good among low-income people and Aboriginal populations. Some health care is undoubtedly more effective—for instance, cardiovascular surgery—and people who would have died a decade or two ago now get added years of life. And some procedures, like hip and knee replacements, can reduce pain and suffering, thereby dramatically improving quality of life.

But attributing population health outcomes to health care spending is confounded by five important realities. First, non-medical factors—education, income, social support, food security, the environment, etc.—have a bigger lifetime effect on population health status than health care. Second, everyone dies eventually, and Canadians already live just about as long as any other people on earth. No amount of health care spending can overcome the limits of the human life span. Third, we cannot carry out an experiment that withholds health care from a large group of people and provides it to others, and observe the differences over time.



Measuring Health Outcomes

Outcomes analysis is necessary to understand the end results of health care practices and interventions, and ultimately to understand the relationships among patient characteristics, health care and patient health status. To explore the feasibility of conducting health outcomes analysis, the Canadian Institute for Health Information and Statistics Canada have collaborated on two reports. ●●●●●➔

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And fourth, internationally, the health status returns from increased per capita spending drop off severely beyond about \$1,000 or \$1,500.³⁴ Finally, many conditions are self-limiting—that is, we get better regardless of whether we seek health care—and some are impervious to health care (incurable).

Ultimately, this is about *value for money*, and the Health Council of Canada has made a serious attempt to clarify what is meant by this term and to assess the relationship between spending and outcomes.⁷ Among their key findings are the following:

- Among highly industrialized countries, health outcomes are not related to the numbers of doctors³⁵ and nurses.³⁶ Italy has 67% more doctors per capita than Canada, yet Italians have a life expectancy that is only six months longer than ours.²⁹
- Some health care is either harmful or useless. Thousands of seniors are prescribed drugs they should never take.³⁷ In Vancouver, a study showed that one-quarter of cataract surgery recipients had *worse* vision after the procedure.³⁸

- Some people may need more service, while others may need less.

Overall, we do not have enough comprehensive information to link, with any precision, health care spending to health outcomes. In some cases, innovation makes health care cheaper: it costs less to perform angioplasty on a heart patient than a coronary artery bypass graft. In some cases innovation is more expensive, for example, the cost of using CT or MRI scans for an increasing range of symptoms. Governments often set access targets, but not quality or outcomes goals. It is not surprising that a \$172 billion system is imperfect, but the fact that we have so little information to quantify how this spending actually affects health is a major gap.





Health Outcomes: Report One

The first outcomes report, *A Framework for Health Outcomes Analysis: Diabetes and Depression Case Studies*, released in July of 2008, sparked the development of the new Health Outcomes Conceptual Framework, which guides data development and analysis for health outcomes at a population level. With a specific focus on diabetes and depression, results demonstrated that existing data sources are very limited in their ability to provide information about health outcomes of care.

Health Outcomes: Report Two

The second report in the series, *Health Outcomes of Care: An Idea Whose Time Has Come*, to be released in 2009, focuses on options for outcomes-oriented data development and enhancement. Based on Canadian and international initiatives and case studies, the report proposes short- and long-term options for upgrading the availability of health care outcomes information in Canada.

Issues on the Horizon

Health expenditure data is abundant. We can readily describe how much money goes where in many different ways. Interpretation, however, is far more difficult and contentious because there is no standard approach to linking volumes and activity to clinical and population health outcomes. Nor is there a method for comparing observed to “ideal” efficiency, or otherwise assessing value for money. All we can say for sure is that the system got a good deal more costly during the past decade; Canadians consumed more health care and more expensive drugs; the numbers of doctors and nurses roughly kept pace with population growth, while numbers in other health care professions grew much more rapidly; and diagnostic imaging became commonplace.

The most intriguing developments occurred in health human resources. The latest data available, from 2006, shows a 25% to 30% increase in the number of new graduates compared to a decade earlier. These numbers will rise again shortly in medicine and nursing because enrolment increases are much higher, and the new graduates have yet to appear in the workforce. Overall, the supply of new graduates will be at an all-time high, further augmented by unprecedented numbers of overseas recruits.

How this affects the system will depend on a number of factors, including:

- **The state of the economy and the rate of increase in health care spending.** The next few years promise to be fiscally turbulent, and governments will be struggling with deficits and the need for restraint in the wake of the world-wide economic recession. If health care spending slows down—a likely scenario—then the ability to absorb all of the new personnel may be a challenge. This may



be a case of *déjà vu*: little more than a decade ago, health care organizations were laying off workers and new nursing graduates could not find permanent jobs.

- **Retirement rates in the current workforce.** Economic uncertainty, reduced pension valuations and diminished investment portfolios are likely to change the retirement plans for many health care workers in their fifties and sixties. If doctors, nurses and others defer their exits for even two or three years, then the impact on the system could be substantial. A markedly higher retention rate could augment the numbers of active personnel even more than the combined effect of increased numbers of new graduates and international migration. Salaried personnel typically achieve their highest incomes at the end of their careers. Their delayed departure could potentially create a higher cost bubble, and the opportunity to replace people at the top of the range with new entrants at the bottom could be deferred. A Manitoba study found that physicians over 50 years of age are higher fee-for-service billers than their younger counterparts.³⁹ If they continue to practise longer than anticipated, there will be major upward pressure on total spending because new medical licensees are entitled to billing numbers regardless of whether there is the expected number of retirees.
- **Developments in scope of practice and interprofessional collaborative practice.** There is a good deal of interest in new approaches to care that maximize the capacity of all occupations

to apply all of their knowledge, skills and experience. Given the right incentives, family doctors might manage cases currently referred to specialists, just as community-based nurses might acquire more responsibility for chronic disease management from family doctors, and ward clerks and licensed practical nurses might perform duties now the province of RNs. Any significant changes on these fronts could substantially alter desired personnel ratios. Health science students educated in traditional silos and with today's expectations may confront a considerably altered world when they hit the workforce in a few years' time.

Perhaps the biggest issue for the coming decade is the speed with which quality improvement, accountability for performance and e-health are embraced as fundamental to system change. Everything from the way people work to the tools they use and the adoption of innovation is susceptible to change, if policies and practices now considered leading edge become the norm.

With some exceptions, particularly when new money is available, health care spending patterns usually change incrementally, and both increases and restraint tend to apply across the board. The growing focus on quality suggests the potential for transformation and perhaps will be a driving force to demand it. Faster and larger-scale changes are likely to alter patterns of health care spending, and broader economic forces may create a new sense of urgency as well as a greater appetite for new approaches to funding.



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