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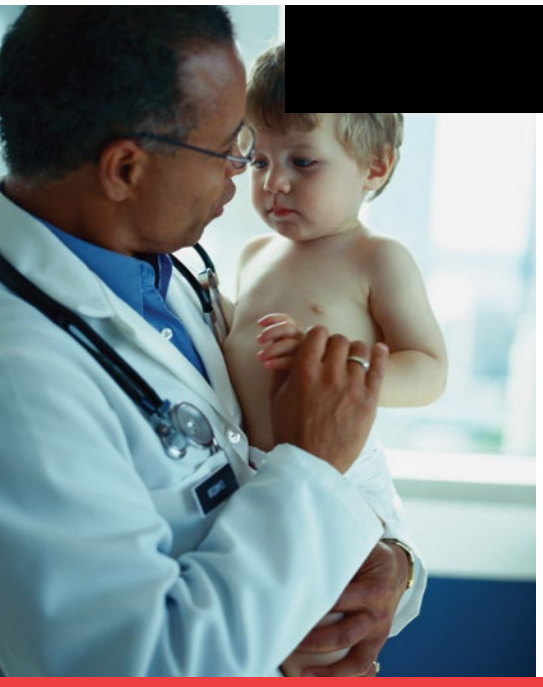

Health Matters: An Economic Perspective

Canadian Alliance for Sustainable Health Care

HEALTH, HEALTH CARE AND WELLNESS

The Conference Board of Canada
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Health Matters: An Economic Perspective
by *The Conference Board of Canada*

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Preface

This report examines the links between the health of Canadians and the economy, and explores how an economic perspective provides an essential lens through which health policies and health care system funding can be assessed. Canada's population is aging and the prevalence of chronic diseases is rising, resulting in higher demands on and costs of the health care system. A wide range of measures can help manage and mitigate the impact of chronic diseases and thereby limit demands on the system. Economic and social policies can improve labour force participation and productivity as well as contribute to health care system funding and sustainability. Efforts to improve the productivity, efficiency, and appropriate use of health care services could help mitigate the effects of growing demand.

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- The Structure of the Health Care System
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EXECUTIVE SUMMARY

Health Matters: An Economic Perspective

At a Glance

- Population health in Canada has implications for both the health care system and economic performance.
- The population is aging and the prevalence of chronic diseases is rising, resulting in higher demands on and costs of the health care system.
- The collective health of Canadians has an impact on economic performance, which in turn has an impact on the sustainability of the system.
- There are modifiable, non-modifiable, and societal population health determinants; those amenable to change should be addressed through policy interventions.

The health of Canadians is both a private matter and a public one. Canadians care about their own health and that of their families and friends. But the collective state of population health in Canada has implications for the health care system itself, and the economic performance of the country. These economic considerations, in turn, have consequences for Canadians' health and the fiscal sustainability of the health care system. Adopting an economic perspective on population health can help inform the assessment and design of health and economic policies.

Trends in population health affect the demand for health care and health care costs. The broader economic impacts of illness have implications for the fiscal viability of the health care system and the capacity to supply health care. The primary driver of rising health costs is the health of the population. Chronic diseases are responsible for a significant amount of disease burden and costs, and many are on the rise. Direct costs—including drug, physician, and hospital costs—for a range of health conditions and chronic diseases are high and growing. For example, between 2000 and 2010 the direct costs of diabetes increased over twofold.

A range of population health determinants—modifiable, non-modifiable, and societal—factors into the prevalence and associated costs of health conditions and chronic diseases. As Canada's population grows and ages, and the prevalence of chronic diseases rises, demands on the health care system and the total cost of delivering services increase. Modifiable lifestyle determinants (such as smoking, alcohol consumption, diet, and physical activity) are amenable to change and can be addressed through policy interventions. Obesity and physical inactivity—key risk factors for many chronic diseases—are growing in Canada and deserve attention. Societal conditions also influence health outcomes and provide another focus for policy interventions to control health care costs and the economic consequences of poor health.

As the demands on and costs of the health care system rise, Canada's capacity to meet the demands and cover costs is also challenged. As the Canadian population

ages, labour force and productivity growth slow and fewer healthy people are available to contribute their work effort to the economy. The tax base that funds health and social programs is weakened. Understanding these relationships is critical to the development of public health, education, and health care policies as well as workplace health and wellness programs.

Health impacts individual and household economic prospects. Poor health can negatively affect both labour force participation and productivity. For individuals, it can result in reduced income or unemployment; for businesses, it may mean productivity losses, and labour and skills shortages; for governments, it could result in a reduced tax base.

Modifiable, non-modifiable, and societal population health determinants factor into the prevalence and associated costs of health conditions and chronic diseases.

As Canada's population ages, more workers exit the labour force than enter, and the proportion of the population that is of working age will decline. A higher proportion of elderly Canadians will depend on fewer workers to sustain the economy. The average retirement age has increased in Canada, which does have positive implications for labour supply. At the same time, an older workforce—with a potentially greater number of chronic conditions—has an impact on productivity.

There is a wide range of potential impacts of aging and poor and declining health on individuals and businesses. The indirect costs of poor health, including lower productivity due to short- and long-term disability and loss of future income due to mortality, provide some indication of the effects of poor health on productivity and, in turn, how well the economy can supply health care. For 10 selected health conditions and chronic diseases, the economic burden from indirect costs is estimated at $119 billion in 2010, up from $79 billion in 2000.

Poor health can be a drain on individual earnings and overall economic productivity, but it also has serious implications for health care system sustainability. Poor health that undermines economic potential also squeezes the tax base that funds the publicly funded health care system. Policies and strategies must provide sufficient funding to the health care system without compromising health or economic outcomes.

The collective health of Canadians has a significant impact on economic performance and the health care system. An aging population and increase in chronic diseases create enormous demands on, and higher costs for, the health care system. Concurrently, the capacity to fund health care is increasingly strained by the impact of these same demographic and health trends.

Although population aging is inevitable, there is a wide range of measures that can help manage and mitigate the impact of chronic diseases and conditions, and thereby limit demands on the health care system. Economic and social policies can improve labour force participation and productivity as well as contribute to health care system funding and sustainability. Finally, efforts to improve the productivity, efficiency, and the appropriate use of the health care services and resources system itself could help to mitigate the effects of growing demand and the strain on supply and funding.

CHAPTER 1

An Economic Perspective on the Health of Canadians

Chapter Summary

- Adopting an informed, economic perspective on population health will increase the likelihood that the desired health and economic outcomes will be achieved.
- The distinction between personal and population health has blurred significantly.
- The viability of the health care system depends, to a large extent, on the ratio of working to retired Canadians. Population growth is not sufficient to provide a complete solution.
- Basically, the options are to reduce costs and/or raise revenues.

Canadians' health matters both privately and publicly. Privately, Canadians are concerned with how their health affects their quality of life, including their enjoyment of various social, cultural, and economic opportunities. But health is also a public matter. The health of Canadians has significant implications both for the cost of the health care system—which is largely publicly funded—and for economic performance more broadly. Economic considerations, in turn, have consequences for Canadians' health and the fiscal sustainability of the health care system.

Unfortunately, too few Canadians have a solid grasp of how population health is linked to the economy. Most have a limited perspective that focuses on the fiscal strain that the health care system exerts on public finances, given the growing costs of hospitals, physicians, and drugs. Many neither acknowledge nor understand the fact that economic policies and performance have far-reaching and significant implications for health outcomes. In turn, health policies and performance have major economic impacts, including effects on Canada's productivity, competitiveness, and growth potential, as well as fiscal sustainability. Failure to recognize and consider these facts in public debate and policy-making undermines the effectiveness of the policies and institutional arrangements that Canadians rely on to improve both their health and the economy.

Adopting an informed, economic perspective on population health is an important step to improving the design of health and economic policies, and makes it more likely that the desired health and economic outcomes will be achieved. This report describes the links between the health of Canadians and the economy and explores how an economic perspective provides an essential lens through which health policies and health care system funding can be assessed. In short, the report introduces a much-needed broad economic perspective into the national dialogue about health and the health care system.

PURPOSE OF THE REPORT

This report, prepared for The Conference Board of Canada's Canadian Alliance for Sustainable Health Care (CASHC), examines the links between Canadians' health and economic performance. It considers the contribution that an economic perspective can make to discussions about health and health care policy. In particular, the report:

- characterizes the links between Canadians' health and economic performance;
- details key trends in Canadians' health and health care costs;
- analyzes how the economic and health care costs are shared between individuals and society, and the implications of that sharing for health and the economy;
- discusses population health determinants and how action on determinants could improve both health and economic outcomes;
- offers recommendations to improve the effectiveness of health and economic policies based on enhanced awareness of the interaction between health and economics.

The report will help guide future CASHC research studies, including scenarios that demonstrate how changes in government, business, and household investments in health promotion and disease management affect long-term costs and economic performance.

FRAMEWORK

In poll after poll, Canadians identify health care and economic concerns (such as employment, poverty, and taxes) as among their top issues or concerns.[1] Yet, rarely do Canadians discuss how the two are related. The simple fact of having to choose between health and economic concerns in polls and public debates may impair Canadians' ability to recognize how vitally connected health and economic considerations are. Treating health and the economy as distinct issues is an approach that Canadians can no longer afford. An economic perspective is essential to improving both health and economic outcomes.

But exactly how are health and economics linked? What does an economic perspective on health and health care look like? How can it contribute to better debate and policy-making? And why should Canadians care? This section sets out a conceptual framework to guide the report's analysis and offers evidence about the importance of an economic perspective to help motivate the discussion.

FROM PRIVATE HEALTH TO PUBLIC ECONOMICS AND BACK AGAIN

Although individuals' health has always had some acknowledged public implications, it has primarily been viewed as a private concern. Gradually, however, health has acquired more public significance and, with it, greater economic implications.

The health of Canadians has significant implications both for the cost of the health care system and for economic performance more broadly.

Over the past century, health experts and policy-makers have become more aware of how social and economic conditions—such as physical proximity in cities and the presence or lack of adequate sanitation—affect the health of individuals on a mass scale. At the same time, advances in epidemiology have revealed how notions of health as a private matter are increasingly inadequate. The emergence of the concept of population or "herd" immunity, for example, highlighted the interdependence of population and individual health and has stimulated a further shift toward regarding health as a public, and not merely private, matter.[2]

1 See, for example, Smith, "Health Care, Jobs Top Concerns."

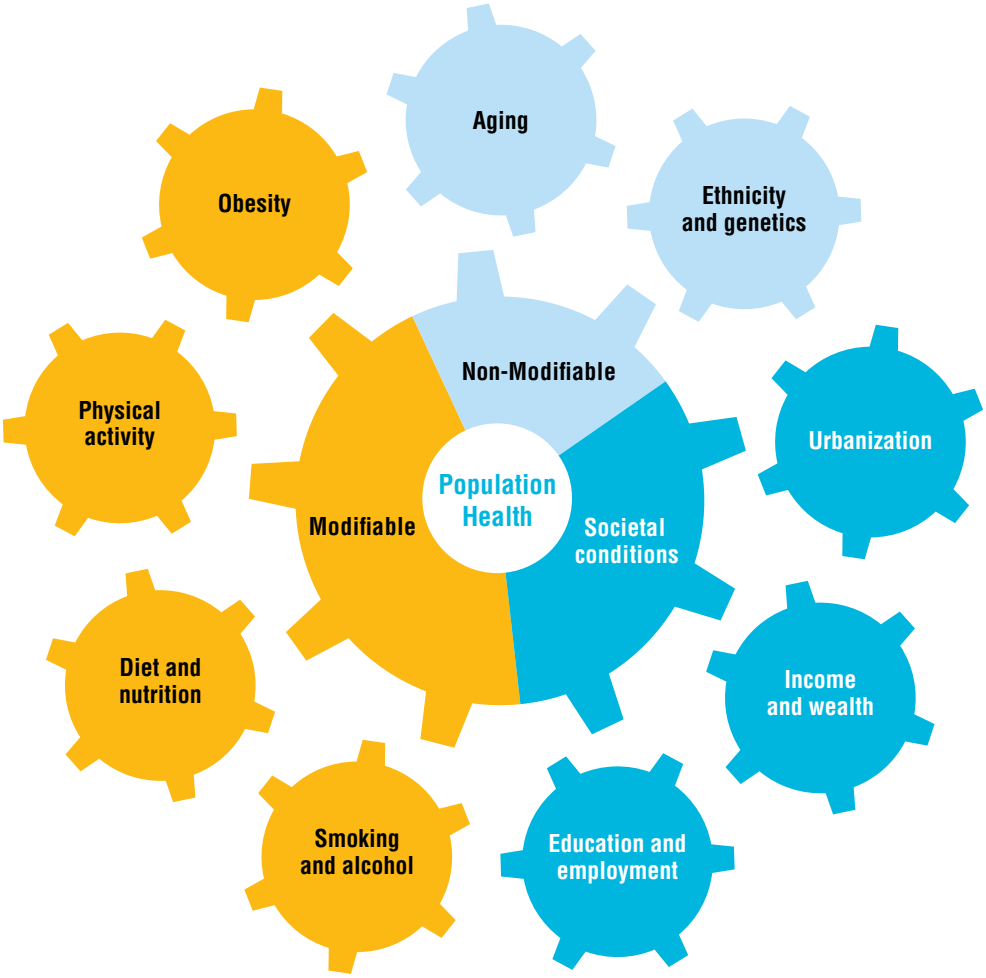
2 According to Paul Fine, the first published use of the term "herd immunity" occurred in a 1923 paper by Topley and Wilson. In that paper, Topley and Wilson noted that their recent research on epidemiology "led us to believe that the question of immunity as an attribute of a herd should be studied as a separate problem, closely related to, but in many ways distinct from, the problem of the immunity of an individual host." Cited in Fine, "Herd Immunity," 266.

The evolution of public health insurance, via Medicare, added a further dimension. Medicare effectively socialized a significant portion of the costs of poor health. As Medicare does not operate on a user-pay basis, some of the cost of poor health is shared with other members of society. Private individuals still bear much of the cost of poor health—in the form of avoidable doctor visits, uninsured health costs, lower earnings, and—perhaps most significantly—reduced quality of life. Yet, sharing even a portion of the costs of poor health publicly has further expanded the notion of health as a public, and not merely private, matter.

Since health has become much more of a public concern, public interventions designed to improve health outcomes have achieved more prominence. As the costs of poor health have been increasingly shared or socialized, there has been a corresponding expansion of the rationale for public policies and initiatives designed to modify personal behaviour and the socio-economic determinants of health, i.e., the social and economic factors that affect health outcomes.[3] (See Exhibit 1.) Health policy now intersects with overall socio-economic policy, including policies related to income distribution, education, housing, and urban planning.

3 For an introduction to the socio-economic determinants of health, see Munro, *Healthy People, Healthy Performance, Healthy Profits.*

Exhibit 1
Population Health Determinants



Source: The Conference Board of Canada.

With this latest development, the conceptual distinction between personal and population health has blurred significantly. All Canadians—young and old, healthy and ill—are effectively tied together by virtue of the cost-shared health care system and the interdependence of health and socio-economic conditions. Critically, the viability of Canada's health care system—indeed, the health of Canadians—depends on the health of the economy insofar as economic performance determines the size of the tax base that can be used to fund the health care system and/or policies that address the socio-economic determinants of health. It is this reality that makes it essential to care about the economics of public health.

THE ECONOMICS OF CANADIANS' HEALTH AND HEALTH CARE SYSTEM

Given the interdependence of health and economics, there are both opportunities to create virtuous circles of improving health and economic performance, and threats of falling into cycles of declining population health and weaker economic performance. The challenge is to find the right mix of policies that can drive this interaction toward virtuous circles and away from decline. This requires much more attention to the economic dimensions of population health and health care policy than has been the case in the past.

According to the Canadian Institute for Health Information, estimated total spending on health care by governments and Canadians in 2011 was $200 billion, or $5,811 per person—a 4 per cent increase over spending in 2010, and accounting for 11.6 per cent of GDP.[4] This is a significant cost and constitutes one of the chief concerns about the viability of the health care system. From an economic perspective, it is useful to know how the costs are covered, how the arrangements to cover those costs affect broader economic performance, what drives costs in the first place, and what can be done to manage the drivers and adopt better arrangements to fund health care.

Canadians have personal incentives, beyond a better quality of life, to avoid and manage health care costs by making better decisions and leading healthier lives. Better personal health allows for greater earning potential, lower out-of-pocket costs and health expenses, and fiscal benefits if other Canadians take measures to better protect their own health. But a large portion of health care costs—about 70 per cent—are effectively socialized via publicly funded Medicare, which may reduce private incentives to modify behaviour. At the same time, even if Canadians recognize the private and public costs—and thus the incentives to modify their behaviour—many of the socio-economic factors that shape health outcomes are beyond direct, individual control.

Whatever the individual incentives to act, the reality is that population health and the health care system depend on cost and funding structures that make collective action essential. Unfortunately, the kind of collective action required to foster a healthy population and sustain the health care system is becoming increasingly difficult in the context of a rapidly aging population. Most health care costs are borne late in life, after retirement from the workforce, while most of the contributions occur during one's working life. Yet, current "withdrawals" do not come from past contributions—as is the case for pensions or retirement savings—but instead are taken from current contributions. In effect, the viability of the system depends on the extent to which transfers from currently working Canadians can keep up with the withdrawals made primarily by senior, retired Canadians.

When the proportion of working to retired Canadians is high, the system can function relatively well. But it does not look promising in the context of an aging population. Baby boomers are only now beginning to retire, and that trend will continue for another 15 to 20 years. At the same time, population growth is not nearly strong enough to maintain the current ratio between workers and retirees,[5] so there will be fewer working Canadians to support a health care system from which more and more Canadians will require services. This reality makes personal and population health for young and working-age Canadians all the more important.

4 Canadian Institute for Health Information, *National Health Expenditure Trends,* Highlights.

5 In 2011, the ratio of Canadians aged 65 and over to those aged 20 to 64 stood at 23 per cent. By 2040, that number will rise to 43.2 per cent.

SQUARING THE CIRCLE: POTENTIAL EFFECTS OF ECONOMICS ON POPULATION HEALTH

If an economic perspective provides a clearer picture of the shape of the challenges, can it also provide solutions—or at least help in the assessment of which options are more promising?

Ideas and strategies for maintaining the viability of the health care system are numerous as the era of baby boomer retirement begins. Population growth is not sufficient to provide a complete solution. Not only did baby boomers have too few children to replace their numbers, but relying on immigration-driven growth is challenged by the fact that many immigrants have had difficulty integrating into the labour market. And just as Canada lacks sufficient numbers of workers, slow trends in labour productivity growth do not help matters. According to research conducted for the Conference Board's Centre on Productivity, "after averaging 2.8 per cent per year from 1962 to 1983, labour productivity growth … slowed to 1.3 per cent per year from 1984 to 2008."[6] Trends in productivity growth would need to move in the other direction in order to provide part of the solution to health care system fiscal viability. This would improve economic and income growth, and increase the tax base for governments.

To address the funding challenges of the health care system, then, the options are to reduce costs and/or raise revenues.[7]

- **Reducing costs**—From a long-term perspective, reducing costs could be achieved by reducing the future demand for health care, by acting on the social and economic determinants of health outcomes—including providing adequate housing, sanitation, and transportation; reducing poverty; enhancing food safety, security, quality, and nutrition; and improving and expanding education. But such measures are unlikely to make sufficient impact on the health of baby boomers, whose accumulated health behaviours and patterns cannot be much changed.

  In the short to medium term, options for reducing health care costs could include improving efficiency and productivity within health care institutions (from general practitioners to specialists to hospital services); changing individual incentives to reduce unnecessary use of the system (e.g., by charging user fees); and/or reducing the number of services that are publicly insured. Additionally, although curing the chronic conditions of seniors is not a realistic option, adoption of techniques to better manage their effects and provide more efficient care (such as through expanded home and community care) can mitigate their impact on health and economic outcomes.

- **Raising revenues**—In terms of raising revenues to maintain health care fiscal viability, the main option appears to be expanding the tax base that funds health care. This involves raising labour participation and productivity. There are several private and public initiatives that work toward this end, including workplace health programs.

Although it is not immediately clear which options would be most effective, practical, and politically palatable, it is clear that an economic perspective is essential in assessing the possibilities. This report makes a contribution to articulating that economic perspective and offering preliminary assessments of trends, challenges, and options.

METHODOLOGY

The research methodology included:

- An extensive literature review focused closely on the links between health, health care, and the economy; the socio-economic determinants of health; and trends in the demographics and health of Canadians.
- Analysis of data gathered from Statistics Canada, the Public Health Agency of Canada, and the Canadian Institute for Health Information.

6 Arcand and Lefebvre, *Canada's Lagging Productivity*, 1.

7 Another option valid in theory, but hard to validate in practice, is borrowing. The rationale is that additional government borrowing may be justified in instances where government intervention can be demonstrated to generate a net return higher than the cost of borrowing, by lowering long-run costs.

CHAPTER 2

Health Trends and the Implications for Health Care Demand

Chapter Summary

- The central driver of health care costs is the health of the population.
- Health care costs have more than doubled in just 11 years, and health spending is beginning to crowd out government spending on other key services and programs.
- The cost of chronic diseases is high and growing. Some health determinants, such as aging, cannot be controlled, but others are modifiable. The latter have greater policy relevance.

Population health and economic performance are closely linked. Health challenges create corresponding economic challenges and vice versa. This is the central conception of an economic perspective on population health. Yet, the precise impacts, the mechanisms through which they occur, and the possibilities for altering the mechanisms and outcomes are not immediately clear. And because they are not clear, evidence-based policy-making is challenging.

Thus, we need a more precise picture of how the health of the population and trends in population health affect economic performance, including the viability of the health care system. This chapter details how trends in population health affect demand for health care and health care costs. The following chapter examines the broader economic impacts of illness which, in turn, have implications for the fiscal viability of the health care system, i.e., the capacity to supply health care.

TRENDS IN HEALTH CARE COSTS

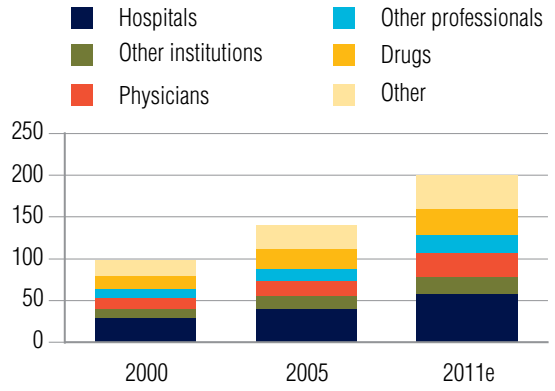
Although health care costs are affected by a wide range of drivers and escalators—including changes in technologies, health human resources, pharmaceuticals, patient expectations, and inflation—the central driver is the health of the population.[1] As the population grows and ages, and the prevalence of chronic diseases rises, demands on the health care system and the total cost of delivering services increase. (Chronic diseases are conditions that progress slowly, are of long duration, and can be managed but rarely cured.)

Data from the Canadian Institute for Health Information reveal that the direct costs associated with providing public and private health care have been increasing rapidly (with a slowing in growth in recent years). As Chart 1 shows, expenditures on health care—the public share accounting for about 70 per cent of all health care costs—were estimated at more than $200 billion in 2011. This represents more than a doubling of health care costs in just 11 years.[2]

1 For a detailed analysis, see The Conference Board of Canada, *Understanding Health Care Cost Drivers*.

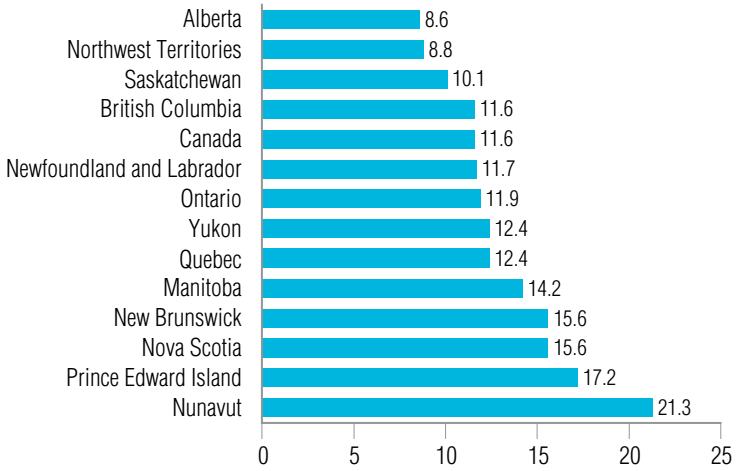
2 Canadian Institute for Health Information, *National Health Expenditure Trends*, data tables.

Chart 1
Total Health Expenditures in Canada, by Use of Funds
(current $ billions)



e = estimate
Source: Canadian Institute for Health Information.

Chart 2
Total Health Expenditures in Canada, 2011
(percentage of provincial/territorial GDP, current dollars)



Sources: Statistics Canada; Canadian Institute for Health Information.

At nearly $60 billion, hospital costs account for the largest proportion (about a third) of total costs. But physician costs have been growing the most rapidly of all cost categories. While hospital costs and other cost categories have increased an average of about 6.5 per cent per year over the past decade, physician costs alone have increased at an average annual rate of 7.1 per cent.[3]

THE IMPACT ON GOVERNMENT BUDGETS

The impact of these trends on government budgets is enormous, and health spending is beginning to crowd out spending on other key services and programs, such as education and infrastructure. Health spending consumed an estimated 41.5 per cent of aggregate revenues in all provinces and territories in 2010–11, up 9 percentage points from 2000–01, and accounted for 11.6 per cent of GDP nationally. (See Chart 2.) In fact, except in the 1990s, health care spending has grown faster than GDP for several decades.[4]

These trends will continue as Canada's population ages, given that older people simply require more health services. Indeed, about 44 per cent of total health care spending already goes toward caring for those over the age of 65—despite this group accounting for only 14.4 per cent of the population. The over-65 population is growing at a rate more than three times greater than that of the overall population, thereby putting enormous pressure on health care costs.

The challenge is well illustrated by the situation in Ontario. According to a recent projection by the Conference Board, using conservative assumptions that took only changes in demographics and inflation into account—i.e., holding real per capita spending constant—health care spending growth in Ontario will average 4.7 per cent per year to 2031. This is higher than the Ontario government's target of 3 per cent per year for the next seven years and is above our estimate for sustainable nominal GDP growth.[5]

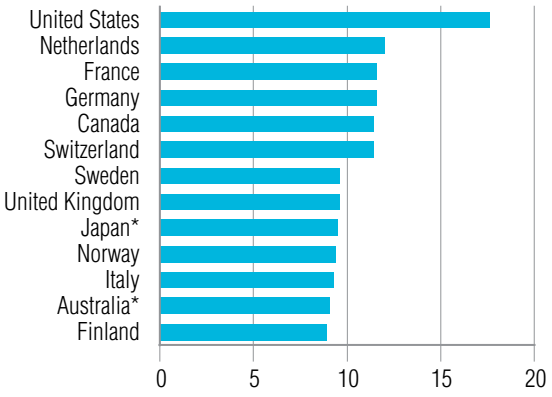
When the projection is based instead on the levels of growth witnessed in the past—which are more aligned with actual demand and cost increases in delivery, the average annual growth in health care spending rises to 5.6 per cent. In this case, health care spending not only threatens to crowd out other spending, but also makes it very unlikely that the Ontario government could balance its budget over the time frame of the projection (to

3 Canadian Institute for Health Information, *National Health Expenditure Trends*, data tables.

4 Canadian Institute for Health Information, *National Health Expenditure Trends*.

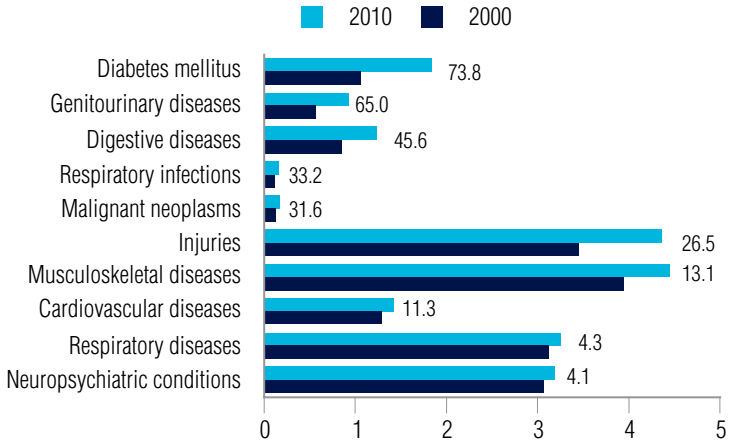
5 Stewart, Beckman, and Hodgson, *Ontario's Economic and Fiscal Prospects*, iii.

Chart 3
International Health Expenditures, 2010
(percentage of GDP)



*2009 data
Source: Organisation for Economic Co-operation and Development.

Chart 4
Trends in Prevalence of Selected Chronic Diseases and Conditions, 2000 and 2010
(number of cases, 000s)



Note: Numbers indicate the percentage increase.
Source: Statistics Canada, Canadian Community Health Survey.

2031).[6] Other Organisation for Economic Co-operation and Development (OECD) countries face similar scenarios, though they are using different strategies for dealing with the challenges. (See Chart 3.)

In December 2011, the federal government announced that provinces and territories will continue to receive Canada Health Transfer increases at 6 per cent annually until 2016–17. Thereafter, increases will match the growth in nominal GDP (real GDP plus inflation).[7] The importance of these transfers to provincial/territorial coffers and to their ability to deliver health services is fairly significant—in Nova Scotia, the transfer represented about a fifth of health spending in 2010–11.[8]

THE EFFECTS OF TRENDS IN POPULATION HEALTH ON HEALTH CARE COSTS

Many factors are driving the growth in public health care expenditures, including population growth, changes in technology, and general inflation. However, the primary driver of rising health costs is the health of the population. Health trends, in turn, are driven by a range of factors, including modifiable determinants (such as diet and exercise), non-modifiable determinants (such as aging and genetics), and societal conditions (such as income, employment, and education).

What are the key trends in population health and their drivers? What impact are they having on health care costs and what is their potential future impact?

THE BURDEN OF CHRONIC DISEASES

Chronic diseases are responsible for a significant amount of the disease burden and costs in Canada, and many are on the rise. Chart 4 shows the trends in the prevalence of 10 chronic diseases and conditions over the decade beginning in 2000. (See Appendix A for detailed trends for selected chronic diseases.) In nearly every case, the prevalence has risen, with some diseases—such as diabetes—showing dramatic increases.

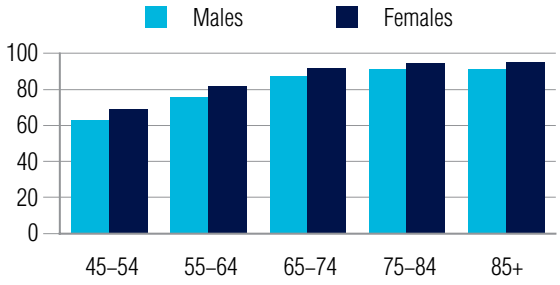
The burden rises with age. Statistics Canada's 2008–09 Canadian Community Health Survey found that approximately 90 per cent of seniors aged 65 or older reported having at least one chronic condition, while many had four or more. (See Chart 5.) Individuals who live with

6 Stewart, Beckman, and Hodgson, *Ontario's Economic and Fiscal Prospects*, iii.

7 Canada, Department of Finance, *Harper Government Announces*.

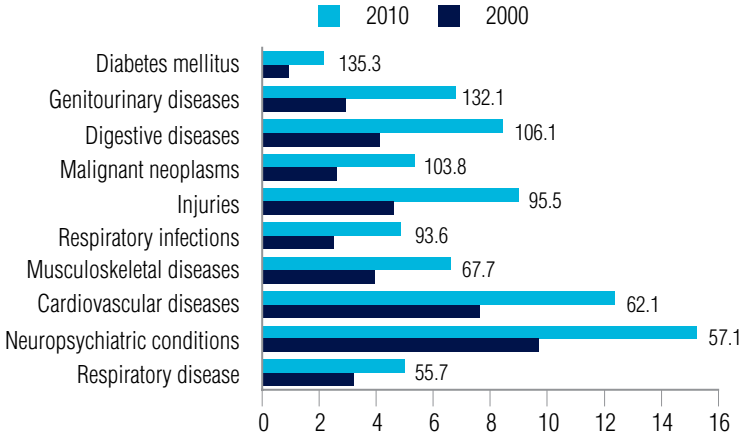
8 Nova Scotia, Department of Finance, *Budget Highlights*.

Chart 5
Reporting at Least One Chronic Condition, 2008–09
(percentage of population; age group)



Source: Statistics Canada, Canadian Community Health Survey.

Chart 6
Total Direct Cost of Selected Chronic Diseases and Conditions, 2000 and 2010
($ billions)



Note: Numbers indicate the percentage increase.
Source: Statistics Canada, Canadian Community Health Survey; Public Health Agency of Canada, Economic Burden of Illness in Canada 2000; The Conference Board of Canada.

chronic conditions are more likely to use hospital and home care services, visit physicians more frequently, and spend longer periods in hospitals.[9]

Although the prevalence of certain chronic diseases increases with age, there is also reason for concern about chronic diseases in younger cohorts of the population. Rates of obesity and physical inactivity—key risk factors for many chronic diseases—are growing in Canada. Between 1981 and 2007–09, measured obesity roughly doubled for both genders in most age groups. Based on measured height and weight data from 2007–09, one in four Canadian adults is obese and 8.6 per cent of children and youth, aged 6 to 17, are obese.[10] And many more children are trending in the direction of obesity. From 1979 to 2004, the percentage of children aged 2 to 17 who were overweight increased from 15 to 26 per cent.[11]

DIRECT COSTS OF CHRONIC DISEASES AND CONDITIONS

The cost to the health care system of these chronic diseases and conditions is high and growing. (See Chart 6.) To estimate the current burden of those diseases considered the most costly in terms of direct costs—i.e., drug, physician, and hospital costs—we projected estimates of the economic burden of illness for the year 2000 provided by the Public Health Agency of Canada.[12] The projected estimates are highlighted in Chart 6. We took a top-down approach by estimating the cost per prevalent disease case for the year 2000 and projecting forward for selected years from 2000 to 2010, using health expenditure data from the Canadian Institute for Health Information, disease prevalence estimates from the Canadian Community Health Survey and Canadian Cancer Statistics, and mortality data from Statistics Canada.

Direct costs for all diseases have been rising due to a number of factors, including increased physician compensation and the adoption of new and expensive patented drugs and medical equipment. However, the prevalence of a disease remains one of the most important drivers of costs.

Among the selected diseases, diabetes saw the highest growth in costs (2.4 times) as well as the highest growth in prevalence (74 per cent) from 2000 to 2010, largely as a result of increasing rates of obesity. The relationship between prevalence and costs held true for the rest of

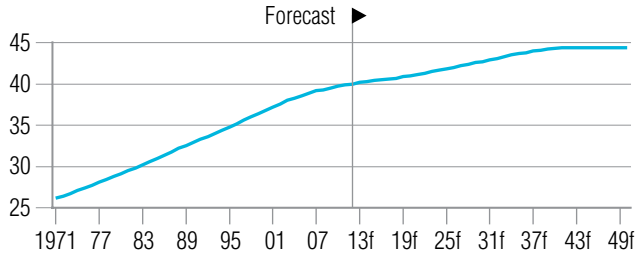
9 Broemeling, Watson, and Prebtani, "Population Patterns of Chronic Health Conditions."

10 Public Health Agency of Canada and Canadian Institute for Health Information, *Obesity in Canada*, 1.

11 Shields, "Overweight and Obesity Among Children and Youth."

12 Public Health Agency of Canada, Economic Burden of Illness 2000, unpublished data.

Chart 7
Canada's Median Age Increases, 1971–2050
(median age of the population)



f = forecast
Sources: The Conference Board of Canada; Statistics Canada.

the diseases. Over this same period, the direct costs increased 2.3 times for genitourinary diseases, 2.1 times for digestive diseases, and 2 times for malignant neoplasms. In short, rising demands on the health care system due to chronic diseases and conditions are becoming increasingly costly. What is driving these trends?

POPULATION HEALTH DETERMINANTS

Canadians are not as healthy as they could be, and chronic diseases are on the rise. What impact do these trends have on the health care system, and what can be done about them?

Poor health, whether from an acute condition like a workplace or sport-related injury or from a chronic condition like diabetes, is influenced by a mix of factors. Although there are many variations of population or determinants of health models,[13] most embody distinctions between upstream determinants of health that are modifiable (things we can control such as diet and exercise), non-modifiable (things beyond our control such as aging and genetics), and societal conditions (such as environmental conditions, income, and employment).

13 See, for example, Etches and others, "Measuring Population Health."

To define a strategy for cost control, we need to understand the nature of the costs. Although a determinants of health perspective provides us with a better understanding of what drives health care costs, not all of the drivers are amenable to change. For instance, we know that Canada's population is aging and that many chronic conditions manifest themselves in old age, but aging is beyond our control. However, there are options to nudge the *ratio* of younger workers to retired seniors, and strategies for managing and mitigating the effects of seniors' chronic conditions. By contrast, certain behaviours and societal conditions are more amenable to change. As we consider the determinants of (poor) health that drive health care costs, we want to be mindful of the distinction between those factors we can influence and those we cannot.

NON-MODIFIABLE DETERMINANTS OF HEALTH

Aging

Chart 7 shows that Canada's population is aging. While only 8 per cent of the population was 65 years and over in 1971, in 2011 that figure was almost 15 per cent of the population. Statistics Canada projects that by 2041, seniors will make up close to a quarter of the population.[14] And although Canada currently has one of the youngest populations of the OECD countries, it is projected to have one of the oldest by 2050.[15]

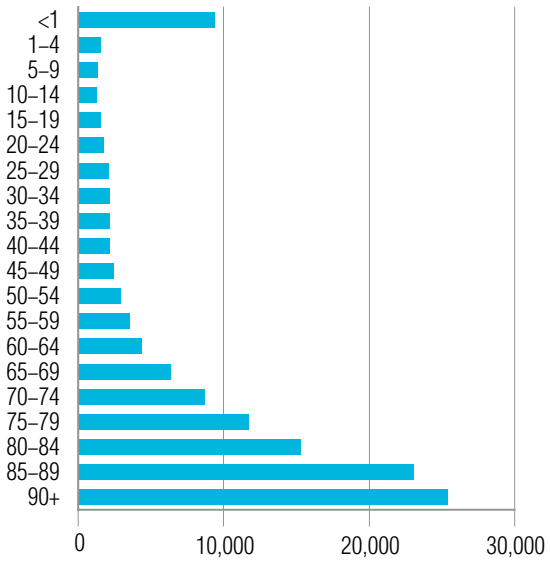
An older population means that more and more people will be living with chronic diseases. Additionally, the elderly are more susceptible to developing communicable diseases, such as pneumonia, and to suffering personal injuries through falls. As a result, elderly Canadians use health care services in far larger amounts than those who are younger. For example, in 2010 in Ontario, public health expenditures on those 70 to 74 years old were seven times more than spending on 5 to 9 year olds.[16]

14 Statistics Canada, *Canadians in Context—Aging Population.*

15 Organisation for Economic Co-operation and Development, *Demography and Population.*

16 Stewart, Beckman, and Hodgson, *Ontario's Economic and Fiscal Prospects*, 13.

Chart 8
Average Public Health Expenditures in Canada, per Capita, 2010
($; age group)



Sources: The Conference Board of Canada; Canadian Institute for Health Information.

Thus, as the population ages, health care demand and total cost rise. (See Chart 8.) A report by The Conference Board of Canada on Ontario's economic prospects forecasts that per capita spending on health care in Ontario will rise to $3,263 in 2030 from $2,704 in 2010 (2002 dollars)—based solely on changes in the province's demographic make-up. Additionally, between 1998 and 2008, population aging contributed 0.8 per cent, out of a total growth of 4.6 per cent, to annual health care cost growth (excluding inflation) in Canada.[17] This represents a little more than 17 per cent of the annual growth in public sector health expenditures over the period. As Canada's population becomes older, this contribution to health care cost growth will rise to more than 1 per cent annually.[18] Yet, while the effects of population aging can be managed and mitigated, aging itself is a cost driver that cannot be controlled.

Some provincial budgets are more susceptible to changes in population health and may require more immediate structural adjustments due to an older average population, lower fertility, immigration rates, and expectations of future economic growth. The Atlantic provinces and Quebec currently have the highest proportions of senior citizens. This trend will likely continue over the next 25 years. For example, under a medium-growth scenario, Statistics Canada forecasts that 31 per cent of Newfoundland and Labrador residents will be over the age of 65 in 2036, compared with a national average of 23.7 per cent.[19]

While the effects of population aging can be managed and mitigated, aging itself is a cost driver that cannot be controlled.

Ethnicity

Ethnicity is another non-modifiable factor that influences health outcomes. For example, numerous surveys have shown that certain ethnic groups face higher disease risks and prevalence than others. A study of four ethnic groups in Ontario found significant variations in the prevalence of cardiovascular disease and risk profiles.[20] Heart disease varied from 3.2 per cent in the Chinese population to 5.2 per cent in the South Asian population.[21]

At the same time, cultural patterns that are not tied to genetics, but track ethnicity to some extent—such as dietary patterns, may be modifiable. Indeed, changes in the health of immigrants after arriving in Canada indicate that cultural patterns—if not ethnicity—can be changed, albeit sometimes for the worse.

Over the last decade, the number of new immigrants coming to Canada each year averaged 247,000.[22] Researchers expect foreign-born Canadians to account for 25 to 28 per cent of the Canadian population by 2031, up from 20 per

17 Marchildon and DiMatteo, *Health Care Cost Drivers*, 12.

18 The Conference Board of Canada, unpublished figures, 2012.

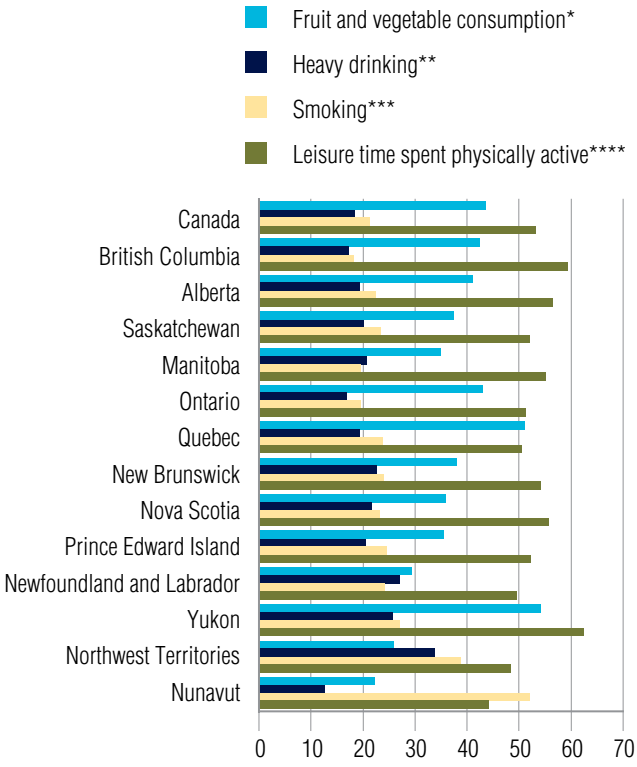
19 Statistics Canada, *Canadians in Context—Aging Population.*

20 The ethnic groups were South Asian, Chinese, Black, and White.

21 Chiu and others, "Comparison of Cardiovascular Risk Profiles."

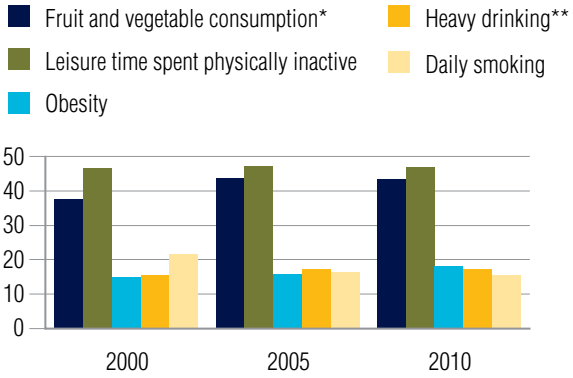
22 The Conference Board of Canada, *Canadian Outlook 2012*, 14.

Chart 9
Selected Health Behaviours in Canada, 2010
(percentage of individuals, age-standardized, both sexes)



*five times or more per day
**aged 12+, five or more drinks on each occasion, at least once per month in the last year
***aged 12+, current daily and occasional
****aged 12+, includes moderately active and active
Source: Statistics Canada, Canadian Community Health Survey.

Chart 10
Selected Health Determinants, Trends in Canada
(prevalence rate, per cent)



*five times or more per day
**five or more drinks on one occasion, at least once per month
Source: Statistics Canada, Canadian Community Health Survey.

cent in 2006.[23] New immigrants often arrive in Canada in better health than those born in this country.[24] The "healthy immigrant effect," however, tends to wear off after a decade and depends on the country of origin.[25] This may be due to a variety of factors, such as adopting some of the unhealthy practices of Canadian lifestyles. Thus, although ethnicity is fixed, and immigration policy is shaped by more than health concerns, there may be some opportunities for adopting better policies and initiatives to improve immigrants' health.

23 Malenfant and others, *Projections of the Diversity*.

24 McDonalda and Kennedy, "Insights Into the 'Healthy Immigrant Effect,'" 1613–27.

25 Ng, "The Healthy Immigrant Effect."

MODIFIABLE LIFESTYLE DETERMINANTS OF HEALTH

Lifestyle factors can significantly affect health outcomes. But unlike non-modifiable factors, behaviours are amenable to change and so have greater policy relevance. To be sure, behaviour and lifestyle options are themselves shaped by other social, economic, and environmental conditions, but many of these are also modifiable. Four key modifiable factors have significant impacts on health. (See charts 9 and 10.)[26]

Smoking and Alcohol

Smoking and alcohol consumption strongly influence health and, by association, health care costs. Smoking increases the probability of developing lung cancer, cardiovascular disease, and chronic obstructive pulmonary

26 Data on lifestyle factors (for example, smoking, obesity, physical activity) can come from several sources, such as self-reported behaviours through the Canadian Community Health Survey or surveys based on actual measures like the Canadian Health Measures Survey. Self-reported and measured results can vary significantly. For example, Canadians tend to under-report their weight compared with measured results. The Canadian Community Health Survey is cross-sectional and it collects information related to health status, health care utilization, and health determinants for the Canadian population. It relies upon a large sample of respondents and is designed to provide reliable estimates down to the health region level. The target population of the survey is all Canadians aged 12 and over. Excluded from the sampling frame are individuals living on Indian reserves and on Crown lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions.

disease,[27] while harmful levels of alcohol consumption increase the probability of injury and cancer, as well as liver, cerebrovascular, and cardiovascular disease.[28]

Smoking and alcohol consumption patterns vary widely across the country. Current daily or occasional smokers are far more common in the three territories, with more than half of Nunavut's residents smoking, compared with a 10-province average of roughly 20 per cent.[29] Aside from the health care costs that arise from smoking- and alcohol-related diseases, these risks have an impact on the bottom line of businesses through reduced productivity of workers.[30]

To be sure, behaviour and lifestyle options are themselves shaped by other social, economic, and environmental conditions, but many of these are also modifiable.

Nutrition and Dietary Patterns

Dietary patterns that include high and frequent consumption of harmful fats, cholesterol, salt, sodium, and/or sugar increase the risk of developing numerous chronic conditions. For example, in 2004, 31 per cent of Canadians' sugar intake came from fruit and vegetables while 35 per cent came from foods such as candy and salad dressing.[31] Foods with more positive health benefits, such as fruit and vegetables, contain high levels of vitamins, nutrients, minerals, and fibre. In 2011, only 40.7 per cent of Canadians consumed fruit and vegetables five times or more per day.[32]

Poor dietary habits among children are particularly troubling as they increase the probability that these individuals will be less healthy later in life. Children and youth who consume five servings of fruit and vegetables per day are far less likely to be overweight or obese than those who do not.[33] At the same time, there are greater opportunities to alter children's behaviour and establish patterns that will produce long-term benefits than is the case for older Canadians.

Physical Activity

Many Canadians are not getting the recommended amount of exercise to maintain good health and this contributes to rising health costs. Results from the 2007 to 2009 Canadian Health Measures Survey for physical activity show that only 15 per cent of adults are getting the recommended amount of exercise (150 minutes of moderate to vigorous physical activity per week).[34] The situation is even more acute in the younger generation: between 2007 and 2009, only 9 per cent of boys and 4 per cent of girls engaged in one hour of vigorous activity at least six days per week, as suggested by Canadian guidelines. They spent, on average, 8.5 hours per day being sedentary.[35] Again, historical patterns in physical activity cannot be changed, and are likely to contribute to rising health care costs, but current patterns are modifiable.

SOCIETAL CONDITIONS AND HEALTH

In addition to modifiable behaviours and non-modifiable factors, there are also social conditions that influence health outcomes. Although difficult to change—especially for individuals—social conditions are not entirely fixed and therefore provide another focus for policy interventions to control health care costs and the economic consequences of poor health.

27 Health Canada, *Health Effects of Smoking*.

28 United States, Centers for Disease Control and Prevention, *Alcohol and Public Health*.

29 Statistics Canada, "Age-Standardized Rates, Current Smoker, Daily or Occasional."

30 Hallamore, *Smoking and the Bottom Line*.

31 Langlois and Garriguet, *Sugar Consumption Among Canadians*.

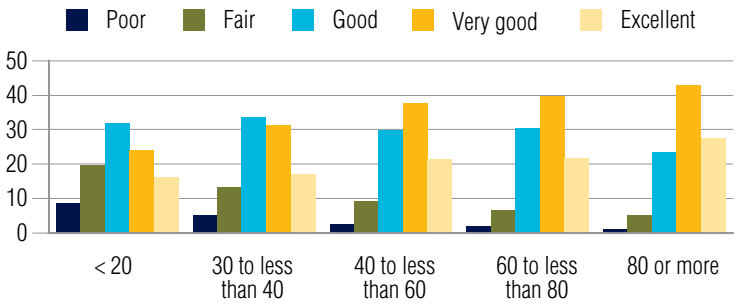
32 Statistics Canada, "Age-Standardized Rates, Fruit and Vegetable Consumption."

33 Shields, "Overweight and Obesity Among Children and Youth."

34 Statistics Canada, *Canadian Health Measures Survey*.

35 Colley and others, "Physical Activity of Canadian Children and Youth."

Chart 11
Perceived Health by Household Income Group in Canada, 2010
(percentage of respondents; total household income from all sources, $ 000s)



Source: Statistics Canada, Canadian Community Health Survey.

Lower Incomes and Wealth Levels

There is a strong relationship between income and health. Health improves as people move up the income ladder. (See Chart 11.) Indeed, low income is a risk factor for several conditions that contribute to poor health, including substandard housing conditions, an inability to afford sufficient and nutritious food, and social exclusion. The stress of having a low income often leads individuals to exhibit other poor lifestyle behaviours (such as smoking and alcohol consumption) and to higher illness rates. Critically, from an economic perspective, low-income individuals are more frequently hospitalized than others.[36]

For children, living in a low-income family can contribute to other problems that have negative health implications. Many low-income children experience physical, emotional, and psychological stress; commonly eat less nutritious food; have higher rates of hyperactivity; take longer to attain vocabulary benchmarks; and tend to be in overall poorer health than other children. These factors together affect their educational performance and employment prospects.[37]

36 Federal, Provincial and Territorial Advisory Committee on Population Health, *Toward a Healthy Future.*

37 Ibid.

Education and Employment

An individual's level of education is also a strong predictor of health.[38] Children who grow up in poorer neighbourhoods are less likely to attend school and complete their education. They have added difficulty obtaining, as well as maintaining, employment. When individuals face barriers to education and/or employment, their opportunity to contribute and innovate diminishes, thereby restricting their potential. This fallout hinders society as well as the economy.

Any improvement in the health of Canadians will have a significant impact on Canada's health care system by both reducing demand and improving funding.

To be sure, it is not clear to what extent education drives health outcomes more or less than income does. In the aggregate, people with higher incomes are likely to have higher education and, in turn, better health outcomes, but causal direction is not entirely clear. In many cases, the more highly educated will earn higher incomes and thus have better health, but it may also be true that some people are more highly educated because they (or their parents) had higher incomes and better health to begin with. Thus, while there are strong correlations, more careful study of the causal mechanisms is required to inform effective policy-making.

CONCLUSION

From an economic perspective, poor and declining health among Canadians raises serious concerns. As the population ages and health declines, pressures on the health care system mount and costs rise. Unfortunately, as a population health perspective reveals, some of the drivers are non-modifiable—the options are limited to managing effects rather than addressing key causes. At

38 Winkleby and others, "Socioeconomic Status and Health."

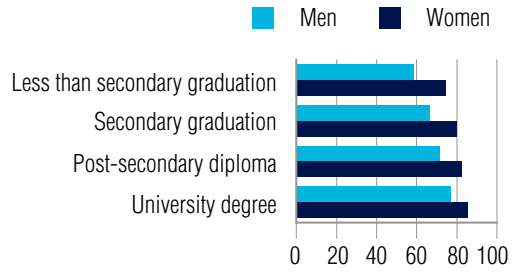
Aboriginal Health

Statistics Canada reports that, in 2006, 1.3 million people (3.9 per cent of Canada's population) self-identified as having an Aboriginal identity. The Aboriginal population is young and growing at a fast rate. By 2030, the population is expected to grow to between 4.3 and 5 per cent of the population. Thus, First Nations, Inuit, and Métis people are an important part of Canada's current and future prosperity.

The significant socio-economic and health disparities between Aboriginal and non-Aboriginal populations in Canada are well-documented. Studies have found that First Nations, Inuit, and Métis people face persistent health inequities, including shorter life expectancy and high rates of chronic and communicable diseases.[1] Aboriginal people also have poorer educational outcomes, such as high school completion, and have a lower participation rate in the workforce than the national average. (See chart.)

Addressing the disparities in, for example, health and education is critical and could help to improve Aboriginal labour force participation. Conference Board estimates suggest that bringing Aboriginal employment to the level of the national average by 2026 would be the equivalent of a 1 per cent increase in total Canadian employment, or 80 per cent of a single year's immigration.[2]

Probability of Survival to Age 75, Aboriginal Ancestry,* 1991–2006
(per cent; education level)



*aged 25
Source: Tjepkema and Wilkins, *Remaining Life Expectancy*.

1 Health Canada, *Diseases and Health Conditions*.

2 Hodgson, "Aboriginal Workers Can Support."

the same time, some determinants of health are modifiable. Both health and economic policies should target those areas in order to achieve the greatest degree of health care system viability possible.

But this is only part of the story. Although we have presented an account of the trends in health care demand and cost, an economic perspective also requires an analysis of health care supply and trends that affect the capacity to fund health care. In this respect, poor and declining health is a double-edged sword. It not only leads to increasing health costs, but also threatens the capacity of the economy and associated tax base to effectively support a viable health care system to meet demand. These cross-cutting currents mean that any improvement in the health of Canadians will have a significant impact on Canada's health care system by both reducing demand and improving funding. But before we can estimate these effects, we need to delve deeper into the broader economic consequences of poor health.

CHAPTER 3

The Economic Burden of Illness and Its Implications for Health Care Supply

Chapter Summary

- Income is a determinant of health, but health is also a determinant of income.
- It is difficult to precisely measure the economic impact of poor health, but lost labour market participation can be estimated.
- Ten selected chronic diseases generated an estimated economic burden of $119 billion in 2010, up from $79 billion in 2000.
- Under current conditions, a tax-based strategy alone will not be sufficient to sustain Canada's health care system.

Increasing demands on the health care system are elevating the total cost of providing health care. As demands and costs rise, the capacity to meet the demands and cover costs is challenged. Indeed, some drivers of health care demand are similar to drivers of health care supply. Labour force and productivity growth slow as the population ages and fewer healthy people are available to contribute their work effort to the economy. In turn, this weakens the tax base that helps to fund health care and other social programs.

A better understanding of these relationships is important to inform public health policies and health and wellness programs in the workplace and other organizations, such as the education system, or even the health care system itself—fundamental tools to sustain economic growth and funding of health care supply.

THE ECONOMIC IMPACT OF HEALTH ON INDIVIDUALS AND HOUSEHOLDS

Before examining the broader economic implications of the health of the population, it is useful to consider the effects of health on individuals' and households' economic prospects. For people with poor or declining health, the ability to maintain employment and earnings can be significantly impaired. This can negatively affect their savings capacity, cause them to take on more debt, and hamper their ability to afford nutritious food, shelter, education, and other goods that influence health for themselves and their families. Indeed, although income is a determinant of health, as we noted in the previous chapter, health is also a determinant of income.

People with physical or mental disabilities, for example, have greater difficulty finding and retaining employment and tend to earn less than those who have no disabilities. In Canada, the income of people with disabilities is only 87 per cent of that of people without disabilities, and only 44 per cent of working-age people in Canada with disabilities are employed versus 69 per cent of Canadians without disabilities.[1] Furthermore, people who are

1 The Conference Board of Canada, *How Canada Performs: Disabled Income*; Statistics Canada, Population Projections for Canada.

obese may experience lower wages and discrimination in hiring decisions.[2] As the prevalence of physical and mental disabilities and obesity rises, the number of income-insecure individuals and households in Canada is also likely to rise.

POPULATION HEALTH AND LABOUR

One of the key mechanisms by which health affects economic performance—and thus the capacity to sustain the health care system—is the labour market. Labour is the most important factor of production in the economy, accounting for 54 per cent of GDP.[3] Unfortunately, poor health can affect both labour force *participation* (the percentage of working-age people in an economy who are either employed or unemployed but actively looking for work)[4] and *productivity* (how efficiently labour contributes to the production of goods and services).[5]

Indeed, poor physical and/or mental health can make it more difficult for people to work, or even simply to show up for work regularly. When that happens, not only do individuals face the prospect of reduced income or unemployment, but businesses can face productivity losses and labour and skills shortages, and governments a reduced tax base. Altogether, these negative outcomes threaten the viability of the health care system—both in terms of the fiscal and financial resources required to cover costs, and the people required to fill health care jobs.

Although it is difficult to precisely measure the economic and social impact of poor health, some estimation is possible. Looking at one aspect of the problem—which gives a sense of the magnitude of the whole, the Conference Board estimated the lost labour market participation stemming from the six most common mental ailments among working-age Canadians at $20.7 billion for 2012, rising to $29.1 billion annually by 2030.[6] This is just for mental health: as we discuss later, the overall economic impact is much larger when including the impact of all illnesses.

THE EFFECTS OF AGING AND POPULATION HEALTH ON LABOUR

Statistics Canada projects that the proportion of the Canadian population that is of working age will drop from 69 per cent in 2009 to 60 per cent by 2036.[7] As Canada's population ages, more workers will exit the labour force than will enter it. This will have a negative effect on labour force growth, which in turn will lower potential GDP growth and strain government tax revenues. In short, a higher proportion of elderly Canadians will depend on fewer workers to sustain the economy.

As the prevalence of physical and mental disabilities and obesity rises, numbers of income-insecure individuals and households in Canada are also likely to rise.

In addition, health—particularly, though not exclusively, the health of workers—affects when workers exit the workforce. Those with health issues may leave earlier than others, as will those with dependents whose health is poor or declining. Research from the Canadian Community Health Survey found that health issues were the most important reported reason for unplanned or involuntary retirement.[8]

Some risks stand out. Heavy drinkers are almost 2 times more likely to leave the workforce early; obese female workers, 1.6 times more likely; and male daily smokers, 1.7 times more likely.[9] A study on the impact of diabetes on employment in Manitoba found that diabetics with complications were twice as likely to be out of the

2 Canadian Obesity Network, *Canadian Summit on Weight Bias*, 4.

3 Calculation based on Statistics Canada, Table 380-0001, Gross Domestic Product (GDP).

4 The Conference Board of Canada, *Mental Health Issues in the Labour Force*, 4.

5 The Conference Board of Canada, *How Canada Performs—Labour Productivity*.

6 The six ailments were depression, dysthymia, bipolar disorder, social phobia, panic disorder, and agoraphobia. The Conference Board of Canada, *Mental Health Issues in the Labour Force*, 3.

7 Statistics Canada, *Population Projections for Canada*.

8 Park, "Health Factors and Early Retirement," 5.

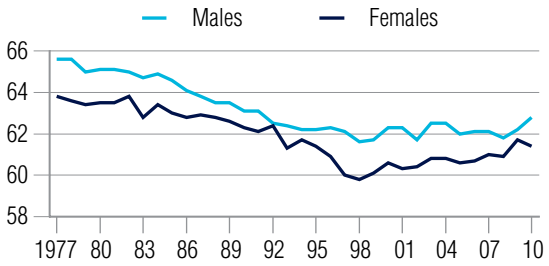
9 Ibid., 9.

labour force as those without diabetes.[10] These negative impacts on the labour force are worrisome, given the trends in obesity and diabetes in Canada.

Life Expectancy and Potential Working Years

At the same time, over the past decade, Canadians' average retirement age has increased. (See Chart 12.) In 2008, a 50 year old could expect to work for an additional 16 years; a 50 year old in the mid-1990s could expect to work only 12.5 additional years. Also, more older individuals are working today. In 2010, 34 per cent of individuals 55 years and older participated in the labour force, up from 22 per cent in 1996.[11] While this has positive implications for labour supply and can help to ease labour and skills shortages, it is not clear how the productivity of elderly Canadians will fare in the long term as many work while managing one or more chronic diseases.

Chart 12
Average Retirement Age in Canada
(age)



Source: Statistics Canada, Labour Force Survey.

ABSENTEEISM, PRESENTEEISM, AND LABOUR SHORTAGES

Workers' health has direct consequences for the amount of time that they work, as well as for how productive and engaged they are when working.[12] Absenteeism due to the poor health of workers or their dependents results in fewer workers being available to complete key business tasks. This can result in less work being completed and/or higher costs for employers, who have to keep more employees on the payroll than is really necessary.

Similar to chronic diseases, communicable diseases can have a negative impact on hours worked. A communicable disease may cause other employees to stay home if the disease spreads or there is concern about it spreading. For example, in November 2009, H1N1 and seasonal flu resulted in 20.9 million hours of lost work time in Canada.[13]

Productivity may also be affected by "presenteeism," wherein workers are physically present at work but not performing at the level required by their job. This may be because they have a health condition that hampers their productivity and/or they are distracted by the health of their dependents.

ESTIMATING THE ECONOMIC BURDEN OF ILLNESS

Clearly, there is a wide range of potential impacts of aging and poor and declining health on individuals and businesses. But is it possible to quantify the economic impact more precisely? The Public Health Agency of Canada (PHAC) developed data and an estimate of the economic burden of illness in Canada for the years 1986, 1993, and 1998. The data have been used for a variety of economic analyses, including The Conference Board of Canada's reports on the Heart Health Strategy and the National Lung Health Framework.

PHAC used mortality data, along with other factors, to produce its calculations on the economic burden of illness in Canada. Direct costs—such as drug, hospital, and physician costs—were considered in the previous chapter. In this chapter, we focus on indirect costs, as these provide some indication of the effects of poor health on productivity and, in turn, on how well the economy can supply health care. While the impacts of poor health are much broader than those captured by the indirect costs examined here, these provide a useful addition to the full picture.

10 Kraut and others, "Impact of Diabetes."

11 Statistics Canada, *Study: Delayed Retirement.*

12 Sharpe and Murray, *State of the Evidence.*

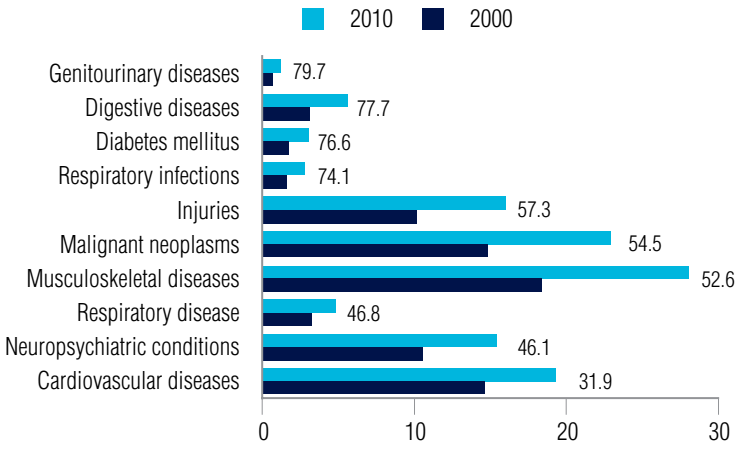
13 Statistics Canada, *Impact of H1N1 and Seasonal Flu.*

The indirect costs that contribute to the broader economic burden of illness include:

- loss of future income due to mortality;
- lower productivity due to long-term disability;
- lower productivity due to short-term disability.[14]

As with our projections of direct costs in the previous chapter, to estimate the current economic burden of those diseases and conditions considered the most costly in terms of indirect costs, we projected estimates of the economic burden of illness for the year 2000, provided by PHAC.[15] The projections are highlighted in Chart 13. We took a top-down approach, by estimating the cost per prevalent disease case for the year 2000, and projected forward for selected years from 2000 to 2010, using health expenditure data from the Canadian Institute for Health Information, disease prevalence estimates from the Canadian Community Health Survey and Canadian Cancer Statistics, and mortality data from Statistics Canada.

Chart 13
Total Indirect Cost of Selected Chronic Diseases and Conditions, 2000 and 2010
($ billions)



Note: Numbers indicate the percentage increase.
Sources: Public Health Agency of Canada, Economic Burden of Illness in Canada 2000; The Conference Board of Canada.

Indeed, poor and declining health that undermines economic potential will also squeeze the tax base that funds the publicly funded health care system.

The indirect costs for all diseases and conditions have increased due to increasing prevalence of disease and mortality. For example, deaths attributed to digestive diseases rose by about 1.9 per cent per year from 2000 to 2010, driving growth in indirect costs due to loss of future income.[16] Similarly, the sharply rising prevalence of diabetes led to a sizable increase in indirect costs due to long-term disability.

From 2000 to 2010, the indirect costs were estimated to have increased 1.8 times for genitourinary diseases, digestive diseases, and diabetes mellitus. Taken together, the selected 10 chronic diseases and conditions generated an estimated economic burden[17] of nearly $119 billion in 2010, up from $79 billion in 2000.

The Impact of Communicable Diseases

Non-chronic diseases, such as communicable diseases, can arise in the population with little warning and have a significant economic impact (including individual, health system, business, and societal costs). For example, the overall impact of SARS on economic growth was estimated at $1.5 billion, with most of the effects concentrated in Toronto.[18] The air transportation and accommodation sectors sustained heavier losses.[19] These broader impacts of population health on the economy provide further reason to consider measures to prevent both chronic and non-chronic diseases, as well as measures to manage and mitigate their effects when they do emerge.

14 Indirect costs in PHAC's Economic Burden of Illness Canada are based on the "human capital" method and, as such, represent a proxy for the societal economic burden that diseases impose on Canada's economy.

15 Public Health Agency of Canada, Economic Burden of Illness 2000, unpublished data.

16 Statistics Canada, Table 102-0531, Deaths, by Cause.

17 This includes loss of future income due to mortality, and lower productivity due to short- and long-term disability.

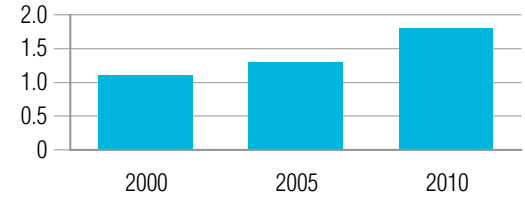
18 Darby, *The Economic Impact of SARS*.

19 Marple, "Possible Economic Impact of H1N1."

Diabetes: The Connection Between Chronic Diseases and the Economy

PHAC's 2011 *Diabetes in Canada* report reveals the connection between diabetes and the economy in Canada and why action to address the growth of diabetes is so critical. In 2008–09, 6.8 per cent of Canadians (almost 2.4 million) had diabetes.[1] (See chart.) This was an increase of 70 per cent from 1998–99, with the greatest relative increase in the 35 to 39 and 40 to 44 year age groups.[2] The rising obesity rate is considered a contributing factor. PHAC estimates that, if current incidence and mortality rates continue, 3.7 million Canadians will be living with diabetes by 2018–19, an increase of over 50 per cent from the 2008–09 levels.

Governments, businesses, households, and individuals collectively feel the impact of this disease. The cost of health care for diabetes and its complications is significant. Businesses feel the impact through lost productivity and insurance costs. Households bear many out-of-pocket expenses and lifestyle impacts. Furthermore, diabetes is itself a risk for other conditions, like cardiovascular disease. PHAC's Economic Burden of Illness in Canada project estimates that the cost of diabetes was $2.5 billion in 2000—considered a conservative estimate that excludes costs associated with the complications of diabetes. Not surprisingly, many governments are moving forward with diabetes strategies to address this serious condition.



*aged 12+
Source: Statistics Canada, Canadian Community Health Survey.

1 This figure is based on PHAC's Canadian Chronic Disease Surveillance System, while the figures in the chart are based on Statistics Canada's Canadian Community Health Survey.

2 Public Health Agency of Canada, *Diabetes in Canada*.

POPULATION HEALTH AND HEALTH CARE SUSTAINABILITY

Canada's model for funding health care expenses places about two-thirds of the burden on public coffers, while the remaining third is covered by individuals, employers, and private insurance. This means that Canada relies on the tax system to fund a large proportion of health expenditures. Yet, as the preceding analysis reveals, trends in demographics and population health are not only increasing the demand for and cost of health care, but also threatening the economic performance of individuals, households, and the economy more broadly. And when economic performance suffers, the tax base from which governments draw resources to fund health care becomes increasingly strained.

The allocation of the fiscal burden of health care raises a host of issues. From an economic point of view, these issues can be unpacked. Four issues, in particular, require attention.

1. **Population health interventions and economic effects**—As the analysis above suggests, maintaining or improving population health—and thus reducing the burden on the health care system—will require improved measures that target the upstream determinants of health. Developing and implementing strategies and setting priorities for action to improve population health are paramount. For example, the fiscal strain that the health care system currently faces is primarily a function of the growing retirement and declining health of the baby-boom generation—a cohort whose accumulated past behaviours and experiences cannot be changed easily. This reality reduces the range of population health measures that could have an impact in the short to medium term.

   On the other hand, it is easier to modify the health behaviours of children and younger workers, who will have personal and population health outcomes—and a related economic impact—over the longer term. This is where employer health programs have a

critical role to play. Other Conference Board of Canada research argues that investments in health and wellness programs can lead to reduced benefits costs, reduced absenteeism, reduced presenteeism, and higher productivity.[20] These cost savings can be used to demonstrate the positive impacts of wellness programs on an organization's bottom line.

Thus, as we consider policy and strategy options for addressing the health care system's challenges, the cost-benefit analyses of population health interventions must be carefully assessed, based on the timing and degree of their potential impact.

2. **Funding arrangements and health incentives**—The distribution of costs between the public and private sectors—roughly two-thirds public and one-third private—has implications for the incentives that businesses, other organizations, and individuals have to promote health in the workplace or to maintain or enhance their own health. Although there has been increasing recognition of the public dimension of health, and many determinants are beyond the control of individuals, organizational and individual behaviour matters a great deal. Businesses and other organizations can take a proactive stance regarding the health of their employees, and individuals can make good or bad choices about the foods they eat, the amount of activity they get, and whether they smoke and drink.

   As a result, it is important to ask whether the ways health care is funded have any effect on the incentives that people face as they make decisions about their health and behaviour. Have incentives to take care of one's own health weakened as health care costs have shifted to the public, or are there adequate incentives and drivers of individual behaviour that outweigh or mitigate that effect? For example, is good health a sufficient reward in itself? Do the relatively smaller, but nevertheless real, private costs provide sufficient motivation to be healthy? While this report does not examine the evidence to definitively answer these questions, it is nevertheless important to consider these issues as strategies for improving health and economic performance are developed.

3. **Demographics and the tax base**—As noted in the first chapter, most health care costs are incurred later in life, after retirement from the workforce, yet most of the contributions are made by those still working. Therefore, the declining ratio of working to retired Canadians has major implications for health care sustainability. Indeed, unlike pension and other retirement program contributions, health care contributions are not made in advance, but are instead taken from general tax revenues on a "pay as you go" basis. Although population growth and other measures can contribute to growing labour force participation, a deteriorating ratio of workers to beneficiaries means that the tax base will face increasing pressure to sustain the health care system as it is currently funded and structured.

   Under current conditions, therefore, tax-focused strategies to sustain the health care system will not be sufficient. There will simply not be enough working people for a tax-based strategy alone to sustain the health care system. Thus, what other strategies are available? To what extent can the current design of the system be enhanced and can productivity in the health care system be improved? Are there measures that could reduce unnecessary or inappropriate use of the system and thus keep costs in check? What is the extent of the role of the private sector in health care delivery within a publicly funded system? All of these questions merit further detailed consideration, but lie outside the scope of this report.

4. **Taxes and productivity**—Strategies to address the sustainability of the health care system will need to look beyond the conventional pay-as-you-go model. Nevertheless, this model will continue to play an important role. Governments are not likely to move away from publicly funded health care in any significant way in the foreseeable future, so a reliance

20 Chenier, Hoganson, and Thorpe, *Making the Business Case*, ii.

on general tax revenues (from income taxes, consumption taxes, and other sources) to fund health care will persist. For this reason, it is imperative to consider what the economy can bear by way of taxes before negative effects on productivity and growth begin to manifest themselves. The reality is that meeting the public interest in affordable, publicly funded health care depends critically on how well the economy performs.

CONCLUSION

This chapter has provided a glimpse into the sizable economic impact of good or poor population health in Canada. Poor health can be a drain on individual earnings and overall economic productivity, but also has significant implications for the sustainability of the health care system. Indeed, poor and declining health that undermines economic potential will also squeeze the tax base that funds the publicly funded health care system. The challenge is to develop and adopt policies and strategies that provide sufficient funding to the health care system without compromising health or economic outcomes. The next chapter considers some possible approaches through the economic and analytical lenses provided in this report.

CHAPTER 4

Reconciling Economics and Population Health

Chapter Summary

- This chapter examines possible strategies to address the challenges to the sustainability of the health care system.
- Strategies and policies that address the upstream social and economic determinants of health should be treated as priorities.
- Improvements in labour force participation and productivity will contribute to health care system funding. In addition, measures should be taken to improve productivity and reduce costs in the system itself.
- Projections indicate that Canada's health care system will still require new sources of funding.

The challenges for the Canadian health care system are clear. An aging population and declining trends for population health are creating enormous demands on, and higher costs for, an already stretched system. At the same time, the capacity to supply and fund health care is strained by the impact of those same demographic and population health trends. In short, a gap between health care demand and supply is widening and threatens to grow further as the ratio between working and retired Canadians declines.

Governments want to respond to these challenges by continuing to adequately fund the health care system, but the tax base is not growing at the same rate as the demands on the system. This leads to a fundamental conundrum: How can Canada address these growing needs in light of limited fiscal and financial resources? This chapter examines the range of possible strategies, offers preliminary analysis to identify the most promising, and identifies some that should be the subject of further study and possible adoption.

SOLUTION PARAMETERS

To address the funding challenges of the health care system driven by a declining state of population health, effective options will need to reduce demand or costs, raise revenues, or both. Options can be assessed as to whether and to what extent they would satisfy one or both of these aims. Additionally, a distinction can be made between those strategies and policies that adopt a short- to medium-term perspective, and those that adopt a long-term perspective.

Further distinctions can be made among:

- population health measures that target the upstream social and economic determinants of health (e.g., housing, poverty, and education), which may help to reduce chronic diseases and health care demand, and improve labour participation and productivity;

- broader economic and social policies that aim to improve population health, boost economic performance, and therefore improve health care supply and funding;
- strategies and initiatives that focus on the health care system directly (e.g., changes to the funding model, and efforts to improve productivity and efficiency).

POPULATION HEALTH STRATEGIES

To improve health and reduce demands on the health care system, strategies and policies that address the upstream social and economic determinants of health should be treated as a public policy priority. From a long-term perspective, improving population and personal health, and reducing costs could be achieved by, for example, improving transportation and housing affordability and adequacy; reducing poverty; enhancing food safety, quality, and nutrition; and improving and expanding education.

How can Canada address these growing needs in light of limited fiscal and financial resources?

In 2011, Canada allocated only an estimated 6.2 per cent of its health expenditures to public health.[1] This places it in the middle of the pack of OECD countries.[2] Health protection and the promotion of awareness about illnesses, such as screening for diseases, can be very cost-effective.[3] Initiatives that target lifestyle changes (such as tobacco use cessation and physical activity programs) or secondary prevention (through drug interventions) deserve attention.

It must be recognized that although population health measures can improve long-term population health outcomes, those measures are unlikely to make a significant impact on the short- to medium-term financial challenges of the health care system.

IMPROVING HEALTH BY IMPROVING HOUSING

As the Conference Board notes in its report *Building From the Ground Up: Enhancing Affordable Housing in Canada*, better quality and more affordable housing can contribute to better health. This can, in turn, lower demands on the health care system and improve "participation, productivity, and performance in the workplace."[4] Indeed, more affordable housing frees resources that residents can use on education, nutrition, and recreation, while higher quality housing reduces injury rates and can promote healthy social environments.[5]

To the extent that short- to medium-term enhancements to housing can be made at a reasonable cost, these are worth exploring. To be sure, a proper comparative cost-benefit analysis would be needed—to ensure that the investments in housing produce better health and economic returns than alternative strategies do. But the likely gains in reduced injuries, better social support networks, and labour participation and productivity suggest that measures to improve housing would be worthwhile.

EDUCATION AND LITERACY

Another priority population health strategy is to improve health indirectly through education and literacy. Higher levels of education are associated with better health outcomes and the relationship appears to be causal. Social investments in education constitute a good strategy for reducing demands on the health care system by improving population health.

1 Canadian Institute for Health Information, *National Health Expenditure Trends*.

2 Organisation for Economic Co-operation and Development, *OECD Health Data 2011*.

3 Ball and others, *Investing in Prevention*.

4 The Conference Board of Canada, *Building From the Ground Up*, 3.

5 Ibid., 3.

Yet, as with other population health measures, the return on investment will be far off and will not deeply address short- to medium-term sustainability challenges. Baby boomers who already have one or more chronic conditions cannot be cured through education. That said, short-term health and food literacy programs may contribute to mitigation and better management of some aspects of chronic diseases and thereby reduce demands on the health care system. For example, as part of its five-year Health Action Plan, Alberta Health Services will be running weekly workshop sessions to help people live with the effects of diabetes, heart disease, arthritis, asthma, high blood pressure, chronic pain, and obesity.[6] Alberta Health Services also recently launched a five-year obesity strategy that includes education on healthy eating for children and supports for those living with the condition.

ADDRESSING POVERTY

Income plays an important role in contributing to personal and population health outcomes. In general, lower income levels lead to poorer personal and population health across a number of measures. Having a decent and secure income allows a family to purchase nutritious foods, obtain adequate housing, and engage in healthy activities—all of which affect the health of the members of that family. Additionally, people with insufficient income may be unable to afford drugs that can help to prevent and/or manage many chronic diseases or conditions, which leads to increased use of the health care system. While income alone does not explain all variations in population health outcomes, it very often plays a critical role as an enabler or barrier to security on the other socio-economic determinants of health.[7]

Measures that aim to reduce poverty should be part of a comprehensive population health strategy. The Conference Board has noted that introducing a guaranteed annual income (GAI) in Canada could reduce health care spending on low-income households.[8] Recent research on a GAI experiment by the Manitoba government in Dauphin, Manitoba, in the 1970s reveals that hospitalization rates of GAI recipients fell by 8.5 per cent relative to similar non-recipients, and visits to doctors declined.[9] This suggests that the province may have reduced health spending on the target population—exactly the kind of short- to medium-term effect that would help in the current context. While more investigation into the general applicability of the initiative is needed, the introduction of a GAI offers a promising option. At a minimum, provincial governments may want to consider a pilot project that tests the impact of a GAI on the publicly funded health care provided to a specific target population.

The sustainability of the health care system depends on not only population health trends, but also economic performance more broadly.

EMPLOYER ACTION ON THE SOCIO-ECONOMIC DETERMINANTS OF HEALTH

Businesses could also act on the socio-economic determinants of health. Many of the options have a short- to medium-term horizon. As the Conference Board demonstrates in its report *Healthy People, Healthy Performance, Healthy Profits: The Case for Business Action on the Socio-Economic Determinants of Health*, employers that take action on the socio-economic determinants of their employees' health can improve both the health of employees and organizational performance and profits.[10] For example:

Workplace wellness programs can have positive effects on absenteeism. Six years after MDS Nordion developed and implemented its Corporate Health Plan—a comprehensive wellness program adopted to improve the physical and social work environment, and give employees access to an array of health resources—it found that absenteeism had declined from six days per employee per year in 1993 to four days in 1999.[11]

6 Alberta Health Services, *Chronic Disease Self-Management Program*.

7 Munro, *Healthy People, Healthy Performance, Healthy Profits*, 9–10; Chief Public Health Officer, *Report on the State of Public Health*, 37–38.

8 Hodgson, "A Big Idea Whose Time Is Yet to Arrive."

9 Forget, "The Town With No Poverty."

10 Munro, *Healthy People, Healthy Performance, Healthy Profits*.

11 Ibid., 22.

CIBC in Toronto fully funded a backup child care centre to which staff can bring their children up to 20 times per year if their regular arrangements fall through. CIBC saved 2,500 days of employee absence in one year—the equivalent of 10 person-years of productivity. The initiative not only contributes to employee health by reducing some of the stress associated with balancing work and family responsibilities; it has also resulted in a strong return on investment. One bank official estimates that the child care arrangement saved the bank $1.5 million in lost productivity in one year.[12]

When BC Hydro initiated its Lifestyles Incentives Program, it included information and education components that not only served employees by improving their education and literacy levels, but also led to fewer workplace accidents, which is good for employees' health and good for BC Hydro's bottom line. The company reports that the program has resulted in $97,000 in reduced accident costs per year and a $35,000 workers' compensation rate reduction. Significantly, BC Hydro estimates that it receives a benefit of $2.74 for every $1 it spends on the program.[13]

As these examples show, businesses and other employers have good reasons for taking action on the socio-economic determinants of health. When they do—if their programs are well-designed—it can not only benefit the business, but also improve the health and welfare of employees and benefit the health care system by reducing demands on the system.

BROADER ECONOMIC AND SOCIAL POLICIES

As this report has demonstrated, the sustainability of the health care system depends on not only population health trends, but also economic performance more broadly. Indeed, the health of the economy has significant implications for funding the health care system.

With population aging reducing the supply of available labour, measures that add workers to the labour force, and that increase labour force productivity, can add more revenue to the government tax base and help ease budgetary pressures.[14] As The Conference Board of Canada has demonstrated on many occasions through its research, the range of available options is wide. The options include:

- *Increasing immigration levels, focusing on economic class immigrants, and improving immigrant integration into the labour force*. About two-thirds of Canada's population growth now comes from immigration, and reliance on immigration to help meet labour force needs will continue to rise. The Conference Board has estimated that to ensure an adequate supply of talented workers to fuel economic growth and to sustain the country's standard of living and quality of life, Canada will need to bring in more than 300,000 immigrants annually after 2011—representing an increase of about 60,000 immigrants per year over the levels that have prevailed since 2000.[15]

  Immigrants should be selected who have the potential to make contributions to the economy, and better programs are required to address the persistent challenges of properly integrating immigrants into the labour force. Immigrants tend to be young, skilled, and well-educated: recent immigrants are more than twice as likely as Canadian-born people to have a university degree. But many face difficulties having their credentials and work experience recognized.[16]

- *Creating incentives for mature workers to stay in the workforce longer*. Few organizations are doing everything they can to retain older workers. Conference Board research reveals that only 6 per cent of employers focus on retaining mature workers to a great or very great extent, and only 8 per cent actively undertake strategies to increase mature workers' level of engagement.[17]

12 Munro, *Healthy People, Healthy Performance, Healthy Profits*, 24.

13 Ibid., 25.

14 Organisation for Economic Co-operation and Development, *Ageing and Employment Policies Canada*.

15 Watt, Krywulak, and Kitagawa, *Renewing Immigration*, 1.

16 Ibid., 2.

17 Thorpe, *Harnessing the Power*, ii.

The federal government's recent change to the eligibility criteria to receive Old Age Security (OAS) benefits signals its concern about the implications of an aging workforce and the sustainability of social programs, although the phase-in period for the adjustment in eligibility is very long.

- *Investing in education, training, and recruitment of specific subpopulations that have historically been under-represented in the labour force*. Governments and businesses can adopt policies and strategies that may contribute to higher labour force participation of under-represented groups, such as Aboriginal people, women, members of visible minorities, and people with disabilities. For example, Aboriginal people are the fastest growing and youngest population cohort in Canada, but their education and labour force participation levels still lag far behind those of other Canadians, despite some progress in recent years.[18]

None of these measures alone is likely to solve Canada's looming labour and skills shortages—and thus is unlikely to solve the problem of health care sustainability. But each initiative could make some contribution. Further research is required to estimate the size of the contribution and to determine whether investments in each initiative would produce a sound return.

HEALTH CARE SYSTEM DESIGN, PERFORMANCE, AND FUNDING

The health care system cannot continue to operate as if demand and supply can be balanced under current arrangements. Demand for health care is growing too quickly, and health care supply (including the availability of human resources and funding) is strained by changing demographics. As a result, the system itself needs to innovate to improve productivity and efficiency, and consider changes that could reduce unnecessary use of the system.

IMPROVING HEALTH SYSTEM PRODUCTIVITY

Like many sectors of the economy, the health care system needs to improve productivity and efficiency. In general, enhancing system productivity may be achieved through initiatives that:

- *Improve health human resources*. Health care system productivity can be enhanced by improving the skills, organization, and management of those delivering health services, support services, and administration. For example, doctors, nurses, personal support workers, and others can be trained to use technologies more effectively, thereby freeing up more time to deal with more patients. Support workers and administrative staff can be trained and incentivized to be more productive and identify opportunities for further innovation and efficiency.
- *Introduce and make more effective use of administrative and health care technologies*. A key strategy for improving health system productivity will be to adopt and effectively use new technologies that can improve how well and efficiently various administrative and record-keeping tasks are completed. Additionally, although many health care technologies are expensive and add to operating costs, more efficient diagnostic and prognostic tools have the potential to create further efficiencies while maintaining quality care.
- *Streamline regulation and administrative processes and policies*. Most organizations could streamline their many accumulated processes and policies. Identifying and reducing overlapping and redundant administrative procedures and policies can improve administrative efficiency. The long-term care (LTC) sector in Ontario, for example, faces hundreds of minor regulations and reporting requirements that reduce the time employees have to attend to patients; these regulations and reporting requirements do not always have clear connections to patient outcomes.[19] This situation led the government-appointed Sharkey Commission to recommend a shift away from a focus on regulatory compliance, and toward "strengthening accountability in LTC homes by linking resources to resident outcomes."[20] LTC home operators and the

18 Howard, Edge, and Watt, *Understanding the Value, Challenges, and Opportunities*.

19 Munro, Downie, and Stonebridge, *Elements of an Effective Innovation Strategy*, 26–27.

20 Sharkey Commission, *People Caring for People*, 11.

Ontario government have taken important strides in recent years to act on that recommendation.[21] The Ontario Health Quality Council's Residents First initiative, for example, emphasizes accountability for outcomes over mere compliance with regulations. Enthusiasm for Residents First among LTC operators, government, and other stakeholders suggests that it may constitute an approach that would satisfy all relevant parties.

- *Improve resource allocation*. Efforts can be made to allocate scarce health resources in ways that reduce unnecessary demands on high-cost parts of the system while maintaining or enhancing quality of care. A continuing care management strategy may go a long way in this regard. By improving primary care as well as home and community care resources and quality, patients in hospitals can be moved into more appropriate care settings.[22] An appropriate continuing care management strategy that places resources where there are needed most, such as at home or in the community, may thereby simultaneously reduce overall costs and enhance patient and client care. In addition, improving home and community care options may reduce the spread of certain infectious diseases, as patients and their visitors would interact with fewer people in these settings.

A wide range of measures can help manage and mitigate the impact of chronic diseases and conditions, and thereby limit demands on the health care system.

Simply encouraging hospitals and other health care institutions to do these things may not actually bring about the desired changes. Funding can be increasingly tied to performance and achievements on these sorts of initiatives—especially on patient outcomes and satisfaction—rather than continuing to provide block grants, to ensure that there are strong enough incentives in place to drive innovation and better outcomes.

EXPLORING OPTIONS TO REDUCE INAPPROPRIATE USE

It may be possible to achieve some efficiency gains and cost reductions by altering the incentives people face when deciding whether and how to use the health care system. At present, since funding via the broad tax system is delinked from demand for services, the health care system gives the impression that services are "free" and allows people to make decisions with little or no concern for cost. Certainly, this approach ensures that no one who genuinely requires services is discouraged from pursuing them due to immediate cost barriers. But it also lacks disincentives to inappropriate use, which increases overall system costs.

To reduce inappropriate use and unnecessary costs, small user fees might be introduced for certain services. Potentially, users could be discouraged from accessing costly parts of the system through small fees, while at the same time be directed to less costly or "free" options to ensure that an access point is available to them to assess their needs.

Of course, given the risk of discouraging legitimate and necessary use of the system, a rigorous assessment of the options and careful design would be vital. Indeed, a well-designed system might waive user fees for any individual who has already been assessed and referred by one of the less costly access points. While user fees would likely prove politically unpopular, options like these should be explored in order to find ways to reduce demands on and limit costs in the already strained publicly funded health care system.

EXPLORING NEW REVENUE SOURCES

Even if efficiency and productivity gains can be made, and cost minimization efforts can produce results, the health care system will require new sources of funding to

21 While the Ontario Health Quality Council set a target of having 420 LTC homes sign on, by 2011, 463 of Ontario's 625 homes had signed on and commenced public reporting of outcomes. If the initiative leads to a replacement of some or much of the old compliance regime, rather than simply becoming an additional reporting requirement, then it could contribute to improvements in LTC efficiency and cost-reduction. Munro, Downie, and Stonebridge, *Elements of an Effective Innovation Strategy*, 26–27.

22 Chappell and Hollander, "An Evidence-Based Policy Prescription."

keep up with the projected increasing demand. Provincial governments have explored and introduced a number of initiatives in recent years. The initiatives include:

- Ontario introduced a health premium, in 2004, to help cover rising health costs. The premium applies to residents of Ontario with taxable incomes over $20,000 and is deducted from employees' pay and pension cheques through the personal income tax system.[23] Although the premium contributes approximately $3 billion to the health care system,[24] this represents a small proportion of overall costs and, on its own, cannot solve the funding challenges.
- Ontario introduced an income-tested deductible for drugs dispensed under the Ontario Drug Benefits Program for seniors, in its 2012 budget. Beginning in August 2014, single seniors with a net income of more than $100,000 will pay a deductible of $100 plus 3 per cent of net income over $100,000, while senior couples with a combined net income of more than $160,000 will pay $200 plus 3 per cent of their family net income over $160,000.[25]
- British Columbia increased its Medical Services Plan premium by 6 per cent in 2010, 2011, and 2012 to meet the growing demand for services.[26]
- Quebec introduced a health "contribution," an annual amount paid via the income tax system by all Quebecers, and operating much like Ontario's health premium. The contribution started at $25 in 2010 and will reach $200 in 2012.[27]

These options are worthy of consideration as partial solutions to health care system funding challenges. While they cannot solve the funding challenge, they nevertheless provide useful examples of how the revenue base can be expanded. Options can be assessed for both their effects on meeting the funding challenge and their broader economic impact. Indeed, as the economic perspective articulated in this report recommends, it is necessary to investigate not only the contribution that such initiatives can make to health care funding, but also their broader impact on economic performance.

MEDICAL SAVINGS ACCOUNTS

It may be worthwhile to revisit the possibility of introducing the Medical Savings Account (MSA), similar to the Registered Disability Savings Plan, to help shift some of the funding burden away from general tax revenues and toward those who use, or will use, the health care system. MSAs are similar to bank accounts, but designed only for medical expenses. As one analyst notes, "they are typically established in conjunction with high-deductible (catastrophic) health insurance [and] the money put aside in the MSA is used to pay for qualifying (usually routine or minor) medical expenses while the insurance plan covers expenses after the deductible level has been reached."[28]

Proponents of MSAs assert that they "increase consumer choice; encourage consumers to make more prudent use of health care services; result in more timely access to health care services; and reduce health care spending."[29] By contrast, opponents and skeptics worry that MSAs will "realize only small health care savings at best; segment the risk in the insurance market and drive up insurance costs for those remaining in comprehensive health insurance plans; and have an adverse impact on health as people cut back on necessary health care."[30] While it is beyond the scope of this report to reach a conclusion about MSAs and their potential contribution to health care viability, they are worth examining in future research.

In sum, many of these ideas will be the subject of further detailed research under the Conference Board's Canadian Alliance for Sustainable Health Care (CASHC).

23 Ontario, Ministry of Finance, *Ontario Health Premium*.

24 Ibid.

25 Ontario, Ministry of Finance, *2012 Ontario Budget*.

26 Government of British Columbia, *Ensuring Health Care Spending*.

27 Revenu Québec, "Health Contribution."

28 Smith, *Medical Savings Accounts*.

29 Ibid.

30 Ibid.

CONCLUSION

The health of Canadians is both a private matter and a public one. Individuals care about their own health and that of their families and friends, but the collective state of population health in Canada can have a profound impact on economic performance and on the health care system itself. To the extent that population health is a public matter, this report has shown why it is necessary to adopt an economic perspective on population health and health care system sustainability. The health of Canadians has implications for both the cost of the health care system and economic performance; and economic considerations, in turn, have consequences for Canadians' health and the fiscal sustainability of the health care system.

Clearly, an aging population and deteriorating population health place enormous pressure on health care system sustainability, and Canadians are looking for solutions that will maintain both the quality of and access to health care. Although population aging is inevitable, there is a wide range of measures that can help manage and mitigate the impact of chronic diseases and conditions, and thereby limit demands on the health care system. Moreover, broader economic and social policies can improve labour force participation and productivity, and thereby contribute to health care system funding and sustainability. And, critically, there are opportunities for improving productivity and reducing costs in the system itself.

Adopting an informed, economic perspective is essential for assessing the various options and improving the design of health and economic policies that can help to address the challenges. This report has detailed the links between the health of Canadians and the economy, outlined key questions and criteria that constitute an economic perspective on population health, and offered preliminary assessment of some promising solutions. Consequently, it provides an important foundation to guide future research studies of the CASHC.

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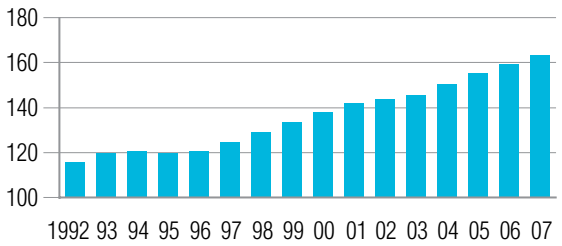
APPENDIX A

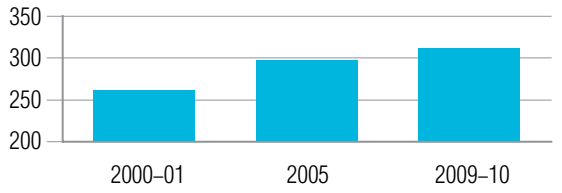
Burden of Disease: Selected Trends

Chart 1
Annual Cancer Diagnoses
(new cases, 000s)



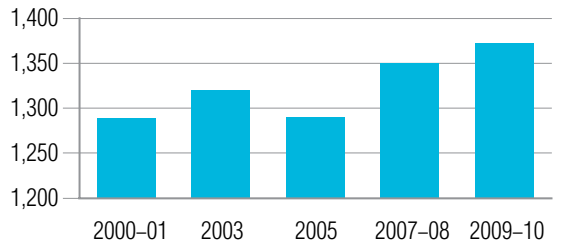
Source: Statistics Canada, Canadian Cancer Registry.

Chart 2
Cerebrovascular Disease in Canada*
(prevalence, 000s)



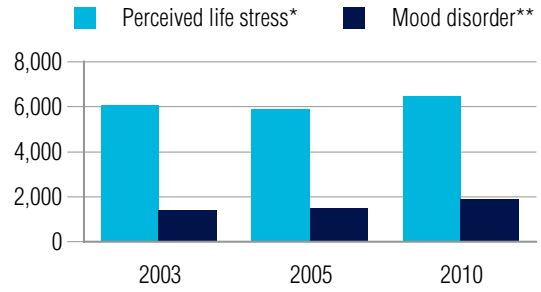
*aged 12+
Source: Statistics Canada, Canadian Community Health Survey.

Chart 3
Ischemic Heart Disease in Canada*
(prevalence, 000s)



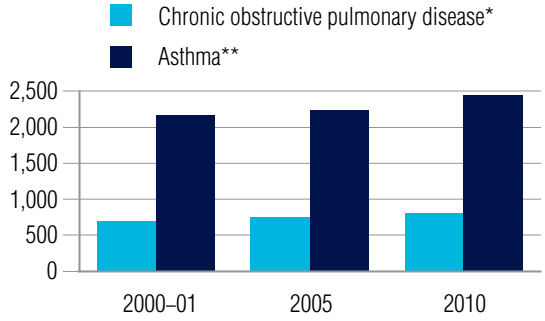
*aged 12+
Source: Statistics Canada, Canadian Community Health Survey.

Chart 4
Selected Mental Illnesses in Canada
(prevalence, 000s)



*aged 15+
**aged 12+
Source: Statistics Canada, Canadian Community Health Survey.

Chart 5
Selected Respiratory Diseases in Canada
(prevalence, 000s)



*aged 35+
**aged 12+
Source: Statistics Canada, Canadian Community Health Survey.

APPENDIX B

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- Undertake detailed analysis of financial pressures and reform options in the health care system, identifying implications and enabling discussion of policy options.
- Apply CASHC's modelling and analytic capacity to various health-system policy interventions that have been proposed; and assess the economic, financial, and social implications.

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