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Canada's Aging Population and Public Policy: 3. The Effects on Health Care

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Canada's Aging Population and Public Policy: 3. The Effects on Health Care

(In Brief)

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CANADA'S AGING POPULATION AND PUBLIC POLICY: 3. THE EFFECTS ON HEALTH CARE*

1 INTRODUCTION

Canada's population is aging, and the consensus among experts is that this will result in increased public health care spending. However, this consensus does not extend to how large this increase will be: while some speak of a ticking time bomb, others say that the magnitude has been greatly exaggerated. This paper discusses population aging as a driver of health care costs and presents the other main cost drivers. It outlines the impact these factors have on public health care spending and the potential public policy implications.

2 KEY FACTORS INFLUENCING PUBLIC HEALTH CARE SPENDING

This section establishes a distinction between nominal spending and spending relative to gross domestic product (GDP) and then discusses the main drivers of health care costs, including the aging population.

2.1 HEALTH CARE SPENDING AND THE GROSS DOMESTIC PRODUCT

Before looking at the effect of health care spending cost drivers, an explanation of the difference between "nominal health care spending" and "health care spending relative to GDP" will be useful. Nominal health care spending is simply spending measured in current dollars.

Health care spending is often expressed relative to the size of the economy, by dividing public health care spending by the GDP. This helps determine how much is spent on health care relative to the size of the national economy. Any factor affecting GDP, such as productivity gains in the economy, is likely to have an impact on the relative weight of health care spending. A productivity gain in the economy – and as a result, in GDP – will bring about a reduction in the relative weight of health care spending. The opposite is also true: a productivity loss in the economy will lead to an increase in the relative weight of health care spending.

2.2 HEALTH CARE SPENDING COST DRIVERS

A number of factors influence public health care spending. They include an aging population, inflation in the health care sector, total income in the economy, and the enrichment factor. Other factors also play a role, including productivity in the health care sector and the size of the economy. These factors will be reviewed in the following sections.

2.2.1 An Aging Population

Population aging is one of the drivers of health care costs, since seniors generally require more health care services than younger people. Seniors suffer more frequently from chronic diseases because these diseases become more prevalent with age, and so seniors are heavier users of health care. For example, the Canadian Institute for Health Information (CIHI) has estimated that people aged 65 and over accounted for approximately 50% of hospital expenditures by provincial/territorial governments in Canada during 2008, whereas this age group makes up 13.7% of Canada's population.[1] However, if senior baby boomers are in better health than seniors of previous generations, this could result in a reduction in health care consumption by this age group.

2.2.2 Inflation in the Health Care Sector

Inflation in the health care sector, along with general inflation, acts as another cost driver of nominal health care spending. "General inflation" (or "economy-wide inflation") refers to the general rise in the price of goods and services, and "inflation in the health care sector" refers to increases, over and above general inflation, in the price of goods and services related specifically to health care (e.g., the cost of equipment, drugs and vaccines).

Health care inflation tends to be higher than general inflation. To explain this phenomenon, some argue that the rise in health care spending is not due to increased health care inflation per se, but instead reflects improvements in the quality of services, such as the greater use of more effective treatments resulting from medical innovations.[2] Others believe that inflation is greater in the health care sector because, in this labour-intensive sector, the costs of services rise largely in concert with pay increases for personnel.[3]

When health care spending is viewed as relative to GDP, the effects of general inflation disappear, because GDP already reflects economy-wide inflation.

2.2.3 Total Income in the Economy

The total income in the economy, often expressed as GDP, is another factor in increased health care spending. According to many economic documents linking health care spending and income, an individual's demand for health care increases with income, a phenomenon called the "income effect."[4] This explains why there is an increased demand for health care services in wealthier countries. The "income effect" could be a particularly significant factor in health care spending relative to GDP if increases in personal incomes lead to a more-than-proportional increase in the demand for health care services.[5] However, if health care spending increases proportionally to GDP, the income effect has an impact on nominal spending, but not on spending relative to GDP.

2.2.4 The Enrichment Factor

Another major driver of health care costs is the "enrichment factor," which reflects improvements in the quality of the health care system, consequently increasing health care spending.[6] The enrichment factor includes the development of innovations in the areas of pharmaceutical drugs,[7] surgical techniques, diagnostic and imaging technologies, and end-of-life care. While often more effective than earlier methods of treatment, new technologies are very expensive and drive up costs.

It is important to distinguish between the enrichment factor and inflation in the health care sector. The enrichment factor represents the increase in health care spending resulting from medical advances and technological innovation (new goods and services), while health care inflation represents the rising cost of existing goods and services.

2.2.5 Productivity in the Health Care Sector

Lastly, productivity in the health care sector has a definite impact on health care spending; improving productivity by using existing health care resources more efficiently helps deliver more health care at the same cost, thereby potentially offsetting the effects on that cost of population aging.

3 SENIORS' HEALTH AND PUBLIC SPENDING BY AGE GROUP

3.1 Health of the Baby Boomer Generation

Life expectancy for today's Canadian seniors (i.e., aged 65 and over) is longer than it was for seniors of previous generations. But what about their healthy life expectancy? Some say that baby boomers are healthier than previous generations. They are wealthier and more knowledgeable about healthy lifestyles, eat better, exercise more and smoke less. Others anticipate that baby boomers will experience a higher prevalence of chronic diseases and comorbidity[8] and point out that obesity rates for baby boomers are more than double those for the preceding generation.[9]

3.2 Public Spending by Age Group

Seniors are not a homogenous group. They are generally divided into three age categories: 65–74 years, 75–84 years, and 85 years and over. Spending on public health care per person varies greatly according to the average age of Canadians. Research results relating to the health care needs of seniors in the different age categories can vary among studies.

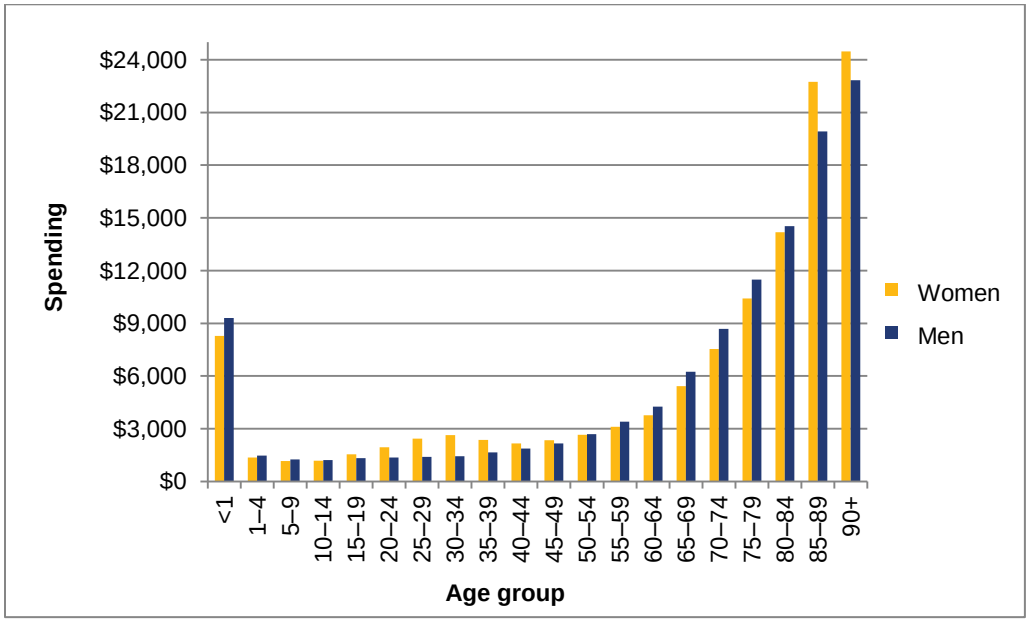
According to a CIHI study, the incidence of chronic disease is higher for 75–84-year-olds than for 65–74-year-olds but that this increase in incidence does not carry through to those 85 years and older.[10] It concluded that health care consumption by seniors is proportional to the number of chronic diseases seniors have, not their age.

The study also revealed that among seniors without chronic diseases, those who were 85 years and older were the most frequent users of health care. Other studies show that those in the 85 years and older group are in the poorest health and require the most care.

According to Marc Lee of the Canadian Centre for Policy Alternatives, between one third and half of a person's health care expenditures happen in the final year of life.[11] Therefore, it is in the final year of a person's life that health care spending is at its greatest, regardless of age. A study published by the Canadian Health Services Research Foundation, which essentially reaches the same conclusions, also shows that the costs of end-of-life care are more significant than costs associated with living longer.[12] Of course, seniors are more likely to die than are young people, which inflates the costs for seniors.

Other studies have shown that a large portion of health care costs is incurred once a person reaches an advanced age. As shown in Figure 1, public health care spending per person tends to be relatively high during the first year of life, and drops considerably during childhood, adolescence and young adulthood. It gradually increases in mid-life and then rises sharply in the senior years.

Figure 1 – Public Health Care Spending per Person per Age Group, 2008



Source: Figure prepared by the author using data from Canadian Institute for Health Information, *National Health Expenditure Trends, 1975 to 2010*, October 2010.

As shown, health care consumption at 85 years and older is about four times higher than at 65–69 years of age. Because the proportion of seniors, particularly the group 85 years and older, is increasing in Canada and will grow considerably over the coming decades, significant pressure on the health care system could result.[13] This growing demand for health care services could require a substantial expenditure increase in this sector.

This is also the view of the Office of the Parliamentary Budget Officer, which has said that the aging population will exert additional pressures on programs that spend more heavily on seniors, such as health care. According to the Office, part of this increase could be offset by decreasing expenditures on programs for young people.[14]

4 IMPACT OF MAIN COST DRIVERS ON HEALTH CARE SPENDING

4.1 TOTAL HEALTH CARE SPENDING TRENDS SINCE 1975

From 1975 to 1991, total health care spending per person – public and private spending combined[15] – in constant 1997 dollars grew at an average annual rate of 2.6%[16] to then decrease to an annual rate of 0.2% from 1991 to 1996.[17] Spending rebounded to an annual rate of 3.6% between 1996 and 2008.

Total health care spending, which made up 7% of GDP in 1975, grew to 8.3% in 1983, and reached a record 10% of GDP in 1992. The rate dropped to 8.9% in 1997 and rose to 11.7% in 2010.[18] According to David Dodge and Richard Dion of the C.D. Howe Institute, since 1975, total nominal health care spending on average has grown faster than GDP by 1.7 percentage points annually (8.3% compared with 6.6%).[19]

4.2 PROJECTED NOMINAL SPENDING AND SPENDING RELATIVE TO GROSS DOMESTIC PRODUCT

The C.D. Howe Institute calculated the annual increase in total health care spending both in nominal terms and relative to GDP for the period from 2001 to 2009, as well as the contribution of each cost driver. As shown in Table 1, the Institute estimated total future nominal health care spending under two scenarios:

- a base case, calculated using historical data; and
- an optimistic case, based on two assumptions: [20]
  - structural changes in the health care system, including technological advances and greater efficiencies, will emerge, thereby limiting growth in health care spending; and
  - new policies to encourage greater labour force participation by certain population groups, such as people 55 years of age and over, will be instituted, thereby helping to increase productivity and boost GDP.

Table 1 – Annual Contribution of Cost Drivers to Total Health Care Spending, in Nominal Terms and Relative to GDP (%)[a]

Cost Drivers	Nominal Spending, 2001–2009	Spending Relative to GDP, 2001–2009	Nominal Spending, 2012–2031 (base case)	Nominal Spending, 2012–2031 (optimistic case)	Spending Relative to GDP, 2012–2031 (base case)	Spending Relative to GDP, 2012–2031 (optimistic case)
Aging population	0.7	0.7	1.0	0.7	1.0	0.7
General inflation	2.3	-	2.1	2.1	-	-
Health care inflation	-0.1	-0.1	0.2	-0.3	0.2	-0.3
Income	2.8	1.0	2.0	2.6	-	-
Enrichment	1.1	1.1	1.1	0.7	1.1	0.7
Interaction effect	-	-	-	0.2	-	0.2
Total	**6.9**	**2.7**	**6.4**	**5.8**	**2.2**	**1.2**

a. Some column totals may not be the exact totals of the columns due to rounding.

Source: Table prepared by the author using data from David Dodge and Richard Dion, *Chronic Healthcare Spending Disease: Background and Methodology*, C.D. Howe Institute, April 2011.

The C.D. Howe data shows that the difference between the two scenarios can be credited to economic productivity starting in 2016. The base case assumes that the productivity rate will be maintained. The optimistic case would, on the other hand, include the implementation of new policies and structural changes, which would lead to greater productivity.

In addition to cost drivers, the optimistic case includes the "interaction effect" between its two assumptions. As these assumptions are not mutually exclusive, the interaction effect is intended to mitigate the risk of overestimating the impact of their interaction on increased health care spending. The interaction effect will put upward pressure on total health care spending.[21]

Table 1 shows that, as part of future health care spending projections, two cost drivers of total health care spending relative to GDP disappear: income and general inflation. As mentioned in section 2.2.3 of this paper, "Total Income in the Economy," the income effect is zero, since the C.D. Howe Institute assumes that increases in GDP generate corresponding increases in health care spending.

However, Table 1 also shows that the impact of the three other cost drivers is the same on nominal spending and on spending relative to GDP, although they have different relative weights.

For example, population aging has a much greater weight in relation to spending relative to GDP. For base case projections, the relative weight of the aging population is around

- 16% of the increase in nominal health care spending, or one percentage point in a total of 6.4%; and
- 45% of the increase in health care spending relative to GDP, or one percentage point in a total of 2.2%.

This difference shows how important it is to accurately identify how health care spending is expressed when assessing the impact of population aging.

According to a study by the Canadian Centre for Policy Alternatives, the annual contribution of population aging to increased health care spending over the coming years is estimated at less than 1%,[22] which is in line with the figures in Table 1 regarding the weight of population aging in nominal spending and spending in relation to GDP.

According to the Office of the Parliamentary Budget Officer, provincial and territorial health care spending relative to GDP is projected to rise from 7.8% in 2010–2011 to 12.7% in 2050–2051 and 15.2% in 2085–2086.[23] The Office also states that between 2012 and 2031, nominal public health care spending will grow annually by 5.3% and that the annual contribution from population aging is projected to rise gradually, peaking in 2032 at 1.2 percentage points and then declining toward zero over the long term.[24] The projection for the period from 2011 to 2030 is in line with the C.D. Howe Institute findings.

5 TAKING STOCK AND ASSESSING CHALLENGES

5.1 TAKING STOCK: THE AGING POPULATION PLAYS A MINOR ROLE

According to the literature, population aging is one of many factors that contribute to rising nominal health care spending. However, aging is not a leading health cost driver, and based on C.D. Howe Institute projections, it is not likely to become one over the next 20 years. A study by the Canadian Health Services Research Foundation, which reviews analyses on the issue, presents a similar picture, stating that on average, the impact of an aging population could account for 0.95% to 1.3% of the growth in future total health care spending in Canada.[25]

It is interesting to note that the U.S. Congressional Budget Office, in a 2007 study, stated that cost drivers other than the aging population will dominate after 2030, a scenario that resembles projections for the coming decades in Canada. Aging will account for roughly one quarter of the growth in government health program spending in the United States until 2030, declining to 20% in 2050 and 10% in 2082.[26]

It is also worth noting that when health care spending is compared with the size of the economy, the annual increase in labour productivity within the Canadian economy seen between 1984 and 2008 (1.3%)[27] should be enough to offset the effect of population aging.

5.2 ASSESSING CHALLENGES: TECHNOLOGY, INFLATION, EFFICIENCY AND PREVENTION

While aging may not play a principal role in rising health care spending, other factors present challenges in this area.

One of the main challenges remains the improvement in the quality of care through new technologies. This relates to the enrichment factor, one of the main cost drivers, which is the reason Canadians receive on average one and half times more health care services today than they did 30 years ago.[28]

Health care inflation also plays a key role, given the steadily rising salaries of health care professionals and costs of medical supplies and equipment.

Furthermore, many experts believe that our health care system is inefficient and that its performance should be improved. Some even go as far as to say that future health care needs could be managed adequately within current funding levels if resource management improves, leading to an increase in productivity in the health care sector.

Finally, an emphasis on prevention is another solution proposed for containing the growing demand for health care resources.

6 CONCLUSION

The aging population will certainly be a health care cost driver to be reckoned with in the future. However, as we have seen, more significant factors will be inflation, the enrichment factor and the income effect. Many economists agree that the effects of population aging on health care costs will be easily managed, assuming reasonable economic growth.

Indeed, with a growing segment of the population leaving the labour force, the key question is whether the economy will be sufficiently productive to provide for the entire population's demand for goods and services, particularly the demand for health care services by seniors. Beyond monetary issues, the true challenge posed by an aging population probably lies in the issue of productivity.

NOTES

* This paper is one of seven in the Library of Parliament series, "Canada's Aging Population and Public Policy." The other publications are:

André Léonard, *1. Statistical Overview*, Publication no. 2011-63-E, revised 28 February 2012.

Édison Roy-César, *2. The Effects on Economic Growth and Government Finances*, Publication no. 2011-121-E, 5 December 2011.

André Léonard, *4. The Effects on Public Pensions*, Publication no. 2011-120-E, 4 August 2011.

Sandra Elgersma et al., *5. The Effects on Employers and Employees*, Publication no. 2012-07-E, 20 February 2012.

Julie Cool, *6. The Effects on Home Care*, Publication no. 2012-03-E, 23 January 2012.

Havi Echenberg, *7. The Effects on Community Planning*, Publication no. 2012-02-E, 23 January 2012.

1. Canadian Institute for Health Information [CIHI], *National Health Expenditure Trends, 1975 to 2010*, October 2010, p. 42; Statistics Canada, Table 051-0001, "Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted)," CANSIM database, accessed in December 2011.
2. Alexandra Constant et al., *Research Synthesis on Cost Drivers in the Health Sector and Proposed Policy Options*, Canadian Health Services Research Foundation, February 2011, p. 10.
3. Ibid.; and Ontario Ministry of Finance, *Ontario's Long-Term Report on the Economy*, 2010, p. 45.
4. Office of the Parliamentary Budget Officer [OPBO], *Fiscal Sustainability Report*, February 2010, p. 16.
5. In economic terms, such a situation is described as the income elasticity of public health care spending being greater than one. Total income (GDP) also reflects population growth, so population size does not need to be considered as a separate factor when identifying explanatory factors for rising health care spending.
6. OPBO (2010), p. 17. The enrichment factor also covers epidemiological trends (increases in chronic diseases and mental health disorders), patient behaviours and preferences, and the physical environment.
7. Pharmaceutical drug costs are the fastest rising of the costs contributing to an increase in health care spending.
8. Comorbidity is the existence of several chronic conditions in one person.
9. Andrew Wister, "Discussion paper: The aging of the baby boomer generation," *Health Innovation Forum*, McGill University Health Centre's Institute for Strategic Analysis and Innovation, n.d.; CIHI, *Seniors and the Health Care System: What Is the Impact of Multiple Chronic Conditions?*, January 2011, p. 1.
10. CIHI (2011), p. 5.
11. Marc Lee, *How Sustainable is Medicare?: A Closer Look at Aging, Technology and Other Costs Drivers in Canada's Health Care System*, Canadian Centre for Policy Alternatives, September 2007, p. 5.
12. Constant et al. (2011), p. 8.
13. Conference Board of Canada, *Canadian Outlook Long-Term Economic Forecast: 2011*, May 2011, p. 36.
14. OPBO (2010), p. 15.
15. Public spending on health care has been about 70% of total health care spending since 1997.
16. CIHI (2010), p. 5.
17. Following the 1990–1992 recession, governments put austerity measures in place that affected health care and social program spending.
18. CIHI (2010), p. 7.
19. David A. Dodge and Richard Dion, *Chronic Healthcare Spending Disease: Background and Methodology*, C.D. Howe Institute, April 2011, p. 8.
20. Ibid., pp. 1 and 6.
21. Ibid., p. 18.
22. Lee (2007), p. 13.
23. OPBO, *Fiscal Sustainability Report 2011*, 29 September 2011, p. 13. OPBO calculations assume that public spending on health care increases proportionally to GDP.
24. Ibid., pp. 13–14.
25. Constant et al. (2011), pp. 8–9.

26. Congressional Budget Office, *The Long-Term Outlook for Health Care Spending: Sources of Growth in Projected Federal Spending on Medicare and Medicaid*, November 2007, p. 14.
27. Conference Board of Canada, *Canada's Lagging Productivity: The Case of a Well-Educated Workforce Lacking the Much-Needed Physical Capital*, January 2010, p. 1.
28. Lee (2007), p. 13.