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HEALTH POLICY

## Managing Healthcare for an Aging Population: Ontario's Troubling Collision Course

by

Colin Busby, William B.P. Robson and Aaron Jacobs

"Even if the province wasn't facing serious economic pressures, the health care system would still need to transform to address the coming demographic shift. Today, health care consumes 42 cents of every dollar spent on provincial programs. Without a change of course, health spending would eat up 70 per cent of the provincial budget within 12 years, crowding out our ability to pay for many other important priorities." *Ontario's Action Plan for Health Care*. (Ontario 2012, p. 5)

The fiscal impact of demographic change – in particular, whether providing publicly funded healthcare to an aging population will financially stress Canadian governments – has prompted years of debate. One camp, developing a theme that the pressures are a glacier rather than an avalanche, has emphasized that aging does not on its own force healthcare costs higher. In any event, this side maintains, aging adds no more than one percentage point to annual increases in health costs (Barer et al. 1995; Evans et al. 2001). In general, this camp sees as less urgent the need for major reforms to treatment or financing. If taxes are allowed to rise and provider compensation can be curbed, the system, so goes the argument, is as sustainable as Canadians want it to be.

The other camp has emphasized that a one-percentage-point annual increase is substantial, especially when it compounds over many years. Moreover, it is argued that aging will slow the growth of the tax base, potentially compromising healthcare as well as other major government

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programs, tax rates and debt control (Robson 2001, 2007, 2010; Drummond and Burleton 2010; Dodge and Dion 2011; and Emery et al. 2012). While this camp might concede that glaciers move slowly, it would emphasize their formidable impact when they arrive. So it tends to urge substantial reforms to healthcare delivery and financing to mitigate an otherwise painful looming collision between demographically sensitive programs and other fiscal priorities.

While the debate has raged, publicly funded healthcare in Ontario has risen from 6.3 percent of provincial GDP in 1991 to about 7.4 percent in 2014. At the same time, it has risen from 38 percent of provincial program spending in 1991 to about 45 percent in 2014. Meanwhile, its share of Ontario's own-source revenue – that is, revenues the province controls rather than funds transferred from Ottawa – has risen from 52 percent to about 55 percent.

Whatever the precise impact of aging and its interactions with changes in treatment, publicly funded healthcare's claim on provincial resources has increased. The above observation from the Ontario Action Plan for Health Care highlights the potential importance of that trend to the province's fiscal future and to the quality of publicly funded healthcare Ontarians receive.

## Mapping Today's Spending onto Tomorrow's Population

Our Ontario healthcare spending projections over the next 50 years use a well-known, straightforward approach. We project Ontario's population growth using the following middle-of-the-road assumptions: a fertility rate stable at its 2011 level; longevity rising in line with Statistics Canada's "medium" improvement scenario; net inter-provincial in-migration falling to zero over 10 years and international in-migration continuing at a rate equivalent to the 1991-to-2013 average.

We then multiply the potential workforce, which we define as Ontarians age 18 to 64, by an index of output per potential worker. This index increases by 1.2 percent annually, the rate recorded by the equivalent national measure from 1991 to 2013. These calculations provide our model with real gross domestic product (GDP) projections, which we convert to nominal dollars. (Nominal provincial GDP is real GDP multiplied by the same 2 percent inflation rate we assume will prevail nationally.)

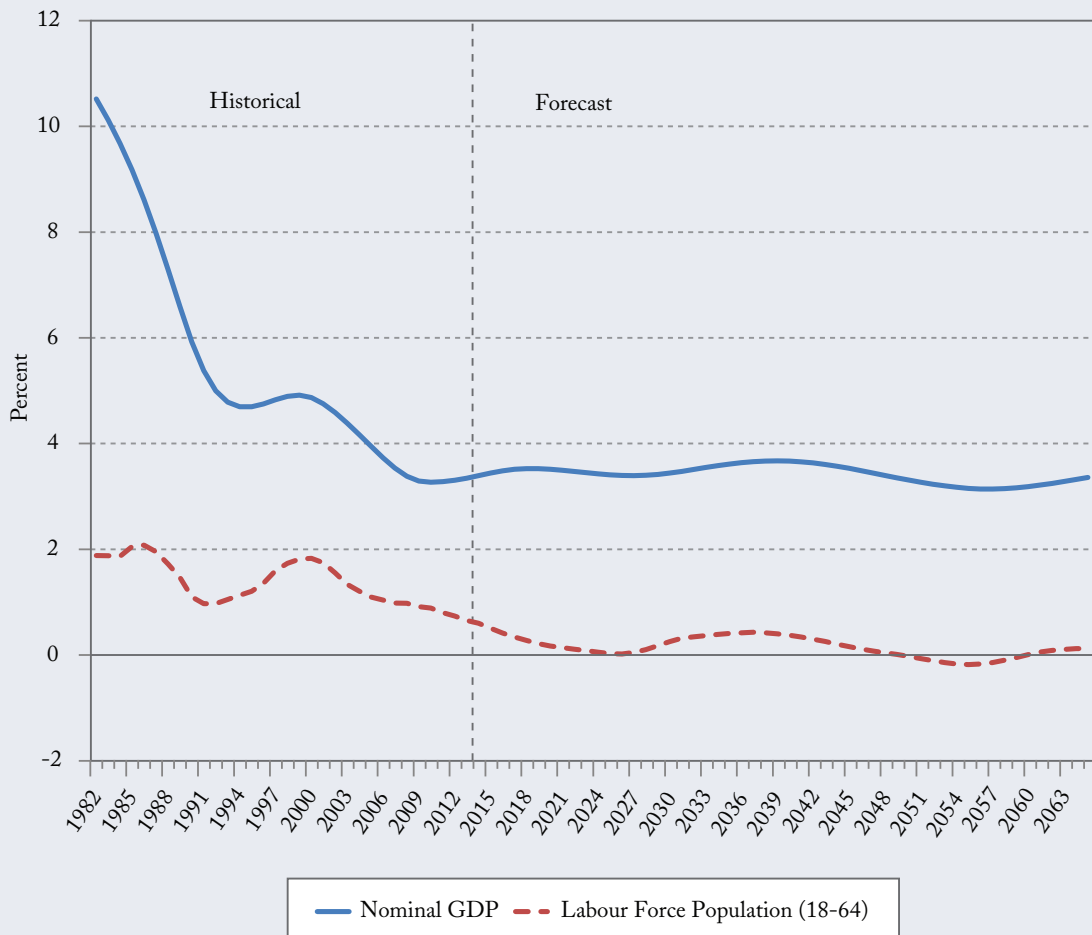
The impact of aging on future workforce growth and GDP often gets little attention in the healthcare spending debate. But they are set to grow much more slowly than they have over the past few decades (Figure 1). Hence, government revenues will grow more slowly than in prior years. Hence, Ontario's tax base will grow more slowly than in prior years and reduce Ontario's ability to accommodate growth in future healthcare costs.

Turning to the cost pressures on healthcare, we project provincial spending for each sex in 20 age groups. Per-person healthcare expenditure in each of these groups grows according to a measure of volume of services delivered and a cost index. The volume measure – an index of service intensity – represents spending on all services provided to a person of a given sex and age by the publicly funded healthcare system, adjusted to remove the effects of inflation. Our base figures for these per-person numbers are the Canadian Institute of Health Information's (CIHI) figures for 2012, pro-rated to match recent actual totals.<sup>1</sup>

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1 For our projections, we use CIHI data for spending by age group between 2010 and 2012 to compute the three-year average share of the total spending for each group. We then use CIHI's 2013 and 2014 spending forecasts by province and Statistics Canada population data to compute per capita costs by age group, assuming that relative spending on each group will be similar.

Figure 1: Annual Growth in Ontario's Labour Force and GDP, 1982-2064



Note: GDP and Labour Force Population data have been smoothed to reduce the effects of short-term fluctuations in the historical data.

Source: Authors' calculations as described in text.

Looking forward, we assume that service intensity per person will rise at the same rate as real output per potential worker – 1.2 percent annually. In terms of cost increases, the government consumption price index nationwide from 1991 to 2012 recorded annual growth at 2.5 percent annually, 0.5 of a percentage point above overall inflation.

The last few years have seen a decline in health-cost inflation, along with lower increases in overall health spending. We hesitate to project more recent moderate rates indefinitely, recalling the 1990s when a period of restraint was followed by rapid growth. So we project healthcare cost inflation at 1.3 percent through 2020, followed by a slow return to the historical margin over economy-wide inflation.

Because demography also affects other programs, we use similar methods – indexes of service intensity in the case of education and indexes of transfers for elderly and child/family benefits – multiplied by relevant populations and price indexes to project future spending (as described in Box 1) in these areas. In this way, we can see whether these programs offset, or exacerbate, any fiscal challenge healthcare presents.

## Ontario's Outlook: Trends and Implicit Liability

Our projections show Ontario's public healthcare spending rising from 7.4 percent of provincial GDP this year to 10.3 percent in 2035 and to 14.3 percent in 2064. Taking account of other demographically sensitive programs does not change the message of fiscal stress. In Ontario, spending on seniors' programs represents an implicit liability, because of projected growth in the age group, and spending on child/family benefits an implicit asset, because of a projected decline in the proportion of the population that is young.

In education, rising service intensity creates upward financial pressure, even when the number of students only inches upwards. As a result, the GDP share of these social and educational programs rises from 13.5 percent to 22.1 percent over the 50-year period (Figure 2). For Ontario to meet these demands from its own revenue sources would require an increase of more than 70 percent in provincial taxes on Ontarians' incomes.

Most public discussion of healthcare and other programs emphasizes maintaining them – perhaps enhancing, but certainly not cutting – and does not plan for higher taxes to pay for them. These political understandings create an implicit liability on the government's balance sheet, because meeting the commitment will in the end require the government to increase taxes on provincial income in the future.<sup>2</sup>

One way to quantify this looming liability is to calculate the present value of changes in these programs' claims on GDP over the next half-century. Discounting the cumulative increase in the province's average tax take from its current level by the yield on government long-term bonds,<sup>3</sup> the province's implicit total social program liability amounts to \$1.38 trillion, nearly all of which (\$1.19 trillion) relates to healthcare (see Table 1).<sup>4</sup> In other words, to cover the additional 50-year cost of these programs, the province would need about \$1.4 trillion in assets yielding income at the same rate as its long-term bonds. This figure is almost double current provincial GDP, or about \$101,000 per Ontarian.

## Policy Pressures and Responses

We see the prospect of such a massive increase in Ontario's tax take as strengthening the case for continuing reforms to Ontario's healthcare system. But what kinds of changes make sense?

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2 The parallel with explicit liabilities is straightforward: if Ontario decides to cover higher program costs by borrowing rather than raising its aggregate tax rate, the implicit liability would, over time, become higher public debt.

3 We use a nominal discount rate of 3.5 percent to discount future nominal costs.

4 As we explain in Box 1, the labour-intensiveness of healthcare (and education) services provides some justification for linking service intensity to economy-wide productivity. The assumption that both grow together is clearly critical to our results. Should Ontario manage to constrain growth in service intensity to 0.5 percentage points less than growth in productivity – 0.7 percent annually, rather than the 1.2 percent we assume in our projections – demographically sensitive spending would be 19.7 percent of GDP in 2064 and the unfunded liability today would be \$1.1 trillion. Historically, service intensity has tended to outpace productivity: if Ontario lets it grow 0.5 percentage points faster – 1.7 percent annually – demographically sensitive spending would be 27.5 percent of GDP in 2064 and the unfunded liability would be \$2.2 trillion.

## Box 1: Projecting Other Demographically Sensitive Program Costs

We use similar projection methods – multiplying relevant populations by program-specific indexes of service or transfer intensity – for all the programs we examine.\*

We assume that service intensity – the volume of services delivered per person in healthcare and education – rises at the same rate as output per person in the economy as a whole. This assumption is not entirely arbitrary: absent good quantitative measures of quality of output, measures of activity in unpriced services such as health and education tend to be driven by inputs. These activities are labour-intensive: wages – which tend to rise with economy-wide productivity – are a key input.

Historically, service intensity has grown at annual rates above the 1.2 percent we assume – and faster than productivity growth. We prefer to link them in our main projection in order to ensure that upward or downward trends in the health and education spending shares of GDP are not a function of different assumptions about service intensity on the one hand and productivity growth on the other. Instead, these trends should reflect demographic change and cost inflation in government consumption compared to inflation elsewhere.

Our index of transfer intensity for seniors' benefits is derived from the Office of the Chief Actuary's projections of spending on Old Age Security, the Guaranteed Income Supplement and Allowances. Because many of those programs are geared to income, and the Chief Actuary's model assumes that incomes rise over time, projections for this index tend to fall somewhat in real terms. Our index of transfer intensity for child and family benefits does not change over time: we assume that the real value of transfers per person in the relevant age group is constant.

Further notes on the projections for programs other than health follow:

**Education:** Base-year provincial/local spending on elementary and secondary education is calculated using data from Statistics Canada's Summary of Public School Indicators for the Provinces and Territories, 2005/06 to 2009/10. Base-year spending on postsecondary education comes from Statistics Canada (CANSIM, table 385-0001). Provincial populations aged 4 to 17 and 18 to 24 drive provincial spending on elementary and secondary students respectively. We multiply these populations by our indexes of service intensity. The population under 17 drives the federal Canada Education Saving Grant, while the population aged 18 to 24 and service intensity drive federal grants to postsecondary students. We multiply these by an unchanging index of transfer intensity.

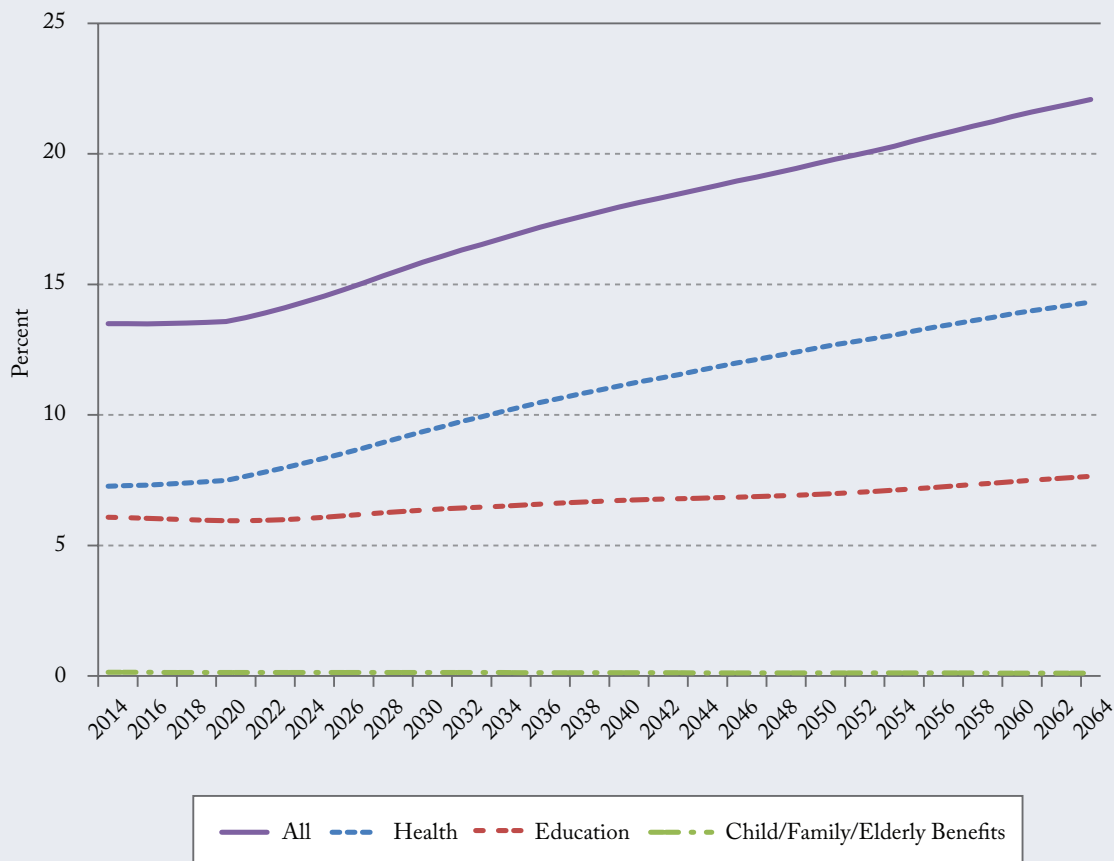
**Elderly benefits:** Base-year federal spending numbers are from the public accounts; base-year provincial spending is from Statistics Canada's Social Policy Simulation Database and Model (SPSD/M), Release 21.0 (responsibility for use and interpretation rests with the authors). As just noted, provincial payments assume the same time path of service or transfer intensity for provincial elderly populations.

**Child/family benefits:** Spending on the federal Universal Child Care Benefit varies with the national population of children to age 5; spending on other child-related benefits varies with relevant populations up to age 17. We assume unchanging indexes of transfer intensity. Federal family benefits delivered through the tax system, while indexed to inflation, are income-tested, so real income growth erodes their real value. SPSD/M simulations suggest that in the scenarios modelled here, these offsetting characteristics leave average nominal spending per child unchanged – an assumption that has also been made for (generally much smaller) provincial programs.

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\* For more background on the methodology used and the terminology, see Robson (2002) and Drummond and Burleton (2010).

Figure 2: Ontario's Demographically Sensitive Programs as a Share of GDP, 2014-2064



Source: Authors' calculations as described in text.

### ***The False Hope of a Federal Bailout***

A regular theme in discussions of fiscal pressures affecting Canada's provinces is the role the federal government could – and, especially when the discussion is from premiers and other provincial officials, should – play in helping them out.

This prescription is suspect in principle. The provinces and territories tax essentially the same bases as Ottawa: personal incomes, corporate profits and consumption spending. Much of the money the federal government already transfers to the provinces simply reflects differences in the degree to which the two levels of government tax these bases – which are a matter of history and politics, not logic or economics. If the federal government increased its transfers further, the fiscal imbalance – the degree to which Ottawa is a tax-and-transfer machine supplying the provinces with the revenues they could raise themselves to perform their constitutional functions – would simply get larger. Ontarians, like Canadians elsewhere, will be better able to hold their



Table 1: Ontario's Implicit Liabilities in a National Context

Demographically Sensitive Programs							
Region	Health	Education	Elderly Benefits	Child/ Family Benefits	All Programs	All Programs Relative to GDP (2014)	All Programs per Person
	\$ Billions					Percent	\$
BC	383.6	18.3	0.7	-1.2	401.4	171	87,029
AB	580.1	108.3	16.5	-0.6	704.3	204	171,999
SK	79.3	30.5	0.5	–	110.3	130	99,069
MB	90.6	27.4	0.0	0.0	118.0	189	92,775
<b>ON</b>	<b>1,194.2</b>	<b>194.0</b>	<b>1.5</b>	<b>-6.4</b>	<b>1,383.3</b>	<b>195</b>	<b>101,265</b>
QC	681.9	139.6	–	-14.7	806.8	218	98,373
NB	67.7	8.3	0.0	0.0	76.0	233	100,678
NS	89.1	9.3	–	0.0	98.4	247	104,814
PE	13.0	2.5	–	–	15.5	263	106,538
NL	65.1	7.4	0.0	0.9	73.4	201	140,209
YT	9.0	1.0	–	–	10.0	387	274,687
NWT	13.9	2.8	–	–	16.7	370	380,070
NU	13.9	3.1	–	–	17.0	681	464,111
Provincial	3,244.6	545.6	19.2	-22.0	3,787.4	196	106,886
Federal	0.0	-12.1	461.0	-21.1	427.8	22	12,100
Canada	3,281.4	540.4	480.2	-43.1	4,258.9	298	164,700

Source: Authors' calculations as described in text.

provincial government to account for the performance of publicly funded healthcare if the province is raising, and is seen to be raising, more of the necessary funds itself.

The lure of more federal funds is also open to a practical objection. Despite the premiers' complaints, the federal government's major continuing program transfers to the provinces – principally the Canada Health and Canada Social Transfer, and Equalization – have grown prodigiously over the past decade and a half. In dollar terms, they have more than tripled since the end of federal restraint in 1997/98, growing relative to the economy and even more when compared to other federal government programs. Indeed, Ottawa's cash transfers to Ontario have more than quadrupled over that period.

If more federal transfers were the answer to provincial fiscal woes, this money should have eased their plight. Yet aggregate provincial deficits are larger now than they were following the federal restraint of the late 1990s. In fact, federal cash transfers to Ontario were \$5 billion in 1997/98, and the provincial deficit was \$4 billion. In 2013/14, federal transfers were \$22 billion, yet the provincial deficit more than doubled, to \$10 billion. A reasonable interpretation of that experience would be that the provinces responded to increases in federal money mainly by spending more, rather than by undertaking reforms that would let them provide more bang for the buck in their services, including healthcare, over the long term.

In Ontario's case, any hope of substantial increases in federal transfers is especially forlorn simply because the province is "too big to bail." As a scan of our results across the country in Table 1 reveals, similar – often worse – pressures afflict all jurisdictions. Since any increases in net federal transfers to Ontario would have to come at the expense of other provinces, it is hard to see such increases being economically or politically attractive. The pressure of healthcare spending on other programs and taxes is a problem Ontario should tackle on its own.

### ***The Case for Prefunding***

One way to mitigate the intergenerational impact of rising healthcare costs would be to follow the lead of the late-1990s reforms to the Canada and Quebec Pension Plans, which converted them from pay-as-you-go to plans in which a portion of premiums collected from people today prefunded their future needs. Some drug programs, and potentially long-term care as well, are like social security programs in that people can prepare for predictable expenses by building a provident fund during their younger years.

Ontario could selectively convert pay-as-you-go programs so that the babyboomers, rather than their declining numbers of children and grandchildren, pay some of the higher costs that loom (Robson 2002; Stabile and Greenblatt 2010). Prefunding does not make sense for all the programs with threatened cost increases, but can spread more fairly over time the needed tax increases for health services that, like pensions, are related to age.<sup>6</sup>

### ***Reducing Healthcare Spending's Sensitivity to Aging***

Unlike pensions, which are promises to pay dollars, healthcare promises services, the cost and quality of which are not fixed. Indeed, the relationship between age and healthcare spending is controversial, because recent age profiles for healthcare spending projections may change. The camp that says aging by itself is not a major problem has tended to emphasize that some factors that connect healthcare spending strongly to age, such as high rates of hospitalization or use of certain drugs, may change over time (Evans et al. 2001).

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6 Busby and Robson (2010) explore some prefunding possibilities and their mechanics in more detail.



To the degree that healthcare spending is related to the end of life, the tendency of people to live longer, healthier lives could mean that future Ontarians will incur inevitable higher healthcare costs at a later age, which would delay the demographic effects in our model.

Clearly, this is not a simple subject. As Felder (2013) points out, decisions to spend are at least partly driven by the life expectancy of the patient, so it is possible that a population that is living longer, healthier lives might encourage more spending on the “young elderly.” Given the difficulty of making firm judgments in this area, we are driven to look at what has actually happened to the age profile of provincial healthcare spending in Ontario since CIHI’s first data in 1998. While a comparison of the 1998 age profile of spending to its counterpart in 2012 (Figure 3) shows some variations by age group, the overall profile has changed very little. A 1998 projection of the impact of demography on Ontario’s healthcare spending by 2012 would have been almost spot on. So while changes that would reduce the impact of aging on healthcare costs are certainly possible, they are not automatic.

Two elements of Ontario’s publicly funded healthcare costs are particularly sensitive to the pressures of aging: its senior-based drug program and long-term care provisions for the elderly. Ontario offers public drug benefits mainly to individuals aged 65 and up. As a result, most individuals with employment-related or voluntary insurance drop it at age 65 to join the public plan. Instead, the province could extend public drug benefits to all individuals without private insurance according to income, regardless of age. British Columbia, for instance, has done so in a way that has dramatically reduced the sensitivity of public drug costs to aging. Other provinces, such as Quebec, also offer lessons on how to design income-tested drug benefits (Busby and Pedde 2014).

Well over half the population will need continuing care support at one point in their lives – a proportion that jumps to almost three-quarters after age 65. But many citizens mistakenly believe that governments are going to cover most of their future long-term care costs. This is because public subsidies to long-term care in institutions or at home are generally opaque and misunderstood. The ambiguity of current public-private responsibilities for financing long-term care dampens private savings and pressures the public sphere to pick up the slack.

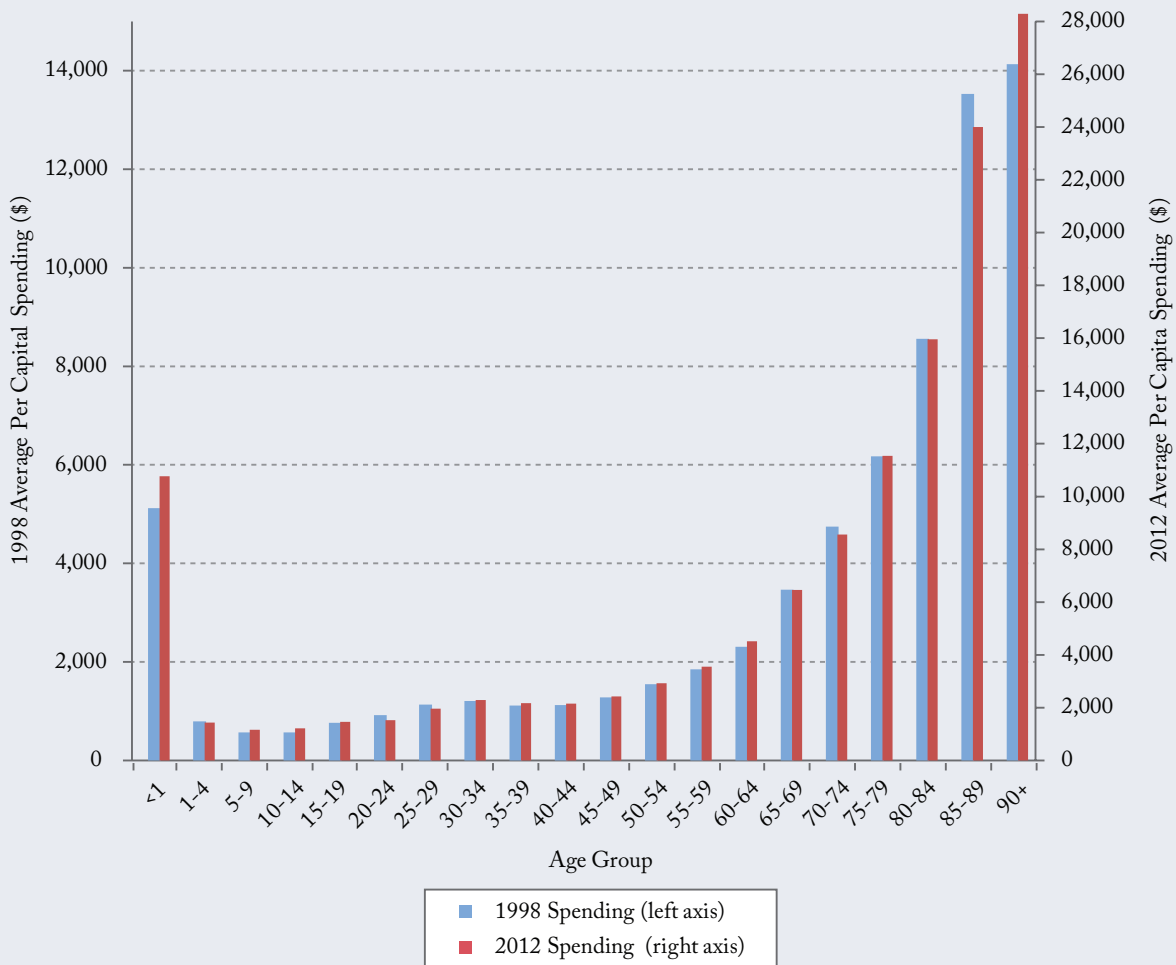
But an expanded public role here would heighten intergenerational inequity, which is why provincial authorities must clearly define the extent to which they will cover future costs. To reduce the connection between public health spending and aging, public subsidies for long-term care must be targeted to those without the means to pay for it. At the same time, the government should require that those who can afford it absorb a meaningful share of the cost. Doing so means setting, and publicizing, government subsidies clearly so that private options – increased savings and insurance – grow to complement public subsidies (Blomqvist and Busby 2014).

### ***Accessible Reforms and Benchmarking Best Practices***

Where might Ontario look in its search for more bang per healthcare buck generally and for more efficiency in spending on an older population particularly? Among the possibilities, many of which figured in the Commission on the Reform of Ontario’s Public Service’s report, are:

- scope-of-practice changes that would allow less expensive medical providers such as pharmacists and nurse practitioners to deliver services that are currently, and unnecessarily, performed by more expensive physicians;
- better follow-up care for patients discharged from hospital to cut down on complications and readmissions;
- improvements in, and more use of, non-institutional care for seniors with chronic conditions;

Figure 3: Average Per Capita Health Spending by Age Group in Ontario, 1998 and 2012



Note: The vertical axes show nominal dollars for transparency's sake: these are the actual dollar figures from CIHI. We could have used constant dollars from either – or, indeed, any year – or index numbers, because this focus of this figure is the relative distribution of health spending by age in the two years. To facilitate comparison of the age-profiles of spending; we have set the vertical scales so roughly half the bars in each year are taller (or shorter) than their counterparts in the other.

Source: CIHI (2014).

- better use of information technology, particularly in coordinating patient health records;
- more coordinated team-based primary care, giving patients comprehensive non-acute services from an organized group of practitioners such as doctors, nurses, dieticians and physiotherapists;
- more use of clinical evidence to reduce variation in diagnostics and therapeutics use; and
- incentives for patients to take greater responsibility for maintaining their own health.

Table 2: Real Per Capita Health Spending, by Use of Funds, Ontario vs. Other Provinces, 2012

Region	Hospitals	Other Institutions	Physicians	Other Professionals	Drugs	Capital	Public Health	Admin	Other Health Spending	Total
<i>Per Capita Spending 2012 (in 2014 dollars)</i>										
BC	1,745	218	901	39	227	184	379	46	285	4,024
AB	2,101	395	952	59	341	217	265	39	178	4,546
SK	1,706	618	874	32	308	226	425	47	305	4,541
MB	1,950	638	832	28	271	234	292	47	363	4,654
<b>ON</b>	<b>1,457</b>	<b>405</b>	<b>953</b>	<b>32</b>	<b>343</b>	<b>169</b>	<b>264</b>	<b>32</b>	<b>171</b>	<b>3,826</b>
QC	1,409	537	707	29	321	289	117	48	160	3,617
NB	1,993	549	813	9	277	267	174	41	274	4,399
NS	1,790	681	813	14	300	334	119	105	182	4,340
PE	1,907	551	694	18	270	566	232	114	214	4,566
NL	2,350	781	867	21	299	359	189	72	364	5,302
CAN	1,627	446	876	34	316	222	245	44	203	4,013
<i>10 = lowest</i>										
ON's Rank	9	8	1	4	1	10	5	10	9	9

Notes: Spending figures from 2011 have been inflated using CIHI's Government Expenditure Implicit Price Index to their 2014 values. "Other professionals" includes care primarily provided by dental and vision care professionals; "Other institutions" include nursing homes and residential care facilities; "Public Health" includes expenditures for items such as food and drug safety, health inspections, health promotion activities, community mental health programs, public health nursing, the prevention of spreading disease and health promotion.

Source: Canadian Institute for Health Information, 2014.

As well, Canada's provinces exhibit large differences in spending in major categories that may yield useful insights for Ontario. Ontario spends less per capita than any other province on hospitals and has relatively low administrative costs (see Table 2 and Table 3). By contrast, Ontario spends more per capita on drugs and physicians. These gaps between Ontario and the national average are large.

At present, we know more about healthcare costs than we do about its quality: For example, Ontarians may get appropriately greater value from their physicians than other provinces do – but we do not know. More rigour in addressing that and related questions is clearly vital alongside current efforts to curb rising costs through negotiations with various providers.

## Closing Comments

Notwithstanding recent restraint, demographic change will stress Ontario's provincial budget in decades ahead. The projected growth of health and other demographically sensitive spending represents an implicit liability

Table 3: Real Annual Per Capita Spending Growth Rate (1991-2013), Ontario vs. Other Provinces

Region	Hospitals	Other Institutions	Physicians	Other Professionals	Drugs	Capital	Public Health	Admin	Other Health Spending	Total
<i>Real Annual Per Capita Spending Growth Rate (Percent)</i>										
BC	1.7	-2.1	1.3	-1.9	2.4	3.0	6.6	-1.7	4.3	1.7
AB	1.5	3.1	2.3	-3.5	4.1	2.8	2.7	0.4	0.9	1.9
SK	1.2	1.3	2.8	-3.5	2.6	-1.7	4.3	0.8	4.7	1.7
MB	1.2	2.0	3.3	-0.6	5.6	3.2	4.6	0.5	4.1	2.3
<b>ON</b>	<b>0.6</b>	<b>2.3</b>	<b>1.4</b>	<b>-0.1</b>	<b>4.0</b>	<b>4.6</b>	<b>5.5</b>	<b>0.0</b>	<b>1.3</b>	<b>1.6</b>
QC	1.0	1.3	2.7	-1.6	4.4	5.8	1.4	-1.3	1.6	1.8
NB	1.6	3.5	2.8	-2.8	2.7	-0.8	4.0	0.2	6.1	2.2
NS	0.8	6.3	3.5	-4.4	3.0	4.3	2.3	5.7	6.4	2.5
PE	2.1	2.5	3.0	-1.7	5.5	7.9	3.9	5.8	6.1	3.0
NL	2.3	3.7	4.1	0.6	4.7	10.5	4.9	2.8	7.4	3.5
CAN	1.1	1.6	2.0	-1.4	3.9	4.0	4.4	-0.3	2.5	1.8
<i>10 = lowest</i>										
ON's Rank	10	6	9	2	6	4	2	8	9	10

Notes: The growth rate is computed as a compound annual growth rate from three-year averages of expenditure around 1991 and 2013, where these expenditures have been inflated using CIHI's Government Expenditure Implicit Price Index. "Other professionals" include care primarily provided by dental and vision care professionals; "Other institutions" include nursing homes and residential care facilities; "Public Health" includes expenditures for items such as food and drug safety, health inspections, health promotion activities, community mental health programs, public health nursing, the prevention of spreading disease and health promotion.

Source: Canadian Institute for Health Information, 2014.

much larger than the provincial debt – which itself is a source of serious concern – and threatens a major increase in the provincial government's draw on Ontarians' incomes. In the face of this challenge, selective prefunding and benchmarking against other provinces' best practices can help Ontario deliver high-quality healthcare in a sustainable fiscal framework for years to come.

## References

- Barer, M.L., R.G. Evans, and C. Hertzman. 1995. "Avalanche or Glacier? Health Care and the Demographic Rhetoric." *Canadian Journal on Aging* 14(2): 193-224.
- Brown, Robert, and Uma Suresh. 2004. "Further Analysis of Future Canadian Healthcare Costs." *North American Actuarial Journal* 8(2). April.
- Blomqvist, Åke, and Colin Busby. 2014. *Paying for the Boomers: Long-Term Care and Intergenerational Equity*. Commentary 415. Toronto: C.D. Howe Institute. September.
- Busby, Colin, and William B.P. Robson. 2011. *A Social Insurance Model for Pharmacare: Ontario's Options for a More Sustainable, Cost Effective Drug Program*. Commentary 326. Toronto: C.D. Howe Institute. April.
- Busby, Colin, and Jonathan Pedde. 2014. *Should Public Drug Plans be Based on Age or Income?* C.D. Howe Institute Commentary 417. Toronto: C.D. Howe Institute. November.
- Canadian Institute for Health Information (CIHI). 2014. *National Health Expenditure Trends, 1975-2014*. Ottawa.
- Drummond, Don, and Derek Burleton. 2010. "Charting a Path for Sustainable Healthcare In Ontario: 10 Proposals to Restrain Costs Without Compromising Quality of Care." TD Economics Special Report. Toronto: TD Bank Financial Group. May.
- Emery, J.C. Herbert, David Still, and Tom Cottrell. 2012. "Can We Avoid a Sick Fiscal Future? The Non-Sustainability of Health-Care Spending with an Aging Population." SPP Research Papers, Vol. 5, No. 31. October.
- Evans, Robert G., Kimberlyn M. McGrail, Steven G. Morgan, Morris L. Barer, and Clyde Hertzman. 2001. "Apocalypse No: Population Aging and the Future of Health Care Systems." *Canadian Journal on Aging*, 20 (suppl. 1).
- Felder, Stephan. 2013. "The Impact of Demographic Change on Healthcare Expenditure." CESifo DICE Report 1/2013: Managing the Healthcare System. Spring
- Office of the Chief Actuary. 2014. *Actuarial Report (12th) on the Old Age Security Program, as at 31 December 2012*. Ottawa: Office of the Superintendent of Financial Institutions.
- Ontario. 2012. *Action Plan for Health Care*. Ontario Ministry of Health and Long-term Care. Queen's Printer for Ontario.
- Ontario. 2007. "Preventing and Managing Chronic Disease: Ontario's Framework." Ministry of Health and Long-term Care. May.
- Robson, William. 2002. *Saving for Health: Pre-Funding Health Care for an Older Canada*. Commentary 170. Toronto: C.D. Howe Institute. October.

- Robson, William. 2007. "Time and Money: The Challenge of Demographic Change and Government Finances in Canada." Backgrounder 109. Toronto: C.D. Howe Institute. December.
- Robson, William. 2010. "The Glacier Grinds Closer: How Demographics Will Change Canada's Fiscal Landscape." E-Brief. Toronto: C.D. Howe Institute. January.
- Stabile, Mark, and Jacqueline Greenblatt. 2010. "Providing Pharmacare for an Aging Population: Is Prefunding the Solution?" IRPP Study 2. Montreal: February.
- Statistics Canada. 2011. *Summary of Public School Indicators for the Provinces and Territories, 2005/06 to 2009/10*. Culture, Tourism and the Centre for Education Statistics: Research Papers. Cat no. 81-595-MWE2011095. Ottawa: Statistics Canada. November.

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Colin Busby is a Senior Policy Analyst at the C.D. Howe Institute.

William B.P. Robson is President and Chief Executive Officer of the C.D. Howe Institute.

Aaron Jacobs is a Research Intern at the C.D. Howe Institute.

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