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HEALTH POLICY

## Managing the Cost of Healthcare for an Aging Population: Manitoba's Looming Funding Gap

by

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"We know there is nothing more important to Manitoba families than the health of their loved ones. That's why health care has always been our top priority. Mr. Speaker, we are focused on expanding care instead of costs." (Manitoba Budget Address 2012, p. 3).

The tension expressed in Manitoba's 2012 Budget Address will be a constant theme for years to come. A lively debate over whether providing publicly funded healthcare to an aging population will financially stress Canadian governments lurks in the background of every provincial budget.

One camp, developing a theme that the pressures are a glacier rather than an avalanche, has emphasized that aging itself adds no more than one percentage point to annual increases in health costs, and argued that it creates no urgency around reforms to treatment or financing (Barer et al. 1995; Evans et al. 2001). If taxes can rise and curbing provider compensation can restrain costs, the system is, in a familiar phrase, as sustainable as Canadians want it to be.

The other camp has emphasized that one percentage point annually is large when it compounds over many years – and, moreover, that aging will slow the growth of the tax base, potentially

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compromising other major government programs, manageable tax rates, and debt control (Robson 2001, 2007, 2010; Drummond and Burleton 2010; Dodge and Dion 2011; and Emery et al. 2012). Glaciers may move slowly, but they transform a landscape: this view tends to see the current system as unsustainable, in the sense that avoiding a painful collision between key fiscal priorities requires fundamental changes to the financing and delivery of healthcare.

While the debate has raged, publicly funded healthcare in Manitoba has risen from 7.4 percent of provincial GDP in 1991 to about 9.4 percent in 2012. At the same time, it has risen from 37 percent of the provincial government's program spending in 1991 to about 39 percent in 2012. Its share of provincial own-source revenue – that is, revenues from taxes and other sources Manitoba controls itself rather than funds transferred from Ottawa – stands at about 57 percent.

The 2012 Budget Address highlights healthcare – the largest single item in provincial program spending, and a central focus of cost control. A key question for Manitobans in the future is whether the fiscal consequences of a growing healthcare budget will squeeze healthcare itself, or other budgetary priorities.

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

We shed light on that question with a well-known, straightforward approach. We project Manitoba's population using the following middle-of-the-road assumptions: a fertility rate stable at its 2010 level; longevity rising in line with Statistics Canada's "medium" improvement scenario; net inter-provincial out-migration to other provinces falling to zero over 10 years, and net international in-migration continuing at its 1997-to-2011 average.

We then multiply the potential workforce, which we define as Manitobans age 18 to 64, by an index of output per potential worker – which grows at the rate recorded by the equivalent national measure from 1997 to 2011: 1.2 percent annually. This provides our model with projections of real provincial gross domestic product (GDP). Nominal provincial GDP is real GDP times the same 2 percent inflation rate we assume will prevail nationally.

Turning to the cost of demographically sensitive government programs, we project provincial spending on healthcare for 20 age groups of each sex across six types of spending. Per-person expenditures for each of these groups grow 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 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 (CIHI) figures for 2010, pro-rated to match recent actual totals.<sup>1</sup> Looking forward, we assume that service intensity per person rises at the same rate as real output per potential worker – 1.2 percent annually (see Box 1). We also assume that costs rise at the pace recorded by the government consumption price index nationwide from 1997 to 2011 – 2.4 percent annually.<sup>2</sup>

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- 1 For our projections, we use the actual CIHI age and sex spending by health category for 2010, and prorate these amounts to correspond with the actual and projected health spending results using the most recent public accounts and budget documents, for 2011 and 2012. This method yields a larger increase in spending in both 2011 and 2012 than the CIHI estimates.
  - 2 During this period, the Bank of Canada targeted 2 percent inflation, and achieved an annual average increase in the consumer price index of exactly 2 percent. The national price index for government consumption rose 2.4 percent annually over the same period. We assume the same margin will prevail in the future.

## 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 rises at the same rate that output per working age person does. This assumption is not entirely arbitrary: absent good quantitative measures of quality of output, measures of activity in health and education tend to be driven by inputs, and these are labour-intensive services in which wages – which tend to rise with economy-wide productivity – are a key input. It also has the virtue of ensuring that trends upward or downward in the shares of health and education spending in GDP are not a function of different assumptions about service intensity on the one hand, and productivity growth on the other.

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 per person age 65 and up. Because many of those programs are geared to income, and the Chief Actuary's model assumes that incomes rise over time, this index tends to fall somewhat in real terms. To the extent that provincial benefits for seniors differ from federal ones, this projection will not provide an accurate picture of the provincial outlook – but seniors' benefits are small enough in Manitoba that this is not a serious problem. 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:

*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 is from the public accounts; base-year provincial is from Statistics Canada's Social Policy Simulation Database and Model (SPSD/M), Release 20.0 (responsibility for use and interpretation rests with the author). As just noted, provincial payments assume the same time-path of transfer intensity for their 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. SPSP/M simulations suggest that in the scenarios modeled 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 information on the methodology used and the terminology see Robson (2002) and Drummond and Burliton (2010).

Because demography 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 spending on them also (Box 1 spells out our approaches for health and these other programs in more detail). We can thus see whether these programs offset, or exacerbate, any fiscal challenge presented by healthcare.

## Manitoba's Outlook: Trends and Implicit Liability

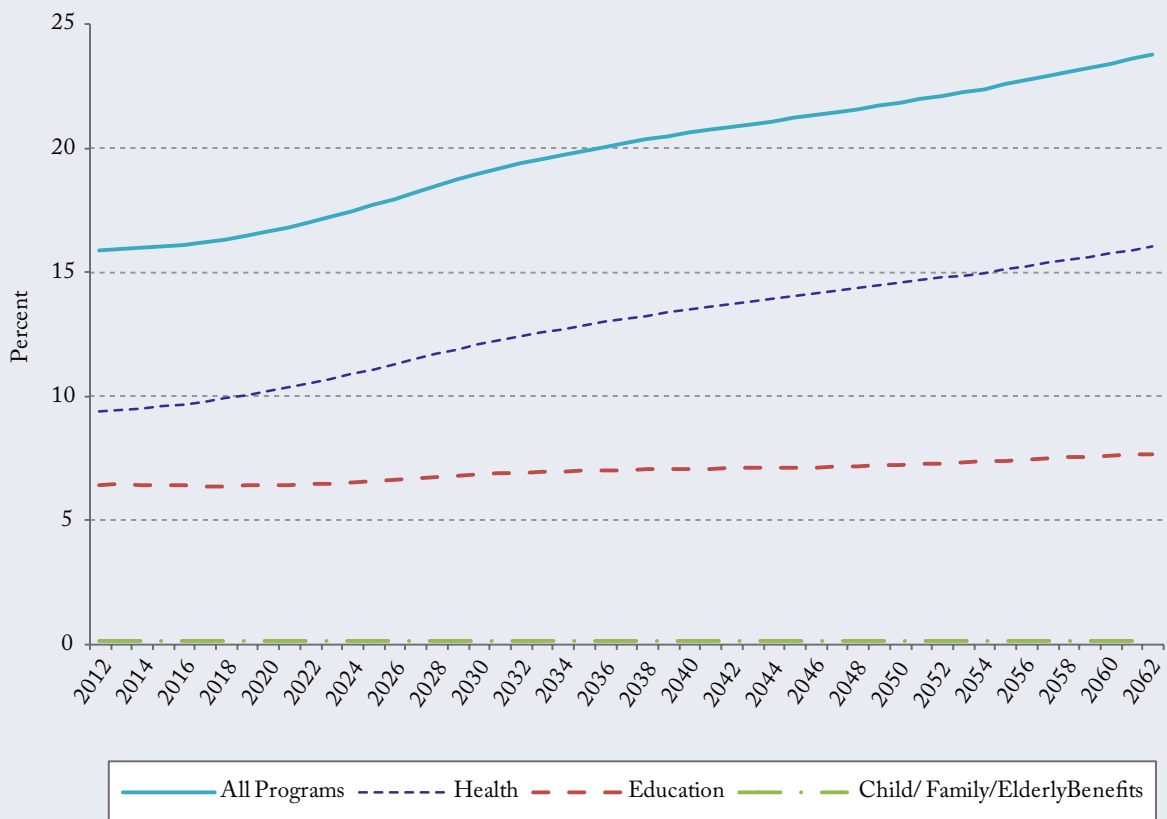
Our projections show the claim of Manitoba's public healthcare spending on provincial GDP rising from 9.4 percent this year to 12.9 percent in 2035 and to 16.0 percent in 2062. Taking account of other demographically sensitive programs does not change the prospect of fiscal stress. In Manitoba, spending on seniors' programs represents an implicit liability and spending on child/family benefits an implicit asset, because of a projected decline in the proportion of the population that is young. These programs are very small, however. In education, service intensity creates upward pressure. As a result, the share of all these programs in GDP rises from 15.9 to 23.7 percent over the period (see Figure 1). For Manitoba to meet these demands from its own revenue sources would require an increase of around 80 percent in the tax bite taken from Manitobans' incomes.

Another perspective on the fiscal pressure of rising healthcare costs is intergenerational: the liability implicit in a "pay-as-you-go" approach when a program's costs are not stable. Most public discussion of healthcare and other programs emphasizes maintaining them – perhaps enhancing, but certainly not cutting. The 2012 provincial budget speech quoted above made a point of resisting tax increases (Manitoba 2012, 3). These political understandings create an implicit liability on the government's balance sheet, because meeting the commitment will require the government to tax a higher share of provincial income in the future.<sup>3</sup>

One way to quantify this liability is to calculate the present value of changes in these programs' claims on GDP over the next half-century, which is roughly the average life expectancy of the average Manitoban. Discounting the cumulative increase in the province's average tax take from its current level at the yield on provincial long-term bonds, the province's implicit liability amounts to \$116 billion, nearly all of which (\$101 billion) relates to healthcare (see Table 1).<sup>4,5</sup> In other words, to cover the additional cost of these programs, the province would

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- 3 The parallel with explicit liabilities is straightforward: if Manitoba decided to cover the higher program costs by borrowing rather than raising its aggregate tax rate, the implicit liability would, over time, become higher public debt.
  - 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 Manitoba 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 18.3 percent of GDP in 2062 and the unfunded liability would be \$41 billion. Historically, service intensity has tended to outpace productivity: if it grew 0.5 percentage points faster – 1.7 percent annually – demographically sensitive spending would be 29.9 percent of GDP in 2062 and the unfunded liability would be \$195 billion.
  - 5 This exceeds the \$85 billion calculated in Robson (2010) mainly because of the lower discount rate used in this study. We use the long-term Ontario bond for these calculations because a deep, liquid market makes yields readily available, and for the sake of using the same discount rate for all Canada's governments.

Figure 1: Manitoba's Demographically Sensitive Programs as a Share of GDP, 2012-2062



Source: Authors' calculations as described in text.

need about \$115 billion in assets yielding what long-term provincial bonds do. This figure is about double provincial GDP, and about \$93,000 per Manitoban.

## Policy Pressures and Responses

We see a funding gap this big, and the prospect of such a massive increase in provincial taxation, as strengthening the case for continuing changes to Manitoba's healthcare system.

Scanning our results for Manitoba and other provinces in Table 1 suggests that pressure for change will occur everywhere in Canada. Moreover, other provinces face relatively worse fiscal stresses – indicated by their higher ratios of implicit liability to GDP – that make larger net transfers to Manitoba through the federal government unlikely. Simple compression of compensation to providers cannot counteract pressures this big without degrading service. What alternatives make sense?

**Table 1: Manitoba's Demographically Sensitive Programs, Implicit Liabilities in a National Context**

	Health	Education	Elderly Benefits	Child/ Family Benefits	All Programs	All Programs Relative to GDP (2012)	All Programs Per Person
	<i>\$ Billions</i>					<i>Percent</i>	<i>\$</i>
BC	415.2	6.4	0.4	(0.1)	421.9	192	91,474
AB	615.4	65.0	13.6	(0.8)	693.2	227	180,332
SK	82.0	15.3	0.3	-	97.6	131	91,897
<b>MB</b>	<b>100.8</b>	<b>15.4</b>	<b>0.1</b>	<b>(0.1)</b>	<b>116.3</b>	<b>197</b>	<b>92,493</b>
ON	1,398.3	89.8	2.4	(6.3)	1,484.2	223	109,920
QC	767.7	79.0	-	(17.3)	829.4	242	103,344
NB	78.2	5.5	0.4	(0.1)	84.0	266	111,745
NS	99.1	2.4	0.2	-	101.7	263	107,713
PE	14.0	0.6	-	-	14.5	269	99,244
NL	75.3	4.5	0.9	(0.1)	80.6	240	158,905
YK	9.0	0.6	-	-	9.5	369	263,744
NT	12.5	1.4	-	-	13.9	278	321,187
NU	13.8	1.6	-	-	15.4	801	457,690
All Provinces and Territories	3,681.3	287.3	18.3	(24.6)	3,962.3	222	113,935
Federal		(13.5)	424.7	(25.0)	386.2	22	11,105
CANADA	3,681.3	273.8	443.0	(49.6)	4,348.5	244	125,040

Source: Authors' calculations as described in text.

## The Case for Prefunding

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

Like other provinces, Manitoba could selectively convert pay-as-you-go programs so that the babyboomers, rather than their inadequately numerous 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 that threaten cost increases, but can spread more fairly over time the tax increases necessary for some health services that, like pensions, are geared 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. The camp that says aging by itself is not a major problem has tended to emphasize that some factors that make per capita healthcare spending so strongly associated with age, such as high rates of hospitalization or use of certain drugs, may change over time (Evans et al., 2001), which could mitigate the demographic effects in our model.

Such changes – which might reflect the ability to deliver services more efficiently – are certainly possible. While Manitoba shows some evidence of such changes – between 1998, the first year CIHI published data on provincial healthcare spending by age, and 2010 there have been some small declines in the relative amounts being spent on the older age-groups (see Figure 2) – the province's overall profile in 2010 was not much different from that in 1998. In other words, a 1998 projection of the impact of demography on Manitoba's healthcare spending by 2010 would have overestimated the effect by a trivial amount. So avoiding a demographically driven squeeze on Manitoba's budget will require more conscious effort than in the past.<sup>7</sup>

## Benchmarking Best Practices

Where might Manitoba get more bang per healthcare buck? As in many other provinces, areas that commentators have identified as promising include:

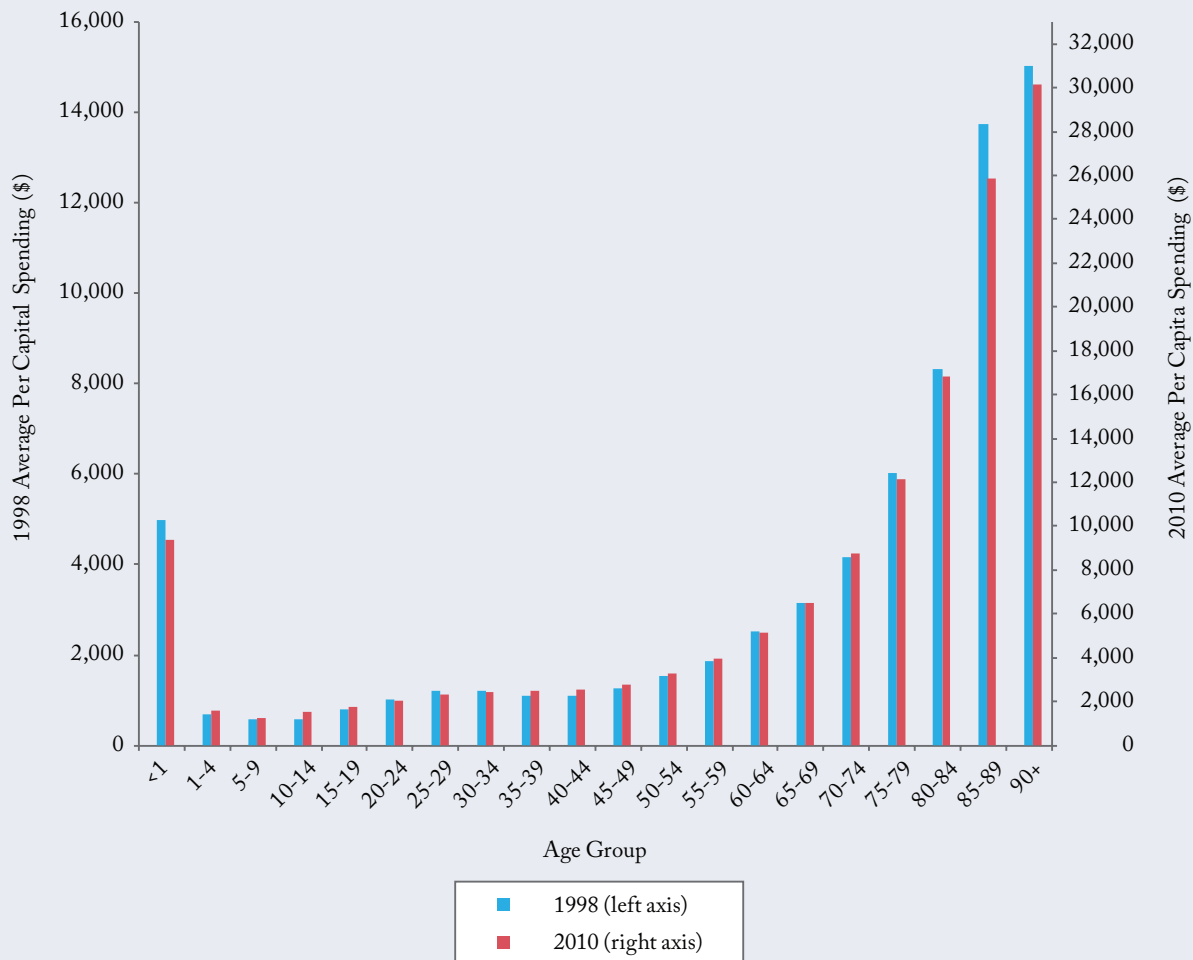
- the establishment and expanded use of electronic health records;
- integration of follow-up care for patients once they are discharged from hospital;

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

7 One objection to projecting healthcare costs on the basis of current age-specific service use is that the higher costs associated with older people reflect higher mortality among older people, which means that these projections overstate cost increases in a future where people are living longer before they incur those mortality-related costs. As Brown and Suresh (2004) demonstrate, however, projections that distinguish spending on people who survive from spending on people who die at various ages produce cost estimates that are only marginally lower than estimates that make no such distinction.

Figure 2: Average Per Person Health Spending By Age Group, Manitoba, 1998 and 2010



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 the 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 (2012) and authors' calculations.

- more coordinated team-based primary care models where patients can get comprehensive non-acute services from an organized group of practitioners such as doctors, nurses, dieticians, and physiotherapists;
- scope-of-practice changes to get more services from such specialties as pharmacists and nurse practitioners instead of the more expensive services of physicians; and,
- improvements in, and more use of, non-institutional care for seniors with chronic conditions.

Turning to different delivery vehicles, Canada's provinces exhibit large differences in spending in major categories that may yield insights.



Manitoba spends less than most provinces on drugs (see Table 2). By contrast, Manitoba spends more on “other health spending,” which includes health research, home care, training, and other assortments of funding and services. Perhaps Manitobans get appropriately greater value from their spending on health research and other services than other provinces do – more rigour in addressing that question is clearly vital to the effort to limit the impact of less useful healthcare spending on other fiscal priorities. That said, the practice of benchmarking usefully guided past policy – the 2012 Budget Address highlights that Manitoba has gone from being one of the provinces with the highest administrative costs to one of the lowest-cost provinces (Manitoba 2012, 2).

## Closing Comments

Manitoba’s recent economic success has helped finance recent increases in health spending, but the pressure of demographic change on the provincial treasury will continue. Selective prefunding and benchmarking against other provinces that may be getting more bang for their bucks in some areas can help Manitoba deliver high-quality healthcare in a sustainable fiscal framework for years to come.

Table 2: Real Per Person Health Spending, By Use of Funds, Manitoba vs. Provinces, 2010

	Hospitals	Other Institutions	Physicians	Other Professionals	Drugs	Capital	Public Health	Admin	Other Health Spending	Total
<i>Per Capita (in 2012 \$)</i>										
BC	1,466	245	796	34	213	245	310	33	310	3,652
AB	2,109	403	905	57	323	311	285	60	202	4,655
SK	1,657	638	793	24	301	146	379	27	274	4,239
<b>MB</b>	1,799	595	<b>783</b>	<b>24</b>	<u>250</u>	<b>167</b>	<b>271</b>	<b>45</b>	<u>329</u>	<u>4,264</u>
ON	1,380	389	901	28	344	236	292	34	161	3,765
QC	1,392	531	653	24	316	220	122	59	150	3,468
NB	1,987	515	763	9	266	118	154	53	266	4,130
NS	1,789	624	767	13	344	157	143	98	170	4,105
PE	1,787	514	733	20	260	271	230	141	193	4,148
NL	2,352	763	810	16	276	296	171	63	202	4,948
CAN	1,545	436	815	30	310	233	248	47	198	3,861
<i>Real Per Capita Growth Rate 1991 to 2010 (percent)</i>										
BC	1.1	-1.5	1.2	-3.2	2.5	4.4	6.2	-2.4	4.8	1.5
AB	1.2	2.7	2.1	-3.6	4.4	6.3	5.1	3.2	2.2	2.2
SK	1.4	2.0	3.0	-4.2	3.7	-1.4	5.9	-1.1	5.1	2.1
<b>MB</b>	<b>1.5</b>	<b>2.3</b>	<u><b>3.6</b></u>	<u><b>-1.0</b></u>	<u><b>6.3</b></u>	<u><b>1.6</b></u>	<b>5.3</b>	<b>0.9</b>	<b>4.7</b>	<b>2.5</b>
ON	0.7	2.6	1.4	-1.3	4.7	6.9	6.9	0.8	1.0	1.9
QC	0.2	5.5	2.0	-3.5	5.2	5.3	3.0	-0.5	4.5	1.9
NB	2.0	3.3	3.1	-3.3	3.4	-0.7	4.6	1.8	6.5	2.6
NS	1.5	6.8	4.1	-4.6	4.6	3.0	3.5	7.1	7.3	3.0
PE	1.5	2.1	3.5	-1.5	5.6	7.2	3.7	7.6	5.0	2.7
NL	3.0	5.2	4.4	-2.4	5.4	10.2	5.8	4.1	3.7	4.0
CAN	0.8	2.9	1.9	-2.5	4.5	5.2	5.8	0.4	3.2	2.0
<b>Blue</b> (with underline): among lowest third; <b>Red</b> (with double underline): among highest third										
Ranking Among Provinces (10 being the lowest; 1 being the highest)										
Per Capita Spending	4	4	6	4	9	7	5	7	1	3
Growth Rate	4	7	3	1	1	8	5	6	6	5

Notes: 2010 data are converted into 2012 dollars using the government current expenditure implicit price index. And because growth calculations are sensitive to the base year chosen, we took an average of the three years around 1991 and 2010 to smooth out the swings in the economy. "Other professionals" includes care primarily provided by dental and vision care professionals; "Other institutions" includes 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: CIHI (2012).

## 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.
- 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.
- Canadian Institute for Health Information (CIHI). 2012. *National Health Expenditure Trends, 1975-2012*. 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).
- Manitoba. 2012. "The 2012 Manitoba Budget Address." Department of Finance Manitoba. Winnipeg: Government of Manitoba. April.
- Office of the Chief Actuary. 2012. *Actuarial Report (11th) on the Old Age Security Program, as at 31 December 2009*. Ottawa: Office of the Superintendent of Financial Institutions.
- Robson, William. 2002. *Saving for Health: Pre-Funding Health Care for an Older Canada*. Commentary 170. Toronto: C.D. Howe Institute. October.
- . 2007. "Time and Money: The Challenge of Demographic Change and Government Finances in Canada." Backgrounder 109. Toronto: C.D. Howe Institute. December.
- . 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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