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HEALTH POLICY

Managing Healthcare for an Aging Population: Good – and Bad – News about Saskatchewan's Fiscal Glacier

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Saskatchewan's 2014/15 budget mentions "record funding of nearly \$5 billion to be spent through the Ministry of Health – a 3 percent increase compared to last year – to improve the health outcomes for Saskatchewan people." (Saskatchewan Provincial Budget 2014/15.)

For years, a debate has raged over the fiscal impact of demographic change – in particular, whether providing publicly funded healthcare to an aging population will financially stress Canadian governments. One camp, developing a theme that the pressures resemble a glacier more than an avalanche, has emphasized that aging itself adds no more than one percentage point to annual increases in health costs. Therefore, it argues there is no urgency for reforms to healthcare treatment or financing (Barer et al. 1995, Evans et al. 2001). If taxes are allowed to rise and provider compensation can be curbed, so goes the argument, the system is – in a formulation made familiar by former Saskatchewan premier Roy Romanow – as sustainable as Canadians want it to be.

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

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move slowly, it would emphasize their formidable impact when they arrive. So it tends to urge major reforms to healthcare delivery and financing to mitigate an otherwise painful looming collision between demographically sensitive programs and other fiscal priorities.

In Saskatchewan, robust recent economic growth has avoided the squeeze of healthcare on provincial resources that has occurred in most of the rest of Canada. Publicly funded healthcare has fallen from 7.8 percent of provincial GDP in 1991 to about 5.9 percent in 2014. On the other hand, healthcare spending has risen from 38 percent of the provincial budget in 1991 to about 43 percent in 2014.

The good news, then, is that Saskatchewan has bucked the trend in most other provinces where the claim of healthcare spending on provincial resources has tended to rise. Even in Saskatchewan, however, healthcare's share of provincial program spending is up - and the above quotation from the 2014/15 budget signals a continuation of this trend. Although Saskatchewan's population is relatively young, we ask whether it faces significant future age-related cost pressures.

Mapping Today's Spending onto Tomorrow's Population

We address that question for the next 50 years based on a well-known, straightforward approach. We project Saskatchewan'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 in-migration from other provinces falling to zero over 10 years and net international in-migration continuing at a rate equivalent to the 1991-to-2013 average.

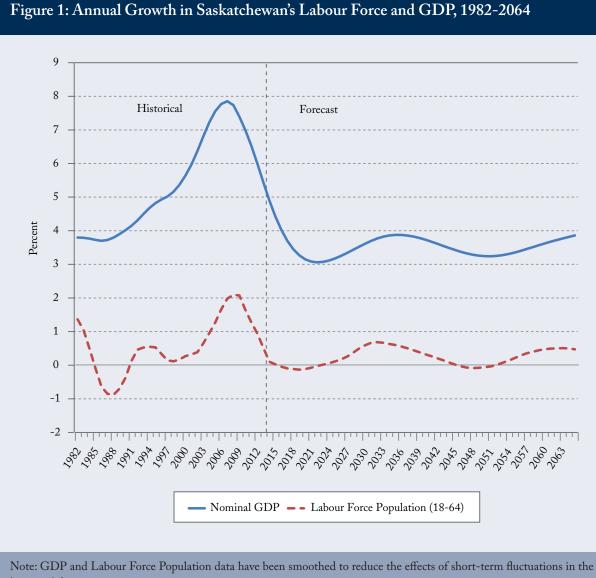
We then multiply the potential workforce, which we define as the provincial population age 18 to 64, by an index of output per potential worker. This index increases by 1.2 percent annually, the rate recorded by the equivalent national measure from 1991 to 2013. These calculations provide our model with real provincial gross domestic product (GDP) projections, which we convert into nominal dollars. (Nominal provincial GDP is real GDP times 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, Saskatchewan's tax base will grow more slowly than in prior years and further reduce Ontario's to accommodate growth in healthcare costs.

Turning to the cost pressures on healthcare, we project provincial spending for each sex in 20 age groups. Per-person expenditure for 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 by the publicly funded healthcare system, adjusted to remove the effects of inflation. Our base numbers for these per-person calculations are the Canadian Institute of Health Information's (CIHI) figures for 2012, pro-rated to match recent actual totals.¹

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

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



historical data.

Source: Authors' calculations as described in text.

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 a 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 resumed 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 seniors' benefits - multiplied by relevant populations

and price indexes to project future spending in these areas (Saskatchewan does not have significant child/ family-specific transfers, so we do not model them.). In this way, we can see whether these programs offset, or exacerbate, any fiscal challenge presented by healthcare. (Box 1 spells out our approaches for health and these other programs in more detail.)

Saskatchewan's Outlook: Trends and Implicit Liability

Our projections show Saskatchewan's public healthcare spending rising from 5.9 percent of provincial GDP this year to 7.6 percent in 2035 and to 10.2 percent in 2064. Taking account of other demographically sensitive programs does not dramatically change the picture. Saskatchewan's transfers to seniors are small. And in education, rising service intensity and an increasing student population results in projections for this part of the budget to eat up a larger chunk of the provincial GDP. Indeed, we project the GDP share of all demographically sensitive programs will increase from 11 percent to 17.1 percent over the 50-year period (Figure 2). For Saskatchewan to meet these demands from its own revenue sources would require the provincial income it collects to nearly double (1.7 times) the current level.

Most public discussion of healthcare and other programs emphasizes maintaining them – perhaps enhancing, but certainly not cutting. And the Saskatchewan government is not promising higher tax rates. These political understandings create an implicit liability on the government's balance sheet because meeting future commitments will require the government to tax a higher share of provincial income.²

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 provincial long-term bonds,³ Saskatchewan's implicit liability amounts to \$110 billion, more than 70 percent of which (\$79 billion) relates to healthcare (see Table 1).⁴ In other words, to cover the additional 50-year cost of these programs, the province would need more than \$110 billion in assets yielding income at the same rate as its long-term bonds— about 130 percent of provincial GDP or some \$100,000 per resident.

Policy Pressures and Responses

The debate over aging's impact on healthcare rages intensely partly because, implicitly and often explicitly, the two camps differ over the necessary size and scope of future changes to healthcare funding and delivery. The

² The parallel with explicit liabilities is straightforward: if Saskatchewan 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 Saskatchewan 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 8.6 percent of GDP in 2064 and the unfunded liability today would be \$88 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 14.3 percent of GDP in 2064 and the unfunded liability would be \$182 billion.

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 that output per person in the economy as a whole does. 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, and these are labour-intensive activities: 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 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, but rather products of 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 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.

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 is 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.

^{*} For more background on the methodology used and the terminology see Robson (2002) and Drummond and Burleton (2010).

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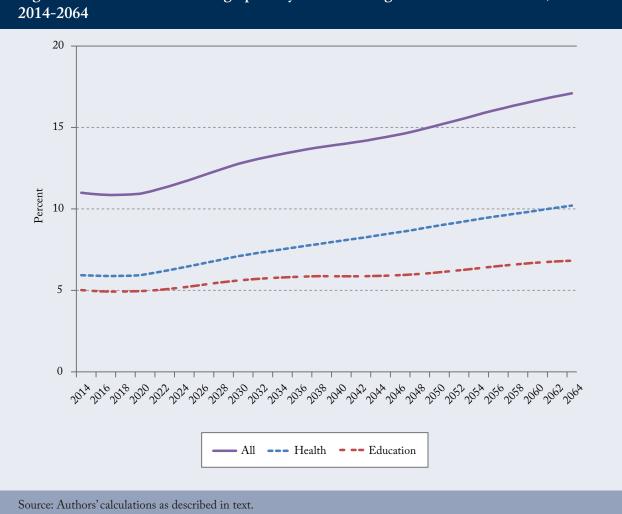


Figure 2: Saskatchewan's Demographically Sensitive Programs as a Share of GDP,

good news for Saskatchewan is that the fiscal stresses it faces appear to be less than those confronted by the rest of the country. Against this encouraging fact, however, there is some bad news.

First, as the government has noted, healthcare spending in Saskatchewan appears likely to rise both in absolute terms and as a share of provincial GDP. Also, Saskatchewan's relatively young population has a higher share of people of aboriginal background than other provinces. Our projections make no allowance for the fact that a growing proportion of the province's workforce will come from this part of the population that historically has a much lower propensity to participate in the mainstream economy and contribute to government revenues. In other words, absent any improvement in aboriginal educational and social achievements, we may have understated a key source of demographic pressure on the provincial budget (Guillemette and Robson 2007).

How might Saskatchewan seek to alleviate this looming pressure while getting more bang for the bucks it does spend in healthcare?

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

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Demographically Sensitive Programs										
Region	Health	Education	Elderly Benefits			All Programs Relative to GDP (2014)	All Programs per Person			
		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			
ON	1,194.2	194.0	1.5	-6.4	1,383.3	195	101,265			
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			

could - and, especially when the conversation is with 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 revenue 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. Saskatchewanites, like Canadians in other provinces, will be better able to hold their 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 Saskatchewan have almost tripled over that period.

If more federal transfers were the answer to provincial fiscal woes, this money should have eased their plight. Instead, a reasonable interpretation 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 Saskatchewan's case, any hope of substantial increases in federal transfers is especially forlorn because Saskatchewan has become a relatively prosperous province with relatively good prospects. As a scan of our results across the country in Table 1 reveals, similar – often worse – pressures will afflict all jurisdictions. Since any increases in net federal transfers to Saskatchewan 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 Saskatchewan should tackle on its own.

The Case for Prefunding

Turning to healthcare spending particularly, one way to mitigate the impact of rising costs in some services 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 many people can prepare for predictable expenses by building a provident fund during their younger years.

Like other provinces, Saskatchewan could selectively convert pay-as-you-go programs so that the babyboomers, rather than their declining number 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.⁵

⁵ Busby and Robson (2010) explore some prefunding possibilities and their mechanics in more detail.

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.

To the degree that healthcare spending is related to the last year of life, the tendency of people to live longer, healthier lives could mean that future Saskatchewanites will incur inevitable higher healthcare costs at a later age than today's, 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 Saskatchewan since CIHI's first data in 1998. While a comparison of the age profile of spending in 1998 to its counterpart in 2012 shows Saskatchewan has historically spent relatively less on its older population, the overall profile appears to have become more strongly geared to age (Figure 3). In other words, a 1998 projection of the influence of demography on Saskatchewan's healthcare spending by 2012 would have *under*-stated the impact of aging. Looking past the recent boom in the provincial economy and in Saskatchewan's government revenues, mitigating this impact will become more of a priority.

Two aspects of Saskatchewan's healthcare bundle are particularly sensitive to the pressures of aging: the province's senior-based drug program and long-term care for the elderly. Saskatchewan offers public drug benefits mainly to individuals aged 65 and up. Most people with employment-related or voluntary coverage drop their private insurance at age 65 and join the public plan. Combined with the tendency for drug use to rise after age 65, there is therefore likely to be demographic pressure on the fiscal sustainability of Saskatchewan's drug plan. One option to reduce that pressure would be to 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. It and other provinces, such as Quebec, offer lessons on how to design income-tested drug benefits (Busby and Pedde 2014).

Meanwhile, well over one-half of 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.

An expanded public role here, however, would exacerbate the transfer from young to old captured in Saskatchewan's implicit liability for healthcare. So the Saskatchewan government should clearly define 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 to absorb a meaningful share of the costs. 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).

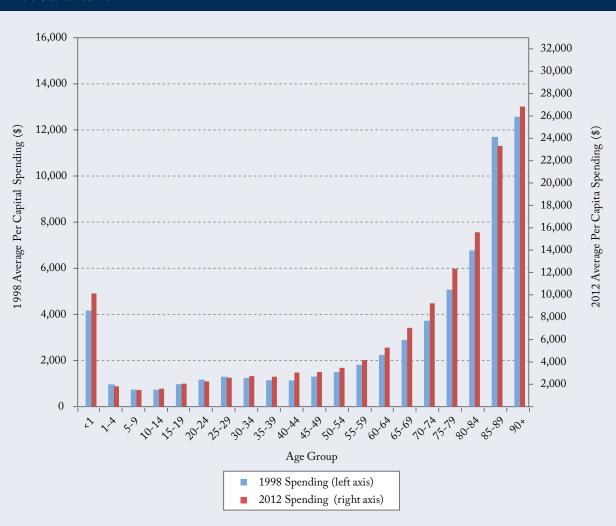


Figure 3: Average Per Capita Health Spending by Age Group in Saskatchewan, 1998 and 2012

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).

Accessible Reforms and Benchmarking Best Practices

Areas where Saskatchewanites might get more bang per healthcare buck are numerous. Areas that experts have identified as promising, in Saskatchewan as elsewhere, include:

- more coordinated team-based primary care models, giving patients 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, but of similar quality, from such medical providers as pharmacists and nurse practitioners instead of from more expensive physicians;

Table 2: Real Per Capita Health Spending, by Use of Funds, Saskatchewan vs. Other Provinces, 2012											
Region	Hospitals	Other Institutions	Physicians	Other Professionals	Drugs	Capital	Public Health	Admin	Other Health Spending	Total	
Per Capita Spending 2012 (in 2014 dollars)											
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	
ON	1,457	405	953	32	343	169	264	32	171	3,826	
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	
10 = lowest											
SK's Rank	8	4	4	3	4	7	1	6	3	5	

Notes: Spending figures from 2012 have been inflated using CIHI's Government Expenditure Implicit Price Index to their 2014 values. "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.

- better follow-up care for patients once they are discharged from hospital;
- "lean" management processes that minimize waste, of which Saskatchewan is seen to be a leader in Canada;
- improvements in, and more use of, non-institutional care for seniors with chronic conditions;
- 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. •

Turning to different delivery vehicles, Canada's provinces exhibit large variations in spending by category that may also yield insights for improvements. Saskatchewan spends less per capita than most provinces on capital and administrative costs (see Table 2 and Table 3). But Saskatchewan spends more on "public health," which includes items such as food and drug safety, health inspections, health promotion activities, community mental health programs, etc., than other provinces.

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

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Region	Hospitals	Other Institutions	Physicians	Other Professionals	Drugs	Capital	Public Health	Admin	Other Health Spending	Total	
	Real Annual Per Capita Spending Growth Rate (Percent)										
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	
ON	0.6	2.3	1.4	-0.1	4.0	4.6	5.5	0.0	1.3	1.6	
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	
10 = lowest											
SK's Rank	7	8	5	9	9	10	5	4	5	8	

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.

We are inclined to think that the province's priorities, as revealed by these comparisons, make sense for its circumstances. Saskatchewan's relatively low overall per capita health costs would support the arguments for making public health a greater priority everywhere. However, without more systematic efforts to analyze best practices in other provinces, such observations are mainly speculative and a thin basis for reallocating within the healthcare budget or between it and other fiscal priorities.

Closing Comments

Though it still has a relatively young population and its economy is fast-growing, Saskatchewan should nevertheless be concerned about the impact of demographic change on its future fiscal situation. Notwithstanding a relatively positive experience over the last decade, demographic change will squeeze Saskatchewan's budget.

Saskatchewan faces an implicit liability related to demographically sensitive programs that is larger than provincial GDP. Selective prefunding and benchmarking against other provinces that get better value for their spending in some areas can help Saskatchewan deliver high-quality healthcare in a sustainable fiscal framework for years to come.

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