RESEARCH LETTER

ONLINE FIRST | HEALTH CARE REFORM

Cost Control in a Parallel Universe: Medicare Spending in the United States and Canada

As the United States was implementing Medicare in 1966, Canada was phasing in its own Medicare program, which covered all Canadians under provincially administered plans. While these provincial plans varied, all incorporated significant payment reforms—global budgeting of hospitals and stringent capital expenditure controls—and banned copayments and deductibles.

Before the mid-1960s, the 2 nations' health care financing systems were similar, and health care costs were comparable.[1] Since then, overall US costs have grown more rapidly, but no study has compared spending for the elderly—the populations covered by Medicare in both nations.

Methods. We obtained official figures for Medicare spending for persons older than 64 years in Canada and the United States for 1971 (when Canadian Medicare became fully operational) through 2009. Since available Canadian data for 1971 through 1979 are less detailed, we focus principally on changes since 1980.

We adjusted Canadian figures for minor changes in government accounting. To avoid distorting time trends, we excluded Medicare Part D (which began in 2006).

We calculated percentage changes in inflation-adjusted spending per elderly enrollee and compared actual US Medicare expenditures in each year since 1980 (and 1971) with the projected level of expenditure had US Medicare spending increased at Canada's rate. See the eAppendix for further details (http://www.archinternmed.com).

Results. US Medicare spending per elderly enrollee rose from $1215 in 1980 to $9446 in 2009 (an inflation-adjusted 198.7% increase). The comparable increase for Canada was 73.0% (from $2141 to $9292). Canada's higher base-year spending reflects its more comprehensive benefits, covering about 80% of seniors' total health costs, vs about 50% in US Medicare.

The **Table** lists actual US Medicare spending from 1980 through 2009 and projected spending and savings had US costs risen at the lower Canadian rate. Projected savings totaled $154.2 billion in 2009 and $2.156 trillion for 1980 through 2009.

Table. Actual and Projected Medicare Spending Characteristics During the Study Period[a]

Year	Actual US Spending	Change From 1980 in Real Per Capita Spending for Persons Older Than 64 Years, %		Projected US Spending if Costs Had Risen at Canadian Rate	Projected US Savings if Costs Had Risen at Canadian Rate
		United States	Canada		
1980	31.0	NA	NA	31.0	NA
1981	37.7	8.3	4.2	34.4	3.4
1982	44.3	17.3	10.6	38.7	5.6
1983	50.0	25.6	12.7	38.9	11.1
1984	55.1	30.5	13.9	40.7	14.5
1985	62.0	38.7	17.5	43.1	18.9
1986	66.8	43.6	19.1	44.5	22.3
1987	71.0	44.2	21.9	50.2	20.8
1988	76.9	47.5	26.3	56.9	20.0
1989	87.3	57.0	28.3	59.7	27.6
1990	96.4	61.6	28.5	64.0	32.4
1991	105.5	66.9	31.0	69.8	35.7
1992	118.1	78.3	31.2	70.4	47.6
1993	130.1	88.0	27.0	67.4	62.7
1994	142.1	98.3	22.4	63.4	78.8
1995	158.6	112.9	19.6	60.8	97.7
1996	172.4	122.8	15.9	59.3	113.1
1997	183.9	131.0	17.6	63.2	120.7
1998	183.2	125.5	23.4	74.0	109.2
1999	181.9	118.3	26.9	83.9	98.0
2000	188.3	116.4	33.6	98.6	89.7
2001	207.7	130.7	39.3	108.1	99.6
2002	223.7	143.0	45.1	116.2	107.5
2003	234.7	146.9	48.2	125.4	109.4
2004	256.1	160.3	54.2	137.5	118.6
2005	277.3	169.2	56.1	149.3	128.0
2006	297.3	175.2	61.0	165.9	131.3
2007	314.8	178.6	63.0	179.7	135.1
2008	344.1	186.1	66.9	201.3	142.8
2009	366.2	198.7	73.0	212.0	154.2
Total, 1980-2009	**4764.3**	198.7	73.0	**2608.3**	**2156.1**

Abbreviation: NA, not applicable.
[a] Unless otherwise indicated, data are reported in billions of US dollars.

Medicare hospital spending per elderly enrollee grew 44.7% in Canada vs 81.9% in the United States. Physician spending grew 100.7% in Canada vs 274.3% in the United States. Hospitals' share of total Medicare spending fell from 49.6% to 41.5% in Canada and from 68.4% to 41.5% in the United States. Spending for other services (eg, home, hospice, and skilled nursing facility care) rose from 3.9% to 23.6% of spending in the United States and from 39.7% to 44.3% in Canada.

For the 1971-2009 period, US costs rose 374.1% vs 126.3% for Canada, and estimated foregone savings were $2.9024 trillion (eFigure).

Comment. Medicare spending has grown nearly 3 times faster in the United States than in Canada since 1980. Had US Medicare costs risen at Canadian rates, rather than a deficit of $17.1 billion in 2009, the Medicare Hospital Trust Fund would have realized a $32.3 billion surplus. Savings on Medicare Part B would have been even larger. By 2009, the $2.156 trillion in excess spending attributable to US Medicare's faster growth was equivalent to more than one-sixth of the national debt.

Several features of Canada's program help constrain costs. First, the single-payer system has simplified administration, holding administrative costs to 16.7% of overall spending vs 31.0% in the United States.[2] Although US Medicare's internal overhead costs are low, it remains one among many payers. Hence providers' administrative costs are inflated by having to deal with a multitude of payers and track eligibility, attribute costs, and bill for individual patients and services.

Second, Canadian hospitals receive prospectively determined global operating budgets, removing incentives to provide unnecessary care while simplifying billing and administration. However, unlike accountable care organization payment schemes in the United States, capital costs are not folded into the global budgets but distributed separately through an explicit health-planning process. Canadian hospitals cannot use operating surpluses to fund new buildings or equipment but must request separate capital appropriations. Hence, they cannot expand by overproviding lucrative services, gaming the payment system through upcoding, avoiding unprofitable patients, or cost shifting.

Third, 51% of Canada's physicians are primary care practitioners vs 32% in the United States.[3] Primary care–centered health systems are generally thriftier.[4] Canada's outpatient fee schedules are also less technology skewed than in the United States.

Fourth, Canada's provincial plans have used their concentrated purchasing power to limit drug and device prices.

Finally, litigation and malpractice costs have remained relatively low in Canada.

Life expectancy at age 65 years is longer and has grown faster in Canada than in the United States since 1980 (and 1971),[5] offering reassurance that cost control has not compromised quality. A meta-analysis suggests that clinical outcomes are, if anything, better for Canadians than for insured Americans.[6]

To some, US Medicare's grim financial health suggests an even grimmer conclusion: it can no longer keep its promise of all needed care for the elderly population.[7] Some would replace it with vouchers that seniors could use to purchase private coverage. Others suggest upending the current payment system by inverting volume-based incentives, offering instead profits to organizations that limit utilization. Yet the efficacy of these drastic solutions remains unproven.[8] Canada's road-tested cost-containment methods offer an alternative.

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Online-Only Material: The eAppendix, eFigure, and eReferences are available at http://www.archinternmed.com.

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Supplementary Online Content

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eAppendix. Methods: cost control in a parallel universe: Medicare spending in the U.S. and Canada
eFigure: Change since 1971 in inflation-adjusted Medicare spending per person over age 64, U.S. and Canada
eReferences: Bibliographic sources

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix

Methods: Cost Control in a Parallel Universe: Medicare Spending in the U.S. and Canada

We analyzed health spending in Canada and the U.S. from 1980 (the first year for which Canadian provincial government spending by age group is available) through 2009. We also performed supplemental analyses beginning in 1971, the year the Canadian program became operational in all provinces (the Northwest Territories and the Yukon – with about 0.5% of Canada's population - joined the program by the end of 1972).

For the U.S. we obtained figures from the Center for Medicare and Medicaid Services (CMS) Office of the Actuary on Medicare Part A and Part B spending, excluding payments for disabled and ESRD enrollees younger than 65. These figures also encompass Medicare Parts A and B payments to managed care organizations (MCOs). Since our analysis focuses on time trends, we excluded Medicare Part D because this new benefit was added in 2006.

For Canada, we calculated figures for per capita health spending for persons over 64 by provincial/territorial governments (hereinafter "provincial governments"), which disburse Medicare payments. Because no single data source provides figures covering the entire study period, we combined three sources. For 1998-2009, we obtained provincial government health spending figures for individual age groups from the Canadian Institute for Health Information (CIHI)[1]. For 1980-2000, Health Canada provided us with comparable data from a 2001 report[2]. Finally, our supplemental analyses of 1971-1980 are based on a 1982 Health and Welfare Canada report[3].

These three data sources, although all presenting official Canadian statistics, provide slightly different spending estimates. For instance, both the most recent (CIHI) and the oldest (Health and Welfare Canada) figures are for calendar years, while the intermediate data (from Health Canada) tabulated figures for fiscal years ending March 31. Fortunately, the data sources include overlapping years – 1980-81 and 1998-2000 - allowing us to verify that, as expected, the calendar year figures closely approximate the figures for the fiscal year that overlap for 9 of the 12 months. For instance, Health Canada's estimate that spending for fiscal 1999-2000 was $1,928 per capita resembles CIHI's calendar year 1999 estimate of $1,919.

The CIHI and Health Canada breakdowns by individual age groups showed greater divergence in absolute terms, but their estimates of the percentage change in year-to-year per capita spending were closely similar. For this reason, we based our calculation of the percentage change in per capita spending for the elderly on the yearly percentage changes, not the absolute dollar figures.

The data for the years before 1980 that served as the basis for our supplemental analyses was less detailed than that for 1980-2009. For instance, the 1971-1974 data did not separate provincial from other (federal and local) government spending. Hence, for these years we estimated provincial spending by adjusting the reported total government spending by the average ratio of provincial:total government spending (.938347) from 1975-1980[2]. In addition, because the 1971-1979 data did not include figures for individual age groups, we used an estimation procedure to calculate per elder spending from per capita expenditures for all age groups combined based upon the following formula:

$$Pelderly = Pall \div (POPSHAREelderly + R \times POPSHAREnonelderly)$$

Where: *Pelderly* = Per elder spending
Pall = Per capita spending, all ages combined
POPSHAREelderly = Proportion of population > 64
POPSHAREnonelderly = Proportion of population < 65
R = per capita spending for the non elderly in 1980/per capita health spending for the elderly in 1980

This calculation adjusts for the aging of the population over time, and assumes that per capita health costs rose at the same rate for the elderly and non-elderly.

When we present dollar figures in the text for illustrative purposes, we adjust the data for years prior to 1998 by the average percent difference in the CIHI and Health Canada data sources for the three

years for which overlapping data were available, and present the figures in U.S. dollars adjusted for purchasing power parity.

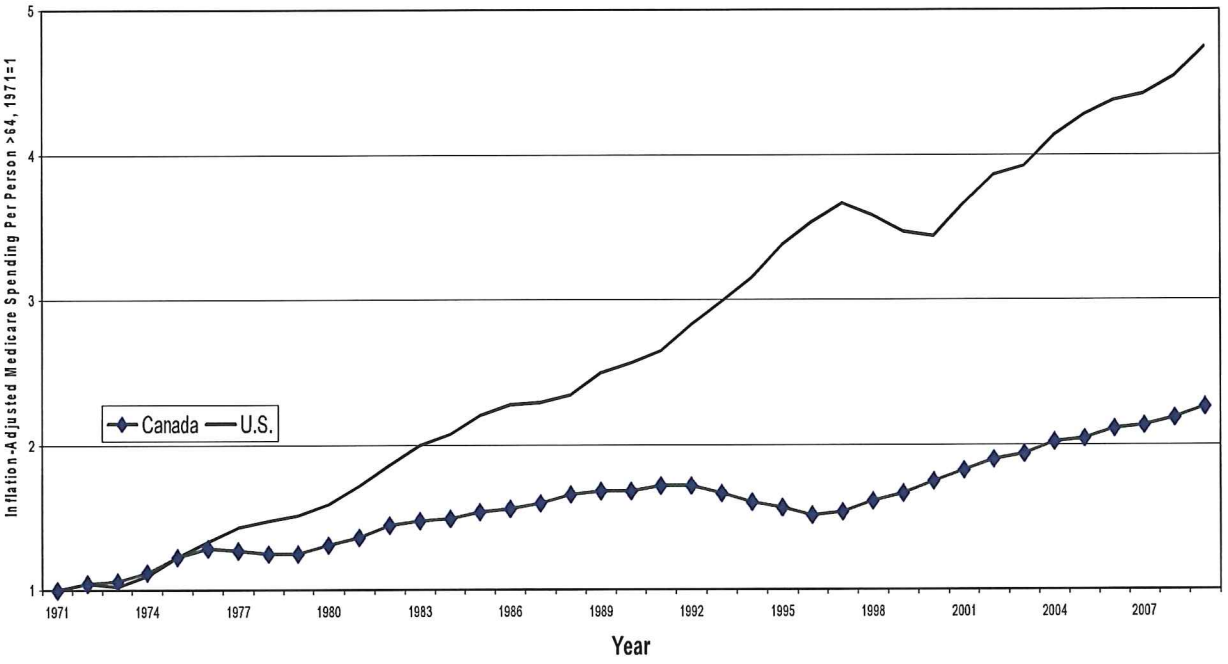
We first calculated the percentage change between 1980 and 2009 in per capita spending for the elderly in each nation and then adjusted for inflation using each country's consumer price index. We then compared actual U.S. Medicare expenditures in each year since 1980 to the level of expenditure that would have occurred had U.S. Medicare spending per elderly enrollee increased at the same rate as the actual rate of increase in Canada. We present projected savings for each year, as well as cumulative savings for 1981-2009.

We also analyzed time trends in hospital and physician spending, the two largest components of Medicare. To assess Medicare hospital spending for the elderly in the U.S. we added Medicare Part A hospital spending and the portion of Part A payments to MCOs attributable to hospital costs, assuming that hospital costs account for the same proportion of Part A payments for Medicare MCO enrollees (excluding hospice costs, which MCOs don't cover) as for fee-for-service Medicare enrollees. For instance, in 2009, hospital payments accounted for 77.7% of fee-for-service Part A Medicare expenditures for elderly enrollees, excluding hospice costs. Hence, we estimated that 77.7% of the $59.4 billion in Part A payments to MCOs plans was for hospital care. For Canada, we used Health Canada and CIHI figures for provincial spending for hospitals on behalf of the elderly.

For our analysis of U.S. Medicare's expenditures for physician services, we included Part B payments for physicians' fees at any site (including hospital outpatient departments), as well as services such as laboratory testing and drug administration that occurred in doctors' offices. We excluded Part B expenditures for durable medical equipment, home health, hospital laboratory services, and "other intermediary services". We estimated physicians' share of Part B payments to MCOs in a similar manner to that described above for hospitals. For Canada, we used figures for provincial spending for physician services in Canada.

Finally, we performed supplemental analyses repeating the calculations of the growth in total Medicare spending in the two nations using 1971 rather than 1980 as the base year.

eFigure: Change since 1971 in inflation-adjusted Medicare spending per person over age 64, U.S. and Canada



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