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Market solutions to public policy problems

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Value for Money from Health Insurance Systems in Canada and the OECD

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Conclusions and recommendations

- Canada ranks 6th highest for health spending, yet ranks between 7th and 21st in 16 out of 18 indicators measuring availability of medical resources and services.

- The countries that ranked above Canada in the availability of medical resources and services had some or all of the following policies in common: (1) consumer/patient cost sharing is required for publicly funded medical goods and services; (2) medical goods and services are financed through some form of public-private social insurance (usually pluralistic) where individuals and employers make direct and significant contributions to premium costs; (3) comprehensive private health insurance options are permitted; (4) private for-profit hospitals are permitted to bill public health insurers for services.

- The federal government should temporarily suspend enforcement of the Canada Health Act to allow the provinces to experiment with policy changes of the type common to other OECD countries, to determine empirically whether the health insurance system would improve if similar policies were permanently adopted by the provinces. The provinces should engage in five-year, population-wide comprehensive trials of the policies enumerated above.

Measuring value for money

This paper compares the economic performance of Canada's health insurance system against the health insurance systems of 27 other countries that are members of the Organisation for Economic Co-operation and Development (OECD).[1] Economic performance is defined by the availability of medical resources and the output of medical services, as well as the associated level of national health spending as a percentage of GDP. The value for money produced by a country's health insurance system is defined relative to the economic performance of the health insurance systems of its international peers . Our analysis uses the most recent internationally comparable data reported to the OECD by its member countries, current to the year 2007, for the 28 OECD countries reporting sufficient data for comparison.

Health spending compared to medical resources and output

Table 1 displays a summary of Canada's rank on health spending, as well as the country's rank in each of 18 indicators of the availability of medical resources and the level of medical output.[2] According to the most recent internationally comparable data from 2007 (table 2), Canada had the sixth most expensive health care system (defined by total health spending as a percentage of GDP) among OECD countries without adjusting for differences in the population age distributions between countries. Despite being ranked as the sixth most expensive health insurance system in the world in 2007, Canada ranked below the majority of the other 27 OECD countries in almost every indicator of medical resource availability and the output of medical services for which comparable data were available.

Table 1: Canada's rank on spending compared to its rank on available medical resources and output indicators among OECD countries, 2007

6th in overall spending among 28 OECD countries
tied for **20th** (out of 22 countries) for number of practising physicians per 1,000 population
17th (out of 26 countries) for number of CT scanners per million population
17th (out of 25 countries) for number of MRI units per million population
11th (out of 22 countries) for number of mammographs per million population
tied for **18th** (out of 21 countries) for number of lithotriptors per million population
tied for **19th** (out of 26 countries) for number of curative care beds per 1,000 population
4th (out of 27 countries) for number of cataract surgeries performed per 100,000 population
17th (out of 25 countries) for number of tonsillectomy procedures per 100,000 population
21st (out of 26 countries) for number of percutaneous coronary interventions (PTCA, stenting) procedures per 100,000 population
9th (out of 27 countries) for number of coronary bypass procedures per 100,000 population
19th (out of 25 countries) for number of appendectomy procedures per 100,000 population
7th (out of 23 countries) for number of cholecystectomy procedures per 100,000 population
5th (out of 21 countries) for number of laparoscopic cholecystectomy procedures per 100,000 population
13th (out of 25) for number of hysterectomy (vaginal) procedures per 100,000 population
tied for **9th** (out of 27 countries) for number of caesarean section procedures per 100,000 population
21st (out of 27 countries) for number of hip replacement procedures per 100,000 population
9th (out of 23 countries) for number of knee replacement procedures per 100,000 population
14th (out of 26 countries) for number of mastectomy procedures per 100,000 population

Sources: OECD, 2010a; calculations by authors.

In table 3, each indicator has the OECD countries (where data is available) ranked in terms of output (from high to low) with the OECD average displayed. Data for Canada are highlighted in red and it is clear that the number of medical outputs in Canada is well below the OECD average for the majority of indicators observed in this analysis.

As shown in table 3, the number of medical resources and outputs available (including procedures performed) in Canada was above the OECD average in only one third of all 18 indicators: cataract surgeries (4th out of 27 countries), coronary bypass surgeries (9th out of 27 countries), cholecystectomies (7th out of 23 countries), laparoscopic cholecystectomies (5th out of 21 countries), caesarean sections (9th out of 27 countries), and knee replacement surgeries (9th out of 23 countries). In the remaining 12 indicators, Canada was below the OECD average and ranked below par in every case. Canada ranked particularly low on the number of practicing physicians (20th out of 22 countries), the number of lithotriptors per population (tied for 18th out of 21 countries), the number of percutaneous coronary interventions (21st out of 26 countries), the number of appendectomies performed (19th out of 25 countries), and the number of hip replacements performed (21st out of 27 countries). Overall, Canada ranked low relative to the other 27 OECD countries in terms of the number of medical resources and outputs, yet ranked relatively high in terms of spending.

Table 2: Total health spending as a percentage of GDP among 28 OECD countries, 2007

1	United States	15.7	15	Norway	8.9
2	France	11.0	16	Italy	8.7
3	Switzerland	10.6	17	Australia	8.5
4	Germany	10.4	18	Spain	8.4
5	Austria	10.3	19	United Kingdom	8.4
6	**Canada**	**10.1**	20	Finland	8.2
7	Belgium	10.0	21	Israel	7.8
8	Portugal	9.9	22	Slovenia	7.8
9	Denmark	9.7	23	Ireland	7.5
10	Greece	9.7	24	Hungary	7.4
11	Netherlands	9.7	25	Luxembourg	7.2
12	Iceland	9.1	26	Czech Republic	6.8
13	New Zealand	9.1	27	Poland	6.4
14	Sweden	9.1	28	Korea	6.3

Source: OECD, 2010a.

Age adjustments

Adjusting for age makes aggregate health-spending data more comparable between countries with different age-distribution profiles. Age is linked to health expenditures. Research indicates that 50% of lifetime per-capita health expenditures occur after the age of 65 (Brimacombe et al., 2001). According to 2007 data published by the CIHI on provincial and territorial government health-care spending by age group, Canadians younger than the age of 1 cost an estimated $8,239 per person. From youths age 1 to adults age 64, spending averaged less than $3,700 per person. There was a pronounced increase in per-capita spending in the senior age groups: $5,588 for those aged 65 to 69; $7,732 for ages 70 to 74; $10,469 for ages 75 to 79; and $19,351 for those aged 80 and older (CIHI, 2009). Similarly, data from the OECD confirms that health expenditures on seniors are significantly higher than per-capita spending in general (OECD, 2008). Countries with younger populations should therefore be expected to spend proportionally less because there should be less demand for medical goods and services. A comparison of spending that does not adjust for the age characteristics of a population can result in an underestimation of what the real level of spending would be for countries with younger populations if all countries had the same age-distribution profiles (Skinner, 2009: 24). In the comparison of value for money in this paper, the data are unadjusted for age because spending is either not correlated with age in all of the separate indicators of medical spending for which data are available for international comparison, or because the spending associated with some indicators could be individually correlated with younger ages in the population (e.g., expenditures related to women and children during birth). Also, when spending is presented alongside resources and outputs, age adjustment must be done to both sides of the cost-benefit equation. On one side, failing to adjust data for the population's age distribution might understate the real level of spending for countries with younger populations. On the other side, failing to adjust the data for age will understate the real level of resources and output supplied by a health insurance system for countries with younger populations. Adjusting both sides is redundant because the adjustments cancel each other out in any consideration of value for money.

Table 3: Canada's rank among 18 medical resources and output indicators in OECD countries, 2007 (or most recent data available)

Practising physicians

per 1,000 population
22 Countries

1	Austria	4.5
2	Belgium	4.0
3	Norway	3.9
4	Switzerland	3.8
5	Iceland	3.7
5	Spain	3.7
7	Sweden	3.6
7	Czech Republic	3.6
9	Germany	3.5
9	Israel	3.5
11	Denmark	3.4
12	Australia	3.0
13	Luxembourg	2.8
13	Hungary	2.8
15	Finland	2.7
16	United Kingdom	2.5
17	United States	2.4
17	Slovenia	2.4
19	New Zealand	2.3
20	**Canada**	**2.2**
20	Poland	2.2
22	Korea	1.7
	OECD AVERAGE	3.1

Source: OECD, 2010a.

CT scanners

per million population
26 countries

1	Australia	56.0
2	Korea	37.1
3	United States	34.3
4	Iceland	32.1
5	Switzerland	31.4
6	Italy	31.0
7	Austria	29.9
8	Greece	28.9
9	Luxembourg	27.1
10	Portugal	26.0
11	Denmark	18.5
12	Finland	16.5
13	Germany	16.3
14	Spain	14.6
15	Ireland	14.3
16	Czech Republic	12.9
17	**Canada**	**12.7**
18	Belgium	12.6
19	New Zealand	12.3
20	Slovenia	10.9
21	France	10.2
22	Poland	9.7
23	Netherlands	7.8
24	United Kingdom	7.6
25	Hungary	7.3
26	Israel	7.2
	OECD AVERAGE	20.2

Source: OECD, 2010a.

MRI units

per million population
25 countries

1	United States	25.9
2	Italy	20.0
3	Iceland	19.3
4	Greece	17.9
5	Austria	17.7
6	Korea	16.0
7	Finland	15.3
8	Switzerland	14.0
9	Luxembourg	10.4
10	Spain	9.3
11	Portugal	8.9
12	New Zealand	8.8
13	Ireland	8.5
14	Germany	8.2
15	Netherlands	7.6
16	Belgium	7.5
17	**Canada**	**6.7**
18	United Kingdom	5.6
18	France	5.6
20	Australia	5.1
21	Czech Republic	4.4
22	Slovenia	3.5
23	Hungary	2.8
24	Poland	2.7
25	Israel	1.9
	OECD AVERAGE	10.1

Source: OECD, 2010a.

Table 3, continued: Canada's rank among 18 medical resources and output indicators in OECD countries, 2007 (or most recent data available)

Mammographs

per million population
22 countries

1	Greece	42.8
2	Korea	41.9
3	United States	40.1
4	Portugal	35.4
5	Finland	34.8
6	Switzerland	32.0
7	Italy	30.3
8	New Zealand	27.7
9	Australia	24.1
10	Luxembourg	22.9
11	**Canada**	**21.3**
12	Belgium	19.6
13	Slovenia	18.9
14	Poland	16.5
15	Iceland	16.1
16	Ireland	14.3
17	Hungary	14.1
18	Czech Republic	13.5
19	Denmark	10.8
20	Spain	10.7
21	United Kingdom	8.5
22	Netherlands	3.9
	OECD AVERAGE	22.7

Source: OECD, 2010a.

Lithotriptors

per million population
21 countries

1	Korea	12.4
2	Switzerland	4.9
3	Belgium	4.6
4	Germany	3.9
4	Poland	3.9
6	Czech Republic	3.2
6	Iceland	3.2
8	Portugal	3.0
9	Luxembourg	2.1
10	Spain	2.0
11	Austria	1.9
11	Greece	1.9
13	Hungary	1.6
13	Netherlands	1.6
15	France	1.5
16	Ireland	1.2
17	Australia	0.9
18	**Canada**	**0.6**
18	Finland	0.6
18	Israel	0.6
21	New Zealand	0.5
21	Slovenia	0.5
	OECD AVERAGE	2.6

Source: OECD, 2010a.

Curative care beds

per 1,000 population
26 countries

1	Austria	5.7
1	Germany	5.7
3	Czech Republic	5.2
4	Korea	5.1
5	Poland	4.6
6	Luxembourg	4.4
7	Belgium	4.3
8	Hungary	4.1
9	Greece	4.0
10	Slovenia	3.8
11	France	3.6
12	Australia (2006)	3.5
12	Switzerland	3.5
14	Denmark	3.1
14	Italy	3.1
16	Netherlands	2.9
17	Portugal	2.8
17	United Kingdom	2.8
19	**Canada**	**2.7**
19	Ireland	2.7
19	Norway	2.7
19	United States	2.7
23	Spain	2.5
24	Sweden (2005)	2.2
25	Israel	2.1
26	Finland	2.0
	OECD AVERAGE	3.5

Source: OECD, 2010a.

Table 3, continued: Canada's rank among 18 medical resources and output indicators in OECD countries, 2007 (or most recent data available)

Cataract surgery

per 100,000 population
27 countries

1	United States (2006)	1,889.3
2	Belgium	1,847.8
3	Spain	1,142.9
4	**Canada**	**1,041.6**
5	Greece (2006)	981.3
6	France	914.0
7	Australia	898.6
8	Italy	895.9
9	Luxembourg	863.8
10	Austria	809.0
11	Netherlands	806.8
12	Sweden	790.4
13	Czech Republic	789.2
14	Portugal	742.3
15	Finland	717.8
16	United Kingdom	631.9
17	Korea	631.1
18	Hungary	630.8
19	Denmark	544.1
20	Slovenia	541.8
21	Iceland	516.7
22	Norway	475.2
23	Switzerland	422.3
24	Israel	356.2
25	New Zealand	283.2
26	Poland	253.4
27	Ireland	211.6
	OECD AVERAGE	764.0

Source: OECD, 2010a.

Tonsillectomy

per 100,000 population
25 countries

1	Norway	298.0
2	Luxembourg	269.8
3	Netherlands	257.9
4	United States (2006)	254.1
5	Iceland	252.7
6	Sweden	242.0
7	Belgium	234.0
8	Denmark	201.1
9	Australia	196.3
10	Hungary	168.0
11	Greece (2006)	160.9
12	Finland	155.2
13	Austria	151.2
14	Switzerland	125.2
15	Israel	121.6
16	France	119.9
17	**Canada**	**112.8**
18	United Kingdom	108.0
19	New Zealand	104.3
20	Ireland	104.0
21	Korea	88.3
22	Italy	88.1
23	Portugal	75.5
24	Spain	53.9
25	Slovenia	53.0
	OECD AVERAGE	159.8

Source: OECD, 2010a.

Percutaneous coronary interventions (PTCA, stenting)

per 100,000 population (in-patient)
26 countries

1	Germany	550.2
2	United States (2006)	436.8
3	Belgium	427.3
4	Italy	384.2
5	Norway	287.3
6	Spain	252.9
7	Czech Republic	247.6
8	Israel	238.9
9	Austria	230.7
10	Iceland	212.6
11	Poland	206.3
12	France	185.4
13	Slovenia	183.5
14	Greece	183.1
15	Denmark	180.4
16	Australia	160.4
17	Hungary	156.0
18	Luxembourg	142.9
19	Netherlands	140.3
20	Finland	136.6
21	**Canada**	**118.1**
22	Switzerland	113.3
23	New Zealand	108.2
24	Portugal	100.3
25	United Kingdom	92.5
26	Ireland	87.0
	OECD AVERAGE	214.0

Source: OECD, 2010a.

Table 3, continued: Canada's rank among 18 medical resources and output indicators in OECD countries, 2007 (or most recent data available

Coronary bypass

per 100,000 population
27 countries

1	Germany	131.8
2	Belgium	131.4
3	United States (2006)	84.5
4	Norway (2006)	81.0
5	Denmark	80.5
6	New Zealand	77.5
7	Australia	71.8
8	Italy	70.7
9	**Canada**	**68.9**
10	Slovenia	62.8
11	Czech Republic	62.4
12	Luxembourg	61.3
13	Iceland	59.7
14	Netherlands	58.2
15	Finland	57.7
16	Israel	56.5
17	Sweden	56.4
18	Poland	52.6
19	Austria	51.6
20	United Kingdom	45.7
21	Portugal	43.0
22	Ireland	40.5
23	Hungary	36.3
24	France	30.9
25	Switzerland	30.8
26	Spain	29.3
27	Korea	6.9
	OECD AVERAGE	60.8

Source: OECD, 2010a.

Appendectomy

per 100,000 population
25 countries

1	Austria	184.9
2	Germany	157.0
3	Ireland	148.6
4	France	148.3
5	Australia	143.3
6	Iceland	139.7
7	Belgium	136.3
8	Switzerland	134.1
9	Luxembourg	130.0
10	New Zealand	127.6
11	Israel	127.2
12	Norway	120.2
13	Finland	116.1
14	Slovenia	113.5
15	United States (2006)	111.8
16	Sweden	106.6
17	Denmark	100.4
18	Spain	99.1
19	**Canada**	**98.6**
20	Portugal	94.2
21	Italy	92.4
22	Netherlands	91.8
23	United Kingdom	91.0
24	Hungary	90.4
25	Poland	80.5
	OECD AVERAGE	119.3

Source: OECD, 2010a.

Cholecystectomy

per 100,000 population
23 countries

1	Greece (2006)	361.3
2	United States (2006)	306.6
3	Slovenia	231.5
4	Hungary	226.4
5	Australia	225.2
6	Belgium	204.3
7	**Canada**	**200.4**
8	Italy	198.6
9	France	180.3
10	Luxembourg	170.8
11	Poland	163.8
12	Switzerland	158.6
13	Portugal	152.5
14	Netherlands	150.0
15	Israel	144.8
16	Spain	139.3
17	Finland	137.1
18	United Kingdom	125.1
19	Denmark	122.1
20	Ireland	109.2
21	New Zealand	106.1
22	Norway	100.0
23	Austria	35.1
	OECD AVERAGE	171.7

Source: OECD, 2010a.

Table 3, continued: Canada's rank among 18 medical resources and output indicators in OECD countries, 2007 (or most recent data available)

Laparoscopic cholecystectomy

per 100,000 population
21 countries

1	United States (2006)	274.8
2	Australia	199.0
3	Slovenia	198.1
4	Austria	188.2
5	**Canada**	**181.7**
6	Hungary	181.2
7	Belgium	178.3
8	Italy	155.4
9	France	152.1
10	Switzerland	143.8
11	Israel	132.8
12	Netherlands	129.9
13	Finland	114.8
14	Portugal	108.4
15	Denmark	106.9
16	Spain	101.8
17	Ireland	98.8
18	Sweden	98.0
19	United Kingdom	91.5
20	New Zealand	89.2
21	Norway	89.0
	OECD AVERAGE	143.5

Source: OECD, 2010a.

Hysterectomy (vaginal)

per 100,000 population
25 countries

1	Korea	403
2	Luxembourg	275
3	Finland	241
4	Austria	227
5	Norway	208
6	Germany	199
7	Sweden	183
8	Poland	154
9	Belgium	141
10	Australia	136
11	Switzerland	131
12	United States (2006)	122
13	**Canada**	**91**
14	Netherlands	88
15	Slovenia	84
16	Iceland	76
17	Italy	72
18	Denmark	60
19	United Kingdom	59
20	Spain	55
21	New Zealand	47
22	Ireland	45
23	Portugal	41
24	Hungary	36
25	Israel	34
	OECD AVERAGE	128

Source: OECD, 2010a.

Caesarean section

per 100,000 population
27 countries

1	United States (2006)	871
2	Australia	843
3	Israel	813
4	Ireland	800
5	Italy	725
6	Korea	723
7	New Zealand	689
8	United Kingdom	594
9	**Canada**	**589**
9	Switzerland	589
11	Luxembourg	575
12	Spain	548
13	Hungary	528
14	Iceland	505
15	Portugal	500
16	Denmark	497
17	France	496
18	Austria	473
19	Germany	463
20	Belgium	440
21	Czech Republic	425
22	Norway	418
23	Sweden	405
24	Poland	371
25	Finland	348
26	Slovenia	323
27	Netherlands	305
	OECD AVERAGE	550

Source: OECD, 2010a.

Table 3, continued: Canada's rank among 18 medical resources and output indicators in OECD countries, 2007 (or most recent data available)

Hip replacement

per 100,000 population
27 countries

1	Germany	280.2
2	Belgium	240.0
3	Austria	236.0
4	Switzerland	232.0
5	Norway	230.7
6	France	217.7
7	Luxembourg	217.3
8	Sweden	206.7
9	Netherlands	205.1
10	Denmark	199.6
11	United Kingdom	187.4
12	Finland	181.2
13	Slovenia	168.6
14	United States (2006)	161.9
15	Australia	155.4
16	Iceland	153.8
17	Italy	153.6
18	New Zealand	149.2
19	Greece (2006)	139.8
20	Ireland	130.7
21	**Canada**	**120.5**
22	Spain	96.8
23	Hungary	91.3
24	Portugal	81.0
25	Israel	55.7
26	Poland	33.0
27	Korea	15.5
	OECD AVERAGE	160.8

Source: OECD, 2010a.

Knee replacement

per 100,000 population
23 countries

1	Germany	194.0
2	United States (2006)	183.1
3	Austria	180.9
4	Switzerland	178.2
5	Finland	171.1
6	Belgium	167.7
7	Australia	158.1
8	Luxembourg	154.8
9	**Canada**	**141.5**
10	United Kingdom	138.7
11	Netherlands	119.4
12	Sweden	110.1
13	France	109.5
14	Iceland	106.6
15	New Zealand	103.5
16	Spain	101.8
17	Italy	96.5
18	Korea	78.9
19	Slovenia	60.9
20	Israel	47.8
21	Portugal	46.4
22	Ireland	44.2
23	Hungary	42.6
	OECD AVERAGE	119.0

Source: OECD, 2010a.

Mastectomy

per 100,000 population
26 countries

1	Finland	89
2	Belgium	87
3	Netherlands	84
4	Denmark	83
5	Sweden	81
6	Korea	72
7	Australia	71
8	Germany	70
8	Norway	70
10	Luxembourg	68
10	United Kingdom	68
12	France	61
13	Switzerland	59
14	**Canada**	**54**
15	Austria	53
15	Italy	53
17	New Zealand	51
17	Portugal	51
19	Israel	48
20	Slovenia	46
21	Iceland	45
21	Ireland	45
21	Spain	45
24	Hungary	43
25	United States (2006)	40
26	Poland	38
	OECD AVERAGE	61

Source: OECD, 2010a.

How is health insurance funded in the OECD?

Table 4 shows which countries require various types of consumer co-payments for publicly funded medical goods and services; which allow private for-profit hospitals to bill public insurers; and which allow their population to purchase private comprehensive medical insurance. In 2007, Canada was only one of four among the 28 OECD countries that do not require cost sharing for services performed in publicly funded hospitals, by general physicians or specialists. The other three countries are Denmark, Spain, and the United Kingdom. The other 24 OECD countries observed in this study require some type of cost-sharing by consumers and patients for the use of publicly funded care in hospitals, by general practitioners, and/or by specialists. In addition, Canada is the only country among the 28 where private comprehensive medical insurance is effectively prohibited. In Canada, private insurance is only permitted to cover goods and services that are not covered by the universal government-run health insurance plan, which, in practice, are mainly dental services and prescription drugs.

Table 4: Parallel private medical insurance and patient cost-sharing for publicly funded health care in OECD countries, 2009

	Consumer/patient cost sharing required for publicly funded health care goods and services				Private for-profit hospitals billing public insurer	Private comprehensive medical insurance available
	Hospitals	GPs	Specialists	Prescription drugs		
Australia	•	•	•	•		•
Austria	•	•	•	•	•	•
Belgium	•	•	•	•		•
Canada				•		
Czech Republic	•	•	•	•	•	•
Denmark				•	•	•
Finland	•	•	•	•	•	•
France	•	•	•	•	•	•
Germany	•	•	•	•	•	•
Greece	•	•	•	•	•	•
Hungary	•	•	•	•		•
Iceland		•	•	•		•
Ireland	•	•	•	•	•	•
Israel	•	•	•	•		•
Italy			•	•	•	•
Korea	•	•	•	•	•	•
Luxembourg	•	•	•	•		•
Netherlands	•	•	•	•	•	•
New Zealand		•	•	•		•
Norway		•	•	•	•	•
Poland	•	•	•	•		•
Portugal	•	•	•	•	•	•
Slovenia	•	•	•	•		•
Spain				•	•	•
Sweden	•	•	•	•	•	•
Switzerland	•	•	•	•	•	•
United Kingdom				•		•
United States	•	•	•	•	•	•

Sources: OECD. 2010a; European Observatory on Health Systems and Policies, 2010; Tamez and Molina, 2000.

Pluralistic public-private social insurance approaches to financing health insurance are common among OECD countries. Based on the most recently available data, table 5 ranks the 28 OECD countries in ascending order according to the degree to which a country relies upon a pluralistic public-private social-insurance approach in order to achieve universal health insurance coverage for its population. In 2007, 1.4% of total health expenditures in Canada were allocated through public-private social-insurance plans (for example, workers' safety insurance). This was significantly below the OECD average of 34.1%. In contrast, direct government spending on public health and health insurance made up 68.9% of total health expenditures in Canada; this was significantly higher than the OECD average of 38.2%. Direct spending through fully private health insurance in Canada made up 12.6% of total health expenditures compared to the OECD average of 6.8%. It is important to note, however, that private insurance spending in Canada is not directly comparable to that in the rest of the OECD because private insurance in Canada does not cover hospital or physician services and is almost entirely limited to dental services and prescription medicines. In other OECD countries, private insurance is permitted to cover drugs, dental, hospital and physician services. The same is also true of public health insurance in Canada, which is limited to hospitals and physicians, while excluding drugs and dental, making the Canadian system far less comprehensive in its coverage than the public systems of the other OECD members studied. Finally, in terms of personal payments (out-of-pocket payments) for medical services as a percent of total health expenditures, Canada (14.7%) was below the OECD average (17.6%).

Luxembourg—social insurance, retroactive reimbursement, patient cost sharing

Luxembourg provides useful lessons for reform in Canada. Luxembourg shows the largest net beneficial difference between spending and output ranks (table 2). Luxembourg ranked 25th (7.2% of GDP) in terms of health care spending, yet ranked comparatively high on the majority of indicators for medical resources and outputs. As table 3 shows, Luxembourg ranked higher than Canada in 13 out of 17 indicators where data was available.[3]

Luxembourg has a social insurance system: 60% of total health insurance costs are paid by compulsory contributions from employers and individuals. Yet, Luxembourg's system is unique because it is not pluralistic like other social insurance systems in the OECD. The most probable explanation for this is that the country's small population reduces the feasibility of sustainable risk-pooling across more than one insurer. In 2008, Luxembourg had a population of 471,000 (second least-populated country after Iceland with a population of 319,000), while the OECD average was 35,712,941 (OECD, 2010a).

Health insurance is compulsory in Luxembourg and covers 99% of the population. The population that is not covered under compulsory health insurance includes civil servants and government employees from other European countries and unemployed individuals who are not receiving a public pension or unemployment benefits (European Observatory on Health Care Systems, 1999).

Compulsory insurance is financed by contributions from tax-financed payments by government (up to 40% of the total), as well as direct contributions from employers (30% of the total) and from individuals (approximately 30%). Employers' contributions vary among sectors and industries; however, they usually contribute an amount equal to that paid by their employees. Individual contributions are calculated as a percentage of gross income (up to a maximum amount). Individuals below a minimum threshold (based on means testing) do not have to contribute to the health insurance fund.

An important aspect of Luxembourg's health insurance system is that patients are required to pay the full price of medical services that they obtain (whether from a hospital or a physician) at the point of service, which is subsequently reimbursed, minus any co-payment. Patients are also required to make co-payments when visiting hospitals, GPs, and specialists.

Table 5: Health care financing, by source, percentage of total health expenditure (THEX), in 28 OECD countries, 2007

	Social health insurance, % of THEX	Public health and gov't insurance, % of THEX	Private insurance, % of THEX	Out of pocket payment, % of THEX
Denmark	0.0	80.2	1.6	13.8
Australia	0.0	67.5	7.8	18.0
Italy	0.1	76.2	1.0	20.1
Ireland	0.6	76.1	8.2	14.1
Portugal	0.8	70.7	4.1	22.9
Canada	**1.4**	**68.9**	**12.6**	**14.7**
Spain	5.0	66.8	5.9	21.0
New Zealand	9.1	70.7	4.9	14.3
Norway	12.0	72.1	—	15.1
United States	12.7	32.8	34.6	12.3
Finland	14.5	60.0	2.1	19.0
Iceland	27.0	55.5	—	16.0
Greece	31.2	29.1	—	—
Israel	38.9	15.5	6.1	27.2
Korea	42.4	12.8	3.9	35.5
Switzerland	42.9	16.2	9.2	30.7
Austria	45.1	31.3	4.5	15.4
Hungary	58.0	12.3	2.0	24.3
Poland	58.5	12.3	0.5	24.2
Belgium	60.7	12.8	4.9	21.3
Slovenia	66.8	5.2	12.9	13.3
Germany	67.7	9.0	9.3	13.3
Luxembourg	70.3	20.6	1.7	6.5
Netherlands	70.4	5.0	5.7	5.5
France	73.1	5.2	13.1	7.1
Czech Republic	76.9	8.3	0.2	13.2
United Kingdom	—	82.0	1.0	11.7
Sweden	—	81.7	0.2	15.8
OECD AVERAGE	34.1	38.2	6.8	17.6

Source: OECD, 2010a.

Notes: Other sources of health spending (e.g., direct spending by non-governmental organizations and companies) not shown so percentages may not total 100%. Incomplete data reported for Sweden, United Kingdom, Norway, Iceland, and Greece.

Switzerland and the Netherlands—universal private health insurance

The most important lesson provided by Switzerland and the Netherlands for health policy reform in Canada is that both countries achieve universal health insurance coverage without any direct government delivery of health insurance. Instead, the Swiss and the Dutch require all residents to purchase health insurance privately in a regulated, competitive market, and provide means-tested public subsidies for low-income people so that everyone can afford to obtain coverage. Additionally, Switzerland and the Netherlands have routine cost-sharing for services delivered in hospitals, by GPs and specialists (table 4).

United States—high spending, numerous resources and high output

Despite a lot of negative rhetoric about the American health insurance system, the data show that, while Americans spend a lot on health care, their system actually achieves a high level of medical resources and outputs. The United States ranks number one in terms of spending among the 28 OECD countries studied. Yet at the same time, the United States ranks higher than Canada in every medical resource and output indicator where data are available, except for the number of curative care beds per 1,000 population and the number of mastectomies performed (table 3). Overall, the United States ranks among the top three countries in 10 of the 17 medical resource and output indicators where data are available for comparison.

Lessons for Canada

This analysis suggests that relative to the majority of OECD countries, Canada's health insurance system does not produce good value for money. Canada has the sixth most-expensive health insurance system in the OECD, yet ranks low for overall availability of, and access to, medical resources and the output of surgical procedures. Despite the relatively high level of health spending in Canada, Canadians do not have access to the same quantity of medical goods and services available in the majority of OECD countries.

Nearly every country observed in this study has some type of patient cost-sharing for services delivered in hospitals, by GPs, and/or specialists. Every country except Canada allows its residents to purchase private comprehensive medical insurance.

Importantly, almost all of the countries that ranked above Canada in terms of the availability of medical resources and services had some or all of the following health insurance policies in common: (1) consumer/patient cost sharing is required for publicly funded medical goods and services; (2) medical goods and services are financed through some form of public-private social insurance (usually pluralistic) where individuals and employers make direct and significant contributions to premium costs; (3) comprehensive private health insurance options are permitted; (4) private for-profit hospitals are permitted to bill public health insurer(s) for services.

Policy recommendations

The federal government should temporarily suspend enforcement of the Canada Health Act to allow the provinces to experiment with policy changes of the type common to other OECD countries, in order to determine empirically whether the health insurance system would improve if similar policies were permanently implemented by the provinces.[4] The provinces should implement 5-year population-wide comprehensive policy trials based on these policies. To encourage reform, the provinces may wish to experiment with the following policies:

- a universal, single-rate, percentage-based, patient cost-sharing charge of 10% of the cost of any publicly funded medical goods and services used, up to an annual maximum exposure of 3% of income, and with targeted public subsidization for select chronic conditions;
- permitting private payment and insurance for all medical goods and services;
- permitting health professionals and hospitals to provide services for public or private payment without restrictions.

Data, method, and limitations

The data used for this study were obtained from the OECD (2010a) and are current to the year 2007. Data were not always available for some countries for 2007. In these cases, data from the most recent previous year were substituted for the missing data in 2007. Estonia, Chile, Mexico, Slovak Republic, Japan, and Turkey were excluded from the analysis due to large amounts of missing data.

The OECD collects and publishes data from each of its member countries on the number of medical technologies and human resources available, and the number of surgical procedures (both emergency and elective) performed. All of the data are stated in ratio to population and are, therefore, comparable. For this study, the most recently available data were collected on 18 indicators describing the availability of human and medical resources, as well as the number of surgical procedures performed. The OECD publishes data for several indicators that were excluded from this analysis because the indicators represented very rare procedures or were not published as aggregate statistics for the whole population.

There are some notable limitations to the comparisons of countries using OECD data.

> OECD data submitted by member countries is not perfectly comparable due to differences in reporting compliance with OECD data definitions. Canadian expenditure data, for example, does not include spending by automobile insurers on medical rehabilitation or private-sector spending on occupational health care, whereas such expenditures are included in the total reported by the United States. There may be other differences between jurisdictions, including incomplete reporting in some years. (Skinner, 2009: 26)

In addition,

> [t]here are some comparability limitations in these statistics. The data reported by each member country in the OECD is not necessarily defined the same way. For example, data reported to the OECD by Canadian and American sources is not defined in the same way. Direct communications with the OECD's health data division confirm that Canadian counts of active physicians include physicians in administration and research, teaching, etc. By contrast, US counts do not include physicians in administration and research, teaching, etc. The reporting difference inflates the number of physician resources per population published by the OECD for Canada relative to the US. (Skinner, 2009: 52)

Population health statistics not relevant to health insurance performance

This paper compares the cost of health insurance systems against the availability of medical goods and services because these things define the cost of health insurance. Population health outcomes are not used in this analysis to measure the performance of health insurance systems.[5] It is important to measure only the resources purchased

by the system used to finance health care instead of the health outcomes produced by medical treatment. The output "good" produced by medical treatment is human health but the output of health insurance is access to medical goods and services. Health insurance systems influence investment in, and the use of, medical resources and therefore can indirectly affect the performance of the medical system and patient health outcomes. However, the particular effects of a medical system are not usually apparent in broad population health statistics (outcomes) like life expectancy because only small percentages of the population have life-shortening health conditions that can be remedied by medical treatment. Broad population health statistics like life expectancy are more significantly affected by factors that affect many people and are usually unrelated to the type of health insurance policy used by a country. For example, clean water, nutrition, the treatment of sanitary sewage and waste, environmental pollution, auto accident rates, rates of violent crime, poverty, control of infectious diseases, mass vaccination programs, and so on have the most statistically significant impact on population-wide health statistics. Once these factors are controlled for, there tends to be little difference in life expectancy between countries that have similar levels of economic development.

In order to isolate and measure accurately the outcomes produced by a medical system—the quantity, quality, allocation, and organization of medical resources—it is important to measure differences in the health outcomes of patients actually treated by hospitals and doctors (assuming the populations have similar risk profiles). According to this measure, there is little reason to doubt that the quality of medical care in Canada is among the best in the world. In fact, for patients that actually receive medical treatment, we would expect to see little difference in health outcomes among countries with similarly developed hospital systems, medical science and medical professionalism after adjusting for differences in the incidence rates of disease. Therefore, the best way to make an accurate comparison of the "output" performance of the health insurance systems of several countries is to know the number of people needing treatment, the number of people receiving actual access to the best available global standard of treatment, and the cost of providing this treatment. Unfortunately, an international data source that would make such an analysis possible does not appear to exist and we are left to compare variations in the "output" among different health insurance systems using available international data on population, demographics, aggregate health spending, and aggregate volumes of medical resources. (Skinner, 2009: 19)

Total costs irrelevant

This study assesses the relative performance of health insurance systems on a "value-for-money" basis because the total costs of a health insurance system are irrelevant without an assessment of the associated benefits produced by the system. In comparing the performance of health insurance systems around the world, it is incorrect to define higher national levels of spending on health as negative without considering benefits (access and availability of medical resources), because doing so falsely assumes that the quantity and quality of health care received across countries is the same. Consider that in 2006 Ethiopia spent 4.9% of its GDP on health care. This is 5.1 percentage points lower than the 10.0% of GDP that Canada spent on health care in the same year (WHO, 2008). Yet, on a per-capita basis, Ethiopians spent only the equivalent (international currency adjusted) of $22 per person on health care in 2006 compared to $3,672 per person in Canada (WHO, 2008). There is no doubt that Ethiopia's health care system is not producing the same quality or quantity of medical goods and services as the Canadian system.

Moreover, research shows that wealthier societies tend to spend proportionally more of their income on health care. This is because people in wealthy countries have proportionally more disposable income to devote to health care after other necessities like food, clothing, housing, transportation, and education (Gerdtham and Jönsson, 2000). As people become wealthier, they have the capacity to spend a higher percentage of their income on improving their health and extending their lives without sacrificing their other needs and preferences.

Another false but common assumption is to view spending on health only as a cost, without consideration of the health benefits received. It is invalid to assume that spending a larger percentage of GDP on health care is necessarily bad (Skinner, 2009: 26–27).

Notes

1 Countries that are members of the OECD have roughly similar levels of economic development making them more suitable for international comparison as a group relative to other countries.

2 The lack of internationally comparable data on the availability of pharmaceutical and other medical consumption products made it impossible to include separate indicators for this important component of medical output.

3 Luxembourg data was not available for the number of Laparoscopic cholecystectomies performed per 100,000.

4 According to a recent OECD report, Canada should relinquish its prohibition on private health insurance for medically necessary services in order to spur more efficiency and innovation from the private sector. The report also recommends that the most effective way of curbing excess demand for medical services while raising revenues is to introduce patient co-payments and deductibles (OECD, 2010b).

5 Research indicates that there is no statistical correlation between spending on medical care and population health outcomes (Centre for International Statistics, 1998). According to the European Observatory on Health Care Systems, "health status can be more influenced by broader determinants such as living and working conditions, personal and community resources and environmental factors than by access to, and the performance of, a given health system" (Marchildon, 2005: 126).

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