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April 2012

# Value for Money from Health Insurance Systems in Canada and the OECD, 2012 edition

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## Main Conclusions

- **Canada ranks 6th highest for health spending, yet ranks between 7th and 26th in 19 out of 20 indicators measuring availability of medical resources and services. Canadians are not getting good value for money from their provincial health systems.**
- **Countries that produce better value for money 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; and**
  **(4) private for-profit hospitals are permitted to bill public health insurers for services.**

## About the authors

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## 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 2009, 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 20 indicators of the availability of medical resources and the level of medical output.[2] According to the most recent internationally comparable data from 2009 (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.

### Table 1: Canada's rank on spending compared to its rank on available medical resources and output indicators among OECD countries, 2009

| |
|---|
| 6th in overall spending among 28 OECD countries |
| 19th (tied) (out of 23 countries) for number of practicing physicians per 1,000 population |
| 12th (out of 21 countries) for number of practicing nurses per 1,000 population |
| Last (tied) (25 out of 26 countries) for number of curative (acute) care beds per 1,000 population |
| 16th (out of 23 countries) for number of CT scanners per million population |
| 14th (out of 22 countries) for number of MRI units per million population |
| 11th (out of 20 countries) for number of PET scanners per million population |
| 10th (out of 19 countries) for number of mammographs per million population |
| 15th (out of 17 countries) for number of lithotriptors per million population |
| 4th (out of 28 countries) for number of cataract surgeries performed per 100,000 population |
| 17th (out of 26 countries) for number of tonsillectomy procedures per 100,000 population |
| 26th (out ouf 27 countries) for number of percutaneous coronary intervention (PTCA |
| 9th (out of 27 countries) for number of coronary bypass procedures per 100,000 population |
| 12th (out of 23 countries) for number of cardiac catheterization procedures per 100,000 population |
| 18th (out of 26 countries) for number of appendectomy procedures per 100,000 population |
| 7th (out of 24 countries) for number of cholecystectomy procedures per 100,000 population |
| 6th (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 |
| 21st (out of 28 countries) for number of hip replacement procedures per 100,000 population |
| 10th (out of 26 countries) for number of knee replacement procedures per 100,000 population |
| 17th (out of 26 countries) for number of mastectomy procedures per 100,000 population |

Sources: OECD, 2011; calculations by authors.

## Table 2: Total health spending as a percentage of GDP among 28 OECD countries, 2009

| | | |
|---|---|---|
| 1 | United States | 17.4 |
| 2 | Netherlands | 12.0 |
| 3 | France | 11.8 |
| 4 | Germany | 11.6 |
| 5 | Denmark | 11.5 |
| 6 | Canada | 11.4 |
| 6 | Switzerland | 11.4 |
| 8 | Austria | 11.0 |
| 9 | Belgium | 10.9 |
| 10 | New Zealand | 10.3 |
| 11 | Portugal | 10.1 |
| 12 | Sweden | 10.0 |
| 13 | United Kingdom | 9.8 |
| 14 | Greece (2007) | 9.7 |
| 14 | Iceland | 9.7 |
| 16 | Norway | 9.6 |
| 17 | Ireland | 9.5 |
| 17 | Spain | 9.5 |
| 17 | Italy | 9.5 |
| 20 | Slovenia | 9.3 |
| 21 | Finland | 9.2 |
| 22 | Australia | 8.7 |
| 23 | Czech Republic | 8.2 |
| 24 | Israel | 7.9 |
| 25 | Luxembourg | 7.8 |
| 26 | Hungary | 7.4 |
| 26 | Poland | 7.4 |
| 28 | Korea | 6.9 |

Source: OECD, 2011

Despite being ranked as the sixth most expensive health insurance system among OECD countries in 2009, 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.

In table 3, each indicator has the OECD countries ranked (where data is available) 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 table 3 shows, the number of medical resources and outputs available (including procedures performed) in Canada were above the OECD average in less than a third of all 20 indicators: cataract surgeries (4th out of 28 countries), coronary bypass surgeries (9th out of 27 countries), cholecystectomies (7th out of 24 countries), laparoscopic cholecystectomies (6th out of 21 countries), and knee replacement surgeries (10th out of 26 countries). In the remaining 15 indicators, Canada was below the OECD average and ranked below par in every case. Canada ranked particularly low on the number of practicing physicians per population (19th out of 23 countries), the number of curative (acute) care beds per population (tied for last out of 26 countries), the number of lithotriptors per population (15th out of 17 countries), the number of percutaneous coronary interventions per population (26th out of 27 countries), the number of appendectomies procedures performed per population (18th out of 26 countries), and the number of hip replacement procedures performed per population (21st out of 28 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.

## 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 2009, Canada was only one of four among the 28 OECD countries that did 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 remaining 24 OECD countries observed in this study require some

*Canada is the only country among the 28 where private comprehensive medical insurance is effectively prohibited.*

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available) *(continued)*

### Table 3a: Practicing physicians per 1,000 population (23 countries)

| Rank | Country | Practicing physicians per 1,000 population |
|---|---|---|
| 1 | Austria | 4.7 |
| 2 | Norway | 4.0 |
| 3 | Switzerland | 3.8 |
| 4 | Sweden (2008) | 3.7 |
| 4 | Iceland | 3.7 |
| 6 | Germany | 3.6 |
| 6 | Czech Republic | 3.6 |
| 8 | Spain | 3.5 |
| 8 | Israel | 3.5 |
| 10 | Italy | 3.4 |
| 10 | Denmark (2008) | 3.4 |
| 12 | Hungary | 3.0 |
| 12 | Australia (2008) | 3.0 |
| 14 | Belgium | 2.9 |
| 15 | Luxembourg | 2.7 |
| 15 | Finland (2008) | 2.7 |
| 15 | United Kingdom | 2.7 |
| 18 | New Zealand | 2.6 |
| 19 | United States | 2.4 |
| 19 | Slovenia | 2.4 |
| 19 | Canada | 2.4 |
| 22 | Poland | 2.2 |
| 23 | Korea | 1.9 |
| | OECD Average | 3.1 |

Source: OECD, 2011.

### Table 3b: Practicing nurses per 1,000 population (21 countries)

| Rank | Country | Practicing nurses per 1,000 population |
|---|---|---|
| 1 | Iceland | 15.3 |
| 2 | Switzerland | 15.2 |
| 3 | Denmark (2008) | 14.8 |
| 4 | Norway | 14.2 |
| 5 | Ireland | 12.7 |
| 6 | Germany | 11.0 |
| 7 | Luxembourg (2006) | 10.9 |
| 8 | New Zealand | 10.5 |
| 9 | Australia (2008) | 10.2 |
| 10 | United Kingdom | 9.7 |
| 11 | Finland (2008) | 9.6 |
| 12 | Canada | 9.4 |
| 13 | Netherlands (2008) | 8.4 |
| 14 | Slovenia | 8.1 |
| 14 | Czech Republic | 8.1 |
| 16 | Austria | 7.6 |
| 17 | Hungary | 6.2 |
| 18 | Poland | 5.3 |
| 19 | Spain | 4.9 |
| 20 | Israel | 4.5 |
| 20 | Korea | 4.5 |
| | OECD Average | 9.6 |

Source: OECD, 2011

### Table 3c: Curative (acute) care beds per 1,000 population (26 countries)

| Rank | Country | Curative (acute) care beds per 1,000 population |
|---|---|---|
| 1 | Germany | 5.7 |
| 2 | Austria | 5.6 |
| 2 | Korea | 5.6 |
| 4 | Czech Republic | 5.0 |
| 5 | Poland | 4.4 |
| 6 | Luxembourg | 4.3 |
| 7 | Belgium | 4.2 |
| 8 | Hungary | 4.1 |
| 8 | Greece | 4.1 |
| 10 | Slovenia | 3.8 |
| 11 | Australia (2006) | 3.5 |
| 11 | France | 3.5 |
| 13 | Switzerland | 3.3 |
| 14 | Netherlands | 3.1 |
| 15 | Italy | 3.0 |
| 16 | Denmark | 2.9 |
| 17 | Portugal | 2.8 |
| 18 | United Kingdom | 2.7 |
| 18 | United States (2006) | 2.7 |
| 20 | Ireland (2008) | 2.6 |
| 21 | Spain | 2.5 |
| 22 | Norway | 2.4 |
| 23 | Sweden | 2.0 |
| 23 | Israel | 2.0 |
| 25 | Finland | 1.8 |
| 25 | Canada (2008) | 1.8 |
| | OECD Average | 3.4 |

Source: OECD, 2011

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available) *(continued)*

### Table 3d: CT scanners per million population (23 countries)

| Rank | Country | CT scanners per million population |
|---|---|---|
| 1 | Australia | 38.7 |
| 2 | Korea | 37.1 |
| 3 | Iceland | 34.5 |
| 4 | United States (2007) | 34.3 |
| 5 | Greece | 33.8 |
| 6 | Switzerland | 32.8 |
| 7 | Italy | 31.7 |
| 8 | Austria | 29.3 |
| 9 | Luxembourg | 26.3 |
| 10 | Portugal (2007) | 26.0 |
| 11 | Denmark | 23.7 |
| 12 | Finland | 20.4 |
| 13 | Ireland | 15.3 |
| 14 | New Zealand | 14.6 |
| 15 | Czech Republic | 14.1 |
| 16 | Canada | 13.9 |
| 17 | Poland | 12.4 |
| 18 | Slovenia | 11.9 |
| 19 | Netherlands | 11.3 |
| 20 | France | 11.1 |
| 21 | Israel | 9.4 |
| 22 | United Kingdom (2008) | 7.4 |
| 23 | Hungary | 7.2 |
| | OECD Average | 21.6 |

Source: OECD, 2011

### Table 3e: MRI units per million population (22 countries)

| Rank | Country | MRI units per million population |
|---|---|---|
| 1 | United States (2007) | 25.9 |
| 2 | Iceland | 21.9 |
| 3 | Greece | 21.7 |
| 4 | Italy | 21.6 |
| 5 | Korea | 19.0 |
| 6 | Austria | 18.4 |
| 7 | Finland | 16.9 |
| 8 | Denmark | 15.4 |
| 9 | Luxembourg | 14.2 |
| 10 | Ireland | 11.9 |
| 11 | Netherlands | 11.0 |
| 12 | New Zealand | 9.7 |
| 13 | Portugal (2007) | 8.9 |
| 14 | Canada | 8.0 |
| 15 | France | 6.5 |
| 16 | Australia | 5.9 |
| 17 | Czech Republic | 5.7 |
| 18 | United Kingdom (2008) | 5.6 |
| 19 | Slovenia | 4.5 |
| 20 | Poland | 3.7 |
| 21 | Hungary | 2.8 |
| 22 | Israel | 1.9 |
| | OECD Average | 11.9 |

Source: OECD, 2011

### Table 3f: PET scanners per million population (20 countries)

| Rank | Country | PET scanners per million population |
|---|---|---|
| 1 | Denmark | 5.6 |
| 2 | Netherlands | 4.5 |
| 3 | United States (2008) | 3.1 |
| 4 | Switzerland | 3.0 |
| 5 | Korea | 2.8 |
| 6 | Italy | 2.0 |
| 6 | Austria | 2.0 |
| 6 | Luxembourg | 2.0 |
| 9 | Ireland | 1.6 |
| 10 | Finland | 1.5 |
| 11 | Canada | 1.1 |
| 11 | Australia | 1.1 |
| 13 | Slovenia | 1.0 |
| 14 | France | 0.9 |
| 15 | Israel | 0.8 |
| 16 | Czech Republic | 0.6 |
| 17 | New Zealand | 0.5 |
| 18 | Poland | 0.4 |
| 18 | Hungary | 0.4 |
| 18 | Greece | 0.4 |
| | OECD Average | 1.8 |

Source: OECD, 2011

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available) *(continued)*

### Table 3g: Mammographs per million population (19 countries)

| Rank | Country | Mammographs per million population |
|---|---|---|
| 1 | Korea | 49.9 |
| 2 | Greece | 49.1 |
| 3 | United States (2008) | 40.2 |
| 4 | Portugal (2007) | 35.4 |
| 5 | Switzerland | 33.2 |
| 6 | Italy | 32.0 |
| 7 | Finland | 31.7 |
| 8 | New Zealand | 26.4 |
| 9 | Australia | 24.3 |
| 10 | Canada (2007) | 21.3 |
| 11 | Luxembourg | 20.3 |
| 12 | Slovenia | 17.3 |
| 13 | Denmark | 17.0 |
| 14 | Iceland | 15.7 |
| 15 | Hungary | 14.6 |
| 16 | Poland | 14.3 |
| 17 | Ireland | 14.1 |
| 18 | Czech Republic | 12.7 |
| 19 | United Kingdom | 9.0 |
| | OECD Average | 25.2 |

Source: OECD, 2011

### Table 3h: Lithotriptors per million population (17 countries)

| Rank | Country | Lithotriptors per million population |
|---|---|---|
| 1 | Korea | 13.6 |
| 2 | Hungary | 4.9 |
| 3 | Poland | 4.2 |
| 4 | Iceland | 3.1 |
| 5 | Portugal (2007) | 3.0 |
| 5 | Czech Republic | 3.0 |
| 7 | Slovenia | 2.5 |
| 8 | Netherlands | 2.1 |
| 9 | Luxembourg | 2.0 |
| 9 | Greece | 2.0 |
| 11 | Austria (2007) | 1.9 |
| 12 | Ireland | 1.1 |
| 13 | Australia (2008) | 1.0 |
| 14 | New Zealand | 0.7 |
| 15 | Canada (2007) | 0.6 |
| 16 | Israel | 0.5 |
| 17 | Finland | 0.4 |
| | OECD Average | 2.7 |

Source: OECD, 2011

### Table 3i: Cataract surgery per 100,000 population (28 countries)

| Rank | Country | Cataract surgery per 100,000 population |
|---|---|---|
| 1 | United States (2006) | 1,891.4 |
| 2 | Belgium (2007) | 1,847.8 |
| 3 | Portugal | 1,390.5 |
| 4 | Canada (2008) | 1,064.8 |
| 5 | France | 997.5 |
| 6 | Greece (2006) | 981.3 |
| 7 | Austria | 934.4 |
| 8 | Australia (2008) | 927.8 |
| 9 | Denmark | 897.6 |
| 10 | Netherlands (2008) | 884.1 |
| 11 | Czech Republic | 847.5 |
| 12 | Luxembourg | 790.4 |
| 13 | Korea | 750.6 |
| 14 | Finland | 745.2 |
| 15 | Hungary | 682.8 |
| 16 | United Kingdom | 668.4 |
| 17 | Iceland (2008) | 651.0 |
| 18 | Sweden | 604.8 |
| 19 | Spain | 558.3 |
| 20 | Poland | 511.5 |
| 21 | Norway (2008) | 480.4 |
| 22 | Switzerland (2008) | 421.4 |
| 23 | Israel | 407.7 |
| 24 | New Zealand | 367.8 |
| 25 | Italy | 312.2 |
| 26 | Ireland | 203.9 |
| 27 | Slovenia | 198.7 |
| 28 | Germany | 185.1 |
| | OECD Average | 757.3 |

Source: OECD, 2011

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available) *(continued)*

### Table 3j: Tonsillectomy per 100,000 population (26 countries)

| Rank | Country | Tonsillectomy per 100,000 population |
|---|---|---|
| 1 | Luxembourg | 258.8 |
| 2 | United States (2006) | 254.4 |
| 3 | Netherlands (2008) | 240.2 |
| 4 | Belgium (2007) | 234.0 |
| 5 | Australia (2008) | 217.1 |
| 6 | Norway (2008) | 208.8 |
| 7 | Iceland (2008) | 191.0 |
| 8 | Greece (2006) | 160.9 |
| 9 | Finland | 159.9 |
| 10 | Germany | 155.9 |
| 11 | Hungary | 147.8 |
| 12 | Denmark | 129.6 |
| 13 | Switzerland (2008) | 120.1 |
| 14 | Austria | 117.7 |
| 15 | New Zealand | 110.7 |
| 16 | Israel | 109.5 |
| 17 | Canada (2008) | 108.2 |
| 18 | France | 103.1 |
| 19 | United Kingdom | 98.9 |
| 20 | Sweden | 94.5 |
| 21 | Ireland | 91.9 |
| 22 | Korea | 88.2 |
| 23 | Portugal | 78.8 |
| 24 | Italy | 71.4 |
| 25 | Spain | 60.4 |
| 26 | Slovenia | 55.4 |
| | OECD Average | 141.0 |

Source: OECD, 2011

### Table 3k: Percutaneous coronary interventions (PTCA, stenting) per 100,000 population (27 countries)

| Rank | Country | PTCA, stenting per 100,000 population |
|---|---|---|
| 1 | Germany | 582.2 |
| 2 | Belgium (2007) | 427.3 |
| 3 | United States (2008) | 377.2 |
| 4 | Norway (2008) | 249.9 |
| 5 | Austria | 230.0 |
| 6 | Czech Republic | 221.1 |
| 7 | Slovenia | 206.9 |
| 8 | Luxembourg | 201.4 |
| 9 | Iceland | 198.0 |
| 10 | Israel | 197.8 |
| 11 | France | 194.0 |
| 12 | Denmark | 184.1 |
| 13 | United Kingdom | 177.5 |
| 14 | Greece | 177.0 |
| 15 | Sweden | 175.2 |
| 16 | Poland | 173.2 |
| 17 | Hungary | 172.2 |
| 18 | Netherlands (2008) | 165.5 |
| 19 | Australia (2008) | 158.8 |
| 20 | Finland | 139.0 |
| 21 | Switzerland | 133.8 |
| 22 | Spain | 133.7 |
| 23 | Italy | 133.4 |
| 24 | Portugal | 118.2 |
| 25 | New Zealand | 117.0 |
| 26 | Canada (2008) | 104.6 |
| 27 | Ireland | 81.5 |
| | OECD Average | 201.1 |

Source: OECD, 2011

### Table 3l: Coronary bypass per 100,000 population (27 countries)

| Rank | Country | Coronary bypass per 100,000 population |
|---|---|---|
| 1 | Belgium (2007) | 131.4 |
| 2 | Germany | 119.9 |
| 3 | United States (2008) | 79.5 |
| 4 | Denmark | 78.6 |
| 5 | New Zealand | 77.0 |
| 6 | Norway (2008) | 70.2 |
| 7 | Australia (2008) | 69.9 |
| 8 | Slovenia | 66.0 |
| 9 | Canada (2008) | 63.4 |
| 10 | Iceland | 59.2 |
| 11 | Netherlands (2008) | 58.4 |
| 12 | Czech Republic | 56.2 |
| 13 | Luxembourg | 54.4 |
| 14 | Finland | 52.9 |
| 15 | Austria | 47.6 |
| 16 | Israel | 47.3 |
| 17 | Sweden | 45.0 |
| 18 | United Kingdom | 40.1 |
| 19 | Portugal | 39.7 |
| 20 | Poland | 38.0 |
| 21 | Hungary | 32.3 |
| 22 | Italy | 32.0 |
| 23 | Switzerland | 30.6 |
| 24 | France | 30.2 |
| 25 | Ireland | 23.5 |
| 26 | Spain | 17.6 |
| 27 | Korea | 7.2 |
| | OECD Average | 54.4 |

Source: OECD, 2011

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available) *(continued)*

### Table 3m: Cardiac catheterization per 100,000 population (23 countries)

| Rank | Country | Cardiac catheterization per 100,000 population |
|---|---|---|
| 1 | Germany | 1038.9 |
| 2 | Belgium (2007) | 517.5 |
| 3 | Greece | 469.7 |
| 4 | Luxembourg | 381.0 |
| 5 | Iceland | 373.4 |
| 6 | United States (2008) | 357.8 |
| 7 | Hungary | 335.0 |
| 8 | Australia (2008) | 325.8 |
| 9 | Portugal | 236.5 |
| 10 | Israel | 227.0 |
| 11 | Slovenia | 222.5 |
| 12 | Canada (2008) | 198.1 |
| 13 | Netherlands (2008) | 192.6 |
| 14 | Ireland | 163.0 |
| 15 | Spain | 136.5 |
| 16 | Switzerland | 125.9 |
| 17 | Austria | 48.1 |
| 18 | Denmark | 33.0 |
| 19 | Finland | 25.0 |
| 20 | Italy | 23.9 |
| 21 | Sweden | 13.3 |
| 22 | Poland | 5.8 |
| 23 | United Kingdom | 2.7 |
| | OECD Average | 237.1 |

Source: OECD, 2011

### Table 3n: Appendectomy per 100,000 population (26 countries)

| Rank | Country | Appendectomy per 100,000 population |
|---|---|---|
| 1 | Austria | 175.5 |
| 2 | Ireland | 158.0 |
| 3 | Germany | 155.4 |
| 4 | Australia (2008) | 147.2 |
| 5 | Iceland | 146.6 |
| 6 | Switzerland | 142.6 |
| 7 | France | 142.1 |
| 8 | Belgium (2007) | 136.3 |
| 9 | Israel | 131.8 |
| 10 | New Zealand | 129.0 |
| 11 | Luxembourg | 123.0 |
| 12 | Norway (2008) | 120.4 |
| 13 | Greece (2006) | 120.1 |
| 14 | Finland | 116.6 |
| 15 | Slovenia | 116.0 |
| 16 | Sweden | 114.3 |
| 17 | Spain | 112.2 |
| 18 | Canada (2008) | 100.7 |
| 19 | Portugal | 97.4 |
| 20 | Netherlands (2008) | 94.2 |
| 21 | Hungary | 93.3 |
| 22 | United States (2008) | 92.6 |
| 23 | United Kingdom | 86.0 |
| 24 | Poland | 81.2 |
| 25 | Italy | 79.7 |
| 26 | Denmark | 35.5 |
| | OECD Average | 117.2 |

Source: OECD, 2011

### Table 3o: Cholecystectomy per 100,000 population (24 countries)

| Rank | Country | Cholecystectomy per 100,000 population |
|---|---|---|
| 1 | Greece (2006) | 361.3 |
| 2 | United States (2006) | 307.0 |
| 3 | Slovenia | 243.2 |
| 4 | Hungary | 241.0 |
| 5 | Austria | 226.5 |
| 6 | Australia (2008) | 222.5 |
| 7 | Canada (2008) | 204.7 |
| 8 | Belgium (2007) | 204.3 |
| 9 | France | 187.4 |
| 10 | Poland | 179.8 |
| 11 | Luxembourg | 177.6 |
| 12 | Italy | 177.5 |
| 13 | Switzerland (2008) | 161.9 |
| 14 | Portugal | 152.9 |
| 15 | Spain | 151.6 |
| 16 | Netherlands (2008) | 148.6 |
| 17 | Israel | 143.4 |
| 18 | Finland | 141.0 |
| 19 | Denmark | 136.3 |
| 20 | Sweden | 134.9 |
| 21 | United Kingdom | 125.0 |
| 22 | New Zealand | 117.0 |
| 23 | Ireland | 108.5 |
| 24 | Norway (2008) | 94.0 |
| | OECD Average | 181.2 |

Source: OECD, 2011

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available) *(continued)*

### Table 3p: Laparoscopic cholecystectomy per 100,000 population (21 countries)

| Rank | Country | Laparoscopic cholecystectomy per 100,000 population |
|---|---|---|
| 1 | United States (2006) | 275.1 |
| 2 | Slovenia | 212.5 |
| 3 | Australia (2008) | 197.2 |
| 4 | Hungary | 197.0 |
| 5 | Austria | 192.0 |
| 6 | Canada (2008) | 187.3 |
| 7 | Belgium (2007) | 178.3 |
| 8 | France | 161.1 |
| 9 | Italy | 155.2 |
| 10 | Switzerland (2008) | 148.3 |
| 11 | Israel | 132.4 |
| 12 | Netherlands (2008) | 129.3 |
| 13 | Denmark | 121.8 |
| 14 | Finland | 120.5 |
| 15 | Portugal | 118.2 |
| 16 | Spain | 116.5 |
| 17 | Sweden | 107.4 |
| 18 | United Kingdom | 104.2 |
| 19 | New Zealand | 98.9 |
| 20 | Ireland | 96.2 |
| 21 | Norway (2008) | 86.0 |
| | OECD Average | 149.3 |

Source: OECD, 2011

### Table 3q: Hysterectomy per 100,000 population (25 countries)

| Rank | Country | Hysterectomy per 100,000 population |
|---|---|---|
| 1 | Korea | 430.7 |
| 2 | Luxembourg | 263.8 |
| 3 | Finland | 224.8 |
| 4 | New Zealand | 201.8 |
| 4 | Norway (2008) | 201.8 |
| 6 | Germany | 186.6 |
| 7 | Poland | 163.4 |
| 8 | Belgium (2007) | 140.9 |
| 9 | Switzerland | 126.1 |
| 10 | Australia (2008) | 125.1 |
| 11 | Austria | 111.7 |
| 12 | United States (2008) | 111.6 |
| 13 | Canada (2008) | 92.2 |
| 14 | Slovenia | 89.4 |
| 15 | Netherlands (2008) | 83.4 |
| 16 | Italy | 66.0 |
| 17 | Denmark | 59.6 |
| 18 | Iceland | 58.3 |
| 19 | Spain | 52.7 |
| 20 | Ireland | 43.4 |
| 21 | Portugal | 42.5 |
| 22 | Sweden | 40.7 |
| 23 | Israel | 40.6 |
| 24 | Hungary | 34.9 |
| 25 | United Kingdom | 28.1 |
| | OECD Average | 120.8 |

Source: OECD, 2011

### Table 3r: Hip replacement per 100,000 population (28 countries)

| Rank | Country | Hip replacement per 100,000 population |
|---|---|---|
| 1 | Germany | 295.7 |
| 2 | Switzerland | 286.7 |
| 3 | Belgium (2007) | 240.0 |
| 4 | Austria | 237.8 |
| 5 | Denmark | 235.7 |
| 6 | Norway (2008) | 232.0 |
| 7 | France | 223.8 |
| 8 | Luxembourg | 221.6 |
| 9 | Sweden | 214.0 |
| 10 | Netherlands (2008) | 213.1 |
| 11 | Slovenia | 193.7 |
| 12 | United Kingdom | 193.6 |
| 13 | Finland | 188.2 |
| 14 | United States (2008) | 183.9 |
| 15 | Iceland | 172.6 |
| 16 | Czech Republic | 166.4 |
| 17 | Australia (2008) | 154.3 |
| 18 | Italy | 150.0 |
| 19 | New Zealand | 148.5 |
| 20 | Greece (2006) | 139.8 |
| 21 | Canada (2008) | 122.5 |
| 22 | Ireland | 117.1 |
| 23 | Hungary | 99.4 |
| 24 | Spain | 92.6 |
| 25 | Portugal | 87.8 |
| 26 | Israel | 51.4 |
| 27 | Poland | 43.5 |
| 28 | Korea | 16.9 |
| | OECD Average | 168.7 |

Source: OECD, 2011

## Table 3: Canada's rank among 20 medical resources and output indicators in OECD countries, 2009 (or most recent data available)

### Table 3s: Knee replacement per 100,000 population (26 countries)

| Rank | Country | Knee replacement per 100,000 population |
|---|---|---|
| 1 | Germany | 212.5 |
| 1 | United States (2008) | 212.5 |
| 3 | Switzerland | 200.0 |
| 4 | Austria | 187.5 |
| 5 | Finland | 178.0 |
| 6 | Denmark | 168.0 |
| 7 | Belgium | 167.7 |
| 8 | Luxembourg | 160.2 |
| 9 | Australia (2008) | 157.9 |
| 10 | Canada (2008) | 143.3 |
| 11 | United Kingdom | 140.9 |
| 12 | Iceland | 131.6 |
| 13 | Sweden | 126.8 |
| 14 | Netherlands (2008) | 124.3 |
| 15 | France | 118.8 |
| 16 | Czech Republic | 111.1 |
| 17 | Spain | 102.3 |
| 18 | New Zealand | 101.8 |
| 19 | Italy | 99.8 |
| 20 | Korea | 97.8 |
| 21 | Slovenia | 93.0 |
| 22 | Norway (2008) | 75.1 |
| 23 | Portugal | 61.7 |
| 24 | Israel | 46.7 |
| 25 | Hungary | 45.2 |
| 26 | Ireland | 41.8 |
| | OECD Average | 127.2 |

Source: OECD, 2011

### Table 3t: Mastectomy per 100,000 population (26 countries)

| Rank | Country | Mastectomy per 100,000 population |
|---|---|---|
| 1 | Korea | 102.6 |
| 2 | Finland | 99.5 |
| 3 | Denmark | 96.0 |
| 4 | Netherlands (2008) | 89.7 |
| 5 | Belgium (2007) | 86.6 |
| 6 | Iceland | 79.9 |
| 7 | Norway (2008) | 78.8 |
| 8 | Australia (2008) | 74.4 |
| 9 | Germany | 71.6 |
| 10 | United Kingdom | 64.8 |
| 11 | France | 62.8 |
| 12 | Switzerland | 57.6 |
| 13 | Sweden | 55.4 |
| 14 | New Zealand | 54.5 |
| 15 | Italy | 53.5 |
| 16 | Portugal | 52.4 |
| 17 | Canada (2008) | 50.7 |
| 18 | United States (2008) | 50.0 |
| 19 | Hungary | 49.9 |
| 20 | Austria | 48.9 |
| 21 | Spain | 45.0 |
| 22 | Slovenia | 44.9 |
| 23 | Luxembourg | 43.8 |
| 24 | Ireland | 43.7 |
| 25 | Israel | 36.5 |
| 26 | Poland | 35.5 |
| | OECD Average | 62.7 |

Source: OECD, 2011

type of cost sharing from 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.

Pluralistic public-private social insurance approaches[3] 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 each relies upon a pluralistic public-private social insurance approach in order to achieve universal health insurance coverage for its population.

In 2009, 1.3% 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 35.5%. In contrast, direct government spending on public health and health insurance made up 69.3% of total health expenditures in Canada; this was significantly higher than the OECD average of 40.2%. Direct spending through fully private health insurance in Canada made up 12.7% of total health expenditures compared to the OECD average of 6.5%. It is important to note, however, that private insurance spending in Canada is not directly comparable to that in the rest of the

## Table 4: Parallel private medical insurance and patient cost sharing for publicly funded health care in OECD countries, as of 2010

| Country | Consumer/patient cost sharing required for publicly funded health care goods/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, 2010; European Observatory on Health Systems and Policies, 2010; Tamez and Molina, 2000.

## Table 5: Health care financing, by source, as a percentage of total health expenditure in 28 OECD countries, 2009 or most recent year available

| | Social health insurance as a percentage of total health expenditure | Public health and gov't insurance as a percentage of total health expenditure | Private insurance as a percentage of total health expenditure | Out of pocket payment as a percentage of total health expenditure |
|---|---|---|---|---|
| Australia (2008) | 0.0 | 68.0 | 8.1 | 18.2 |
| Denmark (2007) | 0.0 | 80.2 | 1.6 | 13.8 |
| Italy | 0.2 | 77.7 | 1.0 | 19.7 |
| Ireland | 0.7 | 74.3 | 11.0 | 12.3 |
| Portugal (2008) | 1.2 | 63.9 | 4.9 | 27.2 |
| Canada | 1.3 | 69.3 | 12.7 | 14.6 |
| Spain | 4.6 | 69.1 | 5.4 | 20.1 |
| New Zealand | 9.4 | 71.0 | 4.8 | 13.4 |
| Norway | 11.8 | 72.3 | — | 15.1 |
| Finland | 14.9 | 59.8 | 2.1 | 19.0 |
| Iceland | 29.3 | 52.7 | — | 16.6 |
| Greece (2007) | 31.2 | 29.1 | — | — |
| Switzerland | 40.8 | 18.9 | 8.8 | 30.5 |
| United States | 41.2 | 6.5 | 32.8 | 12.3 |
| Israel | 41.6 | 16.9 | 7.0 | 28.8 |
| Korea | 44.7 | 13.5 | 5.2 | 32.4 |
| Austria (2007) | 45.1 | 31.3 | 4.5 | 15.4 |
| Hungary | 58.8 | 10.9 | 2.7 | 23.7 |
| Poland | 60.4 | 11.8 | 0.6 | 22.2 |
| Belgium | 63.8 | 11.3 | 4.8 | 20.0 |
| Slovenia | 66.2 | 7.2 | 12.5 | 12.9 |
| Luxembourg | 68.0 | 16.0 | 3.1 | 11.6 |
| Germany | 68.1 | 8.7 | 9.3 | 13.1 |
| Netherlands | 70.4 | 5.0 | 5.7 | 5.5 |
| France | 72.5 | 5.5 | 13.3 | 7.3 |
| Czech Republic | 76.1 | 7.9 | 0.2 | 14.4 |
| Sweden | — | 81.5 | 0.2 | 16.7 |
| United Kingdom | — | 84.1 | 1.1 | 10.5 |
| OECD Average | 35.5 | 40.2 | 6.5 | 17.3 |

Source: OECD, 2010.

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

Due to a change in the OECD's definition of health financing in the United States by "general government (excluding security)" and "social security schemes," there is a significant difference from the 2010 edition of this study in the percentage of total health expenditures allocated to social health insurance, and public health and government insurance.

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 (14.6%) was below the OECD average (17.3%).

*Luxembourg provides useful lessons for reform in Canada... The country ranked 25 (7.8% of GDP) in terms of health care spending, yet ranked comparatively high on the majority of indicators for medical resources and outputs.*

## 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). The country ranked 25th (7.8% 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 15 out of 20 indicators where data were available.[4]

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 as other social insurance systems in the OECD are. 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 2009, Luxembourg had a population of 493,500 (the second least-populated country in the world after Iceland, which has a population of 319,200), while the OECD average was 35,890,797 (OECD, 2011).

Health insurance is compulsory in Luxembourg and covers 99% of the population. Those not covered under compulsory health insurance include civil servants, 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.

## 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 that 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 16 out of 19 (84%) medical resources and output indicators where data are available (table 3). Overall, the United States ranks among the top three countries in 11 of the 19 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 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; and (4) private for-profit hospitals are permitted to bill public health insurer(s) for services.

## The performance of a health *insurance* system cannot be measured by population health statistics

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. 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 a country has. 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.[5]

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 who 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).

## Costs are not relevant unless considered in the context of benefits

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 it produces. 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 the 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).

## 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 age 65 (Brimacombe et al., 2001). According to 2009 data published by the Canadian Institute for Health Information on provincial and territorial government health care spending by age group, Canadians younger than the age of 1 cost an estimated $9,121.36 per person. From age 1 to age 64, spending averaged less than $2,173 per person. There was a pronounced increase in per capita spending in the senior age groups:

*It is common to view spending on health only as a cost, without considering the health benefits received. It is invalid to assume that spending a larger percentage of GDP on health care is necessarily bad.*

$6,072 for those aged 65 to 69; $8,406 for ages 70 to 74; $11,483 for ages 75 to 79; and $20,749 for those aged 80 and older (CIHI, 2011). 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.

## Data

The data used for this study were obtained from the OECD (2011) and are current to the year 2009. Data were not always available for some countries for 2009. In these cases, data from the most recent previous year were substituted for the missing 2009 data. Estonia, Chile, Mexico, Slovak Republic, Japan, and Turkey were excluded from the analysis due to large quantities 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 20 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)

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ISSN 1714-6720

Date of Issue: April 2012

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## 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 Under a social insurance financing system, public or private insurers (or a mix of both) provide health care to citizens once they are enrolled with an insurer. While some tax financing could be required in order provide health insurance for low income earners and the elderly, insurance payments are collected by independent parties that are subsequently responsible for purchasing health services (Esmail and Walker, 2008). In many cases, contributions to social insurance programmes are shared between general tax revenues, employers and employees (OECD, 2001).

4 Data for Luxembourg were not available for the number of laparoscopic cholecystectomies performed per 100,000 people.

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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