## Pharmacare: what are the costs for patients and taxpayers?



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#### SUMMARY

#### Introduction

Since 2013, several academics, activist groups and unions have been vigorously advocating for the establishment of Pharmacare. Pharmacare is proposed as a national, universal-coverage, publicly-funded, government-run, single-payer monopoly that would entirely replace Canada's current pluralistic system of federalprovincial-territorial publicly-funded government-run drug plans, and employmentbased private drug plans. Pharmacare advocates infer that this will be either a federal program or a federal-provincial-territorial intergovernmental cooperative program in order to achieve national scale and standards. Most recently, the Canadian Medical Association Journal (CMAJ) published a study (Morgan et al 2015) that estimated the cost of establishing such a Pharmacare program.

#### Objective

The main purpose of this project is to accurately establish the fundamental facts that inform key assumptions in the public discussion about Pharmacare and to explore feasible alternatives to a government-run monopoly over drug insurance.

#### Content

Our study answers several important questions about Pharmacare that have not been adequately addressed by Pharmacare advocates, including: How many Canadians are insured, uninsured and under-insured for their prescription drugs? How will access to newer more innovative treatments be affected by Pharmacare and what are the health implications for patients? Under realistic assumptions, how much cost will be shifted from private plans onto taxpayers under Pharmacare? What are the indirect economic costs from a government take-over of private insurance? What are the NAFTA implications? How do other countries achieve universal drug insurance coverage? How is the existing pluralistic public-private system in Canada structured and which federal/provincial public drug plans provide the best/worst access to prescription drugs?

#### Conclusions

Based on the evidence, we conclude that a national, single-payer Pharmacare program is unnecessary, and it will be bad for Canadian patients and expensive for Canadian taxpayers. The real problem with drug insurance in Canada is that existing public drug plans are grossly under-insuring patients compared to the coverage provided by private insurance plans. Public drug plans simply provide much fewer treatment options for patients, leaving 11 million Canadians with uninsured drug costs whenever their prescribed and preferred treatments are not covered under the public plan.

## Introduction

### Background

Since 2013, several academics, activist groups and unions have been vigorously advocating for the establishment of a government-run monopoly over drug insurance known as Pharmacare.

Pharmacare is proposed as a national, universal-coverage, publicly-funded, government-run, single-payer monopoly that would entirely replace Canada's current pluralistic system of federal-provincialterritorial publicly-funded government-run drug plans, and employment-based private drug plans.

Pharmacare advocates infer that this will be either a federal program or a federal-provincialterritorial intergovernmental cooperative program in order to achieve national scale and standards.

The leading advocate of this proposal has been the Pharmaceutical Policy Research Collaboration (PPRC), a group of academics led primarily by the Centre for Health Services and Policy Research at the University of British Columbia. The PPRC co-sponsored a 2013 conference with the goal of building a coalition to push for national single-payer Pharmacare.<sup>1</sup>

Several papers have subsequently been published by scholars affiliated with the PPRC advocating a national single-payer pharmacare system.<sup>2,3</sup>

<sup>1</sup> PPRC. URL: <u>www.pharmaceuticalpolicy.ca.</u> <u>Pharmacare2020 conference. URL:</u> http://pharmacare2020.ca/conference/.

<sup>2</sup> Steven G. Morgan, Jamie R. Daw and Michael R. Law (2013). Rethinking Pharmacare in Canada. *CD Howe* 

Most recently, the *Canadian Medical Association Journal (CMAJ)* published a study (Morgan *et al* 2015) that estimated the cost of establishing universal public coverage of prescription drugs in Canada under a new Pharmacare program.<sup>4</sup>

Morgan et al concluded that:

"Overall, Canadians spent just over \$22 billion on the medications included in our analysis during the fiscal year 2012/13. Under our base scenario estimates, total spending on these prescription drugs under a system of universal public coverage would be about \$15.1 billion, representing a decline of \$7.3 billion or 32%. Estimated total savings are the result of almost equal contributions of changes in generic prices, brand-name prices and product selection, net of a small cost increase driven by increased use by previously uninsured patients... Provided that Canada could achieve the pricing found in several comparable countries and the rates of generic drug use currently seen under several provincial drug plans, a universal public drug plan would reduce total spending on prescription drugs in Canada by \$7.3 billion per year, or 32%."<sup>5</sup>

Institute. Commentary No. 384. URL: http://www.cdhowe.org/pdf/Commentary 384.pdf. Marc-André Gagnon (2014). A Roadmap to a Rational Pharmacare Policy. School of Public Policy & Administration at Carleton University. (https://nursesunions.ca/sites/default/files/pharmacare report.pdf. Foreword by Steven G. Morgan (Director of the Centre for Health Services and Policy Research at UBC), afterword by Michael McBane (National Coordinator, Canadian Health Coalition), opening message by the publisher of the paper, Linda Silas of the Canadian Federation of Nurses Unions (CFNU). <sup>4</sup> Morgan, Law, Daw, Abraham and Martin (2015). Estimated cost of universal public coverage of prescription drugs in Canada. CMAJ, March 16, 2015. <sup>5</sup> Excerpted from Morgan et al (2015).

### **CHPI study**

Our study asks several important questions about Pharmacare that have not been adequately addressed by Pharmacare advocates, including:

- How many Canadians are insured, uninsured and under-insured for their prescription drugs?
- How will access to newer more innovative treatments be affected by Pharmacare and what are the health implications for patients?
- Under realistic assumptions, how much cost will be shifted from private plans onto taxpayers under Pharmacare?
- What are the indirect economic costs from a government take-over of private insurance?
- What are the NAFTA implications?
- How do other countries achieve universal drug insurance coverage?
- How is the existing pluralistic public-private system in Canada structured and which federal/provincial public drug plans provide the best/worst access to prescription drugs?

We answer these questions and present evidence to suggest that there are at least four reasons why Canadians should be skeptical about Pharmacare.

First, Canada's actual experience with public drug plans strongly suggests that Pharmacare will reduce access to the most innovative medicines for the 24 million Canadians who currently have employment based private drug plans, without improving benefits for the 11 million Canadians who are currently eligible for public drug plans. Forcing 24 million Canadians with private drug plans to accept the inferior coverage provided by public drug plans could have profound health and economic implications.

Second, assuming realistic prices and no changes to the drug benefits currently enjoyed by Canadians, Pharmacare will shift \$13.2 billion in direct prescription drugs related costs onto taxpayers. If implemented entirely as a centralized federal program, Pharmacare would shift \$25.5 billion off the provinces and the private sector onto the federal budget. In both cases, additional indirect economic costs resulting from the government take-over of the private drug insurance industry could total at least \$4.1 billion in the first year.

Third, a government monopoly is not needed to achieve universal drug insurance coverage: under the current pluralistic public-private system, Canada already has universal drug insurance coverage for catastrophic expenses, and near universal insurance coverage for ordinary prescription drug costs. Neither is a centralized national program needed: provincial/territorial/federal governments already have the authority to autonomously implement any kind of drug insurance system they wish within their respective jurisdictions.

Fourth, international experience proves that there are other ways to achieve universal drug insurance coverage. Several advanced countries have mandatory universal private drug insurance systems supported by means tested public subsidies. Quebec's drug insurance system is somewhat similar to these countries and Quebec has consistently provided the best access to new drugs among all of Canada's publicly funded drug plans.

Based on the evidence, we conclude that a national, single-payer Pharmacare program is unnecessary, and it will be bad for Canadian patients and expensive for Canadian taxpayers.

The evidence suggests that the real problem with drug insurance in Canada is that existing public drug plans are grossly under-insuring patients compared to the coverage provided by private insurance plans. Public drug plans simply provide much fewer treatment options for patients, leaving 11 million Canadians with uninsured drug costs whenever their prescribed and preferred treatments are not covered under the public plan.

We recommend that federal and provincial governments explore policies that would:

- Help more Canadians to gain the health advantages of superior private insurance coverage using real-world guidance from mandatory universal private health insurance systems in other countries.
- Immediately improve coverage for new medicines across existing public drug plans in Canada to match the superior coverage and patient health options provided by private drug insurance plans.

### Insured, uninsured, under-insured

- A government monopoly is not needed to achieve universal drug insurance coverage: under the current pluralistic public-private system, Canada already has universal drug insurance coverage for catastrophic expenses, and near universal insurance coverage for ordinary prescription drug costs.
- The evidence suggests that a significant number of patients are under-insured.

### Estimating the uninsured population

Prescription drug insurance coverage in Canada is a pluralistic system of private sector and public sector plans. The best available evidence suggests that under the current system, Canada already has universal drug insurance coverage for catastrophic expenses, and near universal insurance coverage for ordinary prescription drug costs.

### **Catastrophic drug insurance**

Every jurisdiction in Canada has some type of special publicly funded program or policy to provide uninsured Canadians with financial assistance for catastrophic expenses above a threshold percentage of income for access to drug products that are approved for public insurance.<sup>6</sup> Each of the provincial public drug plans have Special Access Programs to help residents access certain drug therapies that are not on formularies.

<sup>&</sup>lt;sup>6</sup> CIHI (2014). Prescribed Drug Spending in Canada, 2013: A Focus on Public Drug Programs. Page 31. Ottawa: Canadian Institute for Health Information (CIHI).

### **Ordinary drug insurance**

IMS Brogan estimates that as of 2013, 11.0 million Canadians were eligible for coverage under public drug plans and less than 0.8 million Canadians were eligible for other publicly funded drug insurance programs targeting special populations.<sup>7</sup>

Data from the Canadian Life and Health Insurance Association (CLHIA) indicate that 24.2 million Canadians are covered by a private drug plan, mostly as a benefit obtained through employment. The privately insured population is comprised of 10,373,570 direct beneficiaries and their 13,846,876 dependents with extended health benefits. <sup>8</sup>

According to estimates by Statistics Canada, at the end of 2013 Canada's national population totalled roughly 35.3 million.<sup>9</sup>

Assuming that these statistics are accurate, we estimate that only a very small percentage of Canadians (minimum estimate 100,000) have no formal drug plan to pay for ordinary prescription drug expenses.<sup>10</sup>

### Uninsured v. under-insured

Eligibility for a private or public drug insurance plan does not mean that all drug costs are insured.

Research from a 2007 survey of 5,732 Canadians found that about 10% of respondents who had received a prescription in the previous year reported that they did not adhere to their prescribed drug treatment because they could not afford their medications.<sup>11</sup>

Survey results like these are largely (though not entirely) explained by the impact of cost-sharing and restricted formularies in drug plans.

Both private and public drug plans expose their insured populations to a variety of cost-sharing arrangements including co-payments, deductibles and co-insurance (less than 100% coverage of costs).

The quality of drug insurance coverage also differs from plan to plan. Some plans cover the most advanced drug treatments available, while other plans cover only a small fraction of new drugs. The wait for administrative approval to extend insurance coverage to new drugs also differs by plan. Restricted formularies and the delayed inclusion of new medicines on formularies effectively leave patients uninsured for access to those drugs.

 <sup>&</sup>lt;sup>7</sup> IMS Brogan (2015). Comprised of 11,028,315 eligible for federal/provincial/territorial public drug plans and
 782,691 eligible under other public drug programs. Some double counting between these groups is possible from dual eligibility. Special data request. May 15, 2015.
 <sup>8</sup> CLHIA (2015). Adjusted by CLHIA for any potential

double counting. Special data request. Wednesday, August 19, 2015.

<sup>&</sup>lt;sup>9</sup> Statistics Canada (2015). Table 1-1 Quarterly population estimates, national perspective — Population. At January 1, 2014: 35,335,266.

<sup>&</sup>lt;sup>10</sup> Approx. 100,000. Calculation: total population, minus private drug plan population, minus public drug plan population.

<sup>&</sup>lt;sup>11</sup> Michael R. Law, Lucy Cheng, Irfan A. Dhalla, Deborah Heard, Steven G. Morgan (2012). The effect of cost on adherence to prescription medications in Canada. *Canadian Medical Association Journal (CMAJ)*, January 16, 2012.

## Pharmacare impact on existing drug benefits

- Pharmacare will reduce access to the most innovative medicines for the 24 million Canadians who currently have employment based private drug plans.
- Reduced access to newer and better medicines will lead to worse health outcomes and additional costs for the health system.

### **Private v. Public Drug Benefits**

Canadians might be surprised to find out how much better and faster coverage is under private drug plans compared to public drug plans.

Research published by CHPI provides hard evidence from Canadian experience that private drug plans provide much better access to new medicines for patients than any of the various federal-provincial-territorial publiclyfunded, government-run drug plans across the country.<sup>12</sup>

CHPI compared coverage for new drugs in private versus public drug plans in Canada. The most recent data were obtained from Health Canada and IMS Brogan covering the period from January 1, 2004 to December 1, 2013. The results are shown in Charts 1 and 2.

The analysis showed that of the 39 new drugs approved by Health Canada in 2012, 36 (92%) were covered by at least one private drug plan compared to only 11 (28%) that were covered by at least one public plan - as of December 1st, 2013.

For the new drugs approved for sale by Health Canada in 2012 that were eventually covered under at least one private plan and at least one public plan, private drug plans took 143 days on average to approve coverage compared to 316 days for public drug plans.

Aggregated across all years observed, 88% (363 out of 412) of the new drugs approved for sale by Health Canada from 2004 to 2012 were covered by at least one private drug plan, compared to 46% (191 out of 412) that were covered by at least one public drug plan. (Chart 1)

The coverage delay for new drugs, averaged across all years studied (2004 to 2012), was 138 days for private drug plans compared to 479 days for public drug plans. (Chart 2)

The data confirm that the quality of drug coverage is far better in private than in public drug plans in Canada.

<sup>&</sup>lt;sup>12</sup> CHPI (2014). Private versus public drug coverage in Canada: Experience shows competition and choice are better than government-run Pharmacare. Annual Series: How Good Is Your Drug Insurance? *Canadian Health Policy*, February 21, 2014. Toronto: Canadian Health Policy Institute. URL:

http://www.canadianhealthpolicy.com/research/privateversus-public-drug-coverage-in-canada.html.



As of December 1, 2013, of the new drugs approved for sale by Health Canada within each year. Data: Health Canada (2013); IMS Brogan (2013). Calculations: CHPI (2014).

Chart 2 Average wait (days) for coverage of new drugs in private v. public drug plans.



Of the new drugs approved for sale by Health Canada within each year; comparing only the drugs covered by at least one private plan *and* at least one public plan, as of December 1, 2013. Data: Health Canada (2013); IMS Brogan (2013). Calculations: CHPI (2014).

### **Health Implications**

Forcing 24 million Canadians with private drug plans to accept the inferior coverage provided by public drug plans could have profound health and economic implications.

Research has shown that access to new medicines is positively correlated with better health outcomes. A 2012 study by Dr. Frank R. Lichtenberg of Columbia University examined the impact of pharmaceutical innovation, as measured by the average age (vintage) of prescription drugs used, on life expectancy, using data on 30 developing and highincome countries during the period 2000-2009.

Lichtenberg found that life expectancy at all ages and survival rates above age 25 increased faster in countries using newer drugs. The newness of available drugs was the only variable that was significantly related to all of these measures of longevity growth.

Pharmaceutical innovation is estimated to have accounted for almost three-fourths of the 1.74-year increase in life expectancy at birth in the 30 countries in the study sample between 2000 and 2009, and for about one third of the 9.1-

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year difference in life expectancy at birth in 2009 between the top 5 countries (ranked by average drug vintage in 2009) and the bottom 5 countries.<sup>13</sup>

The health implication of access to innovative medicines was also the subject of a 2015 study by Lichtenberg.<sup>14</sup> The study examined the effect that pharmaceutical innovation has had on premature cancer mortality in Canada by investigating whether the cancer sites that experienced more pharmaceutical innovation had larger declines in the premature mortality rate, controlling for changes in the incidence rate.

Pharmaceutical innovation during the period 1985-1996 is estimated to have reduced the number of years of potential life lost to cancer before age 75 in 2011 by 105,366.

### **Economic Implications**

Research has also quantified the cost-efficient economic impact on total health spending and societal productivity associated with better access to newer medicines.

A 2002 study by Lichtenberg using data on the entire U.S. population for the years 1996, 1997

and 1998 found that the use of newer more innovative drugs reduced non-drug spending by 7.2 times as much as it increased drug spending.<sup>15</sup> The study also looked more narrowly at the US Medicare population and found that use of new drugs reduced non-drug spending by all payers (public and private) 8.3 times as much as it increased drug spending and it reduced Medicare non-drug spending 6.0 times as much as it increased drug spending.

More recently a 2013 study published by the Conference Board of Canada examined the health and economic benefits associated with

> spending on pharmaceuticals in Ontario from 2007 to 2012.<sup>16</sup>

The study found that the added costs associated with the use of innovative pharmaceuticals were offset by reductions in the use of other types of health care resources and a reduction in the productivity losses associated with disease as a result of improved health outcomes.

In particular, the \$1.22 billion spent on six classes of pharmaceutical drugs in 2012 generated offsetting health and societal benefits of nearly \$2.44 billion in the same year.

Pharmacare will force 24 million Canadians with private drug plans to accept the inferior coverage provided by public drug plans and this could have profound health and economic implications.

 <sup>&</sup>lt;sup>13</sup> Lichtenberg FR (2012). Pharmaceutical Innovation and Longevity Growth in 30 Developing and High-income Countries, 2000-2009. National Bureau of Economic Research (NBER), Working Paper No. 18235. July 2012.
 <sup>14</sup> Lichtenberg FR (2015). The impact of pharmaceutical innovation on premature cancer mortality in Canada, 2000–2011. International Journal of Health Economics and Management. September 2015, Volume 15, Issue 3, pp 339-359.

<sup>&</sup>lt;sup>15</sup> Lichtenberg FR (2002). Benefits and Costs of Newer Drugs: An Update. *National Bureau of Economic Research (NBER)*, Working Paper No. 8996. June 2002.

<sup>&</sup>lt;sup>16</sup> Hermus G, Stonebridge C, Dinh T, Didic S, Theriault L (2013). *Reducing the Health Care and Societal Costs of Disease: The Role of Pharmaceuticals*. The Conference Board of Canada, July 2013.

## Direct cost to taxpayers

- Assuming current prices and no changes to the drug benefits currently enjoyed by Canadians, Pharmacare would shift at least \$13.2 billion in annual costs from the private sector onto Canadian taxpayers.
- If implemented as a 100% federal program, Pharmacare would shift \$25.5 billion off the provinces and the private sector onto the federal budget.

### **Drugs costs reported by CIHI**

The most recent data available from the Canadian Institute for Health Information (CIHI) for national spending related to prescription drugs for 2013 are shown in Table 1.<sup>17</sup>

CIHI reported \$28.6 billion in total public sector and private sector spending related to prescription drugs in Canada in 2013 (Table 1).

There are several important nuances in the data definitions used by CIHI that require explanation.

First, the spending reported for "Prescribed Drugs" includes all related costs, which consist of patented and non-patented drugs ("non-patented" drugs include off-patent brands and generics), wholesale and retail price mark-ups, pharmacy dispensing fees, and the administrative costs of public drug plans.

The public sector administration costs reported by CIHI for government health expenditures exclude the administration costs of public drug plans, which are reported by CIHI under "Drugs" expenditures.

Therefore, the total health administration costs reported by CIHI are understated and the costs for "Prescribed Drugs" are overstated.

## Table 12013 Distribution of Public and Private SectorPrescription Drugs Related Costs Reported by CIHI

Total	\$28,584,57
Non-insured costs & co-payments (out-of-pocket)	\$6,402.63
Private Insurers	\$10,088.26
Social Security Funds (WCB + Drug Insurance Funds)	\$1,081.34
Federal drug plans	\$625.59
Provincial/Territorial drug plans	\$10,386.75
	(millions \$)

Data Source: CIHI (2014). NHEX Data Tables. Table G.14.1. Expenditure on Drugs by Type, by Source of Finance, and as a Share of Public, Private and Total Health Expenditures, Canada, 1985–2014.

> Meanwhile, the cost of "Prescribed Drugs" excludes hospital spending on drugs, which is reported under "Hospitals" expenditures.

Second, the costs associated with public sector employees' drug plans are paid by taxpayers but are reported in CIHI data as private insurers' spending because public sector employees are covered by drug plans that are administered by the private sector.

<sup>&</sup>lt;sup>17</sup> The data was published in October 2014. 2014 data were not used in our analysis because the data were not yet fully captured for the year as of the publication date and were only available as forecasted estimates. CIHI also reported the 2013 data as forecasted numbers. We used the 2013 data because it was the most recent complete calendar year and the forecast was expected to be more accurate given that there were 9 to 10 months for it to mature prior to the 2014 publication.

Third, prescribed drugs related spending by Social Security Funds (SSF) is reported by CIHI as public sector expenditure; however, SSF costs are not funded through redistributive taxes, but through mandatory private sector contributions.

### Taxpayers' and private-payers' costs before and after Pharmacare

Table 2 shows our analysis of the 2013 CIHI data, re-classifying national prescribed drugs related spending according to whether it was

paid for by taxpayers versus private sector payers. Table 3 shows the most recent available data and calculations that inform the assumptions for estimating and reclassifying the data according to whether it was funded by taxpayers or by private-payers.

Federal/provincial/territorial drug plan spending is presented as reported by CIHI and classified as taxpayers' costs. The public sector employees' portion of private drug plans' costs are

estimated and reclassified as taxpayers' costs. The private sector employees' portion is similar estimated and remain classified as private-payer costs. SSF spending is reclassified as private spending for reasons stated earlier.

In the "after" Pharmacare scenario, noninsured costs are separated from co-payments by the amounts estimated using data from the Morgan *et al* study's proposed co-payment charges under Pharmacare, and multiplied by

Taxpayers' costs will increase by nearly \$13.2 billion (2013\$) as a result of cost-shifting from the private sector to Pharmacare. In addition, Pharmacare will charge Canadians over \$2.7 billion in out-of-pocket copayments.

data from IMS Brogan for the number of brand and generic prescriptions dispensed. Incremental administrative costs on new publicly administered spending are estimated.

As shown in Table 2, taxpayers' costs will increase by nearly \$13.2 billion (2013\$) as a result of cost-shifting from the private sector to Pharmacare. If implemented as a 100% federal program, Pharmacare would shift \$25.5 billion off the provinces and the private sector onto the federal budget. In addition, Pharmacare will charge Canadians over \$2.7 billion in out-of-

pocket co-payments.

Assuming current prices and no changes to the drug benefits currently enjoyed by Canadians, at the total societal level (taxpayer plus private-payer funded), the only projected savings would potentially come from any difference between public and private drug plans' administrative costs.

However, as mentioned earlier, the public sector administration costs reported by CIHI for government health expenditures exclude

the administration costs of public drug plans, which are reported by CIHI under "Drugs" expenditures.

This means that the minimum incremental public administration costs on former private costs shown in Table 2 are an underestimate of actual costs because our estimate applies the only available data for the percentage attributable to administration costs as reported by CIHI.

Table 2           2013 Distribution of Taxpayers' v. Private-payers' Costs Before and After Pharmacare								
Taxpayers' Costs		Private-payers' Costs						
	BEF	ORE						
Provincial/Territorial drug plans Federal drug plans Public sector employees' portion of private insurance costs	<b>(millions \$)</b> \$10,386.75 \$625.59 \$1,940.98	Social Security Funds Private sector employees' portion of private insurance costs Private sector employees' portion of private insurance administration costs	(millions \$) \$1,081.34 \$8,147.28 \$1,218.56					
Public sector employees' portion of private insurance administration costs	\$290.31	Non-insured costs & co-payments (out-of-pocket)	\$6,402.63					
Total	\$12,953.31 AF	TER	\$10,849.81					
Provincial/Territorial drug plans Federal drug plans Public sector employees' portion of private insurance costs Social Security funds Private sector employees' portion of private insurance costs Non-insured costs Minimum incremental public administration costs on former private costs <b>Total</b>	(millions \$) \$10,386.75 \$625.59 \$1,940.98 \$1,081.34 \$8,147.28 \$3,674.83 \$281.68 <b>\$26,138.45</b>	Co-payments Total	(millions \$) \$2,727.80 \$2,727.80					
Difference After Pharmacare	+\$13,185.13	Difference After Pharmacare	-\$14,122.01					

Notes: Figures rounded to the nearest decimal.

Table 3	
Supporting Data	
Assumptions	<u>Data</u>
Private sector and public sector portions of employed population <sup>18</sup>	
2011 total employed persons <sup>19</sup> 2011 public sector employed persons <sup>20</sup> Public sector employment % of total employment Private sector employment % of total employment	17,221,000 3,313,320 19.24% 80.76%
Private Insurers Administration Costs	
2012 total privately insured health spending (millions \$) <sup>21</sup> 2012 private insurance administration spending (millions \$) <sup>22</sup> 2012 private insurance administration % of total privately insured health spending <b>Public sector administration costs on total federal/provincial/territorial government health</b>	\$24,616.50 \$3,681.80 14.96%
spending	
2013 total F/P/T government spending on health (millions \$) <sup>23</sup> 2013 F/P/T government spending on health administration (millions \$) <sup>24</sup> 2013 administration costs % of total government spending on health	\$144,904.7 \$2,749.65 1.90%
Estimated Spending on Copayments Proposed for Pharmacare	
Total Rx's dispensed 12 mths ending Dec 2013 (millions) <sup>25</sup> Brands = 34.3% Generics = 65.7%	575.00 197.23 377.78
Morgan et al's proposed base scenario copays per Rx dispensed (\$) <sup>26</sup>	
Brands	\$10.00
Generics Total savings from conavs (millions \$)	\$2.00
Brands	\$1,972.25
Generics	\$755.55
Total	\$2,727,80

<sup>&</sup>lt;sup>18</sup> Public sector employment includes federal/provincial/territorial/local/institutional and excludes government business enterprises. Public and private sector portions of costs are assumed to reflect the relative portions of the workforce.

 <sup>&</sup>lt;sup>19</sup> Most recent data available. Statistics Canada (2015). Summary Tables. Employment by Industry. CANSIM table 282-0008.
 <sup>20</sup> Most recent data available. Statistics Canada (2015). Summary Tables. Public sector employment, wages and salaries (employees). CANSIM table 183-0002

<sup>(</sup>employees). CANSIM table 183-0002. <sup>21</sup> Most recent data available. CIHI (2014). National Health Expenditure Trends, 1975 to 2014. Report. October 2014. Table 3: Private Sector Health Expenditure by Source of Finance and Use of Funds, Canada, 2012.

<sup>&</sup>lt;sup>22</sup> Ibid.

<sup>&</sup>lt;sup>23</sup> CIHI (2014). NHEX Data Tables. Table C.6.1. Federal Direct Health Expenditure, by Use of Funds, Canada, 1975 to 2014— Current Dollars; and Table C.4.1. Provincial/Territorial Government Health Expenditure, by Use of Funds, Canada, 1975 to 2014— Current Dollars.

<sup>&</sup>lt;sup>24</sup> Ibid.

<sup>&</sup>lt;sup>25</sup> IMS Brogan (2014). PharmaFocus 2018. Page 382 and 384.

<sup>&</sup>lt;sup>26</sup> Morgan et al (2015). Estimated cost of universal public coverage of prescription drugs in Canada. Online Appendix 1. CMAJ March 16, 2015.

## Explaining the variance between the Morgan *et al* and CHPI estimates

### Data differences: Morgan et al v. CIHI

The Morgan *et al* study estimated actual total spending on prescription drugs in Canada during the fiscal year 2012/13 to be \$22.3 billion.<sup>27</sup> Their estimate is about \$6.3 billion lower than figures published by CIHI which estimate prescription drugs related spending to be \$28.6 billion in the calendar year 2013.<sup>28</sup>

A small part of the variance could be due to the difference between the fiscal year period used by Morgan *et al* and the calendar year periods used by CIHI.

There is rough congruence between the numbers on the public sector side. Morgan *et al* reported total <u>public</u> costs of \$12.2 billion that almost match the figures published by CIHI of roughly \$12.1 billion. CIHI's number was comprised of \$1.1 billion for Social Security Funds, \$0.6 billion for Federal government drug plans and \$10.4 billion for Provincial/Territorial government drug plans.

However, Morgan *et al* reported <u>private</u> sector costs of only \$10.1 billion total, comprised of \$5.6 billion for private drug plans and \$4.5 billion for out-of-pocket spending. Whereas the corresponding data published by CIHI is \$16.5 billion for the private sector comprised of \$10.1 billion for private drug plans and \$6.4 billion for "out-of-pocket" costs (i.e. non-insured and copayments).

Based on these numbers, it appears that Morgan *et al* might have underestimated the cost of covering the formerly uninsured population; and/or did not count all prescription drugs related costs that define the data published by CIHI, which include *ex factory* sales cost of drugs, plus wholesale and retail price mark-ups, plus pharmacy dispensing fees, plus administration costs. These related costs must be paid for under Pharmacare as well.

### Assumptions on prices and substitution

The Morgan *et al* study did not estimate the cost shift from private payers to taxpayers, all else being equal. Their estimate is built on the two assumptions that a universal national government-run monopoly pharmacare program can be made affordable through (1) leveraging monopsony buying power to achieve dramatic price reductions; and (2) by limiting the range of therapeutic products available to patients under Pharmacare through increased generic substitution and formulary restrictions.

It is highly doubtful that significant savings could be gained by either approach.

### Prices

Prices for new medicines in Canada are already regulated and are quite moderate. According to the 2013 Report of the Patented Medicine Prices Review Board (PMPRB) - Canada's federal drug price regulator - the prices of patented medicines available in Canada have grown slower than the Consumer Price Index (CPI) in 24 of the last 26 years.<sup>29</sup>

Another analysis by the PMPRB of drug products matched between comparable countries showed that the prices of patented medicines in Canada have remained below the

<sup>&</sup>lt;sup>27</sup> Morgan et al (2015). Table 2.

<sup>&</sup>lt;sup>28</sup> CIHI (2014). NHEX Data Tables. Table G.14.1.

<sup>&</sup>lt;sup>29</sup> PMPRB (2014). 2013 Annual Report. Figure 4.

average median international prices every year for the last 13 years from 2001 to 2013.<sup>30</sup>

Ultimately, prices are constrained by the global economics of new drug development. There is very little that a Canadian pharmacare monopoly could do to affect the prices of new drugs, without jeopardizing access to new drugs in Canada. The development of new drugs occurs on a global level. Across international markets, prices are differentiated to match local incomes, in order to recover the high risk-adjusted capital costs of research and development which are incurred globally.<sup>31</sup>

According to the most recent estimate published by Tufts University Center for the Study of Drug Development, as of 2013, the cost to develop, win marketing approval and conduct post-approval R&D for a new drug as required by the U.S. Food and Drug Administration (FDA) is between US\$2.6 billion and US\$2.9 billion on average. This estimate does not include further global costs of obtaining additional drug approvals outside the USA.<sup>32</sup>

Using a different method, another study published by *Forbes*<sup>33</sup> examined the 15-year

research spending of a group of the largest pharmaceutical companies and divided it by the number of new drugs each had approved by the FDA. The research suggests that for companies that have launched more than three drugs, the median cost of development per new drug is US\$4.2 billion; for companies that have launched more than four, it is US\$5.3 billion. The high global costs of developing new drugs has been confirmed by a substantial body of research over a long period of time.<sup>34, 35, 36, 37, 38, 39</sup>

The assumption that significant savings can be squeezed from the prices of new drugs is also not supported by the evidence on the actual cost burden of overall spending on new drugs. Total spending on new drugs is already only a small fraction of total health spending, leaving little room for overall savings from further rationing and price controls.

A 2014 CHPI study assessed the economic burden of spending on patented drugs in Canada relative to population, general price inflation, GDP and other healthcare costs. The

<sup>&</sup>lt;sup>30</sup> Ibid. Figure 10.

<sup>&</sup>lt;sup>31</sup> Danzon, PM and Furukawa, MF (2003). Prices And Availability Of Pharmaceuticals: Evidence From Nine Countries. *Health Affairs*. October 29, 2003.

 <sup>&</sup>lt;sup>32</sup> JA DiMasi, HG Grabowski and RW Hansen (2014).
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<sup>&</sup>lt;sup>33</sup> Herper M (2013). How Much Does Pharmaceutical Innovation Cost? A Look At 100 Companies. Forbes, August 11, 2013. URL:

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 <sup>&</sup>lt;sup>34</sup> DiMasi JA (2001). Risks in New Drug Development:
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<sup>&</sup>lt;sup>36</sup> Adams CP, Brantner VV (2003). New Drug Development: Estimating Entry from Human Clinical Trials. FTC Working Paper No. 262. *Federal Trade Commission*.

<sup>&</sup>lt;sup>37</sup> Adams CP, Brantner VV (2006). Estimating the Cost of New Drug Development: Is It Really \$802 Million? *Health Affairs* 25, 2: 420–28.

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<sup>&</sup>lt;sup>39</sup> Paul SM, Mytelka DS, Dunwiddie CT, Persinger CC, Munos BH, Lindborg SR, Schacht AL (2010). How to improve R&D productivity: the pharmaceutical industry's grand challenge. *Nature*, 2010, Volume 9: 203-214.

analysis used the most recent data from the Patented Medicine Prices Review Board (PMPRB) and the Canadian Institute for Health Information (CIHI).<sup>40</sup>

According to data from PMPRB, all spending on patented drugs in Canada totalled \$13.6 billion in 2013 [at *ex factory* prices].<sup>41</sup>

At \$13.6 billion, patented drugs directly accounted for only 6.5% of the \$210.4 billion reported by CIHI for total (public & private) health spending in Canada in 2013.

Adjusting for population, per capita spending on patented drugs was \$386.82 in 2013. At \$386.82, per capita spending on patented drugs accounted for less than 1% (0.72%) of per capita GDP (\$53,506.50) in 2013. Per capita spending on patented drugs has declined relative to GDP since 2004 when it was 0.83% of per capita GDP."

On a per capita basis, spending on patented drugs has grown much slower than spending on the rest of healthcare. Over the most recent five years from 2008 to 2013, per capita spending on patented drugs grew by only 2.1% in total over the entire period. By comparison, per capita spending on all other health care (excluding patented drugs) grew by 16.7% from 2008 to 2013. Adjusting also for general price inflation over time, per capita spending on patented drugs in 2013 was equal to \$246.96 in constant 1990 \$, declining -5.2% from \$260.41 (in constant 1990 \$) in 2008.

What is the impact of patented drugs on Provincial/Territorial government health spending?

According to CIHI data, provincial/territorial government spending through public drug plans on all (patented and non-patented) <u>prescribed</u> drugs was roughly \$10.3 billion. This accounts for 36.3% of the \$28.6 billion in total (public and private) spending on <u>prescribed</u> drugs across Canada in 2013.

It is estimated that total provincial/territorial government spending through public drug plans on patented prescribed drugs was approximately \$4.9 billion or only 3.6% of the \$138.1 billion total spent by provincial/territorial governments for health care in 2013.

Adjusting for population, per capita provincial/territorial government spending through public drug plans on patented prescribed drugs was estimated to be \$140.56 in 2013.

Per capita provincial/territorial government spending through public drug plans on patented prescribed drugs declined -5.3% over the entire 5-year period from 2008 to 2013. By comparison per capita provincial/territorial government spending on all other health care (excluding patented drugs) increased by 18.0% over the same period.

The very small percentage of total (public & private) health spending or provincial/territorial government health spending accounted for by

 <sup>&</sup>lt;sup>40</sup> CHPI (2014). Spending on patented drugs in Canada,
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 <sup>41</sup> Patented drugs therefore directly accounted for (at most) only 48% of the \$28.6 billion in total (public & private) spending reported by CIHI for <u>prescribed</u> "drugs" in 2013; and only 40% of the \$33.7 billion in total (public & private) spending reported by CIHI for <u>all</u> "drugs" in 2013.

patented drugs means there is very little room to squeeze more savings from the cost of new drugs without jeopardizing the health options available to Canadians.

### Generic Usage

Generic product utilization is already very high in Canada's public drug plans, realistically leaving little room for further substitution.

According to the most recently available data from CIHI, when looking only at cases in which a generic version(s) of a product is available, generic drugs already accounted for 85.2% of prescription claims paid for under public drug plans in Canada.<sup>42</sup>

## Indirect economic costs

- The indirect gross economic costs from Pharmacare displacing the private drug insurance business include lost employment, a reduced tax base and increased social costs totaling nearly \$3.7 billion.
- Nationalizing the private drug insurance business could trigger legal claims to compensation under NAFTA provisions that protect investors from government takeovers. These costs would be paid by Canadian taxpayers and total over \$372 million.

### **Employment losses**

There are challenges with estimating the private drug plans' contribution to overall employment in the life and health insurance industry because private insurers offer drug plans as part of broader health coverage, and agents and brokers that sell this coverage offer other coverages as well.

CIHI data on the drug costs incurred by private insurance plans has been used as a proxy for claims incurred, and a percentage has been calculated for drug plan claims as a percentage of claims by the entire insurance industry (both life and health and property-casualty<sup>43</sup>). The percentage has been applied to aggregate Statistic Canada numbers for employment in the industry.

 <sup>&</sup>lt;sup>42</sup> CIHI (2015). Prescribed Drug Spending in Canada, 2013:
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<sup>&</sup>lt;sup>43</sup> For property and casualty claims, the 2012 figure was used as 2013 has not yet been published by IBC.

## Table 4Estimated Direct and Indirect Employment, Average Salariesand Total Compensation Private Drug Plans 2013

	Number Employed	Average Annual Salaries	Total
Insurance Carriers	8,329	\$84,933	\$707.4 million
Agents, Brokers, Other Services	10,470	\$60,895	\$637.6 million
TOTAL	18,799		\$1,345.0 million

Sources: Statistics Canada CANSIM Table 383-00311, author calculations.

According to Statistics Canada, the contribution to employment from insurance carriers was 85,865 and the contribution by associated agents, brokers and other insurance services was 107,940.

The portions of these contributions attributable to private drug plans is estimated to be:

- Insurance carriers: 8,329
- Agents, Brokers and other Insurance Services: 10,470

Table 4 shows employment numbers, average salaries and total incomes for both categories. The indirect economic costs in lost employment from Pharmacare displacing the private drug insurance business include 18,799 jobs worth over \$1.3 billion in lost incomes annually.

### **Industry tax losses**

According to the Canadian Life and Health Association (CLHIA), the industry paid over \$3.5 billion in taxes to federal, provincial, and municipal governments for its business in Canada (CLHIA 2014a). The portion attributable to private drug coverage is estimated again using CIHI data on drug costs incurred as a proxy for drug plan payments only it is divided by total payments made by the Canadian life and health insurance industry. Using this method, the taxes paid to Canadian governments for drug plans are estimated at \$464 million.

CLHIA (2014b) notes the industry collected an additional \$1.3 billion in retail sales taxes on group insurance plans on behalf of provincial governments. As health insurance is mostly offered by employers through group plans, a significant portion of these taxes would be related to drug plans.

Insurance agents and brokers insurance related industries contributed \$405 million in income taxes in 2012 according to Statistics Canada. To estimate the proportion attributable to drug plans, the same methodology has been used for the calculations of employment only with 2012 data. On this basis, it is estimated that the portion attributable to drug plans is \$36 million.

### **Personal tax losses**

Table 5 shows median and average income and income taxes paid by family units in 2012. Applying the Statistics Canada implicit income tax rate to the total salary compensation estimates in Table 4 suggests that annual income tax losses of \$112.5 million for people employed by insurance carriers and \$101.4 million for people employed as/by brokers, agents and other insurance services.<sup>44</sup>

Employment losses in these sectors would have additional adverse fiscal impacts such as lower sales tax expenditures because of lower spending and social security costs (i.e. employment insurance).

### Social costs

Employment insurance (EI) costs consist of benefits paid under the program and the loss of premiums of individuals no longer employed. Eligibility for benefits depends on regional unemployment rates. Using the national rate (6.8% in February 2015 according to Statistics Canada) to determine number of weeks of eligibility, and applying the maximum number of weeks of eligibility (38) to the employment numbers in Table 4, it is technically feasible that national pharmacare could cost the federal government \$374.3 million dollars, less what is

## Table 52012 Income and Income Taxes by Family Unit

Average Income	\$77,800
Median Income	\$59,700
Average Income Taxes	\$12,400
Median Income Taxes	\$6,200
Implicit Income Tax Rate	15.9%

Source: Statistics Canada Table 206-0001.

returned to governments in taxes including income tax and the tax penalty for income earners that exceed an income threshold for the years in which they receive benefits.

Applying Statistics Canada's implicit income tax rate in Table 5 results in an after tax estimate of maximum possible benefits costs of \$314.8 million. Loss of premiums for one year of the number of employees stated in Table 4 would be a further \$17.5 million.

### NAFTA compensation costs

Box 1 states the relevant text of the NAFTA agreement on expropriation.

Epps and Flood (2002) note that.... "if a government wanted to fund or provide health care services in an area that was currently privately financed or open to private providers, such action could be considered a measure tantamount to expropriation by depriving investors present in the market of their current or potential business, thus opening up the possibility of a claim for compensation." They further express the view that explicit legislation forcing established U.S. or Mexican entities out of Canadian health care markets would trigger a requirement for expropriation compensation.

<sup>&</sup>lt;sup>44</sup> However, the Statistics Canada data on income tax is based on family units. Family units may have other sources of income such as an additional employed person and investment income. Given that income tax rates in Canada are progressive, the marginal implicit income tax rate in Table 5 would definitely be lower than the implicit rate for insurance carrier staff and might be lower than the implicit rate for brokers, agents and other insurance services.

Should national pharmacare be introduced in Canada, the going concern value of fair market value compensation costs have been estimated as the present value of a future stream of profits. Growth in profits is estimated as being the same as growth in expenditure in privately funded drug costs. The Canadian Institute of Actuaries has projected that these costs will grow annually at a real rate of 3.4% until 2037. To determine a nominal growth rate for this period, 2% has been added (50% of the Bank of Canada's current target

inflation rate. Following 2037, the growth rate used in this estimate is half the Bank of Canada's target inflation rate.

The income stream has been discounted at 7.7%, which is the average ROE for the life and health insurance industry for the 10 years 2003-2012 as determined by Statistics Canada. The fair market value for insurers eligible for

### Box 1. NAFTA Article 1110(1) (2)

Expropriation and Compensation

 No Party may directly or indirectly nationalize or expropriate an investment of an investor of another Party in its territory or take a measure tantamount to nationalization or expropriation of such an investment ("expropriation"), except: (a) for a public purpose;

(b) on a non-discriminatory basis;

(c) in accordance with due process of law and Article 1105(1); and

(d) on payment of compensation in accordance with paragraphs 2 through 6.

2. Compensation shall be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place ("date of expropriation"), and shall not reflect any change in value occurring because the intended expropriation had become known earlier. Valuation criteria shall include going concern value, asset value including declared tax value of tangible property, and other criteria, as appropriate, to determine fair market value.

compensation is estimated at \$27,349 per \$1,000 in annual income lost in 2016 if national pharmacare is introduced in the beginning of that year.

CLHIA (2014a) notes that foreign insurers generated 1.2% of total Canadian life and health premiums. Applying this to 2013 total net income (Office of the Superintendent of Financial Institutions [OSFI] data) and the

proportion of payments made to drug plans (the 2013 proportion of total expenditure on drugs by private insurers according to CIHI over CLHIA's figure for the total claims payments made by the Canadian life and health insurance industry) results in an estimate of \$372.4 million.

### **Total potential indirect costs**

Table 6 shows that indirect economic costs resulting from the government take-over of the private drug insurance industry could total almost \$4.1 billion in the first year.

Table 6	
Indirect Economic Costs of Pharmac	care
	(millions \$)
direct employment income losses	\$707.4
indirect employment income losses	\$637.6
direct industry income tax losses	\$464.0
industry sales tax losses	\$1,300.0
indirect industry income tax losses	\$36.0
direct employment related personal tax losses	\$112.5
indirect employment related personal tax losses	\$101.4
employment insurance expense	\$314.8
employment insurance premium losses	\$17.5
NAFTA compensation claims	\$372.4
TOTAL	\$4,063.6

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# Provincial public drug plan variation

A centralized national program is not needed: provincial/territorial/federal governments already have the authority to autonomously implement any kind of drug insurance system they wish within their respective jurisdictions.

### Who is covered under public drug plans?

Each of the ten Canadian provinces is responsible for managing their healthcare systems, including their public drug plans.<sup>45</sup>

The common core components across the 10 provincial public drug plans include coverage for social assistance recipients, drug cost assistance to residents with specific and rare diseases (e.g. cancer, HIV/AIDS and mental illnesses) and to residents with high drug cost relative to income.

British Columbia, Manitoba, Quebec and New Brunswick in design, provide public drug coverage to all residents who do not have private insurance or who need to supplement their private insurance coverage.

In Ontario, Quebec, New Brunswick, Prince Edward Island, Alberta and Nova Scotia all seniors are eligible for public drug plan coverage. Seniors in Saskatchewan under a certain income threshold are covered in the public plan while Newfoundland and Labrador coverage applies only to low income seniors.

In Alberta, non-seniors and non-social assistance recipients without private insurance can enroll for public drug coverage. Public drug plans in Newfound and Labrador, Nova Scotia, Prince Edward Island, Ontario and Saskatchewan provide coverage for non-senior and non-social assistance recipients when residents experience high drug cost relative to income.

### Catastrophic coverage

Effectively, all provinces offer drug cost coverage to help residents when their drug spending comprises a significant portion of their income i.e. catastrophic drug cost coverage. The level of catastrophic drug cost coverage varies across provinces and the drugs covered are typically those on respective formularies, which also vary by province. Each of the provincial public drug plans have Special Access Programs to help residents access certain drug therapies that are not on formularies.

### Cost-sharing in provincial public drug plans

The main determinants to how much coverage residents receive under provincial public drug plans and their contribution into the plans are income level, age and whether residents have private insurance.

Public drug plans of British Columbia, Manitoba and New Brunswick are available to all residents who register with the plans, thus in this way the availability of coverage to residents is considered universal. However, the amount of drug cost coverage is dependent on income i.e. individuals and families with lower income receive more cost coverage than those

<sup>&</sup>lt;sup>45</sup> The federal government is also responsible for six public drug plans – providing coverage for First Nations people and people in certain federal government departments (Veterans Affairs Canada, Canadian Forces, Correction Canada, RCMP and Citizenship and Immigration Canada).

with higher income. Seniors and non-seniors in British Columbia and Manitoba drug plans contribute to the cost of the plans through deductibles based on a percentage of income.

The British Columbia plan also requires a copayment. In New Brunswick non-senior participants pay premiums and co-payments with amounts determined by income levels. Low income seniors in New Brunswick pay only a co-payment while other seniors pay premiums and co-payments for drug cost coverage administered by a private insurer.

The Quebec public drug plan is compulsory for all residents without private drug insurance. Participants, seniors and non-seniors, pay an annual premium, monthly deductible and copayment amounts according to income and to a maximum amount. (Low income participants, children and certain student population are exempt from contributions).

Seniors in Nova Scotia pay premiums and copayments with set annual maximums (with contributions exceptions for low income seniors).

Seniors covered under public plans in Ontario, Alberta, Saskatchewan, Prince Edward Island and Newfoundland and Labrador do not pay premiums. Those in Ontario and Saskatchewan pay deductibles and set co-payments based on income with exceptions for low income seniors. In Alberta, Prince Edward and Newfoundland and Labrador, covered seniors pay only copayments.

Non-senior participants in Alberta pay premiums (with varying subsidized premiums for low income participants) and co-payments (a set amount). Participants pay deductibles and co-payments in Ontario (based on percentage of net income and a set copayment), Saskatchewan (based on percentage of income), and Nova Scotia (based on income levels). Non-seniors participants in Prince Edward Island's and Newfoundland and Labrador's public plans pay only co-payments.

All provincial public plans require cost contribution by participants depending on their income, thus ability to pay. Even with public drug cost coverage, many participants face large out-of-pocket expenses for drugs into the thousands of dollars, although Alberta appears to be different.

To illustrate variations in the cost faced by participants in provincial public plans<sup>46</sup>, take for example an individual with prescription drug needs and with an income of \$50,000. This individual would pay, annually:

- In British Columbia: a maximum \$2000 out-of-pocket drug cost<sup>47</sup>.
- In Alberta: a maximum of \$762 (the plan premium) and co-payment of \$25 per prescription.
- In Manitoba: maximum of \$2,685 and then all drug costs above this amount are covered.
- In Ontario: \$ 1,861 and any subsequent drug costs above this total, the individual pays only a copayment of \$2.
- In Quebec, the maximum amount is \$1029.
- In Nova Scotia: \$3,438 and any subsequent drug cost above this total, the individual pays only a copayment only 20%.
- In New Brunswick: premium of \$1,400 for the year and a co-payment of \$20 per prescription.

<sup>&</sup>lt;sup>46</sup> These amounts are derived using the online drug cost estimators provided by provincial public drug plan on their respective websites. No online drug cost estimators are available by Newfoundland and Labrador, Prince Edward Island and Saskatchewan provincial plans. <sup>47</sup> British Columbia and Ontario, public drug plan coverage is based on net income which is derived from downward adjustments to Total Income on personal income tax forms.

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cialCoverages.pdf.

## Benefits and costs across existing public drug plans in Canada

Access to new drugs differs significantly across existing public drug plans with Quebec's system providing the best access to innovative medicines and achieving the lowest overall health costs.

## Comparing coverage for new medicines across public drug plans

A 2014 CHPI study<sup>48</sup> ranked the quality of coverage for new drugs under federal and provincial public drug plans from best to worst using data from Health Canada and IMS Brogan covering the period from January 1, 2004 to December 1, 2013. The study compared benefits under Canada's public drug programs in terms of the number of new drugs approved for public insurance coverage, as well as the time that patients waited for publicly insured access to new drugs. It found that the quality of insured access to new drugs varies significantly between public drug plans. Some jurisdictions provide much better access for their publicly insured populations than do other jurisdictions.

Averaged across all public plans, of the 412 new drugs approved for sale by Health Canada over the 9-year period from 2004-2012 only 23.1% were covered for full or partial public coverage as of December 1, 2013.

Of the new drugs that were eventually covered, it took on average 733 days for public drug plans to list a new drug on their formularies.

Quebec and Ontario provide the highest coverage rates for new drugs, while Manitoba, Alberta, British Columbia and the federal NIHB provide the lowest coverage rates. (Chart 3)



<sup>&</sup>lt;sup>48</sup> CHPI (2014). Comparing Access to New Drugs in Canada's Federal and Provincial Public Drug Plans. Annual Series: How Good Is Your Drug Insurance? *Canadian Health Policy*, June 25, 2014. Toronto: Canadian Health Policy Institute. URL: <u>http://www.canadianhealthpolicy.com/products/comparing-access-to-new-drugs-in-canada--s-public-drug-plans--2014-annual-report.html</u>.

overall publicly funded

Public drug plan spending and

The most recent available data

suggest that Quebec tends to

invest more toward access to

relative to other provinces, but

overall health costs. (Chart 5)<sup>49</sup>

this is offset by significantly lower

For example, on a per capita basis

Quebec spends more than British

Columbia on prescribed drugs

(\$301 v. \$204), but achieves lower overall health costs (\$3,615

drugs in its public drug plan

healthcare costs in Quebec



Quebec had the shortest delays to listing new drugs for reimbursement on its public drug plan, while New Brunswick, PEI and Ontario had the longest delays to listing. (Chart 4)

New Brunswick and Quebec had the highest number of new drugs listed for full reimbursement, while Manitoba, British Columbia, the NIHB, Ontario and Saskatchewan had the lowest number of full reimbursements.

Overall, Quebec appears to provide the best access to new drugs under its public drug plan. However, it is important to put the performance of all public drug plans in the context of benchmarks set by private sector insurance plans.

Other CHPI research referenced earlier in this paper confirms that all public drug plans in Canada provide much lower quality of coverage for new drugs than do private sector drug insurance plans.

### v. \$3,825).

Quebec also ranks very highly for access to new medicines as shown in Charts 3 and 4. Based on the data presented earlier showing that use of new medicines is linked to substantial health and economic benefits, taken together, Charts 3, 4 and 5 seem to suggest that investing in access to new medicines returns an efficiency dividend to the health system that reduces overall cost pressures.

The data tend to support the conclusion that cost containment efforts that reduce access to new medicines are economically counterproductive. Societal investments that improve access to new medicines will return health and economic gains that far outweigh the upfront costs.

<sup>&</sup>lt;sup>49</sup> Data Source: CIHI (2014). National Health Expenditure Trends, 1975 to 2014, Tables D.4.1.3 to D.4.10.3.



# International drug insurance systems

Mandatory universal private insurance is a real-world alternative to a government-run, single-payer monopoly.

This section compares the Canadian drug insurance system to two alternative international models for universally insuring prescription drugs. The government-run singlepayer systems of the United Kingdom (UK) and New Zealand (NZ) are contrasted with the mandatory universal private insurance (referred to hereafter as UPI) systems in Germany, Netherlands, Switzerland and Japan.

The primary purpose of this analysis is to compare the following: i) description of universal drug coverage under universal health insurance schemes, ii) how drugs are approved for universal coverage, iii) how universal drug insurance is financed, iv) how universal health insurance is financed, v) what is covered under the universal basket of services (national health insurance scheme).

### Data

The majority of information was collected from the *European Observatory on Health Systems and Policies*, an organization hosted by the World Health Organization's (WHO) Regional Office for Europe. The Observatory includes partnerships from a number of governments (e.g. United Kingdom, Austria, Belgium, etc.) in addition to international organizations such as the WHO, the European Commission, the World Bank, and the London School of Economics and Political Science (European Observatory on Health Systems and Policies, 2015). The Observatory publishes the *Health System in Transition* (HiT) series, which provides a comprehensive description of health care systems of the WHO European Region in addition to selected OECD countries. The series is updated regularly, and the Observatory's website provides health policy updates and a reform log which describe policy initiatives currently under development and recent reforms (European Observatory on Health Systems and Policies, 2015).

The most recent country HiTs were used for this analysis and individual country pages on the Observatory's website were reviewed in order to ensure that the most recent data (i.e. policy reforms) were captured.

As HiTs are not published for all countries, such as those not belong to the WHO European Region, the following government websites were used to collect health care system information: Australia, New Zealand, and Switzerland.

Finally, individual country information was validated using the *International Profiles of Health Care Systems, 2014*, an annual report published by the Commonwealth Fund.

### Analysis

Table 7 compares the national drug insurance plans among a sample of universal health care systems. As shown in the Table, Canada is the only country included in this analysis that does *not* have some form of national drug insurance plan designed to provide universal coverage for its entire population. Canada's only publicly funded national drug plan is the Non-Insured Health Benefits plan (NHIB), which provides drug coverage for First Nations and Inuit, military, veterans, members of the RCMP, and federal inmates. Population sub-groups such as seniors, low income earners, and people with catastrophic drug expenses are fully/partially subsidized for drug coverage in Canada; however, they are dependent on public drug plans that are administered by their respective provinces. Notably, as shown in a recent study on the generosity of public drug plans in Canada, these provincial drug plans vary in terms of the number of new drugs approved for public coverage and the delay to access these drugs (CHPI, 2014).

While the absence of a national drug insurance plan might be unique to Canada in comparison to other universal health care systems, it is critical to recognize the significant differences in how these systems are financed and how their respective health insurance works.

### Single-payer Health Insurance (general taxation): UK and New Zealand

As shown in Table 7, universal health care systems are financed in a number of ways. Comparable to Canada, UK and New Zealand are financed primarily through general taxation. All three countries provide universal coverage for their entire population, which generally includes most medical services provided by physicians and in hospitals. In contrast to Canada and UK where the majority of health care services are free at the point of service, New Zealand has co-payments for many GP services.

UK and New Zealand both include pharmaceuticals in the basket of medical services covered under their respective national health insurance plans. New Zealand has a *positive list* of drugs called the Pharmaceutical Schedule, which indicates which pharmaceutical products are covered under national health insurance. The

Pharmaceutical Management Agency (PHARMAC) determines coverage eligibility based on population needs, clinical benefits and risks, cost-effectiveness, budgetary impact, and direct costs to users. Notably, although drugs are covered under New Zealand's national health insurance, patients are required to contribute through co-payments and an annual deductible. Co-payments for the general population range between \$5 and \$15, and there are exemptions based on age, income, and health status (e.g. chronic condition). The annual deductible (for the general population) is based on the number of prescription items filled over a 12-month period. Specifically, patients are required to make co-payments until a maximum of 20 prescriptions are filled, at which point they are exempt from copayments for the remainder of the 12-month period.

Similar to New Zealand, drug coverage is included in UK's national health insurance plan (National Health Insurance – NHS). However in contrast to New Zealand, UK has a *negative list* which includes drugs that the NHS will not pay for. Coverage decisions are based on recommendations provided by the National Institute for Health and Clinical Excellence (NICE), which basis its review on costeffectiveness and safety. As a *positive list* of nationally covered drugs does not exist, local NHS organizations (e.g. local commissioning groups) ultimately decide which drugs they will pay for (for their local populations). Unlike most medical services covered under the NHS, there is a flat co-payment (£7.65 in 2012) for drugs that are publicly covered, with exemptions based on income, age, and medical condition (approximately 50% of the population is exempt from co-payments).

### Universal Private Insurance (UPI): Germany, the Netherlands, Switzerland, and Japan

Another method of financing universal health insurance is through a private insurance mandate.

In Germany, the Netherlands, Switzerland, and Japan, all citizens are required by law to purchase health insurance from their choice of private insurers (public insurers in Japan's case). As drugs are included in the standard insurance package in these countries (i.e. mandated), it is important to understand how national health insurance works in these jurisdictions.

Germany's national health insurance system, which covers the entire population, requires all citizens and permanent residents to contribute to a sickness fund. The majority of funds are collected through employee/employer contributions, which are transferred to the Central Reallocation Pool (which is administered by the Federal Insurance Authority). Contributions are based on income (not based on health status), and there is an upper threshold.

Funds are distributed from the Central Reallocation Pool to the sickness funds according to each fund's insured population (funding distribution is risk adjusted). Individuals have full choice of sickness funds, which all cover the same basket of medical services including hospital care, physician services, and prescription drugs. There is no competition on insurance products between funds; however citizens can purchase private insurance which offer additional benefits. In 2014, there were 132 private not-for-profit sickness funds to choose from. While sickness funds cannot deny coverage based on health condition, they do have some flexibility regarding the structure of their premiums/deductibles. For example, a sickness fund can offer a range of deductibles and noclaim bonuses to encourage their clients to limit unnecessary medical care. Individuals earning above a specific income can opt-out of contributions, however they must purchase private insurance.

In addition to standard insurance payments (premiums/deductibles), patients are required to make co-payments for inpatient hospital stays (€10/day). Prior to 2013, co-payments for GP services were also required, however this provision has been removed.

Finally, there is a safety net that applies to the entire population in the form of an annual cap on cost-sharing. The threshold (cap) is 2% of annual income for the majority of adults, and 1% for people with chronic conditions. Children under 18 are exempt from cost-sharing. In 2012, German's spent \$4,811 on total health expenditures (per capita).

Germany's drug coverage is based on a negative list, which includes most lifestyle drugs, over-the-counter drugs, and drugs that do not demonstrate clinical efficiency. All new drugs are reviewed for clinical and cost effectiveness by the Institute for Quality and Efficiency in Healthcare (IQWIG), which makes recommendations to the central governments regarding a drug's inclusion on the negative list. Co-payments for prescription drugs range from €5 to €10 for the general population, with exemptions based on income, age and health status.

Similar to Germany, the Netherlands has a universal private insurance mandate that covers the entire population. Since 2006, all Dutch residents are required by law to purchase 'basic' health insurance from a private insurer of their choice. Accordingly, all insurers are obliged to offer a standard package, and must accept all individuals regardless of age, income and/or pre-existing conditions. The standard insurance package is stipulated and regulated by the central government based on recommendations from the Health Care Insurance Board, and includes most medical care provided by GPs, hospital services, specialists, maternity care, some mental care, and prescription drugs.

Insurance premiums are community-rated (individuals with the same insurer pay the same premiums regardless of health status/age), and co-payments are required for most services (except those provided by GPs and for care provided to children under 18) until an annual deductible of €350 (2013) is reached. Although monitored and regulated by the central government, insurers are allowed to set their nominal premium.

Individuals can purchase supplemental and complementary insurance to cover services that are not included in the standard insurance package (e.g. dental, alternative medicines, glasses). In addition to insurance premiums, a portion of general taxes are used to fund the Health Insurance Fund which provides insurance for low income earners and children under 18 (7.65% of an employee's income and approximately 9.65% of individual's annual income). In 2011, total health expenditures were approximately \$5,219 per person.

The Netherlands has a *positive list* of pharmaceuticals that are included in the standard insurance package. The Health Care Insurance Board provides reimbursement recommendations (i.e. inclusion on the positive list of drugs) to the central government based on a drug's cost-effectiveness and safety. As drugs are included in the standard insurance package, co-payments and the annual deductible apply for pharmaceuticals. Similar to other services included in the standard insurance plan, there are exemptions (for costsharing) based on age, health status and income.

Switzerland's universal health insurance system is based on a private insurance mandate where citizens are required to purchase a standard insurance package from a wide-range of private non-profit insurers. Similar to health insurance in the Netherlands, the standard package is determined by the central government, and insurers are obliged to accept all applicants for basic insurance. The standard package covers most service provided by GPs, complimentary medicines (e.g. medical homeopathy, acupuncture, etc.), hospital services, and pharmaceuticals included on the *positive list*.

Insurance contributions are paid directly by individuals into health insurance schemes through monthly premiums (community-rated) which are set by individual insurers, and regulated by the central government. Private insurers are required to offer a deductible (minimum) of CHF300 for adults; however individuals have the ability to request a higher deductible and a lower premium.

Once the annual deductible has been met, patients are required to share some of the costs of health services that they use through a percentage-based co-payment (i.e. coinsurance). Specifically, after the annual deductible is reached, a 10% co-insurance is required for the majority of insured services, except for inpatient hospital stays where a flat co-payment of CHF15/day is collected. Out-ofpocket payments (e.g. co-insurance) are capped annually at CHF700. Some services, such as maternity care, and subgroups of the population (low income, children under 18) are exempt from deductibles, coinsurance, and copayments. In addition to insurance premiums, deductibles, and coinsurance, general taxation revenues are used for subsidizing particular population cohorts (age, health status, income). In 2012, total health expenditures were approximately \$4,491 per person.

Switzerland has a *positive list* of pharmaceuticals that are included in the standard insurance package. This list (called the 'list of pharmaceutical specialties') is determined by the Federal Office of Public Health based on a drug's therapeutic progress, therapeutic breakthrough, cost- efficiency, and safety. As drugs are included in the standard insurance package, the same cost-sharing scheme applies. However, insurers can charge a co-insurance of 20% for a brand-name drug if a generic version is available (unless specified by a physician).

All Japanese citizens are required by law to have health insurance from one of the 3,400 nonprofit insurance providers (public, quasipublic, and employer-based insurers). However unlike other jurisdictions with UPI schemes, citizens cannot choose their insurer; they are required to enroll in an insurance plan based on occupation, municipality (residency), and age (there is a separate insurance system for people 75 and older).

The majority of the population is insured through an employer-based scheme; selfemployed and unemployed citizens are covered by a National Health Insurance plan. Comparable to other UPI systems, insurers cannot deny coverage. While health insurance is not provided by the government, the central government regulates most aspects of the health care system such as the fee schedules, and stipulates what is covered in the national benefits package (which must be offered by all insurers). The standard insurance package provides coverage for hospital services, home care, most dental care, ambulatory care, physiotherapy, and approved drugs.

All health insurance plans are financed by premiums, government subsidies, and patient co-payments (regulated by central government). Co-payments are 'percentagebased' and vary according to age and income. For the general population, all services covered under the national insurance package have a 30% co-payment rate; until a monthly cap is reached (out-of-pocket payments are only based on age and income). In 2012, total health expenditures were approximately \$3,219 per person.

Japan has a *positive list* of drugs that are included in the national benefits package. New drugs are reviewed by the Central Social Insurance Medical Council, which provides coverage recommendations to the central government based on cost-effectiveness, therapeutic benefits, and safety. Since drugs are included in the national insurance package, they are subject to the 30% co-payment for the general population with lower co-payments based on age, income, and health status.

### Summary

As shown in this analysis, there are considerable differences in the way in which universal health care systems cover drugs under their national health insurance schemes. UK and New Zealand include drugs in the basket of medical goods and services that are covered under their respective single-payer health insurance schemes. New Zealand has a positive list, which includes pharmaceutical products that are covered under its national health insurance plan, whereas UK has a negative list. In both jurisdictions, drugs are approved (or not approved in UK's case) for national drug coverage by the central government, based on recommendations which take into account a drug's cost and clinical effectiveness, safety, and population needs. Patients in both countries are required to make co-payments for drugs included in their national drug plans, with exemptions based on age, income, and health status. Importantly, in both countries, national drug insurance is administered by the government and primarily financed by general tax revenues.

In contrast, the UPI systems of Germany, the Netherlands, Switzerland, and Japan achieve universal drug coverage through a more conventional insurance approach. For instance, while the central governments have a significant regulatory function in these countries and determine which drugs are covered (or not covered in the case of Germany) in the standard/national insurance package, they do not administer the insurance. Instead, health insurance (which includes drug coverage) is purchased from private non-profit insurance companies which must offer a standard insurance package, and cannot deny anyone for coverage.

In Germany, the Netherlands and Switzerland, citizens can choose between insurers (or sickness funds in Germany's case). Since insurance rates are regulated and determined by government, insurers typically compete on quality of services. In contrast to the taxpayer funded universal drug coverage under single-payer systems, citizens of UPI systems are required to contribute to their respective health/drug insurance plan through premiums, deductibles (or caps), and co-payments. Notably, all UPI schemes have cost-sharing exemptions based on age, income, and health status.

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## Table 7.Select comparison of international drug insurance systems.

Country	Universal Drug Insurance	National Drug Insurance Scheme	Patient Cost Sharing	Population Covered	Process for Approving Drugs for Universal Coverage	Financing of Universal Health Insurance	Basket of Services Covered Under Universal Health Care System	Total Health Expenditures per capita (\$US PPP)	Sources
Canada	NO	<ul> <li>Public drug plans are administered by the provinces/ territories</li> <li>Vary in terms of coverage and population covered (age, income).</li> </ul>	<ul> <li>Premiums, copayments and deductibles vary by province.</li> </ul>	<ul> <li>Varies by province.</li> <li>Federal Public Drug Benefit Programs provide coverage for First Nations and Inuit, military, veterans, members of the RCMP, and federal inmates.</li> </ul>	<ul> <li>Common Drug Review (CDR) makes recommendations for reimbursement based on a clinical and cost-effectiveness analysis.</li> <li>Provinces determine their own coverage.</li> <li>Significant variation between provinces.</li> </ul>	• Single-payer public health insurance (general taxation).	<ul> <li>Medically necessary services delivered in hospitals and by physicians.</li> </ul>	\$4,602	Marchildon (2013); Health Canada (2015); Health Systems and Policy Monitor (2015); OECD (2015).
Germany	YES	• Universal private insurance mandate	<ul> <li>Patients pay co- payments for drugs: typically around €5–10.</li> </ul>	• Entire population covered under SHI (compulsory).	<ul> <li>Negative list includes lifestyle drugs, OTC drugs, and drugs that do not demonstrate clinical efficiency.</li> </ul>	<ul> <li>Health insurance is mandatory for all citizens and permanent residents through:         <ol> <li>Statutory health insurance [SHI] (85%), or</li> <li>Private health insurance [PHI] (11%).</li> <li>Funds are collected through employee and employer contributions (into a Sickness Fund).</li> <li>People above a designated threshold can opt-out of contributions, but must then purchase private insurance opt- out.</li> <li>Individuals have full choice of Sickness Funds (132 in 2014).</li> </ol> </li> </ul>	<ul> <li>Hospitals, physicians in ambulatory care, drugs (that are not on negative list).</li> </ul>	\$4,811	ISPOR (2015); Busse and Blümel (2014); Health Systems and Policy Monitor (2015); Mossialos et al., (2015); OECD (2015).
Netherlands	YES	• Universal private insurance mandate	<ul> <li>Deductibles and co-payment for basic insurance package.</li> <li>Specific population exempt from co- payments (age, income, medical condition).</li> <li>Annual deductible of £155 for individuals 18 and older.</li> </ul>	<ul> <li>Entire population covered for basic insurance package (compulsory).</li> </ul>	<ul> <li>Positive list determined by central government based on cost-effectiveness and safety.</li> </ul>	<ul> <li>Basic health insurance is mandatory for all Dutch residents except for the following groups: 1) persons who refuse to insure themselves for religious or philosophical grounds, 2) members of the armed forces</li> <li>Basic health insurance (package) is purchased from a private insurer, whom cannot deny applicants based on medical risk and predetermined medical conditions.</li> </ul>	<ul> <li>Care provided by GPs, hospitals, medical specialists and midwives</li> <li>Pharmaceutical care on list of approved drugs.</li> <li>Medical aids and devices</li> <li>Dental care for children until age of 22         <ul> <li>Maternity care</li> <li>Transport of sick people (ambulance)</li> <li>Allied health care (physiotherapy, dietician, speech therapy, etc.</li> <li>Mental care</li> </ul> </li> </ul>	\$5,219 (2011)	Schäfer et al., (2010); Government of Netherlands (2015a; b); Health Systems and Policy Monitor (2015); OECD (2015).

						<ul> <li>Taxes are also taken from employers (7.65% of employee's income); and employees pay a fixed percentage of their income (9.65%) to the government.</li> <li>Deductible is approx. €350 per year.</li> </ul>			
Sweden	YES	<ul> <li>National Health Care System</li> <li>National government regulates and partially funds system</li> </ul>	<ul> <li>National 'ceiling' for out-of-pocket charges – applies to ALL health care services</li> <li>Uniform Rx copayments and deductible across the country</li> <li>Patient pays the following: 50% of the cost between €122-233; 25% of the cost between €233-433; and 10% of the cost between €433- 600.</li> <li>12-month ceiling for Rx drugs is €244.</li> </ul>	<ul> <li>Entire population covered</li> <li>Some population exempt from out- of-pocket payments</li> </ul>	<ul> <li>Positive list</li> <li>Central government decides which prescription drugs should be subsidized in the reimbursement scheme (The Dental and Pharmaceutical Benefits Agency).</li> <li>Decisions are based on 'cost- effectiveness' analysis, and the disease the drug is intended to treat.</li> </ul>	<ul> <li>Mostly through general taxation (indirect taxes and income taxes) and user charges.</li> <li>Taxes are collected from employers, however they vary between municipalities and councils.</li> <li>County Councils are responsible for organizing and financing health care services.</li> <li>Majority of funding through general tax revenues collected by local country councils</li> </ul>	<ul> <li>There is no basic basket/package of services (including drugs)</li> <li>Coverage is based on 3 principles:</li> <li>1) Human dignity (equal entitlement to services regardless of status); 2) solidarity (greatest need take precedence in receiving medical care); and 3) Cost- effectiveness (a reasonable relationship between costs and the effect – measured as 'improved quality of life and improved health'.</li> </ul>	\$4,106	Anell et al., (2012); The Swedish Institute (2015); Health Systems and Policy Monitor (2015); OECD (2015).
France	YES	<ul> <li>Statutory Health Insurance (national health insurance)</li> </ul>	<ul> <li>Co-payment and annual ceiling.</li> <li>Co-payment is €0.5 for every drug package – up until the annual €50 ceiling is reached.</li> </ul>	<ul> <li>Entire population covered</li> <li>Some population exempt from out- of-pocket payments</li> </ul>	<ul> <li>Positive list</li> <li>Determined by the Ministry of Health, under the advice of the 'Transparency Committee' and 'Pricing Committee'.</li> <li>Drugs that meet the following criteria are typically included on a 'positive list' (national). i)effectiveness of drug</li> <li>the benefits related to alternative therapies available,</li> <li>preventative, symptomatic, and curative properties of the drug, iv) the condition in question</li> <li>the impact the drug has on public health.</li> </ul>	<ul> <li>Statutory Health Insurance: employer and employee payroll tax (43%), income tax (33%), taxes on alcohol and tobacco sales (8%), social security transfers (8%), state subsidies (2%), 6% out-of-pocket payments.</li> <li>Since 2000, the Universal Health Coverage Act waives premiums for low-income individuals.</li> <li>Contribution are income-based: individuals earning €9020 or less are exempt from premium, and people making more than €9020 pay 8% of their taxable income.</li> </ul>	<ul> <li>Hospital treatment (public or private hospitals), rehabilitation, physiotherapy</li> <li>Diagnostic services,</li> <li>Services delivered by GPs, dentists, and midwives,</li> <li>Prescribed health-related transport,</li> <li>Pharmaceutical product on positive list.</li> </ul>	\$4,288	Chevreul et al., (2010); Health Systems and Policy Monitor (2015); Mossialos et al., (2015); OECD (2015).
ик	YES	<ul> <li>National Health Insurance (single payer)</li> <li>Universal public health insurance through the</li> </ul>	<ul> <li>Flat co-payment (£7.65 in 2012).</li> <li>Significant share of population exempt from copayments (age, chronic condition, income).</li> </ul>	<ul> <li>Universal coverage under NHS</li> <li>Approx. 50% of population exempt from copayments.</li> </ul>	<ul> <li>Negative list called the 'Blacklist' – which includes drugs that the NHS will not pay for.</li> <li>The National Institute for Health and Clinical Excellence (NICE) provides recommendations (typically based on cost- effectiveness analysis) for public</li> </ul>	<ul> <li>General taxation and National Insurance Contribution.</li> <li>People can also purchase private medical insurance</li> </ul>	<ul> <li>Most primary and secondary services (including additional services such as prescription drugs, dental, optometry, etc.)</li> <li>There is not a 'positive list' of NHS covered services.</li> <li>Local NHS organizations commission/purchase services</li> </ul>	\$3,289	Boyle (2011); Health Systems and Policy Monitor (2015); Mossialos et al., (2015); OECD (2015).

		National Health Insurance (NHS)			<ul> <li>coverage and clinical guidelines for public health, health</li> <li>technology, and clinical practice.</li> <li>Local NHS organizations (responsible for purchasing/commissioning services for local populations) produce their own lists for preferred prescribing (and what they will/will not cover).</li> </ul>		for their local population (they ultimately decided what is covered).		
Australia	YES	<ul> <li>National Health Insurance (regionally administered – Single payer).</li> </ul>	<ul> <li>Co-payment and deductible.</li> <li>Flat co-payment of \$37.70 (2015) for most prescriptions and \$6.10 for people with a concession card (e.g. veterans, people with low income).</li> <li>Annual deductible (called Safety Net Threshold) of \$1453.90 for general patients and #366.00 for people with concession card.</li> </ul>	<ul> <li>Entire population covered (Medicare) – under the Pharmaceutical Benefits Scheme (PBS).</li> </ul>	<ul> <li>Positive list (PBS) determined by Pharmaceutical Benefits Advisory Committee (PBAC).</li> <li>Decisions based on medical conditions benefiting from drug, clinical effectiveness, safety and cost-effectiveness (compared to similar treatments).</li> </ul>	• Universal Public Health Insurance through General taxation.	<ul> <li>Treatment in public hospitals, treatment by medical professionals as stipulated in the Medicare Benefits Scheme  "medically necessary services".</li> <li>Partial costs associated with drugs listed on the PBS.</li> </ul>	\$3,997 (2011)	Government of Australia (2014; 2015a; 2015b); Mossialos et al., (2015); OECD (2015).
New Zealand	YES	<ul> <li>Single Payer – covered through Pharmaceutica I Management Agency (PHARMAC).</li> </ul>	<ul> <li>Co-payments and annual deductible.</li> <li>Co-payments vary by group (e.g. age, low income, and high user – chronic condition).</li> <li>General patients pay between \$5 - \$15/</li> <li>Annual deductibles based on the number of prescription items filled (max of 20 in 12 months).</li> </ul>	• Entire population covered – under PHARMAC.	<ul> <li>Positive list (Pharmaceutical Schedule) determined by the PHARMAC based on population health needs, clinical benefits and risks, cost-effectiveness, budgetary impact, direct costs to users.</li> </ul>	<ul> <li>Universal Public Health Insurance through General taxation.</li> </ul>	<ul> <li>Treatment in public Hospital, GPs, specialists' services, dental for children under 18, and medicines included on the Pharmaceutical Schedule).</li> <li>Copayments for many GP services.</li> </ul>	\$3,172 (2011)	Government of New Zealand (2015; 2015); PHARMAC (2014a; b)); OECD (2015).
Switzerland	YES	Universal private insurance mandate	<ul> <li>Premiums and deductibles are determined by health insurer (regulated by</li> </ul>	<ul> <li>Entire population covered under mandate (basic insurance package).</li> </ul>	<ul> <li>Positive list is called the 'list of pharmaceutical specialties' (approx. 2500 drugs).</li> <li>Determined by the Federal Office of Public Health (FOPH) based on:</li> </ul>	<ul> <li>Contributions paid directly by individuals into health insurance schemes (e.g. monthly premiums).</li> <li>Choice of non-profit private</li> </ul>	<ul> <li>Basic insurance package (which must be offered by all insurers and cannot be denied to any applicant) includes:</li> <li>Illness, accidents and</li> </ul>	\$4,491	Swiss Health (2013); FOPH (2012); Mossialos et al., (2015); OECD (2015).

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			central government). • Standard deductible is approx. CHF 300 annually for people older than 18 yrs. (standard insurance package).		<ul> <li>Therapeutic progress, therapeutic breakthrough, cost-efficiency (compared to similar treatment).</li> <li>List is included in basic insurance package (mandated by government).</li> </ul>	<ul> <li>insurer (called a Health Insurance Fund).</li> <li>Annual deductible of 300 CHF for standard insurance package</li> <li>10% co-insurance required for most insured services (except for maternity care) once the deductible has been met</li> <li>Out-of-pocket payments (e.g. co- insurance) is capped at CHF700 annually</li> <li>General tax revenue used for subsidizing particular population groups (low income, chronic conditione atc)</li> </ul>	maternity. Most services provided by GPs, complimentary medicines (e.g. acupuncture, medical homoeopathy), hospital services, and drugs on the "list of pharmaceutical specialties".		
Japan	YES	• Universal insurance mandate	<ul> <li>Public health insurance schemes – premiums, and copayments.</li> <li>30% copayment rate applies to most health services (including drugs)</li> <li>Co-payments and annual cap vary based on age, income, and medical condition.</li> </ul>	<ul> <li>Universal coverage under mandate.</li> <li>Benefits package determined by central government.</li> </ul>	<ul> <li>Positive list</li> <li>Drugs are reviewed by the Central Social Insurance Medical Council (representatives from government, public, medical profession).</li> <li>The Council makes recommendation to the Ministry of Health, Labour, and Welfare.</li> </ul>	<ul> <li>Central government decides the national benefits package covered by health insurance (and the provider fees – every 2 years).</li> <li>Over 3,400 insurers (public, quasi-public, and employerbased).</li> <li>General taxation used for subsidizes insurance costs for low income earners.</li> </ul>	<ul> <li>Hospital care, mental care, ambulatory care, home care, physiotherapy, most dental care, and approved drugs.</li> </ul>	\$3,219	National Institute of Population and Social Security Research (2014); Government of Japan (2015); OECD (2015).

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