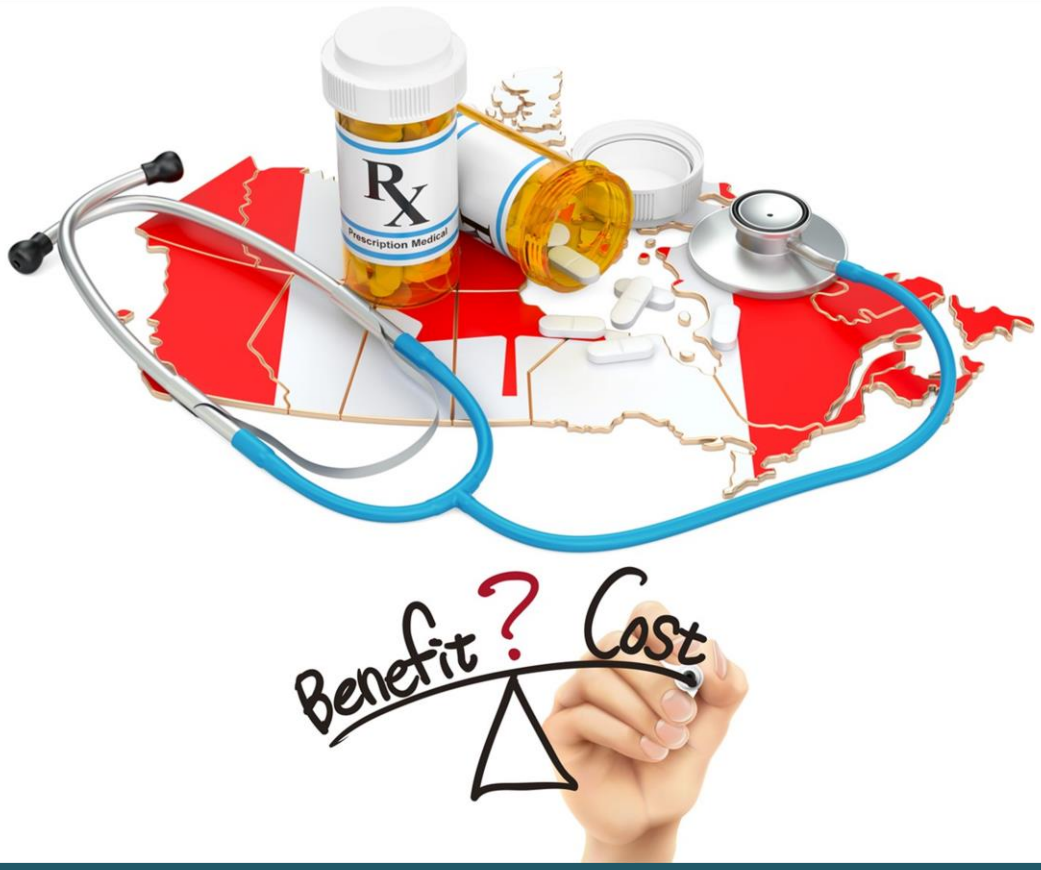

Close the Gaps:

Patient Benefits and Taxpayer Costs of 3 Pharmacare Options.

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OUTLINE

SUMMARY

Objective

The federal government's Advisory Council on the Implementation of National Pharmacare recently released its interim report. In June, the Council is expected to issue its final recommendations about which model the program will be based on. Three approaches are being considered. The purpose of this paper is to identify the real prescription drug insurance coverage gaps, to estimate and compare the costs and benefits of the three pharmacare models being considered by the Council, and to use these facts to inform decision making about the most appropriate model from the perspective of patients and taxpayers.

Highlights

- All Canadians are insured under existing private and public drug plans. In every Province, public plans are the payer of last resort and out-of-pocket costs are capped at affordable levels across all income deciles. However, public plans only cover the drugs listed on their formularies.
- Formulary exclusions expose patients to 100% of the cost of their prescribed drugs as an out-of-pocket expense. Therefore, this analysis assumes that closing the insurance gap caused by formulary exclusions is of greater social importance than reducing out-of-pocket costs related to premiums, deductibles, coinsurance and copayments.
- This paper proposes a federal option for pharmacare that fully closes the insurance gap caused by formulary exclusions under existing public drug plans. It provides nearly $2.3 billion more in net benefits for patients than the National Pharmacare model studied by the Parliamentary Budget Officer (PBO) and it would cost taxpayers $2.1 billion less than the PBO's model. The model doesn't require shifting the full cost of existing provincial public drug plans onto the federal budget, nor require the government to cover privately paid costs, so it reduces the burden on the federal budget by $14.1 billion compared to the PBO 's model.

INTRODUCTION

The federal government's Advisory Council on the Implementation of National Pharmacare recently released its interim report.[1] In June, the Council is expected to issue its final recommendations about which model the program will be based on. Three approaches are being considered: [2]

PBO National Pharmacare

The primary option is a universal, single-payer, government-managed drug plan that would replace all employment-based drug benefits in both the private and public sector, as well as replacing existing federal, provincial and territorial government-run drug plans. This is the model that was studied by the Parliamentary Budget Officer (PBO) and recommended by the House of Commons Standing Committee on Health.[3,4]

Federal Safety-Net

A second option is for the federal government to provide safety-net drug insurance to protect Canadians from exceptionally high drug costs above a defined threshold percentage of household income.

Close-the-Gaps

The third option is to enhance existing public and private drug insurance plans by adjusting regulations and public funding to close the coverage gaps.

In September 2016, the House of Commons Standing Committee on Health asked the PBO to estimate the cost to the federal government from implementing a National Pharmacare program based on the single-payer model. The government did not request a comparative analysis of the cost of the other two models. Nor did the government request an empirical verification of two core assumptions used to justify the need for National Pharmacare: that millions of Canadians are not covered by any type of drug plan; and that out-of-pocket costs for prescription drugs force people to make a choice between basic necessities and medicines.

The purpose of this paper is to identify the real prescription drug insurance coverage gaps, to estimate and compare the costs and benefits of the three pharmacare models being considered by the Council, and to use these facts to inform decision making about the most appropriate model from the perspective of patients and taxpayers.

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[1] Interim Report of the Advisory Council on the Implementation of National Pharmacare. To: The Honourable Ginette Petitpas Taylor, Minister of Health; The Honourable Bill Morneau, Minister of Finance. From: Dr. Eric Hoskins, Chair, Advisory Council on the Implementation of National Pharmacare. Date: March 5, 2019.

[2] Government of Canada (2018). Towards Implementation of National Pharmacare: Discussion Paper. Page 9.

[3] Parliamentary Budget Officer (PBO). Federal Cost of a National Pharmacare Program. 28 September 2017.

[4] House of Commons Standing Committee on Health. Pharmacare Now: Prescription Medicine Coverage for All Canadians: Report of the Standing Committee on Health. Bill Casey Chair. April 2018. 42nd Parliament, 1st Session. | (Ottawa, April 18, 2018) HESA Committee News Release: House of Commons Standing Committee on Health Calls for Prescription Medicine Coverage for All Canadians.

DRUG INSURANCE GAP: MYTHS v FACTS

One of the primary rationales offered by advocates for National Pharmacare is that millions of Canadians are not covered under any prescription drug plan. Surveys show that a significant percentage of Canadians report cost-related reasons for not taking their prescribed medications.[5,6,7] However, the results are not explained by an absence of insurance coverage across the population.

Canadians who do not have a private drug plan (or who reach their annual/lifetime coverage maximums under their plan) and are not eligible for regular first payer coverage under a public drug plan, are eligible (by income-adjusted premiums, deductibles, coinsurance and copayments) for federal, provincial and territorial public drug plans as a second payer (i.e. payer of last resort). Every jurisdiction in Canada publicly insures out-of-pocket prescription drug expenses exceeding a low percentage of income, if the medications are listed on the public formulary.[8]

Table 1a shows data on the distribution of the Canadian population by drug insurance coverage across the 10 provinces in 2016.[9] All source data and calculations are noted in the table. The data count the total population, the number of people with a private drug plan, the number of eligible beneficiaries in the federal NIHB drug plan residing in the province, the number of active claimants in provincial public drug plans, the remainder of non-active claimants eligible for first payer or second payer provincial public drug plan coverage and the number of people without any drug plan.

Uninsured

"According to the 2016 Canadian Community Health Survey, approximately 20 per cent of Canadians (as many as 7.5 million people) report that they do not have prescription drug coverage. This likely reflects both people who have no coverage (the uninsured) and those who have inadequate coverage (the underinsured) – both of which are barriers to access."

Interim Report of the Advisory Council on the Implementation of National Pharmacare. Page 3.

[5] 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.
[6] Shachi Kurl, Steve Morgan (July 15, 2015). Prescription drug access and affordability an issue for nearly a quarter of all Canadian households. The Angus Reid Institute.
[7] Michael R. Law, Lucy Cheng, Ashra Kolhatkar, Laurie J. Goldsmith, Steven G. Morgan, Anne M. Holbrook, Irfan A. Dhalla. The consequences of patient charges for prescription drugs in Canada: a cross-sectional survey. CMAJOpen2018: 6(1).
[8] Parliamentary Budget Officer (PBO). Federal Cost of a National Pharmacare Program. Appendix H: Provincial Drug Plans Overview. Page 73.
[9] The analysis presented in this paper updates the data from a previous study and focuses more narrowly on the 10 Provinces, excluding the Territories. This was done to facilitate direct comparison with the PBO's cost estimate for national pharmacare which was also based on the 10 provinces. See previous study: Skinner, Brett J (2018). Prescription drug plan coverage 2016: how many Canadians were insured, under-insured or uninsured? *Canadian Health Policy*, June 11, 2018. Toronto: Canadian Health Policy Institute. www.canadianhealthpolicy.com

Table 1b shows information regarding the maximum out-of-pocket costs that residents are exposed to before the provincial public drug plan coverage begins.

The data show that of the 36.1 million people who lived across the 10 provinces in 2016, 23.1 million were covered under private drug plans. The remaining 13.0 million people had regular public drug benefits or were otherwise eligible for safety-net coverage under existing public drug plans. The provincial public drug plan population consists of 784,458 residents who are eligible for first payer benefits under the Federal NIHB program, 7,971,437 active claimants or registrants for first and second payer benefits under the provincial public drug plan and 4,264,829 non-claimants/non-registrants who remain eligible for first and second payer benefits under the provincial public drug plan.

The cost-sharing eligibility requirements for second payer safety-net coverage under existing public drug plans are income-adjusted and therefore socially progressive. People on social assistance or those with low incomes are eligible for coverage at zero or very low costs. The same is generally true for seniors. People with middle to upper incomes face moderate cost-sharing requirements, effectively capped at between three percent to seven percent of family income in most provinces, with somewhat higher thresholds in Newfoundland and Labrador, Nova Scotia and Prince Edward Island.

Given the fact that out-of-pocket prescription drug costs are effectively capped at low percentages of income under existing public safety-net plans, it should not be surprising that Canadians report actual out-of-pocket prescription drug costs that are below 3% of income on average even for the lowest income people. Table 2 compares average out-of-pocket spending on prescription drugs (direct spending plus insurance premiums) to average household income and select household expenditures in 2016. The data were obtained by custom request from Statistics Canada and sourced from its Survey of Household Spending in 2016, which is based on the self-reported responses of a sample of Canadians.[10]

Out-of-pocket costs

"Even those with prescription drug coverage can face significant and often prohibitive out-of-pocket expenses, in the form of deductibles, co-payments and annual or lifetime maximums. Analysis of the 2016 Canadian Community Health Survey found that approximately 1 million Canadians have to choose between food and heat or a needed prescription."

Interim Report of the Advisory Council on the Implementation of National Pharmacare. Page 3.

[10] The data were previously published in Canadian Health Policy Institute (2018). Out-of-pocket prescription drug costs: What are the implications for National Pharmacare? *Canadian Health Policy*, October 2018. Access to Innovative Medicines Series. Toronto: CHPI. www.canadianhealthpolicy.com.

Average annual household income before tax ranged from $13,106 for people in the lowest income decile to $288,404 for people in the highest income decile. Out-of-pocket spending on prescription drugs increased with income. People in the lowest income decile spent the least at $390 annually on average. People in the ninth income decile spent the most at $1,375 annually on average. However, out-of-pocket spending on prescription drugs declined as a share of income as income increased. Out-of-pocket prescription drug costs declined from 3% of household income at the lowest decile, down to 0.4% of household income at the highest decile.

Table 2 also shows average household spending on luxury items or discretionary expenses including restaurant meals, entertainment, TV and satellite radio, and tobacco and alcohol. Across every income decile, expenditures on restaurants exceeded out-of-pocket costs for prescription drugs. The same can be said for entertainment, TV and satellite radio taken together. Finally, across every income decile, more is spent by households on tobacco and alcohol than is spent out-of-pocket on prescription drugs.

These facts show that Canada has achieved universal drug insurance coverage across the population and out-of-pocket prescription drug costs are objectively affordable. If a patient's prescribed medication is listed on the public formulary, then the patient is effectively insured. On the other hand, if a prescribed medication is not listed on the public formulary, then the patient is effectively uninsured because they are exposed to 100% of the cost as an out-of-pocket expense. The real insurance gap is caused by formulary exclusions under existing public drug plans, the payers of last resort.[11,12]

To illustrate the scale of the drug insurance gap caused by formulary exclusions in public plans, Table 3 shows data comparing the number of drugs covered by private and public plans in each province in the fiscal year 2015-16.[13] The numbers are compared by payer within each province and also versus Quebec, which is used as a benchmark against which to measure formulary exclusions because it has the most generous private and public coverage among the provinces. The data show that public drug plans in every province insure far fewer drugs than the private plans in their markets. Public drug plans in all provinces also fall short of public coverage in Quebec. Public plans in all provinces cover many fewer drugs than Quebec's private plans.

[11] Canadian Health Policy Institute (2018). Coverage of new medicines in public versus private drug plans in Canada 2008-2017. *Canadian Health Policy*, August 20, 2018. Access to Innovative Medicines Series. Toronto: CHPI. www.canadianhealthpolicy.com.

[12] Canadian Health Policy Institute (2018). Coverage of new medicines in Federal-Provincial public drug plans in Canada 2008-2017. *Canadian Health Policy*, September 2018. Access to Innovative Medicines Series. Toronto: CHPI. www.canadianhealthpolicy.com.

[13] Drug coverage is defined by Drug Identification Numbers (DINs) reimbursed.

Table 1a. Distribution of Provincial population by drug insurance coverage, 2016.

POPULATION COHORT	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK	TOTAL 10 PROVS
2016 total population incl. NIHB clients: [14]	4,236,376	4,757,658	1,318,115	757,384	530,305	948,618	13,976,320	149,472	8,321,888	1,148,588	36,144,724
2016 people covered by a private drug plan: [15]	2,726,000	2,820,000	808,400	498,200	347,800	611,000	9,212,000	103,400	5,358,000	639,200	23,124,000
2016-17 people covered by a public drug plan: *	1,510,376	1,937,658	509,715	259,184	182,505	337,618	4,764,320	46,072	2,963,888	509,388	13,020,724
Federal eligible 1st payer NIHB clients [16]	121,095	18,607	152,874	*2,078*	*1,455*	*2,602*	207,266	*410*	70,930	148,953	784,458
Provincial active claimants/registrants: 1st/2nd payer [17,18,19,20,21]	674,282	738,215	140,300	126,900	103,300	136,800	3,077,526	41,400	2,646,114	286,600	7,971,437
Provincial eligible non-claimants/non-registrants: *	714,999	1,180,836	216,541	130,206	77,750	198,216	1,479,528	4,262	246,844	73,835	4,264,829
2016 people with no drug insurance: *	0	0	0	0	0	0	0	0	0	0	0

Table 1b. Maximum out-of-pocket cost (premium, deductible, coinsurance, copay) before full public drug insurance begins, 2016.

POPULATION COHORT	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Drugs listed on public formulary: [22,23]										
social assistance, low income	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%
seniors aged 65+ years, low income	$25	1%	3%	$9	$6	2%	$2	$16	4%	$20
seniors aged 65+ years, mid-upper income	$25	3%	7%	$15	$6	2%	$6	$16	7%	$20
aged 18-64 years, $15k income	2%	2%	3%	1% + $5	5%	2%	4%	3%	7%	4%
aged 18-64 years, $75k income	7% + $25	4%	7%	3% + $30	10%	16%	4%	12%	7%	4%
Drugs **not** listed on public formulary:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: *Calculated. Totals may not sum due to rounding. Stated as %/income or $/Rx.

[14] Canadian Institute for Health Information. National Health Expenditure Database, 1975 to 2018. Appendix D.1 Population by province/territory and Canada.
[15] Canadian Life and Health Insurance Association. Special data request. (April 11, 2018). Includes policies with drug benefits; Group and Individual plans; all eligible unique beneficiaries (i.e. Principals and Dependants).
[16] Non-Insured Health Benefits Program: First Nations and Inuit Health Branch: Annual Report 2016-2017. *Italics* = calculated proportional distribution from NIHB and CIHI population data.
[17] Patented Medicine Prices Review Board (September 2018). CompassRx, 4th edition: Annual Public Drug Plan Expenditure Report, 2016/17. Fig. 1.3. National Prescription Drug Utilization Information System (NPDUIS).
[18] PharmaCare Trends 2016/17, Health Sector Information, Analysis and Reporting Division, B.C. Ministry of Health.
[19] Alberta AHCIP Statistical Supplement 2016/2017. Table 4.1. Non-Group Supplementary Coverage: Number of Registrations and Persons Covered by Level of Premium Payment. Page 111.
[20] OPDP At A Glance: FY2016/17 Data Report. Ontario Public Drug Programs (OPDP) of the Ontario Ministry of Health and Long-Term Care.
[21] Régie de l'assurance maladie du Québec. Tableau AM.06. Principales variables selon la catégorie de personnes assurées Régime public d'assurance médicaments, Québec, 2016. 2017-08-30.
[22] (PBO). Federal Cost of a National Pharmacare Program. Appendix H: Provincial Drug Plans Overview. Page 73.
[23] Provincial public drug plans websites.

Table 2. Out-of-pocket prescription drug costs, household income, select expenditures by income decile, 2016.

AVERAGE HOUSEHOLD INCOME, EXPENSES [24]	CAN D1	CAN D2	CAN D3	CAN D4	CAN D5	CAN D6	CAN D7	CAN D8	CAN D9	CAN D10
Household income before tax	$13,106	$26,013	$37,706	$49,169	$62,857	$77,511	$93,471	$115,578	$149,600	$288,404
Prescribed medicines and pharmaceutical products	$298	$440	$525	$525	$505	$464	$540	$429	$417	$403
Private health care plan premiums	$92	$150	$305	$490	$599	$629	$709	$734	$958	$821
SUB-TOTAL	$390	$590	$830	$1,015	$1,104	$1,093	$1,249	$1,163	$1,375	$1,224
% INCOME *	3.0%	2.3%	2.2%	2.1%	1.8%	1.4%	1.3%	1.0%	0.9%	0.4%
Food purchased from restaurants	$1,169	$1,294	$1,372	$1,834	$2,326	$2,611	$2,614	$3,111	$4,433	$5,290
Entertainment	$553	$604	$789	$782	$868	$931	$1,051	$1,000	$1,343	$1,520
Television and satellite radio services	$402	$503	$557	$593	$581	$679	$661	$768	$814	$893
Tobacco products and alcoholic beverages	$634	$611	$1,016	$1,024	$1,324	$1,649	$1,575	$1,814	$1,941	$2,489

Note: *Calculated. Totals may not sum due to rounding. The pharmaceutical component of private health care plan premiums was not available separately from the data source.

Table 3. Formulary exclusions: number of drugs covered by private and public plans by province, versus Quebec, 2015-16.

DRUG PLAN TYPES, SCOPE OF FORMULARY	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Private[25]	6,818	6,771	5,865	6,306	5,675	5,892	9,065	-	9,427	5,531
Public [26]	4,123	5,797	5,450	4,837	4,639	4,653	5,335	-	7,792	4,300
Public % Private in Province *	60.5%	85.6%	92.9%	76.7%	81.7%	79.0%	58.9%	-	82.7%	77.7%
Public in Province % Private in QC *	43.7%	61.5%	57.8%	51.3%	49.2%	49.4%	56.6%	-	82.7%	45.6%
Public in Province % Public in QC *	52.9%	74.4%	69.9%	62.1%	59.5%	59.7%	68.5%	-	100.0%	55.2%
Private in Province % Private in QC *	72.3%	71.8%	62.2%	66.9%	60.2%	62.5%	96.2%	-	100.0%	58.7%

Note: *Calculated. Totals may not sum due to rounding. PE excluded by data source.

[24] Statistics Canada. Survey of Household Spending in 2016. Custom data request 7/27/2018.
[25] Sutherland, Greg, and Thy Dinh. Understanding the Gap: A Pan-Canadian Analysis of Prescription Drug Insurance Coverage. The Conference Board of Canada. DECEMBER 2017.
[26] Sutherland, Greg, and Thy Dinh. Understanding the Gap: A Pan-Canadian Analysis of Prescription Drug Insurance Coverage.

COSTS AND BENEFITS

Option 1: PBO National Pharmacare

In September 2017, the Parliamentary Budget Officer delivered a report titled, *Federal Cost of a National Pharmacare Program*.[27] The PBO analysis focused on the net cost to the federal government from implementing the program and therefore included data from the 10 provincial public drug plans, excluding the territories and the federal Non-Insured Health Benefits (NIHB) program. The PBO used the most recent data available at the time of its analysis which was current to the fiscal year 2015-16 and costs were stated in current 2016 dollars. PBO's analysis was based on the following assumptions regarding the design of a National Pharmacare program:

- Replace existing public (Federal, Provincial, Territorial) and private drug plans with a universal, single-payer, public drug plan operated by the Federal government.
- National formulary based on the Quebec public drug plan.
- Require a $5 co-payment for all prescriptions of brand-name drugs, with exemptions for the following: individuals aged 15 and under; students aged 16-18; individuals aged 65 and over; pregnant women; physically disabled; recipients of employment insurance and their dependents; and, recipients of welfare or social assistance and their dependents.
- A stronger negotiating position for government in establishing brand drug prices to obtain at least the lowest price currently obtained by public and private insurance plans in Canada, plus an additional 25% discount.
- Universal application of the generic drug substitution levels observed in public plans to the private sector, whenever generic alternatives are available.

PBO's estimate of the annual cost for a National Pharmacare program, if implemented in the fiscal year 2015-2016 is shown in Table 4. PBO estimated that the total program cost in its first year would be $20.4 billion. This was calculated after accounting for $2.3 billion in extra costs from behavioral utilization changes, plus wholesale and retail price markups and pharmacy dispensing fees. It also accounted for $10.8 billion in savings from formulary exclusions, generic substitution, brand drug price rebates, pricing policies and copayments. After subtracting $645 million in existing Federal direct prescription drugs costs (NIHB), PBO estimated that the net additional cost to the Federal government would be $19.3 billion. Finally, PBO estimated the net additional public (i.e. taxpayer) cost to be $7.3 billion.[28]

[27] (PBO). Federal Cost of a National Pharmacare Program.

[28] A subsequent study published by CHPI has shown that under slightly different assumptions the PBO National Pharmacare model could be much more expensive: adding $26.2 billion (2016 $) to the Federal budget and $12.3 billion in new costs for taxpayers. Canadian Health Policy Institute (2018). Taxpayer Cost of National Pharmacare: Disputing the Parliamentary Budget Officer's Estimate. Canadian Health Policy, October 2018. Access to Innovative Medicines Series. Toronto: CHPI. www.canadianhealthpolicy.com.

Table 4. PBO National Pharmacare cost estimate 2015-16.[29]

Pre-National Pharmacare Eligible Costs	(millions 2016)
Total current non-hospital Rx drugs related spending across 10 provinces: incl. Fed, Prov, private.	$28,549

Post-National Pharmacare Cost Changes: increase (decrease)	
Utilization changes.	$1,700
Markups and pharmacy fees.	$600
Universal formulary matching Quebec public drug plan.	($3,996)
Mandatory generic substitution.	($533)
Lowest observable price policy.	($1,100)
25% brand rebate.	($4,800)
$5 brand copayment after exemptions.	($397)
Total Program Cost	**$20,362**
Minus Current Federal Direct Cost	($645)
Net Federal Cost	**$19,300**
Net Public (Taxpayer) Cost	**$7,300**

Note: *Calculated. Totals may not sum due to rounding.

In effect, the PBO's National Pharmacare model would transfer 100% of costs from existing private drug plans and out-of-pocket costs (less $397 million from $5 brand copayment) to taxpayers. After accounting for all rationing/pricing measures (valued at $10.8 billion), the model would increase taxpayer costs by $7.3 billion more than the status quo. It would not change the costs affecting vulnerable populations which are already fully (or heavily) subsidized under existing public drug plans. The model essentially subsidizes out-of-pocket costs for middle to upper income people, because the $5 copayment is generally less than the premiums, deductibles, coinsurance and copayments under existing private and public safety-net drug plans. The model partially reduces the insurance gap caused by formulary exclusions under existing public drug plans because the PBO assumed the national adoption of the Québec public formulary, which would increase the value of benefits for 10.0 million people currently dependent on public drugs plans in the other nine provinces (Québec's public drug plan population would see no formulary improvement). However, the model would reduce the pre-pharmacare value of formulary benefits for 23.1 million Canadians (in 10 provinces) who were privately insured in 2016 by nearly $4 billion. The PBO also estimated the model based on PEI's formulary, which would have reduced net taxpayer costs to $4.1 billion (gross program costs fall $3.2 billion from $20.4 billion to $17.2 billion) but would have also reduced the value of formulary benefits for patients by $7.2 billion.[30]

[29] (PBO). Federal Cost of a National Pharmacare Program.
[30] (PBO). Federal Cost of a National Pharmacare Program. Summary Table 2. Pages 3-4.

Option 2: Federal Safety-Net

According to the Council, the Safety-Net model for pharmacare would be a national program that would cover all prescription drug costs above a defined percentage of income. The Council specifically offered a threshold of 3% of income as an example.[31] The Council did not specify whether this model is intended to be an alternative version of the PBO'S National Pharmacare model, or whether the Safety-Net model would merely supplement existing private and public drug plans. There are important scale differences between these 2 versions of the Safety-Net model. Cost estimates for both versions are presented below. However, both versions would be redundant because existing public drug plans already protect Canadians from prescription drug costs exceeding a low percentage of income, for the drug products that are listed on the public drug plan formulary.

Single-Payer Safety-Net

In principle, there is little practical difference between the PBO's National Pharmacare model with a $5 copayment and a Single-Payer Safety-Net model that covers prescription drug costs above a threshold of 3% of income. The main distinctions are patient exposure to out-of-pocket costs and the overall expenditures required to publicly fund each program.

Table 5 presents the data and calculations used to estimate the cost of a federal Safety-Net for prescribed drugs spending exceeding 3% of household income. The analysis extrapolates the actual distribution of utilization in public drug plans in 2016 to project the distribution of utilization across the general population by income in the 10 provinces for direct comparability with the PBO analysis of costs for its National Pharmacare model explained earlier. All source data are noted in the table. The table begins by displaying data published by the Canadian Institute for Health Information (CIHI) showing the distribution of utilization in public drug plans. Supplemental data from Statistics Canada on the average household income before tax in each of 10 income deciles is presented in a matrix correlation with the upper limit in each of the utilization threshold ranges. This made it possible to illustrate a rough approximation of the distribution of the population according to utilization costs as a percentage of income. Using income deciles, by definition the population is ranked by income then sorted into 10 groups of equal population numbers. The analysis assumes the distribution of utilization is the same across each income decile.

[31] Government of Canada (2018). Towards Implementation of National Pharmacare: Discussion Paper.

Using data from CIHI on the population across the 10 provinces in 2016, Table 5 then presents the distribution of the population in each income decile by utilization according to the percentage of users corresponding to each of the threshold ranges of prescription drug expenditures per user. This is followed by a presentation of the distribution of total public drug plan spending by utilization according to the percentage of total expenditure corresponding to each of the threshold ranges of expenditures per user. The analysis assumes that the Single-Payer Safety-Net model would achieve the same cost savings from rationing/pricing that were estimated by the PBO for its National Pharmacare model. Therefore, the base costs distributed throughout the table equal the total estimate provided by the PBO.

The data show that 52.5% of the claimant population accounted for 5.6% of total spending on prescribed drugs at the low end of the utilization scale, while at the high end 2.2% of the claimant population accounted for 35.4% of total spending on prescribed drugs. Cells in the table corresponding to the upper limits of the threshold ranges of utilization that exceeded 3% of average household income within each decile were identified and shaded. The corresponding cells in the rest of the table were summed and a total was calculated. The results show a Single-Payer Safety-Net model covering prescribed drugs costs exceeding 3% of income would add roughly $15.4 billion to the federal budget in 2016 versus the status quo. This is $3.9 billion less than the PBO's estimate of the net federal cost for its National Pharmacare model and implies net additional taxpayer cost of $3.4 billion.

The Single-Payer Safety-Net model would not make significant practical differences in coverage for people without private insurance or who are not eligible for first payer coverage under public drug plans because most provinces already have similarly structured safety-net plans that make this model redundant. Again, this model would not change the costs affecting vulnerable populations which are already fully (or heavily) subsidized under existing public drug plans in all provinces. The primary effect of this model would be to standardize the policy approach to safety-net coverage across the country. The main beneficiaries of the national adoption of a Safety-Net program modeled on a 3%/income deductible would be wealthier self-employed people who currently rely on public safety-net plans in the Atlantic provinces, which have higher cost-sharing eligibility requirements for higher income earners. The model would also transfer costs from existing private drug plans and out-of-pocket costs to taxpayers. Again, the model reduces the insurance gap caused by formulary exclusions under public drug plans because the model also assumes the national adoption of the Québec public formulary, which would increase the value of benefits for 10.0 million people currently dependent on public drugs plans in the other nine provinces (Québec's public drug plan population would see no formulary improvement). However, like the PBO model, this model would also reduce the pre-pharmacare value of formulary benefits for 23.1 million Canadians who were privately insured in 2016 by nearly $4 billion.

Supplemental Safety-Net

Alternatively, a Safety-Net model could merely supplement existing private and public drug plans. In principle, this type of safety-net program would be a national version of British Columbia's Pharmacare program or Ontario's Trillium drug plan. In 2016 under British Columbia's Fair Pharmacare program, households with incomes below $15,000 annually had their deductibles and copayments capped at between $25 and $300 per year (max. 2% of income). Out-of-pocket prescription drug costs exceeding this were 100% covered by the public drug plan, which serves as a universal safety-net in the absence of private insurance. Household exposure to out-of-pocket costs was scaled up by income to an annual maximum of $10,000 for households with incomes above $250,000, which is 4% of income at the threshold.[32] Similarly, Ontario's Trillium Drug Plan serves as a universal safety-net in the absence of private insurance. In 2016, depending on family size, households with incomes below $15,000 annually faced a maximum deductible of about $300 per year. Household exposure to out-of-pocket prescription drug costs from the deductible were scaled up by income to a maximum of 4% of income.[33]

Table 6 presents an estimate of the cost of a national program modeled on Ontario's Trillium drug plan. Ontario's Public Drug Plans reported total costs of $5,390,822,347, of which Trillium reported costs of $499,316,104 for 182,262 claimants with the average cost per claimant being $2,740 in 2016. Ontario's total population in 2016 was 13,976,320. This means that 1.3% of people living in Ontario used Trillium as their safety-net public drug plan accounting for 9.3% of total public drug plan costs. These percentages are extrapolated across all 10 provinces using CIHI population data and PBO data on public drug plan costs, as well as Ontario's Trillium Drug Plan cost per claimant. The analysis suggests that a federal Supplemental Safety-Net program modeled on Ontario's Trillium Drug Plan would cost taxpayers between $1.2 billion and $1.3 billion in 2016.

The federal Supplemental Safety-Net model would not make significant practical differences in coverage for people without private insurance or who are not eligible for first payer coverage under public drug plans because most provinces already have safety-net plans that make this model redundant. Again, this model would not change the costs affecting vulnerable populations which are already fully (or heavily) subsidized under existing public drug plans in all provinces. The primary effect of this model would be to standardize the policy approach to safety-net coverage across the country. The main beneficiaries of the national adoption of a Safety-Net program modeled on Ontario's Trillium Drug Plan would be wealthier self-employed people who currently rely on public safety-net plans in the Atlantic provinces, which have higher cost-sharing eligibility requirements relative to Ontario's Trillium Drug Plan. Formulary benefits under existing private and public drug plans would remain unchanged. Therefore, this model would not reduce the insurance gap caused by formulary exclusions under existing public drug plans.

[32] British Columbia Ministry of Health Services (2009). Fair PharmaCare Assistance Levels – Regular. Current as of 2016.
[33] Government of Ontario (2013). A Guide to Understanding the Trillium Drug Program. Current as of 2016.

Table 5: Federal Single-Payer Safety-Net for prescribed drugs spending >3% of household income: total cost estimate using PBO assumptions.

Distribution of utilization in public drug plans, 2016.[34]						
Public drug plan spending per claimant (range):	<$500	$500-$1,499	$1,500-$2,499	$2,500-$4,999	$5,000-$9,999	$10,000+
Percentage of claimant population:	52.5%	24.0%	9.6%	8.5%	3.2%	2.2%
Percentage of total public drug plan spending:	5.6%	14.0%	12.2%	19.0%	13.9%	35.4%

Prescription drug spending utilization thresholds as a percentage of income, by income deciles, 2016.*

		Upper limit within utilization threshold.					
Income decile:	Avg. household income before tax:[35]	$500	$1,500	$2,500	$5,000	$10,000	$15,000[36]
1	$13,106	3.8%	11.4%	19.1%	38.2%	76.3%	114.5%
2	$26,013	1.9%	5.8%	9.6%	19.2%	38.4%	57.7%
3	$37,706	1.3%	4.0%	6.6%	13.3%	26.5%	39.8%
4	$49,169	1.0%	3.1%	5.1%	10.2%	20.3%	30.5%
5	$62,857	0.8%	2.4%	4.0%	8.0%	15.9%	23.9%
6	$77,511	0.6%	1.9%	3.2%	6.5%	12.9%	19.4%
7	$93,471	0.5%	1.6%	2.7%	5.3%	10.7%	16.0%
8	$115,578	0.4%	1.3%	2.2%	4.3%	8.7%	13.0%
9	$149,600	0.3%	1.0%	1.7%	3.3%	6.7%	10.0%
10	$288,404	0.2%	0.5%	0.9%	1.7%	3.5%	5.2%

Distribution of total population by utilization in 10 PROVS, 2016 POP = 36,144,724.[37] *

	Percentage of the population by utilization.						
Avg. household income before tax	52.5%	24.0%	9.6%	8.5%	3.2%	2.2%	TOTAL
$13,106	1,897,598	867,473	346,989	307,230	115,663	79,518	3,614,472
$26,013	1,897,598	867,473	346,989	307,230	115,663	79,518	1,716,874
$37,706	1,897,598	867,473	346,989	307,230	115,663	79,518	1,716,874
$49,169	1,897,598	867,473	346,989	307,230	115,663	79,518	1,716,874
$62,857	1,897,598	867,473	346,989	307,230	115,663	79,518	849,401
$77,511	1,897,598	867,473	346,989	307,230	115,663	79,518	849,401
$93,471	1,897,598	867,473	346,989	307,230	115,663	79,518	502,412
$115,578	1,897,598	867,473	346,989	307,230	115,663	79,518	502,412
$149,600	1,897,598	867,473	346,989	307,230	115,663	79,518	502,412
$288,404	1,897,598	867,473	346,989	307,230	115,663	79,518	195,182
							12,166,314

Distribution of total spending on prescribed drugs by utilization in 10 PROVS at PBO net federal cost assumptions = $19,320 million, 2016.[38] *

	Percentage of total spending on prescribed drugs by utilization.						
Avg. household income before tax	5.6%	14.0%	12.2%	19.0%	13.9%	35.4%	TOTAL
$13,106	$108	$270	$235	$367	$268	$683	$1,932
$26,013	$108	$270	$235	$367	$268	$683	$1,824
$37,706	$108	$270	$235	$367	$268	$683	$1,824
$49,169	$108	$270	$235	$367	$268	$683	$1,824
$62,857	$108	$270	$235	$367	$268	$683	$1,554
$77,511	$108	$270	$235	$367	$268	$683	$1,554
$93,471	$108	$270	$235	$367	$268	$683	$1,318
$115,578	$108	$270	$235	$367	$268	$683	$1,318
$149,600	$108	$270	$235	$367	$268	$683	$1,318
$288,404	$108	$270	$235	$367	$268	$683	$951
							$15,417

Note: *Calculated. Totals may not sum due to rounding.

[34] Canadian Institute for Health Information. Prescribed drug spending in Canada, 2017: a focus on public drug programs. Table 8. Page 23.
[35] Statistics Canada. Survey of Household Spending in 2016. Custom data request 7/27/2018.
[36] This figure was selected to represent the $10,000 + utilization threshold for the purpose of allocating the remainder of the distribution.
[37] Canadian Institute for Health Information. National Health Expenditure Database, 1975 to 2018. Appendix D.1 Population by province/territory and Canada.
[38] (PBO). Federal Cost of a National Pharmacare Program. Summary Table 1. Net Federal Cost of Pharmacare. Page 2.

Table 6. Federal Supplemental Safety-Net for prescribed drugs spending >4% of household income: total cost estimate modeled on Ontario's Trillium Drug Plan.

	TOTAL ON	TRILLIUM CLAIMANTS	TRILLIUM % TOTAL*
Population: Total 2016, Trillium 2016-17:[39,40]	13,976,320	182,262	1.3%

	TOTAL OPDP	TRILLIUM	TRILLIUM % OPDP*	TRILLIUM $/CLAIMANT
Public drug plan expenditure 2016-17:[41]	$ 5,390,822,347	$ 499,316,104	9.3%	$2,740

	AB	BC	MB	NB	NL	NS	ON	PEI	QC	SK	TOTAL 10 PROVS
2016 total population:[42]	4,236,376	4,757,658	1,318,115	757,384	530,305	948,618	13,976,320	149,472	8,321,888	1,148,588	36,144,724
Estimated supplemental safety-net claimants @ ON Trillium utilization levels: *	55,246	62,044	17,189	9,877	6,916	12,371	182,262	1,949	108,524	14,978	471,355
PBO estimate of actual 2015-16 total public drug plan expenditure on prescribed drugs (millions 2016 $):[43]	$1,072	$1,170	$371	$233	$144	$273	$5,452	$27	$3,979	$420	$13,142
Estimated federal supplemental safety-net expenditure @ ON Trillium utilization levels, local costs (millions 2016 $): *	$99	$108	$34	$22	$13	$25	$505	$3	$369	$39	$1,217
Estimated federal supplemental safety-net expenditure @ ON Trillium utilization levels and costs/claimant (millions 2016 $): *	$151	$170	$47	$27	$19	$34	$499	$5	$297	$41	$1,292

Note: *Calculated. Totals may not sum due to rounding.

[39] Canadian Institute for Health Information. National Health Expenditure Database, 1975 to 2018. Appendix D.1 Population by province/territory and Canada.
[40] OPDP At A Glance: Data Report 2016/17. Ontario Public Drug Programs (OPDP), Ontario Ministry of Health and Long-Term Care. "Recipients".
[41] OPDP At A Glance: Data Report 2016/17.
[42] Canadian Institute for Health Information. National Health Expenditure Database, 1975 to 2018. Appendix D.1 Population by province/territory and Canada.
[43] (PBO). Federal Cost of a National Pharmacare Program. 28 September 2017. Table 1-1 Non-Hospital Drug Spending, by Province and Primary Payer, 2015-16. Page 7.

Option 3: Close-the-Gap

The third option being considered by the Council is to enhance existing public and private drug insurance plans by adjusting regulations and public funding to close the coverage gaps. Evidence presented earlier in this paper show that the most significant insurance gaps are caused by formulary exclusions under existing public drug plans. The cost of a federal program designed to focus exclusively and directly on alleviating this gap is estimated in Table 7.

The analysis is based on the same data used by the PBO for its cost estimate of a National Pharmacare program. All source data and calculations are noted in the table. The table presents the results of an analysis for 2 scenarios. The first scenario estimates the cost for all 10 public drug plans to expand their formularies to match Québec's public plan, known as RAMQ. Québec was chosen as a benchmark because its public plan leads the other nine provinces in terms of the number of drugs covered [Table 3]. The second scenario estimates the cost for all 10 public drug plans to further expand their formularies to add the non-RAMQ drugs, which were covered under Quebec's private drug plans, which have the most extensive coverage of available medications of all private markets in Canada. Gross costs are calculated using the PBO's data and net costs after public payer rebates are also shown.[44]

The table calculates existing expenditures by public drug plans on drugs listed on the RAMQ formulary. Then it calculates the percentage increase required in each province to match the RAMQ formulary. Similarly, the table calculates existing public drug plans' spending on non-RAMQ drugs and again calculates the percentage increase required for each province to add these drugs to its formulary at the same coverage level as Québec's private market. The incremental cost of both formulary expansions was calculated against the status quo and the total was further adjusted to reflect known rebates on the price of brand drugs in public drug plans.

The estimate suggests that under this model expanding formularies to match Québec's public drug plan would cost taxpayers roughly $2.6 billion. Adding non-RAMQ drugs would cost an additional $2.6 billion. The model makes no changes to the existing formulary benefits of privately insured people, while significantly improving formulary benefits in public drug plans - effectively closing the drug insurance gap. The model makes no changes to out-of-pocket costs from premiums, deductibles, coinsurance and copayments. Vulnerable populations remain insured under existing public drug plans and safety net programs.

[44] Analysis assumes that all provinces achieve rebates on brand drugs equivalent to Ontario's public drug plans. The fact that all provinces participate in the pan-Canadian Pharmaceutical Alliance reinforces this assumption. Ontario's AG reported that the provincial public drug plan received rebates totaling 30% of spending on brand drugs in 2016/17. Office of the Auditor General of Ontario. Annual Report 2017. Section 3.09 Ontario Public Drug Programs. Page 491.

Table 7. Closing the Gap: Incremental public drug plan expenditure from formulary expansion, 2016.

	(millions 2016)										
	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK	TOTAL 10 PROVS
Base expenditure data.											
2015-16 total market expenditure on prescribed drugs. [45]	$2,723	$2,812	$820	$700	$466	$797	$11,306	$101	$8,054	$769	$28,549
2015-16 total market expenditure at universal RAMQ formulary. [46]	$2,311	$2,430	$724	$616	$403	$698	$9,350	$88	$7,247	$687	$24,553
2015-16 total market expenditure on non-RAMQ prescribed drugs. *	$412	$383	$96	$84	$62	$100	$1,957	$13	$807	$83	$3,996
2015-16 total public drug plan expenditure (PUBRXEX). [47]	$1,072	$1,170	$371	$233	$144	$273	$5,452	$27	$3,979	$420	$13,142
Scenario 1: 10 Provincial public drug plans match RAMQ formulary.											
2015-16 PUBRXEX % accounted for by drugs matching RAMQ formulary. [48]	98.8%	98.7%	96.6%	98.8%	99.5%	98.8%	97.2%	98.7%	100.0%	99.4%	
2015-16 PUBRXEX $ accounted for by drugs matching RAMQ. *	$1,059	$1,155	$358	$230	$143	$270	$5,299	$27	$3,979	$417	$12,938
2015-16 % drugs on public formulary also listed on RAMQ formulary. [49]	73.9%	72.0%	63.6%	67.3%	56.3%	63.7%	77.6%	39.1%	100.0%	65.7%	
PUBRXEX % increase required to match RAMQ formulary. *	135.3%	138.9%	157.2%	148.6%	177.6%	157.0%	128.9%	255.8%	100.0%	152.2%	
Total PUBRXEX $ cost at match with RAMQ formulary. *	$1,433	$1,604	$564	$342	$254	$423	$6,829	$68	$3,979	$635	$16,132
Gross incremental PUBRXEX $ required to match RAMQ formulary. *	$374	$449	$205	$112	$111	$154	$1,530	$42	$0	$218	$3,194
Net incremental PUBRXEX $ required: 30% rebate on brands at 61% of total. [50,51] *	**$306**	**$367**	**$168**	**$91**	**$91**	**$126**	**$1,250**	**$34**	**$0**	**$178**	**$2,610**
Scenario 2: 10 Provincial public drug plans add non-RAMQ drugs.											
2015-16 PUBRXEX % accounted for by non-RAMQ drugs. *	1.2%	1.3%	3.4%	1.2%	0.5%	1.2%	2.8%	1.3%	0.0%	0.6%	
2015-16 PUBRXEX $ accounted for by non-RAMQ drugs. *	$13	$15	$13	$3	$1	$3	$153	$0.4	$0	$3	$203
2015-16 drugs on RAMQ formulary % of drugs paid by private-payers in QC. [52] *	82.7%	82.7%	82.7%	82.7%	82.7%	82.7%	82.7%	82.7%	82.7%	82.7%	
PUBRXEX % increase required to add non-RAMQ drugs. *	121.0%	121.0%	121.0%	121.0%	121.0%	121.0%	121.0%	121.0%	121.0%	121.0%	
Total PUBRXEX $ cost non-RAMQ drugs. *	$301	$337	$118	$72	$53	$89	$1,433	$14	$835	$133	$3,385
Gross incremental PUBRXEX $ required to add non-RAMQ drugs. *	$288	$321	$106	$69	$53	$86	$1,280	$14	$835	$131	$3,182
Net incremental PUBRXEX $ required: 30% rebate on brands at 61% of total. [53,54] *	**$235**	**$263**	**$86**	**$56**	**$43**	**$70**	**$1,046**	**$11**	**$682**	**$107**	**$2,600**
NET TOTAL COST OF FORMULARY EXPANSION *	**$541**	**$629**	**$254**	**$148**	**$134**	**$195**	**$2,296**	**$45**	**$682**	**$285**	**$5,209**

Note: *Calculated. Totals may not sum due to rounding.

[45] (PBO). Federal Cost of a National Pharmacare Program. Table 3-7 Total Pharmaceutical Expenditure. Page 43.
[46] (PBO). Federal Cost of a National Pharmacare Program. Table 3-7 Total Pharmaceutical Expenditure. Page 43.
[47] (PBO). Federal Cost of a National Pharmacare Program. Table 1-1 Non-Hospital Drug Spending, by Province and Primary Payer, 2015-16. Page 7.
[48] (PBO). Federal Cost of a National Pharmacare Program. Table 1- 4 Drug availability. Page 13.
[49] (PBO). Federal Cost of a National Pharmacare Program. Table 1- 4 Drug availability. Page 13.
[50] Office of the Auditor General of Ontario. Annual Report 2017. Section 3.09 Ontario Public Drug Programs. Page 491.
[51] Parliamentary Budget Officer (PBO). HESA - Follow-up analysis to "Federal Cost of a National Pharmacare Program". 8 November 2017. Table 1 Non-hospital drug expenditures by primary payer, 2015/16. Page 2. Quebec brand plus bio percentage of total.
[52] Sutherland, Greg, and Thy Dinh. Understanding the Gap: A Pan-Canadian Analysis of Prescription Drug Insurance Coverage. The Conference Board of Canada. DECEMBER 2017.
[53] Office of the Auditor General of Ontario. Annual Report 2017. Section 3.09 Ontario Public Drug Programs. Page 491.
[54] (PBO). HESA - Follow-up analysis to "Federal Cost of a National Pharmacare Program". Table 1 Non-hospital drug expenditures by primary payer, 2015/16. Page 2.

WINNERS AND LOSERS

The PBO estimated that Canadian society would spend $4.2 billion less under National Pharmacare than the current private and public prescription drug insurance system. However, the PBO's estimate of societal costs and benefits did not account for changes in the formulary benefits of privately and publicly insured Canadians, nor the impact on taxpayer costs.

To roughly illustrate the shifting of costs and benefits caused by each of the three models for pharmacare studied in this paper, Table 8 presents an analysis of the economic losses or gains to patients and taxpayers according to private versus public insurance status and out-of-pocket prescription drug expenditures.

PBO National Pharmacare

The data show under the National Pharmacare model studied by the PBO, privately insured patients would lose almost $4 billion worth of benefits while publicly insured patients would gain $2.6 billion in additional benefits due to the national adoption of the RAMQ formulary. After accounting for the copayments built into the PBO model, patients would gain about $4.3 billion from reduced out-of-pocket costs. In total patients would gain nearly $3 billion in net benefits. However, under the model taxpayers would lose $7.3 billion split between the privately and publicly insured populations.[55]

Federal Safety-Net

Under the Single-Payer Safety-Net version of pharmacare, the losses and gains for patients would be the same as under the PBO model because it also assumes national adoption of the RAMQ formulary. The reduction in out-of-pocket costs for patients under the 3%/income deductible built into this model is much smaller than under the $5 copayment built into the PBO model. As a result, patients suffer a net loss of $925 million worth of benefits. The cost of the model is lower, but it still results in a net loss for taxpayers of about $3.4 billion split between the private and public insurance populations.

[55] Split 83.5% private, 16.5% public. Analysis assumes that all social assistance recipients, low income people and seniors are allocated to the publicly insured population and that of these groups only seniors would bear a proportionate (16.5%) burden of the tax cost for national pharmacare. Based on Canadian Institute for Health Information. National Health Expenditure Database, 1975 to 2018. Appendix D.23 Population by age and sex, by province/territory and Canada, in thousands, 2016.

By contrast under the Supplemental Safety-Net version, there are no changes to existing private or public drug plan formulary benefits and because the program merely replaces similarly structured existing public safety-net drug plans there is virtually no change to out-of-pocket costs, except for a very small percentage of the population in the Atlantic provinces who are between the ages of 18 and 64, middle to upper income earners, have health claims that exceed 3%/income and who don't have private insurance or eligibility for first payer public drug plan coverage. For the same reason there is no change to taxpayer cost, because the costs are merely shifted from the provinces to the federal government.

Close-the-Gap

Costs and benefits for this model are presented in 2 scenarios. The first is the expansion of public drug plan formularies to match RAMQ and the second is the expansion of the public drug plan formularies to add the non-RAMQ drugs excluded under the PBO's National Pharmacare model. The model leaves existing private drug plans intact under both scenarios. There are no losses or gains for the privately insured population. Improvements to the public drug plan formularies are reflected by a gain of $5.2 billion in patient benefits. Taxpayer losses amount to $5.2 billion as the cost of fully closing the insurance gap under public drug plans.

Under this model, expanding existing public drug plan formularies to match RAMQ achieves the same improvement for public drug plan patients as the PBO's National Pharmacare model, but without reducing benefits for the 23.1 million people who currently have privately insured drug plans. Closing this part of the gap costs taxpayers only about 35% of the cost of PBO's National Pharmacare model. Expanding the public drug plan formularies to add the non-RAMQ drugs excluded under the PBO's National Pharmacare model increases taxpayer costs to 71% of the cost of PBO's National Pharmacare model but doubles the formulary benefits for public drug plan patients.

Under both the PBO's National Pharmacare model and the Single-Payer Safety-Net model, patients receive greater benefits from reduced out-of-pocket costs related to premiums, deductibles, coinsurance and copayments. However, these costs are already effectively capped at affordable levels across all income deciles. By contrast, formulary exclusions expose patients to 100% of the cost of their prescribed drugs as an out-of-pocket expense. Therefore, this analysis assumes that closing the insurance gap caused by formulary exclusions is of greater social importance.

Of the 3 versions of pharmacare being considered by the Council, this is the only model that maximizes benefits for patients net of taxpayer costs and fully closes the insurance gap caused by formulary exclusions under existing public drug plans. It provides nearly $2.3 billion more in net benefits for patients than the PBO's model and it would cost taxpayers $2.1 billion less than the PBO’s model. Finally, because the model doesn't require shifting the full cost of existing provincial public drug plans onto the federal budget nor require the government to cover privately paid costs, it reduces the burden on the federal budget by $14.1 billion compared to the PBO 's model.

Table 8. Economic (loss)/gain to patients and taxpayers versus status quo: National Pharmacare, Federal Safety-Net and Close-the-Gap models.

[millions 2016]

	PRIVATE	PUBLIC	OOP	NET
Population	23.2	13.0	36.2	36.2
PBO National Pharmacare				
Patients	($3,996)	$2,610	$4,345	$2,958
Taxpayers	($6,096)	($1,205)	$0	($7,300)
Total	($10,092)	$1,405	$4,345	($4,342)
Single-Payer Safety-Net				
Patients	($3,996)	$2,610	$462	($925)
Taxpayers	($2,839)	($561)	$0	($3,400)
Total	($6,835)	$2,049	$462	($4,325)
Supplemental Safety-Net				
Patients	$0	$0	$0	$0
Taxpayers	$0	$0	$0	$0
Total	$0	$0	$0	$0
Close-the-Gap 1: PUBDPs @ RAMQ				
Patients	$0	$2,610	$0	$2,610
Taxpayers	($2,179)	($431)	$0	($2,610)
Total	($2,179)	$2,179	$0	$0
Close-the-Gap 2: PUBDPs add NON-RAMQ				
Patients	$0	$2,600	$0	$2,600
Taxpayers	($2,171)	($429)	$0	($2,600)
Total	($2,171)	$2,171	$0	$0
Close-the-Gap TOTAL				
Patients	$0	$5,209	$0	$5,209
Taxpayers	($4,350)	($860)	$0	($5,209)
Total	($4,350)	$4,350	$0	$0

Note: Totals may not sum due to rounding.

IMPLEMENTING A CLOSE-THE-GAP MODEL

The analysis in this paper assumes that the Federal government has the following common-sense policy goals for pharmacare:

1. Close the insurance gap caused by formulary exclusions under existing public drug plans.
2. Maximize benefits for patients net of sustainable taxpayer costs.
3. Avoid disrupting private drug plans covering more than 23.1 million Canadians.
4. Respect the constitutional division of powers which assigns jurisdiction for health care to the Provinces.
5. Subsidize the provincial budget impact from expanding public formularies without disadvantaging Québec for having the most extensive existing public formulary.

To achieve these 5 goals, the federal government could establish a supplemental safety-net pharmacare program to cover high-cost claimants in existing provincial public drug

plans on the condition that each province expand its public formulary to include all of the RAMQ and non-RAMQ drugs identified by the PBO, which were used as the basis for estimating the cost of a Close-the-Gaps pharmacare model in this paper. In future, the provinces would automatically cover all drugs approved by Health Canada at prices negotiated between manufacturers and the pan-Canadian Pharmaceutical Alliance. Provinces would identify public drug plan claimants with annual prescription drug costs of $10,000 or more and would bill the federal government for the costs associated with these high utilization claimants. This would free up budget room for the provinces to expand their formularies. An estimate of the cost of such a program is presented below.

Table 9 shows the 2016 distribution of the active claimant population and expenditures by utilization in the existing provincial public drug plans. The data show that of the total 7.9 million active claimants, 175,484 were high utilization claimants with annual costs exceeding $10,000. Total expenditure on these people is estimated at close to $4.7 billion. This almost entirely offsets the $5.2 billion estimated cost of expanding provincial public drug plan formularies to match RAMQ and add non-RAMQ drugs. To cover the difference, the federal government could adjust the high-cost threshold for coverage downward slightly until the provinces are fully compensated for the cost of adopting all of the RAMQ and non-RAMQ drugs identified by the PBO and that define the real drug insurance gap in Canada.

Based on the analysis in this paper, this approach would accomplish each of the 5 goals listed above and would provide nearly twice the net benefits for patients as the PBO's National Pharmacare model at about 2/3 of the cost to taxpayers and reduce the federal budget impact by $14.1 billion.

Table 9. Distribution of public drug plan claimant population and expenditure by utilization, 2016.

Annual Expenditure Per Claimant[56]	Distribution of Population[57]	Population by Utilization*	Distribution of Total Expenditure[58]	Total Expenditure by Utilization*
<$500	52.5%	4,187,682	5.6%	$735,952,000
$500-$1,499	24.0%	1,914,369	14.0%	$1,839,880,000
$1,500-$2,499	9.6%	765,748	12.2%	$1,603,324,000
$2,500-$4,999	8.5%	678,006	19.0%	$2,496,980,000
$5,000-$9,999	3.2%	255,249	13.9%	$1,826,738,000
$10,000+	2.2%	175,484	35.4%	$4,652,268,000
TOTAL	100.0%	7,976,537 [59]	100.0%	$13,142,000,000 [60]

Note: *Calculated. Totals may not sum due to rounding.

[56] Canadian Institute for Health Information. Prescribed drug spending in Canada, 2017: a focus on public drug programs. Table 8. Page 23.
[57] Canadian Institute for Health Information. Prescribed drug spending in Canada, 2017. Table 8. Page 23.
[58] Canadian Institute for Health Information. Prescribed drug spending in Canada, 2017. Table 8. Page 23.
[59] See Table 1: "Provincial active claimants/registrants: 1st & 2nd-payer".
[60] Parliamentary Budget Officer (PBO). Federal Cost of a National Pharmacare Program. 28 September 2017. Table 1-1 Non-Hospital Drug Spending, by Province and Primary Payer, 2015-16. Page 7.

REFUNDABLE TAX CREDIT

The analysis in this paper has shown that all Canadians are already insured under existing private, public and safety-net drug plans and none of the 3 models would change the out-of-pocket costs affecting vulnerable populations which are already fully (or heavily) subsidized under existing public drug plans. This analysis has also shown that closing the insurance gap caused by formulary exclusions is of greater social importance than reducing out-of-pocket costs related to premiums, deductibles, coinsurance and copayments because formulary exclusions expose patients to 100% of the cost of their prescribed drugs as an out-of-pocket expense. The evidence presented in this paper recommends a pharmacare model that closes the gaps caused by formulary exclusions in existing public drug plans.

Nevertheless, if the federal government wished to reduce the number of people who are reliant on public safety-net plans, it could consider creating a refundable tax credit (RTC) to help low income workers without an employer-sponsored plan and self-employed people afford private drug plan premiums. The RTC could be structured to cover the costs of private drug plan premiums exceeding 4% of income up to a maximum equal to the average cost of private drug plan premiums.

Table 10 shows an estimate of the cost for such an RTC model for 2 scenarios defined by different population cohorts: the self-employed (2.8 million in 2016) and public drug plan eligible non-claimants/non-registrants (4.3 million in 2016). Total premiums across Individual drug benefit plans were estimated using available data, assuming the drug component of extended health and disability premiums was proportionate to its known percentage of benefits across all plans. The average cost ($1,475 in 2016) of the drug component of premiums in Individual plans was calculated from available population data on the number of principals with Individual (no Group) plans. The table then distributes the population of both cohorts across each income decile and shows the corresponding percentage of premium costs that would be refundable, the remaining premium cost per principal after the RTC is applied, the post-RTC cost as a percentage of income and the aggregate cost from foregone tax revenue.

The analysis suggests that if 100% of the eligible self-employed population in 2016 claimed the RTC, the maximum total cost would have been about $388 million. Some of the self-employed population would live in households with two incomes with the second income earner having employment-based benefits covering the family. Available data suggests the single-earner self-employed population was about 1 million in 2016. Assuming this population represents those who would likely claim the RTC, the maximum total cost would have been about $146 million. If the analysis is extended to cover eligible non-claimants under existing public drug plans (estimated in Table 1) then the maximum total cost would have been about $606 million if 100% of this population claimed the RTC.

Table 10. Cost estimate for a refundable tax credit (RTC) to assist low income workers and the self-employed afford private drug plan premium costs >4% of income.

Drug Benefits, Population Cohorts	2016
Extended Health and Disability Benefits: Group and Individual Plans [61]	$32,531,000,000
Drugs Benefits: Group and Individual Plans [62]	$11,000,000,000
Drugs Benefits % Extended Health and Disability Benefits: Group and Individual Plans *	33.8%
Extended Health and Disability Premiums: Individual Plans [63]	$4,100,000,000
Est. Drug Plan Premiums: Individual Plans *	$1,386,369,924
Number of Principals with Drug Benefits: Individual Plans [64]	940,000
Est. Drug Plan Premiums per Principal *	$1,475
Number of Self-employed Persons [65]	2,769,700
Single-earner % of all Economic Families [66]	37.9%
Est. Single-earner Self-employed Persons *	1,048,696
Est. PDP eligible non-claimants/non-registrants [67]	4,323,017

Avg. Household Income Before Tax by Income Decile	Maximum Eligible Population	% Premium Cost Refundable	Premiums Per Principal After RTC	Premiums % Income	Tax Cost if 100% RTCs Claimed
$13,106	276,970	65.0%	$516	3.9%	$265,520,075
$26,013	276,970	30.0%	$1,032	4.0%	$122,547,727
$37,706	276,970	0.0%	$1,475	3.9%	$0
$49,169	276,970	0.0%	$1,475	3.0%	$0
$62,857	276,970	0.0%	$1,475	2.3%	$0
$77,511	276,970	0.0%	$1,475	1.9%	$0
$93,471	276,970	0.0%	$1,475	1.6%	$0
$115,578	276,970	0.0%	$1,475	1.3%	$0
$149,600	276,970	0.0%	$1,475	1.0%	$0
$288,404	276,970	0.0%	$1,475	0.5%	$0
					$388,067,802
$13,106	432,302	65.0%	$516	3.9%	$414,430,367
$26,013	432,302	30.0%	$1,032	4.0%	$191,275,554
$37,706	432,302	0.0%	$1,475	3.9%	$0
$49,169	432,302	0.0%	$1,475	3.0%	$0
$62,857	432,302	0.0%	$1,475	2.3%	$0
$77,511	432,302	0.0%	$1,475	1.9%	$0
$93,471	432,302	0.0%	$1,475	1.6%	$0
$115,578	432,302	0.0%	$1,475	1.3%	$0
$149,600	432,302	0.0%	$1,475	1.0%	$0
$288,404	432,302	0.0%	$1,475	0.5%	$0
					$605,705,921

Note: *Calculated. Totals may not sum due to rounding.

[61] Canadian Life and Health Insurance Facts, 2017 Edition. Canadian Life and Health Insurance Association (CLHIA). Pg 13.
[62] Canadian Life and Health Insurance Facts, 2017 Edition. Canadian Life and Health Insurance Association (CLHIA). Pg 13.
[63] Canadian Life and Health Insurance Facts, 2017 Edition. Canadian Life and Health Insurance Association (CLHIA). Pg 24.
[64] Canadian Life and Health Insurance Association. Special data request. (April 11, 2018).
[65] Statistics Canada. Table 14-10-0027-01 Employment by class of worker.
[66] Statistics Canada. Table 11-10-0028-01 Single-earner and dual-earner census families by number of children.
[67] Table 1.

CAUTIONS AND LIMITATIONS

1. The PBO's analysis of National Pharmacare and the comparative analysis of the other two models presented in this paper assume that the cost of formulary expansion is in a one to one ratio with existing costs for the basket of drugs covered under existing public drug plan formularies. In reality, the prices for the drugs that are currently not covered are likely to be higher than the prices that are currently covered.
2. The PBO's analysis and the analysis presented in this paper assume that the cost of formulary expansion is 100% additive to current total costs. In reality, many of the drugs currently not covered are likely to be substitutes for drug products that are covered and therefore the cost of adding these drugs to the formulary would actually supplant existing expenditures and would only potentially increase existing costs marginally.
3. The PBO's analysis and the analysis presented in this paper assume that the cost of formulary expansion is the same across private and public drug plans. In reality, the demographics, health needs and utilization profiles of the patient populations currently served under private and public drug plans is different and this could affect the cost structure of the benefits provided under each type of plan.
4. The PBO's analysis and the analysis presented in this paper used available data which permitted rough estimates of costs based on the distribution of utilization across broad population cohorts. A more exact modeling estimate requires access to individualized utilization data from administrative databases.

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