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Cost Estimate of a Single-payer Universal Drug Plan

OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
BUREAU DU DIRECTEUR PARLEMENTAIRE DU BUDGET

The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

This report estimates the total and incremental public cost of a single-payer universal drug plan— "Pharmacare"—over 2023-24 to 2027-28. The estimated cost reflects a national application of Quebec's Régie de l'assurance maladie du Québec (RAMQ) formulary with universal access and a copayment scheme.

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Parts of this material are based on data and information provided by the Canadian Institute for Health Information. However, the analyses, conclusions, opinions and statements expressed herein are those of the PBO and not necessarily those of the Canadian Institute for Health Information.

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Highlights

Upon the implementation of a single-payer universal drug plan based on Quebec's Régie de l'assurance maladie du Québec (RAMQ) formulary—"Pharmacare"—we estimate the incremental cost to the public sector (that is federal and provincial governments combined) to be $11.2 billion in 2024-25, increasing to $13.4 billion in 2027-28.

In terms of the economy as a whole, we estimate cost savings on drug expenditures of $1.4 billion in 2024-25, rising to $2.2 billion in 2027-28.

Summary

In response to parliamentary interest in implementing a single-payer universal drug plan, PBO has prepared an updated cost estimate of a single-payer universal drug plan— "Pharmacare." The updated cost estimate is based on the same framework proposed by the House of Commons Standing Committee on Health (HESA) in 2016[1] and used by the PBO in 2017.[2]

This report presents the projected incremental cost for the public sector (that is federal and provincial governments combined) to meet the Pharmacare standard over a five-year period effective January 1st, 2024. As there is no certainty with respect to the federal and provincial shares of the cost of such a program, it is not possible to isolate federal costs. This report also includes cost estimates for frameworks in which alternative lists of drugs to be covered by Pharmacare (the formulary) are considered.

PBO estimates total drug expenditures under Pharmacare to be $33.2 billion in 2024-25 (the assumed first full fiscal year of implementation), increasing to $38.9 billion in 2027-28. After accounting for status quo spending on provincial drug plans and direct federal spending, as well as Pharmacare copayment revenues, the incremental cost to the public sector (that is federal and provincial governments combined) is estimated to be $11.2 billion in 2024-25, increasing to $13.4 billion in 2027-28 (Table S-1).

While there are incremental costs to the public sector resulting from the transfer of expenditures currently covered by the private insurance and out-of-pocket outlays, economy-wide spending on the drugs listed on the formulary is estimated to be lower. The economy-wide savings are projected to increase from $1.4 billion in 2024-25 to $2.2 billion in 2027-28, as the expenditure growth rate of Pharmacare is slower compared to the baseline (5.3 per cent vs. 5.8 per cent). This is because historically, drug

expenditures of private plans grow at a faster rate than those of public plans.[3]

Table S-1

Projected Cost of Pharmacare (billions of dollars)

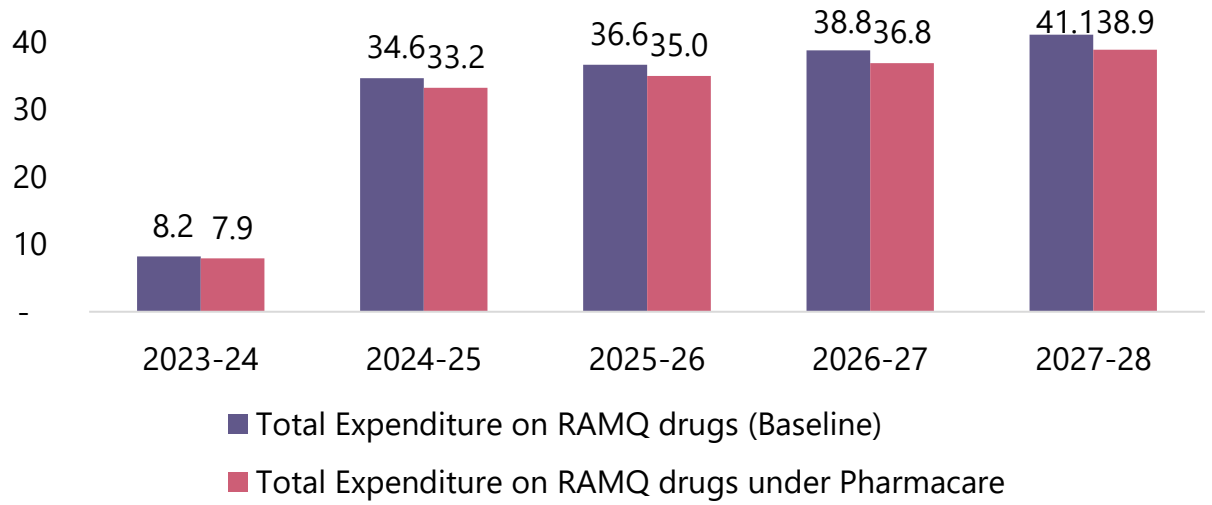
Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Drug Expenditure under Pharmacare	7.9	33.2	35.0	36.8	38.9
Public Plans Drug Expenditures	-4.4	-18.4	-19.4	-20.4	-21.6
Direct Federal Drug Expenditures	-0.8	-3.3	-3.4	-3.5	-3.6
Pharmacare Co-Payment Revenues	-0.1	-0.3	-0.3	-0.3	-0.3
Incremental Cost to the Public Sector	**2.6**	**11.2**	**11.9**	**12.6**	**13.4**

Source:
Office of the Parliamentary Budget Officer.

Notes:
Incremental cost to the public sector could either be borne by the federal government or split between the federal and provincial governments, depending on the cost-sharing model that is ultimately adopted. Numbers may not sum to total due to rounding.

Figure S-1

Projected Total Spending on Drugs Eligible for Pharmacare (billions of dollars)



Textual description:

Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Expenditure on RAMQ drugs (Baseline)	8.2	34.6	36.6	38.8	41.1
Total Expenditure on RAMQ drugs under Pharmacare	7.9	33.2	35.0	36.8	38.9

Source:
Office of the Parliamentary Budget Officer.

Cost estimates that considered alternate drug formularies produced similar conclusions; however, the magnitude of the savings and costs are scaled roughly proportionately to the market share of those drugs.

Introduction

On June 13, the New Democratic Party (NDP) tabled a Pharmacare bill that was defeated.[4] More recently, media reported that the Minister of Health planned to table a Pharmacare bill upon the return of the House of Commons in the Fall of 2023.[5]

In response to parliamentary interest in the creation of a single-payer universal drug plan, the Office of the Parliamentary Budget Officer (PBO) undertook analysis to estimate prescription drug expenditures under a scenario of a single-payer universal drug plan relative to a baseline scenario representing the status quo.

The analysis uses the criteria for a single-payer universal drug plan as provided in 2016 by the House of Commons Standing Committee on Health (HESA) along with updated assumptions to reflect more recent data and research.

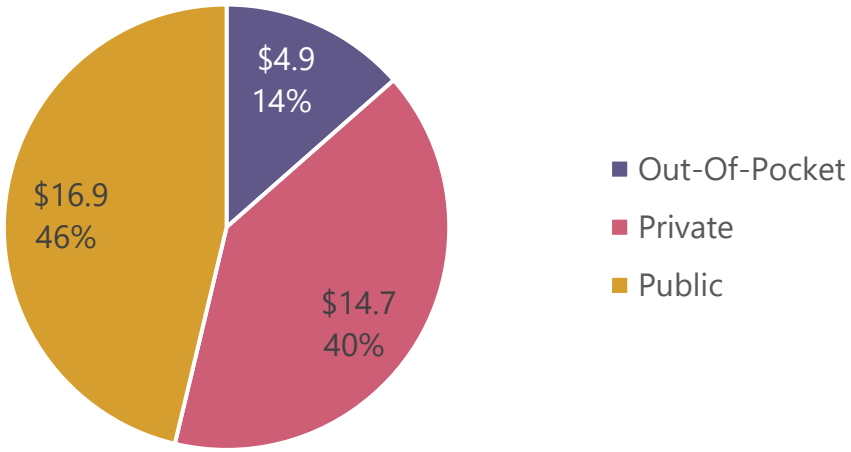
The analysis includes the total estimated drug expenditure, costs incremental to total status quo spending, as well as the incremental cost to public payer(s) to cover private insurance and out-of-pocket spending.

Drug Spending in Canada

Total prescription drug spending in Canada, excluding hospital drugs, amounts to roughly $36.6 billion in 2021-2022, a 28 per cent increase relative to 2015-2016.[6]

About 46 per cent ($16.9 billion) of total prescription drug expenditure was covered by public sources; 40 per cent ($14.7 billion) by private insurance; and the remaining 14 per cent ($4.9 billion) was paid for out-of-pocket.[7]

Figure 1
Non-Hospital Drug Spending in Canada, by Primary Payer, 2021-2022 (billions of dollars)



Textual description:

Primary Payer	$ billions	Per cent
Out-Of-Pocket	4.9	14
Private	14.7	40
Public	16.9	46

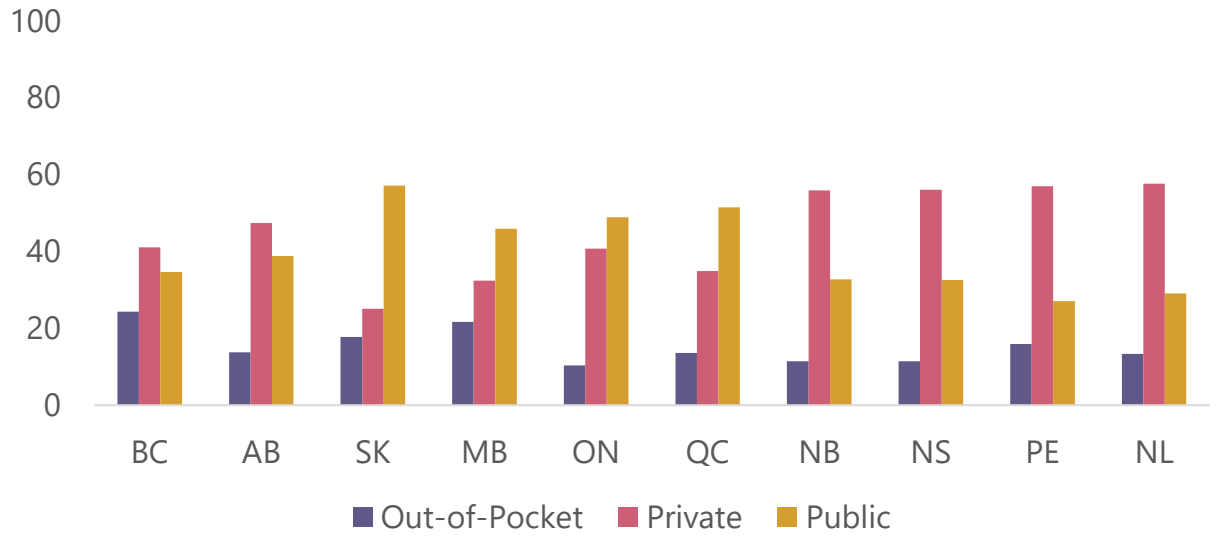
Source:
Office of the Parliamentary Budget Officer using data from IQVIA.

Note:
Numbers may not sum to total due to rounding.

The proportion of drug spending covered by primary payer varies across Canada.[8] Data from 2021-22 indicates drug spending in the Atlantic provinces as well as British Columbia and Alberta, was predominantly covered by private payer (between 41 per cent and 58 per cent). In Saskatchewan, Manitoba, and Central Canada, public insurance was the single largest payer of prescription drugs (between 46 per cent and 57 per cent).

Figure 2

Non-Hospital Drug Spending in Canada, by Province and Primary Payer, 2021-22 (per cent)



Textual description:

Province	Out-of-Pocket	Private	Public
BC	24%	41%	35%
AB	14%	47%	39%
SK	18%	25%	57%
MB	22%	32%	46%
ON	10%	41%	49%
QC	14%	35%	52%
NB	11%	56%	33%
NS	11%	56%	33%
PE	16%	57%	27%
NL	13%	58%	29%
Total	**14%**	**40%**	**46%**

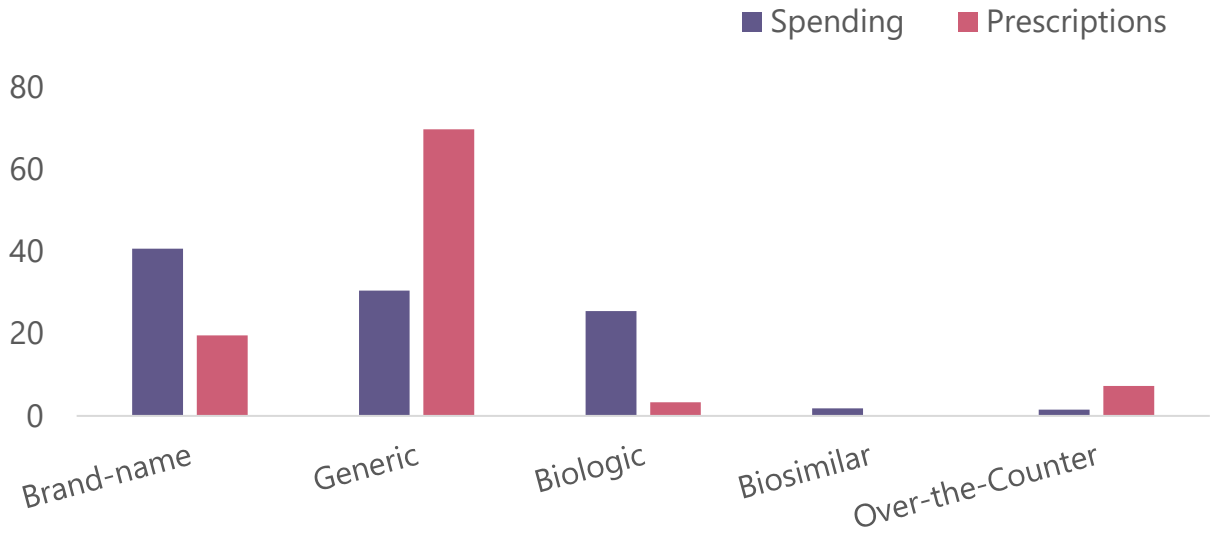
Source:
Office of the Parliamentary Budget Officer using data from IQVIA.

In our framework we classify drugs into five categories: brand-name, generic, biologic, biosimilar, and over-the-counter drugs.[9]

Data for 2021-22 indicates that generic drugs accounted for 70 per cent of total prescriptions and 30 per cent of the total drug expenditures in Canada. Brand-name drugs represented 20 per cent of total prescriptions and over 41 per cent in total spending. Due to high prices, biologic and biosimilar drugs made up a small portion of total prescriptions but quite a significant portion of total spending.

Figure 3

Share of Drug Prescriptions and spending in Canada in 2021-22, by Drug Category (per cent)



Textual description:

Drug Category	Spending	Prescriptions
Brand-name	41%	20%
Generic	30%	70%
Biologic	26%	3%
Biosimilar	2%	0%
Over-the-counter	2%	7%

Source:
Office of the Parliamentary Budget Officer using data from IQVIA.

Note:
Over-the-Counter drugs represent prescribed over-the-counter drugs.

Drug Plans in Canada

Canada's prescription drug coverage is a patchwork of a large number of public drug plans and several more private drug plans, each with its own eligibility criteria, formularies, cost-sharing requirements, and policies on generic and biosimilar substitution.[10]

Private drug plans are typically available through employment (and post-retirement), though individual plans are also available for purchase.[11] The large number of public plans are primarily provided by provinces and territories.[12,13]

There is high commonality among provinces' drug formularies, and the overlap between each provinces' drug formulary and that of RAMQ is over 82 per cent (Table 1).

Table 1

Public Plan Coverage of RAMQ Drugs in 2021-22

Province	Number of drugs	Expenditure
BC	83%	89%
AB	90%	87%
SK	82%	83%
MB	84%	82%
ON	84%	90%
QC	100%	93%
NB	89%	87%
NS	86%	87%
PE	89%	83%
NL	87%	86%

Source:
Office of the Parliamentary Budget Officer using Data from IQVIA.

Note:

Expenditure is calculated as a share of total public payer spending as identified in IQVIA which can include spending on drugs not listed on provincial formulary.

Drug Prices in Canada

According to Health Canada, prices for prescription drugs in Canada are roughly 25 per cent above the median of Organisation for Economic Co-operation and Development (OECD) countries.[14]

Information collected and reported annually from the Patented Medicine Prices Review Board (PMPRB) suggests that, compared to international prices, Canada tends to pay a premium for patented and generic medicines which made up roughly 51 per cent and 22 per cent of all sales in 2021 respectively.[15]

PMPRB Guidelines

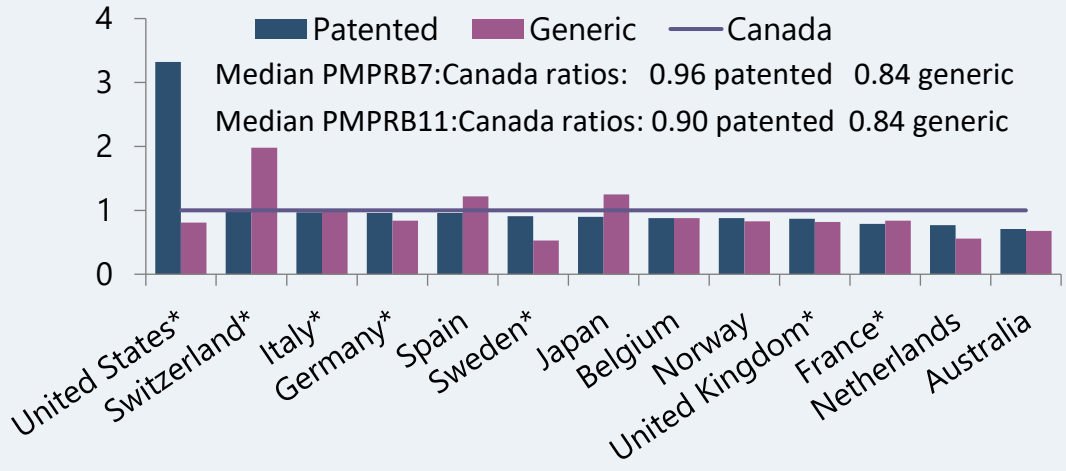
The Patented Medicine Prices Review Board (PMPRB) publish Guidelines for patentees to follow when reporting information to PMPRB. This information allows PMPRB to assess patent drug prices in Canada by comparing Canadian prices to international prices. The latest interim Guidelines came in to force on July 1, 2022, and updated the list of comparator nations from 7 (PMPRB7) to 11 (PMPRB11).

In general, nations with generally more expensive drug prices were removed from this list and nations with lower drug prices were added. This change is anticipated to reduce patented drug prices in Canada.

The analysis from PMPRB suggests that targeting the prices observed in PMPRB11 nations rather than in PMPRB7 nations could result in additional savings for patented drugs.

Figure 4

Average Foreign-to-Canadian Price Ratios, Patented and Generic Drugs, 2021



Textual description:

Country	Patented	Generic**	Canada
United States*	3.32	0.81	1.00
Switzerland*	1.01	1.98	1.00
Italy*	0.97	0.98	1.00
Germany*	0.96	0.84	1.00
Spain	0.96	1.22	1.00
Sweden*	0.91	0.53	1.00
Japan	0.9	1.25	1.00
Belgium	0.88	0.88	1.00
Norway	0.88	0.83	1.00
United Kingdom*	0.87	0.82	1.00
France*	0.79	0.84	1.00
Netherlands	0.77	0.56	1.00
Australia	0.71	0.68	1.00

Source:
Patented Medicine Prices Review Board

Notes:
* PMPR7 comparator country. All countries presented, except for the United States and Switzerland, represent a PMPRB11 comparator country.

**Data for generic drugs are limited to Q4 of 2021.

A Single-payer Universal Drug Plan

The Scope

This report retains the framework for Pharmacare that was provided to PBO by the House of Commons standing Committee on Health in September 2016. Specifically, Pharmacare would:

- Be a universal plan;
- Replace existing public and private drug plans;
- Use the Régie de l'assurance maladie du Québec (RAMQ) formulary as the national formulary;
- 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 dependants.

Data

In line with our previous report, PBO used data primarily from IQVIA supplemented with data and information from: RAMQ for its formulary; PMPRB to identify patented products and growth factors for projections; the Canadian Institute for Health Information (CIHI) primarily for key descriptive information of IQVIA data as well as other provinces' drug formularies, and several other cited sources for additional information.[16]

Changes to Drug Expenditures

There are several avenues through which Pharmacare can alter national drug expenditures.[17] Those outlined below are considered in the analysis.[18]

Behavioural Impact

An increase in the number of prescriptions being filled is expected under Pharmacare, resulting from point-of-sale price reductions to low or zero copayment. Prices borne directly by patients are expected to fall by 47 per cent to 100 per cent, which results in overall increases in the utilization of prescription drugs of 13.5 per cent.[19]

Generic Substitution

When a brand-name drug is off patent, there may be one or multiple generic drugs available that serve as an alternative or substitution. In fact, public drug plans and many of the private drug plans reimburse up to the lower-cost alternative generic medication.[20] This is known as 'generic substitution'.

Generic substitution is more prevalent in public drug plans. We assume that the generic substitution rate under Pharmacare converges to the current median provincial public drug plan rate over four years, leaving a maximum of 7 per cent of brand-name drugs with a generic available for dispensing.[21] For the baseline scenario, we assume that current trends towards greater generic substitution continue for all types of plans until they reach the current median provincial public drug plan rate.[22]

We identify brand-name drugs and their acceptable substitutions using Quebec's formulary and definition: the drugs must have the same generic name as well as strength and dosage. We assume that under Pharmacare the lowest-priced generic on the formulary is dispensed. In the baseline scenario the price is limited to the lowest-priced generic covered by the

provincial drug plan for public payers, and to the lowest-priced generic available in the province for out-of-pocket and private plans.[23]

Biologic and Biosimilar Drugs

Compared to brand-name and generic substitution, substitutions from biologic to biosimilar are more complex. Several Canadian payers have undertaken initiatives to encourage switching from biologics to biosimilars which resulted in increased biosimilar utilization. We assume that over time biologics continue losing their market share and that, after 10 years of being on the market, biosimilars occupy 40 per cent of the units in their respective reference product and acceptable substitution group for both the Pharmacare and baseline scenarios.

What are biosimilar drugs?

Biosimilar drugs are biological drugs that are highly similar to the reference biologic drug that is already authorized for sale. Unlike generic drugs that contain identical medicinal ingredients to their reference products, biosimilar drug can be shown to be highly similar to its reference biologic, but not identical.

As of March 2023, 51 biosimilars of 16 innovator reference products have been approved in Canada.

Source(s):
Government of Canada[24], Patented Medicine Prices Review Board[25].

Drug Costs

We assume that the implementation of Pharmacare will affect drug prices in two ways.

First, we expect that a common formulary would allow for stronger negotiating power and, therefore, the price of all existing drugs could be negotiated down to the current lowest observable price in Canada.

Second, we assume a single public payer would be able to negotiate an additional discount consistent with current confidential rebates that provincial governments are able to negotiate with drug companies.[26] This discount is assumed to be 20 per cent for brand-name drugs and 25 per cent for drugs that are new to the Canadian market.[27] In the baseline scenario, the same discounts are assumed but only for transactions covered by public payer(s).[28] The discounts are applied to the manufacturer prices. Markups and fees are assumed to remain unchanged.[29, 30]

Other

Pharmacare as proposed by HESA has co-payment revenues that partially offset the costs of drug coverage.[31] Pharmacare is expected to reduce some existing direct federal drug expenditures, including expenditures of the federal Public Service Health Care Plan (PSHCP), coverage for certain populations, the medical expense tax credit and supplement, and non-taxation benefits from private health plans.[32]

Results

PBO estimates the gross cost incremental to that of public drug plans will be $14.8 billion in 2024-25, increasing to $17.3 billion in 2027-28.[33] Further, after accounting for savings on direct federal spending and Pharmacare copayment revenues, the estimated incremental cost to the public sector (that is federal and provincial governments combined) is estimated to be $11.2 billion in 2024-25, increasing to $13.4 billion in 2027-28 (Table 2). Incremental cost to the public sector could either be borne by the federal government or split between the federal and provincial governments, depending on the cost-sharing model that is ultimately adopted.

Table 2

Projected Cost of Pharmacare (billions of dollars)

Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Drug Expenditure under Pharmacare	7.9	33.2	35.0	36.8	38.9
Public Plans Drug Expenditures	-4.4	-18.4	-19.4	-20.4	-21.6
Direct Federal Drug Expenditures	-0.8	-3.3	-3.4	-3.5	-3.6
Pharmacare Co-Payment Revenues	-0.1	-0.3	-0.3	-0.3	-0.3
Incremental Cost to the Public Sector	**2.6**	**11.2**	**11.9**	**12.6**	**13.4**

Source:
Office of the Parliamentary Budget Officer.

Note:
Numbers may not sum to total due to rounding.

The incremental cost to public payers varies across provinces, ranging from 1.4 times the amount of projected baseline spending in Saskatchewan to nearly three-times that of the projected baseline public spending in Prince Edward Island (Table 3). These variations reflect the difference between projected baseline public payer plans and that of Pharmacare, including the formulary, utilization, drug-mix, prices and substitution.

Table 3

Provincial Breakdown of Projected Prescription Costs in 2024-25 (millions of dollars)

Province	Public Plans	Pharmacare	Net cost	Additional Drugs
BC	1,200	2,860	1,661	108
AB	1,502	3,052	1,550	132
SK	636	915	279	101
MB	517	913	396	88
ON	7,673	12,555	4,882	673
QC	5,922	10,514	4,591	0
NB	352	883	531	43
NS	375	921	545	40
PE	46	132	86	7
NL	173	478	304	21
Total	**18,397**	**33,222**	**14,825**	**1,213**

Source:
Office of the Parliamentary Budget Officer.

Notes:
Projected prescription costs are net of confidential rebates. Additional drugs are the drugs that a province currently lists on its formulary but that are not covered under Pharmacare with RAMQ formulary. Numbers may not sum to total due to rounding.

Table 4

Provincial Breakdown of Projected Prescription Costs in 2027-28 (millions of dollars)

Province	Public Plans	Pharmacare	Net cost	Additional Drugs
BC	1,358	3,244	1,886	119
AB	1,758	3,579	1,821	150
SK	759	1,078	319	123
MB	608	1,068	460	103
ON	9,121	14,873	5,753	798
QC	6,868	12,206	5,338	0
NB	430	1,084	653	52
NS	434	1,069	635	45
PE	57	162	105	9
NL	184	509	325	22
Total	**21,577**	**38,873**	**17,295**	**1,423**

Source:
Office of the Parliamentary Budget Officer.

Notes:
Projected prescription costs are net of confidential rebates. Additional drugs are the drugs that a province currently lists on its formulary but that are not covered under Pharmacare with RAMQ formulary. Numbers may not sum to total due to rounding.

In terms of economy-wide cost savings, drug expenditures in Canada would be reduced by having a single payer due to:

- Increased negotiating power to reduce list prices to the lowest in Canada;
- Universally applying confidential rebates beyond the market share covered by public payers to that covered by private insurance and paid for out-of-pocket; and,

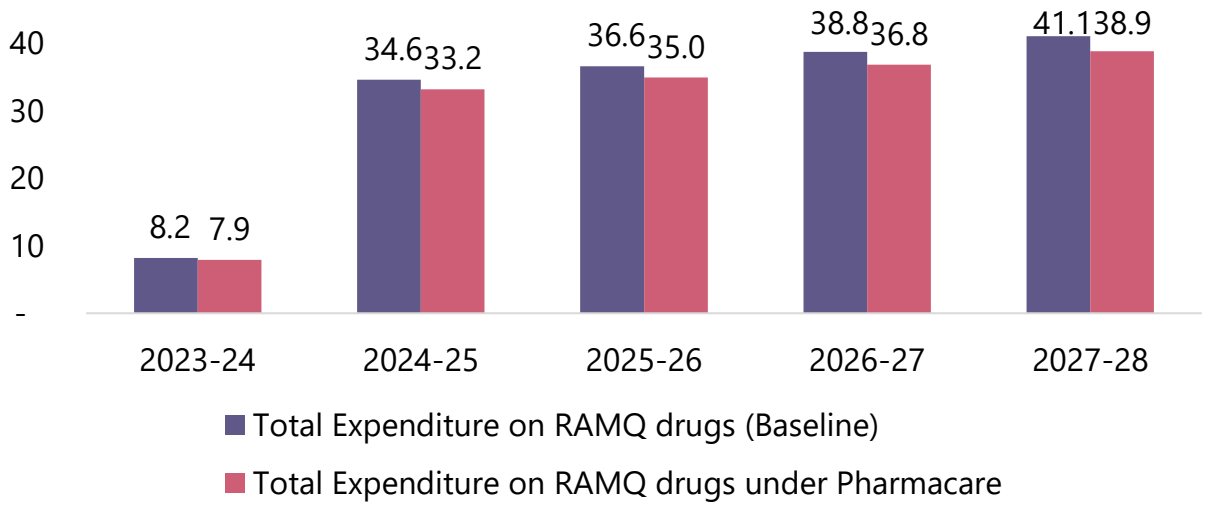
- Imposing universal generic and biosimilar substitution policies.

Despite an assumed increase in prescriptions as a result of reducing direct prices borne by patients, economy-wide cost savings would still be achieved under Pharmacare relative to the baseline scenario.

We estimate total drug expenditure in 2024-25 to be $1.4 billion less than the estimated spending under the baseline scenario ($33.2 billion vs. $34.6 billion). The savings are projected to increase to $2.2 billion in 2027-28, reflecting a slightly slower projected growth rate for drug expenditures under Pharmacare compared to the baseline. Historically, drug expenditures of private plans grow at a faster rate than those of public plans.[34]

Figure 5

Projected Total Spending on Drugs Eligible for Pharmacare (billions of dollars)



Textual description:

Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Expenditure on RAMQ drugs (Baseline)	8.2	34.6	36.6	38.8	41.1
Total Expenditure on RAMQ drugs under Pharmacare	7.9	33.2	35.0	36.8	38.9

Source:
Office of the Parliamentary Budget Officer.

Note that the year-over-year net change is very sensitive to the therapeutic mix of drugs, as well as the pricing effect. Therefore, future drug pricing and market mix will greatly determine the cost of any drug plan.

Appendix A: Projection Methodology

To estimate the cost of a single-payer universal drug plan over the 2023-24 to 2027-28 period, the following cost drivers are considered:[35]

- The volume of drugs used,
- The price of prescription drugs,
- Population growth,
- Shifts between lower- and higher-cost drugs (drug mix),
- Decreasing use of direct-acting antivirals (DAA) and COVID-19 related drugs,
- Dispensing fees and markups.

Provincial public plans growth factors determined by the Patented Medicine Price Review Board (PMPRB) are used for volume, price, population, drug mix, use of DAA drugs, and dispensing fees cost driver calculations. To account for year-to-year variation in these drivers, each growth factor is calculated as a provincial average over the last five years.[36] For volume and population cost drivers, 2020-21 is excluded from the calculation because of notable changes in the number of beneficiaries and the number of claims per patient due to COVID-19.

To estimate baseline drug spending, the same growth factors are applied to prescriptions where the primary payer is identified as public. Private plans' growth factors determined by the PMPRB are used to estimate baseline spending where the primary payer is identified as private or when prescription is paid out-of-pocket.[37]

Markups are expected to grow by 3 per cent each year in each province regardless of the primary payer. No growth rate is assumed for the spending on COVID-19 drugs.

Table A-1
Cost growth factors

Growth Factor	Volume	Price	Population	Drug-mix	DAA	COVID-19	Dispensing fees	Markups
BC	1%	-1%	3%	3%	-2%	0%	3%	3%
AB	1%	-2%	2%	4%	-1%	0%	5%	3%
SK	1%	-1%	3%	5%	0%	0%	1%	3%
MB	2%	-1%	0%	6%	-1%	0%	1%	3%
ON	0%	-1%	2%	6%	0%	0%	0%	3%
QC	1%	-1%	2%	5%	-1%	0%	1%	3%
NB	2%	-1%	2%	6%	0%	0%	3%	3%
NS	1%	-2%	2%	5%	0%	0%	3%	3%
PE	1%	-2%	3%	5%	0%	0%	6%	3%
NL	1%	-1%	0%	3%	0%	0%	1%	3%
Non-public	1%	-2%	3%	5%	0%	0%	6%	3%

Source:
Office of the Parliamentary Budget Officer using data from PMPRB.

Note:
PMPRB does not report public plan growth factors for Quebec therefore national growth factors were applied.

Appendix B: Trends in Generic Substitution

Table B-1

Percent of Brand-name Drug Dispensed When Generic Is Available, Private and Out-of-Pocket Payer

Fiscal Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
BC	18%	18%	17%	15%	14%	12%
AB	21%	23%	20%	19%	16%	14%
SK	12%	15%	11%	11%	9%	8%
MB**	8%	10%	9%	8%	6%	6%
ON	21%	23%	18%	18%	16%	14%
QC**	11%	11%	10%	10%	8%	7%
NB*	8%	12%	9%	11%	9%	8%
NS	12%	14%	11%	11%	9%	8%
PE**	11%	11%	10%	10%	8%	7%
NL	13%	14%	12%	12%	11%	9%

Source:
Office of the Parliamentary Budget Officer using data from IQVIA and CIHI.

Notes:
* For these provinces the average growth rate is positive, therefore the 2021-22 rate is assumed in baseline calculations over the projection horizon. In Pharmacare calculations they are assumed to converge to the 2021-22 public plan median rate (7 per cent) over four years.

** These provinces are at or below the current public plan median rate (7 per cent), therefore the 2021-22 rate is assumed in both Pharmacare and baseline calculations over the projection horizon.

Table B-2

Percent of Brand-name Drug Dispensed When Generic Is Available, Public Payer

Fiscal Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
BC*	9%	9%	8%	9%	11%	10%
AB**	9%	13%	9%	9%	8%	7%
SK**	10%	12%	10%	9%	9%	7%
MB**	6%	6%	6%	7%	6%	5%
ON**	8%	8%	8%	7%	6%	5%
QC*	10%	9%	22%	15%	11%	8%
NB*	5%	9%	11%	18%	17%	14%
NS**	7%	7%	7%	7%	6%	5%
PE*	10%	9%	22%	15%	11%	8%
NL	12%	14%	13%	12%	12%	9%

Source:
Office of the Parliamentary Budget Officer using data from IQVIA.

Notes:
* For these provinces the average growth rate is positive, therefore the 2021-22 rate is assumed in baseline calculations over the projection horizon. In Pharmacare calculations they are assumed to converge to the 2021-22 public plan median rate (7 per cent) over four years.

** These provinces are at or below the current public plan median rate (7 per cent), therefore the 2021-22 rate is assumed in both Pharmacare and baseline calculations over the projection horizon.

Appendix C: Alternative Formularies

We consider two alternative formularies which a single-payer universal drug plan could cover: a catastrophic drugs formulary and an essential medicines formulary.

Catastrophic Drug Plan

Catastrophic drugs are the drugs that could cause undue financial hardship. The list of catastrophic drugs was created using information from the Canadian Institute for Health Information (CIHI). The list contains drugs that were accepted by the catastrophic programs of British Columbia, Ontario, Newfoundland and Labrador and Prince Edward Island between April 1, 2016, and March 31, 2020.[38]

To estimate the cost, PBO retained several assumptions from the Pharmacare model with the RAMQ formulary for price discounts and substitution from biologic to biosimilar. However, given the nature of catastrophic drugs, no behavioural effect and no substitution from brand-name to generic drugs is assumed.

Once copayment revenues and savings on direct federal spending are accounted for, the incremental cost of a single-payer universal drug plan with a catastrophic formulary to the public sector (that is, federal and provincial governments combined) is $1.8 billion and $2.0 billion in 2024-25 and 2027-28 respectively.[39]

The total catastrophic drug expenditures under the alternative formulary is estimated to be $2.6 billion and $3.6 billion less than the estimated spending under the baseline scenario in 2024-25 and 2027-28 respectively.

Table C-1
Projected Cost of Pharmacare (billions of dollars)

Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Drug Expenditure under Pharmacare	5.4	23.0	24.3	25.7	27.1
Public Plans Drug Expenditures	-4.4	-18.4	-19.4	-20.4	-21.6
Direct Federal Drug Expenditures	0.0	-0.2	-0.2	-0.2	-0.2
Pharmacare Co-Payment Revenues	-0.6	-2.6	-2.8	-3.1	-3.4
Incremental Cost to the Public Sector	**0.4**	**1.8**	**1.9**	**2.0**	**2.0**

Source:
Office of the Parliamentary Budget Officer.

Note:
Numbers may not sum to total due to rounding.

Table C-2
Provincial Breakdown of Projected Prescription Costs in 2024-25 (millions of dollars)

Province	Public Plans	Catastrophic Plan	Net cost	Additional Drugs
BC	1,200	1,893	694	373
AB	1,502	2,275	773	467
SK	636	661	25	157
MB	517	672	155	126
ON	7,673	9,255	1,581	2,187
QC	5,922	6,413	491	2,410
NB	352	671	319	113
NS	375	692	316	122
PE	46	103	57	13
NL	173	358	184	58
Total	**18,397**	**22,992**	**4,595**	**6,026**

Source:
Office of the Parliamentary Budget Officer.

Notes:

Projected prescription costs are net of confidential rebates. Additional drugs are the drugs that a province currently lists on its formulary but that will not be covered under this catastrophic drug plan. Numbers may not sum to total due to rounding.

Table C-3

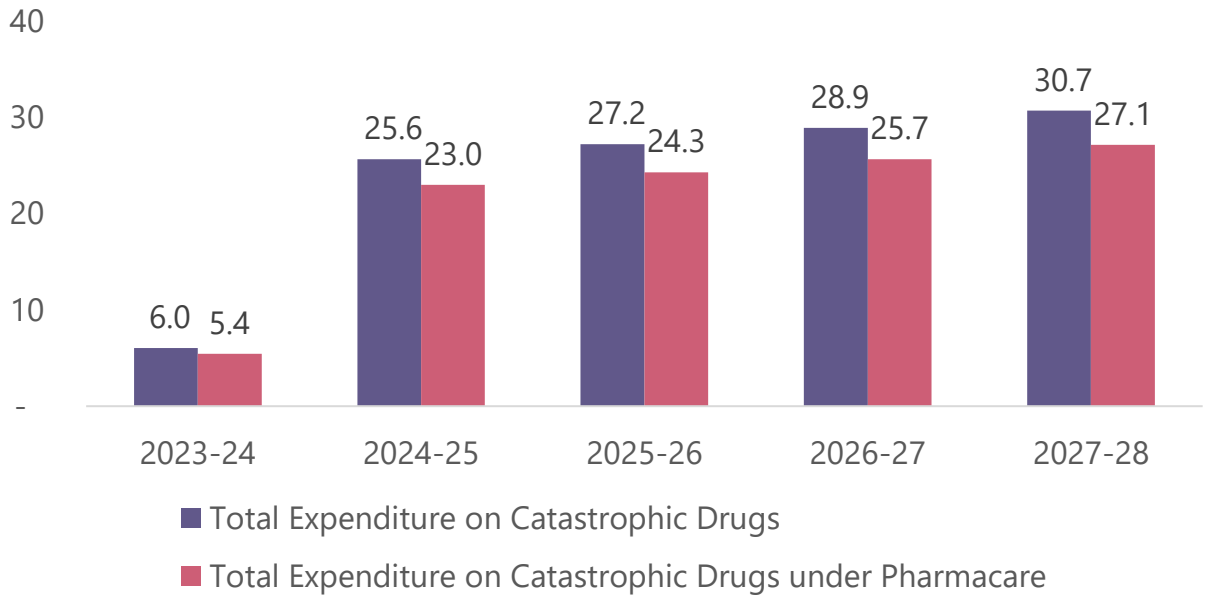
Provincial Breakdown of Projected Prescription Costs in 2027-28 (millions of dollars)

Province	Public Plans	Catastrophic Plan	Net cost	Additional Drugs
BC	1,358	2,158	800	424
AB	1,758	2,678	920	545
SK	759	785	26	188
MB	608	790	182	148
ON	9,121	11,046	1,925	2,592
QC	6,868	7,543	675	2,750
NB	430	827	397	138
NS	434	804	370	141
PE	57	127	70	16
NL	184	379	195	62
Total	**21,577**	**27,137**	**5,560**	**7,006**

Source:
Office of the Parliamentary Budget Officer.

Notes:
Projected prescription costs are net of confidential rebates. Additional drugs are the drugs that a province currently lists on its formulary but that will not be covered under this catastrophic drug plan. Numbers may not sum to total due to rounding.

Figure C-1
Projected Total Spending on Catastrophic Drugs Eligible for Pharmacare (billions of dollars)



Textual description:

Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Expenditure on Catastrophic Drugs	6.0	25.6	27.2	28.9	30.7
Total Expenditure on Catastrophic Drugs under Pharmacare	5.4	23.0	24.3	25.7	27.1

Source:
Office of the Parliamentary Budget Officer.

Essential Medicines Plan

Essential medicines are those that satisfy the priority health care needs of a population. The essential medicines list used in this report is the "adapted for Canadian population" World Health Organization's Model List of

Essential Medicines created by researchers at St. Michael's hospital in Toronto.[40]

PBO estimates that drug expenditures under this alternative to be $0.4 billion and $0.3 billion more than the estimated spending under the baseline scenario in 2024-25 and 2027-28 respectively.

The list of essential medicines consists primarily of generic drugs, the prices for which are already sufficiently low that little additional savings can be achieved with a single-payer plan. Therefore, the higher expenditures are a result of increased drug use that is not offset by the savings from stronger negotiating power and enforced generic substitution.

Table C-4

Projected Cost of Pharmacare (billions of dollars)

Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**
Total Drug Expenditure under Pharmacare	2.2	9.4	9.8	10.2	10.7
Public Plans Drug Expenditures	-4.4	-18.4	-19.4	-20.4	-21.6
Direct Federal Drug Expenditures	-0.2	-0.9	-1.0	-1.1	-1.1
Pharmacare Co-Payment Revenues	-0.0	-0.1	-0.1	-0.1	-0.1
Incremental Cost to the Public Sector	-2.4	-10.0	-10.7	-11.4	-12.1

Source:
Office of the Parliamentary Budget Officer.

Note:
Numbers may not sum to total due to rounding.

Table C-5

Provincial Breakdown of Projected Prescription Costs in 2024-25 ($ Millions)

Province	Public Plans	Essential Medicines	Net cost	Additional Drugs
BC	1,200	1,061	-138	782
AB	1,502	955	-547	1,080
SK	636	310	-326	483
MB	517	315	-202	387
ON	7,673	3,113	-4,560	6,169
QC	5,922	2,854	-3,068	4,529
NB	352	263	-89	262
NS	375	296	-80	264
PE	46	46	1	34
NL	173	167	-6	118
Total	**18,397**	**9,383**	**-9,014**	**14,107**

Source:
Office of the Parliamentary Budget Officer.

Notes:
Projected prescription costs are net of confidential rebates. Additional drugs are the drugs that a province currently lists on its formulary but that will not be covered under the essential medicines plan. Numbers may not sum to total due to rounding.

Table C-6

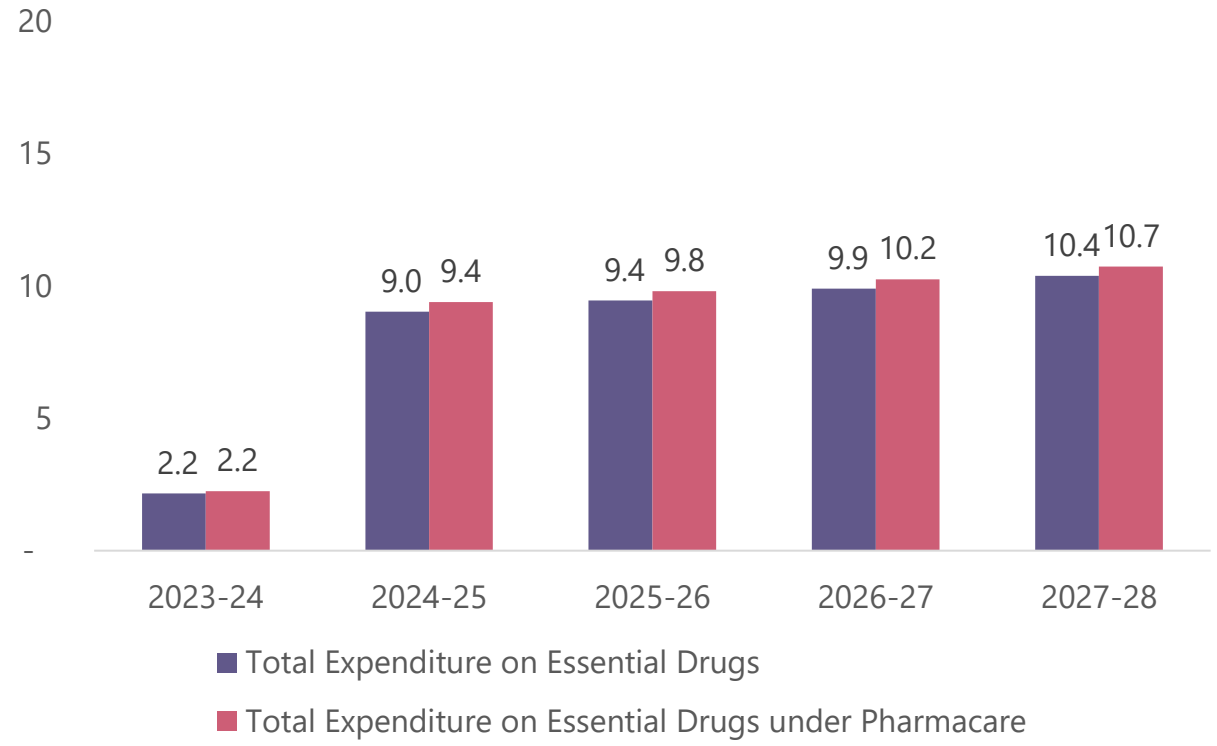
Provincial Breakdown of Projected Prescription Costs in 2027-28 ($ Millions)

Province	Public Plans	Essential Medicines	Net cost	Additional Drugs
BC	1,358	1,192	-166	896
AB	1,758	1,099	-659	1,278
SK	759	359	-400	586
MB	608	361	-247	462
ON	9,121	3,597	-5,524	7,398
QC	6,868	3,231	-3,637	5,305
NB	430	315	-115	323
NS	434	337	-97	308
PE	57	56	-1	43
NL	184	177	-8	126
Total	**21,577**	**10,723**	**-10,854**	**16,726**

Source:
Office of the Parliamentary Budget Officer.

Notes:
Projected prescription costs are net of confidential rebates. Additional drugs are the drugs that a province currently lists on its formulary but that will not be covered under the essential medicines plan. Numbers may not sum to total due to rounding.

Figure C-2
Projected Total Spending on Essential Drugs Eligible for Pharmacare (billions of dollars)



Textual description:

Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28
Total Expenditure on Essential drugs	2.2	9.0	9.4	9.9	10.4
Total Expenditure on Essential drugs under Pharmacare	2.2	9.4	9.8	10.2	10.7

Source:
Office of the Parliamentary Budget Officer.

Notes

[1] Canada. Parliament. House of Commons. Standing Committee on Health. Minutes of Proceedings. (Meeting No. 21, September 29, 2016) 42nd Parliament, 1st Session. (Online). Accessed September 5, 2023.

[2] Office of the Parliamentary Budget Officer, Federal Cost of a National Pharmacare Program. 2017.

[3] PBO calculations based on growth factor estimates by PMPRB, Patented Medicine Prices Review Board. Annual Report 2021, 2023.

[4] Bill C-340. *An Act to enact the Canada Pharmacare Act*. 42nd Parliament, 1st Session. June 13, 2023.

[5] CBC news. "New health minister says pharmacare legislation is coming this fall". CBC news web site. Last updated August 16, 2023. Accessed September 6, 2023.

[6] This amount also excludes a small portion of observations for which primary payer could not be identified (1 per cent of the total expenditures in Canada in 2021-22).

This is roughly in line with the total prescription cost as published by the Canadian Institute for Health Information (CIHI), where PBO estimate the fiscal year 2021-22 estimate is $37.3 billion. Source: Canadian Institute for Health Information. National health expenditure trends. Accessed August 24, 2023.

[7] " Primary Payer" refers to the payer – public insurance, private insurance, or individual out-of-pocket – that paid for the largest portion of the prescription. The entirety of the transaction value is attributed to the primary payer, even though a portion of this out-of-pocket amount may be reimbursed by an insurer as a coordination of benefits. IQVIA estimates that

about half of out-of-pocket expenses are later submitted to private drug plan. Analysis excludes a small portion of observations for which primary payer could not be identified. These observations represent less than 1 percent of the total expenditures in Canada in 2021-22 and they are excluded through the whole analysis.

[8] Because our database reports prescriptions filled, the reported province means that the prescription was filled in that province. It does not necessarily mean that the prescription was covered by the drug plan in that province. Prescriptions can be filled out-of-province and/or covered by federal plan.

[9] Brand-name, biologic, and biosimilar drugs include both patent and off-patent drugs.

[10] A more detailed overview of drugs plans in Canada, along with citations to various sources, is available in our 2017 report and the Government of Canada's 2019 report.

[11] The Canadian Life and Health Insurance Association (CLHIA) estimates that in 2021 roughly 25 million Canadians, or 73 per cent, have private drug insurance directly or through a family member. This includes coverage through an employer-sponsored (group) plan or through individual policies. Source data for drug coverage provided by the Canadian Life and Health Insurance Association, which is a subset of the data provided in their published Canadian Life & Health Insurance Facts, 2022 Edition. Source data for population to calculate the percentage is Statistics Canada. (2021). Census of Population summary web page. Accessed August 28, 2023.

[12] Details of the various public plans are summarized in a report available on the Canadian Institute for Health Information's website. Source: Canadian Institute for Health Information. National Prescription Drug

Utilization Information System — Plan Information Document, March 2023. Ottawa, ON: CIHI; 2023.

[13] The federal government is responsible for funding or delivering pharmaceuticals to certain populations including First Nations and Inuit persons, Veterans, members of the military, members of the Royal Canadian Mounted Police, refugees, and inmates in federal penitentiaries. In 2021-22, the estimated cost is $1,096 million, based on PBO's calculations to transform raw data from calendar year to fiscal year. Source for raw data: Table C in the Canadian Institute for Health Information, National Health Expenditure Trends Data Tables, 2022.

[14] Government of Canada, "Prescription drug pricing and costs", Government of Canada website, last date modified March 13, 2023. Accessed August 30, 2023.

[15] Patented Medicine Prices Review Board. Annual Report 2021, 2023.

[16] Descriptions and data limitations are available in our previous report . Office of the Parliamentary Budget Officer, Federal Cost of a National Pharmacare Program. 2017.

[17] All saving and additional costs are assumed to occur instantaneously with the implementation of Pharmacare.

[18] A more detailed description is available in our previous report. Office of the Parliamentary Budget Officer, Federal Cost of a National Pharmacare Program. 2017.

[19] Once generic substitution is enforced, we expect out-of-pocket expenses to decrease further due to the elimination of the $5 copayment. PBO recalculated the percentage increase in utilization using the already-adjusted utilization levels in a scenario with generic substitution and found the increase in utilization remained stable at 13.5 per cent. The stability of the effect despite imposing generic substitution is attributable to the

relatively small share of brand-name drugs with a generic available among the non-exempt population, as well as the small marginal change from a $5 co-payment to a $0 co-payment.

For more details on estimating the behavioural reaction to lower out-of-pocket expenses see Section 3.1 of Federal Cost of a National Pharmacare Program.

[20] In some public plans, patients can receive reimbursement for a brand-name drug up to the reimbursement cost of the generic either upon request, or if the physician has indicated a 'no substitution' clause. The latter is often in cases where the patient experiences adverse drug reactions to the generic, but not the brand-name drug, but is sometimes upon request to fulfill patients' preferences rather than medical necessity. In other plans, only the generic is reimbursed, despite the 'no substitution' request. However, plans tend to offer a compassionate clause that will reimburse patients for the full cost of a brand-name drug in cases of severe adverse reaction to the generic.

[21] "Exceptional" drugs were excluded from this calculation.

[22] In instances where generic substitution rates decrease over time, the current rate was assumed through the projection horizon.

[23] Generic substitution is limited to the drugs covered by Quebec's formulary. PBO did not have a list of acceptable generic substitutions for each public plan. Instead, PBO identified brand-name drugs' generic substitutions using Quebec's list (as provided in their formulary). Then, as long as the generic drug was covered by each province's own public drug plan, it was assumed to be eligible for substitution of the brand-name drug within that province. As a result, a province's own generic substitution policy may not be represented.

[24] Biosimilar biologic drugs in Canada: Fact Sheet Accessed August 15, 2023.

[25] Meds Pipeline Monitor 2022 Accessed August 15, 2023.

[26] For more details on confidential rebates see Box 1-6 of Federal Cost of a National Pharmacare Program.

[27] These rebates are based on consultations with stakeholders. They also reasonably compare to findings from a report by the Ontario Auditor General, which estimated that $1.1 billion in confidential rebates was collected by the Ontario Ministry of Health in 2016-17. PBO estimates this represented roughly 21 per cent of Ontario's public prescription drug expenditures in that year. Source: Office of the Auditor General of Ontario. 2017 Annual Report Volume 1. PBO defined 'new' drugs using the list of newly patented products in Canada as published in PMPRB's Annual Report 2021. Based on consultations, we assume there is no additional room for savings on generic drugs.

[28] There is some evidence of private plans negotiating confidential rebates, but the practice is not widespread and not consistent from provider to provider.

[29] Except for an increase in total expenditures on markups and fees due to an increase in the total number of prescriptions filled.

[30] To estimate markups and dispensing fees (cumulatively referred to as 'fees'), PBO used the difference between the total cost incurred for each drug by province and the total medicinal cost for each drug by province. It was assumed that fees do not vary by the primary payer, age, or gender of the patient. To allocate these fees to each payer, age and gender group, the difference between the total and medicinal cost at the province-drug level was multiplied by the share of the prescriptions each group takes up at the province-drug level.

[31] The methodology for calculating co-payment revenues under Pharmacare are described in our 2017 report: Office of the Parliamentary Budget Officer, Federal Cost of a National Pharmacare Program. 2017.

[32] PSHCP drug expenditures for calendar year 2022 provided by Treasury Board Secretariat via IR0703. Other direct federal drug spending for 2021-22 was calculated using data from CIHI. Source: Canadian Institute for Health Information. National health expenditure trends. Accessed August 24, 2023. Tax expenditures for the private health benefits tax expenditure, the medical expense tax credit and supplement are published by the Canada Revenue Agency. Source: Report on Federal Tax Expenditures - Concepts, Estimates and Evaluations 2023. Accessed August 24, 2023.

[33] It is important to note that public plan expenditures as estimated using data from IQVIA do not represent the net cost to provinces' public drug plans which account for co-payment revenues and deductibles. PBO compared the IQVIA public payer data to the administrative data for provincial drug plans published by the Canadian Institute for Health Information, and the difference by province was less than 4% on average.

[34] PBO calculations based on growth factor estimates by PMPRB, Patented Medicine Prices Review Board. Annual Report 2021, 2023.

[35] Growth factors are applied after the savings from generic substitution are accounted for each year.

[36] Patented Medicine Prices Review Board. CompassRx: Annual Public Drug Plan Expenditure Report 8th Edition Accessed August 16, 2023.

[37] Patented Medicine Prices Review Board. Annual Report 2021, 2023.

[38] In particular, the following drug programs are included in this analysis: Fair Pharma Care (BC), ODB – Trillium Program (ON), Catastrophic drug Program (PEI), Assurance plan (NL). Because analysis used claims submitted between April 1, 2016 and March 31, 2020, the definition of drugs new to

Canadian market was modified to include drugs for which the notice of compliance was issued between 2016 and 2019.

[39] To calculate the savings on direct federal spending for alternative formularies the ratio of total drug spending on alternative formulary to the total drug spending on RAMQ formulary was applied to the savings on direct federal spending under Pharmacare with the RAMQ formulary.

[40] CLEAN Meds, Accessed September 6, 2023.

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