

# Net direct expenditure on patented medicines by public drug plans in 10 Canadian provinces in 2023

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## ABSTRACT

Canada's federal, provincial, and territorial governments argue that price controls are necessary, because the cost of patented drugs is too high and threatens the fiscal sustainability of public healthcare systems. Research by the Canadian Health Policy Institute (CHPI), proves this to be a false assumption: at the national level, net direct public expenditure on patented medicines accounted for only 2.1 percent of total public healthcare expenditure in 2022 (CHPI 2024). The CHPI analysis used publicly available data from the PMPRB specifically for national sales of patented drugs at manufacturers list prices. The PMPRB does not publish patented drug sales by jurisdiction, payer, or net of manufacturers rebates. Alternate data were obtained from the PMPRB's annual public drug plan spending report for the fiscal year 2022/23 (PMPRB 2025) which allowed for the isolation of provincial-specific spending on prescribed drugs with separately reported costs related to pharmacy dispensing fees, beneficiary-paid copayments and deductibles by province, and the province-wide average portion of total prescription expenditures attributable to patented drugs. Due to commercial confidentialities, data on manufacturer rebates were not publicly available. However, an estimate of the average rebates applied to Ontario's public drug plans was available and was extrapolated across the provinces. Ontario data on wholesale and retail price mark ups were also available. Together these data allowed for an estimate of provincial public drug plan spending on patented medicines that is comparable to the national sales data published by PMPRB while accounting for manufacturers rebates. Across all 10 provinces, the average net direct expenditure by public drug plans on patented drugs was \$68 per capita. Stated as a percentage of total public healthcare expenditure per capita, the net direct expenditure per capita by public drug plans on patented drugs averaged 1.0 percent. Ontario had the highest expenditure on patented drugs and the lowest overall public healthcare costs. The result is consistent with the economics literature. Research suggests that interprovincial differences in access to, and utilization of newer medicines are associated with meaningful differences in population health outcomes. Previous research (Skinner 2025) on the number of new patented drugs covered in provincial public drug plans shows a correlation with the spending data from the present study. The greater availability of new drugs in Ontario is associated with lower overall healthcare utilization reflected by lower public healthcare expenditure. Potentially avoidable public healthcare costs associated with provinces that spent less than Ontario's public drug plans on patented drugs were estimated to total \$21.3 billion in 2023. For comparison, the cost of closing the gap with Ontario on net direct spending per capita for patented medicines totalled \$918 million across nine provinces.

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## INTRODUCTION

When a new drug is introduced to Canada, it must be approved for marketing by Health Canada, which certifies its safety and effectiveness. Subsequently, new patented drugs are subject to a lengthy, multi-layered process of price controls. The Canadian federal government regulates manufacturers' list prices for patented biopharmaceuticals products through the Patented Medicine Prices Review Board (PMPRB). The PMPRB's official mandate covers sales of drugs with active patents, for transactions occurring in Canada, whether paid for publicly or privately. Subsequently, Canada's Drug Agency (CDA) conducts health technology assessment (HTA) on behalf of all provincial, territorial and federal public drug plans, except for Quebec which maintains an independent process. The CDA assesses the cost-effectiveness of new drugs and issues recommendations to the public plans regarding formulary inclusion and reimbursement conditions. Following HTA, a national intergovernmental agency known as the pan-Canadian Pharmaceutical Alliance (PCPA) negotiates prices with manufacturers on behalf of all public drug plans collectively. The public drug plans ultimately exercise final authority for the prices paid.

The justification for this complex price control apparatus is that the cost of patented drugs is too high and threatens the fiscal sustainability of public healthcare systems. Research conducted regularly by the Canadian Health Policy Institute (CHPI), proves this

to be a false assumption: at the national level, net direct public expenditure on patented medicines accounted for only 2.1 percent of total public healthcare expenditure in 2022 (CHPI 2024).

The CHPI analysis used publicly available data from the PMPRB specifically for national sales of patented drugs at manufacturers list prices. The PMPRB does not publish patented drug sales by jurisdiction, payer, or net of manufacturers rebates. Alternate data were obtained from the PMPRB's annual public drug plan spending report for the fiscal year 2022/23 (PMPRB 2025) which allowed for the isolation of provincial-specific spending on prescribed drugs with separately reported costs related to pharmacy dispensing fees, beneficiary-paid copayments and deductibles by province, and the province-wide average portion of total prescription expenditures attributable to patented drugs. Due to commercial confidentialities, data on manufacturer rebates were not publicly available. However, an estimate of the average rebates applied to Ontario's public drug plans was available and was extrapolated across the provinces. Ontario data on wholesale and retail price mark ups were also available. These data excluded Quebec. Comparable supplemental data published by the Canadian Institute for Health Information (CIHI) pharmaceutical data tool for the calendar year 2023 were substituted for total prescription drug costs in Quebec and the average of the other nine provinces was used whenever data were calculated.

Together these data allowed for an estimate of provincial public drug plan spending on patented medicines that is comparable to the national sales data published by PMPRB while accounting for manufacturers rebates. Data for overall public healthcare expenditure, and population by province were obtained from CIHI's national health expenditure database for the calendar year 2023.

## METHOD

The data and calculations are shown in TABLE 1. Total public drug plan spending on prescribed drugs was multiplied by the percentage paid by the public drug plan after deducting pharmacy dispensing fees (varied by province). The result was multiplied by the average percentage of prescribed drugs expenditure attributable to patented medicines published by PMPRB (49 percent), that result was then multiplied by the plan paid percentage (varied by province) excluding copayments and deductibles which are paid by beneficiaries. The plan paid percentage, excluding price markups (94.1 percent) was calculated using data published by Ontario's Auditor General, and applied as an average across all 10 provinces (Ontario data are shown in TABLE 2). Using data reported by Ontario's Auditor General, the value of manufacturers rebates stated in dollars, was calculated as a percentage of spending on patented prescribed drugs by Ontario drug benefit programs, after accounting for deductions including dispensing fees, copayments/deductibles, and price markups, and applied as an average across all 10 provinces (48.1 percent). Per capita estimates were calculated using population data from CIHI, and percentage was calculated by dividing expenditure on patented drugs by public health expenditure. Potentially avoidable public healthcare expenditures were calculated as the bilateral difference between the lowest per capita public health expenditure and the per capita public health expenditure in each of the other provinces, which was multiplied by population, with the result being stated in millions of dollars.

## ANALYSIS

The results of the analysis are shown in TABLE 1 and illustrated in CHART 1. After isolating the portion of total prescribed drugs cost associated with patented medicines, and deducting pharmacy dispensing fees, copayments/deductibles, markups, and manufacturer rebates, public drug plans' net direct expenditure on patented drugs ranged from a low of \$45 per capita in Alberta to a high of \$105 per capita in Ontario. Across all 10 provinces, the average (not shown in the table) net direct expenditure by public drug plans on patented drugs was \$68 per capita. Total public healthcare expenditure ranged from a low of \$5665 per capita in Ontario to a high of \$8171 per capita in Newfoundland and Labrador. The average (not shown in the table) total public healthcare expenditure across all 10 provinces was \$6713. Stated as a percentage of total public healthcare expenditure per capita, the net direct expenditure per capita by public drug plans on patented drugs ranged from a low of 0.7 percent in Alberta, British Columbia, Newfoundland and Labrador, and Prince Edward Island to a high of 1.9 percent in Ontario, and averaged (not shown) 1.0 percent.

It is notable that Ontario had the highest expenditure on patented drugs and the lowest overall public healthcare costs. The result is consistent with the economics literature. Research suggests that interprovincial differences in access to, and utilization of newer medicines are associated with meaningful differences in population health outcomes. For example, Lichtenberg (2025) examined Canadian data from 1970 to 2022 and found that the age-adjusted mortality rate by disease, province and year was inversely related to the number of drugs used to treat the disease that were covered on public drug program formularies in that province. He further estimated that the utilization of newer medicines reduced hospitalization and related healthcare costs in subsequent years.

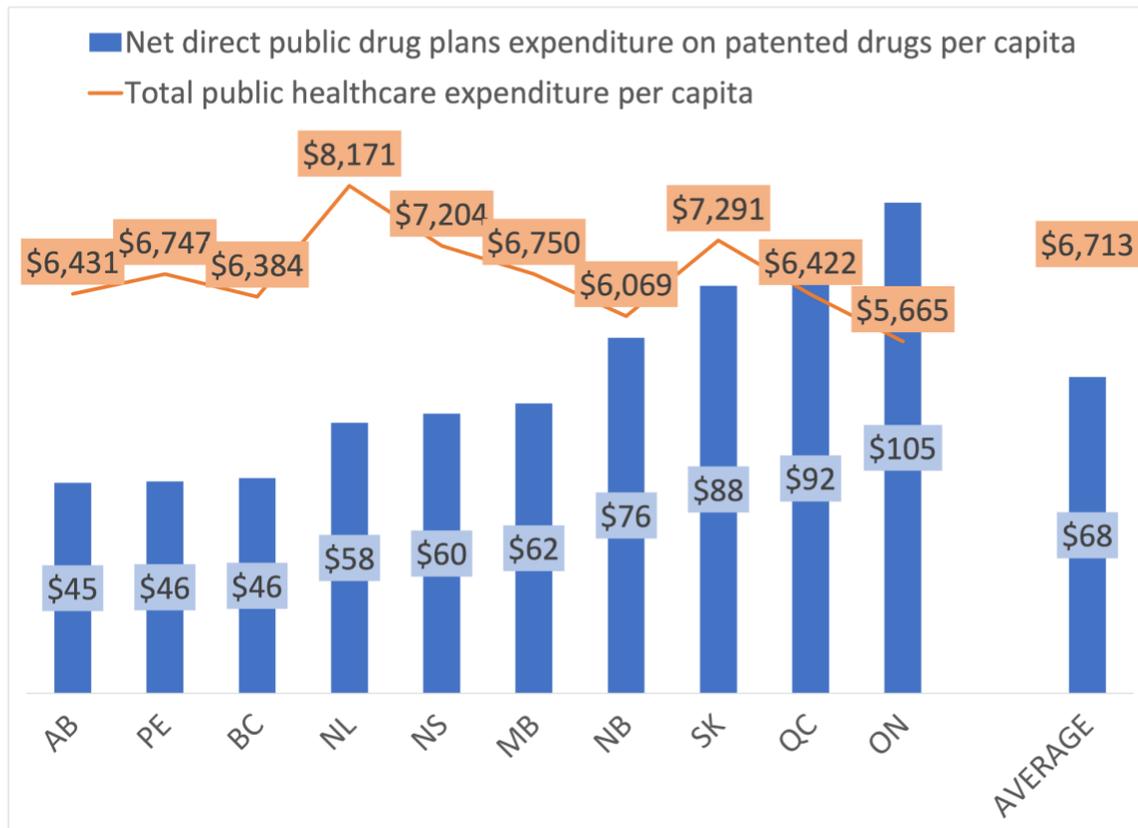
Previous research (Skinner 2025) on the number of new patented drugs covered in provincial public drug plans shows a correlation with the spending data from the present study. Higher spending per capita on patented drugs is associated with a higher number of new drug products being made available to beneficiaries and reflected in formulary listings. The greater availability of new drugs in Ontario is associated with lower overall healthcare utilization reflected by lower public healthcare expenditure.

Potentially avoidable public healthcare costs associated with provinces that spent less than Ontario’s public drug plans on patented drugs were estimated to total \$21.3 billion in 2023 and ranged from \$188 million in Prince Edward Island up to \$6.7 billion in Quebec. Stated as a percentage of total public healthcare expenditure, the avoidable costs ranged from 6.6 percent in New Brunswick up to 30.7 percent in Newfoundland and Labrador, and averaged 16.5 percent across the nine provinces that spent less than Ontario on patented medicines in 2023. For comparison, the cost of closing the gap with Ontario on net direct spending per capita for patented medicines totalled less than \$918 million across nine provinces and ranged from \$10 million in Prince Edward Island to \$327 million in British Columbia. Stated as a percentage of total public healthcare expenditure, the cost of closing the gap with Ontario on net direct spending per capita for patented medicines, ranged from 0.2 percent in Quebec and Saskatchewan, up to 0.9 percent in Alberta, British Columbia, and Prince Edward Island, and averaged 0.6 percent.

### CONCLUSION

Squeezing public expenditure on patented medicines is shortsighted and counterproductive policy. On average, net direct spending by public drug plans on patented drugs accounted for only 1.0 percent of total public healthcare expenditure across the 10 provinces. Ontario’s experience with spending more on patented drugs shows that there are significant potential downstream savings from facilitating patient access to the most innovative medicines.

**Ontario spent more on patented drugs, less on healthcare overall. Other provinces incurred potentially avoidable public healthcare costs = \$21.3 billion in 2023.**



**\$21.3 BILLION**  
 POTENTIALLY AVOIDABLE COSTS BY PROVINCE (BILLIONS) 2023

AB	\$3.6
BC	\$4.0
MB	\$1.6
NB	\$0.3
NL	\$1.4
NS	\$1.6
PE	\$0.2
QC	\$6.7
SK	\$2.0

TABLE 1. ESTIMATE OF NET DIRECT PUBLIC DRUG PLANS EXPENDITURES ON PATENTED DRUGS BY PROVINCE, 2023

	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK	DATA
Total prescribed drugs cost (millions)	\$1,300	\$1,665	\$572	\$352	\$199	\$386	\$8,905	\$64	\$5,139	\$675	1, 2
Plan paid percentage of total prescribed drugs cost, excluding dispensing fees	79.3%	79.9%	82.5%	81.5%	74.0%	78.0%	84.8%	75.5%	80.0%	84.1%	1, QC avg
Total prescribed drugs cost, excluding dispensing fees (millions)	\$1,031	\$1,331	\$472	\$287	\$148	\$302	\$7,550	\$48	\$4,109	\$568	1, QC calc
Average patented drugs percentage of prescribed drugs cost	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	1
Gross patented drugs cost (millions)	\$505	\$652	\$231	\$141	\$73	\$148	\$3,700	\$24	\$2,014	\$278	
Plan paid percentage of gross patented drugs cost excluding copayments and deductibles	86.0%	80.0%	80.0%	92.0%	88.0%	88.0%	91.0%	66.0%	83.2%	78.0%	1
Beneficiary paid copayments and deductibles (millions)	\$71	\$130	\$46	\$11	\$9	\$18	\$333	\$8	\$338	\$61	
Gross patented drugs cost excluding dispensing fees and copayment/deductibles (millions)	\$434	\$522	\$185	\$130	\$64	\$130	\$3,367	\$16	\$1,676	\$217	
Plan paid percentage of gross patented drugs cost excluding markups	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	3
Gross patented drugs cost excluding dispensing fees, copayment/deductibles and markups (millions)	\$409	\$491	\$174	\$122	\$60	\$123	\$3,168	\$15	\$1,577	\$204	
Average manufacturer rebate percentage of gross patented drugs cost	48.1%	48.1%	48.1%	48.1%	48.1%	48.1%	48.1%	48.1%	48.1%	48.1%	3
Value of rebates (millions)	\$197	\$236	\$84	\$59	\$29	\$59	\$1,524	\$7	\$758	\$98	
Net direct public drug plans expenditure on patented drugs (millions)	\$212	\$255	\$90	\$63	\$31	\$64	\$1,644	\$8	\$818	\$106	
Public healthcare expenditure (millions)	\$30,196	\$35,235	\$9,820	\$5,066	\$4,401	\$7,627	\$88,427	\$1,173	\$56,993	\$8,816	4
Population (millions)	4.7	5.52	1.45	0.83	0.54	1.06	15.61	0.17	8.87	1.21	5
Net direct public drug plans expenditure on patented drugs per capita	\$45	\$46	\$62	\$76	\$58	\$60	\$105	\$46	\$92	\$88	
Total public healthcare expenditure per capita	\$6,431	\$6,384	\$6,750	\$6,069	\$8,171	\$7,204	\$5,665	\$6,747	\$6,422	\$7,291	
Patented drugs, percentage of public healthcare expenditure per capita	0.7%	0.7%	0.9%	1.3%	0.7%	0.8%	1.9%	0.7%	1.4%	1.2%	
Potentially avoidable public healthcare expenditure (millions)	\$3,596	\$3,968	\$1,578	\$337	\$1,350	\$1,629	-	\$188	\$6,714	\$1,966	
Avoidable expenditure as a percentage of total public healthcare expenditure	11.9%	11.3%	16.1%	6.6%	30.7%	21.4%	-	16.0%	11.8%	22.3%	
Total cost (millions) of closing the gap with Ontario on spending per capita for patented medicines	\$283	\$327	\$62	\$24	\$26	\$48	-	\$10	\$116	\$22	
Total cost (millions) of closing the gap with Ontario on spending per capita for patented medicines percentage of total public health care expenditure (millions)	0.9%	0.9%	0.6%	0.5%	0.6%	0.6%	-	0.9%	0.2%	0.2%	

TABLE 2. BREAKDOWN OF ONTARIO DRUG BENEFIT PROGRAM EXPENDITURES (MILLIONS) 2016/17

	COSTS	DATA
Total program expenditure	\$5,390	3
Markups	\$320	3
Dispensing fees	\$1,204	3
Copayments/deductibles	\$689	3
Total markups, dispensing fees, copayments/deductibles	\$2,213	
Total deductions before rebate percentage of total program expenditure	41.1%	
Brand-name drugs, share of total program expenditure	\$3,883	3
Brand-name drugs, share of total after deductions and before rebates	\$2,289	
Total value of rebates received by the Ontario drug benefit program	\$1,100	3
Rebates as a percentage of brand-name drugs after deductions	48.1%	

#### DATA SOURCES

1. Patented Medicine Prices Review Board. (2025). CompassRx, 10th edition: Annual Public Drug Plan Expenditure Report, 2022/23.
2. Canadian Institute for Health Information. Prescribed Drug Spending in the Pharmaceutical Data Tool. 2025.
3. Ontario Auditor General Annual Report 2016/2017.
4. CIHI (2024). NHEX TRENDS 1975-2024. Table B.3.1.
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