

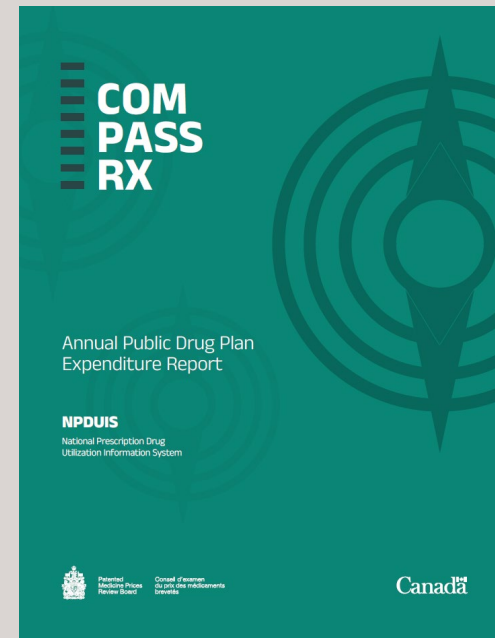
Cost drivers in Canada's public and private drug plans: a comparative study using real-world evidence

Presentation to Canada's Drug Agency Symposium 2026

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Patented Medicine Prices Review Board*

*Disclosure: I have no actual or potential conflict of interest
in relation to this topic or presentation.*



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Canada

PMPRB and NPDUIS research initiative



Patented Medicine
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Conseil d'examen du prix
des médicaments brevetés
Canada

- **The PMPRB protects and informs Canadian consumers by**
 - Reviewing the prices of patented medicines sold in Canada
 - Reporting on pharmaceutical trends.
- **Pursuant to section 90 of the Patent Act** and at the request of **the Minister of Health**, the PMPRB has the mandate to provide the Minister with critical information and intelligence on price, utilization, and cost trends so that Canada's healthcare system has more comprehensive and accurate information on how medicines are being used and on sources of cost.

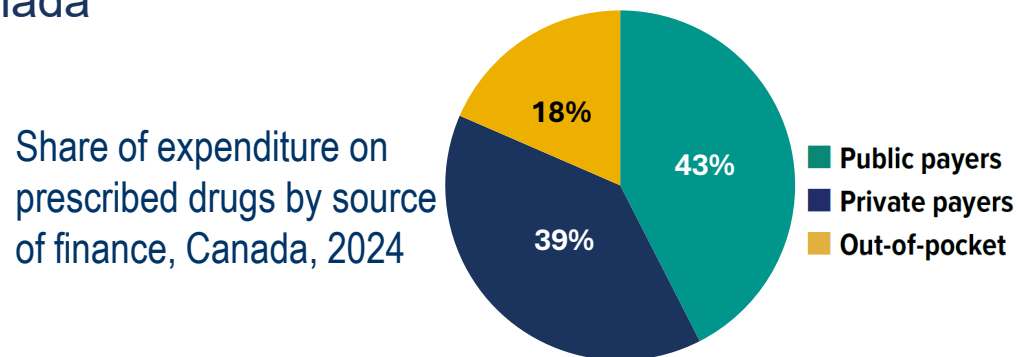


- **Operates independently of the regulatory activities of the PMPRB.**
- **Partnership between the PMPRB and the Canadian Institute for Health Information (CIHI).**
- **Informs the Minister of Health and the public using a variety of media: annual publications, focused reports, conference presentations, etc.**



Objective: to compare cost pressures affecting public and private drug plans

- Public drug plans and private insurers together account for **over 80% of all prescribed drug spending** in Canada



Data source: Canadian Institute for Health Information. *National Health Expenditure Trends, 2025: Data Tables — Series G.*

- This presentation examines the similarities and differences in **cost pressures** affecting these plans, differentiating the short-term effects and the longer-lasting impacts
- The study focuses on recent years (**2023/24** for public plans and **2024** for private plans), with a retrospective look at trends since **2018/19 and 2019**
- Methodology builds on the PMPRB's **expanded Laspeyres cost-driver model**, isolating the contribution of:
 - Demographics; Volume; Drug-mix; Substitution; Price change


Approach and Data Sources

➤ Data sources:

- NPDUIS Database at the Canadian Institute for Health Information (CIHI)
- IQVIA™ Private Pay Direct Drug Plan (PDP) database (capture rate: 80%-86%, depending on year)

	NPDUIS Public Drug Plans	Private Drug Plans
Coverage	9 provinces (except Quebec) and Yukon	10 provinces
Reporting Period	Fiscal year: 2018/19 – 2023/24 (April–March)	Calendar year: 2019-2024 (January–December)
Comparisons	Reflect snapshots of utilization and cost metrics	

➤ Definitions:

- Drug costs: includes ingredient cost + allowable markups
- Prescription costs: Drug costs + dispensing fees

plan-paid + patient-paid

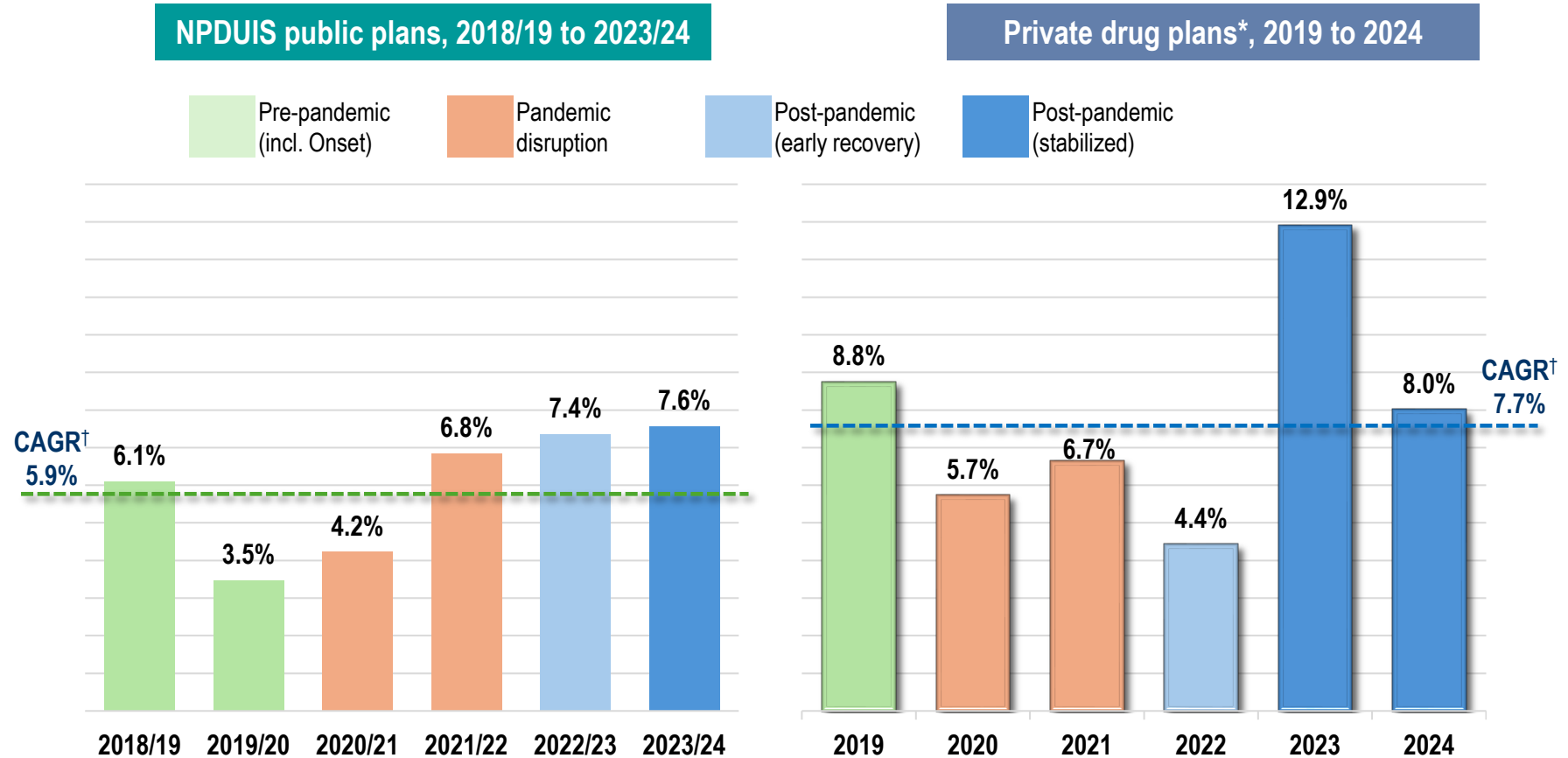
➤ Limitations:

- Drug costs do not reflect rebates and confidential product listing agreements (PLAs).

Both sectors show sustained growth; private plans had faster growth overall

Annual rates of changes in prescription drug expenditures

- Over the study period, prescribed drug expenditures grew at a **CAGR of 5.9%** in public plans and **7.7%** in private plans
- NPDUIS public plans: spending grew by **7.6%** in **2023/24**, following 7.4% 2022/23
- Private plans: after a sharp rise of 12.9% in 2023, growth moderated but remained strong at **8.0% in 2024**



Note: For comparability across fiscal- and calendar-year datasets, study years were aligned to common pandemic phases reflecting broad pre-pandemic, pandemic disruption, and post-pandemic recovery and stabilization. These are analytic groupings and may not correspond exactly to epidemiological phases.

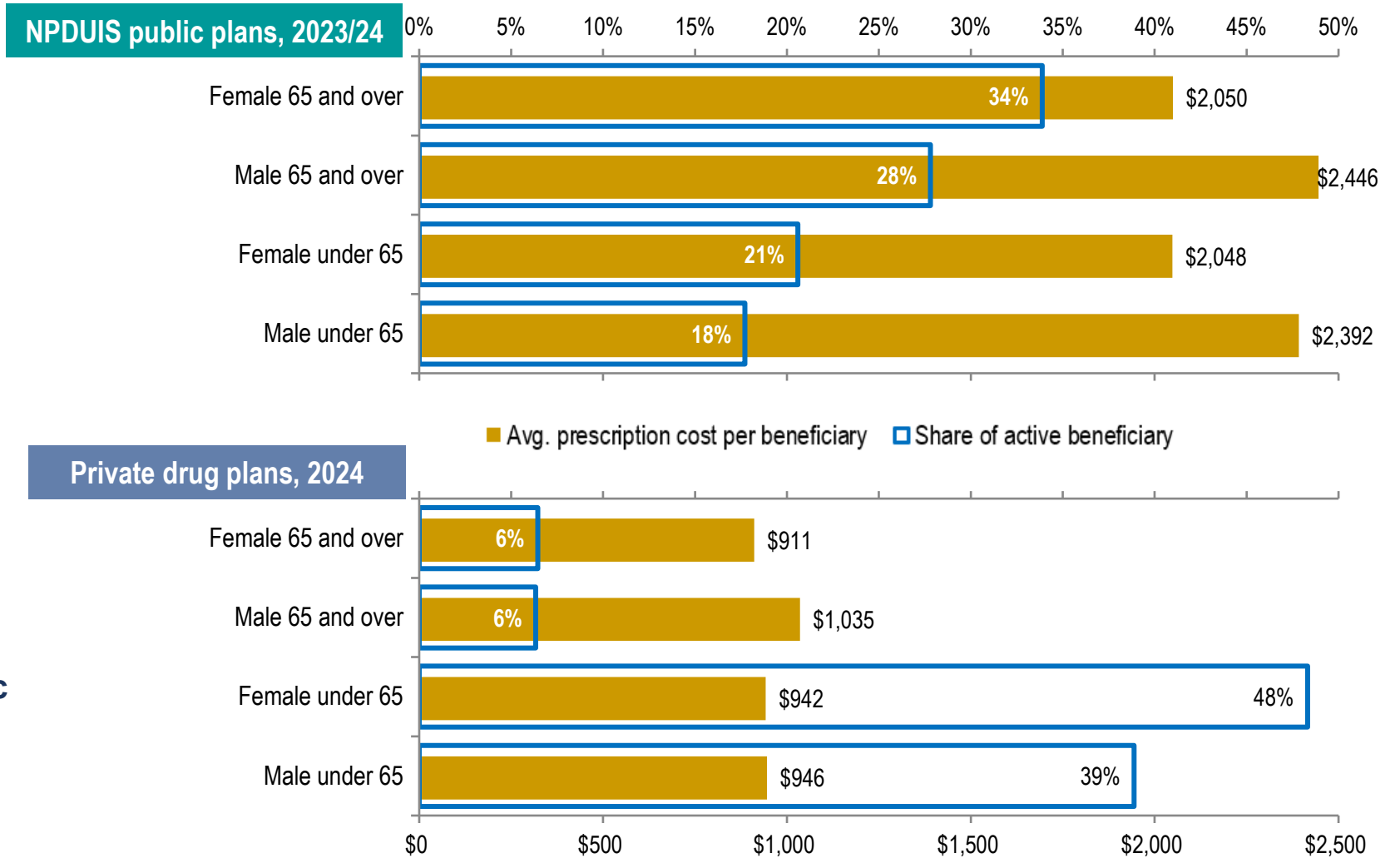
* Results are based on values extrapolated from the IQVIA™ Private Pay Direct Drug Plan database to represent 100% of the private pay-direct market in Canada.

† Compound annual growth rate.

Data source: National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information. IQVIA™ Private Pay Direct Drug Plan Database.

Public plan demographics are skewed more toward seniors; average cost per claimant is also higher

- Seniors (**65+**) made up the majority (**62%**) of public plan beneficiaries, while **private** drug plans were dominated by claimants **under age 65 (87%)**
- Across all age groups, **males incurred higher average treatment costs**, though more females submitted claims
- Average annual costs per claimant in **private plans** were **less than half of those in public plans**

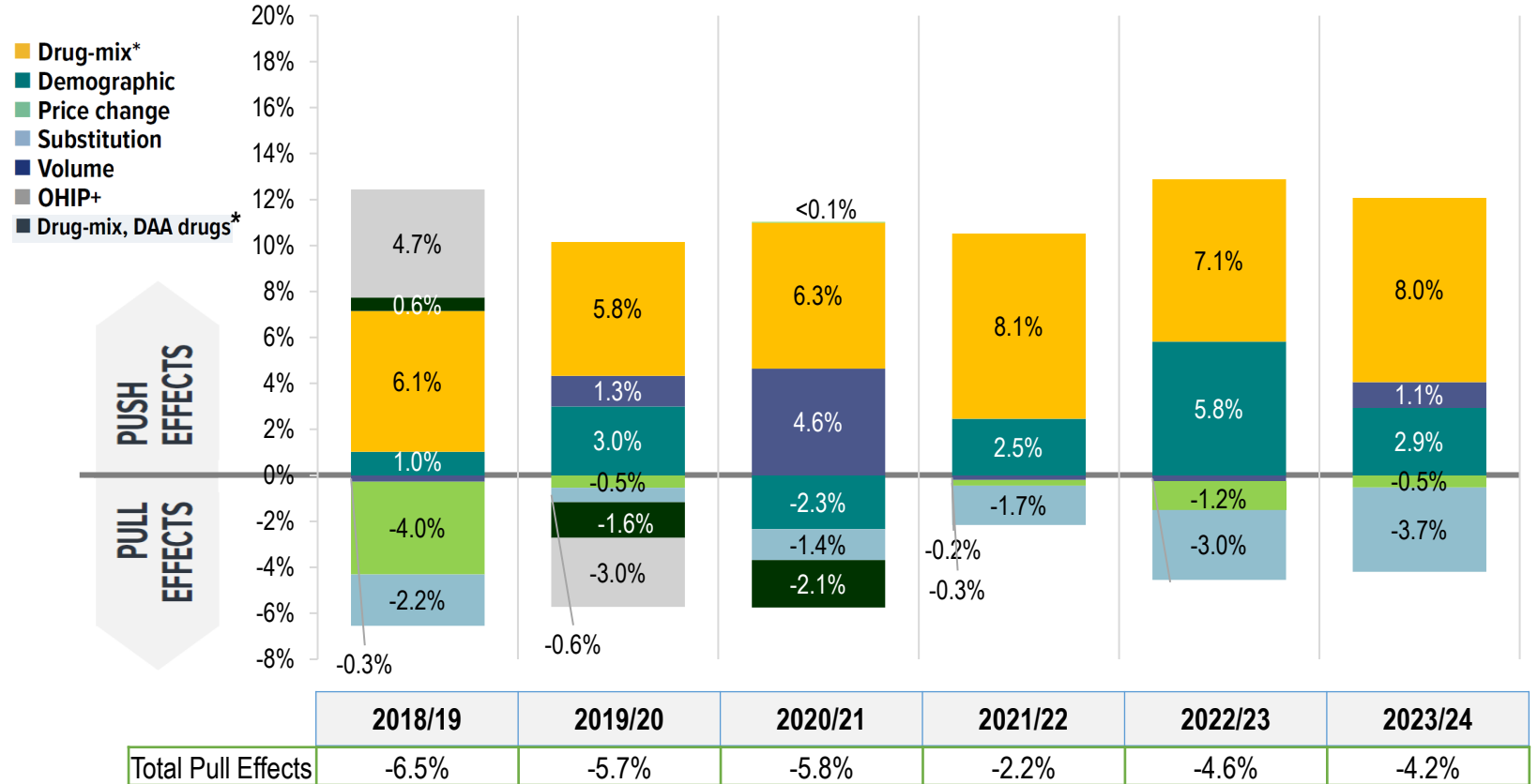


Drug-mix effect was the largest cost driver in NPDUIS public plans, partially offset by substitution and price changes

- The **drug-mix** effect—greater use of higher-cost medicines was the primary driver of drug cost growth, contributing **6%–8% annually**
- Following a 7.9% increase in 2022/23, drug costs rose by a further **7.9% in 2023/24**
- In 2023/24:
 - **Drug-mix** alone contributed **8.0%** to growth
 - **Substitution and price** changes offset growth by **-4.2%**
 - **Demographic and volume** effects added a combined **4.0%**

Drug cost drivers, NPDUIS public plans, 2018/19 to 2023/24

Net Change	5.8%	4.3%	5.3%	8.4%	7.9%	7.9%
Total Push Effects	12.4%	10.2%	11.0%	10.5%	12.9%	12.1%



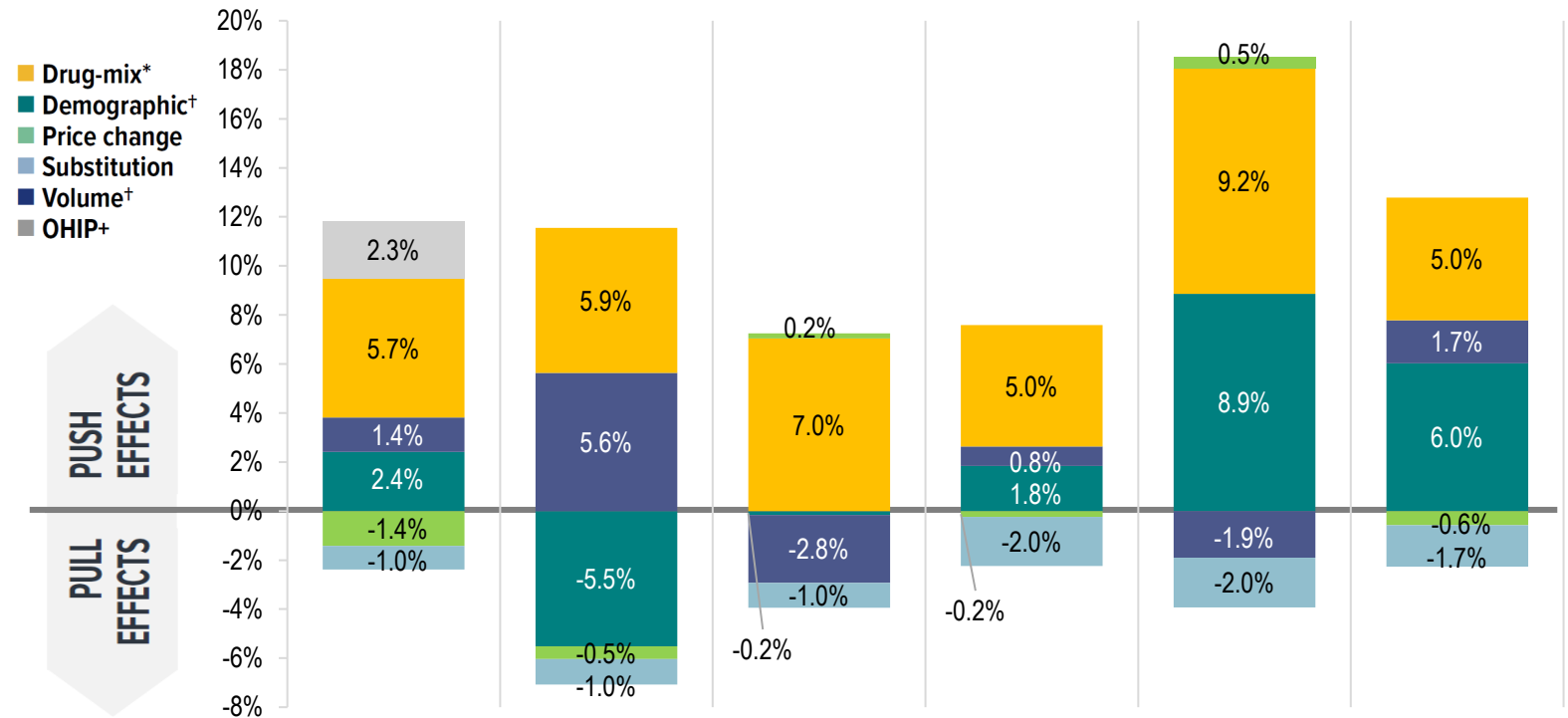
* Since 2021/22, the effect of direct-acting antiviral (DAA) drugs has been minor (-0.1%) and folded into the Drug-mix, other drugs effect.

Data source: National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information.

Private plans also had a large drug-mix impact, but offsetting effects were smaller

Drug cost drivers, private drug plans, 2019 to 2024

Net Change	9.0%	5.4%	4.0%	4.5%	14.1%	9.8%
Total Push Effects	11.8%	11.5%	7.2%	7.6%	18.5%	12.8%



	2019	2020	2021	2022	2023	2024
Total Pull Effects	-2.4%	-7.1%	-3.9%	-2.2%	-3.9%	-2.3%

- Similarly, over 2019–2024 in private plans, the **drug-mix** effect consistently pushed costs upward by **5%–9% annually**
- However, cost-mitigating effects from generic/biosimilar substitutions and price reductions were modest (~ **-2% per year**) and insufficient to offset upward pressures
- Compared to public plans, **demographic and volume** effects varied more widely (**-3% to 8%**), reflecting plan design differences and pandemic-related shifts in utilization and enrollment

* The drug-mix effect does not separate the impact of direct-acting antiviral (DAA) drugs for hepatitis C, due to their negligible impact on private drug plan spending for the reported period 2019–2024.

† Partial data discontinuity from the private drug plan data supplier in 2021 and 2022 influenced the results for the demographic and volume effects. The 2023 demographic effect is based on projected claimant data to adjust for claimant double counting in the raw data.

Data source: IQVIA™ Private Pay Direct Drug Plan Database (capture rate: 79.9% to 85.7% of the private pay-direct market in Canada, varying by year).

A small number of medicines accounted for the majority of the drug-mix effect

Top contributors to the drug-mix effect

NPDUIS public plans, 2023/24					Private drug plans, 2024			
Rank	Medicinal ingredient	Therapeutic class (ATC2)	Average cost per beneficiary*	Contribution to the drug-mix effect	Medicinal ingredient	Therapeutic class (ATC2)	Average cost per beneficiary*	Contribution to the drug-mix effect
1	Semaglutide	Drugs used in diabetes	\$2,153	1.73%	Semaglutide	Drugs used in diabetes	\$1,607	0.72%
2	Onasemnogene abeparvec	Other drugs for disorders of the musculo-skeletal system	\$3,086,677	0.40%	Risankizumab	Immunosuppressants	\$24,417	0.31%
3	Aflibercept	Ophthalmologicals	\$8,769	0.40%	Dupilumab	Other dermatological preparations	\$18,453	0.29%
4	Elexacaftor/tezacaftor /ivacaftor	Other respiratory system products	\$242,041	0.40%	Lisdexamfetamine dimesilate	Psychoanaleptics	\$16,824	0.26%
5	Empagliflozin	Drugs used in diabetes	\$847	0.40%	Ofatumumab	Immunosuppressants	\$748	0.24%
6	Tafamidis	Other nervous system drugs	\$136,961	0.40%	Upadacitinib	Immunosuppressants	\$11,428	0.23%
7	Vedolizumab	Immunosuppressants	\$20,846	0.35%	Adalimumab	Immunosuppressants	\$21,581	0.23%
8	Upadacitinib	Immunosuppressants	\$12,598	0.34%	Vedolizumab	Immunosuppressants	\$4,398	0.22%
9	Faricimab	Ophthalmologicals	\$6,224	0.28%	Abemaciclib	Antineoplastic agents	\$32,766	0.21%
10	Risankizumab	Immunosuppressants	\$18,676	0.22%	Infliximab	Immunosuppressants	\$116,226	0.18%
Total drug-mix effect				8.0%	5.0%			

* The average cost per beneficiary may not represent the cost of a complete year of treatment.

➤ In both sectors, **10 medicines** accounted for **more than half** of the overall drug-mix effect:

- **4.9%** upward push in 2023/24 of **public plans**
- **3.5%** in 2024 of **private plans**

➤ **Antidiabetic** therapies, high-cost **oral oncology** drugs, and **immunosuppressants** were among the leading contributors

The number and share of high-cost drugs has grown in both

➤ High-cost drugs (annual cost >\$10,000) account for:

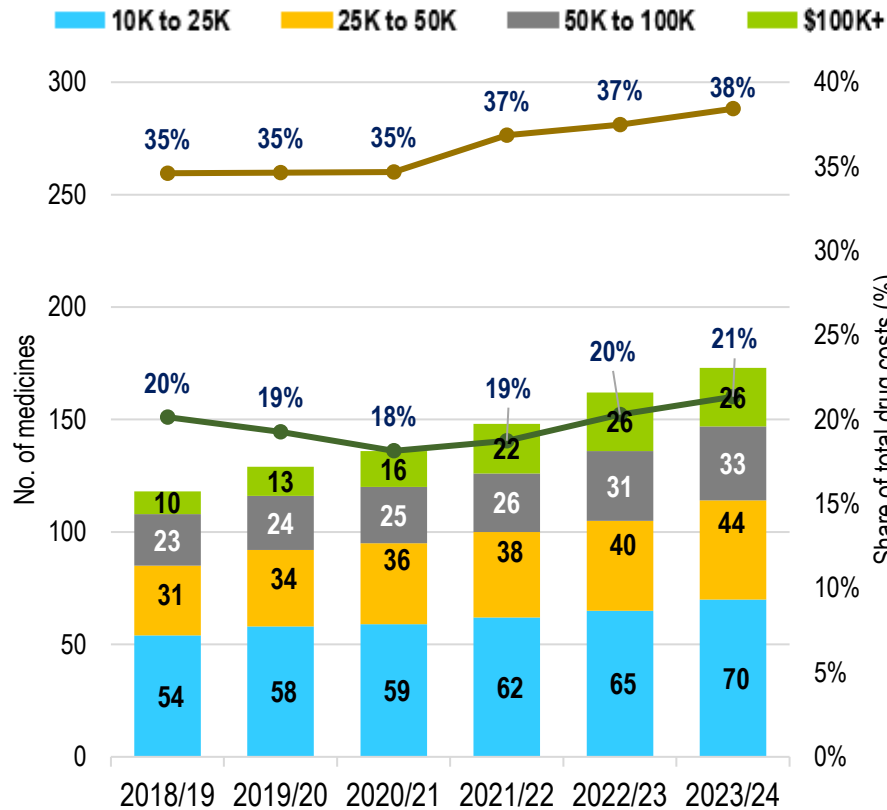
- 38% of drug costs in 2023/24 public plans
- 33% in 2024 private plans

➤ Drugs costing >\$25,000 annually represent:

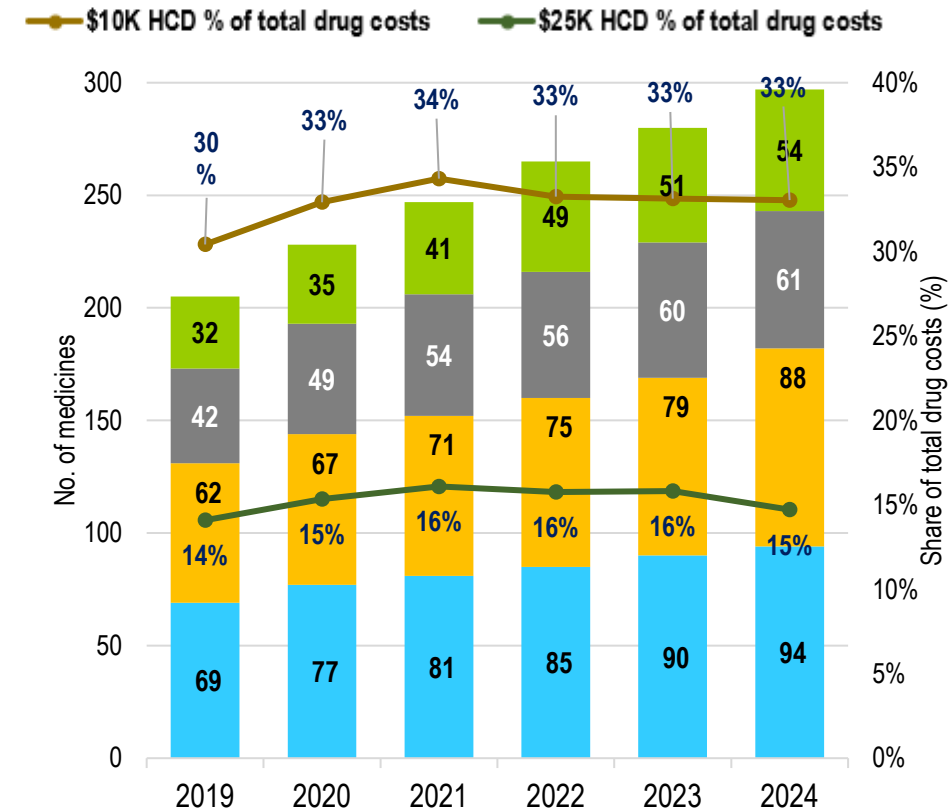
- 21% of public plan costs
- 15% of private plan costs

➤ The number of high-cost drugs has increased across all cost bands, particularly medicines costing over **\$100,000 annually**

NPDUIS public plans, 2018/19 to 2023/24



Private drug plans, 2019 to 2024

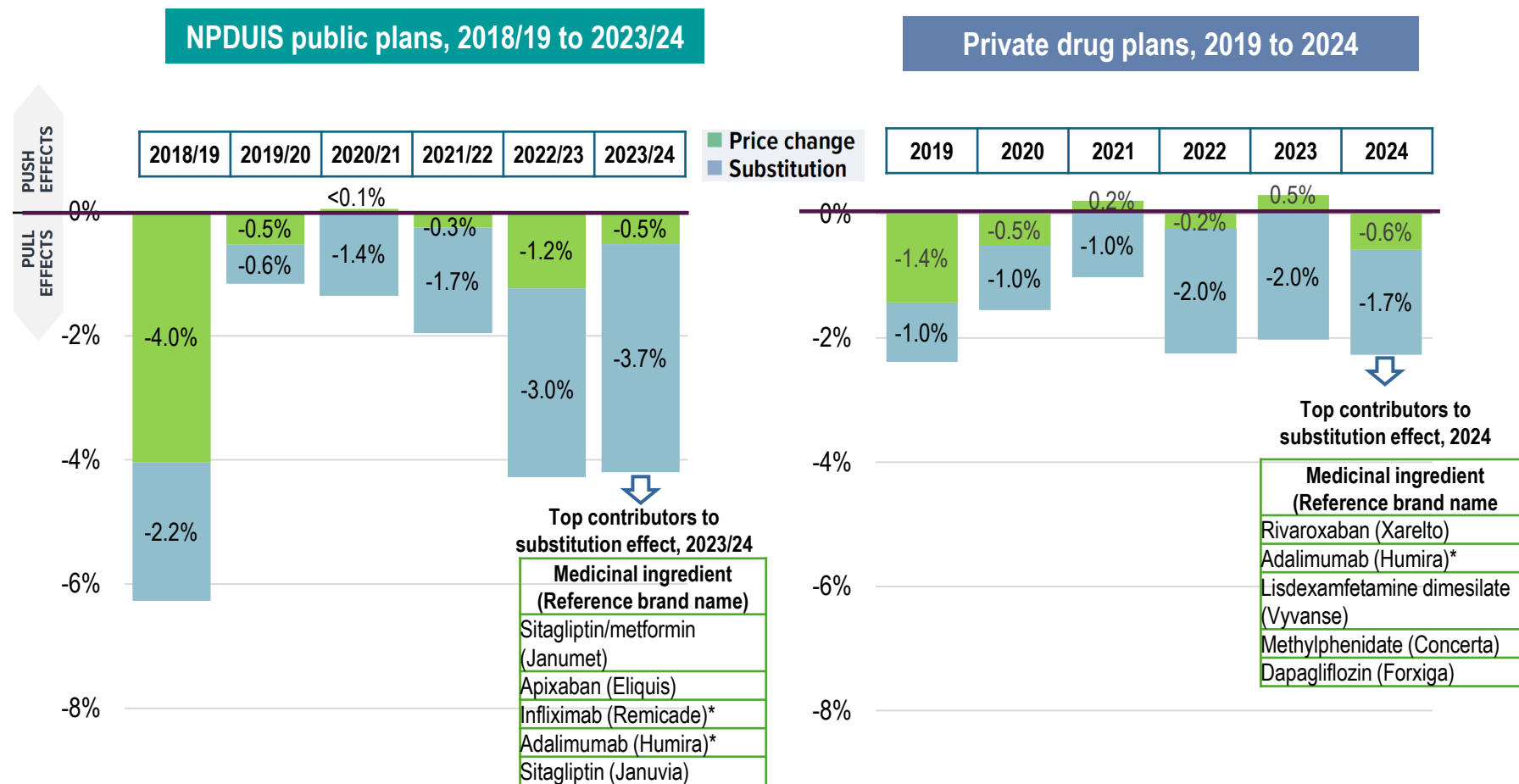


Note: High-cost medicines are defined as having an annual treatment cost greater than \$10,000.

Public drug plans saw greater savings from substitution and price changes than private plans

- **Public drug plans** achieved **greater savings** (average -3.2%) than private plans (-1.8%)
- After significant price drops in 2018/19, savings from **price change stabilized** at under -1% in both sectors
- **Substitution** generated **larger** effects than price changes:
 - -3.7% in public plans (2023/24)
 - -1.7% in private plans (2024)
- **Biosimilars** and high-selling generics were among the top contributors to substitution effects in both sectors

Trends in price and substitution effects



*Substitution effect from biosimilar medicines

Data source: IQVIA™ Private Pay Direct Drug Plan Database (capture rate: 79.9% to 85.7% of the private pay-direct market in Canada, varying by year).

Key findings

- 1** Sustained growth across both sectors, with higher growth in private plans
 - Prescription drug expenditures grew at a **CAGR of 5.9% in NPDUIS public plans** (2018/19 - 2023/24) and **7.7% in private plans** (2019 – 2024)
 - **Public plan** beneficiaries are mainly (62%) **seniors** with higher annual costs, while **private plan** claimants are mostly (87%) **under age 65** with lower annual costs
- 2** Increased use of higher-cost drugs remains the leading cost driver in both sectors
 - The **drug-mix** effect consistently pushed drug costs upward by **5%–9% annually**
 - **High-cost** medicines (costing over \$10,000 annually) accounted for **38%** of drug costs in public plans and **33%** in private plans
- 3** Savings from generic/biosimilar substitution and price reductions moderated cost growth but were insufficient to offset upward pressures
 - **Cost-mitigating effects** were stronger in public plans (average **-3%**) than in private plans (**-2%**), driven primarily by substitution effects



National Prescription Drug Utilization Information System research initiative

THANK YOU

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