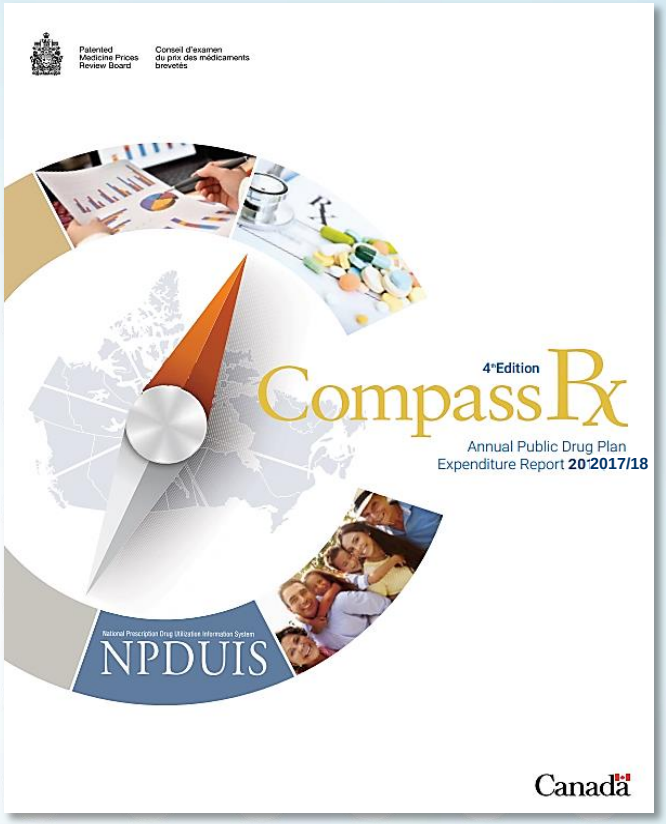
Patented Medicine Prices Review Board

Conseil d'examen du prix des médicaments brevetés

Uncovering the Forces Driving Costs in Canada's Public Drug Plans



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Background and Objectives

- **Public drug plan expenditures account for a significant portion of the overall healthcare budget. Through its annual flagship *CompassRx* report, the PMPRB monitors and analyzes the evolving pressures driving changes in these expenditures.**

- **This analysis outlines the preliminary results for the latest fiscal year, tracking recent trends in prescription drug costs and identifying the key drivers for 2017/18, including:**
  - changes in the beneficiary population (**demographic effect**);
  - changes in the amount of drugs used (**volume effect**);
  - shifts between lower- and higher-priced drugs (**drug-mix effect**);
  - changes in drug prices (**price effect**); and
  - shifts from brand-name to generic or biosimilar options (**substitution effect**).

Methods and Data Sources

- The analysis focuses on Canadian public drug plans participating in the National Prescription Drug Utilization Information System (NPDUIS) initiative
- The main data source for this report is the NPDUIS Database at the Canadian Institute for Health Information (CIHI)
- The drug costs reported here do not reflect rebates resulting from confidential product listing agreements
- Although based in part on data provided by the Canadian Institute for Health Information (CIHI), the statements, findings, conclusions, views and opinions expressed in this report are exclusively those of the PMPRB and are not attributable to CIHI

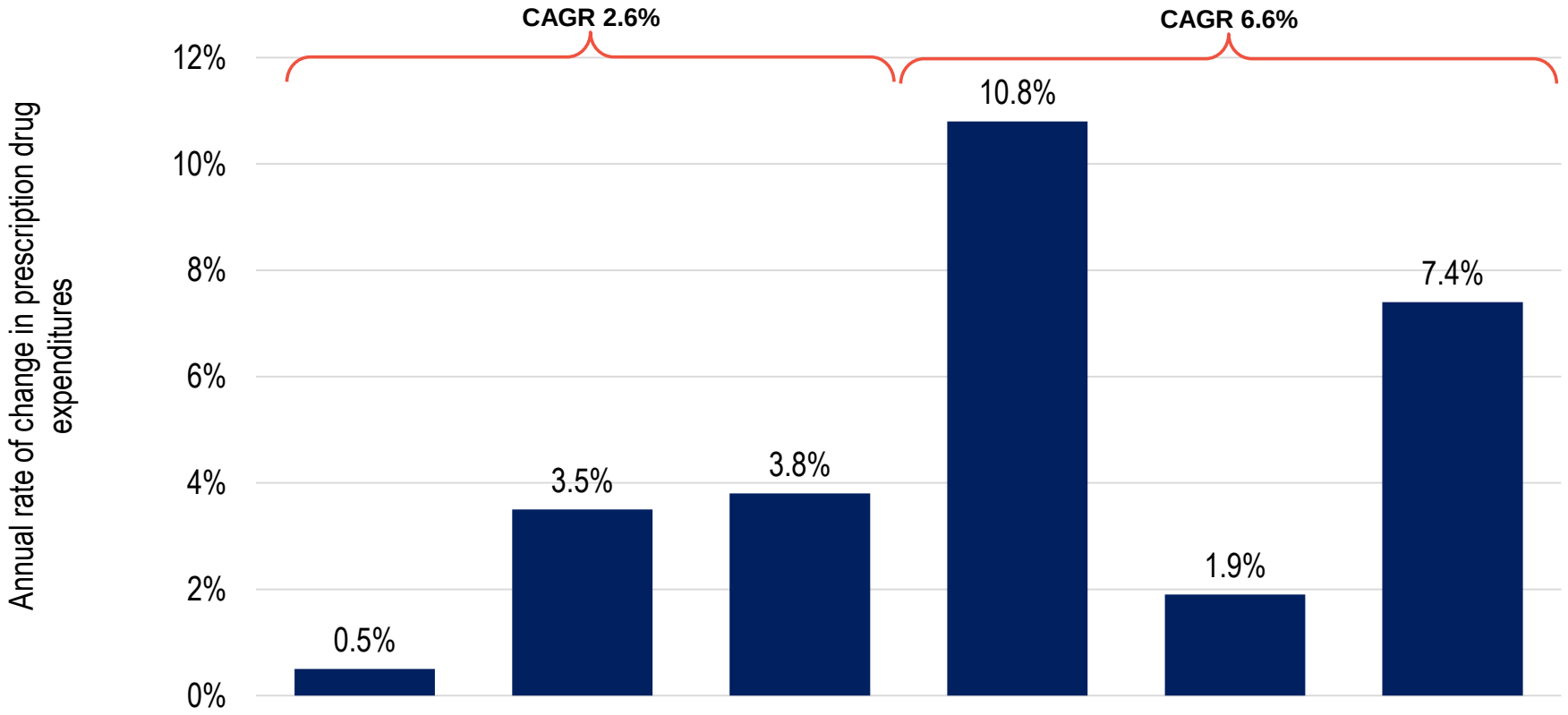
1. Prescription expenditures grew by a marked 7.4% in 2017/18, building on a three-year average annual increase of 6.6%

2. Drug costs, the largest component of these expenditures, increased by 8.3% in 2017/18

3. The renewed pressure from DAA drugs along with an increase in other higher-cost medicines collectively accounted for a 7.1% upward push on drug costs in 2017/18

4. Cost savings from generic and biosimiar substitution and price reductions, which have been declining in recent years, accounted for only a slight reduction in costs in 2017/18

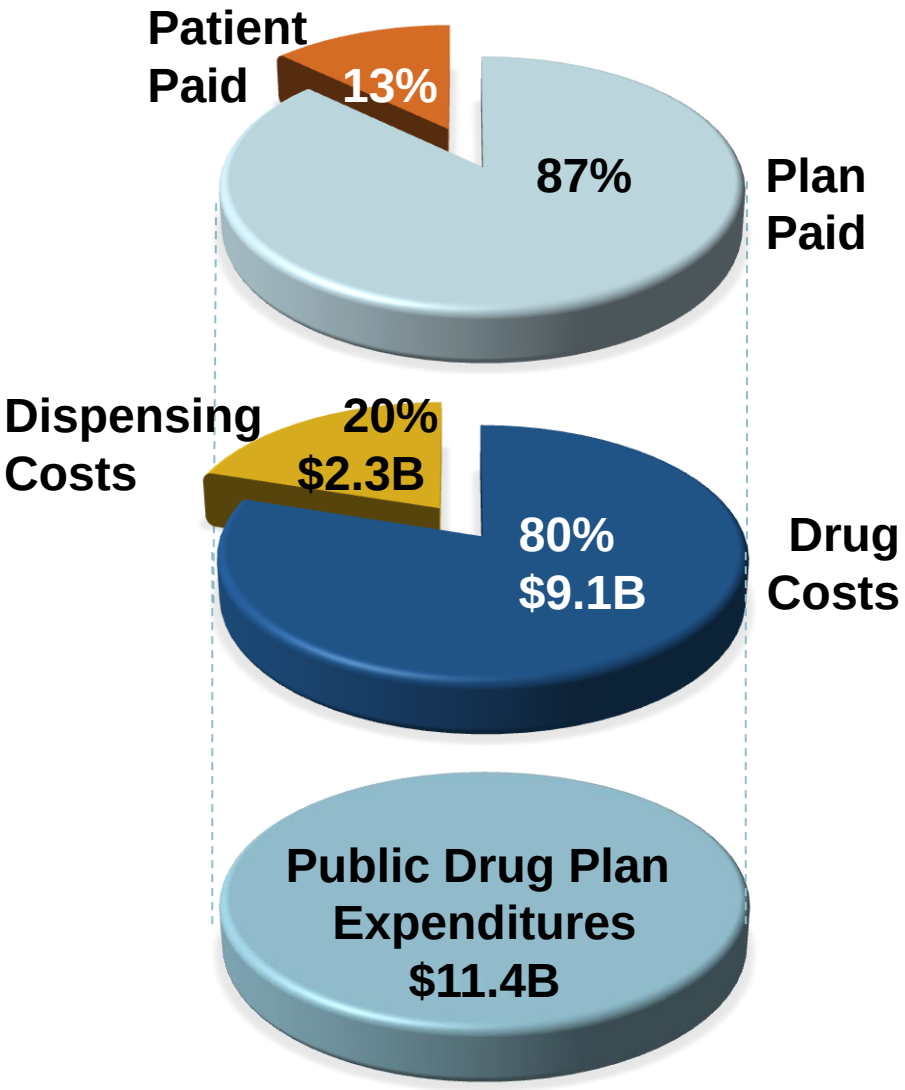
1 Prescription expenditures increased by 7.4% in 2017/18



Total prescription drug expenditures	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
	$8.8B	$9.1B	$9.4B	$10.5B	$10.7B	$11.4B

Note: Prescription costs include the drug cost and related markups as well as dispensing cost.
Data source: National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information.

1 Overview of expenditures in NPDUIS public drug plans, 2017/18



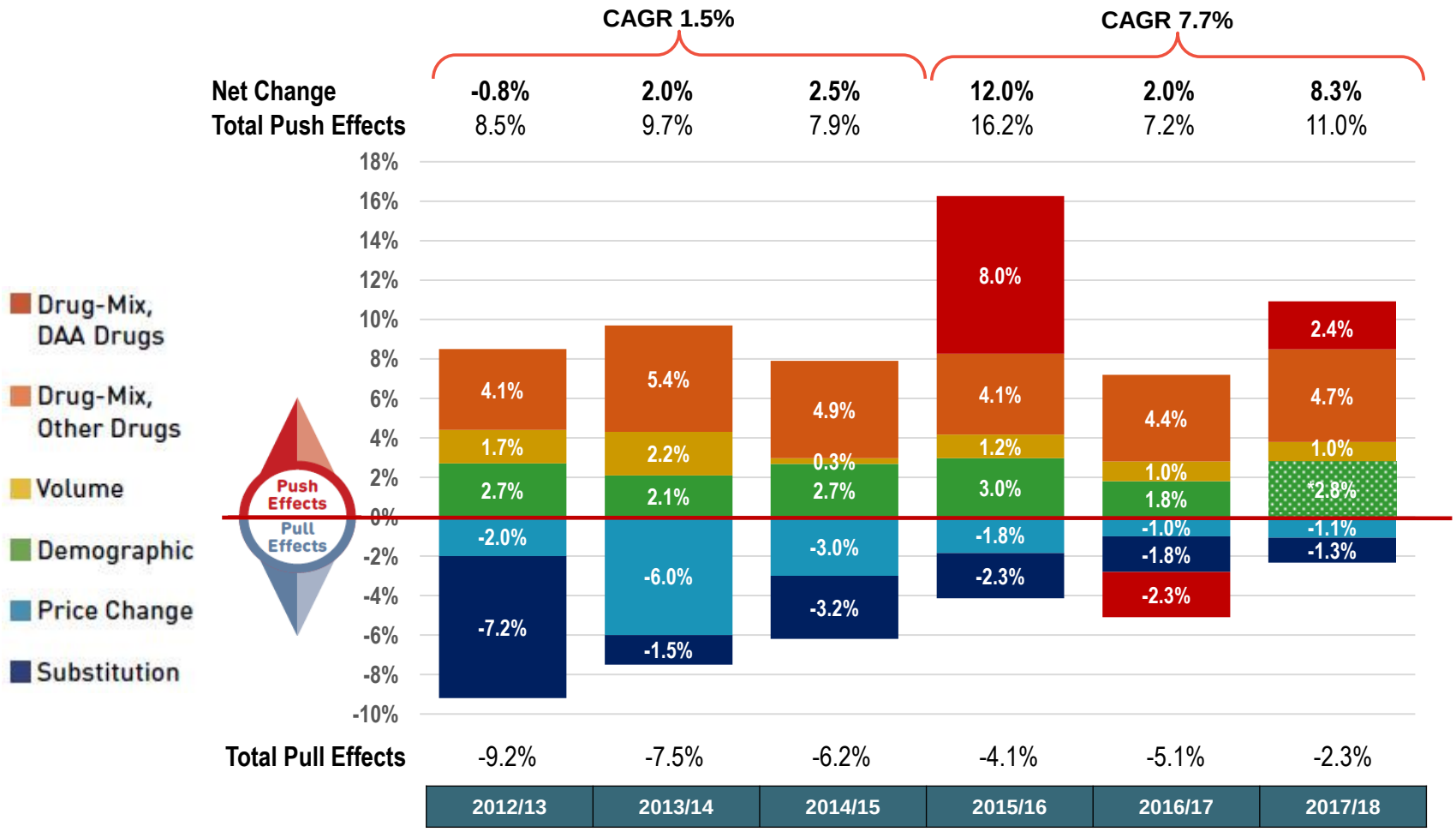
277 Million Prescriptions

6.9 Million Active Beneficiaries

1 in 4 covered

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

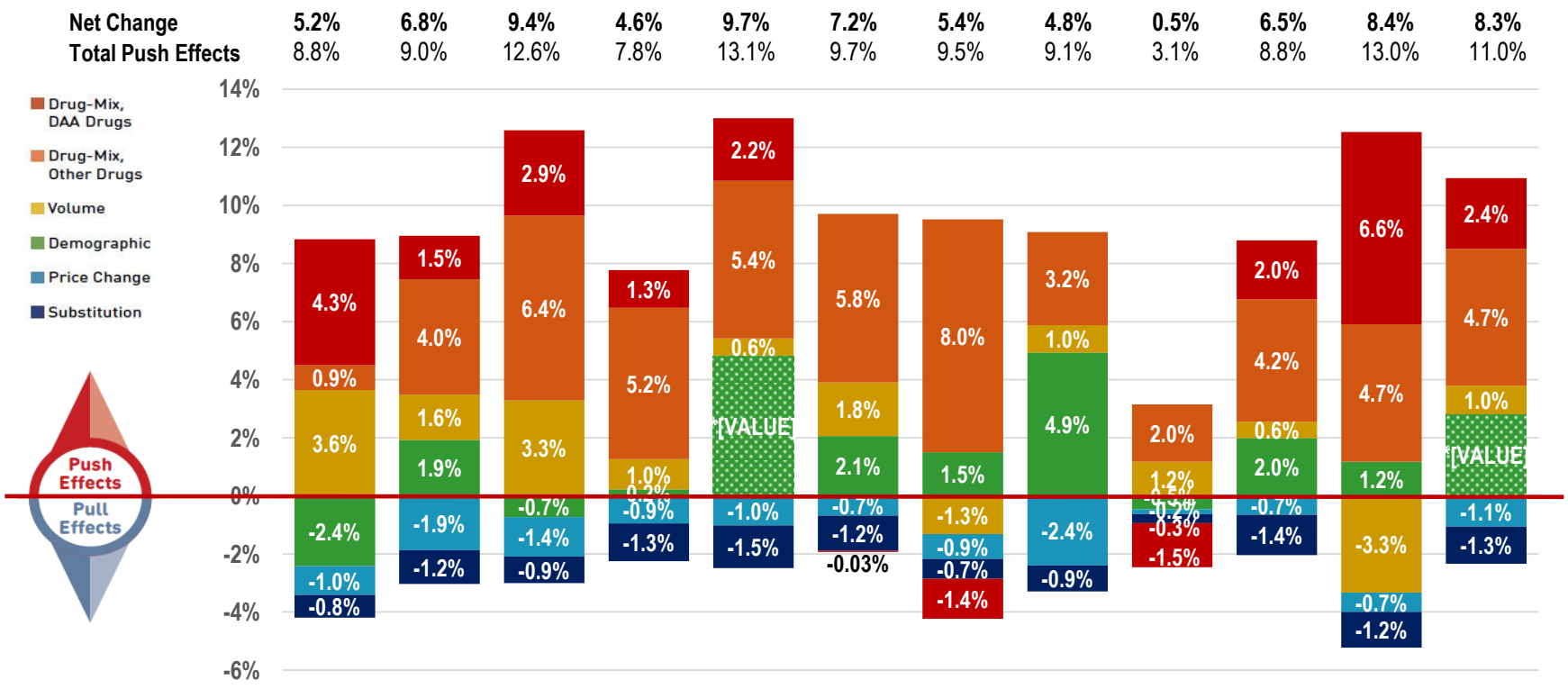
2 A sustained increase in the use of higher-cost drugs, along with a renewed pressure from DAA drug use, drove drugs costs up by 7.1% in 2017/18



*The demographic effect captured the 1.5% of drug cost increase attributed to the implementation of the OHIP+ program in Ontario from the last quarter of the 2017/18 fiscal year.

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

3 While the overall growth in costs varied, the increased use of higher-cost drugs was the most important driver for almost all plans

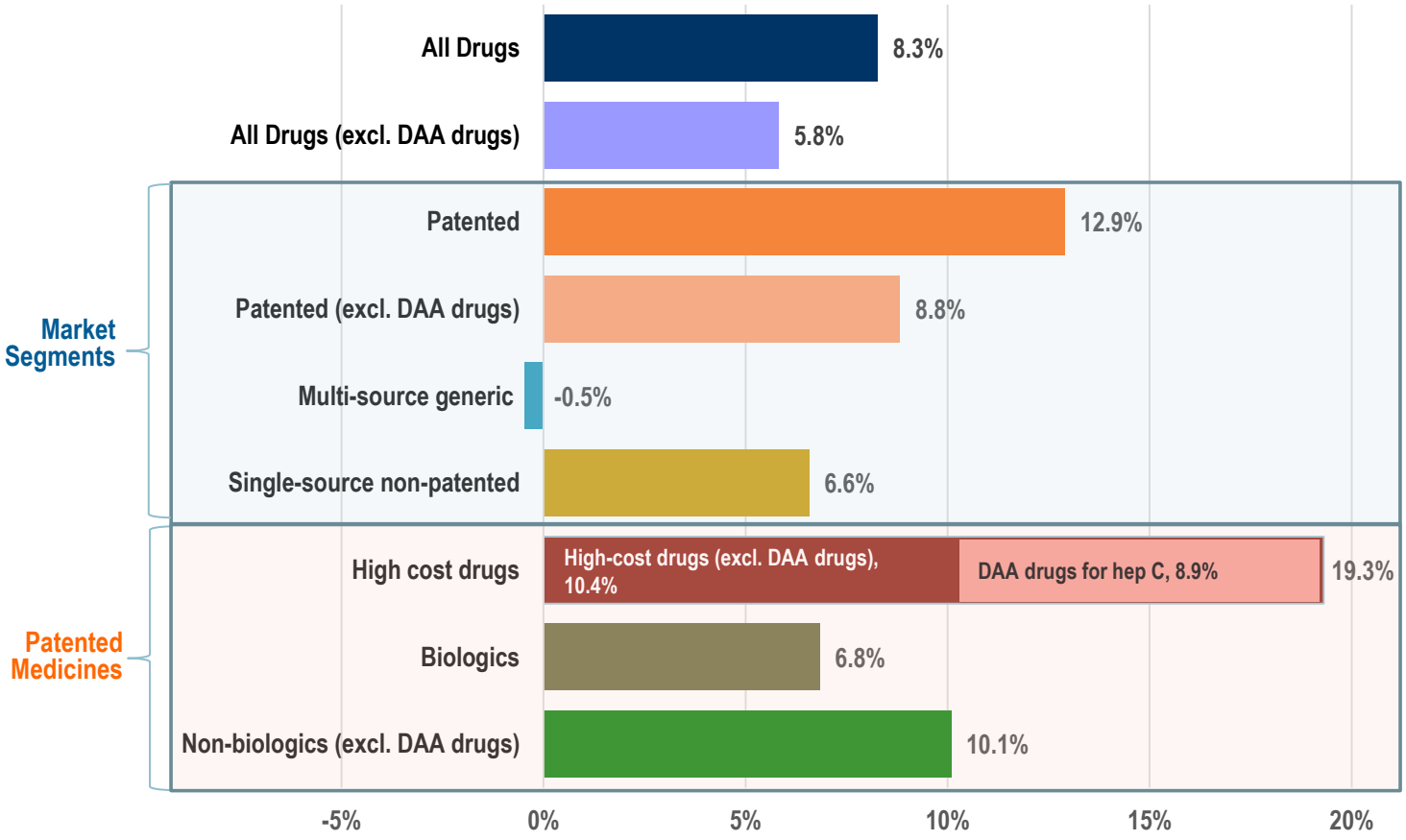


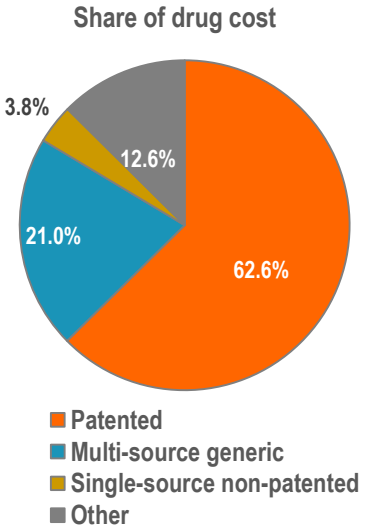
Amount ($ million)		BC	AB	SK	MB	ON	NB	NS	PEI	NL	YT	NIHB	Total
Drug cost	2016/17	$1,075.0	$734.5	$359.2	$336.5	$4,918.1	$192.7	$183.8	$32.4	$117.4	$13.5	$463.0	$8,426.1
	2017/18	$1,131.0	$784.1	$392.9	$351.9	$5,396.9	$206.7	$193.9	$33.9	$117.9	$14.4	$501.9	$9,125.5
Absolute change		$56.0	$49.6	$33.7	$15.4	$478.8	$14.0	$10.0	$1.5	$0.6	$0.9	$38.9	$699.4

*The introduction of OHIP+ in Ontario, in the last quarter of 2017/18, is captured in the demographic effect, resulting in a 2.5% increase in Ontario and a 1.5% increase overall.

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

3 Patented medicines made the greatest contribution to the overall increase in drug costs

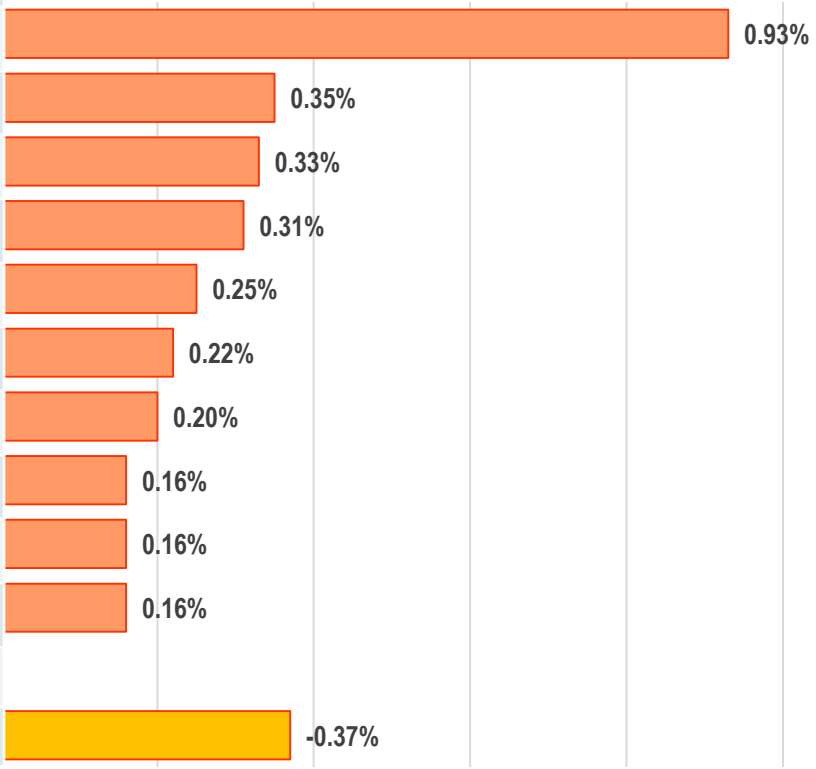




Data source: National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information.

3 The top 10 drugs, which included several high-cost medicines, contributed 3.1% to the 4.7% drug-mix effect

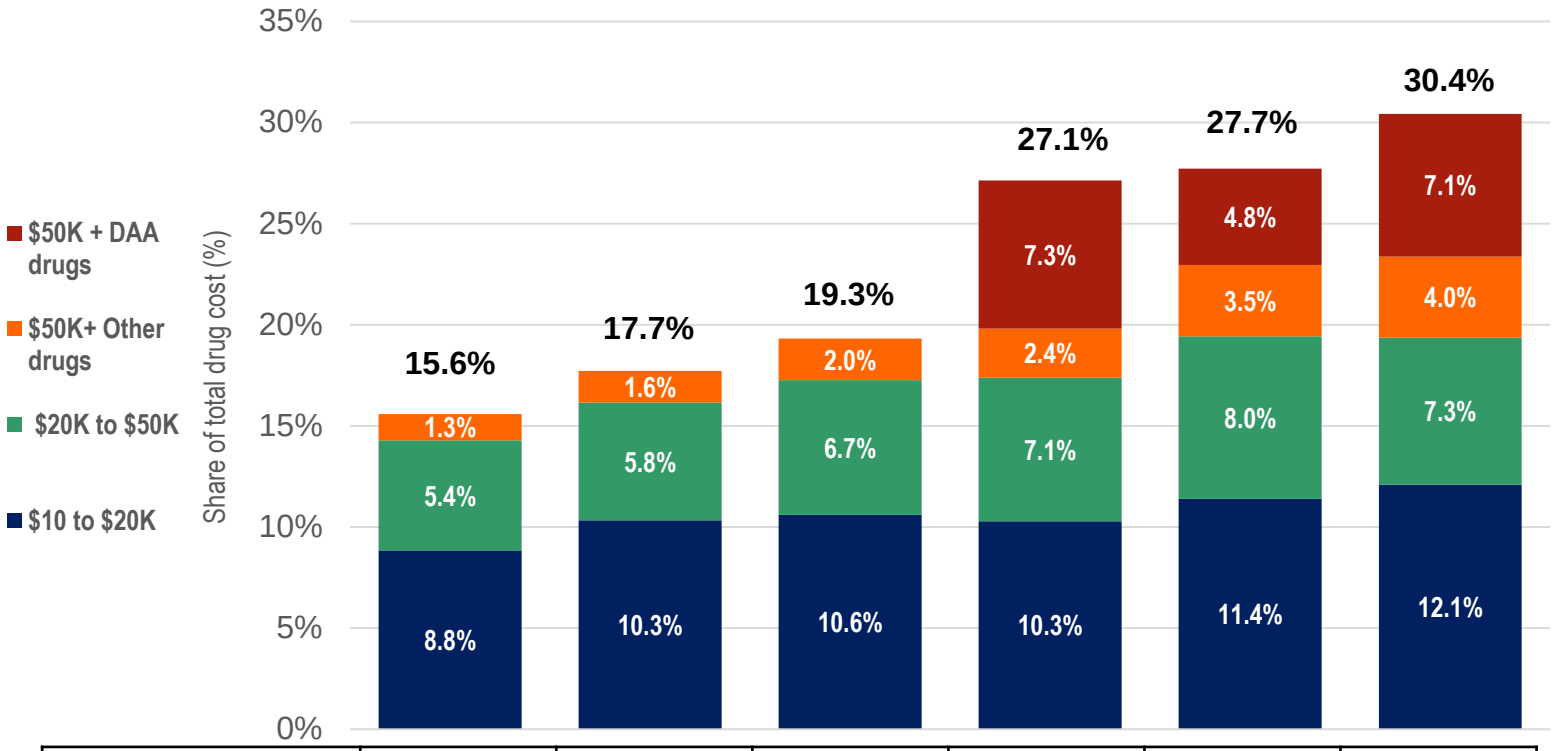
Average cost per beneficiary*	Total number of beneficiaries	Drug cost $million (share)	Therapeutic class	Trade name (molecule)
Top 10 drugs contributing to the push effect				
$8,647	31,345	$271.0 (3.0%)	Ophthalmologicals	Eylea (aflibercept)
$901	125,888	$113.5 (1.3%)	Antithrombotic agents	Eliquis (apixaban)
$66,114	2,362	$156.2 (1.7%)	Immunosuppressive agents	Revlimid
$634	57,679	$36.6 (0.4%)	Drugs used in diabetes	Jardiance (empagliflozin)
$968	127,238	$123.1 (1.4%)	Drugs used in diabetes	Janumet (sitagliptin, metformin hydrochloride)
$9,937	2,624	$26.1 (0.3%)	Immunosuppressive agents	Xeljanz (tofacitinib)
$16,528	17,341	$286.6 (3.2%)	Immunosuppressive agents	Humira (adalimumab)
$604	48,631	$29.4 (0.3%)	Anti-asthmatics	Breo ellipta (vilanterol, fluticasone furoate)
$62,456	851	$53.2 (0.6%)	Antineoplastic agents	Imbruvica (ibrutinib)
$20,228	772	$15.6 (0.2%)	Antineoplastic agents	Ofev (nintedanib)
Top drug contributing to the pull effect				
$8,645	23,732	$205.2 (2.3%)	Ophthalmologicals	Lucentis (ranibizumab)



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

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

3 The share of high-cost drugs is on the rise



Drug Cost ($millions)	$1,075.7	$1,258.6	$1,408.7	$2,235.7	$2,327.2	$2,776.5
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Total no. of molecules	56	63	75	82	86	94
10K to 20K	30	37	38	35	36	40
20K to 50K	17	16	24	28	31	31
50K+ Other drugs	9	10	13	16	16	20
$50K+ DAA drugs				3	3	3
Share of active beneficiaries	1.04%	1.18%	1.28%	1.52%	1.67%	1.66%
Share of prescriptions	0.18%	0.20%	0.22%	0.27%	0.29%	0.33%

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

4 Biosimilar uptake remains modest

PRICE CHANGE ↓

SUBSTITUTION ↓

Compared to traditional generic drug markets, the savings from biosimilars are limited by a slower uptake and lower price reductions

Reference biologic		Biosimilar				
Trade name (molecule)	Drug cost $million (% share)	Trade name	Market approval	First reimbursement	Price discount*	Share of prescriptions
Remicade (infliximab)	$391.0 (4.3%)	Inflectra	15-Jan-14	Q1 2016	46.8%	5.4%
		Renflexis	01-Dec-17	Q3 2018	50.1%	NA
Lantus (insulin glargine)	$147.2 (1.6%)	Basaglar	01-Sep-15	Q3 2017	25.0%	1.0%
Neupogen (filgrastim)	$16.0 (0.2%)	Grastofil	07-Dec-15	Q4 2016	25.0%	72.3%
Enbrel (etanercept)	$157.6 (1.7%)	Brenzys	31-Aug-16	Q3 2017	33.7%	2.4%
		Erelzi	06-Apr-17	Q4 2017	37.2%	<0.1%

*Based on Ontario Drug Benefit formulary listing price

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

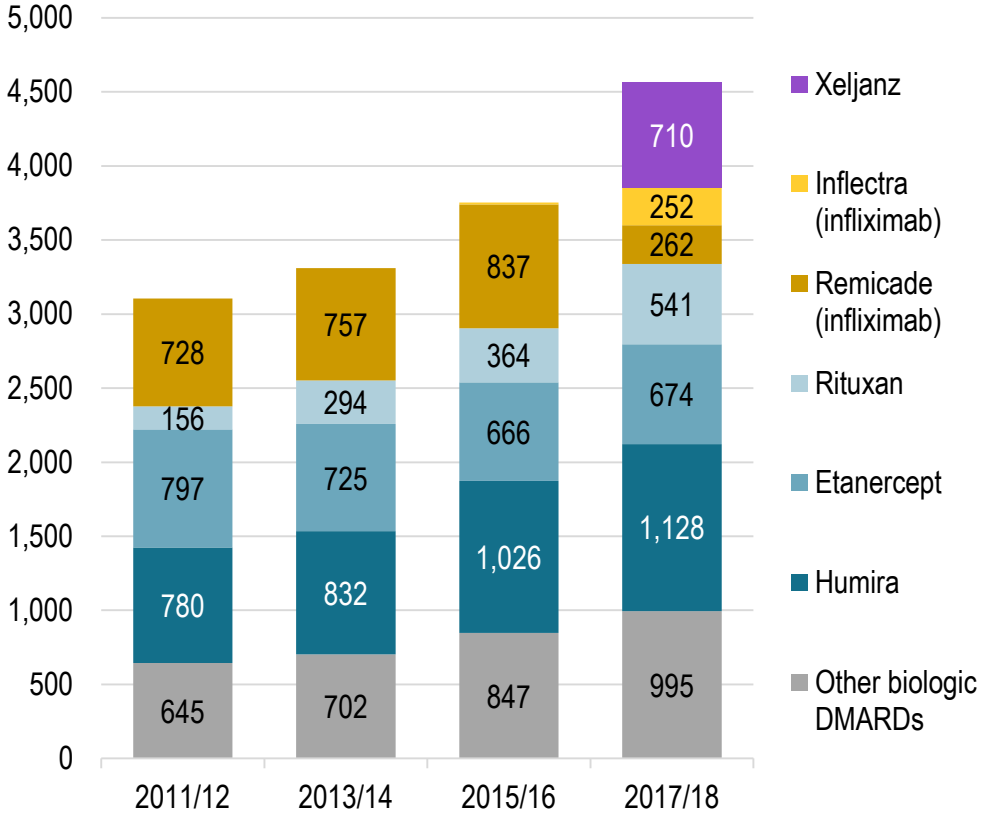
4 Fewer patients were initiated on infliximab after biosimilar introduction

PRICE CHANGE

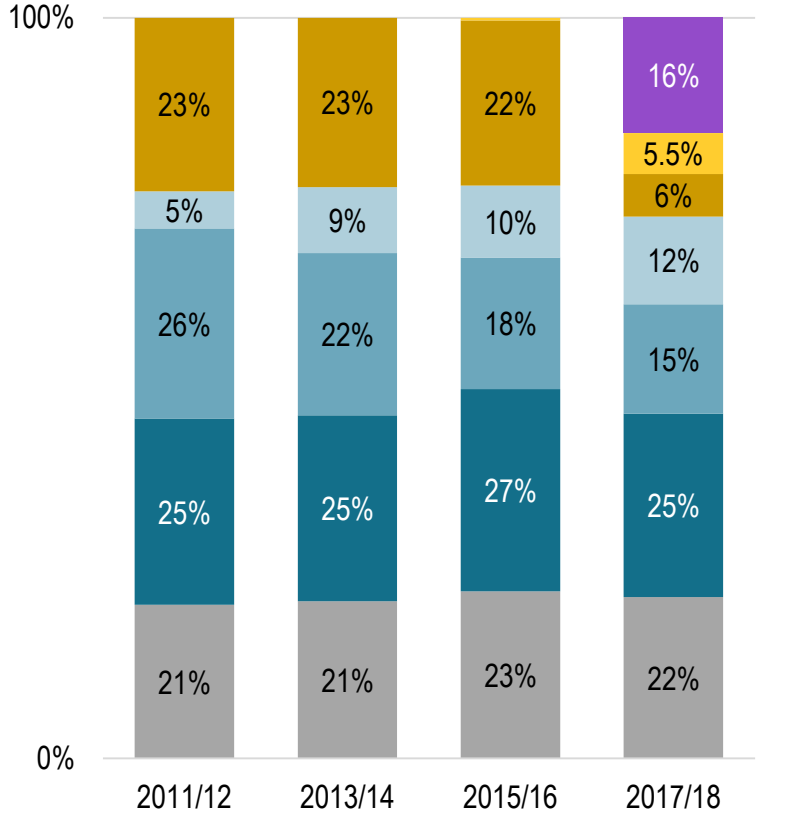
SUBSTITUTION

Instead, new patients started on other originator products in the class

Number of new patients on biologic DMARDs



Distribution of new patients by biologic DMARD

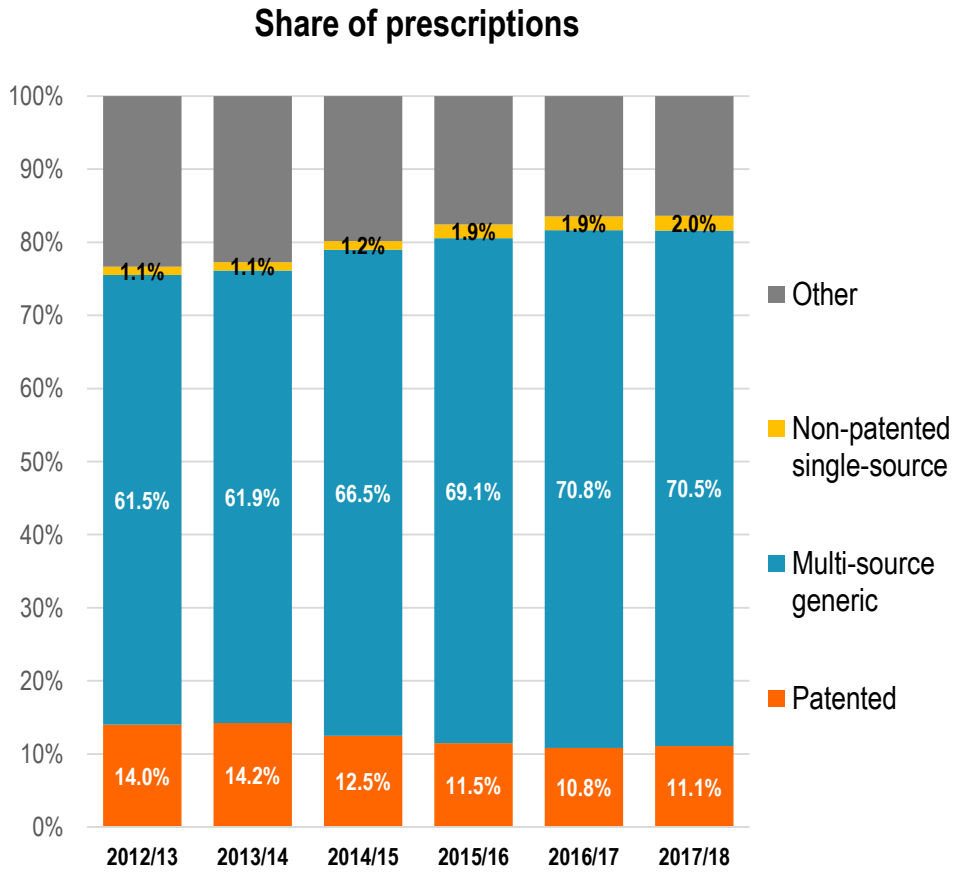


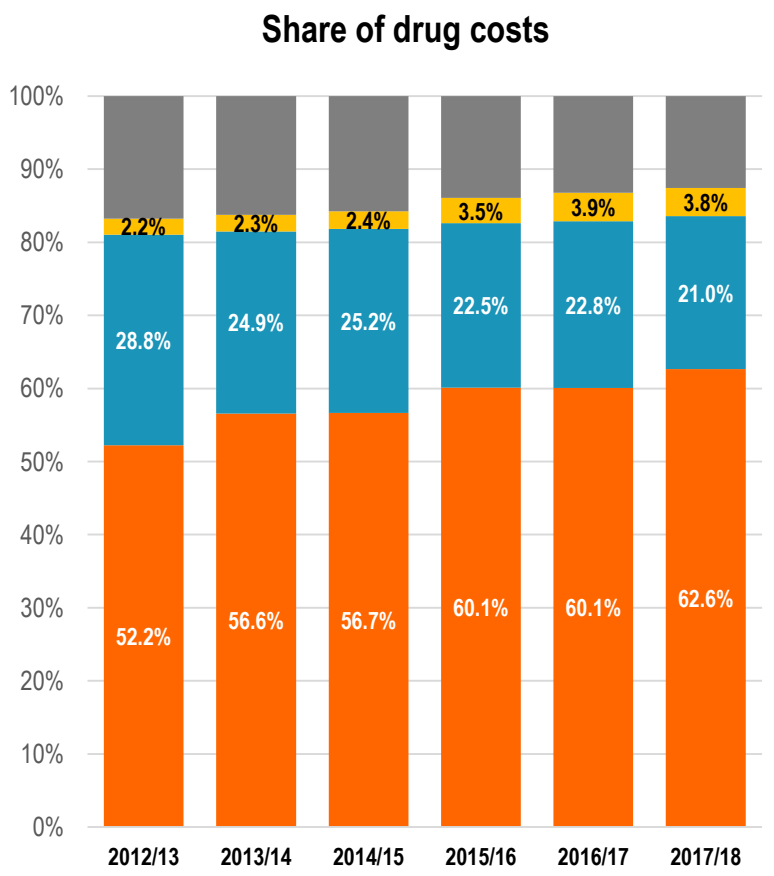
Data source: National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information.

4 Generics capture a higher share of use, while patented medicines capture a higher share of costs

PRICE CHANGE

SUBSTITUTION





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THANK YOU

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