Prescribed Drug Spending in Canada

2019

A Focus on Public Drug Programs

1994 • 2019

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Production of this document is made possible by financial contributions from Health Canada and provincial and territorial governments. The views expressed herein do not necessarily represent the views of Health Canada or any provincial or territorial government.

Unless otherwise indicated, this product uses data provided by Canada's provinces and territories.

Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6
Phone: 613-241-7860
Fax: 613-241-8120
cihi.ca
copyright@cihi.ca

ISBN 978-1-77109-882-3 (PDF)

How to cite this document:
Canadian Institute for Health Information. *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs*. Ottawa, ON: CIHI; 2019.

Cette publication est aussi disponible en français sous le titre *Dépenses en médicaments prescrits au Canada, 2019 : regard sur les régimes publics d'assurance médicaments*.
ISBN 978-1-77109-883-0 (PDF)

Table of contents

Acknowledgements

The Canadian Institute for Health Information (CIHI) wishes to acknowledge and thank the following groups for their contributions to *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs*:

- Newfoundland and Labrador Prescription Drug Program, Department of Health and Community Services
- Prince Edward Island Provincial Pharmacare Program, Department of Health and Wellness
- Nova Scotia Pharmaceutical Services, Department of Health and Wellness
- New Brunswick Pharmaceutical Services Branch, Department of Health
- Quebec Public Prescription Drug Insurance Plan, Régie de l'assurance maladie du Québec
- Ontario Drugs and Devices Division, Ministry of Health
- Manitoba Provincial Drug Programs, Department of Health
- Saskatchewan Drug Plan and Extended Benefits Branch, Ministry of Health
- Alberta Pharmaceutical and Health Benefits, Ministry of Health
- British Columbia Health and Drug Coverage, Ministry of Health
- Yukon Pharmacare, Health and Social Services
- First Nations and Inuit Health Branch, Indigenous Services Canada

Please note that the analyses and conclusions in this document do not necessarily reflect those of the organizations mentioned above.

About CIHI

The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization dedicated to providing essential health information to all Canadians.

CIHI works closely with federal, provincial and territorial partners and stakeholders throughout Canada to gather, package and disseminate information to inform policy, management, care and research, leading to better and more equitable health outcomes for all Canadians.

Health information has become one of society's most valuable public goods. For 25 years, CIHI has set the pace on data privacy, security, accessibility and innovation to improve Canada's health systems.

CIHI: Better data. Better decisions. Healthier Canadians.

Highlights

Public drug program spending accounted for 43.4% of prescribed drug spending in Canada in 2018. This report provides an in-depth look at public drug program spending in Canada, using CIHI's National Prescription Drug Utilization Information System (NPDUIS). Public drug program spending does not include spending on drugs dispensed in hospitals or on those funded through cancer agencies and other special programs.

Public drug program spending increased by 6.8% in 2018, compared with an increase of 5.3% in 2017.

- The growth in 2018 was largely due to the introduction of OHIP+, which extended drug coverage to all Ontario residents age 24 and younger. Excluding new OHIP+ beneficiaries, drug program spending in all jurisdictions increased by 3.4%.
- Protein kinase inhibitors (used to treat various types of cancer) and hepatitis C drugs were the top 2 contributors to growth.
- Savings from generic entries and pricing policies continued to offset some of the growth. Drug classes with significant declines in spending included statins, proton pump inhibitors and angiotensin-converting enzyme (ACE) inhibitors.

Anti-TNF drugs, used to treat conditions such as rheumatoid arthritis and Crohn's disease, accounted for the highest proportion of drug spending for the seventh consecutive year.

- Spending on tumour necrosis factor alpha inhibitors (anti-TNF drugs) increased slightly, accounting for 8.3% of public drug program spending.
- Hepatitis C drugs, which accounted for the next highest proportion (5.4%), grew by 15.0% in 2018, compared with 16.6% growth in 2017.
- Biosimilars for the anti-TNFs Enbrel (etanercept) and Remicade (infliximab) accounted for 4.7% of spending on these products in 2018.

The proportion of public drug program spending on high-cost individuals continued to rise.

- In 2018, the 2.1% of individuals for whom a drug program paid $10,000 or more accounted for more than one-third of spending (38.8%, up from 36.6% in 2017).
- High-cost individuals are a mix of people taking a high number of drugs and those taking high-cost drugs.
  - 1 in 4 individuals for whom a drug program paid $10,000 or more were taking 15 or more drug classes, while 1 in 5 were taking fewer than 5 drug classes.
  - 3 in 5 high-cost individuals used at least one high-cost drug.

About this report

Prescribed Drug Spending in Canada, 2019 provides an in-depth look at public drug program spending in Canada in 2018. It looks at the types of drugs accounting for the majority of spending, broken down by sex, age and neighbourhood income. It also examines how different drug classes contribute to observed trends in public drug program spending. For more detailed methodological notes and for information on the terms used in this report, see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes*.

Supplementary data tables, including the top drug classes in terms of spending and use, are available on CIHI's website: *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*.

Please note that, throughout the report (including data tables and figures), numbers may not add up to the total due to rounding.

Please send feedback and questions to the NPDUIS team at drugs@cihi.ca.

Introduction

Spending on prescribed drugs is forecast to reach $34.3 billion in 2019, an increase of 2.7% over the previous year.[1] Multiple payers are involved in the financing of prescribed drugs. In the public sector, these payers include provincial, territorial and federal drug subsidy programs and social security funds (such as workers' compensation boards). In the private sector, payers include private insurers and households or individuals paying out of pocket.

In 2019, $14.8 billion (43.1%) of prescribed drug spending is forecast to have been financed by the public sector. This reflects an annual increase of 2.5%, compared with 2.9% growth in private-sector spending. The public share of prescribed drug spending varied among provinces, ranging from 31.7% in New Brunswick and 34.0% in Newfoundland and Labrador to 47.4% in Manitoba and 48.6% in Saskatchewan. In the private sector, prescribed drug spending financed by private insurers was $12.7 billion (36.9%), with the remaining $6.8 billion (19.9%) financed by Canadian households.[1]

Public drug program spending accounted for 43.4% of prescribed drug spending in 2018, as reported in CIHI's *National Health Expenditure Trends, 1975 to 2019*.[1] Public drug program spending does not include spending on drugs dispensed in hospitals or on those funded outside public drug programs (e.g., through cancer agencies).

This report provides an in-depth look at public drug program spending in 2018 using drug claims data submitted to CIHI's NPDUIS by all provinces and Yukon, plus 1 federal program administered by the First Nations and Inuit Health Branch (FNIHB) at Indigenous Services Canada.

Public drug program spending by broad therapeutic category

Spending by broad therapeutic category provides a high-level overview of the types of conditions that account for the majority of drug spending. Broad therapeutic categories are regarded as groups of different chemicals that act on the same organ or system (see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes*).

Public drug programs spent $14.5 billion in 2018, an annual increase of 6.8%, compared with 5.3% in 2017[i] (Table A1). The growth in 2018 was due in large part to the new eligibility stream (OHIP+) introduced in January 2018, which extended the Ontario Drug Benefit Program to cover residents age 24 and younger.[2] Excluding spending on OHIP+ beneficiaries who were not previously covered by an Ontario drug program,[ii] spending in all jurisdictions increased by 3.4% in 2018.

Among 14 broad therapeutic categories, antineoplastic and immunomodulating agents accounted for the highest proportion of public drug program spending (21.2%), even though a large portion of public spending on these drugs comes from cancer agency and hospital budgets and is not included in drug program spending (Table 1). Within the top 5 broad therapeutic categories, the decrease in spending on cardiovascular system drugs (-9.0%) offset some of the growth in spending for other broad therapeutic categories, such as antineoplastic and immunomodulating agents (15.6%).

i. This amount may not reflect the impact of all product listing agreements with drug manufacturers.
ii. 91.9% of OHIP+ beneficiaries were not previously covered by an Ontario drug program (i.e., did not have any accepted claim in Ontario in 2017).

Table 1 Percentage of public drug program spending and rate of use, by broad therapeutic category,* 2018

Broad therapeutic category	TPS ($ millions)	Annual rate of growth (%)	Proportion of TPS (%)	Rate of use (%)
Antineoplastic and immunomodulating agents	3,080.5	15.6	21.2	3.2
Nervous system	2,332.7	1.5	16.1	43.2
Alimentary tract and metabolism	1,839.6	5.8	12.7	35.8
Cardiovascular system	1,477.1	-9.0	10.2	42.8
Antiinfectives for systemic use	1,335.2	9.7	9.2	49.0
Sensory organs	885.8	12.2	6.1	11.2
Respiratory system	876.5	8.1	6.0	22.6
Blood and blood-forming organs	745.3	8.6	5.1	12.3
Musculoskeletal system	381.1	3.9	2.6	21.8
Genitourinary system and sex hormones	344.2	19.5	2.4	16.1
Systemic hormonal preparations	247.9	9.0	1.7	18.1
Dermatologicals	158.6	26.1	1.1	21.8
Various	130.9	15.8	0.9	0.9
Antiparasitic products, insecticides and repellents	23.7	7.6	0.2	3.9
Unassigned†	153.2	8.8	1.1	2.2
Non-drug products‡	487.7	3.7	3.4	20.3
Total	**14,500.0**	**6.8**	**100.0**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† This category includes products without an assigned Anatomical Therapeutic Chemical (ATC) code.

‡ Non-drug products include, but are not limited to, diabetic supplies, wound care, ostomy supplies and pharmaceutical services. (See *Prescribed Drug Spending in Canada, 2019 — Methodology Notes* for more details.)

TPS: Total program spending.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Spending on non-drug products (e.g., diabetic supplies, wound care, pharmaceutical services) totaled $487.7 million and accounted for 3.4% of public drug program spending. Although diabetic supplies accounted for 62.1% of non-drug spending, spending on these products declined by 3.2% in 2017 and by 1.2% in 2018. This decrease is largely due to decreases in spending on blood glucose test strips, which accounted for 83.3% of diabetic supply spending in 2018. Changes in formulary coverage that limit the number of blood glucose test strips that could be claimed per person in a given year may be contributing to the decrease in spending on blood glucose test strips.[3, 4] Pharmaceutical services, such as medication reviews and immunizations provided by pharmacists, were second among categories of non-drug spending. Spending on these services accounted for 18.1% of non-drug spending, increasing by 9.0% in 2018.

The distribution of spending across broad therapeutic categories was similar across jurisdictions, with antineoplastic and immunomodulating agents and nervous system drugs accounting for the 2 highest proportions of spending in 8 of the 12 jurisdictions and appearing in the top 4 broad therapeutic categories in all jurisdictions except FNIHB (Table A2). Many factors can influence the distribution of spending, including the drug program design, the health and demographics of the population covered, formulary coverage and prescribing patterns. For a more comprehensive list of factors, see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes*.

Public drug program spending by drug class

This section looks at drug classes that accounted for the highest proportion of public drug program spending (Table A3 and Table A4), as well as those that were the largest contributors to growth in public drug program spending (Table A5 and Table A6). Spending by drug class provides more detail on the conditions being treated. Drug classes are regarded as groups of different chemicals that act in the same way to treat similar medical conditions. Contribution to growth was calculated as the change in spending for the specific drug class between 2017 and 2018, divided by the change in overall spending (see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes*).

The top 10 drug classes accounted for one-third of drug program spending. For the seventh consecutive year, anti-TNF drugs (used to treat conditions such as rheumatoid arthritis and Crohn's disease) accounted for the highest proportion of spending. They were followed by hepatitis C drugs and antineovascularization agents (used to treat age-related macular degeneration) (Figure 1). Direct factor Xa inhibitors, a class of direct oral anticoagulants used to treat or prevent stroke and venous thromboembolic events, were new to the top 10 in 2018.

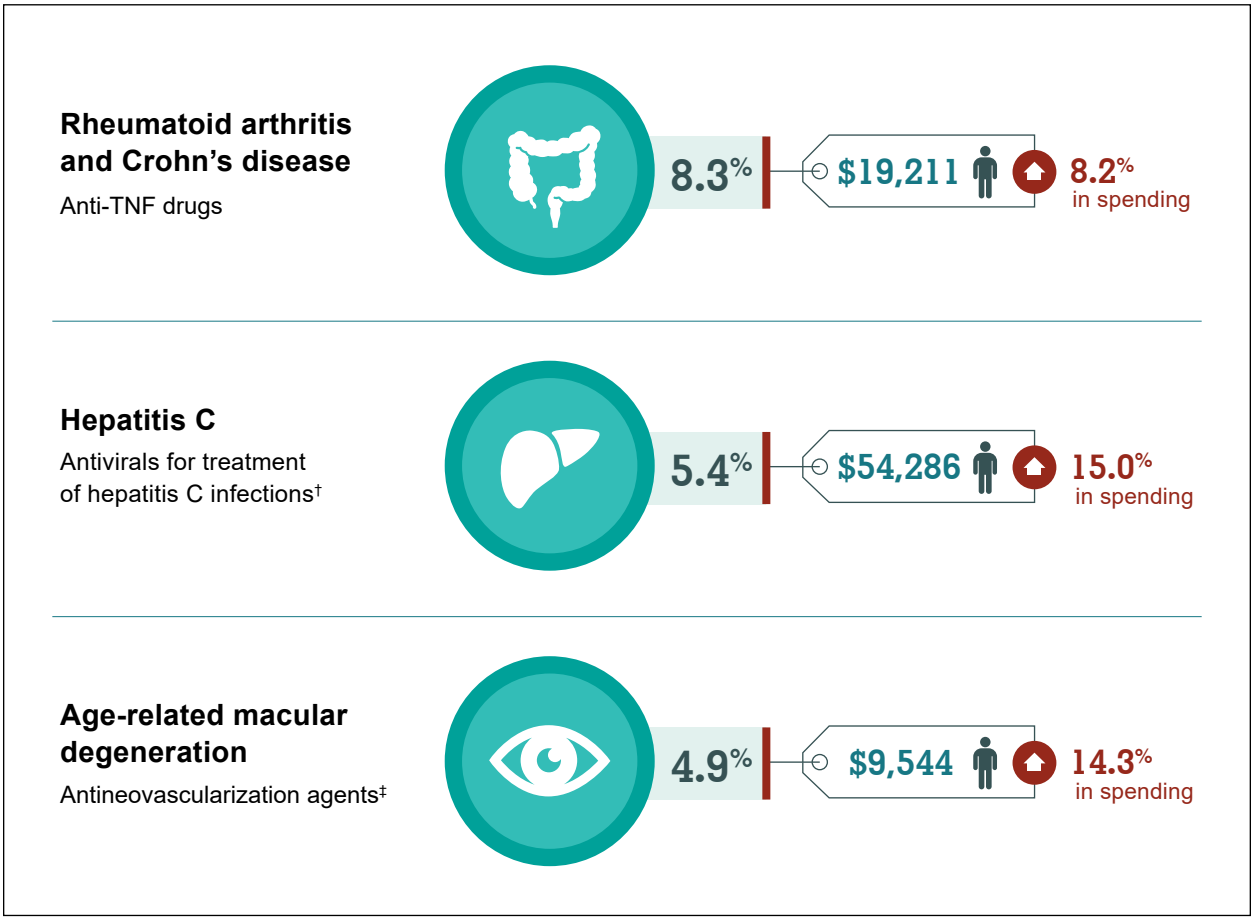
OHIP+

OHIP+, which was introduced in January 2018, is a new eligibility stream that extended the Ontario Drug Benefit Program to cover Ontario residents age 24 and younger. In 2018, almost 2.3 million individuals (43.0% of active beneficiaries in Ontario) made at least one claim under OHIP+, and $638.7 million was spent on this new program, an average of $281 per OHIP+ beneficiary. Spending on OHIP+ accounted for 9.9% of drug program spending in Ontario (and 4.4% among all jurisdictions) and had a significant impact on the growth in public drug program spending in Canada in 2018. Spending across all jurisdictions grew at 6.8% in 2018; however, when excluding spending on OHIP+ beneficiaries who were not previously covered by an Ontario drug program, spending increased by 3.4%.

The top 3 drug classes among OHIP+ users were anti-TNF drugs, centrally acting sympathomimetics (used to treat attention deficit hyperactivity disorder [ADHD]) and other antipsychotics (used to treat schizophrenia and bipolar disorder).

Effective April 1, 2019, the program was redesigned to cover residents age 24 and younger who are not covered by a private plan.

Figure 1 Top 3 drug classes by percentage of public drug program spending,* 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

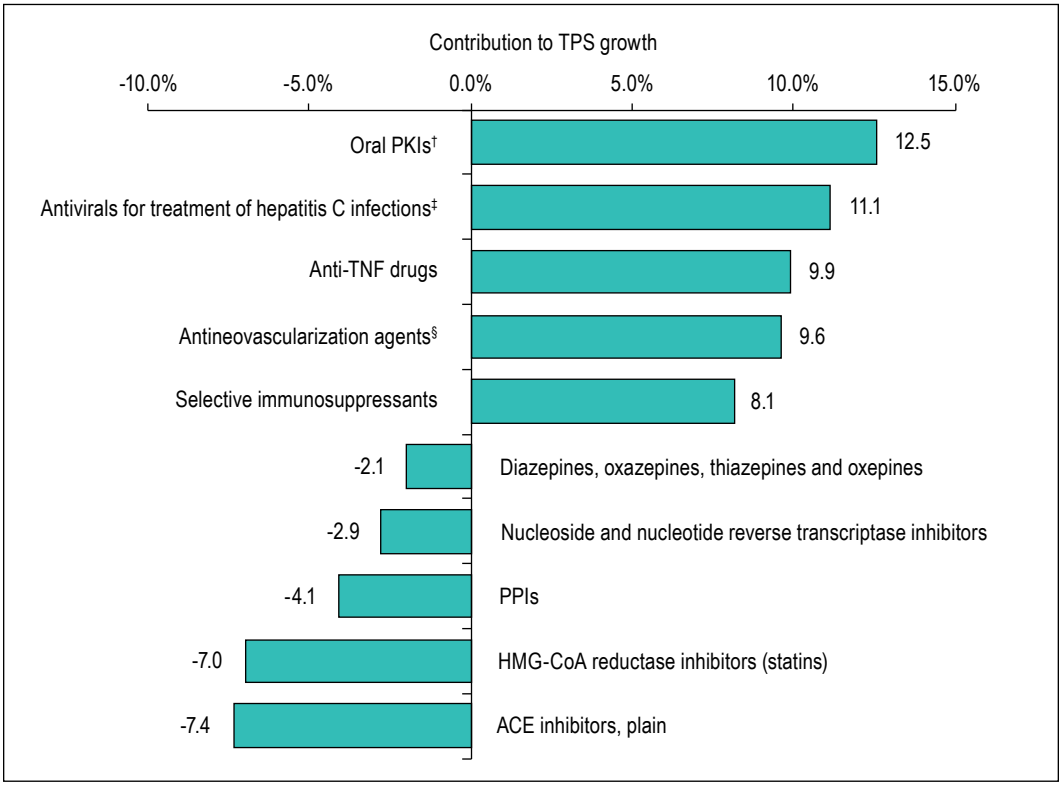
Anti-TNF: Tumour necrosis factor alpha inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Oral protein kinase inhibitors (PKIs), used to treat various types of cancer, were the largest contributor to growth, followed by hepatitis C drugs, which were the highest contributor in 2017 (Figure 2). Centrally acting sympathomimetics, used to treat ADHD, were new to the top 10 contributors to growth, ranking 8th. This is due in large part to the introduction of OHIP+, where this drug class accounted for the second-highest proportion of spending. Combinations of oral blood glucose–lowering drugs (used to treat type 2 diabetes) dropped out of the top 10 contributors to growth, to 11th place.

Figure 2 Top 5 drug classes by largest (positive and negative) contribution to growth in public drug program spending,* 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

‡ Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

§ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

TPS: Total program spending.

PKI: Protein kinase inhibitor.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PPI: Proton pump inhibitor.

ACE: Angiotensin-converting enzyme.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Single-ingredient angiotensin-converting enzyme (ACE) inhibitors, used to treat high blood pressure and heart failure, experienced the largest decrease in spending in 2018, from $255.0 million in 2017 to $187.4 million in 2018 (Figure 2). This was largely due to the introduction of a generic version of perindopril in 2018.

Statins, used to treat high cholesterol, and proton pump inhibitors (PPIs), used to treat gastroesophageal reflux disease, also experienced significant decreases in spending, from $382.8 million and $289.7 million in 2017 to $318.5 million and $252.0 million in 2018, respectively. These decreases were likely due, in part, to price reductions negotiated through the pan-Canadian Pharmaceutical Alliance (pCPA). The negotiated generic prices for 20 of the most commonly prescribed chemicals — including statins, PPIs and ACE inhibitors — were further reduced from 15% to 10% of their brand-name counterparts as of April 1, 2018.[5] Overall, public drug program spending on the 67 pCPA-negotiated chemicals decreased by $243.0 million, representing 1.7% of overall public drug program spending in 2018.

Biologics: 3 of the top 5 drug classes in spending

Overall spending on biologics increased slightly, accounting for 23.3% of total spending in 2018, compared with 22.2% in 2017. 3 of the top 5 classes in spending were biologic drugs: anti-TNF drugs, antineovascularization agents and selective immunosuppressants (used to treat multiple conditions, including various forms of arthritis, and to prevent organ transplant rejection).

Anti-TNF drugs accounted for the largest proportion of public drug program spending, at 8.3%, and were the third-largest contributor to growth in spending (Table A3 and Table A5). Antineovascularization agents accounted for 4.9% of spending and were the fourth-largest contributor to growth in spending. Each of these classes was used by a small proportion of beneficiaries (about 0.5%) but had a high cost per patient (roughly $19,211 and $9,544 per paid beneficiary for anti-TNFs and antineovascularization agents, respectively).

Anti-TNF drugs accounted for the largest share of drug program spending in every province except Ontario and B.C., where they accounted for the second-largest share, after antineovascularization agents in Ontario and hepatitis C drugs in B.C. (see *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*). Lucentis (ranibizumab) and Eylea (aflibercept) accounted for almost all spending on antineovascularization agents in 2018, accounting for 39.5% and 60.5%, respectively. Public spending on ranibizumab and aflibercept in Nova Scotia, Manitoba and B.C., and the majority of this spending in Alberta, is through special programs that are not included in these provinces' NPDUIS data submissions.

Selective immunosuppressants accounted for 2.6% of public drug program spending and were the fifth-largest contributor to growth in spending. Spending on this drug class increased by $74.1 million in 2018. 73.1% of this increase was due to increased spending on 2 drugs: Xeljanz (tofacitinib) and Entyvio (vedolizumab); spending rose from $25.9 million and $9.9 million in 2017 to $45.9 million to $44.1 million in 2018, respectively. Tofacitinib and vedolizumab were first listed in 2016 and 2017, respectively.

Hepatitis C drugs: Second-highest proportion of spending

Hepatitis C drugs, introduced in 2014, accounted for the second-highest proportion (5.4%) of drug program spending and were the second-largest contributor to spending growth, accounting for 11.1% of overall growth in 2018 (Figure 2). This is due, at least in part, to some jurisdictions expanding coverage of these drugs in 2017 to all eligible individuals who were diagnosed with chronic hepatitis C, regardless of the type and severity of their disease.

The mix of chemicals contributing to spending and growth within the class changed significantly in 2017 and 2018. In 2018, spending on 2 chemicals — Zepatier (elbasvir and grazoprevir) and Epclusa (sofosbuvir and velpatasvir), first marketed in 2016 — increased by $203.4 million, accounting for 87.1% of drug program spending on this drug class. In contrast, spending on Sovaldi (sofosbuvir) and Harvoni (ledipasvir and sofosbuvir), which accounted for the majority of spending on the drug class in 2016, continued to decrease in 2017 and 2018. Epclusa is the first product approved to treat all genotypes of the hepatitis C virus.[6] These new drugs were similar in price to their predecessors, with all 4 chemicals costing between $50,840 and $54,857 per person. Given that hepatitis C drugs are typically taken as a defined course of treatment (e.g., 12 weeks) and have demonstrated high cure rates (i.e., over 90% for hepatitis C virus genotypes 1 to 6),[7, 8] it is not surprising that the majority (89.1%) of people with a claim for hepatitis C drugs in 2018 were new users.

Like the 3 biologic drug classes, hepatitis C drugs have a low rate of use (0.1% of beneficiaries). However, these drugs had the highest average cost of any class in the top 10, at $54,286 per paid beneficiary. They appeared in the top 5 in terms of public drug program spending in 2018 in all jurisdictions except Newfoundland and Labrador and Quebec (see *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*).[iii] This is due in part to Newfoundland and Labrador and Quebec having the 2 lowest rates of reported hepatitis C infection in Canada.[9]

iii. Spending on antivirals for treatment of hepatitis C infections in P.E.I. is not included in NPDUIS. P.E.I. spent $1.8 million on its hepatitis C program in 2018; if this spending had been included, antivirals for treatment of hepatitis C infections would have ranked 2nd among drug classes in terms of program spending.

Protein kinase inhibitors: Highest contributor to growth

In 2018, PKIs, used to treat various types of cancer, were the highest contributor to growth (Table A5). This class made up the fourth-largest proportion of public drug program spending (2.9%), contributing 12.5% to the overall growth in spending in 2018. Spending on this drug class almost tripled between 2014 and 2018, from $148.6 million to $421.7 million, and grew by 37.2% in 2018.

Spending on Imbruvica (ibrutinib) increased by $43.8 million, accounting for 28.5% of spending on this drug class in 2018. Imbruvica is used to treat chronic lymphocytic leukemia (CLL), which is one of the most common types of leukemia in adults;[10] in July 2016, it received further approval to broaden the indication to include first-line treatment of CLL.[11, 12] Ofev (nintedanib), used to treat idiopathic pulmonary fibrosis, is the only PKI used for non-cancer treatment and accounted for 7.1% of spending on this drug class. Given that spending on cancer drugs in Saskatchewan, Alberta and B.C. is not funded through public drug programs and is not included in NPDUIS, spending for PKIs in these provinces is underestimated.

Opioids and drugs used in opioid dependence: Public health and safety concern

Opioids are a class of medication used mainly for pain management. While they have important therapeutic benefits, opioids also have abuse potential and can lead to severe harm or even death if not used properly.[13, 14] Canada is one of the world's largest per capita consumers of opioids.[15] The high level of dispensing not only costs health care systems in terms of drug expenditures but is also a public health and safety concern due to the potential harm associated with opioid misuse.[13]

Natural opium alkaloids, such as morphine and codeine, ranked 22nd among the top drug classes in terms of public drug program spending in 2018. Spending on this class decreased from $187.9 million in 2017 to $181.4 million in 2018. In 2018, it accounted for 1.3% of total program spending and 68.4% of program spending on all opioids. This class ranked 12th among non-seniors, with public spending at $101.4 million or 1.6% of total program spending. It should be noted that these figures do not include spending by private insurers or out-of-pocket spending, which are likely higher for non-seniors than for seniors.

Spending on all opioids decreased from $281.1 million in 2017 to $265.2 million in 2018. This is largely due to fewer people starting on opioids, and fewer people taking opioids on a long-term basis.[16] A number of factors may have contributed to this decrease, including the implementation of new treatment guidelines, the delisting of high-strength opioids in several jurisdictions and an increased awareness of Canada's opioid crisis.[16–19]

Drugs used in opioid dependence ranked 5th among the top 10 drug classes for spending on non-seniors. These drugs are most often used to treat dependence on illicit opioids, such as heroin, but can also be used to manage pain.[20, 21] In 2018, $177.6 million (96.7%) of program spending on drugs used in opioid dependence was for non-seniors. The majority (73.5%) of spending in this class is for methadone (sold under the brand names Metadol and Methadose), while spending on Suboxone (buprenorphine in combination with naloxone) increased slightly, from 26.0% in 2017 to 26.4% in 2018. Although there are advantages and disadvantages to both treatments, new clinical guidelines released in 2018 strongly recommend the buprenorphine–naloxone combination (rather than methadone) as the first-line treatment where possible because of a lower risk of side effects, including overdose, and the potential for more flexible dosing options.[22, 23]

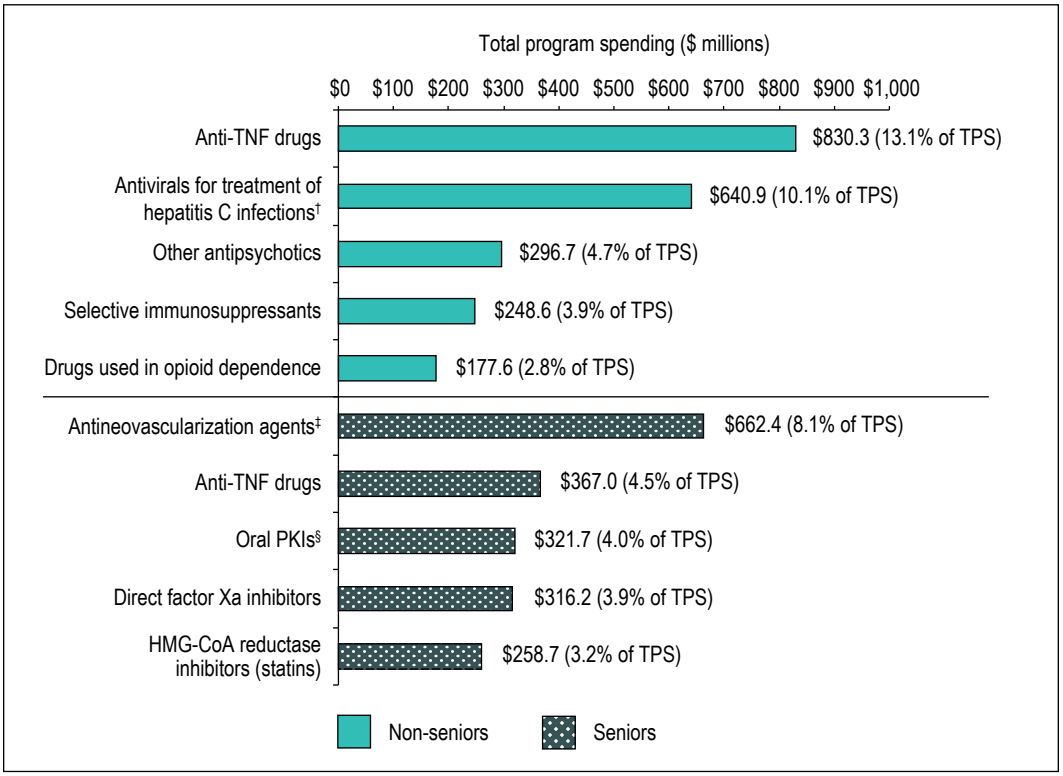
Demographic variation in public drug program spending

Variation by age

Public drug programs, on average, paid more toward drug costs for seniors ($1,608 per paid beneficiary) compared with non-seniors ($1,075 per paid beneficiary). Only 2 drug classes — anti-TNF drugs and other immunosuppressants — appeared in the top 10 drug classes for both seniors (Table A7) and non-seniors (Table A8). Seniors accounted for 56.2% of total program spending but only 39.9% of active beneficiaries (Table B1).

Antineovascularization agents accounted for the highest proportion of public drug program spending for seniors (8.1%) (Figure 3). Seniors accounted for 94.0% of spending on this drug class, which reflects the difference in the prevalence of age-related macular degeneration between the 2 age groups. Statins — the most commonly used drug class among seniors — ranked 5th, accounting for 3.2% of total spending.[24] Combinations of oral blood glucose–lowering drugs (used to treat type 2 diabetes) were new to the top 10 list for seniors in 2018, while ACE inhibitors (used to treat high blood pressure and congestive heart failure) moved off the list, ranking 11th in 2018.

Figure 3 Top 5 drug classes by public drug program spending on seniors and non-seniors,* 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Anti-TNF drugs accounted for the highest proportion of public drug program spending for non-seniors (13.1%), followed by hepatitis C drugs (10.1%) and other antipsychotics (4.7%). By contrast, hepatitis C drugs ranked 14th for seniors, accounting for 1.7% of program spending. Other immunosuppressants, used to treat rheumatoid arthritis and multiple myeloma, and to prevent renal transplant rejection, were new to the top 10 list for non-seniors, while natural opium alkaloids moved off the list, ranking 12th.

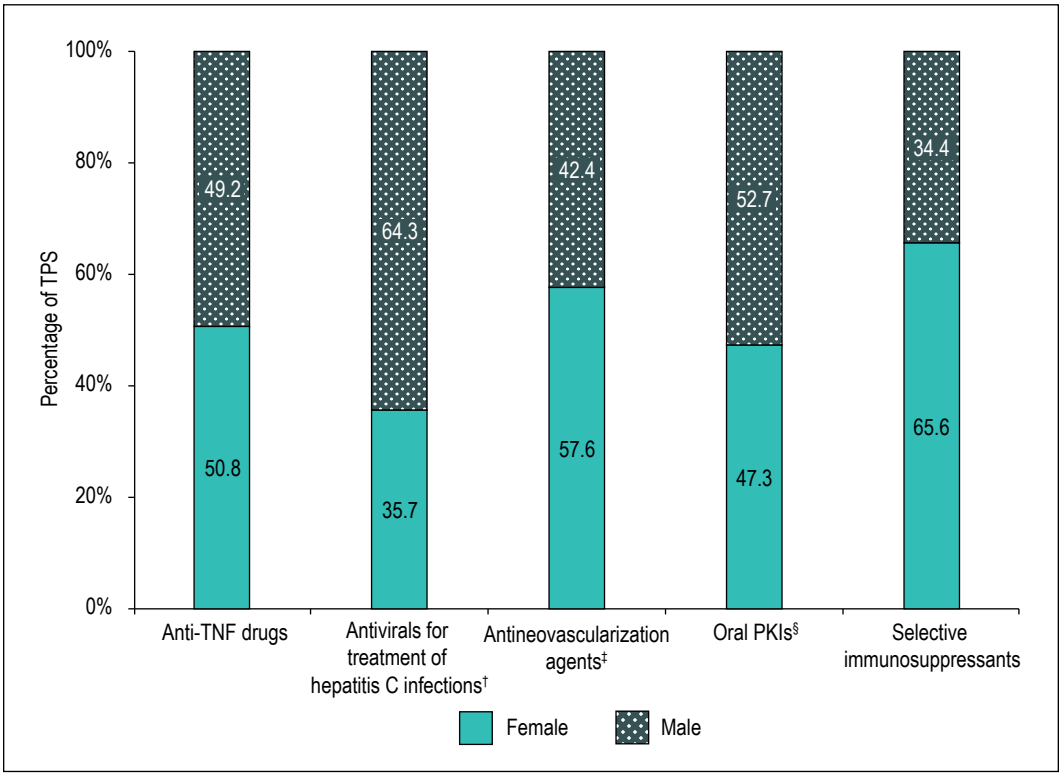
Variation by sex

Females accounted for 50.9% of total program spending and 55.0% of active beneficiaries in 2018 (see *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*). 8 of the top 10 drug classes were the same for both sexes (Table A9 and Table A10).

Anti-TNF drugs accounted for the largest proportion of public drug program spending among both males and females, while antineovascularization agents and hepatitis C drugs were also among the top 3 for both sexes. For selective immunosuppressants, spending and rate of use were higher among females than among males; for hepatitis C drugs and other antipsychotics, spending and rate of use were much higher among males than among females (Table A11). This may be due, in part, to differences in disease prevalence. For example, there is a higher rate of hepatitis C infections in males than in females.[25] Other factors that may account for variations by sex include differences in dosage requirements and duration of usage.[26] Another drug class with notable differences in program spending between men and women was antivirals for HIV infections,[iv] which ranked 9th among men but 36th among women.

iv. Spending on antivirals for treatment of HIV infections in P.E.I., Nova Scotia, Alberta and B.C. is not included in NPDUIS.

Figure 4 Top 5 drug classes by proportion of public drug program spending and sex*



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

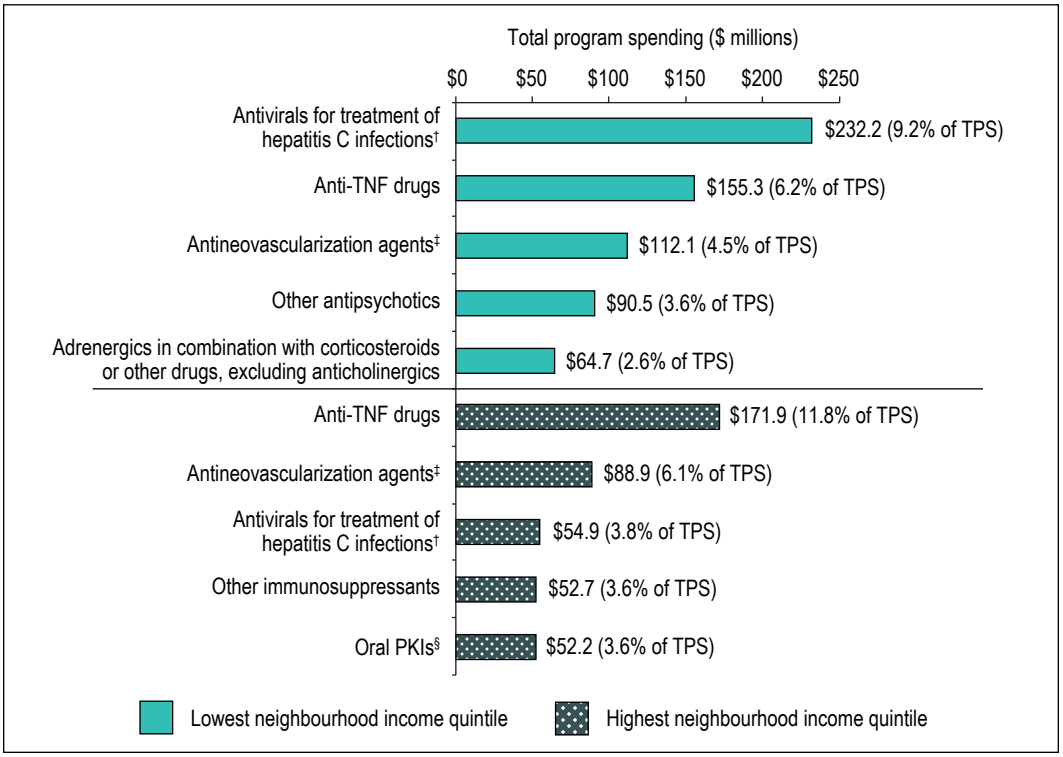
Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Variation by neighbourhood income

Figure 5 looks further into spending among the top 10 drug classes by neighbourhood income quintile in the 8 jurisdictions where the neighbourhood could be identified. In these provinces, 8 of the 10 classes appeared in the top 10 drugs by spending for all income levels, with anti-TNF drugs accounting for the highest program spending for each quintile except the lowest (see *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*).

Figure 5 Top 5 drug classes by public drug program spending, lowest and highest neighbourhood income quintiles, selected jurisdictions,* 2018



Notes

* As of July 2019, there were 8 jurisdictions submitting claims data to NPDUIS where patient postal code could be identified: Newfoundland and Labrador, Prince Edward Island, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and Yukon.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Postal Code Conversion File Plus, Statistics Canada.

The drug classes accounting for the largest proportions of spending varied for individuals living in high- and low-income neighbourhoods (see *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*). Hepatitis C drugs accounted for a much higher proportion of spending among people living in low-income neighbourhoods, while anti-TNFs accounted for a much higher proportion of spending among those in high-income neighbourhoods. Also of note, drugs for opioid dependence and antivirals for treatment of HIV infections were ranked 6th and 8th, respectively, in the lowest income quintile, but were not in the top 10 for the highest income quintile (see *Prescribed Drug Spending in Canada, 2019: A Focus on Public Drug Programs — Top 100 Drug Classes, 2018 Data Tables*). Multiple factors likely contributed to these variations, including a higher prevalence of HIV infections among those in lower income quintiles, and greater uptake of publicly funded treatment service options for opioid misuse among those in lower income quintiles.[27–29]

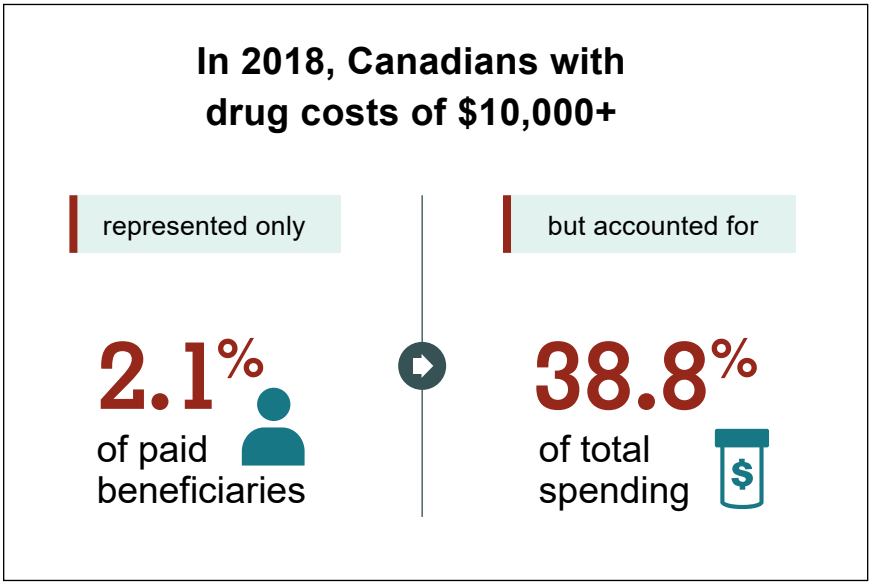
Public drug program spending per paid beneficiary also varied somewhat with income, ranging from $1,521 for those living in the lowest-income neighbourhoods to $1,102 for those living in the highest-income neighbourhoods (Table B2). This is likely due to multiple factors, including public drug program design and differences in health status across income levels.[28]

High-cost, high-volume individuals

High-cost individuals

The majority of public drug spending in 2018 was for a relatively small number of individuals (Figure 6). Public drug programs paid $2,500 or more toward drug costs for 11.5% of beneficiaries, accounting for 70.1% of public drug spending. Conversely, the programs paid less than $500 toward drug costs for more than half (62.7%) of beneficiaries, accounting for only 6.7% of program spending (Table A13).

Figure 6 Percentage of paid beneficiaries and public drug program spending, by program spending per paid beneficiary,* 2018



Note

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

Sources

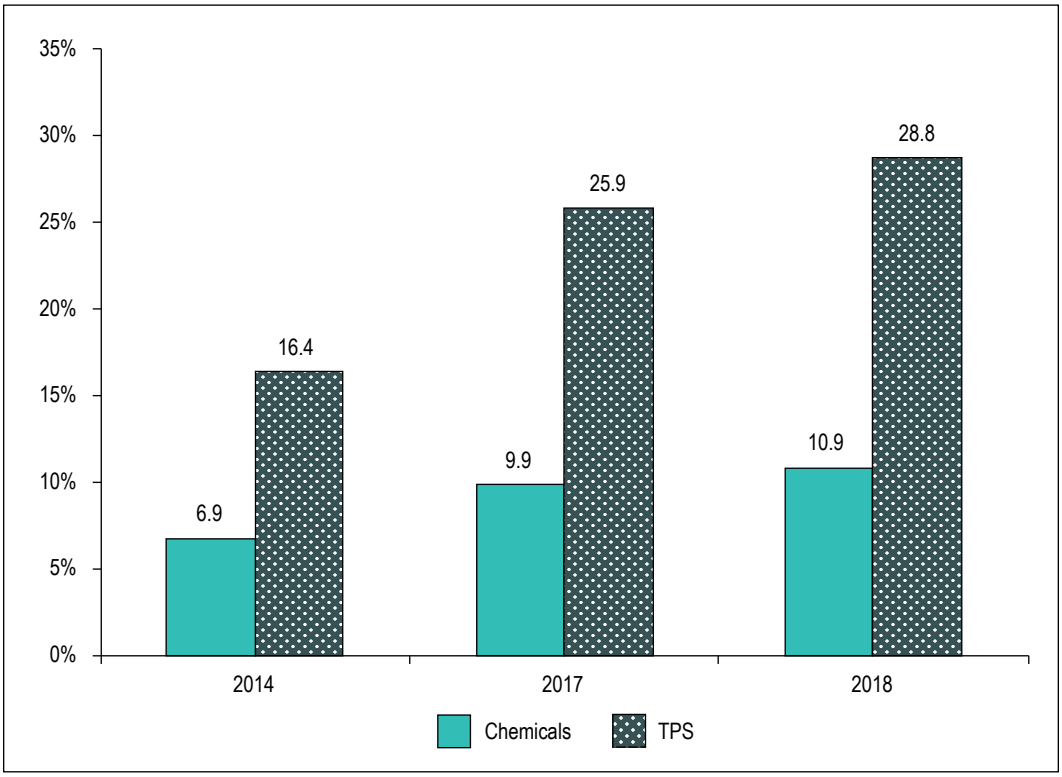
National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

The proportion of drug program spending on beneficiaries for whom the drug program paid $10,000 or more (referred to as high-cost individuals) increased from 36.6% in 2017 to 38.8% in 2018, even though the proportion of beneficiaries they accounted for decreased from 2.3% to 2.1% (Table A13).

The distribution of costs varied across jurisdictions (Table A13). Variation in spending across jurisdictions can be influenced by many factors, such as drug program design, formulary coverage, and the health and demographics of the population covered (Appendix B). It should also be noted that claims for certain high-cost drugs, such as expensive drugs for rare diseases, may be funded through special programs or through a different claim adjudication process, and therefore not be submitted to NPDUIS.

The proportion of spending on high-cost drugs also continued to rise. In 2018, chemicals with an average cost of $10,000 or more per paid beneficiary (referred to as high-cost drugs) accounted for 28.8% of spending, compared with 25.9% in 2017 (Figure 7) and 16.4% in 2014 (Table A14). Anti-TNFs and hepatitis C drugs accounted for 49.5% of this spending. In 2018, 60.7% of high-cost individuals had a claim for at least one high-cost drug, compared with 0.3% of all other beneficiaries.

Figure 7 Proportion of public drug program spending on chemicals that cost on average $10,000 or more per paid beneficiary, and the proportion of total chemicals paid,* 2014, 2017 and 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

TPS: Total program spending.

Drug products without an Anatomical Therapeutic Chemical (ATC) code assigned by Health Canada and products assigned as pseudo–drug identification numbers are excluded.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

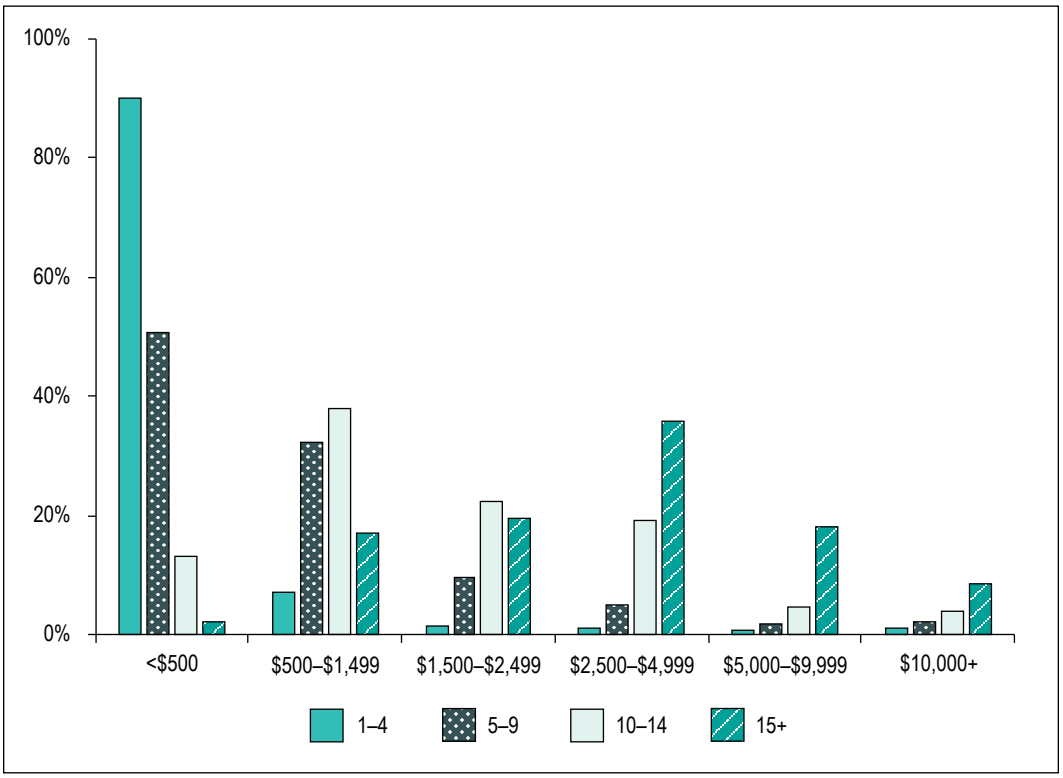
Among high-cost drugs, anti-TNFs and hepatitis C drugs accounted for 5 of the top 6 chemicals; sofosbuvir and velpatasvir, an antiviral for hepatitis C treatment, accounted for the largest proportion (3.8%) of total public drug program spending (Table A15).

High-volume users (polypharmacy)

Not surprisingly, spending was higher among those taking more drugs, with drug programs spending an average of $448 per paid beneficiary taking fewer than 5 drug classes, up to an average of $4,958 for those taking 15 or more drug classes.

Although people prescribed 15 or more drugs are much more likely to be high-cost users than those taking fewer drugs (Figure 8), it is not only those taking a higher number of drug classes that end up with high annual drug costs. 1 in 5 high-cost users were taking fewer than 5 drug classes, while 1 in 4 were taking 15 or more.

Figure 8 Percentage of paid beneficiaries, by number of drug classes and program spending per paid beneficiary,* 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

Drug products without an Anatomical Therapeutic Chemical (ATC) code assigned by Health Canada and products assigned as pseudo–drug identification numbers are excluded.

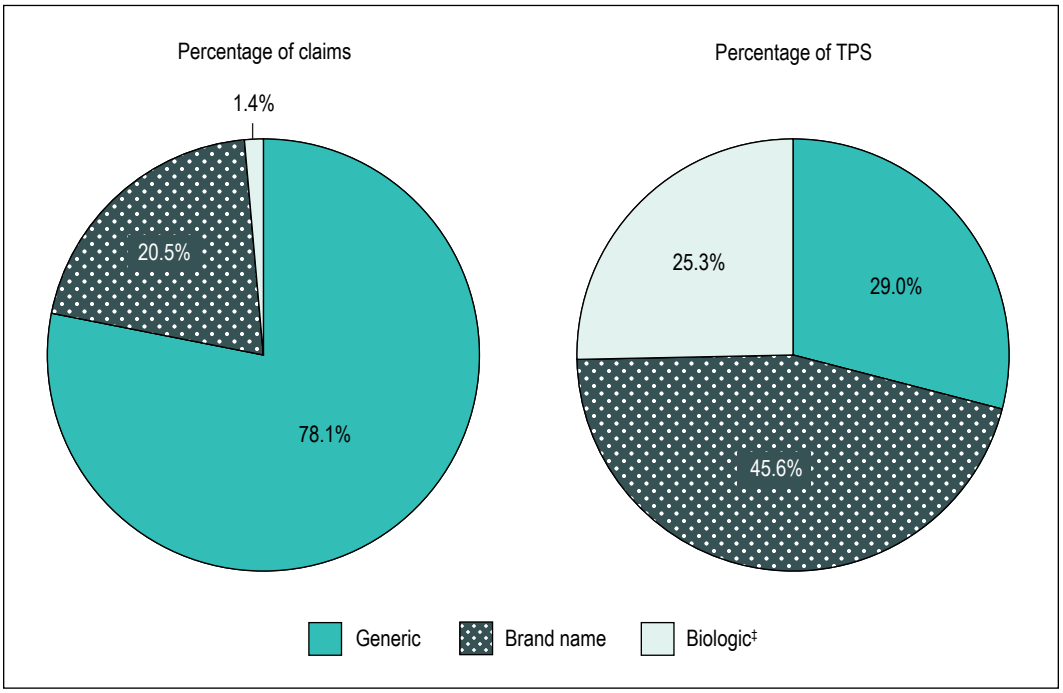
Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Generic drugs and biosimilars

In 2018, generic products accounted for 29.0% of public drug program spending (Figure 9) — down from 32.7% in 2016 and 31.1% in 2017. Although the share of generic spending varies by jurisdiction, spending on generic products decreased as a proportion of drug program spending over the past 5 years in all jurisdictions (Table A16). Generic products' share of utilization during this time period was relatively stable, accounting for 78.1% of accepted claims in 2018, up from 77.2% in both 2016 and 2017.

Figure 9 Percentage share of public drug program spending and of accepted claims, by type of drug,*,† 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Over-the-counter and non-drug products were excluded from this analysis.

‡ Biologic products include reference biologic products and biosimilars.

TPS: Total program spending.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

The share of spending on generic products does not necessarily reflect the extent of use of generic products in place of brand-name products, as generic alternatives are not available in all cases (most often when the brand-name product is still under patent). For cases where generic products were available, generics accounted for 78.6% of spending and 90.3% of claims in 2018.

Biosimilars are a highly similar version of a biologic drug that comes to market after the patent for the reference biologic product has expired.[30] In 2018, biosimilars accounted for 2.6% of spending on biologics, and 2.3% of biologic users took at least one biosimilar.

When biosimilars were available, they accounted for 9.1% of biologic spending (11.9% of biologic users) in 2018, up from 3.5% (3.9% of biologic users) in 2017. Filgrastim (used to treat low white blood cell counts in patients receiving chemotherapy) contributed most to this increase in 2018. Spending on Grastofil, the biosimilar product of filgrastim, accounted for 26.7% of public drug program spending on filgrastim in 2017, and increased to 57.7% in 2018.

In contrast, the uptake of some biosimilars has been minimal. Biosimilars for the anti-TNFs Enbrel (etanercept) and Remicade (infliximab) have been available since 2016 and accounted for only 4.7% of spending on these products in 2018. To date, the uptake of biosimilars has been slower in Canada than in other countries in the Organisation for Economic Co-operation and Development (OECD).[31–33]

Cancer drug spending in hospitals and by public drug programs

There are differences in the way cancer drug programs are funded and administered across jurisdictions. Public drug program spending does not include spending on drugs dispensed in hospitals or on those funded through cancer agencies and other special programs. However, some public drug programs cover cancer medications used in outpatient settings (i.e., outside of the hospital). Claims paid through the public drug programs submitting to NPDUIS are included in this analysis, while claims from the Saskatchewan Cancer Agency, Alberta Outpatient Cancer Drug Program and BC Cancer Agency are not submitted to NPDUIS (see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes* for more details).[v]

v. It should be noted that some of these drugs are used to treat other diseases as well as cancer, and because diagnosis information is not available in NPDUIS it is uncertain whether a given claim was for cancer or another indication. As a result, spending on cancer drugs is likely overestimated using this approach.

Spending on cancer drugs accounted for 8.6% of total public drug program spending in the 7 provinces where data was available in 2018, and grew by 22.8% from the previous year. The majority of this growth was due to a rise in spending on PKIs and other immunosuppressants. These drugs accounted for two-thirds of spending and more than half of growth in cancer drug spending in 2018. In 2017, the most recent year for which hospital spending data was available, $2.3 billion was spent on drugs dispensed in hospitals (excluding Quebec), an increase of 5.2% over the previous year. In provinces that report hospital drug spending by type of drug, one-third (36.9%) of hospital drug spending was on cancer drugs (Table 2).

Table 2 Hospital and public drug program spending on cancer drugs, by province, 2017 and 2018

Province	2017			2018	
	Drug spending in hospitals* ($ millions)	Drugs as a share of total hospital spending (%)	Cancer drug spending† in hospitals ($ millions)	Cancer drug‡ spending by public drug program ($ millions)	Cancer drug spending as a share of total public drug program spending§ (%)
N.L.	51.4	3.8	17.1	13.6	9.3
P.E.I.	9.4	3.2	3.1	3.1	9.3
N.S.	103.7	4.7	37.6	25.5	12.0
N.B.	73.6	4.6	33.3	23.6	9.6
Que.	n/a	n/a	n/a	322.1	8.1
Ont.	1,319.2	5.7	438.9	550.7	8.5
Man.	78.0	2.8	n/a	41.2	11.7
Sask.	54.7	2.8	n/a	n/a	n/a
Alta.	248.3	3.1	96.1	n/a	n/a
B.C.	336.3	4.4	164.8	n/a	n/a
Total	**2,274.6**	**4.7**	**790.9**	**979.9**	**8.6**

Notes

* Includes only drug spending borne by hospitals. Spending on drugs used in hospitals but funded through other agencies, such as provincial cancer agencies, is excluded. As a result, Manitoba and Saskatchewan cancer drug spending data is not available. Quebec cancer drug spending data is not available.

† Drugs classified as antineoplastics according to the MIS Standards in Canadian MIS Database data are considered to be cancer drugs in this analysis.

‡ Drugs identified by their Anatomical Therapeutic Chemical (ATC) code as antineoplastics and immunomodulating agents with an approved indication of cancer (see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes* for more detail).

§ Spending on cancer drugs in Saskatchewan, Alberta and British Columbia is funded through cancer agencies and is not included in NPDUIS.

n/a: Not available.

Sources

Canadian MIS Database and National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Conclusion

This report examined public drug program spending in 2018 in all provinces, Yukon and 1 federal program administered by Indigenous Services Canada. Public drug program spending in these jurisdictions reached $14.5 billion in 2018. Anti-TNF drugs continued to account for the highest proportion of spending (8.3%) in 2018, followed by hepatitis C drugs (5.4%) and antineovascularization agents (4.9%).

Public drug program spending increased by 6.8% in 2018, largely due to the introduction of OHIP+ for Ontario residents age 24 and younger. Excluding OHIP+ beneficiaries who were not previously covered by an Ontario drug program, spending in all jurisdictions increased by 3.4%. PKIs (used to treat various types of cancer) overtook hepatitis C drugs as the highest contributor to growth in 2018.

Significant decreases in spending in several classes partially offset the growth in other classes. Drug classes with significant declines in spending included ACE inhibitors, statins and PPIs. These decreases were due, at least in part, to price reductions negotiated through the pCPA.

The proportion of spending on high-cost individuals continued to rise. The proportion of drug program spending on beneficiaries for whom the drug program paid $10,000 or more toward drugs increased from 36.6% in 2017 to 38.8% in 2018, while the proportion of corresponding beneficiaries decreased from 2.3% to 2.1%. In 2018, 60.7% of high-cost individuals had a claim for at least one high-cost drug, compared with 0.3% of all other beneficiaries.

Although those taking 15 or more drug classes are much more likely to be high-cost users than those taking fewer drugs, it is not only those taking a higher number of drug classes that end up with high annual drug costs. 1 in 5 high-cost users took fewer than 5 drug classes, while 1 in 4 took 15 or more.

In 2018, generic products accounted for 29.0% of public drug program spending, down from 32.7% in 2016 and 31.1% in 2017. Generics accounted for 78.1% of accepted claims overall, and 90.3% of claims in cases where generic products were available. For cases where biosimilars were available, they accounted for 9.1% of biologic spending and were used by 11.9% of biologic users in 2018 — an increase from 3.5% of biologic spending and 3.9% of users in 2017. To date, the uptake of biosimilars has been slower in Canada than in other OECD countries.

In 2017, $2.3 billion was spent on drugs dispensed in hospitals (excluding Quebec), an increase of 5.2% over the previous year. In provinces that report hospital drug spending by type of drug, one-third (36.9%) of hospital drug spending was on cancer drugs. Spending on cancer drugs accounted for 8.6% of total public drug program spending in the 7 provinces where data was available in 2018, and grew by 22.8% from the previous year.

Appendix A: Data tables

Table A1 Annual growth rate of active beneficiaries and public drug program spending, by jurisdiction,* 2015 to 2018

	Annual growth rate (%)							
	Active beneficiaries				Total program spending			
Jurisdiction†	2015	2016	2017	2018	2015	2016	2017	2018
N.L.	-0.3	-0.6	-1.0	-0.2	4.8	3.7	-1.7	1.7
P.E.I.	11.3	13.2	30.3	6.3	-1.9	15.3	6.0	8.1
N.S.	2.0	2.2	2.4	2.0	4.2	3.2	6.2	2.2
N.B.	2.9	1.4	2.1	1.1	13.1	5.7	5.5	3.5
Que.	1.5	2.0	1.4	0.8	3.7	3.9	4.6	2.4
Ont.‡	2.0	2.7	2.8	66.0	8.1	5.0	6.4	11.6
Man.	1.6	1.0	0.6	0.7	9.0	5.4	1.3	0.8
Sask.	2.1	2.8	1.4	3.2	5.1	2.9	7.1	12.4
Alta.	3.0	3.5	3.5	3.7	10.0	0.8	6.8	4.6
B.C.	1.1	1.9	1.1	0.6	15.9	3.1	1.5	6.7
Y.T.	4.3	5.1	5.2	4.5	27.5	-6.4	7.3	2.3
FNIHB§	1.7	2.2	0.4	-9.8	12.4	10.0	7.2	-3.6
Total	**1.7**	**2.2**	**1.8**	**17.4**	**7.6**	**4.4**	**5.3**	**6.8**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Differences in jurisdictional growth rates should be interpreted with caution as they can be influenced by data limitations. For example, spending on hepatitis C drugs is not included in NPDUIS in all jurisdictions.

‡ The increase in public drug program spending and number of active beneficiaries is largely due to OHIP+, which was introduced in January 2018 and extended the Ontario Drug Benefit Program to cover residents age 24 and younger.

§ As of October 2017, claims processed on behalf of the First Nations Health Authority in British Columbia are not included in NPDUIS.

FNIHB: First Nations and Inuit Health Branch.

Sources

National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A2 Percentage of public drug program spending, by broad therapeutic category and jurisdiction,* 2018

Broad therapeutic category	Public drug program spending by jurisdiction (%)											
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	FNIHB
Antineoplastic and immunomodulating agents	22.5	31.3	29.7	26.9	20.6	18.8	40.8	30.6	30.3	24.8	21.9	8.2
Nervous system	19.9	19.1	11.1	20.9	16.4	14.9	16.5	14.5	9.1	23.8	8.2	21.7
Alimentary tract and metabolism	12.2	11.2	12.0	10.9	14.2	13.2	8.7	9.5	12.4	7.0	6.7	14.4
Cardiovascular system	14.2	10.9	15.0	10.3	12.0	9.4	7.2	8.4	12.9	7.8	7.0	7.9
Antiinfectives for systemic use	5.5	2.4	5.0	8.0	6.2	9.1	9.4	11.6	6.2	18.5	15.5	16.9
Sensory organs	2.8	4.2	2.0	5.0	6.3	8.7	0.6	2.3	2.8	0.8	1.7	1.5
Respiratory system	6.6	6.3	7.6	7.2	6.5	6.0	4.6	5.4	7.6	3.9	8.0	5.3
Blood and blood-forming organs	2.5	2.6	4.0	4.6	5.9	5.1	3.3	5.0	6.9	3.8	2.4	3.1
Musculoskeletal system	1.9	1.0	2.0	1.6	2.6	3.1	1.3	1.4	3.3	1.5	1.5	1.9
Genitourinary system and sex hormones	2.1	1.6	1.8	2.0	2.5	2.7	1.2	1.4	2.6	1.0	1.1	2.3
Systemic hormonal preparations, excluding sex hormones and insulins	2.0	1.0	2.4	1.5	2.1	1.6	2.1	0.9	2.2	1.3	1.0	1.0
Dermatologicals	1.3	0.9	1.0	0.7	0.7	1.4	0.6	0.9	0.8	0.6	0.5	1.9
Various	0.2	0.2	0.2	0.2	0.9	1.2	0.2	0.4	0.3	0.4	0.2	1.0
Antiparasitic products, insecticides and repellents	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.6
Unassigned†	0.3	0.0	0.0	0.0	0.1	1.8	1.1	0.9	0.8	0.1	16.2	2.5
Non-drug products	6.0	7.2	5.9	0.3	3.0	2.9	2.3	6.6	1.5	4.4	8.1	9.7

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† This category includes products without an assigned Anatomical Therapeutic Chemical (ATC) code.

FNIHB: First Nations and Inuit Health Branch.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A3 Top 10 drug classes by public drug program spending,* 2018

Drug class	Common uses	TPS ($ millions)	Proportion of TPS (%)	Rate of use (%)	TPS per paid beneficiary ($)
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	1,197.3	8.3	0.4	19,210.5
Antivirals for treatment of hepatitis C infections†	Hepatitis C	779.3	5.4	0.1	54,285.5
Antineovascularization agents‡	Age-related macular degeneration, secondary and diabetic macular edema	704.7	4.9	0.5	9,544.4
Oral PKIs§	Various types of cancer	421.7	2.9	0.1	33,158.9
Selective immunosuppressants	Various forms of arthritis, organ transplant, various other conditions	373.4	2.6	0.4	7,531.1
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	361.4	2.5	0.3	10,682.9
Other antipsychotics	Schizophrenia, bipolar disorder	350.1	2.4	2.0	1,249.4
Direct factor Xa inhibitors	Venous thromboembolism, stroke prevention, deep vein thrombosis prevention	337.5	2.3	3.1	799.9
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	Asthma, emphysema, chronic bronchitis	325.0	2.2	4.1	599.1
HMG-CoA reductase inhibitors (statins)	High cholesterol	318.5	2.2	24.8	104.9
Combined top 10		**5,168.8**	**35.7**	**n/a**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A4 Annual growth rate of public drug program spending for top 10 drug classes (in total program spending),* 2015 to 2018

Top 10 drug classes (in TPS)	Annual growth rate of public drug program spending (%)			
	2015	2016	2017	2018
Anti-TNF drugs	10.2	12.3	6.0	8.2
Antivirals for treatment of hepatitis C infections†	825.8	6.8	16.6	15.0
Antineovascularization agents‡	12.2	-1.6	14.1	14.3
Oral PKIs§	17.0	36.7	29.4	37.2
Selective immunosuppressants	28.2	30.1	27.3	24.8
Other immunosuppressants	51.4	22.0	24.6	21.0
Other antipsychotics	13.4	15.9	9.3	5.9
Direct factor Xa inhibitors	66.3	39.4	28.0	22.9
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	1.7	0.1	-0.1	3.7
HMG-CoA reductase inhibitors (statins)	-3.2	0.4	-2.5	-16.8
All drug classes	**7.6**	**4.4**	**5.3**	**6.8**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta (starting in October 2015), is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A5 Top 10 drug classes by largest contribution to growth in public drug program spending,* 2018

Drug class	Common uses	Increase in TPS ($ millions)	Contribution to TPS growth (%)	Annual rate of growth (%)
Oral PKIs†	Various types of cancer	114.2	12.5	37.2
Antivirals for treatment of hepatitis C infections‡	Hepatitis C	101.7	11.1	15.0
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	90.7	9.9	8.2
Antineovascularization agents§	Age-related macular degeneration, secondary and diabetic macular edema	88.2	9.6	14.3
Selective immunosuppressants	Various forms of arthritis, organ transplant, various other conditions	74.1	8.1	24.8
Direct factor Xa inhibitors	Venous thromboembolism, stroke prevention, deep vein thrombosis prevention	63.0	6.9	22.9
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	62.7	6.8	21.0
Centrally acting sympathomimetics	ADHD	61.0	6.7	54.9
Sodium–glucose co-transporter 2 inhibitors	Type 2 diabetes mellitus	46.7	5.1	43.7
Interleukin inhibitors	Various forms of arthritis, psoriasis	38.2	4.2	31.7
All drug classes		**917.1**	**100**	**6.8**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

‡ Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

§ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

TPS: Total program spending.

PKI: Protein kinase inhibitor.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

ADHD: Attention deficit hyperactivity disorder.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A6 Top 10 drug classes by largest negative contribution to growth in public drug program spending,* 2018

Drug class	Common uses	Change in TPS ($ millions)	Contribution to TPS growth (%)	Annual rate of growth (%)
ACE inhibitors, plain	High blood pressure, heart failure	-67.7	-7.4	-26.5
HMG-CoA reductase inhibitors (statins)	High cholesterol	-64.3	-7.0	-16.8
PPIs	Gastroesophageal reflux disease, peptic ulcer disease	-37.6	-4.1	-13.0
Nucleoside and nucleotide reverse transcriptase inhibitors	HIV	-26.2	-2.9	-61.2
Diazepines, oxazepines, thiazepines and oxepines	Schizophrenia, bipolar disorder	-19.0	-2.1	-8.8
Dihydropyridine derivatives	High blood pressure	-15.5	-1.7	-8.1
ARBs, plain	High blood pressure, heart failure	-15.3	-1.7	-12.0
ACE inhibitors and diuretics	High blood pressure, heart failure	-12.4	-1.4	-20.1
Other antiepileptics	Epilepsy, neuropathic pain	-11.7	-1.3	-5.3
ARBs and diuretics	High blood pressure, heart failure	-10.6	-1.2	-19.1
Combined top 10		**-280.3**	**-30.8**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

TPS: Total program spending.

ACE: Angiotensin-converting enzyme.

PPI: Proton pump inhibitor.

HIV: Human immunodeficiency virus.

ARB: Angiotensin II receptor blocker.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A7 Top 10 drug classes by public drug program spending, on seniors,* 2018

Drug class	Common uses	TPS ($ millions)	Proportion of TPS (%)	Rate of use (%)
Antineovascularization agents†	Age-related macular degeneration, secondary and diabetic macular edema	662.4	8.1	1.2
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	367.0	4.5	0.3
Oral PKIs‡	Various types of cancer	321.7	4.0	0.2
Direct factor Xa inhibitors	Venous thromboembolism, stroke prevention, deep vein thrombosis prevention	316.2	3.9	7.0
HMG-CoA reductase inhibitors (statins)	High cholesterol	258.7	3.2	48.9
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	254.6	3.1	0.3
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	Asthma, emphysema, chronic bronchitis	239.4	2.9	6.8
Dipeptidyl peptidase 4 inhibitors	Type 2 diabetes mellitus	186.2	2.3	3.9
PPIs	Gastroesophageal reflux disease, peptic ulcer disease	180.8	2.2	30.9
Combinations of oral blood glucose–lowering drugs	Type 2 diabetes mellitus	161.8	2.0	3.1
Combined top 10		**2,948.9**	**36.2**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

‡ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PPI: Proton pump inhibitor.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A8 Top 10 drug classes by public drug program spending on non-seniors,* 2018

Drug class	Common uses	TPS ($ millions)	Proportion of TPS (%)	Rate of use (%)
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	830.3	13.1	0.5
Antivirals for treatment of hepatitis C infections†	Hepatitis C	640.9	10.1	0.1
Other antipsychotics	Schizophrenia, bipolar disorder	296.7	4.7	2.3
Selective immunosuppressants	Various forms of arthritis, organ transplant, various other conditions	248.6	3.9	0.3
Drugs used in opioid dependence	Drug addiction	177.6	2.8	1.1
Centrally acting sympathomimetics	ADHD	168.0	2.6	3.7
Antivirals for treatment of HIV infections, combinations‡	HIV	167.6	2.6	0.3
Diazepines, oxazepines, thiazepines and oxepines	Schizophrenia, bipolar disorder	152.1	2.4	4.0
Other antiepileptics	Epilepsy, neuropathic pain	116.0	1.8	4.7
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	106.8	1.7	0.2
Combined top 10		**2,904.5**	**45.7**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on antivirals for treatment of HIV infections in Prince Edward Island, Nova Scotia, Alberta and British Columbia is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

HIV: Human immunodeficiency virus.

ADHD: Attention deficit hyperactivity disorder.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A9 Top 10 drug classes by public drug program spending on females,* 2018

Drug class	Common uses	TPS ($ millions)	Proportion of TPS (%)	Rate of use (%)
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	608.0	8.2	0.4
Antineovascularization agents†	Age-related macular degeneration, secondary and diabetic macular edema	405.7	5.5	0.5
Antivirals for treatment of hepatitis C infections‡	Hepatitis C	277.8	3.8	0.1
Selective immunosuppressants	Various forms of arthritis, organ transplant, various other conditions	245.0	3.3	0.4
Oral PKIs§	Various types of cancer	199.3	2.7	0.1
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	Asthma, emphysema, chronic bronchitis	182.7	2.5	4.3
Direct factor Xa inhibitors	Venous thromboembolism, stroke prevention, deep vein thrombosis prevention	166.9	2.3	2.7
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	161.6	2.2	0.3
HMG-CoA reductase inhibitors (statins)	High cholesterol	157.3	2.1	20.9
PPIs	Gastroesophageal reflux disease, peptic ulcer disease	150.5	2.0	19.2
Combined top 10		**2,554.7**	**34.6**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

‡ Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

PPI: Proton pump inhibitor.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A10 Top 10 drug classes by public drug program spending on males,* 2018

Drug class	Common uses	TPS ($ millions)	Proportion of TPS (%)	Rate of use (%)
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	589.3	8.3	0.4
Antivirals for treatment of hepatitis C infections†	Hepatitis C	500.9	7.0	0.1
Antineovascularization agents‡	Age-related macular degeneration, secondary and diabetic macular edema	298.9	4.2	0.5
Oral PKIs§	Various types of cancer	222.4	3.1	0.1
Other antipsychotics	Schizophrenia, bipolar disorder	210.7	3.0	2.2
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	199.8	2.8	0.3
Direct factor Xa inhibitors	Venous thromboembolism, stroke prevention, deep vein thrombosis prevention	170.6	2.4	3.5
HMG-CoA reductase inhibitors (statins)	High cholesterol	161.1	2.3	29.7
Antivirals for treatment of HIV infections, combinations**	HIV	147.6	2.1	0.3
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	Asthma, emphysema, chronic bronchitis	142.2	2.0	3.9
Combined top 10		**2,643.3**	**37.2**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

** Spending on antivirals for treatment of HIV infections in Prince Edward Island, Nova Scotia, Alberta and British Columbia is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

HIV: Human immunodeficiency virus.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A11 Top 10 drug classes by public drug program spending,* by sex, 2018

Drug class	Common uses	Proportion of TPS (%)		Rate of use (%)	
		Female	Male	Female	Male
Anti-TNF drugs	Rheumatoid arthritis, inflammatory bowel disease, Crohn's disease	8.2	8.3	0.43	0.44
Antivirals for treatment of hepatitis C infections†	Hepatitis C	3.8	7.0	0.06	0.14
Antineovascularization agents‡	Age-related macular degeneration, secondary and diabetic macular edema	5.5	4.2	0.53	0.50
Oral PKIs§	Various types of cancer	2.7	3.1	0.08	0.10
Selective immunosuppressants	Various forms of arthritis, organ transplant, various other conditions	3.3	1.8	0.40	0.31
Other immunosuppressants	Rheumatoid arthritis, renal transplant, multiple myeloma	2.2	2.8	0.29	0.26
Other antipsychotics	Schizophrenia, bipolar disorder	1.9	3.0	1.89	2.24
Direct factor Xa inhibitors	Venous thromboembolism, stroke prevention, deep vein thrombosis prevention	2.3	2.4	2.75	3.45
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	Asthma, emphysema, chronic bronchitis	2.5	2.0	4.27	3.88
HMG-CoA reductase inhibitors (statins)	High cholesterol	2.1	2.3	20.93	29.68

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A12 Top 10 drug classes by public drug program spending, by neighbourhood income quintile, selected jurisdictions,* 2018

Drug class	1: Lowest income	2	3	4	5: Highest income
	Percentage of total program spending				
Anti-TNF drugs	6.2%	8.4%	9.8%	11.0%	11.8%
Antivirals for treatment of hepatitis C infections†	9.2%	6.5%	5.7%	4.9%	3.8%
Antineovascularization agents‡	4.5%	5.3%	5.4%	5.6%	6.1%
Oral PKIs§	1.9%	2.6%	2.9%	3.0%	3.6%
Other immunosuppressants	1.7%	2.5%	3.0%	3.2%	3.6%
Selective immunosuppressants	1.8%	2.5%	2.9%	3.0%	3.2%
Other antipsychotics	3.6%	2.5%	2.2%	1.8%	1.6%
Direct factor Xa inhibitors	2.1%	2.5%	2.6%	2.6%	2.8%
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	2.6%	2.5%	2.4%	2.3%	2.2%
HMG-CoA reductase inhibitors (statins)	2.0%	2.0%	2.0%	1.9%	1.9%

Notes

* As of July 2019, there were 8 jurisdictions submitting claims data to NPDUIS where patient postal code could be identified: Newfoundland and Labrador, Prince Edward Island, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and Yukon.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Postal Code Conversion File Plus, Statistics Canada.

Table A13 Program spending per paid beneficiary, by percentage of paid beneficiaries and of public drug program spending, and by jurisdiction,* 2014 and 2018

Jurisdiction		Program spending per paid beneficiary											
		<$500		$500–$1,499		$1,500–$2,499		$2,500–$4,999		$5,000–$9,999		$10,000+	
		2014	2018	2014	2018	2014	2018	2014	2018	2014	2018	2014	2018
N.L.	PB (%)	46.9	47.8	30.0	30.3	10.6	9.4	8.5	7.8	2.7	3.0	1.3	1.7
	TPS (%)	6.8	6.8	20.8	18.6	15.7	12.6	22.4	18.6	13.6	13.7	20.8	29.8
P.E.I.	PB (%)	66.1	81.1	23.4	11.7	4.9	3.3	3.6	2.2	1.3	0.9	0.8	0.8
	TPS (%)	15.3	14.1	26.5	17.8	12.4	11.2	16.2	13.4	11.1	10.5	18.4	33.0
N.S.	PB (%)	41.5	48.8	34.3	30.1	11.3	9.3	9.2	7.8	2.4	2.1	1.2	1.9
	TPS (%)	7.0	7.5	21.9	17.6	15.9	12.2	22.8	17.9	11.3	9.1	21.1	35.5
N.B.	PB (%)	41.8	45.7	31.9	27.9	11.6	11.1	9.4	8.8	3.3	3.4	2.0	3.2
	TPS (%)	5.3	5.0	18.5	13.2	14.4	11.3	20.8	16.0	14.0	12.3	26.9	42.2
Que.	PB (%)	57.4	59.1	22.3	20.5	7.8	7.4	7.7	7.4	3.1	3.3	1.7	2.2
	TPS (%)	6.5	6.0	15.6	12.9	11.9	10.1	21.1	18.4	16.5	15.9	28.4	36.7
Ont.	PB (%)	44.1	65.4	27.0	16.5	12.0	7.2	10.7	6.6	4.1	2.5	2.2	1.8
	TPS (%)	4.5	7.0	15.0	12.0	14.2	11.3	22.3	18.4	16.5	13.8	27.5	37.4
Man.	PB (%)	47.8	49.2	25.5	24.1	10.1	9.2	9.1	8.4	3.9	4.2	3.6	4.9
	TPS (%)	4.2	3.6	11.6	8.9	9.8	7.4	15.9	12.1	13.3	12.0	45.3	56.1
Sask.	PB (%)	70.8	78.6	16.2	10.6	5.7	4.3	4.6	3.5	1.5	1.4	1.2	1.6
	TPS (%)	8.2	6.6	17.4	11.4	13.3	9.9	18.8	14.2	12.1	11.3	30.3	46.7
Alta.	PB (%)	49.3	53.2	31.0	26.8	9.7	9.9	6.1	6.4	1.9	1.5	2.0	2.2
	TPS (%)	8.1	7.9	21.1	16.9	14.4	13.7	15.9	15.4	10.3	7.3	30.2	38.8
B.C.	PB (%)	58.0	59.7	21.9	19.4	7.8	7.4	7.4	7.1	2.9	3.0	2.0	3.4
	TPS (%)	7.6	5.7	15.1	9.9	11.8	8.2	19.9	14.1	15.4	12.0	30.3	50.0
Y.T.	PB (%)	35.1	36.1	33.5	33.7	13.1	12.7	10.5	9.7	5.0	3.9	2.9	3.8
	TPS (%)	3.8	3.7	15.0	13.7	12.0	10.7	17.3	14.6	16.2	11.8	35.6	45.6
FNIHB	PB (%)	70.9	68.5	16.2	16.0	5.7	5.8	4.9	5.9	1.7	2.4	0.7	1.3
	TPS (%)	12.9	9.2	18.5	13.4	14.5	11.0	21.9	19.4	14.6	15.8	17.6	31.1
Total	PB (%)	**53.1**	**62.7**	**24.2**	**18.5**	**9.3**	**7.3**	**8.3**	**6.7**	**3.2**	**2.7**	**1.8**	**2.1**
	TPS (%)	**6.1**	**6.7**	**15.9**	**12.5**	**13.2**	**10.8**	**21.0**	**17.6**	**15.6**	**13.7**	**28.1**	**38.8**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

PB: Paid beneficiaries.

TPS: Total program spending.

FNIHB: First Nations and Inuit Health Branch.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A14 Proportion of public drug program spending per paid beneficiary per chemical,* 2014, 2017 and 2018

Program spending per paid beneficiary per chemical	2014		2017		2018	
	Proportion of TPS (%)	Proportion of number of chemicals (%)	Proportion of TPS (%)	Proportion of number of chemicals (%)	Proportion of TPS (%)	Proportion of number of chemicals (%)
<$500	50.2	70.1	43.6	67.3	40.9	66.3
$500–$1,499	19.2	12.0	16.5	12.4	16.7	12.1
$1,500–$4,999	5.7	7.3	7.1	7.2	6.3	7.3
$5,000–$9,999	8.4	3.8	6.9	3.2	7.3	3.4
$10,000+	16.4	6.9	25.9	9.9	28.8	10.9

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

TPS: Total program spending.

Drug products without an Anatomical Therapeutic Chemical (ATC) code assigned by Health Canada and products assigned as pseudo–drug identification numbers are excluded.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A15 Top 10 chemicals that cost on average $10,000 or more per paid beneficiary, by public drug program spending,* 2018

Chemical	Common uses	TPS ($ millions)	Proportion of TPS (%)	TPS per paid beneficiary ($)
Sofosbuvir and velpatasvir[†]	Hepatitis C	557.9	3.8	54,856.9
Infliximab	Rheumatoid arthritis, Crohn's disease	527.5	3.6	29,088.3
Adalimumab	Rheumatoid arthritis, Crohn's disease	388.3	2.7	15,504.6
Lenalidomide	Various blood cancers	244.6	1.7	65,162.0
Etanercept	Rheumatoid arthritis, ankylosing spondylitis	186.0	1.3	14,194.4
Elbasvir and grazoprevir[†]	Hepatitis C	120.8	0.8	51,329.3
Ibrutinib[‡]	Chronic lymphocytic leukemia	120.2	0.8	63,663.3
Ustekinumab	Plaque psoriasis, Crohn's disease, psoriatic arthritis	79.3	0.5	17,648.1
Lamivudine, abacavir and dolutegravir[§]	HIV	73.5	0.5	12,141.1

Chemical	Common uses	TPS ($ millions)	Proportion of TPS (%)	TPS per paid beneficiary ($)
Golimumab	Rheumatoid arthritis, psoriatic arthritis, ulcerative colitis, ankylosing spondylitis	72.4	0.5	13,951.2
Combined top 10		**2,370.3**	**16.3**	**n/a**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

§ Spending on antivirals for treatment of HIV infections in Prince Edward Island, Nova Scotia, Alberta and British Columbia is not included in NPDUIS.

TPS: Total program spending.

PKI: Protein kinase inhibitor.

n/a: Not applicable.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Table A16 Generic drugs as a percentage of public drug program spending and of accepted claims, by jurisdiction,* 2014 to 2018

	Percentage of TPS					Percentage of accepted claims				
Jurisdiction	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
N.L.	48.4	49.3	47.2	47.1	44.7	78.2	82.1	83.3	83.8	85.3
P.E.I.	44.8	45.6	43.1	42.6	36.8	77.4	78.7	80.0	80.1	78.5
N.S.	45.3	40.5	40.6	38.5	35.7	74.9	75.8	77.2	77.2	79.1
N.B.	37.6	36.4	37.6	36.7	34.1	74.7	77.7	82.6	82.8	82.4
Que.	35.7	35.7	35.5	34.0	31.6	73.7	75.5	76.5	76.5	77.5
Ont.	30.7	30.3	29.4	27.8	26.7	72.4	75.6	77.3	77.2	77.8
Man.	36.2	32.7	31.1	30.1	28.3	78.6	80.0	80.6	80.4	81.7
Sask.	31.5	29.6	28.5	25.8	23.4	70.1	73.1	75.9	76.2	78.6
Alta.	31.4	29.9	31.8	30.0	27.8	73.5	74.7	76.2	76.5	77.5
B.C.	37.6	32.6	32.6	31.6	28.0	71.5	74.7	77.8	78.4	79.2
Y.T.	36.9	27.9	32.4	31.6	28.1	78.5	79.8	80.7	80.7	80.6
FNIHB	47.6	44.6	43.6	40.6	38.4	75.1	77.3	78.1	77.2	77.1
Total	**34.1**	**33.1**	**32.7**	**31.1**	**29.0**	**73.2**	**75.7**	**77.2**	**77.2**	**78.1**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

TPS: Total program spending.

FNIHB: First Nations and Inuit Health Branch.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Appendix B: Overview of drug program design and formulary

Overview of drug plan design

Although public drug coverage is available in the 12 jurisdictions included in this analysis, the design of public drug programs varies widely across jurisdictions. One major difference is that drug programs in Manitoba and B.C., as well as FNIHB's drug program, offer similar coverage to people of all ages, while the other jurisdictions have a separate plan designed specifically for seniors.

There is less consistency in the coverage of non-seniors across jurisdictions. In Manitoba, Saskatchewan and B.C., drug costs are reimbursed if they exceed a certain percentage of an individual's income. In most other jurisdictions, similar plans are available but generally only to those without private insurance. In all jurisdictions, coverage is available to individuals receiving income assistance. Coverage is also available for selected drugs to treat particular conditions in all provinces, though the drugs and conditions vary.

The differences in coverage of non-seniors across jurisdictions, along with population demographics, greatly impact the age distribution of the active beneficiary population, and in turn how drug program spending is distributed across age groups. In jurisdictions offering similar coverage to both non-seniors and seniors, non-seniors account for the vast majority of active beneficiaries, and the majority, albeit a lower proportion, of total drug program spending (Table B1). In these jurisdictions, the proportion of non-senior beneficiaries ranges from 72.7% in B.C. to 90.6% for FNIHB beneficiaries, where the large proportion is due to both plan design and the relatively lower average age of the population it covers. Non-seniors accounted for a proportion of drug program spending ranging from 64.0% in Manitoba to 82.5% for FNIHB.

Table B1 Public drug program spending on seniors and non-seniors, by jurisdiction,* 2018

Jurisdiction	Non-seniors (<65)		Seniors (65+)	
	Percentage of active beneficiaries (%)	Percentage of TPS (%)	Percentage of active beneficiaries (%)	Percentage of TPS (%)
N.L.	47.6	49.1	52.4	50.9
P.E.I.	51.9	45.7	48.1	54.3
N.S.†	17.4	21.3	82.6	78.7
N.B.	37.1	47.3	62.9	52.7
Que.	52.8	38.3	47.2	61.7
Ont.	55.8	39.1	44.2	60.9
Man.	76.7	64.0	23.3	36.0
Sask.	77.5	62.3	22.5	37.7
Alta.†	17.5	34.5	82.5	65.5
B.C.	72.7	65.6	27.3	34.4
Y.T.	27.2	44.9	72.8	55.1
FNIHB	90.6	82.5	9.4	17.5
Total	**60.1**	**43.8**	**39.9**	**56.2**

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Claims data for community services drug programs in Nova Scotia and Alberta is not submitted to NPDUIS, so beneficiaries younger than 65 are underrepresented in those provinces.

FNIHB: First Nations and Inuit Health Branch.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

In Saskatchewan, the proportion of non-senior beneficiaries (77.5%) is similar to the proportion in Manitoba and B.C.; however, the proportion of total program spending for non-seniors (62.3%) is slightly lower due to differences in cost sharing. In 2018, Ontario extended drug coverage to a younger population and started covering costs of certain medications for people age 24 and younger who have a valid Ontario Health Insurance Plan (OHIP) card. Due to this new program, the proportion of non-senior beneficiaries increased sharply from 28.7% in 2017 to 55.8% in 2018; however, the proportion of total program spending for non-seniors increased only slightly from 35.3% in 2017 to 39.1% in 2018.

Among the remaining provinces, the seniors' proportion of beneficiaries ranged from 47.2% in Quebec to 82.6% in Nova Scotia, and the proportion of program spending for seniors ranged from 50.9% in Newfoundland and Labrador to 78.7% in Nova Scotia. It should be noted that drug claims from drug programs for income assistance recipients in Nova Scotia and Alberta are not submitted to NPDUIS. This results in a lower proportion of non-seniors appearing in the data for these provinces, as these programs provide coverage to non-seniors only.

Another important difference between drug programs is the cost-sharing mechanism employed, such as a deductible or copayment (or a combination of the 2), which will affect the amount that individuals and drug programs pay for each drug claim. For example, even for consistently covered populations like seniors, cost-sharing mechanisms vary. In Nova Scotia and New Brunswick, some seniors must pay premiums to enrol in the program, and then there are copayments for each claim. Newfoundland and Labrador, P.E.I., Ontario and Alberta also have copayments for each claim but do not charge premiums. In Manitoba, deductibles are used whereby seniors pay for their drug costs up to a certain percentage of their income and the drug program pays for their drug costs once the deductible has been reached. In Saskatchewan, some seniors have copayments, while others have deductibles, depending on income level; in B.C., deductibles are used, but there are also copayments for each claim once the deductible has been reached. FNIHB covers all eligible costs for those enrolled in its drug program, regardless of age or income.

Common to all provinces included in the analysis, individuals covered by provincial workers' compensation boards or federal drug programs are not eligible for coverage under provincial drug programs. Federal drug programs include those delivered by

- Correctional Service of Canada;
- FNIHB;[vi] and
- Veterans Affairs Canada.

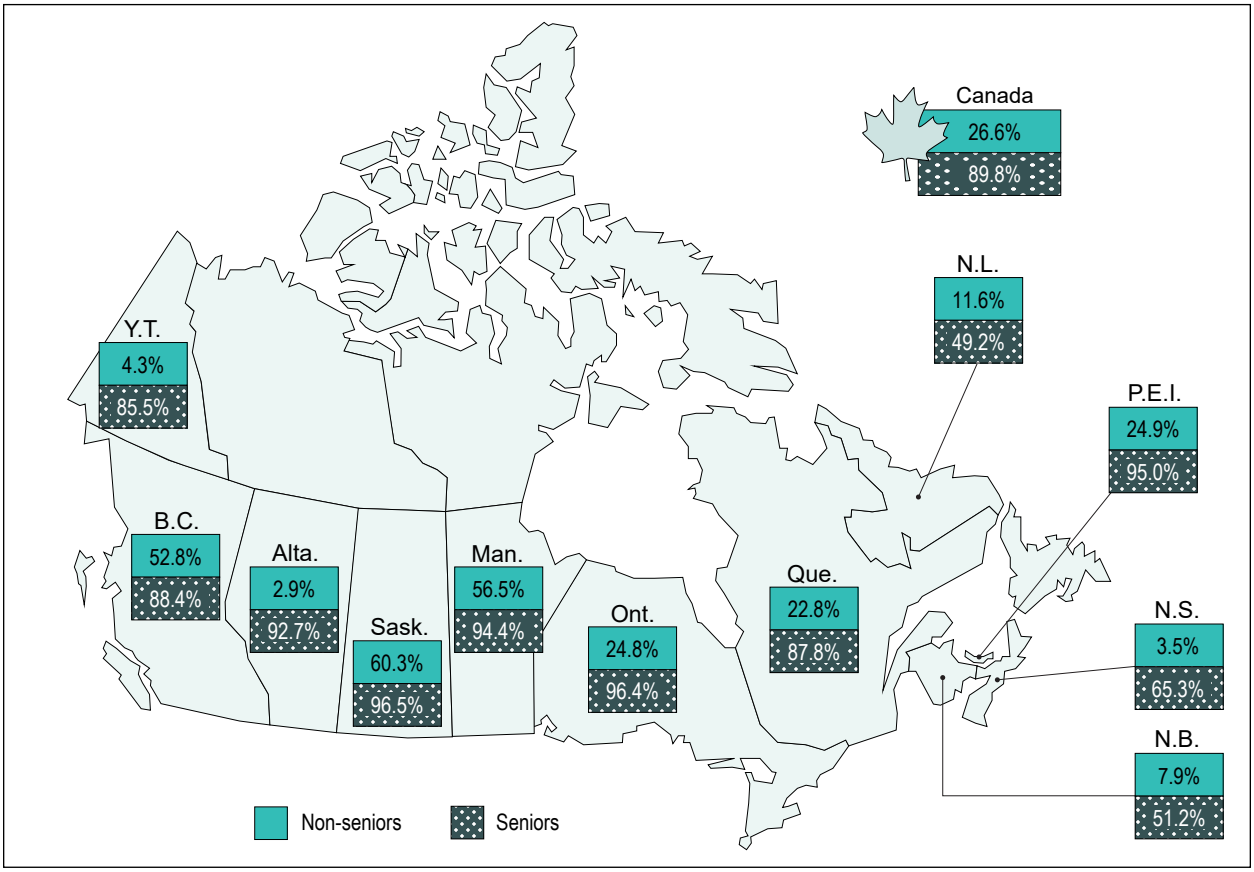
In addition to the overview presented here, further information about public drug programs in Canada can be found in the *NPDUIS Plan Information Document*,[34] available at cihi.ca, or on the websites of the public drug programs (see *Prescribed Drug Spending in Canada, 2019 — Methodology Notes*).

vi. This excludes seniors living in Ontario who also have coverage through FNIHB. These seniors first have their drug claims covered by the Ontario Drug Benefit Program; any remaining drug costs are covered by FNIHB.

Differences in public drug program coverage

Public drug coverage for the senior population is fairly similar across most jurisdictions; however, there is less consistency in coverage for non-seniors. Owing to the more comprehensive public coverage, and the fact that seniors use more drugs than younger age groups, it is not surprising that, in 2018, 89.8% of seniors had at least one claim accepted by a public drug program, either for reimbursement or toward a deductible; the corresponding percentage for non-seniors was 26.6%. The proportion of the population receiving benefits from a public drug program was much smaller, with 78.8% of seniors and 17.6% of non-seniors — about one-quarter (28.1%) of the population overall — receiving benefits in 2018. The proportion of seniors who made at least one claim varied from 96.5% in Saskatchewan to 49.2% in Newfoundland and Labrador (Figure B1). The smaller proportions of seniors in Newfoundland and Labrador, Nova Scotia and New Brunswick are likely due, in part, to the larger role of private insurance among seniors in those provinces. For non-seniors, the proportion of the population with public claims ranged from 60.3% in Saskatchewan to 2.9% in Alberta (Figure B1). It should be noted that the lower proportion of non-seniors in Nova Scotia and Alberta is due, in large part, to the fact that drug claims for programs for income assistance recipients younger than 65 in those provinces are not submitted to NPDUIS.

Figure B1 Active beneficiaries as a percentage of population, seniors and non-seniors, by jurisdiction,* 2018



Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS. The First Nations and Inuit Health Branch is not included in this analysis as the population is unknown.

Drug claims for income assistance recipients younger than 65 in Nova Scotia and Alberta are not submitted to NPDUIS. Therefore, the proportion of the non-senior population with claims is underestimated in those provinces.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec; Statistics Canada population estimates, February 2018.

Individuals living in the lowest-income neighbourhoods were the most likely to have received benefits from a public drug program in 2018, with 30.8% of people having at least one paid claim (i.e., a claim where the cost was at least partially reimbursed), compared with 24.7% of people living in the highest-income neighbourhoods.

Table B2 Public drug program spending, by neighbourhood income quintile,* 2018

Income quintile	Percentage of population with accepted claims (%)	Percentage of population with paid claims (%)	Proportion of TPS (%)	TPS per paid beneficiary ($)
1: Lowest income	40.7	30.8	26.9	$1,521
2	39.7	27.8	21.8	$1,365
3	39.0	26.4	19.0	$1,253
4	37.9	24.9	16.7	$1,166
5: Highest income	38.2	24.7	15.6	$1,102
Urban	39.1	27.0	85.3	$1,290
Rural/remote	40.6	27.3	14.7	$1,304

Notes

* As of July 2019, there were 8 jurisdictions submitting claims data to NPDUIS where patient postal code could be identified: Newfoundland and Labrador, Prince Edward Island, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and Yukon.

TPS: Total program spending.

Drug claims for income assistance recipients younger than 65 in Alberta are not submitted to NPDUIS. Therefore, the proportion of the population with claims may be underestimated, particularly in lower-income neighbourhoods.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Population estimates and Postal Code Conversion File Plus, Statistics Canada; Statistics Canada, Demography Division, customized data.

A similar proportion of individuals living in rural/remote and urban neighbourhoods received benefits from a public drug program (27.3% and 27.0%, respectively). There was also little difference in the amount paid per beneficiary by public drug programs between those in rural/remote neighbourhoods ($1,304) and those in urban neighbourhoods ($1,290).

Formulary overview

Variation in the number and types of drugs covered by jurisdictional formularies is one of many factors that can lead to differences in drug utilization and expenditure. Other factors include the health, age and sex of the population, prescribing trends and the availability of non-drug therapies.

In 2018, drug classes common in all 12 public drug programs made up 89.9% of drug claims and 74.2% of drug program spending on seniors. For drug classes covered in at least 11 jurisdictions, the rates increased to 94.2% of drug claims and 84.1% of total program payments on seniors.[vii] Because such a large portion of program expenditures relates to drug classes that are listed in most jurisdictions, differences in formulary coverage are not expected to play a large role in any jurisdictional differences in overall utilization and expenditure. However, differences in formulary coverage may have a significant impact on the utilization of specific drugs or drug classes across jurisdictions. Given this potential impact, it is important to consider differences in formulary listings when comparing jurisdictional drug utilization or expenditure for specific drugs or drug classes.

vii. Drug products without an Anatomical Therapeutic Chemical (ATC) code assigned by Health Canada and products assigned as pseudo–drug identification numbers are excluded.

Appendix C: Text alternative for images

Figure 1: Top 3 drug classes by percentage of public drug program spending,* 2018

Rank	Drug class	Common uses	Proportion of TPS	Growth in 2018	TPS per person
1	**Anti-TNF drugs**	Rheumatoid arthritis, Crohn's disease	8.3%	8.2%	$19,211
2	**Antivirals for treatment of hepatitis C infections†**	Hepatitis C	5.4%	15.0%	$54,286
3	**Antineovascularization agents‡**	Age-related macular degeneration	4.9%	14.3%	$9,544

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure 2: Top 5 drug classes by largest (positive and negative) contribution to growth in public drug program spending,* 2018

Drug class	Contribution to TPS growth
Oral PKIs†	12.5%
Antivirals for treatment of hepatitis C infections‡	11.1%
Anti-TNF drugs	9.9%
Antineovascularization agents§	9.6%
Selective immunosuppressants	8.1%
Diazepines, oxazepines, thiazepines and oxepines	-2.1%
Nucleoside and nucleotide reverse transcriptase inhibitors	-2.9%
PPIs	-4.1%
HMG-CoA reductase inhibitors (statins)	-7.0%
ACE inhibitors, plain	-7.4%

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

‡ Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

§ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

TPS: Total program spending.

PKI: Protein kinase inhibitor.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PPI: Proton pump inhibitor.

ACE: Angiotensin-converting enzyme.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure 3: Top 5 drug classes by public drug program spending on seniors and non-seniors,* 2018

Top 5 drug classes for non-seniors	TPS ($ millions)	Proportion of TPS (%)
Anti-TNF drugs	830.3	13.1
Antivirals for treatment of hepatitis C infections†	640.9	10.1
Other antipsychotics	296.7	4.7
Selective immunosuppressants	248.6	3.9
Drugs used in opioid dependence	177.6	2.8

Top 5 drug classes for seniors	TPS ($ millions)	Proportion of TPS (%)
Antineovascularization agents‡	662.4	8.1
Anti-TNF drugs	367.0	4.5
Oral PKIs§	321.7	4.0
Direct factor Xa inhibitors	316.2	3.9
HMG-CoA reductase inhibitors (statins)	258.7	3.2

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure 4: Top 5 drug classes by proportion of public drug program spending and sex*

Proportion of . . .	Anti-TNF drugs	Antivirals for treatment of hepatitis C infections†	Antineovascularization agents‡	Oral PKIs§	Selective immunosuppressants
Males	49.2%	64.3%	42.4%	52.7%	34.4%
Females	50.8%	35.7%	57.6%	47.3%	65.6%

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure 5: Top 5 drug classes by public drug program spending, lowest and highest neighbourhood income quintiles, selected jurisdictions,* 2018

Top 5 drug classes for the lowest neighbourhood income quintile	TPS ($ millions)	Proportion of TPS (%)
Antivirals for treatment of hepatitis C infections†	232.2	9.2
Anti-TNF drugs	155.3	6.2
Antineovascularization agents‡	112.1	4.5
Other antipsychotics	90.5	3.6
Adrenergics in combination with corticosteroids or other drugs, excluding anticholinergics	64.7	2.6

Top 5 drug classes for the highest neighbourhood income quintile	TPS ($ millions)	Proportion of TPS (%)
Anti-TNF drugs	171.9	11.8
Antineovascularization agents‡	88.9	6.1
Antivirals for treatment of hepatitis C infections†	54.9	3.8
Other immunosuppressants	52.7	3.6
Oral PKIs§	52.2	3.6

Notes

* As of July 2019, there were 8 jurisdictions submitting claims data to NPDUIS where patient postal code could be identified: Newfoundland and Labrador, Prince Edward Island, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and Yukon.

† Spending on antivirals for treatment of hepatitis C infections in Prince Edward Island is not included in NPDUIS.

‡ Spending on ranibizumab and aflibercept (which accounted for 99.9% of spending on antineovascularization agents) in Nova Scotia, Manitoba and British Columbia, and the majority of this spending in Alberta, is funded through special programs and is not included in NPDUIS.

§ The majority of spending on PKIs in Saskatchewan, Alberta and British Columbia is not funded through public drug programs and is not included in NPDUIS.

TPS: Total program spending.

Anti-TNF: Tumour necrosis factor alpha inhibitor.

PKI: Protein kinase inhibitor.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Postal Code Conversion File Plus, Statistics Canada.

Figure 7: Proportion of public drug program spending on chemicals that cost on average $10,000 or more per paid beneficiary, and the proportion of total chemicals paid,* 2014, 2017 and 2018

Proportion of . . .	2014	2017	2018
Total program spending on chemicals that cost on average $10,000 or more per paid beneficiary	16.4%	25.9%	28.8%
Chemicals paid that cost on average $10,000 or more per paid beneficiary	6.9%	9.9%	10.9%

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

Drug products without an Anatomical Therapeutic Chemical (ATC) code assigned by Health Canada and products assigned as pseudo–drug identification numbers are excluded.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure 8: Percentage of paid beneficiaries, by number of drug classes and program spending per paid beneficiary,* 2018

Program spending per paid beneficiary	Percentage of paid beneficiaries with 1 to 4 drug classes	Percentage of paid beneficiaries with 5 to 9 drug classes	Percentage of paid beneficiaries with 10 to 14 drug classes	Percentage of paid beneficiaries with 15 or more drug classes
<$500	89.9%	50.5%	13.0%	2.0%
$500–$1,499	6.9%	32.0%	37.7%	16.9%
$1,500–$2,499	1.2%	9.3%	22.0%	19.4%
$2,500–$4,999	0.8%	4.7%	19.0%	35.5%
$5,000–$9,999	0.5%	1.5%	4.6%	18.0%
$10,000+	0.8%	2.0%	3.8%	8.2%

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

Drug products without an Anatomical Therapeutic Chemical (ATC) code assigned by Health Canada and products assigned as pseudo–drug identification numbers are excluded.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure 9: Percentage share of public drug program spending and of accepted claims, by type of drug,*,† 2018

Type of drug	Percentage of total program spending
Generic	29.0%
Brand name	45.6%
Biologic‡	25.3%

Type of drug	Percentage of claims
Generic	78.1%
Brand name	20.5%
Biologic‡	1.4%

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS.

† Over-the-counter and non-drug products were excluded from this analysis.

‡ Biologic products include reference biologic products and biosimilars.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

Figure B1: Active beneficiaries as a percentage of population, seniors and non-seniors, by jurisdiction,* 2018

Jurisdiction	Proportion of non-senior active beneficiaries as a percentage of population	Proportion of senior active beneficiaries as a percentage of population
N.L.	11.6	49.2
P.E.I.	24.9	95.0
N.S.	3.5	65.3
N.B.	7.9	51.2
Que.	22.8	87.8
Ont.	24.8	96.4
Man.	56.5	94.4
Sask.	60.3	96.5
Alta.	2.9	92.7
B.C.	52.8	88.4
Y.T.	4.3	85.5
Can.	26.6	89.8

Notes

* Currently, the Northwest Territories and Nunavut do not submit data to NPDUIS. The First Nations and Inuit Health Branch is not included in this analysis as the population is unknown.

Drug claims for income assistance recipients younger than 65 in Nova Scotia and Alberta are not submitted to NPDUIS. Therefore, the proportion of the non-senior population with claims is underestimated in those provinces.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec; Statistics Canada population estimates, February 2018.

References

1. Canadian Institute for Health Information. *National Health Expenditure Trends, 1975 to 2019*. 2019.
2. Patented Medicine Prices Review Board. *CompassRx, 5th Edition: Annual Public Drug Plan Expenditure Report, 2017/18*. 2019.
3. ICES. Limiting reimbursement for blood glucose test strips does not harm patients and reduces costs. Accessed August 29, 2019.
4. Ontario Drug Policy Research Network. *Blood Glucose Test Strip Quantity Limits Across Canada*. 2017.
5. The Council of the Federation Secretariat. The pan-Canadian Pharmaceutical Alliance. Accessed August 28, 2019.
6. Pacific Hepatitis C Network. Hepatitis C Treatment Information Project: Comparing hep C treatments. Accessed August 28, 2019.
7. World Health Organization. Hepatitis C key facts. Accessed August 27, 2019.
8. Wang LS, D'Souza LS, Jacobson IM. Hepatitis C — A clinical review. *Journal of Medical Virology*. 2016.
9. Public Health Agency of Canada. *Hepatitis C in Canada: Infographic*. 2018.
10. Canadian Cancer Society. What is chronic lymphocytic leukemia?. Accessed August 28, 2019.
11. Janssen Canada. Health Canada approves IMBRUVICA® (ibrutinib) for first-line treatment of chronic lymphocytic leukemia. Accessed August 28, 2019.
12. Health Canada. Regulatory decision summary — Imbruvica — Health Canada. Accessed September 6, 2019.
13. National Advisory Council on Prescription Drug Misuse. *First Do No Harm: Responding to Canada's Prescription Drug Crisis*. 2013.
14. Brands B, Paglia-Boak A, Sproule BA, Leslie K, Adlaf EM. Nonmedical use of opioid analgesics among Ontario students. *Canadian Family Physician*. 2010.
15. International Narcotics Control Board. *Narcotic Drugs 2018: Estimated World Requirements for 2019 — Statistics for 2017*. 2019.

16. Canadian Institute for Health Information. *Opioid Prescribing in Canada: How Are Practices Changing?*. 2019.

17. Busse JW, ed.; National Pain Centre at McMaster University. *The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain*. 2017.

18. Guan Q, Khuu W, Martins D, Tadrous M, Chiu M, Do MT, Gomes T. Evaluating the early impacts of delisting high-strength opioids on patterns of prescribing in Ontario. *Health Promotion and Chronic Disease Prevention in Canada: Research, Policy and Practice*. June 2018.

19. Ontario Ministry of Health and Long-Term Care. Ontario taking action to prevent opioid abuse: Province enhancing reporting system, connecting patients with high-quality treatment [news release]. October 12, 2016.

20. McMaster University. Canadian guideline for safe and effective use of opioids for chronic non-cancer pain. Accessed September 12, 2018.

21. Centre for Addiction and Mental Health. Methadone. Accessed September 12, 2018.

22. Bruneau J, et al. Management of opioid use disorders: A national clinical practice guideline. *CMAJ*. March 2018.

23. Marteau D, McDonald R, Patel K. The relative risk of fatal poisoning by methadone or buprenorphine within the wider population of England and Wales. *BMJ Open*. 2015.

24. Canadian Institute for Health Information. *Drug Use Among Seniors in Canada, 2016*. 2018.

25. Public Health Agency of Canada. *Report on Hepatitis B and C in Canada: 2017*. 2019.

26. Whitley HP, Lindsey W. Sex-based differences in drug activity. *American Family Physician*. 2009.

27. Ontario HIV Treatment Network. *Out-of-Pocket Costs Associated With HIV in Publicly Funded High-Income Health Care Settings*. 2019.

28. Kendall CE, et al. A cross-sectional, population-based study measuring comorbidity among people living with HIV in Ontario. *BMC Public Health*. 2014.

29. Burchell AN, Raboud J, Donelle J, Loutfy MR, Rourke SB, Rogers T, Rosenes R, Liddy C, Kendall CE. Cause-specific mortality among HIV-infected people in Ontario, 1995–2014: A population-based retrospective cohort study. *CMAJ Open*. 2019.

30. Health Canada. *Biosimilar Biologic Drugs in Canada: Fact Sheet*. 2019.

31. Patented Medicines Prices Review Board. *Biosimilars in Canada: Current Environment and Future Opportunity*. 2019.

32. Canadian Agency for Drugs and Technologies in Health. *Environmental Scan: Biosimilars — Regulatory, Health Technology Assessment, Reimbursement Trends, and Market Outlook*. 2018.

33. Patented Medicine Prices Review Board. *Potential Savings From Biosimilars in Canada*. 2017.

34. Canadian Institute for Health Information. *National Prescription Drug Utilization Information System — Plan Information Document, July 31, 2019*. 2019.

media@cihi.ca

CIHI Ottawa
495 Richmond Road
Suite 600
Ottawa, Ont.
K2A 4H6
613-241-7860

CIHI Toronto
4110 Yonge Street
Suite 300
Toronto, Ont.
M2P 2B7
416-481-2002

CIHI Victoria
880 Douglas Street
Suite 600
Victoria, B.C.
V8W 2B7
250-220-4100

CIHI Montréal
1010 Sherbrooke Street West
Suite 602
Montréal, Que.
H3A 2R7
514-842-2226

cihi.ca

21016-1019