

2024 GreenShield Drug Trends Report





Contents

1. Introduction

- Foreword3
- Key takeaways.....4
- Terminology.....5

2. Drug utilization trends

- Overall trends.....8
- Cost concentration10
- Generic utilization.....13
- Generic penetration14
- Top 10 therapeutic classes15
- Top 10 drug products.....17

3. Specialty drugs

- Overall trends.....20
- Cost and utilization20
- Specialty biologics versus specialty non-biologics.....24
- Focus on biosimilars25
- Global biosimilars penetration.....28

4. Non-specialty drugs

- Overall trends.....30
- Claimant cost intervals30

5. Emerging drug trends

- Overall trends.....34
- Diabetes.....34
- Obesity and weight loss medications36
- Managed formularies37
- Prior authorization38
- Pharmacists' prescribing39
- Looking forward.....41
- Building a healthier, more equitable future together42
- About GreenShield43





01

Welcome to our 2024 GreenShield Drug Trends Report

I'm proud to share our 2024 GreenShield Drug Trends Report. This report underscores our commitment to closely monitoring emerging trends in the drug landscape and proactively innovating and adapting our offerings to respond to plan members' healthcare needs.

Improving health outcomes for Canadians has always been at the centre of everything we do. Founded in 1957 by William Wilkinson, a pharmacist from Windsor, Ontario, GreenShield aimed to address the social challenge of providing affordable access to medications, leading to the creation of North America's first prepaid drug plan. From its outset, GreenShield was structured as a non-profit organization, reinvesting its excess earnings to support better health for all Canadians.

Today, this commitment to innovation and positive social impact continues to drive our purpose, and our commitment to advancing health equity touches everything we do. We've evolved to become Canada's first integrated health and benefits organization. As a 'payer,' we offer insurance, administer benefits, and pay claims. As a 'provider,' we deliver various healthcare services such as mental health, pharmacy, telemedicine, and chronic disease management. Integrating both sides of the payer-provider equation simplifies access to care, removes administrative barriers, and, most importantly – improves health outcomes.

This report is based on GreenShield's adjudication* of 34 million claims in 2023. Insights include updates on health trends related to diabetes, weight management, mental health, and, most notably, the impact of new chronic disease therapies on plan sponsor costs.

Key trends observed:

- **Diabetes:** Medication costs and claimants experienced double-digit growth due to the high adoption of expensive prescriptions to both treat and prevent complications.
- **Weight management:** Costs for non-specialty drugs in the \$1,000 to \$1,999 range are increasing the fastest, partly due to obesity drugs, which have seen a 45 per cent rise in costs and a 48 per cent increase in claimants since 2022.
- **Biosimilars:** Biosimilars continue to relieve expenditures. In 2023, the spending on these exceeded that of their originator counterparts for the first time.
- **Mental Health:** As the aftermath of the COVID-19 pandemic continued into 2023, its impact was evident on the rates of anxiety and depression. The number of claimants using anxiety/depression medications has grown over time and continued to exhibit a mid-single digit annual growth in 2023. This upward trend will likely continue in the future due

to the increase in mental health awareness and the de-stigmatizing of mental illnesses which may encourage more patients to seek treatment.

Increasing access to care

While managing chronic disease requires a comprehensive approach including preventative health interventions, medications remain the cornerstone of treatment for many. Today, over one million Canadians do not have prescription drug coverage.

We believe the inability to afford essential medicines should never be a barrier to good health. We envision a future where all Canadians can reach their fullest health and well-being potential regardless of background or circumstance. Where health care should be a right, not a privilege. As such, last year, we introduced the GreenShield Cares' Essential Medicines program to provide prescription medications free of charge to eligible Ontarians without public or private drug coverage. This year, we are proud to announce the expansion of this program to Nova Scotia, with other provinces to follow.

Shaping the future together

Our goal, as always, is to provide you with meaningful insights that you can use to serve your clients and plan members.

Thank you for your continued trust in us as your source for navigating pharmacy benefits management. Together, we look forward to shaping the future of health care with informed decisions to ensure Better Health for All.

Mark Rolnick,
Executive Vice President, Head of GreenShield Administration

*Includes GreenShield Administration partners



01

Key Takeaways

Our latest drug trends report reveals shifts in healthcare costs and utilization, driven by the rise of innovative therapies for chronic conditions.



Total drug costs show double-digit growth, year-over-year. Largely driven by claimant growth, the cost per claimant in 2023 was \$971, a 1.9 per cent increase from 2022. This trend is expected to continue in the coming years with the launch of new, innovative drug therapies and is one reason to consider plan management strategies.



GLP-1 agonists are driving much of the cost growth, with a 50 per cent increase in total costs for this drug category from 2022 to 2023. This growth is attributed to a combination of factors, including an increase in physicians prescribing them for weight and diabetes management, and higher consumer demand.



ADHD drug costs and the number of claimants continue to rise with double-digit growth among claimants with an annual treatment cost ranging from \$500 to \$999. This increase is partially due to greater awareness of ADHD in adults.



The number of claimants with chronic conditions such as diabetes, hypertension, and obesity is rising, especially as newer, effective, and more expensive medications are more widely used. In addition, hypertension, asthma, cholesterol, and osteoarthritis claims contributed to 42 per cent of the total increase in claimants for the top 10 disease states in 2023. This highlights the role of preventative health solutions in managing these drug costs.



Diabetes medication costs and claimants saw double-digit growth, as more expensive prescriptions are adopted to both treat and prevent complications. This trend is expected to continue.



Spending on non-specialty drugs has been rising, for drugs costing between \$1,000 and \$3,000 per year. One approach to addressing this spending is to adopt a formulary design that manages higher-cost non-specialty drugs. Managed formulary plan designs showed an 8.2 per cent savings in total cost per claim compared to open formulary plans.



There's an opportunity to manage costs as more generic drugs are utilized in private drug plans. Adopting mandatory policies for generics is key to achieving those savings. The current share of generic claims nationally is 67.6 per cent, while public plans have reached levels of 73 per cent.



Biosimilars (biological medications with a structure and effectiveness similar to those of the original biologic) continue to relieve expenditures, because of GreenShield's comprehensive biosimilar strategies. In 2023, the spending on biosimilars exceeded that of their originator counterparts for the first time.



Pharmacist prescribing, though still limited, is increasing, and its convenience offers potential benefits in reducing costs. Notably, when pharmacists prescribe for chronic conditions, spending tends to be lower, as they initiate less-complex treatments.



01

Terminology

Term	Definition
Biologic drug	A drug product that is produced from living organisms.
Biosimilar	A biologic drug that is highly similar to another biologic drug known as the “originator biologic.” Biosimilars are produced after patent expiry of the originator biologic.
Biosimilar penetration rate	Proportion of claims that were filled for biosimilar drugs.
Brand-name drugs	Also called “innovator” or “reference” drugs. These drug products are initially marketed as new chemical entities. They are the first version sold by a single manufacturer that, in most cases, originally researched and developed the drug. The innovator drug is granted a patent which protects it from generic drug competition for a specified number of years to allow the manufacturer to recover the costs associated with developing the new drug.
Case management	A specialty pharmacy value-added service that coordinates patient-specific medical needs over the lifespan of their illness. These services may vary depending on the individual and specific illness but are designed to complement the patient’s current health care team and journey.
Claimant	Any covered individual who has submitted at least one claim.
Generic drug	A copy of a brand-name drug which is produced after the “innovator” drug patent expires. The generic drug is pharmaceutically equivalent to the brand-name drug: it contains the identical medicinal ingredients, in the same amounts, and in a similar dosage form. Generic medications may have different non-medicinal ingredients than the brand-name drug, but these must not affect the safety, efficacy, or quality of the drug compared to the brand-name drug. There may be many generic versions of the same brand-name drug, and these are usually available at a lower cost.
Generic penetration rate	Measures the percentage of multi-source products (where generic alternatives are available) that were filled with a generic product.
Generic share of claims	Measures the percentage of the total number of claims made up of generic products.
Multi-source products	These are brand-name drugs that are no longer protected under patent exclusivity and have one or more therapeutically equivalent generic(s) available (marketed by different pharmaceutical manufacturers). Once the patent expires, the generic drug product can be substituted for the brand-name product.



Term	Definition
Non-specialty drug	Refers to drug products that cost less than \$10,000 per claimant. The cost is solely determined by its annual average claimant cost without dispensing fees.
Open formulary	Most drugs approved by Health Canada and introduced to the marketplace are automatically added to an open formulary as full benefits of the plan. A small subset of drugs, such as high-cost drugs or medications with the potential for inappropriate use, are assigned a prior authorization required status and have a set of clinical criteria that must be satisfied for the drug to be a benefit of the plan. This type of formulary preserves plan member choice but does not consider whether new non-specialty drugs entering the market provide any additional value over existing ones.
Originator biologic	Biologic drug that is first to market. Sometimes referred to as the "reference" biologic or "innovator" biologic.
Single-source products	Drug products for which the patent has not yet expired (or has certain exclusivities), so that only one manufacturer can make it. Single-source drug products are usually brand-name drug products.
SMARTspend managed formulary - enhanced	In addition to the drugs managed under the lite option, this option extends management to drugs that are generally cost effective in specific clinical circumstances and for which clinical criteria for access must be satisfied. This sets up the potential to generate greater savings owing to a more expansive list of drugs under management, including ones for diabetes, pain, and heart disease.
SMARTspend managed formulary - lite	This option manages a designated list of high-volume non-specialty drugs, such as for diabetes and asthma, where step therapy enabled through an automatic-approval process driven by claims history can be applied. This greatly reduces the need for a form-based prior authorization process and offers a better plan member experience. Management of these high-volume non-specialty drugs (e.g., for diabetes or heartburn) is where there's greater opportunity for savings.
Specialty drug	Refers to drug products that cost \$10,000 or more per claimant. The cost is solely determined by its annual average claimant cost without dispensing fees.
Specialty pharmacy	A pharmacy with expertise in managing complex diseases that require usage of high-cost biologics and other specialty drug products.
Total drug cost	Amount paid by the plan and patient. Includes drug costs, markups, and dispensing fees.

2

Drug utilization trends





02

Overall trends

Since 2019, the total drug costs adjudicated by GreenShield have risen from about \$1.55 billion to \$2.46 billion in 2023. At the same time, the number of claimants has increased from 2.0 million to 2.5 million. While drug costs increased by 59 per cent, the number of claimants only increased by 25 per cent, respectively.

As outlined in Figure 1, there was an 11.0 per cent growth in total adjudicated drug cost between 2022 and 2023. As we will see in later sections, the cost to treat some conditions, especially diabetes, is rising quickly alongside an increase in new claimants, all contributing to the increase in overall expenditures.

The number of overall drug claims adjudicated by GreenShield increased by 7.2 per cent and surpassed 34 million in 2023. The average drug cost per claim has grown steadily since 2019; except in 2020, when temporary

COVID-19-related policies allowing shorter days' supply (i.e., 30 days) were implemented, reducing the average days' supply per claim and resulting in a lower drug cost per claim. Once these policies were lifted during the second half of 2020, the average days' supply normalized and subsequently resulted in a greater drug cost per claim in 2021 through 2023 compared to 2020. In 2023, the 3.6 per cent increase in cost per claim was partially offset by a 1.7 per cent reduction in the number of claims per claimant, resulting in an increase in average drug cost per claimant (Table 1).

FIGURE 1

Year-over-year growth in total adjudicated drug cost, 2019 to 2023

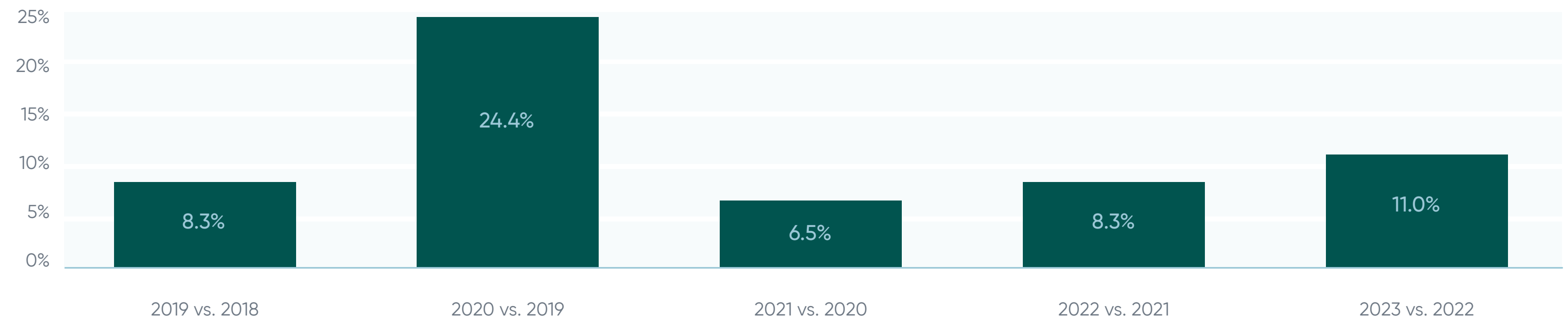
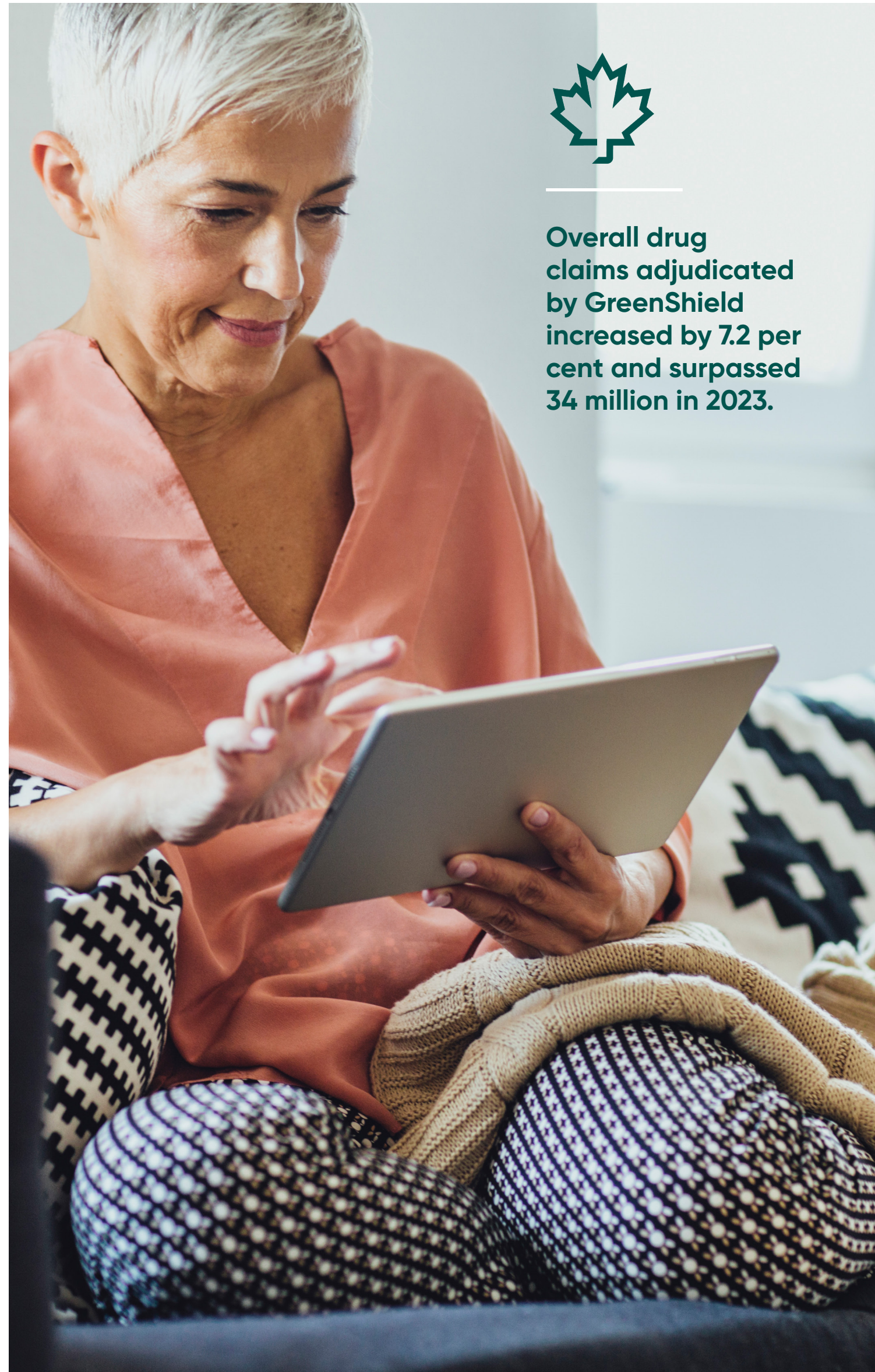


TABLE 1

Total drug cost, claimants, total drug cost per claim, and total drug cost per claimant, 2019 to 2023

Metric	2019	2020	2021	2022	2023
Total drug cost	\$1.5B	\$1.9B	\$2.0B	\$2.2B	\$2.5B
Claimants	2.0M	2.1M	2.1M	2.3M	2.5M
Total drug cost per claim	\$66	\$64	\$68	\$69	\$71
Drug cost per claimant	\$786	\$932	\$970	\$953	\$971



Overall drug claims adjudicated by GreenShield increased by 7.2 per cent and surpassed 34 million in 2023.

GreenShield total drug costs were heavily influenced by different levels of claimant growth during the study period. In 2023, we experienced a 9.0 per cent claimant increase which drove an 11.0 per cent increase in drug expenditures.

Most disease states saw an increase in the number of claimants in 2023 with treatments for infections registering the most absolute growth. GreenShield saw a 16.7 per cent year-over-year increase in the use of anti-infective medications, equating to 154,000 additional claimants compared to 2022, as illustrated in Table 2 below. This accounts for 74 per cent of the overall growth in claimants for that year.

GreenShield saw a 16.7 per cent year-over-year increase in the use of anti-infective medications, equating to 154,000 additional claimants compared to 2022.

Anti-infective medications are generally used for short-term treatment. Specifically, the average number of claims per claimant for infection medications was 2.0, which is considerably lower than the average for other top-10 disease states as shown in Table 2. Consequently, the substantial rise in the number of claimants for anti-infectives also led to a 1.7 per cent decrease in the average number of claims per claimant overall.

TABLE 2

Top 10 disease states by share of claimants

Ranking	Disease state	Share of claimants (2023)	Claims per claimant (2023)	Absolute number of claimant change (2023 vs. 2022)
1	Infection	42.5%	2.0	+154.2K
2	Anxiety/depression	20.8%	7.3	+35.0K
3	Pain	17.4%	4.1	+18.5K
4	Hypertension	17.3%	8.2	+26.6K
5	Acid-related gastrointestinal conditions	15.9%	4.4	+25.9K
6	Asthma and COPD	15.7%	3.6	+16.3K
7	Allergies	14.5%	2.4	+35.1K
8	Skin irritations/conditions	13.6%	1.9	+33.8K
9	Elevated cholesterol	13.2%	6.2	+26.1K
10	Osteoarthritis	11.7%	1.9	+19.2K
All disease states		100%	13.7	+209.7K



Cost concentration

As evident in previous years, a relatively small portion of claimants is responsible for a disproportionately large share of overall expenditures. In 2023, the highest 15 per cent of claimants were responsible for 73.8 per cent of the total adjudicated GreenShield drug costs. Within this group, 53.6 per cent of the total drug cost was associated with the top 5 per cent of claimants, and 30.8 per cent was associated with the top 1 per cent of claimants. This cost concentration appears to be intensifying – the share of cost for the top 5 per cent of our claimants made up an increasing share of total drug cost over the years, from 52.8 per cent in 2019 to 53.6 per cent in 2023. In 2023, the top 5 per cent most expensive claimants cost 22 times more on average, compared to the remaining 95 per cent of the claimant population (\$10,413 versus \$474). These high-cost claimants had seven and a half times more claims (75 claims versus 10) at an average cost per claim that was more than triple that of the rest of the claimant population (\$140 versus \$45).

The high-cost claimants not only made up most of the total drug cost, but a large percentage of them also stayed high-cost claimants for three or more consecutive years. Over half (54.4 per cent) of the top 5 per cent of claimants from 2021 were also ranked in the top 5 per cent in both 2022 and 2023. And this percentage increased in 2023 versus the previous years.

This relatively high persistence of high-cost claimants warrants not only the consideration of strategies to ensure both appropriateness of continued usage of high-cost drugs, but also patient support through strategies such as comprehensive case management provided by specialty pharmacies. Given their expertise in managing complex diseases that require usage of high-cost biologic and other specialty drug products, specialty pharmacies are ideally positioned to play a growing role in these integrated care processes.

The average total drug cost per GreenShield claimant reached \$971 in 2023, which represents a 23.5 per cent increase from 2019 (Table 5).

TABLE 3

Total drug cost distribution by claimant group, 2023

Claimant group	2019 Share of total drug cost	2023			
		Share of total drug cost	Average claims per claimant	Average cost per claim	Average annual cost per claimant
Top 1%	31.4%	30.8%	79	\$379	\$29,946
Top 5% (Includes top 1%)	52.8%	53.6%	75	\$140	\$10,413
All other 95%	47.2%	46.4%	10	\$45	\$474

TABLE 4

Proportion of high-cost claimants that remain in the same group for three consecutive years

Claimant group	2019–2021	2020–2022	2021–2023
Top 1%	47.3%	56.3%	57.6%
Top 5% (Includes top 1%)	45.8%	53.2%	54.4%

TABLE 5

Total cost per claimant, 2019 to 2023

	2019	2020	2021	2022	2023
Total drug cost per claimant	\$786	\$932	\$970	\$953	\$971



Claimants with an annual treatment cost of over \$6,000 were responsible for about 62 per cent of the increase in average claimant cost between 2019 and 2023, despite representing only 2.3 per cent of the claimant population in 2023 (Figure 2). During the same period, claimants with an annual treatment cost of over \$50,000 accounted for the largest contribution to the average claimant cost increase over the five-year period.

The large contribution from claimants with an annual cost over \$6,000 was in part due to the substantial increase in claimants within these cohorts between 2019 and 2023 (Figure 3). More importantly, these cohorts saw an 85.4 per cent surge over the last five years which was notably greater than the 28.1 per cent observed from those of claimants with lower expenses.

Nevertheless, claimants with an annual treatment cost of over \$6,000 made up only 2.3 per cent of the GreenShield total claimant population in 2023. Most of the claimants (80.9 per cent of our 2.5 million claimants) had an annual treatment cost of less than \$1,000 in 2023 but accounted for a disproportionate 21.3 per cent of the total drug cost (Table 6 on next page).

FIGURE 2
Contribution to the total cost per claimant growth by annual treatment cost range, 2023 vs. 2019

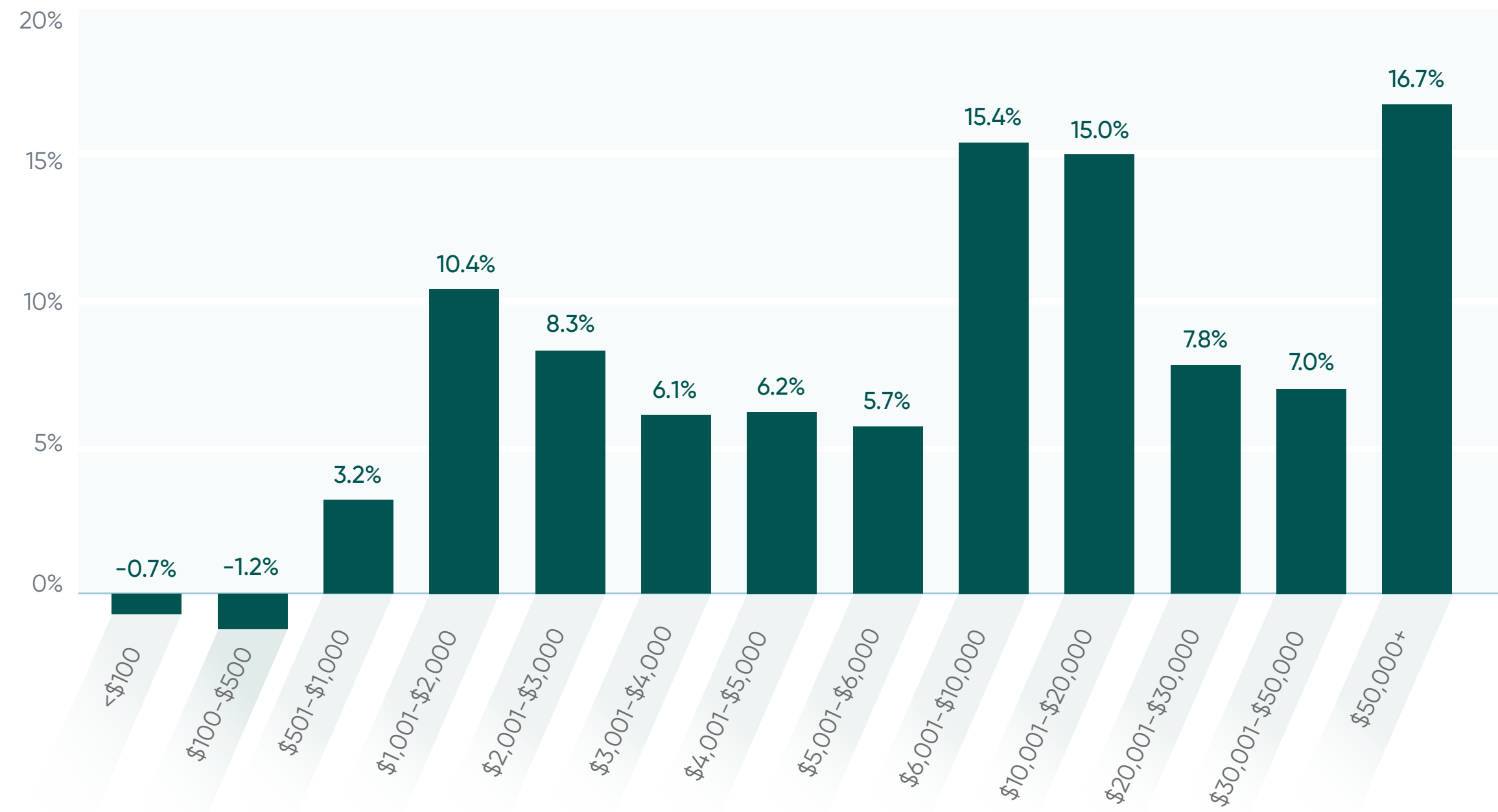


FIGURE 3
Change in the number of claimants by annual treatment cost range, 2023 vs. 2019

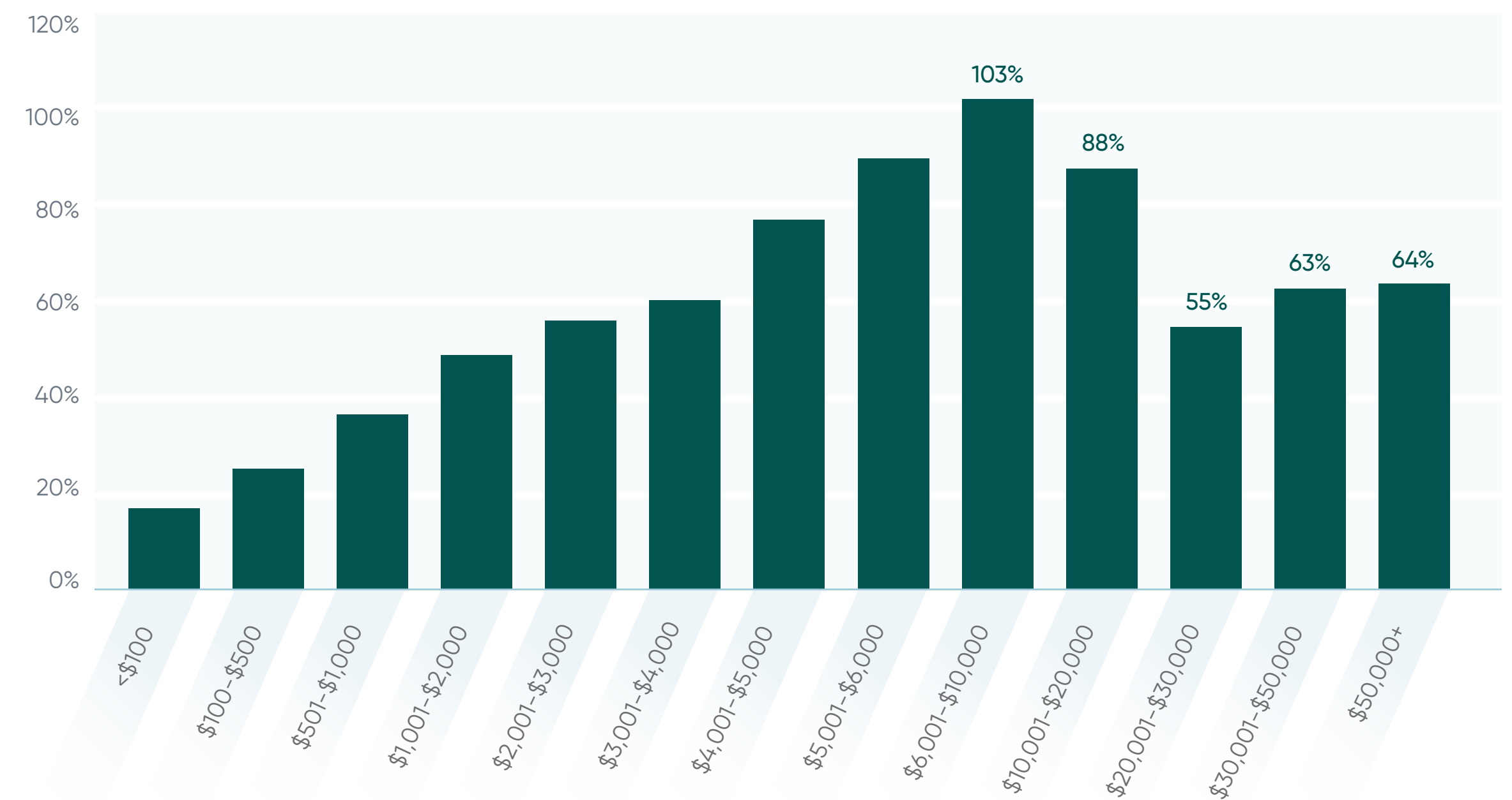




TABLE 6

Share of claimants and share of total drug costs by annual treatment cost range, 2023

Annual total drug cost per claimant interval	Share of claimants	Share of total drug costs
<\$100	29.3%	1.4%
\$101–\$500	37.7%	9.8%
\$501–\$1,000	13.9%	10.2%
\$1,001–\$2,000	10.1%	14.6%
\$2,001–\$3,000	3.6%	9.0%
\$3,001–\$4,000	1.7%	5.9%
\$4,001–\$5,000	0.9%	4.3%
\$5,001–\$6,000	0.6%	3.4%
\$6,001–\$10,000	1.0%	8.0%
\$10,001–\$20,000	0.7%	9.6%
\$20,001–\$30,000	0.3%	7.9%
\$30,001–\$50,000	0.2%	6.8%
\$50,000+	0.1%	9.3%
Total	100%	100%

Delving a bit deeper into the characteristics of these high-cost claimants, patients suffering from rheumatoid arthritis (RA), Crohn's disease, colitis, and psoriasis represented the largest share of total drug cost in both the top 1 per cent and top 5 per cent high-cost claimant groups (Table 7). While the claimants in the top 1 per cent typically required specialty medications to manage their conditions, the top 5 per cent high-cost claimants, in contrast, suffered from more common chronic diseases that require relatively less costly treatment

such as diabetes, respiratory issues, mental health conditions, and high cholesterol. Nearly 55 per cent of the top 1 per cent of high-cost claimants used products for RA/Crohn's/colitis/psoriasis, which made up 40.0 per cent of their total drug cost. In comparison, 23.0 per cent of the top 5 per cent of claimants used RA/Crohn's/colitis/psoriasis products, which made up 26.0 per cent of the total drug cost (Table 7). The top 1 per cent of claimants also had a larger share of high-cost specialty medications to treat conditions such as cancer, cystic fibrosis, and multiple sclerosis. As a result, the top 1 per cent most costly claimants had a higher cost concentration in the top

10 disease states at 80.7 per cent compared to 66.4 per cent for the top 5 per cent high-cost claimants.

Diabetes had a different dynamic in the two categories; it represented the second-largest share of drug costs in the top 5 per cent claimant group, compared to the ninth-largest share in the top 1 per cent group. This was due to the high prevalence of the condition, paired with an escalating cost of treatment per patient driven by utilization of newer antidiabetic agents, such as Ozempic (semaglutide).

TABLE 7

Top 10 disease states by share of total drug cost and share of claimants for top 1 % and top 5 % of high-cost claimants, 2023

Top 1%				Top 5%			
Rank	Disease state	Share of total drug cost	Share of claimants	Rank	Disease state	Share of total drug cost	Share of claimants
1	RA/Crohn's/colitis/psoriasis	40.0%	54.6%	1	RA/Crohn's/colitis/psoriasis	26.0%	23.0%
2	Cancer	11.2%	17.7%	2	Diabetes	10.5%	39.4%
3	Cystic fibrosis	7.2%	1.3%	3	Cancer	7.6%	9.4%
4	Multiple sclerosis	6.1%	7.4%	4	Asthma and COPD	4.2%	28.7%
5	Asthma and COPD	4.4%	28.7%	5	Multiple sclerosis	4.2%	2.5%
6	Skin irritations/conditions	4.1%	25.7%	6	Cystic fibrosis	4.1%	0.3%
7	HIV	2.7%	5.2%	7	Skin irritations/conditions	2.9%	20.7%
8	Macular degeneration	2.0%	3.9%	8	Anxiety/depression	2.7%	45.1%
9	Diabetes	1.8%	18.1%	9	HIV	2.3%	2.5%
10	Paroxysmal nocturnal haemoglobinuria (PNH)	1.3%	0.1%	10	Elevated cholesterol	1.9%	42.4%



Generic utilization

While generic utilization rates depend on factors such as physician prescribing habits and existing patent protections on originator drugs, increasing the utilization of generic drugs continues to be an important element of cost management in private drug plans, and adopting mandatory generic policies is an essential vehicle to achieving those savings. Generic products continued to make up a greater share of claims within GreenShield, accounting for 67.6 per cent of all claims in 2023 up from 66.4 per cent in 2022, and their corresponding share of total drug cost also grew compared to previous years (Figure 4). While this growth in generic utilization is encouraging, there is room for upward growth.

For reference, public plans in Canada have achieved generic utilization rates of 73 per cent*, and in the United States, generic utilization has reached over 90 per cent**.

At the regional level, the Atlantic provinces had some of the highest generic shares of claims at over 74 per cent, while Ontario and Quebec, the two largest provinces in expenditure, had two of the lowest generic-fill rates at 68.1 per cent and 66.0 per cent, respectively (Figure 5).

* CompassRx, ninth edition, Annual Public Drug Plan Expenditure Report, 2021/22. Government of Canada website: <https://www.canada.ca/en/patented-medicine-prices-review/services/npduis/analytical-studies/compassrx-9th-edition.html>

** United States Generic Drugs Market Forecast Report 2023: A \$147.57 Billion Market by 2028 from \$101 Billion in 2022 – Increasing Prevalence of Life-threatening Diseases Creating Opportunities. ResearchAndMarkets.com: <https://www.globenewswire.com/en/news-release/2023/05/10/2665713/28124/en/United-States-Generic-Drugs-Market-Forecast-Report-2023-A-147-57-Billion-Market-by-2028-from-101-Billion-in-2022-Increasing-Prevalence-of-Life-threatening-Diseases-Creating-Opportu.html>

FIGURE 4

Generic share of claims and total drug cost, 2019 to 2023

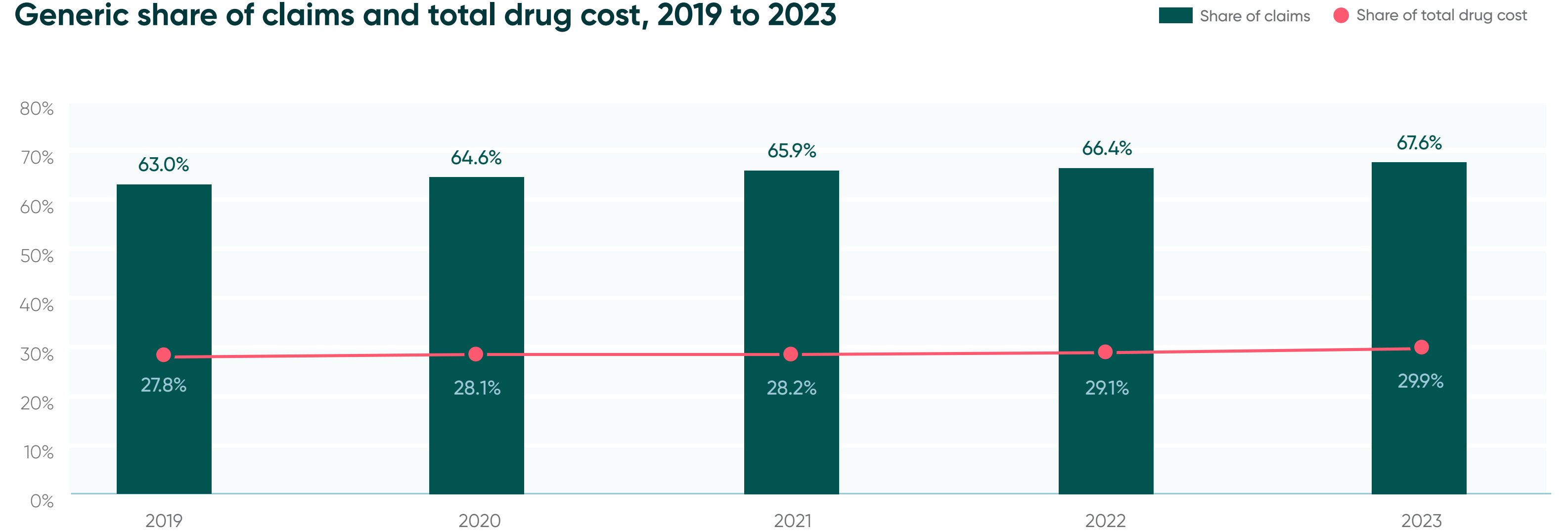
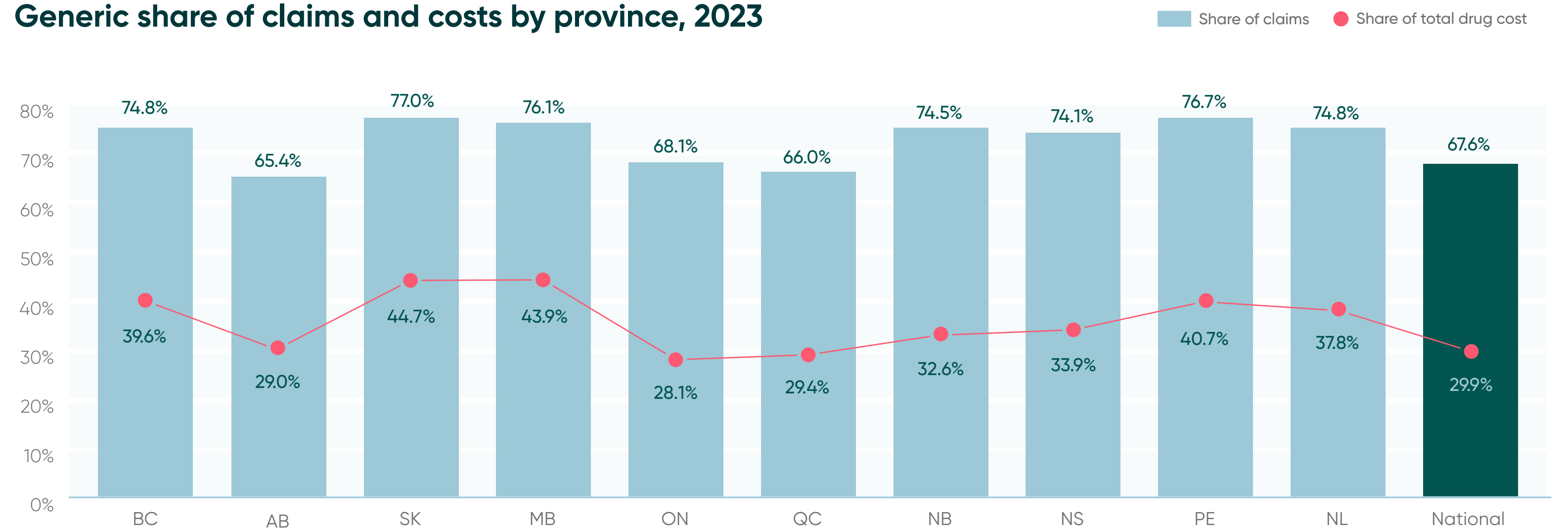


FIGURE 5

Generic share of claims and costs by province, 2023





Generic penetration

Unlike generic share of claims, which measures the percentage of the total number of claims made up of generic products, the generic penetration rate measures the percentage of multi-source products (where generic alternatives are available) that were filled with a generic product. In this analysis, single-source products, including biosimilars, are excluded. Multi-source generic products made up nearly 90 per cent of GreenShield claims in 2023 and accounted for about 47 per cent of the total drug cost.

Similar to generic share of claims, Quebec also had the lowest generic penetration rate at 75 per cent, whereas the rates in other provinces exceeded 80 per cent (Figure 6).

Generic penetration rates also varied notably across therapeutic classes in 2023. Table 8 shows the generic penetration rates across multi-source products within the top 10 disease states.

The common chronic disease states like anxiety/depression, hypertension, and elevated cholesterol had generic penetration rates above 90 per cent in 2023 with similar results across all provinces. This is likely because these generic products have been available within these therapeutic areas for a while, are effective, and have become the norm.

In contrast, ADHD and asthma/COPD showed two of the lowest generic penetration rates across these top disease states. ADHD had a generic penetration rate of only 34 per cent nationally, including only 17 per cent in Saskatchewan.

FIGURE 6

Generic share of claims and generic penetration rate by province, 2023

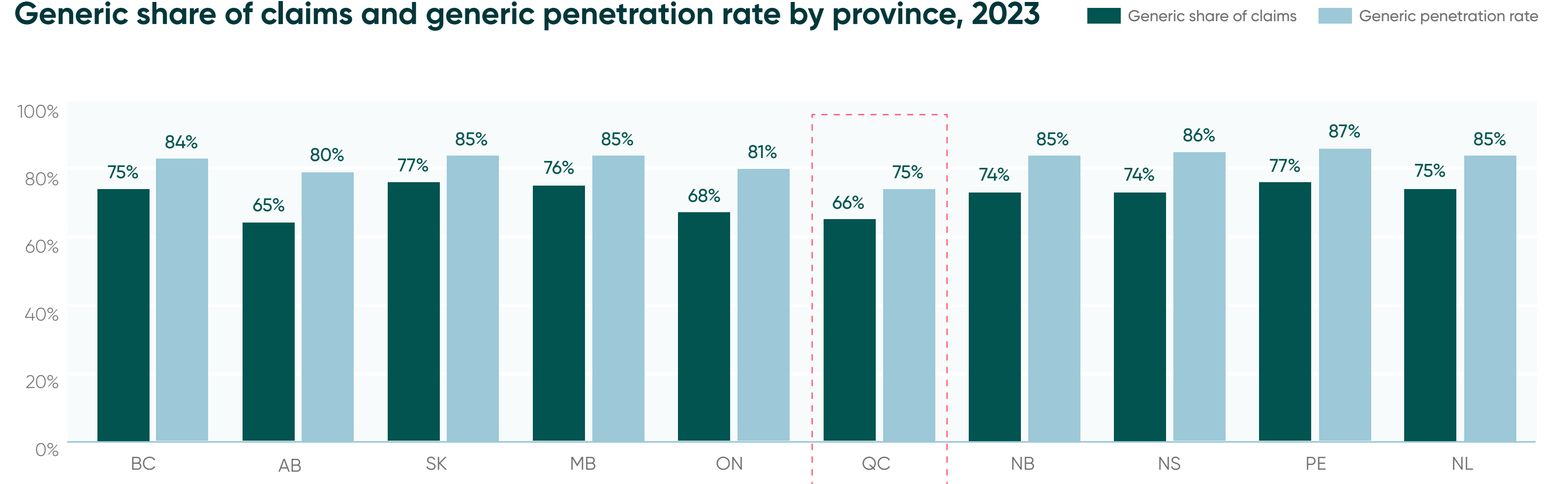


TABLE 8

Generic penetration rates across multi-source products by disease state and province, 2023

Disease state	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	National
Elevated cholesterol	96%	98%	99%	99%	94%	98%	98%	98%	99%	98%	97%
Hypertension	97%	96%	97%	98%	96%	96%	98%	99%	99%	98%	96%
Acid-related gastrointestinal conditions	95%	94%	97%	96%	90%	95%	95%	94%	97%	95%	94%
Anxiety/depression	94%	95%	96%	98%	94%	90%	97%	97%	99%	98%	92%
Infection	86%	87%	92%	87%	85%	85%	91%	91%	92%	93%	85%
Diabetes	86%	82%	90%	94%	82%	84%	91%	92%	96%	91%	84%
Pain	89%	91%	90%	92%	75%	72%	82%	88%	87%	88%	75%
RA/Crohn's/colitis/psoriasis	79%	78%	78%	84%	79%	67%	77%	80%	76%	78%	73%
Asthma and COPD	56%	53%	67%	69%	61%	60%	70%	61%	63%	70%	60%
ADHD	39%	33%	17%	23%	40%	33%	42%	57%	37%	36%	34%



Diabetes and ADHD continue to grow not only in prevalence, they also accounted for a notable larger portion of total drug costs in 2023.



Top 10 therapeutic classes*

Despite only 5.3 per cent of claimants submitting claims for rheumatoid arthritis (RA)/Crohn's/colitis/psoriasis medications in 2023, these inflammatory conditions made up the largest share of total drug cost, accounting for 14.8 per cent (Table 9). Over the past five years, both the prevalence rate and share of total drug cost for these claimants have remained stable.

Conversely, diabetes and ADHD continue to grow not only in prevalence, they also accounted for a notable larger portion of total drug costs in 2023 compared to 2019. This is partly due to an increased number of claimants using these medications to manage their conditions.

TABLE 9

Top therapeutic classes by total drug cost, 2023 vs. 2019

Disease state	2023		2019	
	Prevalence rate	Share of total drug cost	Prevalence rate	Share of total drug cost
RA/Crohn's/colitis/psoriasis	5.3%	14.8%	5.4%	15.0%
Diabetes	7.0%	8.8%	6.1%	7.6%
Anxiety/depression	20.8%	6.0%	19.3%	5.9%
ADHD	6.6%	5.6%	4.3%	4.3%
Asthma and COPD	15.7%	5.4%	14.5%	5.6%
Cancer	1.5%	4.3%	1.4%	4.5%
Hypertension	17.3%	3.7%	17.4%	4.4%
Infection	42.5%	3.1%	43.1%	3.8%
Skin irritations/conditions	13.6%	2.9%	13.3%	2.1%
Acid-related gastrointestinal conditions	15.9%	2.9%	14.6%	3.1%

* Note that the disease states are determined using the primary indication of an individual drug. The prevalence rates are calculated as a share of the total number of GreenShield claimants who claimed drugs associated with a specific disease state.



The most prevalent condition continues to be infection with approximately 1.08 million individuals claiming medications for this condition in 2023. This represents 42.5 per cent of the GreenShield claimants who used medications to treat an infection in 2023 (Table 10), although it only made up 3.1 per cent of the total drug cost.

While the 2023 infection prevalence rate still fell behind the 2019 level, it had bounced back notably from the 37.4 per cent, 34.8 per cent, and 39.8 per cent in 2020, 2021, and 2022, respectively (Table 11).

The year-over-year absolute increase in the infection prevalence rate occurred through all age groups with the most substantial increase in claimants younger than 15 years old and those between the ages of 35 and 44 years old – increasing by 5.0 per cent and 4.1 per cent, respectively. Again, this largely coincides with the relaxing of COVID-19-related restrictions such as the removal of indoor capacity limits, social gathering limits, and masking.

The most prevalent condition continues to be infection with approximately 1.08 million individuals claiming medications for this condition in 2023.

As the aftermath of the COVID-19 pandemic continued into 2023, its impact was evident on the rates of anxiety and depression. The number of claimants using anxiety/depression medications has grown over time and continued to exhibit a mid-single digit annual growth in 2023 (Figure 7 on next page). Although this is in line with the patterns seen in 2021 and 2022, it remains significantly lower than the 13 per cent surge in claimants caused by COVID-19 in 2020.

This upward trend will likely continue in the future due to the increase in mental health awareness and the de-stigmatizing of mental illnesses, which may encourage more patients to seek treatment.

TABLE 10

Top therapeutic classes by prevalence rate, 2023 vs. 2019

Disease state	2023		2019	
	Prevalence rate	Share of total drug cost	Prevalence rate	Share of total drug cost
Infection	42.5%	3.1%	43.1%	3.8%
Anxiety/depression	20.8%	6.0%	19.3%	5.9%
Pain	17.4%	2.3%	17.7%	2.8%
Hypertension	17.3%	3.7%	17.4%	4.4%
Acid-related gastrointestinal conditions	15.9%	2.9%	14.6%	3.1%
Asthma and COPD	15.7%	5.4%	14.5%	5.6%
Allergies	14.5%	1.9%	14.2%	1.9%
Skin irritations/conditions	13.6%	2.9%	13.3%	2.1%
Elevated cholesterol	13.2%	2.6%	12.0%	2.7%
Osteoarthritis	11.7%	0.6%	11.9%	0.8%

TABLE 11

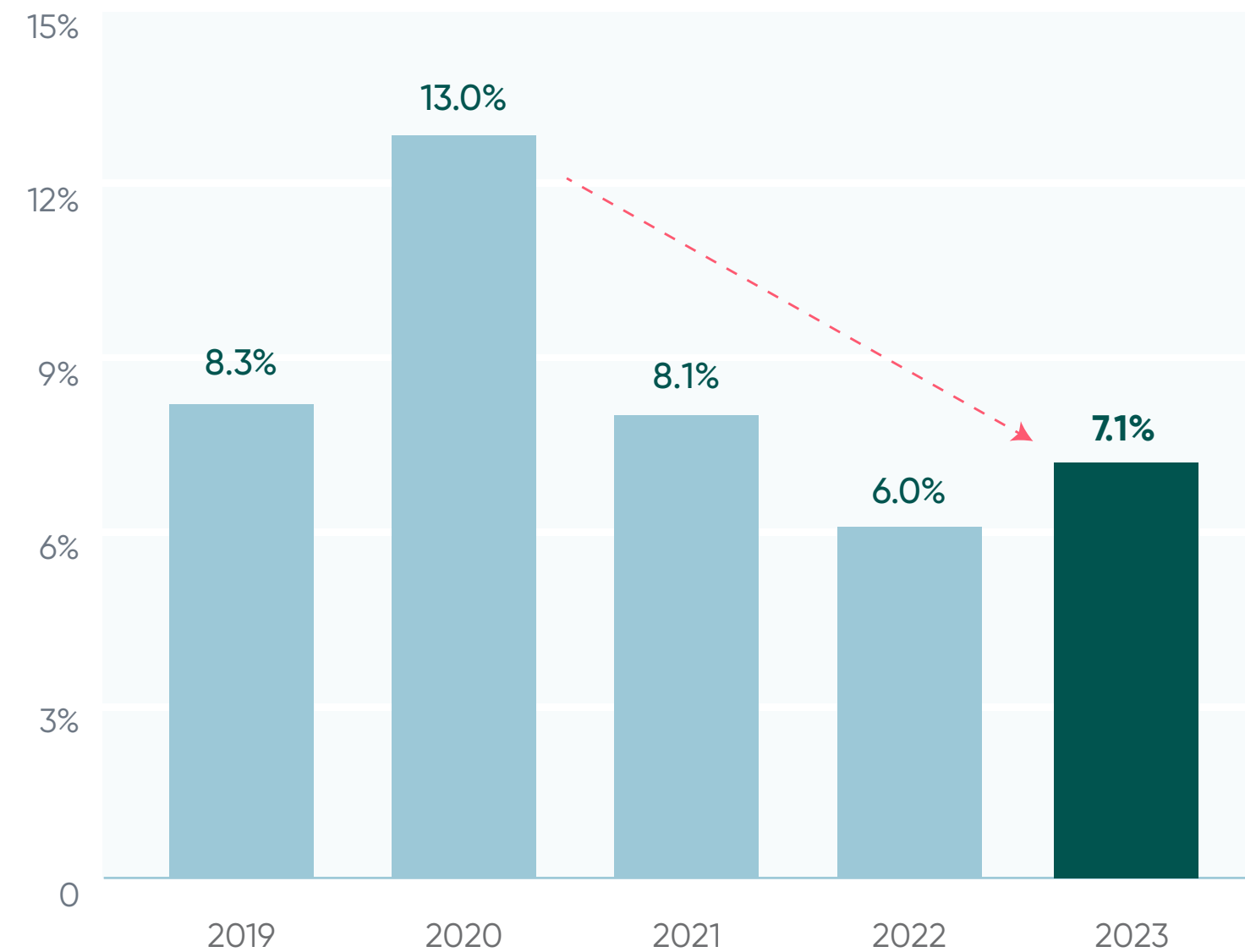
Prevalence rates of infection by age group, 2019 to 2023

Age group	Percentage of total claimants using infection medications					Absolute Difference (2023 vs. 2022)
	2019	2020	2021	2022	2023	
0–14	58.8%	49.5%	44.7%	56.8%	61.7%	+ 5.0%
15–24	43.0%	38.9%	37.3%	41.2%	42.1%	+ 0.9%
25–34	45.0%	39.5%	36.8%	41.7%	44.5%	+ 2.8%
35–44	45.7%	39.8%	36.5%	41.9%	46.0%	+ 4.1%
45–54	42.3%	36.7%	33.8%	38.1%	40.5%	+ 2.4%
55–64	41.5%	35.4%	33.3%	37.3%	39.9%	+ 2.6%
65+	28.5%	25.4%	25.0%	25.7%	26.6%	+ 1.0%
Total	43.1%	37.4%	34.8%	39.8%	42.5%	+ 2.8%



FIGURE 7

Anxiety/depression claimant year-over-year growth since 2019



Top 10 drug products

The top 10 products made up a notable share of total cost within GreenShield. Some of these products are used by very few claimants (i.e., a prevalence rate of less than 0.5 per cent of our total claimant population) but have an average cost per claimant typically above \$10,000. Six of the top 10 products in 2023 belong to this cohort. The other products, in contrast, have higher prevalence rates but cost much less for each claimant.

Infliximab (Remicade) and adalimumab (Humira) were the top two products in total drug cost in 2019 to 2022, however they slid to the second and third spots in 2023. Thanks to biosimilar strategies, the cost growth rates for both

were significantly lower than their compounded annual growth rate from 2018 to 2022 (Table 12). On the other hand, semaglutide (Ozempic, Rybelsus), elexacaftor/tezacaftor/ivacaftor (Trikafta), and dupilumab (Dupixent), which launched after 2017, made it to the top 10 list in 2023. Most remarkably, semaglutide (Ozempic, Rybelsus), new to the market since 2018, rose rapidly

in 2023 with a year-over-year total drug cost growth of 60.6 per cent. Concurrently, methylphenidate (Concerta) and lisdexamfetamine (Vyvanse), medications prescribed for ADHD, continued to exhibit robust growth into 2023, with reported increases in total drug costs of 14.3 per cent and 28.6 per cent year-over-year, respectively.

TABLE 12

Top 10 products by total drug cost in 2023

Rank 2019	Rank 2023	Product	Brand name	Disease state	Total cost per claimant (2023)	Prevalence rate (2023)	Share of total drug cost (2023)	YOY total drug cost growth (2023)	Compound annual growth rate (2018 to 2022)
32	1	Semaglutide	Ozempic, Rybelsus	Diabetes	\$1,890	1.9%	3.7%	60.6%	135.6%
1	2	Infliximab	Remicade	RA/Crohn's/colitis/psoriasis	\$27,317	0.1%	3.1%	0.0%	7.1%
2	3	Adalimumab	Humira	RA/Crohn's/colitis/psoriasis	\$13,540	0.2%	2.5%	3.3%	5.0%
3	4	Methylphenidate	Concerta	ADHD	\$699	3.4%	2.5%	14.3%	20.3%
4	5	Lisdexamfetamine	Vyvanse	ADHD	\$830	2.8%	2.4%	28.6%	28.1%
5	6	Ustekinumab	Stelara	RA/Crohn's/colitis/psoriasis	\$26,032	0.1%	2.1%	6.8%	28.9%
1,000+	7	Elexacaftor/tezacaftor/ivacaftor	Trikafta	Cystic fibrosis	\$173,234	0.0%	2.1%	65.3%	-
43	8	Dupilumab	Dupixent	Skin irritations/conditions	\$16,464	0.1%	1.3%	19.1%	72.1%
16	9	Vedolizumab	Entyvio	RA/Crohn's/colitis/psoriasis	\$19,227	0.1%	1.2%	20.5%	27.3%
12	10	Budesonide/formoterol	Symbicort	Asthma and COPD	\$322	3.3%	1.1%	8.7%	17.4%



The ranking of the top 10 products was consistent across the provinces of Alberta, Ontario, and Quebec but showed notable differences from British Columbia in 2023. This trend was largely seen in the usage of medications for autoimmune disorders, including infliximab (Remicade), adalimumab (Humira), ustekinumab (Stelara), and vedolizumab (Entyvio). This could be due to the alignment with public drug programs, as these expensive

treatments are often funded by public drug programs once patients meet their income-based deductibles within the province. Meanwhile, semaglutide (Ozempic, Rybelsus), lisdexamfetamine (Vyvanse), and dupilumab (Dupixent) ranked in the top 10 across each of these four major provinces.

TABLE 13

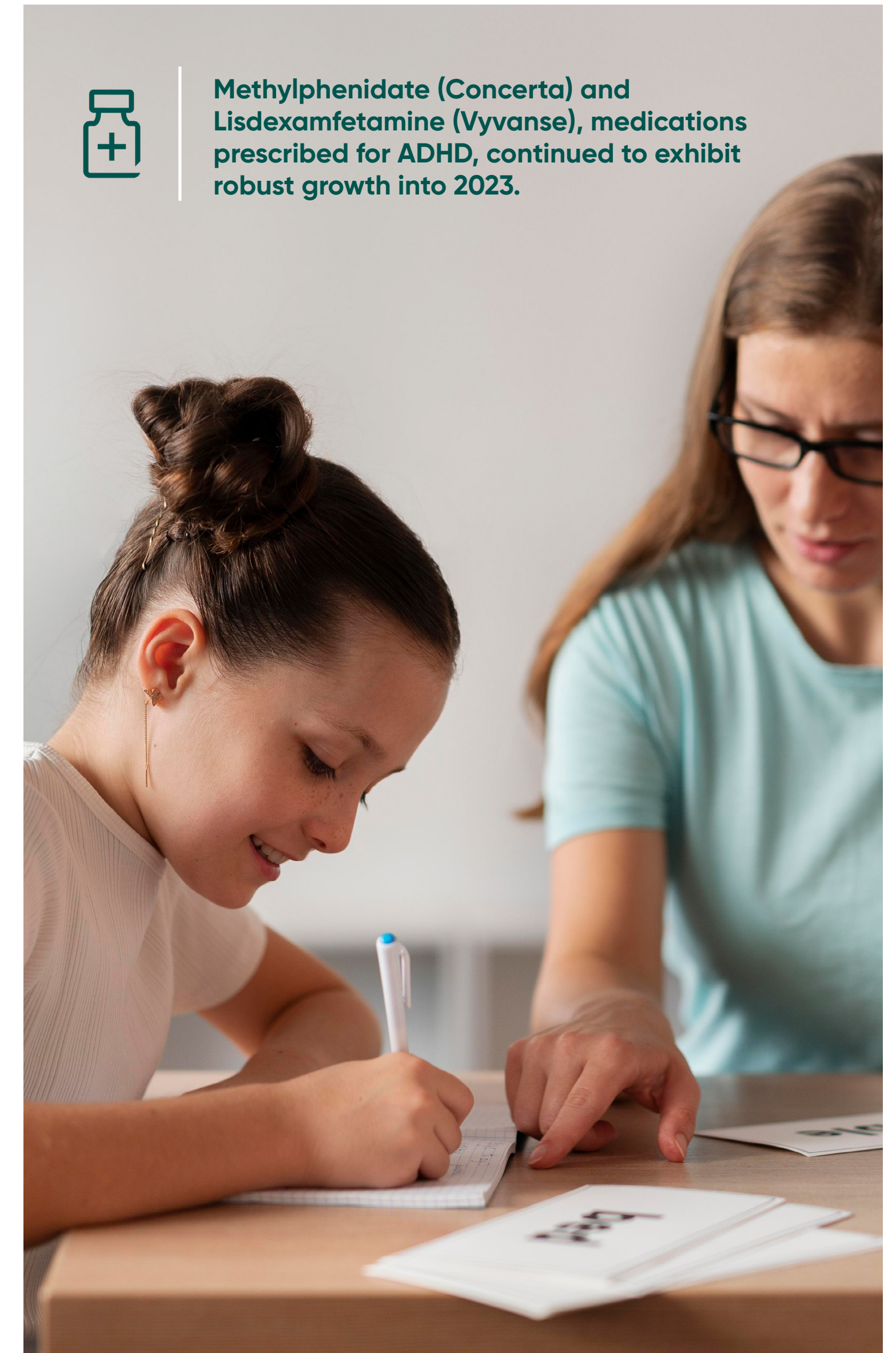
Top 10 products by total drug cost within certain provinces, 2023

Product	Brand name	Disease state	Share of total cost within the province				
			National	BC	AB	ON	QC
Semaglutide	Ozempic, Rybelsus	Diabetes	3.7%	4.3%	4.2%	4.4%	3.1%
Infliximab	Remicade	RA/Crohn's/colitis/psoriasis	3.1%	0.3%	2.1%	2.9%	3.8%
Adalimumab	Humira	RA/Crohn's/colitis/psoriasis	2.5%	0.8%	2.1%	2.6%	2.8%
Methylphenidate	Concerta	ADHD	2.5%	1.0%	2.5%	1.1%	3.5%
Lisdexamfetamine	Vyvanse	ADHD	2.4%	1.6%	5.1%	2.1%	2.4%
Ustekinumab	Stelara	RA/Crohn's/colitis/psoriasis	2.1%	0.5%	1.8%	1.9%	2.5%
Elexacaftor/tezacaftor/ivacaftor	Trikafta	Cystic fibrosis	2.1%	1.4%	0.5%	1.0%	3.2%
Dupilumab	Dupixent	Skin irritations/conditions	1.3%	1.2%	1.5%	1.5%	1.2%
Vedolizumab	Entyvio	RA/Crohn's/colitis/psoriasis	1.2%	0.3%	1.1%	1.2%	1.3%
Budesonide/formoterol	Symbicort	Asthma and COPD	1.1%	1.6%	1.8%	1.1%	0.9%

Note: the highlighted products are ranked as the top 10 within their respective reported province.



Methylphenidate (Concerta) and Lisdexamfetamine (Vyvanse), medications prescribed for ADHD, continued to exhibit robust growth into 2023.





3

Specialty drugs





03

Overall trends

In 2023, there were over 32,000 GreenShield claimants that used a specialty drug to treat their medical conditions. These specialty drug products were associated with \$696.8 million in total drug cost (Table 14).

Although the number of claimants with specialty products rose by 14.2 per cent in 2023, their specialty products expenditure only increased by 10.4 per cent. This increase in specialty expenditures was higher than the 2.3 per cent growth seen in 2022, but it remained lower than the 11.3 per cent increase in non-specialty product expenditures in 2023.

Cost and utilization

The proportion of overall drug spend owing to specialty drugs did not substantially change from 2022 to 2023. As in previous years, a very small proportion (1.3 per cent) of claimants was responsible for a large share of overall costs.

As evident in Figure 8, the contribution of specialty drugs to overall spending has steadily climbed since 2019, and then dropped in 2022 and 2023, largely thanks to biosimilar penetration, which will be explored in a later section.

FIGURE 8

Specialty drugs share of total drug cost and share of claimants, 2019 to 2023

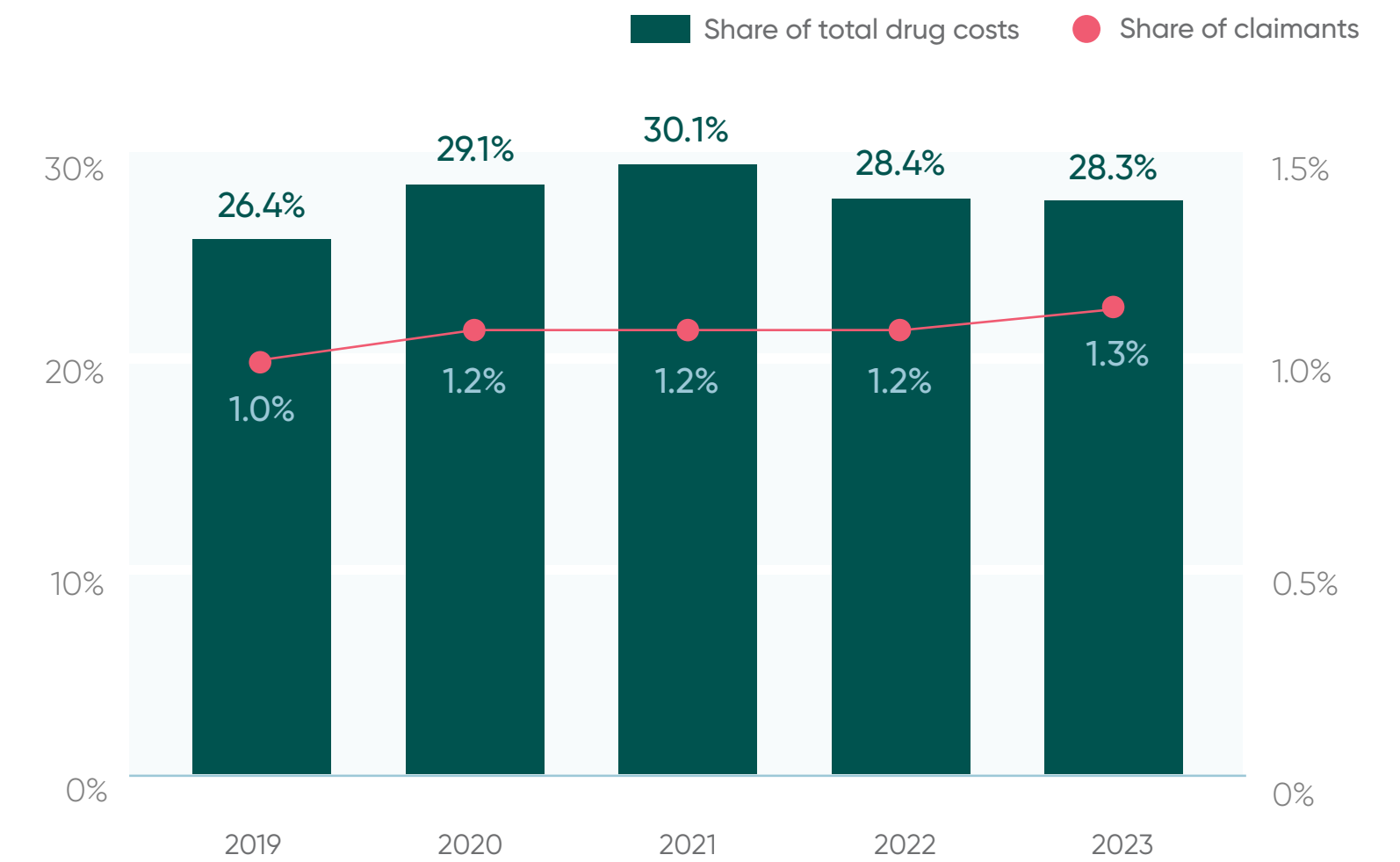


TABLE 14

Specialty drugs total cost, number of claims, and number of claimants, 2019 to 2023

Period	Total drug cost		Claims		Claimants	
	Amount	YOY growth	Number	YOY growth	Number	YOY growth
2019	\$409.3M	15.5%	141.6K	12.2%	19.9K	13.9%
2020	\$560.5M	36.9%	187.7K	32.6%	23.9K	20.5%
2021	\$617.1M	10.1%	199.4K	6.2%	26.3K	10.0%
2022	\$631.1M	2.3%	210.4K	5.5%	28.4K	7.8%
2023	\$696.8M	10.4%	233.2K	10.9%	32.4K	14.2%



Specialty share of total drug cost varied significantly across the country in 2023. For instance, the western region had a relatively lower specialty share of total drug cost compared to the other provinces thanks to co-ordination with the public drug programs (Figure 9). Furthermore, the share of specialty drugs by total drug costs was relatively flat in 2023 compared to 2022 across these provinces.

In contrast, in the eastern regions, specialty items constituted a substantially larger percentage of the total expenses compared to most areas in the western regions. However, of note, they experienced a decrease in the specialty drug's percentage of the total costs in 2023.

In 2023, over 32,000 claimants utilized a specialty drug product for the treatment of their condition.

As noted in Table 15, in 2023, over 32,000 claimants utilized a specialty drug product for the treatment of their condition. The vast majority of these claimants used products costing between \$10,000 and \$49,999 per year. Products with an annual treatment cost between \$10,000 and \$49,999 made up 81.4 per cent of the specialty product total cost in 2023, down from 82.4 per cent in 2022 and 87.5 per cent in 2019 (Table 15). The notable smaller market share in 2023 and decline over the reporting period was partly due to the strong biosimilar penetration into the infliximab and adalimumab markets.

Despite the reduction in their share of total drug costs, there was a notable 9.0 per cent year-over-year increase in costs driven by a 14 per cent increase in claimants. This increase constituted over 70 per cent of the overall growth in specialty costs. Furthermore, the surge in costs was largely driven by newer treatments for conditions such as rheumatoid arthritis, Crohn's disease, colitis, and psoriasis, with drugs like risankizumab (Skyrizi), upadacitinib (Rinvoq), vedolizumab (Entyvio), and ustekinumab (Stelara) being the primary contributors to this significant growth.

FIGURE 9

Specialty drug expenditure by province, 2022 vs 2023

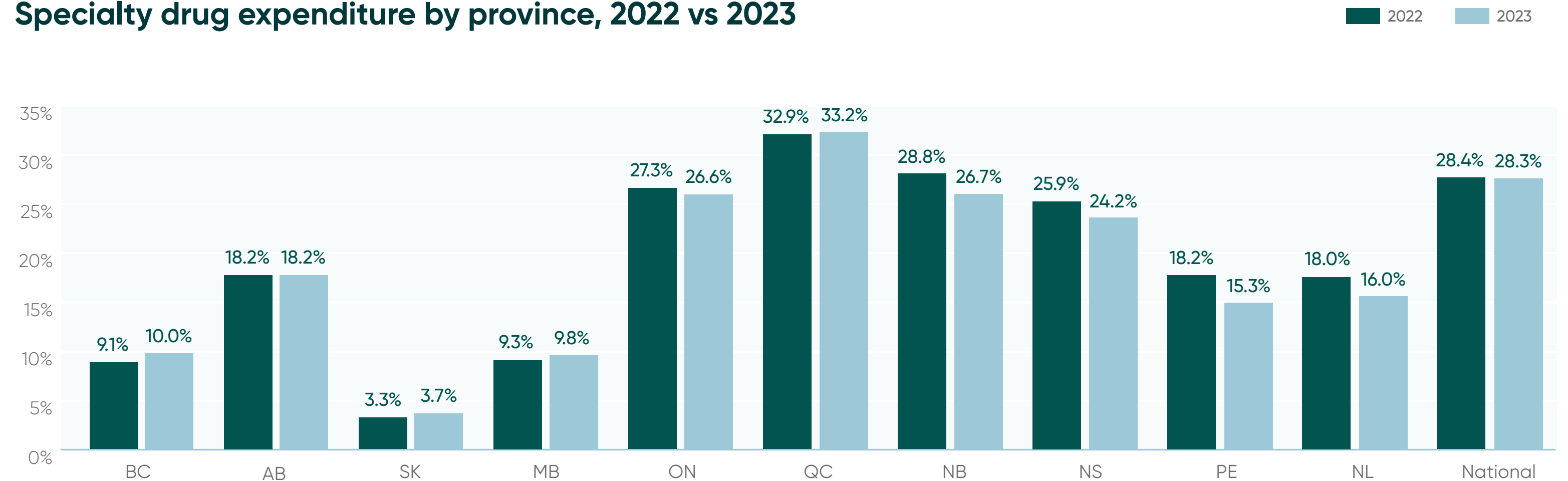
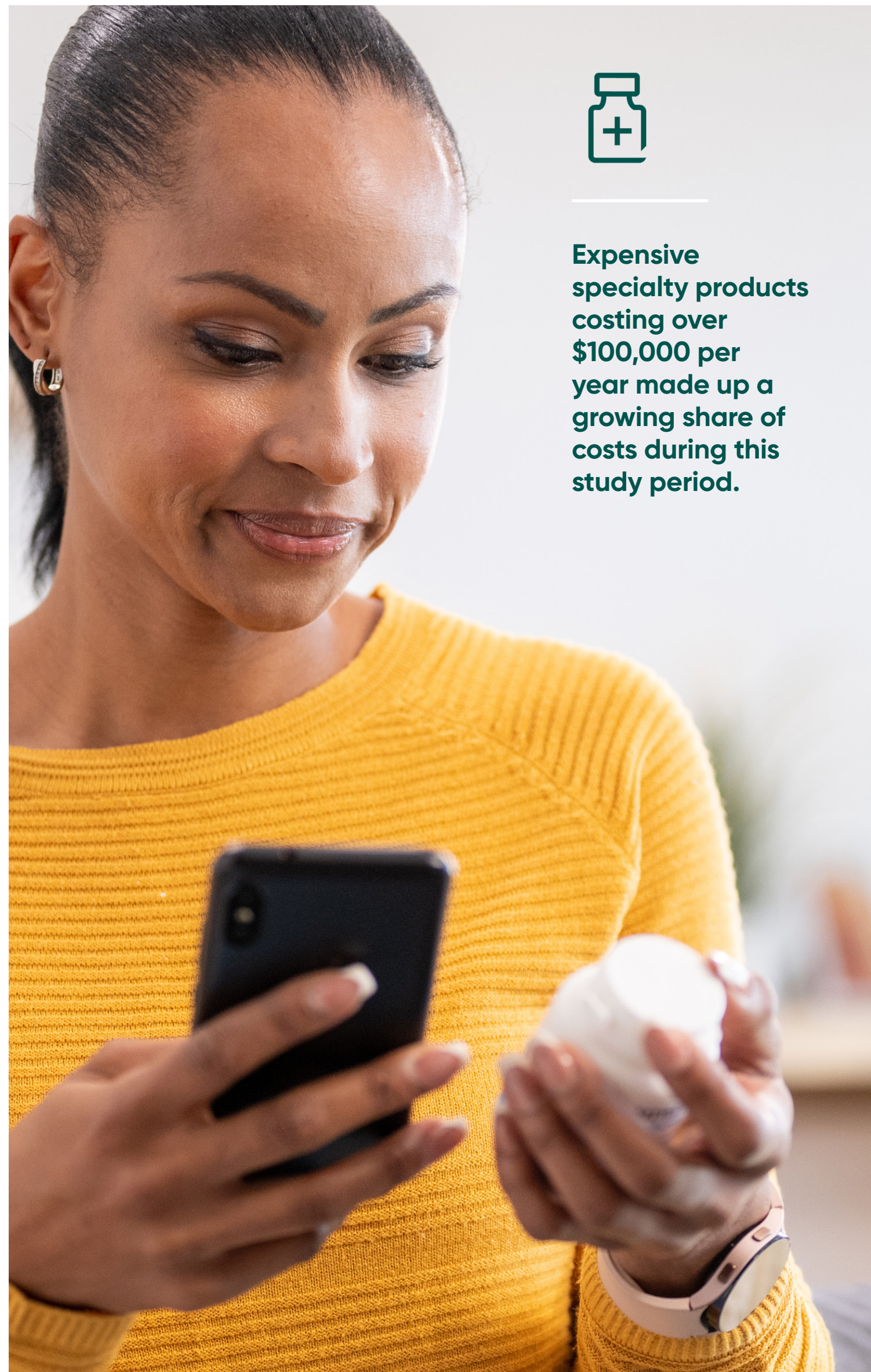


TABLE 15

Total cost and claimant measures by cost of specialty products, 2023

Range of specialty product cost	Total cost measures				Claimant measures		
	Share of total drug cost			YOY cost growth (2023 vs. 2022)	Number of claimants (2023)	2023 vs. 2022 (absolute difference)	YOY claimant growth (2023)
	2019	2022	2023				
\$10,000–\$49,999	87.5%	82.4%	81.4%	9.0%	31.5K	4.0K	14.3%
\$50,000–\$99,999	5.3%	5.5%	4.8%	-3.1%	0.5K	26	5.1%
\$100,000–\$249,999	4.1%	8.0%	9.8%	36.0%	0.4K	67	17.4%
\$250,000–\$499,999	2.5%	3.3%	3.0%	0.9%	59	10	20.4%
\$500,000 +	0.7%	0.8%	1.0%	26.7%	11	2	22.2%
Grand total	100.0%	100.0%	100.0%	10.4%	32.4K	4.0K	14.2%



Expensive specialty products costing over \$100,000 per year made up a growing share of costs during this study period.

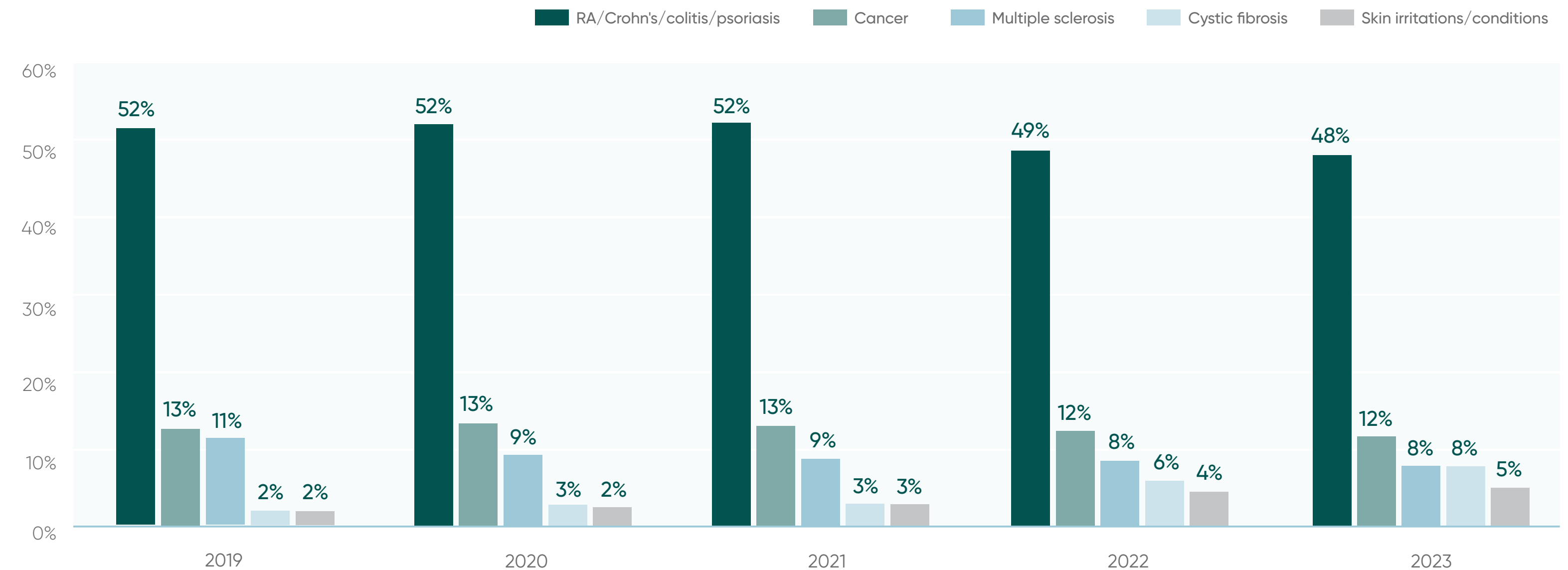
Products costing between \$50,000 and \$99,999 made up 4.8 per cent of total specialty cost and experienced a modest 3.1 per cent cost decline in 2023. This reduction in overall cost growth was driven by the decreased usage of the oncology medication ibrutinib (Imbruvica), which experienced a 23 per cent year-over-year reduction in the number of claimants.

In comparison, expensive specialty products costing over \$100,000 per year made up a growing share of costs during this study period. The most substantial growth occurred in products with an annual treatment cost of \$100,000 to \$249,999, which in turn accounted for 9.8 per cent of the specialty product total cost in 2023, up from eight per cent in 2022 and 4.1 per cent in 2019. This larger share was primarily due to a

36.0 per cent year-over-year cost increase among the highest specialty products in 2023. Elexacaftor/tezacaftor/ivacaftor (Trikafta), a cystic fibrosis medication, was the primary cost growth contributor, with sodium phenylbutyrate/ursodoxicoltaurine (Albrioza) for amyotrophic lateral sclerosis following next. Elexacaftor/tezacaftor/ivacaftor (Trikafta) expenditures jumped by 65 per cent (or \$20.2 million) in 2023, while all the other cystic fibrosis medications (including lumacaftor/ivacaftor (Orkambi), tezacaftor/ivacaftor and ivacaftor (Symdeko), and ivacaftor (Kalydeco)) experienced a negative cost growth in 2023. Sodium phenylbutyrate/ursodoxicoltaurine (Albrioza)'s total cost soared by 800 per cent (or \$2.6 million) year-over-year as the claimant count rose to 37 per cent in 2023 from eight in the previous year.

FIGURE 10

Share of total drug cost by top 5 disease states in total drug cost for specialty drugs, 2019 to 2023





The impact of the specialty products costing \$250,000 or above was relatively small. These products combined made up about 4.0 per cent of the specialty cost in 2023. Although the total drug expenditures for ravulizumab (Ultomiris), a new product used for blood disorders, increased by \$1.3 million in 2023, products that cost between \$250,000 and \$499,999 increased by only 0.9 per cent thanks to reductions of \$0.54 million and \$0.4 million in eculizumab (Soliris) and burosumab (Crysvita) expenditures, respectively.

Lastly, products priced above \$500,000 saw a substantial higher total cost in 2023, attributed to a 22 per cent growth in claimants in 2023. Nevertheless, this class of medications represented merely 1.0 per cent of the overall specialty cost for that year.

Medications used for RA/Crohn's/colitis/psoriasis made up 48 per cent of total specialty products drug cost

Overall, medications used for RA/Crohn's/colitis/psoriasis made up 48 per cent of total specialty products in 2023 (Figure 10 on previous page). Although their share in the specialty products market showed a declining trend during the reporting period, their spending conversely increased by a significant 9.1 per cent to \$336.8 million (Table 16 and Table 17). This increase was primarily due to the robust demand for risankizumab (Skyrizi), upadacitinib (Rinvoq), vedolizumab (Entyvio), and ustekinumab (Stelara).

Cystic fibrosis expenditures surged by 45.4 per cent in 2023 to \$53.5 million. As a result, cystic fibrosis accounted for 7.7 per cent of the specialty product cost up from 2.2 per cent in 2019. Elexacaftor/tezacaftor/ivacaftor (Trikafta) was the sole growth contributor in this class that experienced a 65 per cent (or \$20.2 million) increase in 2023.

TABLE 16

Top 10 specialty disease states, year-over-year total drug cost growth, 2019 to 2023

Top 10 disease states	2019 vs. 2018	2020 vs. 2019	2021 vs. 2020	2022 vs. 2021	2023 vs. 2022
RA/Crohn's/colitis/psoriasis	14.6%	38.5%	10.4%	-4.6%	9.1%
Cancer	5.9%	44.2%	7.8%	-2.9%	3.8%
Multiple sclerosis	9.7%	11.4%	4.9%	-1.6%	1.7%
Cystic fibrosis	44.1%	68.3%	12.6%	112.9%	45.4%
Skin irritations/conditions	141.0%	75.3%	56.1%	33.8%	24.0%
Asthma and COPD	13.3%	40.3%	-0.1%	11.3%	11.1%
HIV	12.3%	13.5%	-1.4%	-1.2%	7.5%
Paroxysmal nocturnal haemoglobinuria (PNH)	21.1%	61.7%	-1.3%	-12.0%	-5.2%
Kidney disorders	50.3%	40.5%	18.5%	27.2%	24.3%
Blood disorders	39.8%	56.8%	7.5%	99.4%	14.0%

TABLE 17

Top 10 specialty disease states, total drug cost, 2019 to 2023

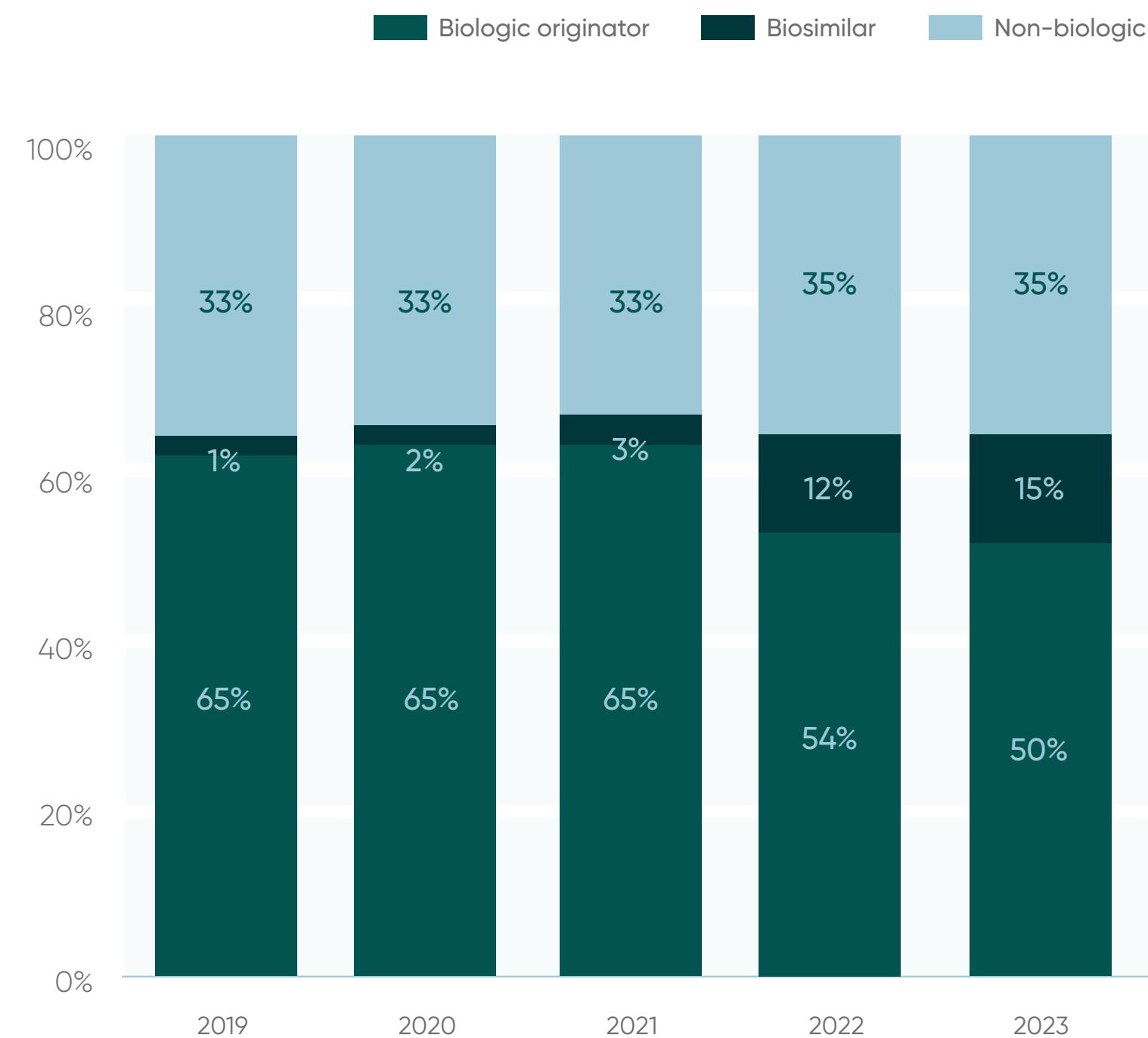
Top 10 disease states	2019	2020	2021	2022	2023
RA/Crohn's/colitis/psoriasis	\$211.7M	\$293.1M	\$323.7M	\$308.8M	\$336.8M
Cancer	\$51.6M	\$74.3M	\$80.2M	\$77.9M	\$80.8M
Multiple sclerosis	\$46.2M	\$51.5M	\$54.0M	\$53.1M	\$54.1M
Cystic fibrosis	\$9.1M	\$15.4M	\$17.3M	\$36.8M	\$53.5M
Skin irritations/conditions	\$7.5M	\$13.2M	\$20.6M	\$27.5M	\$34.2M
Asthma and COPD	\$18.4M	\$25.9M	\$25.8M	\$28.8M	\$32.0M
HIV	\$15.2M	\$17.3M	\$17.1M	\$16.9M	\$18.1M
Paroxysmal nocturnal haemoglobinuria (PNH)	\$7.4M	\$12.0M	\$11.9M	\$10.4M	\$9.9M
Kidney disorders	\$2.7M	\$3.8M	\$4.5M	\$5.7M	\$7.1M
Blood disorders	\$1.7M	\$2.6M	\$2.8M	\$5.6M	\$6.4M



Specialty biologics versus specialty non-biologics

Biologics continue to make up the majority of the specialty expenditures over the study period; however, this category’s composition changed significantly in 2022 and 2023. Overall biologics (including originator biologics and biosimilars) accounted for 65 per cent of specialty expenditures, and non-biologics accounted for 35 per cent in 2023.

FIGURE 11
Biologics and non-biologics share of specialty total drug cost by year, 2019 to 2023



Biosimilars grew from 1.5 per cent of specialty expenditure in 2019 to 15 per cent in 2023 (Figure 11).

RA/Crohn’s/colitis/psoriasis made up the largest disease state within the biologic class at 69.9 per cent of total expenditures (Table 18). This class experienced a 9.2 per cent growth in costs driven by risankizumab (Skyrizi), vedolizumab (Entyvio), and ustekinumab (Stelara) in 2023. Consequently, the five leading conditions within the biologic specialty

TABLE 18
Top 5 disease states for specialty biologics/non-biologics, 2023

Specialty biologics			
Disease state	Share of total drug cost	YOY total drug cost difference	YOY total drug cost growth
RA/Crohn’s/colitis/psoriasis	69.9%	\$26.6M	9.2%
Skin irritations/conditions	7.5%	\$6.6M	24.0%
Asthma and COPD	7.1%	\$3.2M	11.1%
Multiple sclerosis	4.9%	\$3.7M	20.1%
Paroxysmal nocturnal haemoglobinuria (PNH)	2.2%	-\$0.5M	-5.2%
Top 5 subtotal	91.6%	\$39.6M	10.6%
Total	100.0%	\$41.3M	10.0%

drugs represented over 90 per cent of their total cost. Specialty non-biologics expenditures were less concentrated than their biologic counterparts. The top 5 conditions within the non-biologic specialty products group made up 53.7 per cent of the total drug cost compared to 91.6 per cent under biologic specialty products. Cystic fibrosis contributed \$16.7 million towards the year-over-year cost growth within this product cohort, making up 21.9 per cent of total drug costs.

Specialty non-biologics			
Disease state	Share of total drug cost	YOY total drug cost difference	YOY total drug cost growth
Cystic fibrosis	21.9%	\$16.7M	45.4%
Multiple sclerosis	13.1%	-\$2.8M	-8.0%
RA/Crohn’s/colitis/psoriasis	8.4%	\$1.5M	7.7%
HIV	7.4%	\$1.3M	7.5%
Kidney disorders	2.9%	\$1.4M	24.3%
Top 5 subtotal	53.7%	\$18.1M	10.4%
Total	100%	\$24.4M	11.1%



Focus on biosimilars

Biosimilars present comparable safety and efficacy to their originator products but at a significantly lower cost. Overall, there are 15 biologic originators with biosimilars on the market, and the total drug cost for biosimilars reached \$122 million in 2023, up 38 per cent (or \$33.7 million) from the previous year. In contrast, spending on biologic originators (the

biologics where a biosimilar was available) declined by 32 per cent (or \$32.9 million) in 2023 (Figure 12).

As a result of GreenShield's comprehensive biosimilar strategies, biosimilars continued to gain momentum throughout GreenShield in 2023 and for the first time, the expenditures on biosimilars exceeded that of their originator counterparts. The significant growth in the use of

biosimilars was led by the biosimilars of Remicade and Humira as their total drug costs jumped by 37.5 per cent and 55.2 per cent year-over-year to \$49.0 million and \$40.9 million in 2023, respectively (Figure 13). This strong growth contributed 83 per cent of the biosimilar total drug cost growth in 2023.

FIGURE 12
Biosimilar and their biologic originator total drug cost, 2019 to 2023

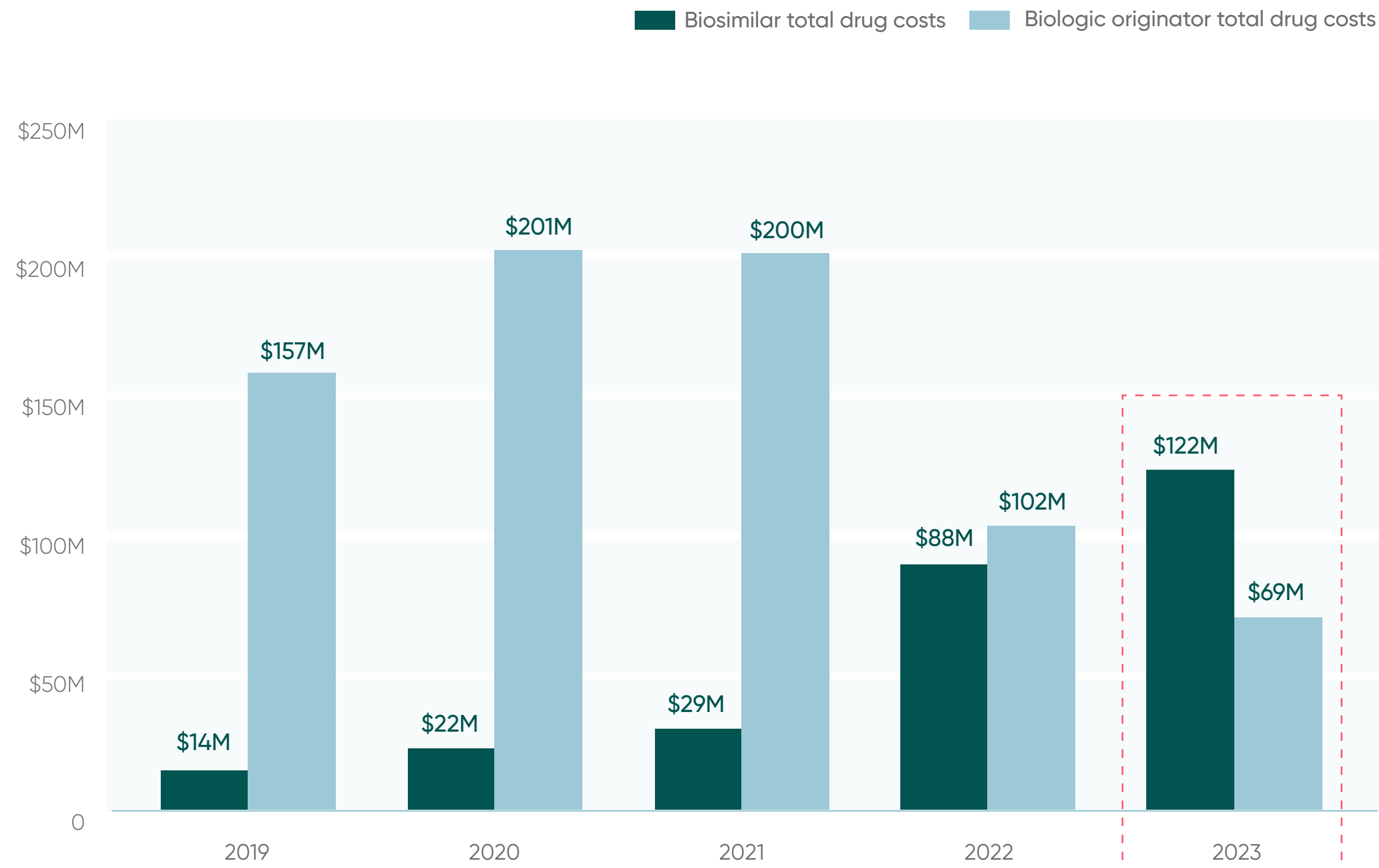
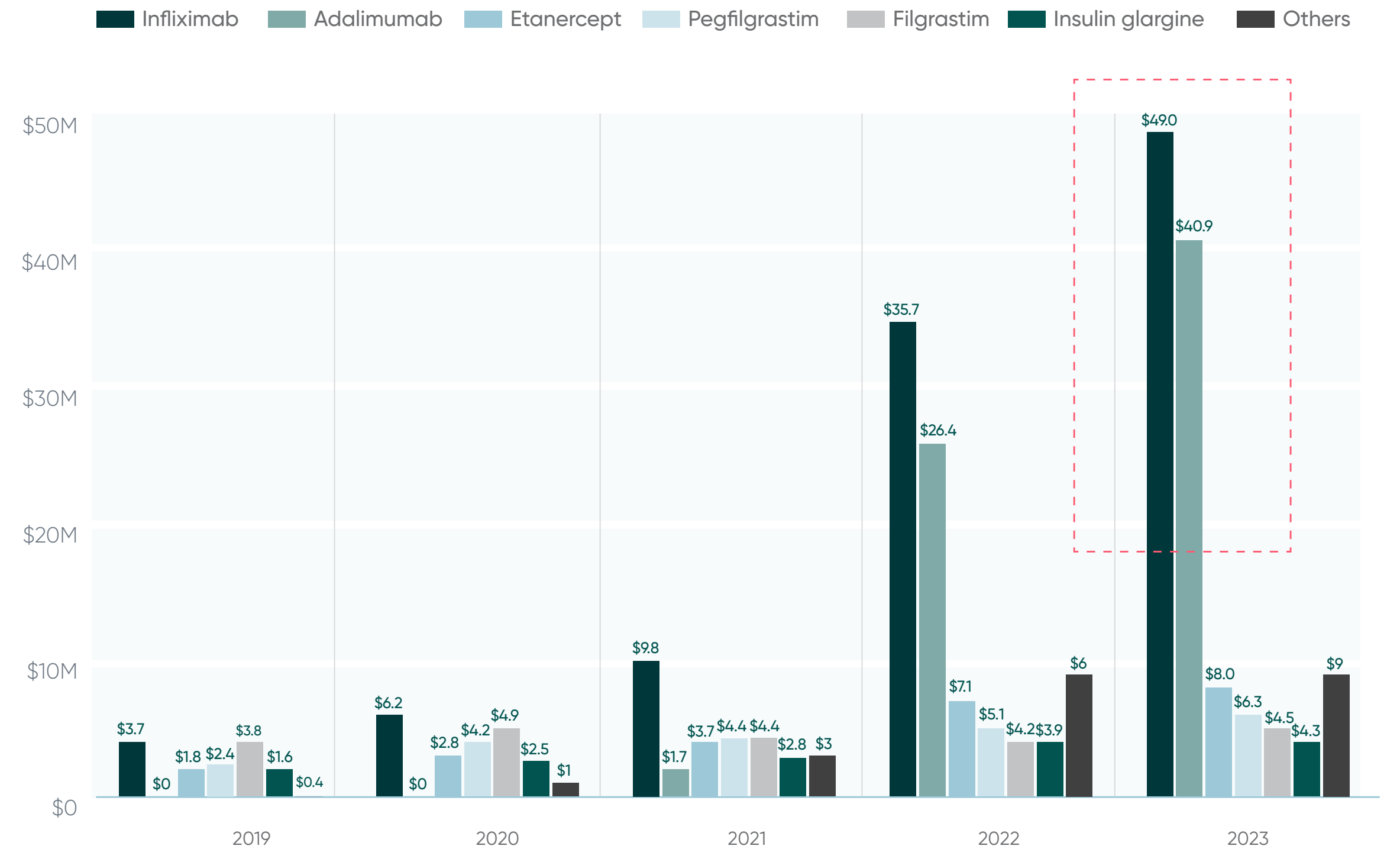


FIGURE 13
Biosimilar total drug costs by drug, 2019 to 2023



Note: Others include the total drug costs from the biosimilars in glatiramer, rituximab, bevacizumab, insulin lispro, teriparatide, enoxaparin, insulin aspart and trastuzumab.



There are 15 biologic originators with biosimilars on the market.

The rapid biosimilar utilization growth for GreenShield reflected our much greater biosimilar penetration than in other private drug plans monitored by IQVIA in 2023. For the top 5 chemicals (in total cost) that have biosimilars, their rates of biosimilar penetration all surpassed the other private drug plans (Table 19). In addition, provincial government biosimilar transitioning policies have driven high levels of biosimilar penetration within the provincial drug programs in both Ontario and Quebec.

Provincial government policies that implement biosimilar transitioning under their health care plans have now been launched in 12 out of the 13 jurisdictions (British Columbia, Alberta, New Brunswick, Quebec, Northwest

For the first time, the expenditures on biosimilars exceeded that of their originator counterparts.

Territories, Nova Scotia, Saskatchewan, Ontario, Newfoundland and Labrador, Yukon, Prince Edward Island, and most recently Manitoba). These policies have had the effect of driving biosimilar adoption in each of these provinces, but due to the timing of implementation, there are dramatic differences in biosimilar penetration across the country.

TABLE 19

Biosimilars share of claims for the top 5 molecules, 2023

Molecule	GreenShield	Other private drug plans*	Ontario public plans*	RAMQ*
	Biosimilar share of claims			
Infliximab	72.3%	44.9%	56.5%	97.9%
Adalimumab	78.6%	63.9%	61.9%	98.8%
Etanercept	80.2%	69.0%	69.3%	100.0%
Pegfilgrastim	100.0%	98.6%	100.0%	100.0%
Insulin glargine	84.3%	56.6%	40.6%	98.2%

* Source: IQVIA, PharmaStat



The majority of public drug programs had implemented biosimilar initiatives prior to the fourth quarter of 2023. Biosimilar initiatives in Nova Scotia, Saskatchewan, and Ontario completed their transition periods within the

year 2023, resulting in a significant shift in biosimilar adoption from the fourth quarter of 2022 to the fourth quarter of 2023 across these three public drug programs (Table 20). There was also a considerable increase in biosimilar

penetration for infliximab and adalimumab in private drug plans during this period however it was less pronounced.

TABLE 20

Biosimilar share of infliximab and adalimumab claims by province and program type, October through December 2023

Province	Infliximab						Adalimumab					
	GreenShield		Other private drug plans*		Public*		GreenShield		Other private drug plans*		Public*	
	2022Q4	2023Q4	2022Q4	2023Q4	2022Q4	2023Q4	2022Q4	2023Q4	2022Q4	2023Q4	2022Q4	2023Q4
BC	77.8%	65.4%	64.7%	76.2%	99.4%	99.4%	90.7%	88.0%	62.0%	68.8%	98.6%	98.1%
AB	48.4%	55.2%	30.0%	37.3%	100.0%	100.0%	26.9%	43.9%	24.5%	39.9%	100.0%	100.0%
SK	-	-	0.0%	0.0%	6.4%	96.8%	100.0%	75.0%	25.9%	70.6%	21.4%	99.4%
MB	50.0%	60.0%	72.5%	84.4%	39.2%	43.8%	15.8%	100.0%	46.2%	63.4%	12.3%	24.0%
ON	25.7%	33.9%	14.7%	19.3%	32.7%	81.9%	29.2%	48.7%	19.1%	39.0%	33.1%	83.0%
QC	90.1%	91.5%	53.8%	63.6%	97.3%	98.4%	94.4%	95.7%	72.9%	79.5%	98.3%	99.0%
NB	46.2%	50.0%	13.9%	16.3%	100.0%	100.0%	29.4%	62.3%	16.0%	26.9%	100.0%	100.0%
NS	16.7%	35.0%	4.0%	8.7%	48.0%	93.5%	29.2%	53.8%	11.3%	29.2%	37.3%	95.4%
PE	-	-	0.0%	0.0%	-	-	0.0%	-	3.8%	17.7%	-	-
NL	0.0%	0.0%	2.1%	3.6%	4.3%	73.4%	10.5%	38.1%	8.0%	18.7%	9.8%	86.1%

* Source: IQVIA, PharmaStat

Global biosimilar penetration

Biosimilar penetration rates in Canada can be compared globally by leveraging IQVIA's market-level data in other countries. A snapshot of biosimilar rates for Q2 2023 shows that GreenShield's biosimilar penetration was often in line with most European countries and was much higher than that experienced by the U.S. and Japan (Table 21). In particular, the biosimilar penetration rates of pegfilgrastim and insulin glargine were higher compared to the majority of the countries included in the study.



TABLE 21

GreenShield biosimilars share vs. other countries, April through June 2023

	infliximab	adalimumab	etanercept	pegfilgrastim	insulin glargine
GreenShield	72%	77%	79%	100%	84%
Denmark	99%	98%	94%	100%	38%
Finland	99%	74%	67%	91%	3%
France	82%	51%	56%	86%	30%
Germany	86%	77%	82%	63%	17%
Italy	97%	85%	84%	86%	14%
Japan	29%	14%	51%	0%	50%
Netherlands	92%	74%	37%	98%	29%
Norway	99%	93%	92%	100%	32%
Poland	100%	100%	96%	100%	26%
Spain	87%	69%	59%	90%	20%
U.K.	96%	90%	87%	92%	15%
U.S.	54%	2%	0%	44%	28%

Level of biosimilar penetration 0–24% 25–49% 50–74% 75–100%

Source: IQVIA EMEA Thought Leadership; IQVIA MIDAS QTR June 2023.



Non-specialty drugs

2024 GreenShield Drug Trends Report





04

Overall trends

While specialty drugs continue to dominate industry conversations, there are important trends starting to emerge pertaining to non-specialty drugs which require close attention.

The dynamics of non-specialty drugs are best illustrated by dividing GreenShield claimants into cost intervals (Table 22). Each of these cost intervals is dominated by specific therapeutic categories such as asthma, migraines, and diabetes.

The overarching theme is the growing utilization of biologic drugs to treat these relatively common conditions that have typically been treated with traditional small molecule drugs. This utilization is driving unprecedented growth in spending and will require closer management of not only the appropriateness of drug therapy but also overall disease management. Total non-specialty drug cost reached \$1.77 billion in 2023, up 11.3 per cent year-over-year thanks to the 8.8 per cent increase in the total number of non-specialty claimants (Table 22). The two fastest-growing

claimant-cost-interval categories in 2023 were the \$1,000–\$1,999 and the \$5,000–\$9,999 intervals; the dynamics of each are outlined below.

Claimant cost interval \$5,000–\$9,999

Spending on drugs for claimants with an annual treatment cost of \$5,000–\$9,999 grew by 23.3 per cent (to \$66 million or 2.7 per cent of total drug cost) in 2023. This growth was attributed to a 21.4 per cent increase in claimants especially with the greater utilization of the biologic treatments within its top disease states. The top 5 disease states by cost made up 86.1 per cent of the total drug cost.

TABLE 22

Utilization by claimant cost intervals, 2023

Claimant cost intervals	Share of total drug cost	Contribution to total drug cost growth	Total drug cost growth		Claimant growth	
			2023 vs. 2022 (YOY)	2022 vs. 2018 (annually)	2023 vs. 2022 (YOY)	2022 vs. 2018 (annually)
<\$500	44.5%	44.4%	11.0%	8.4%	8.9%	6.2%
\$500–\$999	13.5%	1.9%	1.4%	10.6%	5.3%	8.3%
\$1,000–\$1,999	7.8%	18.3%	30.3%	22.4%	19.3%	15.8%
\$2,000–\$2,999	1.8%	2.2%	13.8%	12.8%	9.9%	8.9%
\$3,000–\$3,999	0.8%	0.7%	9.3%	8.0%	12.6%	7.4%
\$4,000–\$4,999	0.6%	0.5%	9.7%	9.4%	7.9%	6.0%
\$5,000–\$9,999	2.7%	5.2%	23.3%	20.1%	21.4%	22.4%
Non-specialty	71.7%	73.2%	11.3%	10.3%	8.8%	6.8%
Specialty	28.3%	26.8%	10.4%	15.5%	14.2%	13.0%



Products used for eye diseases, such as macular degeneration, made up 26.7 per cent of the total drug cost within this cohort of products in 2023 (Table 23), followed by the products used for migraines, high cholesterol, HIV, and cancer. The combination of these top 5 disease states made up 86.1 per cent of the total drug cost. These trends are mainly driven by the use of newer patented treatments combined with the intensification of treatments for these conditions.

Eye diseases

Eye disease (such as macular degeneration) products in the \$5,000–\$9,999 interval continued their robust cost growth trend in 2023 (Table 23). The total drug costs for these products rose by 34.1 per cent year-over-year, propelled by a 30.4 per cent increase in claimants for aflibercept (Eylea) and faricimab (Vabysmo). These two treatments accounted for 70 per cent and 30 per cent of the cost growth for this disease category, respectively. Additionally, the significant growth in utilization caused by the eye disease category contributed 35.9 per cent to the total drug cost growth for products within the \$5,000–\$9,999 range, compared to its 26.7 per cent share of the total drug costs.

HIV

HIV total drug cost jumped by 40.5 per cent year-over-year in 2023. This substantial cost growth was mainly attributed to the relatively new HIV medications, like emtricitabine/tenofovir/alafenamide (Descovy) and dolutegravir/lamivudine (Dovato), and they largely overpowered the cost decline on emtricitabine/tenofovir (Truvada), tenofovir (Viread), raltegravir (Isentress), and darunavir (Prezista) which faced strong generic competition. As a result, HIV medications accounted for 22.1 per cent of the total cost growth, while they made up only 12.7 per cent of total drug cost within the \$5,000–\$9,999 cohort.

TABLE 23

Top 5 disease states for claimants in the \$5,000–\$9,999 cost interval, 2023

Rank	Disease state	Share of total drug cost	Total drug cost growth		Claimant growth	
			2023 vs. 2022	2023 vs. 2022	2023 vs. 2022	2023 vs. 2022
1	Macular degeneration	26.7%	34.1%		30.4%	
2	Migraines	19.8%	20.0%		21.9%	
3	Elevated cholesterol	15.3%	20.4%		22.0%	
4	HIV	12.7%	40.5%		29.2%	
5	Cancer	11.6%	13.1%		17.5%	
Top 5 total		86.1%	Not available			

TABLE 24

Top 5 disease states for claimants in the \$1,000–\$1,999 cost interval, 2023

Rank	Disease state	Share of total drug cost	Total drug cost growth		Claimant growth	
			2023 vs. 2022	2023 vs. 2022	2023 vs. 2022	2023 vs. 2022
1	Diabetes	52.1%	52.5%		41.3%	
2	Weight control	11.6%	44.9%		47.8%	
3	Cervical dystonia	6.7%	16.4%		11.9%	
4	Medical devices/equipment - CGM/FGM*	5.8%	12.7%		14.5%	
5	RA/Crohn's/colitis/psoriasis	4.4%	12.4%		9.5%	
Top 5 total		80.6%	Not available			

* CGM = continuous glucose monitoring; FGM = flash glucose monitoring

Claimant cost interval \$1,000–\$1,999

Drug spending for claimants with an annual treatment cost between \$1,000 and \$1,999 has experienced exceptional growth over the years. In 2023, the total drug cost for this interval grew by 30.3 per cent; this was also the fastest annual growth rate across all cost intervals, including specialty products.



The top 5 conditions for this product interval made up 80.6 per cent of the total drug cost including 52.1 per cent from diabetes medications. Diabetes medications were the primary driver in this cohort and were responsible for nearly 80 per cent of the total drug cost growth in 2023. This increase was attributed to higher semaglutide (Ozempic) expenditures, which rose 60 per cent year-over-year.

Weight control was the other stand-out category within this cost interval, reporting a 44.9 per cent total drug cost growth year-over-year. Naltrexone/bupropion (Contrave) and liraglutide (Saxenda) made up 15 per cent and 85 per cent of the weight control total drug cost in 2023. They experienced a 37 per cent and 46 per cent year-over-year total drug cost growth, respectively, attributable to the increase in the number of claimants.

Claimant cost interval \$500–\$999

Drug spend for claimants with an annual treatment cost ranging from \$500 to \$999 total drug cost grew by 1.4 per cent year-over-year in 2023, despite the number of claimants growing by a disproportionate 5.3 per cent. This imbalance was ascribed to the intense generic competition that occurred in the therapeutic areas of diabetes and blood clots.

At a disease state level, expenditures for diabetes fell by 17.8 per cent, which equates to \$15.8 million (Table 25). This reduction was primarily due to sitagliptin/metformin (Janumet) and sitagliptin (Januvia), which experienced

significant generic competition, leading to a 70.9 per cent decrease in their total drug cost, amounting to \$17.6 million year-over-year. Nonetheless, the increased utilization by claimants of empagliflozin (Jardiance), insulin degludec (Tresiba), and empagliflozin/metformin (Synjardy) mitigate these considerable savings within this therapeutic category.

Similarly, blood clot products faced a large decrease in expenditures due to generic competition. Total drug costs for apixaban (Eliquis), a medication for blood clots, diminished by 93.3 per cent, or \$10.6 million, which contributed to a 40 per cent reduction in costs across this therapeutic class (Table 25).

TABLE 25

Top 5 disease states for claimants in the \$500–\$999 cost interval, 2023

Rank	Disease state	Share of total drug cost	Total drug cost growth		Claimant growth	
			2023 vs. 2022	2023 vs. 2022	2023 vs. 2022	2023 vs. 2022
1	ADHD	33.5%	23.6%		20.5%	
2	Diabetes	27.1%	-17.8%		-0.4%	
3	Anxiety/depression	7.0%	8.3%		7.0%	
4	Asthma and COPD	4.9%	15.6%		10.0%	
5	Blood clots	8.5%	-40.1%		-37.0%	
Top 5 total		81.1%	Not available		Not available	

5

Emerging drug trends



05

Overall trends

Through analysis of our claims data, we note four key trends worthy of plan sponsor consideration for future planning. These trends include significant developments in diabetes treatment, a changing perspective on obesity, a growing opportunity to manage non-specialty drug costs through managed formularies, and the increasing role of pharmacists in prescribing medications.

Diabetes

The increasing incidence of diabetes among Canadians, coupled with the introduction of new medications to treat this condition, continues to result in cost pressures. Recently, it was estimated that 15 per cent of the Canadian population had either diagnosed or undiagnosed diabetes in 2023, with a projected increase to 17 per cent of the Canadian population by 2033.* This steady increase, combined with the demonstrated effectiveness of new medications in improving long-term health outcomes, means that plan sponsors can expect diabetes to have continued impact on both claimant health and costs over the next decade.

New medications pushing costs

The drugs known as glucagon-like peptide-1 (GLP-1) agonists are approved for use by Health Canada for individuals with type-2 diabetes. They have not only shown to be highly effective in managing this condition, but they are also demonstrating benefits in the prevention of cardiovascular events (e.g. heart attack, stroke) in people with diabetes with existing cardiovascular disease.

Interestingly, it was the effectiveness of GLP-1 agonists in weight management that led to widespread discourse throughout social media and popular culture. Due to their use in diabetes and weight management,

It was estimated that 15 per cent of the Canadian population had either diagnosed or undiagnosed diabetes in 2023, with a projected increase to 17 per cent of the Canadian population by 2033.*

this class of drugs is expected to reach nearly \$50 billion in annual global sales by 2024 and surpass \$100 billion by 2029.** They are anticipated to become the largest blockbuster drugs in history.

Overall trends

In 2023, there was an increase in both the number of diabetes claimants (12.6 per cent) and expenditures (15.8 per cent) (Table 26). As a result, diabetes spending grew from 8.4 per cent of total drug costs in 2022 to 8.8 per cent of total drug costs in 2023.

TABLE 26

Diabetes expenditure and claimant year-over-year growth, 2019 to 2023

Metric	2019 vs. 2018	2020 vs. 2019	2021 vs. 2020	2022 vs. 2021	2023 vs. 2022	2023 vs. 2019 (annualized)
Total drug cost	12.5%	22.0%	8.9%	19.9%	15.8%	16.6%
Number of claimants	6.3%	10.1%	7.1%	11.6%	12.6%	10.3%

* **Diabetes in Canada.** Diabetes Canada website. <https://www.diabetes.ca/advocacy---policies/advocacy-reports/national-and-provincial-backgrounders/diabetes-in-canada>

** **GLP1 agonists set to become the best-selling drugs in 2024, says GlobalData.** GlobalData website. <https://www.globaldata.com/media/pharma/glp1-agonists-set-to-become-the-best-selling-drugs-in-2024-says-globaldata/>



In 2023, seven out of every 100 claimants had at least one diabetes medication claim, up from 6.1 per cent of claimants in 2019. The lower prevalence compared to the overall Canadian population is likely due to intrinsic demographic differences between private insurance claimants and the general Canadian population, as well as the claimant population who remain undiagnosed and have not made a diabetes medication claim. Between 2019 and 2023, the total number of diabetes claimants increased by 10.3 per cent, outpacing the 6.6 per cent growth in total claimants across all therapies.

GLP-1 agonists

Diabetes spend was dominated by GLP-1 agonists (e.g. Ozempic, Rybelsus), accounting for 46.2 per cent of the total diabetes drug cost in 2023. They also represented an increasing share of both spending and usage for diabetes medications between 2019 and 2023. By 2023, 29 per cent of people with diabetes were using these products, compared to 10 per cent in 2019 and 23 per cent in 2022 (Figure 14). As a result, GLP-1 agonist spending increased from 19 per cent of diabetes drug cost in 2019 to 46 per cent of diabetes drug cost in 2023.

In 2023, seven out of every 100 claimants had at least one diabetes medication claim.

Total GLP-1 agonist spending grew 50 per cent year-over-year in 2023 to approximately \$100 million, up from \$22 million in 2019 (Figure 15). Expenditures in 2023 were eclipsed by semaglutide, including Ozempic and Rybelsus, which represented 91.4 per cent (or \$91 million) of total GLP-1 spending.

FIGURE 14
GLP-1 agonists share of diabetes drug costs and share of diabetes claimants, 2019 to 2023

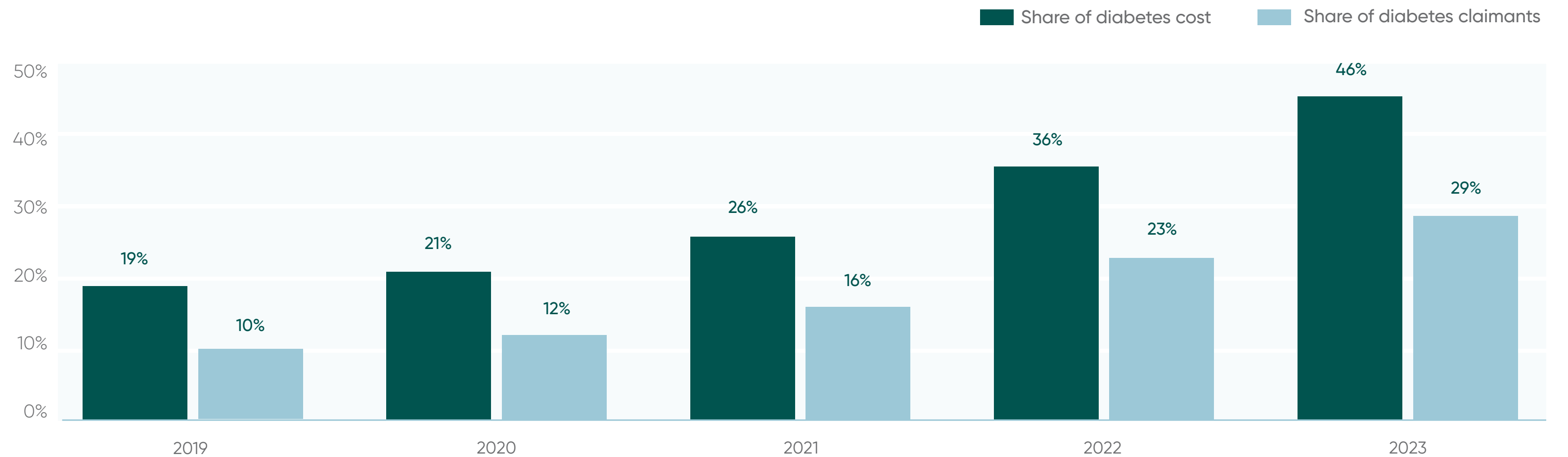
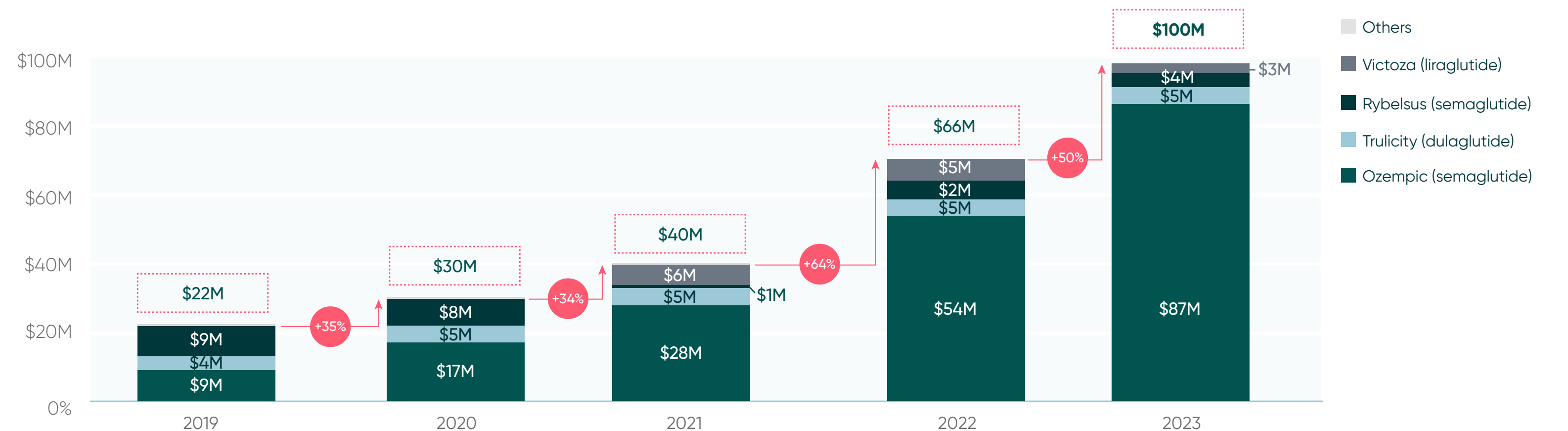


FIGURE 15
Total drug cost by GLP-1 product, 2019 to 2023





Obesity and weight loss medications: a shifting perspective

Obesity is a major health concern closely linked to chronic conditions such as type-2 diabetes, hypertension, and heart disease. In 2022, nearly one third of Canadians aged 18 years or older were classified as obese, a significant rise from just one fifth in 2003.* Currently, five medications are approved for weight loss in Canada.

Historically, obesity was often seen as a lifestyle choice, with weight loss medications labelled as “lifestyle medications,” typically excluded from insurance coverage. However, the medical community now recognizes obesity as a chronic, multifaceted condition – especially with the availability of more effective treatments. This shift has reframed the approach to managing obesity, treating it with the same urgency as other chronic diseases.

In 2023, weight loss medications accounted for 1.0 per cent of total drug costs, up from 0.6 per cent in 2019. While these medications still represent a small fraction of drug expenditures, their costs grew by 170 per cent between 2019 and 2023. There was a 43 per cent increase in costs from 2022 to 2023 alone, largely due to the growing number of claimants using weight loss medications, which increased from 0.3 per cent in 2019 to 0.53 per cent in 2023 (Table 27).

This dramatic increase signals not just the growing acceptance of medical interventions for obesity but also the impact these treatments will have on future costs. Weight loss medication spending in 2023 was dominated by liraglutide (Saxenda), the once-daily injectable product, which accounted for more than 80 per cent of weight loss medication expenditures. Saxenda, which shares the same active ingredient (liraglutide) as the diabetes medication Victoza, grew to \$21 million in spending in 2023.

TABLE 27

Weight loss medications expenditure and claimant year-over-year growth, 2019 to 2023

Metric	2019 vs. 2018	2020 vs. 2019	2021 vs. 2020	2022 vs. 2021	2023 vs. 2022	2023 vs. 2019 (annualized)
Total drug cost	38.4%	16.9%	33.6%	22.5%	43.2%	28.7%
Number of claimants	29.4%	7.6%	29.5%	14.7%	43.5%	23.1%

TABLE 28

Weight loss products in 2024 and beyond

Status	Weight loss product	Active ingredient(s)	Mechanism of action	Dosing	Other products with the same active ingredient	
Available on the market in 2024	Wegovy	Semaglutide	GLP-1	Once weekly	Ozempic and Rybelsus (approved for diabetes)	
Pipeline	FDA approved in November 2023	Zepbound	Tirzepatide	GIP + GLP-1	Once weekly	Mounjaro (approved for diabetes)
	Phase 3 trial results available in second half of 2024	CagriSema	Cagrilintide + semaglutide	Amylin and calcitonin receptor agonist + GLP-1	Once weekly	-
	Phase 3 trial results available in early 2026		Retatrutide	GIP + GLP-1 + glucagon receptor tritagonist	Once weekly	-

GLP-1 = glucagon-like peptide-1; GIP = glucose-dependent insulinotropic polypeptide

* An overview of weight and height measurements on World Obesity Day. Statistics Canada website. <https://www.statcan.gc.ca/o1/en/plus/5742-overview-weight-and-height-measurements-world-obesity-day>



Further growth is anticipated within the weight loss class (Table 28 on previous page) as weight loss drugs demonstrate benefits in reducing cardiovascular events, and as more efficacious treatment options come to market including (semaglutide) Wegovy, which launched in Canada in April 2024.

A recent study* demonstrated that individuals with existing cardiovascular disease but without diabetes, treated with semaglutide, had a 20 per cent lower risk of cardiovascular events (e.g. heart attack, stroke, death) compared to patients who received a placebo. The findings of this landmark study showed that the medication could be routinely prescribed to treat cardiovascular illness, beyond solely using the medication for weight loss. This has likely played a part in many plan sponsors including weight loss drugs on benefit plans.

Managed formularies: an opportunity to manage non-specialty drug spend

The need to manage spending on non-specialty drugs has increased in recent years, as evidenced by the growing overall spend on drugs that cost \$1,000–\$3,000 per year (Section 2, Figure 2). One mechanism to accomplish this is through adoption of a formulary design that manages these higher-cost non-specialty drugs. Under managed formulary designs, such as GreenShield’s SMARTspend® managed formulary (lite or enhanced), new non-specialty drugs are subjected to an evidence-based review process and assigned a coverage status – covered, requires prior authorization, or not covered.

* *Semaglutide and Cardiovascular Outcomes in Obesity without Diabetes*. *N Engl J Med* 2023; 389:2221-2232. *N Engl J Med* 2023; 389:2221-2232. DOI: 10.1056/NEJMoa2307563.

TABLE 29

Comparison of cost per claim by formulary type, 2022 to 2023

Formulary type	Total cost per claim	
	2022	2023
Managed formulary combined (enhanced + lite)	\$71	\$72
Open formulary	\$78	\$79
Difference in cost per claim (managed vs. open)	-9.0%	-8.2%

TABLE 30

Comparison by diabetes medication and formulary type, 2023

Diabetes medication (by total cost)	Share of claims		Share of total costs		Average cost per claim		Difference in cost per claim (managed vs. open formulary)
	Managed formulary	Open formulary	Managed formulary	Open formulary	Managed formulary	Open formulary	
GLP-1	16.7%	17.5%	44.9%	42.6%	\$349.1	\$347.2	0.6%
SGLT-2	19.7%	19.8%	23.2%	23.7%	\$153.1	\$170.5	-10.2%
Insulin	12.4%	15.0%	14.5%	16.6%	\$152.8	\$158.3	-3.4%
DPP-4	11.1%	8.9%	10.1%	8.6%	\$117.2	\$138.7	-15.4%
Metformin	28.8%	29.0%	5.1%	6.7%	\$23.1	\$33.0	-30.1%
SU	10.4%	9.2%	1.5%	1.2%	\$19.1	\$19.4	-1.1%
Thiazolidinediones	0.3%	0.2%	0.3%	0.1%	\$107.1	\$92.3	16.0%
GLP-1 and insulin	0.1%	0.1%	0.2%	0.3%	\$404.2	\$424.1	-4.7%
Meglitinides	0.4%	0.2%	0.1%	0.1%	\$30.1	\$46.5	-35.3%
Alpha-glucosidase inhibitor	0.1%	0.1%	0.0%	0.0%	\$29.6	\$32.5	-8.9%
All diabetes	100.0%	100.0%	100.0%	100.0%	\$129.8	\$142.6	-9.0%

GLP-1 = glucagon-like peptide-1 agonists; SGLT-2 = sodium-glucose cotransporter-2 inhibitors; DPP-4 = dipeptidyl peptidase-4 inhibitors; SU = sulfonylureas

Managed formularies experienced an 8.2 per cent lower cost per claim than open formulary plans (Table 29 on previous page). This gap in average drug cost between managed formularies and open formularies was evident in both 2022 and 2023. This is evidence of the effectiveness of this plan design in managing overall expenditure on these non-specialty categories of drugs. Drug plans with a managed formulary had a lower cost per claim across several chronic conditions compared to plans with an open formulary, including diabetes, anxiety/depression, ADHD, hypertension, and acid related gastrointestinal conditions.

Delving deeper into the impact of formulary type in diabetes, it was observed that higher-cost glucagon-like peptide-1 (GLP-1) agonist therapy accounts for a greater portion of diabetes claims within open plans versus managed plans (17.5 per cent vs. 16.7 per cent) as seen in Table 30 (previous page), despite prior authorization requirements for semaglutide being the same across all formularies. This may be due to underlying demographic differences, or because the prescribers of those plan members with managed formularies have become more accustomed to trialling lower-cost medications before prescribing for higher-cost agents.

Managed formularies also had a noticeably lower cost per claim within several of the top diabetes medications including:

- **SGLT-2:** The average cost per SGLT-2 inhibitor claim was 10 per cent lower with managed formulary plans (\$153.1) versus open plans (\$170.5).
- **DPP-4:** Claims for DPP-4 inhibitors were over 15 per cent lower with managed formulary plans (\$117.2) compared to open plans (\$138.7).
- **Metformin:** The average cost per metformin claim was over 30 per cent lower with managed formulary plans (\$23.1) versus open plans (\$33.0).

The increased share of claims observed for diabetes medication categories that have experienced genericization (e.g. DPP-4, SU, thiazolidinediones) on managed formularies compared to open may be attributed to the required step therapy under the managed formulary. This process requires plan members to trial one or more lower-cost alternative medications before obtaining access to them.

Prior authorization: increasing in volume alongside the pipelines of diabetes and high-cost specialty therapies

Prior authorization is a tool leveraged to help ensure drugs are accessed in a way that reflects their labelled indications with considerations of value compared to therapeutic alternatives. As the pharmaceutical industry pipeline has increasingly shifted to development of high-cost specialty therapies, this has resulted in a growing number of products designated as requiring prior authorization on formularies (Table 31).

Overall, there has been a consistent increase in the number of products requiring prior authorization, along with a corresponding rise in total costs, claims, and claimants over the five-year period. 526 (or 10 per cent of all products) required prior authorization in 2019 representing 7.7 per cent of claims and 41.0 per cent of total costs. This grew to 683 (or about 13 per cent of all products) in 2023, representing 8.4 per cent of claims and 45.4 per cent of total costs.

TABLE 31

Utilization of products requiring prior authorization, 2019 to 2023

Time period	Number of unique medications (based on trade name)	Share of total costs	Share of claims	Share of claimants	Average cost per claimant
2019	526	41.0%	7.7%	15.0%	\$2,146
2020	556	43.2%	7.6%	15.3%	\$2,626
2021	616	44.9%	7.9%	16.2%	\$2,697
2022	658	44.3%	8.0%	16.3%	\$2,601
2023	683	45.4%	8.4%	16.9%	\$2,603



Many of the top products that have a prior authorization designation are high-cost specialty products that treat conditions such as inflammatory diseases and cystic fibrosis (Table 32).

Products that treat common conditions such as diabetes also appear in the top 10-list of prior authorization products – in these instances prior authorization is used to ensure step therapy is followed on managed formularies and to prevent off-label usage in conditions where the product is not indicated (e.g. the use of Ozempic for weight loss).



Pharmacists' prescribing: improving timeliness of treatment

In the recent five years, Canada saw an expansion in the scope of practice for pharmacists along with public funding to provide care for some conditions across Canada. This was driven by the need for more convenient and accessible healthcare, the impacts of the COVID-19 pandemic, pressures on the healthcare system, and the need to improve the timeliness of patient care. As a result, pharmacists now have more authority in managing both acute and chronic conditions. Their accessibility in the community setting has the potential to reduce barriers to care.

Pharmacist prescribing varies from one province or territory to another, and includes the following activities, performed independent of a physician:

- **prescribing** a new prescription to treat a condition (usually minor)
- **renewing or extending** an existing prescription for a chronic condition
- **modifying** (adaptation/change of a dose, duration, or dosage form) an existing prescription

Where public funding is available, the funding covers the assessment of the patient's condition, not the actual prescribing act, similar to the funding of a physician visit.

TABLE 32

Top 10 products that have a prior authorization designation, 2023

Ranking (by total cost)	Product	Brand name	Disease state	Share of total drug costs	Share of claimants	Average cost per claimant
1	Semaglutide	Ozempic, Rybelsus	Diabetes	3.7%	1.9%	\$1,890
2	Infliximab	Remicade	RA/Crohn's/colitis/psoriasis	3.1%	0.1%	\$27,317
3	Adalimumab	Humira	RA/Crohn's/colitis/psoriasis	2.5%	0.2%	\$13,540
4	Lisdexamfetamine	Vyvanse*	ADHD	2.4%	2.8%	\$830
5	Ustekinumab	Stelara	RA/Crohn's/colitis/psoriasis	2.1%	0.1%	\$26,032
6	Elexacaftor/tezacaftor/ivacaftor	Trikafta	Cystic fibrosis	2.1%	0.0%	\$173,234
7	Dupilumab	Dupixent	Skin irritations/conditions	1.3%	0.1%	\$16,464
8	Vedolizumab	Entyvio	RA/Crohn's/colitis/psoriasis	1.2%	0.1%	\$19,227
9	Liraglutide	Victoza, Saxenda	Diabetes/weight control	1.0%	0.5%	\$2,016
10	Empagliflozin	Jardiance*	Diabetes	0.9%	1.1%	\$805

* Prior authorization on managed formularies only



The impact of pharmacist prescribing in Canada*

Over the past five years, at a national level, a small but growing portion of total prescriptions was initiated by a pharmacist, rising from 2.5 per cent in 2019 to 6.0 per cent in 2023 (Figure 16). The total drug spend associated with these prescriptions has also followed a similar upward trajectory, increasing from 1.7 per cent of the total prescription drug spend in 2019 to 3.6 per cent of the total prescription drug spend in 2023.

The share of total prescription drug spend that was prescribed by a pharmacist was disproportionately lower than the share of total prescriptions issued. This is because pharmacist prescribing (including prescription adaptations/renewals, minor ailment prescribing, and administering vaccinations) is typically associated with lower costs and less complex medications.

Across Canada, each province saw a growth in the portion of total prescriptions that were prescribed by a pharmacist between 2019 and 2023 (Figure 17).

In 2023, Quebec and Alberta had the highest portion of total prescriptions written by a pharmacist at 9.3 per cent and 7.1 per cent, respectively.

This variance by province is likely due to variance in scope of practice and prescribing privileges for pharmacists, which are further influenced by public funding for the assessment.

* Data presented in this section was obtained from IQVIA's CompuScript, which leverages Canadian retail pharmacy prescription data (including public, private, and cash-paying prescriptions) and segments by prescriber type. This includes over 6,700 pharmacies representing more than 60 per cent of all retail pharmacies in Canada. For the purposes of this section, immunizations adjudicated under the name of a pharmacist will be classified as pharmacist prescribing.

FIGURE 16

Portion of total prescriptions and total drug spend prescribed by a pharmacist in Canada, 2019 to 2023

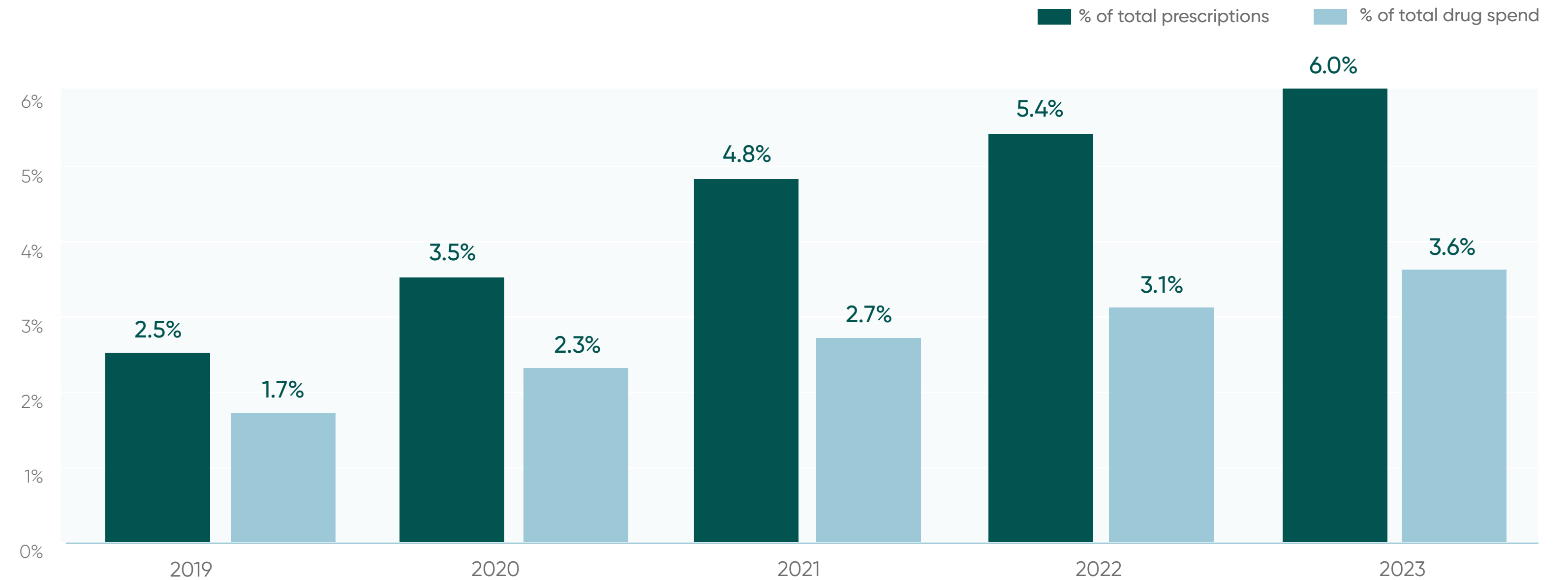
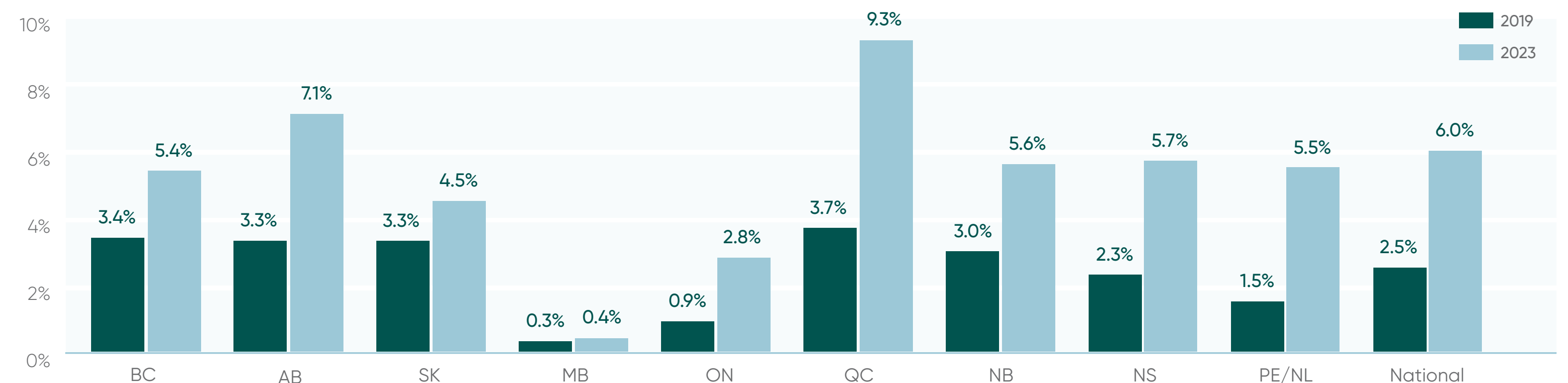


FIGURE 17

Portion of total prescriptions by province that were prescribed by a pharmacist, 2019 vs. 2023





What treatments do pharmacists prescribe?

The disease states with the largest portion of pharmacist prescribing include many chronic conditions such as hypertension, anxiety/depression, diabetes, elevated cholesterol, and acid-related gastrointestinal conditions.

Growth in pharmacist prescribing accelerated during the COVID-19 pandemic, with the increased scope of practice and public funding available to prescribe and administer immunizations including influenza and COVID-19 vaccines as part of broader public health initiatives. In most provinces, pharmacists have the authority to independently prescribe many non-publicly funded vaccines, with British Columbia, Ontario, Nunavut, and Northwest Territories as outliers.

1 million assessments had been conducted by Ontario pharmacists in the first 10 months of 2023.

Infection medications made up an increasing share of pharmacist prescriptions, growing from 3.8 per cent in 2019 to 4.4 per cent at a national level in 2023. This was partially driven by the expansion of pharmacist prescribing authority for minor ailments in some provinces. For example, when minor ailment assessments began to be publicly funded in Ontario in January 2023, the portion of infection prescriptions (for urinary tract infections, pink eye, cold sores and Lyme disease prevention) that were prescribed by a pharmacist increased dramatically from 0.9 per cent in 2019 to 5.0 per cent in 2023.

Public acceptance of pharmacists prescribing appears strong, with the Ontario Ministry of Health announcing that 1 million assessments had been conducted by Ontario pharmacists in the first 10 months of 2023.

A growing portion of anxiety/depression medications were prescribed by a pharmacist in 2023 (7.6 per cent of prescriptions in 2023 versus 5.3 per cent in 2019). Many included renewals or temporary extensions of existing prescriptions, likely as patients wait for their next visit with their psychiatrist or family physician.

Across Canada, hypertension ranked near the top in every province as pharmacists renew/extend prescriptions as part of continuity of care. Diabetes and anxiety/depression also ranked highly in most regions.

Of note, when comparing the average cost per claim when prescribed by a pharmacist versus the average cost per claim across all prescriber types, pharmacists tend to prescribe lower-cost and less complex medications within chronic disease states. For example, the average cost of a diabetes medication when prescribed by a pharmacist is \$84, which is \$33, or 28 per cent lower, than the average cost per claim across all prescriber types.

Looking forward

Preventive health support

As we look towards 2025, the introduction of innovative treatments for chronic diseases emphasizes the need for timely access to health interventions to manage plan sponsor expenses. GreenShield seamlessly integrates various preventive health tools and chronic disease management programs within our health and benefits platform, GreenShield+.

- **GreenShield+:** A first-of-its-kind digital health and benefits ecosystem, GreenShield+ offers unprecedented levels of integration between health services – including telemedicine, pharmacy, mental health, well-being, and chronic disease management – and benefits plans. With GreenShield+, users can search for healthcare providers, check benefits coverage, access healthcare services, connect with thousands of healthcare professionals, and seamlessly submit their benefits claims anytime, anywhere.

- **Employee Assistance Program (EAP):** Recognizing the interconnection between physical and mental health and the long-term health costs of chronic disease, our modern EAP offers access to personalized mental health counselling, nutrition and health coaching, well-being support and more, available anytime, anywhere.
- **Chronic Disease Management program:** Our comprehensive clinician-guided Chronic Disease Management program is a six-month intensive program that provides a dedicated care team, tools, resources, and guidance to help support members to manage and prevent chronic health conditions.

Building a healthier, more equitable future together

Beyond reimagining workplace health and benefits, our vision is for an equitable future where all Canadians, regardless of background or circumstance, can live their healthiest lives. We're focused on increasing access and removing barriers to mental health, essential medicines, oral health, and chronic disease management.

As Canada's only national non-profit health and benefits organization, we prioritize reinvesting in the health and well-being of those most in need. The overarching objectives that guide the company are to invest \$75 million to positively impact at least one million Canadians by the end of 2025. Social impact drives our purpose, and our commitment to advancing health equity touches everything we do. Together, we can improve health outcomes across Canada.

Building a healthier, more equitable future together

As a proudly Canadian non-profit health and benefits company, we envision a future where all Canadians, regardless of background or circumstance can live their healthiest lives. We're committed to democratizing access to culturally appropriate, patient-centred care that leaves no Canadian behind. We accomplish this by advancing sustainable solutions that bring coverage and care together in pursuit of Better Health for All™.



As a non-profit health and benefits company, we reinvest our earnings and redeploy our health services to support underserved communities in Canada through GreenShield Cares. We're on track to deliver on our commitment to invest \$75 million and improve the lives of at least one million Canadians by the end of 2025.

We create shared value

Through our Creating Shared Value (CSV) model, we're also creating products to better serve the needs of all Canadians and fill the gaps in health care. CSV seamlessly integrates our social impact and business growth initiatives to achieve purpose through performance. As our business grows, we expand our financial capacity to drive positive social change as a force for good. As our social impact grows, we become a more sought-after service provider.

Our CSV approach is multi-pronged. We leverage our innovation mindset to develop products and services that address the needs of equity-

seeking groups. We also view societal issues through a social impact lens, which allows us to engage with stakeholders to inform policies and system-wide initiatives. Finally, we deploy our health services to support underserved communities and collaborate with community partners to scale access to culturally appropriate health services, to advance health equity nationally. When your organization selects GreenShield to support its workforce, you're also investing in the health and well-being of Canadians at large. Together, we enable Better Health for All.

About GreenShield

GreenShield is a non-profit integrated health and benefits company and the first organization in Canada to operate as a payer-provider. We offer insurance, administer benefits, and pay claims as a 'payer' while offering health services such as mental health, pharmacy, and telemedicine as a 'provider.' Integrating coverage and care enables us to deliver a personalized experience that improves access, convenience, integration, and health outcomes for Canadians. We are focused on dramatically improving mental health and other chronic disease health outcomes.



GreenShield Health is one of Canada's fastest growing digital health providers. With vast offerings in mental health, pharmacy, telemedicine and chronic disease management, and 5,000+ clinicians, we are empowering millions of Canadians to take control of their health from the comfort of home. In addition to supporting the health of individual Canadians, GreenShield Health offers holistic well-being solutions for public and private organizations of all sizes. Our innovative, tech-forward approach brings together telemedicine, mental health, disease management, well-being, and pharmacy services and our group and individual health insurance and administration services to integrate healthcare for our customers.



For over 65 years, GreenShield has led the way as one of the country's largest health and dental benefits providers, with 19 innovation as our driver and a social mission at our core. We support clients across the country with flexible and automated administration of dental, drug, extended health, travel benefits, and health spending accounts. From forward-thinking claims management strategies to a unique brand of service, we have always focused on making the GreenShield experience valuable for our clients. GreenShield has earned a reputation for exceptional adjudication and administration of pharmacy, dental, and extended health claims, serving over seven million Canadians.



GreenShield Administration is at the forefront of total health benefits management across pharmacy benefits management, claims adjudication, and benefits administration, advancing our payer-provider model. Our capabilities provide access to proprietary information, invaluable insights, and an enhanced healthcare experience, all while effectively managing and controlling costs of all health and dental benefits with a focus on specialty drug costs. We are the only partner able to offer an end-to-end suite of integrated health and benefits technology and services tailored to customers of all sizes, from large organizations to small businesses and entrepreneurs.



[greenshield.ca](https://www.greenshield.ca)

GreenShield is comprised of three non-profit entities: Green Shield Canada (GSC), Green Shield Association (GSA) and Green Shield Canada Foundation (GSCF), and GSA's wholly owned subsidiaries, including Green Shield Health Inc. and Green Shield Administration Inc.



™Trademarks of Green Shield Canada. ©2024 Green Shield Canada. All rights reserved.