VALUE OF PHARMACY BENEFIT MANAGEMENT SERVICES TO PHARMACIES IN CANADA

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Executive summary

Prescription pharmaceuticals are a critical component of Canada’s health care system, contributing to meaningful health outcomes and quality of life for millions of people.

In recent years, pharmaceutical drug spending has accounted for an increasingly large proportion of spending within the system. Growing faster than any other component of health care, expenditures on drugs have surpassed spending on physician compensation to become the second-largest health care system cost in Canada, after hospitals. This influences Canadians' access to important prescription drugs and the sustainability of Canada's health care system. Pharmacy benefits manager’s work on behalf of Canada’s government, private insurers and employers to ensure that the pharmacy ecosystem remains healthy.

Five key constituents ensure safe and clinically appropriate delivery of medication to patients and affordable funding for prescribed therapies – pharmaceutical manufacturers, wholesalers/distributors, pharmacy providers, insurance companies (insurers or payers—both public and private) and pharmacy benefit managers (PBMs). They are overseen by regulators at the federal and provincial levels.

Insurers commonly contract out managing their pharmaceutical spend to integrated technology and administrative intermediaries, called PBMs. In this role, when a patient goes to the pharmacy and shows their insurance card, the pharmacy connects to the PBM, who administers the insurance plan on behalf of the insurer and sends back any patient co-pay with payment and coverage confirmation. This includes plan design management, clinical programs, pricing and financial reconciliation. Express Scripts Canada (ESC) and TELUS Corporation’s TELUS Health division are the two largest pharmacy PBMs in Canada. Others include Canada Life’s ClaimSecure, Green Shield Canada’s HBM+, and Blue Cross Canada’s PBMs.

Insurers engage PBMs in the Canadian market for routing and administration, plan design and formulary management (i.e., developing and maintaining the lists and pricing of drugs approved for coverage), negotiating with manufacturers to secure rebates, and claim audits. Additionally, PBMs supports the cost effectiveness of pharmaceutical utilization through solutions addressing cost containment, fraud, waste and abuse identification and prevention, analytics and reporting, health management and care effectiveness. These value-added solutions are growing in importance as the health care system evolves and faces increased cost pressures.

These services deliver value to all market participants in Canada’s health care system. The value creation stems from a PBM’s role as the enabler of real-time connectivity among the parties involved in paying for and dispensing the prescribed medications in a market with a complex regulatory and funding landscape and a rising cost environment.

While PBMs act as a shared service within the industry, delivering value to all market participants, insurers continue to bear the majority of the cost for PBMs. Where pharmacies in particular derive significant benefit from the existence of the PBM’s capabilities, we examined and evaluated that value accruing to pharmacy providers.

To do so, we defined a scenario of claims settlement that would be true if technology and related resources that enable electronic claims processing were not available. Under this scenario, there are two ways to look at avoided

expenditures which exist from a pharmacy's perspective. They have to do with the fundamental decision of a pharmacy to accept insurance and file a manual claim, or to treat the dispense as a self-pay transaction and avoid the manual claim process.

Assuming that in some cases the pharmacy would accept insurance and in other cases it would require self-pay, the value provided to a traditional retail pharmacy was estimated at **$3.50 to $6.00 per claim**.

An additional valuation technique was also considered, of whether there are current examples of businesses paying for technology services on a transaction basis. We identified a number of such examples for the reader's consideration.

This valuation analysis was commissioned in collaboration with an external, globally-recognized consulting firm with Canadian expertise.

Payment model for pharmaceuticals in Canada[1, 2, 3]

Under the Canada Health Act, prescription drugs administered in hospitals are provided at no cost to the patient. Outside of the hospital setting, provincial and territorial governments are responsible for publicly funded drug plans, which determine what prescription drugs are covered and under what conditions for their eligible recipients.
Most Canadians have access to insurance coverage for prescription drugs through public and/or private insurance plans. On the public side, the federal, provincial and territorial governments offer varying levels of coverage generally for those most in need, based on age, income and medical condition.

In 2022, out-of-pocket spend ($6.4 billion) represented over 15% of total spend on prescription drugs while public plan spend ($16.1 billion) represented approximately 45% of total spend.

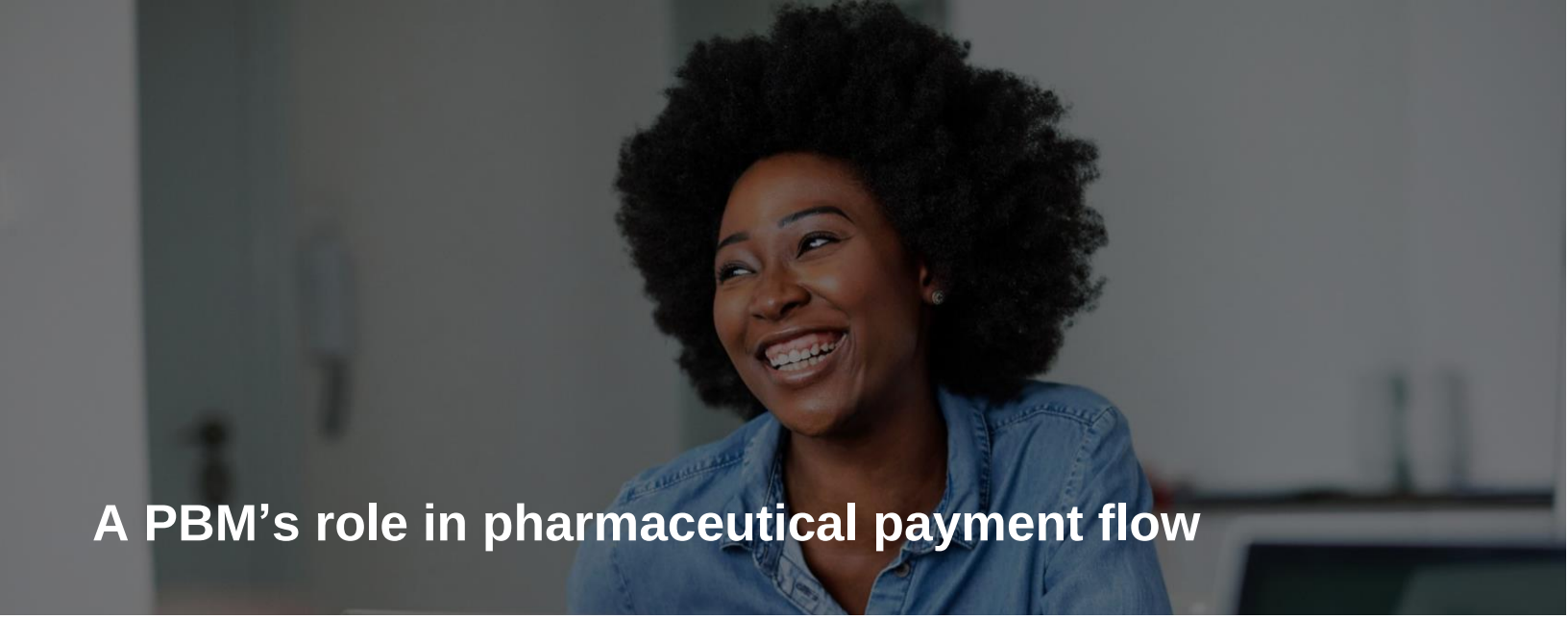
Private insurance is the second-largest payer for prescribed drugs in Canada, accounting for almost 40% ($14.7 billion) of prescribed drug spending in 2022. Key insurers include Manulife, Sun-Life, Canada Life, Desjardins, Group Medical Services, Green Shield Canada, Pacific Blue Cross, Alberta Blue Cross, Saskatchewan Blue Cross, Manitoba Blue Cross, Blue Cross Canassurance and Medavie Blue Cross.

Most private plans cover nearly all prescription drugs, but recent concerns over long-term sustainability have resulted in an increased use of cost management mechanisms, such as mandatory generic substitution, greater use of managed formularies, prior authorization and multi-tiering (promoting the use of more cost-effective medicines), preferred pharmacy networks and increased cost sharing.

Both public and private insurance plans require relatively complex administrative and information technology capabilities including:

- Maintaining and updating drug formularies
- Developing and maintaining a network of pharmacies
- Maintaining membership and eligibility
- Pricing and paying claims
- Customer service call centers
- Plan design and pricing
- Fraud, waste and abuse identification and prevention
- Analytics and reporting
- Grievances and appeals management
- Regulatory compliance and reporting.

Having originally emerged in Canada in the 1990’s as Assure Health and CAPSS, pharmacy benefit management companies aid insurers with a number of these capabilities, as we discuss next.



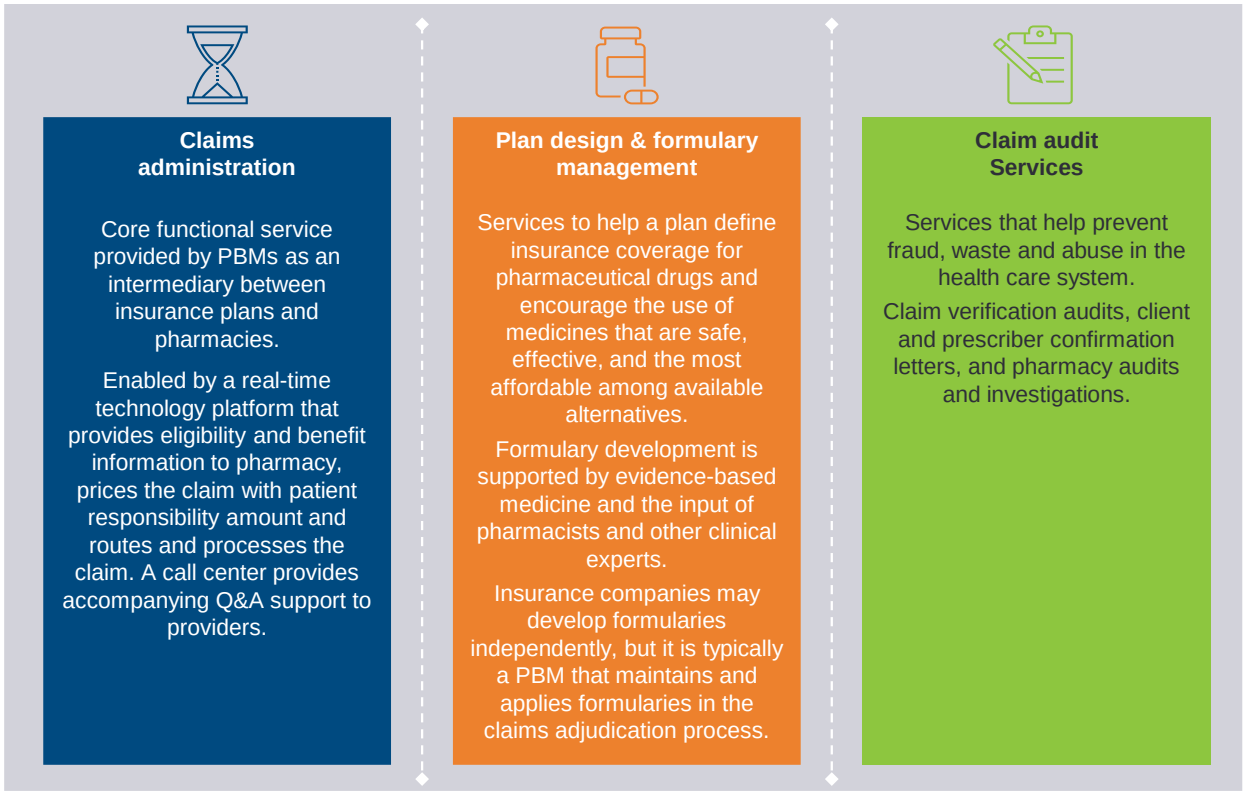
A PBM's role in pharmaceutical payment flow

Private insurance plans widely contract out administrative aspects of managing their pharmaceutical spend – most notably for Canada, the electronic processing and settlement of claims for for-profit health plans[4] – to technology and administrative intermediaries, including PBMs. In this role, a PBM acts as a technology connector among an insurer, its sponsor (such as an employer and government programs), pharmacies and manufacturers. Express Scripts Canada and TELUS Corporation's TELUS Health division (TELUS) are the two largest pharmacy claims processors in Canada. Others include Canada Life's ClaimSecure and NexgenRx (TSXV:NXG).

Core services

The core services for which insurers and plan sponsors engage PBMs in the Canadian market consist of claims routing and administration, plan design and formulary management (developing and maintaining the lists and pricing of drugs approved for coverage by each plan), negotiating with manufacturers to secure pricing discounts and rebates, and claim audits. In some cases, PBMs may deal directly with employer or other plan sponsors rather than through a payer.

Figure 1: Core services provided by PBMs to insurers and plan sponsors

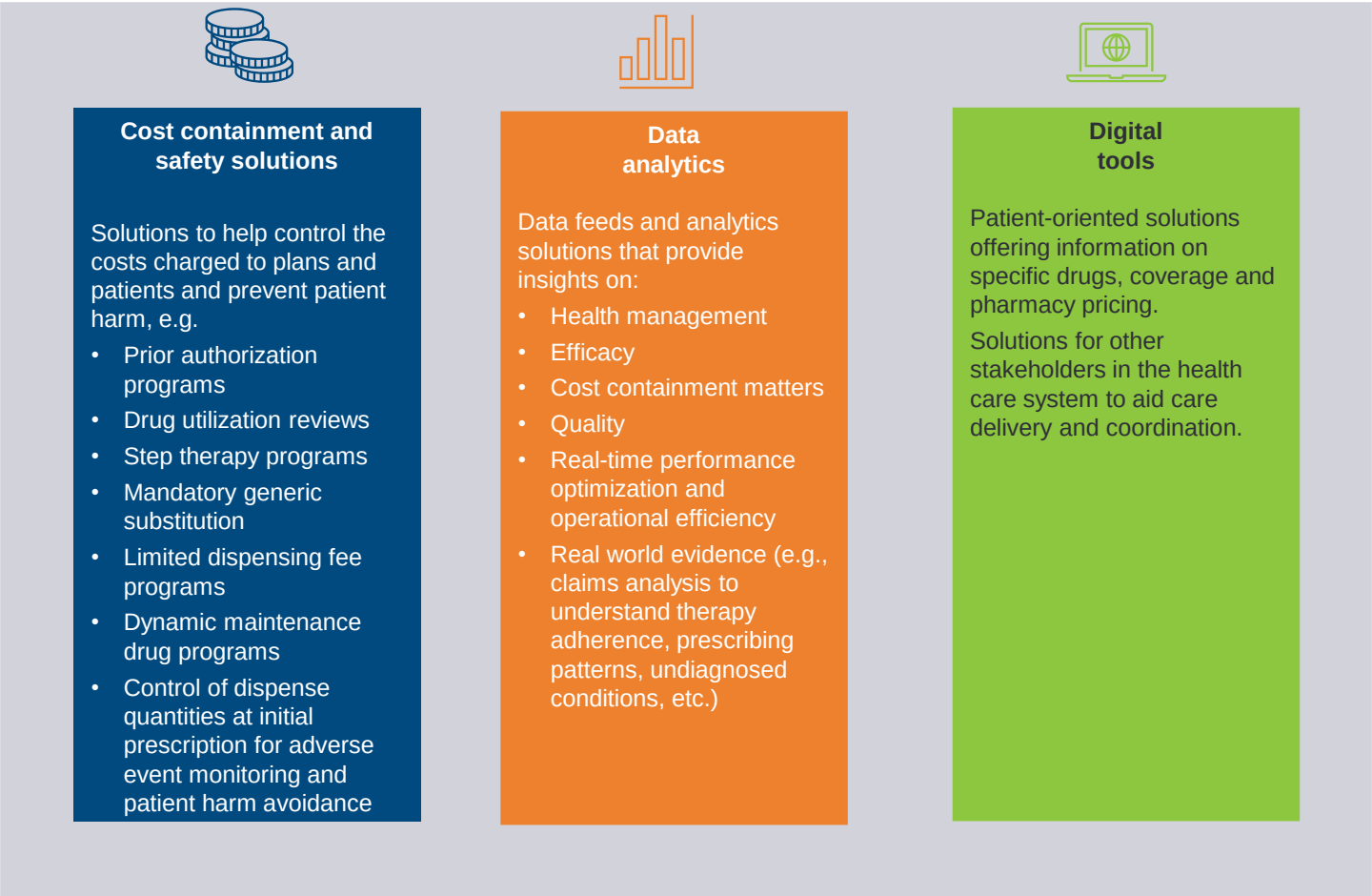


Other solutions

Beyond the technology aspects of electronic claims processing, a full scope PBM such as ESC also supports the cost effectiveness of pharmaceutical utilization through solutions addressing cost containment, health management and care effectiveness.

These value-added solutions are growing in importance as the health care system evolves and faces increased cost pressures. For example, with specialty drugs representing the fastest-growing area of pharmacy spend in Canada and the US, insurers and plan sponsors will continue to look to the PBMs to help address the cost and accessibility of these therapies. Avoiding medication errors continues to be another factor expected to drive the demand for additional services.

Figure 2: Other PBM solutions aimed to enhance cost containment and care effectiveness



Comparative view: market roles played by PBMs in other geographies

Outside of Canada, PBMs are most notably active in the US, where they play an important part of the health care system. However, pharmacy benefit management functions are also present in a number of other countries' pharmaceutical distribution and payment systems, including the United Kingdom (UK) and Australia. The specific roles PBMs play vary across countries with differences depending on health care systems and regulatory environments.

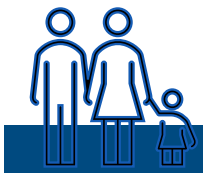
- As in Canada, in the **United States** PBMs serve as intermediaries between health insurance providers and plan sponsors (private and public), pharmaceutical manufacturers, and pharmacies that negotiate and manage drug benefit plans. While functionally similar to Canada, a PBM's revenue model in the US is significantly different. PBMs tend to retain a portion of manufacturer rebates and charge direct and indirect remuneration (DIR) fees to pharmacies. PBMs in the US also typically operate in-house mail order and specialty pharmacies. CVS Caremark, Express Scripts and OptumRx are the top PBMs supporting the majority of US claims.
- In **Australia**, PBMs play a similar role to their counterparts in Canada and the US. They manage prescription drug benefits on behalf of health insurers and other payers, negotiating with pharmacies and drug manufacturers to secure lower prices for medications.
- In the **United Kingdom**, prescription benefit management companies or Pharmacy Service Providers (PSPs) operate in a manner similar to PBMs, helping manage prescription drug benefits on behalf of insurers, employers and the country's national health care system. They negotiate prices with drug manufacturers and pharmacies, and work to ensure that patients have access to the medications they need. One of the largest PSPs is Lloyds Pharmacy Clinical Homecare, which provides home delivery of prescription medications and clinical support services to patients with chronic conditions.

Value creation by PBMs

A PBM's services contribute value to multiple constituents in Canada's health care system. This value creation stems from a PBM's role as the enabler of real-time connectivity among the parties involved in paying for and dispensing the prescribed medications to patients in a market with a complex regulatory and funding landscape. In this section, we will explore the value of the connectivity enabled by a PBM through the lenses of three key constituents benefiting from this – patients, insurers and pharmacies.

Value to patients

PBMs improve patient experience by contributing to removal of financial barriers, reduction of time to therapy and improved harm avoidance.



Patients

Formularies and negotiated pricing	Retail price stability
Electronic claim processing	Reduced financial barriers to starting therapy and stable refills
Safety solutions	Avoided harm from drug interactions, adverse events and medication abuse
Digital tools	Convenience, information access, agency over care management
Data analytics	Medication adherence and access to new therapies

Although a PBM's involvement is invisible to the patient as a pharmacist dispenses a prescription to him or her, this involvement helps the patient to access the prescribed therapy quicker, adhere to it and avoid harm.

Negotiated pricing with pharmacies, electronic benefit verification, prior authorization and claims processing reduce financial barriers to therapy that arise when "wait time" is involved.

Pharmacists who practiced in Canada prior to the introduction of these capabilities commented to us that it was common for patients to wait for several weeks while a benefit verification request was mailed to an insurer. While pharmacies commonly extended credit to patients during this wait period, higher priced medications carried too much nonpayment risk for a pharmacist to extend credit and required this wait period.

Safety programs and data analytics prevent potential harm from drug interactions, adverse events and abuse. Digital tools enhance a patient's experience as a consumer who expects real-time access to care providers and input in care decisions, ultimately contributing to better health outcomes.

From a broader societal perspective, a PBM formulary identifies and encourages use of medicines that are safe, effective and most affordable. Formularies identify clinical equivalence across medications and identify preferred therapeutic use with the help of doctors and other clinicians. By establishing formulary lists, PBMs help ensure a more effective utilization of health care resources and minimize overall costs, thereby benefiting the overall Canadian health care system.[5]

Value to insurers

PBMs create process efficiencies and lower operating costs for insurers, while enabling the reduction of fraud, waste and abuse.

The electronic claims process delivers meaningful value to insurers in terms of operational process efficiencies, labour automation and cost of capital reduction. This business function is the original reason why PBMs were originally established as insurers' outsourced administrative functions, and why today insurers continue to pay for the majority of the PBM services.

In the instance of benefit coordination, some estimates indicate that fully adopted electronic coordination of benefits corresponds to an over 70% decrease in costs to insurers compared with a fully manual process.[6]

Beyond process automation, PBMs support insurers with cost containment solutions such as prior authorization and step therapy processes, which ultimately optimizes financial performance and long-term viability of an insurance plan. Claim audits reduce financial costs and reputations risks of fraud, waste and abuse in the system.

Finally, data analytics provided by PBMs allow a competitive edge for an insurer in value-based care, e.g., better risk assessment and prediction, and prevention initiatives.

Value to pharmacies

Similar to value they deliver for insurers, PBMs create process efficiencies and lower operating costs for pharmacies. PBMs also enable convenience and consumer-oriented experience at a pharmacy.

Pharmacies

Electronic claim processing	Operational process efficiencies, labor automation, cost of capital reduction, avoidance of third-party transaction fees
Network	Patient volume and store traffic
Safety solutions	Operational efficiency and clinical effectiveness of pharmacy personnel
Digital tools	Enhanced customer service capabilities and patient loyalty, operational savings and clinical effectiveness

Similar to insurers, access to electronic claims processing is also the most fundamental source of added value from a PBM for pharmacies. It helps pharmacies with cost savings and avoidance of additional expenditures in three ways: (1) operational process efficiencies and labour automation, (2) third-party transaction costs and (3) cost of capital.

At scale, being part of a PBM's network results in patient volume and store traffic, with patients choosing the pharmacy where their insurance coverage allows for a convenient dispense with no financial strain that comes with the "pay and submit a claim for reimbursement" scenario.

Safety solutions and digital tools aid pharmacies in enhancing quality of care they deliver to patients and creating a consumer-focused experience that enables real-time communication and improved care decisions.

While PBMs act as a shared service within the industry, delivering value to all market participants, insurers continue to bear the majority of the cost for PBMs in Canada. Where pharmacies in particular derive significant benefit from the existence of the PBM's capabilities, we examined and evaluated that value accruing to the pharmacy providers further.

The following pages quantify the value that a PBM's services provide for pharmacies, as the Canadian health care system evolves and faces increased cost pressures. While demonstrating significant value delivery to a pharmacy on a per claim basis, the initial analysis does not yet attempt to take into account the financial value of improved patient harm prevention and better consumer experience through services such as electronic prior authorization, or value of upcoming investments PBMs will need to make to support upcoming Canadian Pharmacist Association (CPhA) Claim Standard implementation.

Quantifying value contributed to pharmacies by PBMs

We commissioned an external globally recognized consulting firm with Canadian presence to develop a valuation analysis that quantifies the value of core PBM services to pharmacies.

Valuation framework

The valuation community recognizes three widely accepted approaches to value, commonly referred to as (i) the income, (ii) the cost and (iii) the market approach. Within each of these approaches, a variety of methodologies exist to assist in the estimation of value.

While each of these approaches is initially considered in the valuation of a service, the nature of the subject service and the availability of data influence which approach and methods are ultimately utilized to estimate value.

The valuation model we developed analyzes the core PBM services delivered to pharmacies at the point of sale – benefits check, claims processing and administration – under the income approach to value, with the market approach considered as an additional reference point.

Income approach

The income approach focuses on the income-producing or cost-reducing capability of the subject services. The underlying premise of this approach is that the value of a service can be measured by the present worth of the net economic benefit (cash receipts less cash outlays) to be received over the duration of the service, or to be produced by the service.

Market approach

The market approach analyzes agreements involving the sale of similar services or competitive bids to perform similar services. The market approach is an effective methodology when service agreements or transactions are available in the market and sufficiently comparable to the subject services. In most cases, however, comparable agreements for services are not publicly available for analysis.

Income approach

One specific application of the income approach is a methodology referred to as the "cost savings method." It measures an expected benefit stream of a service, in terms of the future costs, which are avoided (or reduced) as a result of obtaining the service. It is considered appropriate in valuations where the subject service (or asset) results in saving costs, avoiding expenditures, or improving efficiency, etc.[7]

We defined a scenario of claims settlement that would be true if technology and related resources that enable electronic claims processing were not available. Under this scenario, there are two ways to look at avoided expenditures that exist from a pharmacy's perspective. They have to do with the fundamental decision of whether to accept insurance or treat the dispense as a self-pay transaction.

Assuming that in some cases the pharmacy would accept insurance and in other cases it would require self-pay, the value provided to a traditional retail pharmacy was estimated at **$3.50 to $6 per claim**.

This section details the underlying analysis. Additionally, the Appendices include an illustrative application of the analysis to a specialty pharmacy.

Understanding a pharmacy's avoided expenditures

Three categories of fundamental expenses are avoided at a pharmacy when it has access to a platform that enables electronic claim submission and processes: (1) cost of capital, (2) third-party transaction costs and (3) operational process efficiencies and labour automation.

- **Costs of capital:** The concept of time value of money gives rise to another critical avoided cost. Every day that goes by between dispensing a prescription medication and getting reimbursed by the insurer is a day of lost opportunity to deploy the collected cash in operations, earn an investment return or distribute it to owners as earnings. The "cost of capital" or required rate of return is a measure used to quantify this lost opportunity.
- **Third-party transaction fees**: Claims payments do not incur transaction fees for pharmacies. Absent the ability to accept insurance and submit a claim, a pharmacy is likely to treat the dispense as a "self-pay transaction." With over 75% of consumer purchases in Canada using electronic payment methods,[8] a pharmacy is very likely to incur third-party transaction fees on self-pay transactions.
- **Operational process efficiencies and labour automation**: An efficient, automated alternative to a manual verification of benefits and submission of a claim via email, fax or postal services reduces the administrative burden on a pharmacy's workforce.

Quantifying a pharmacy's avoided expenditures

To quantify these avoided expenditures under the cost savings method, we defined a hypothetical scenario of claims settlement that would be true if technology and related resources that enable electronic claims processing – such as ESC's PBM system – were not available. Simply put, this scenario is a replica of manual filing and processing of claims that was prevalent across pharmacies in Canada up until the 1990s. We will refer to it as "Alternative Case – Manual Claims System."

Under this alternative state, technology platforms for electronic benefit check, claim submission and payment are not available. Thus, pharmacies either accept insurance and submit claims on behalf of the patient, or treat patients as "self-pay" customers, with some of them unable to pay for the prescribed medicine.

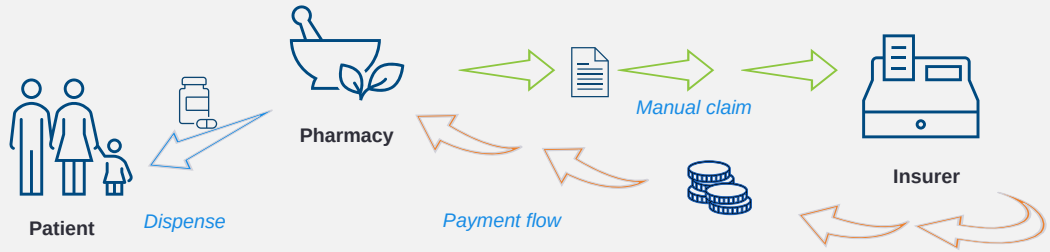
Two scenarios of avoided expenditures exist from a pharmacy's perspective in this alternative state. These are aligned to the fundamental decision of whether to accept insurance, or treat the dispense as a self-pay transaction in the alternate state of claim processing.

Figure 3: Alternative state of claim submission process

Technology platforms for electronic benefit check, claim submission and payment are not available; pharmacies either accept insurance and submit claims on patient's behalf, or treat patient as "self-pay"

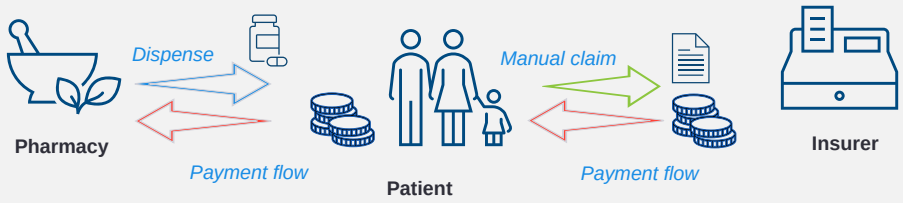
A — Pharmacy submits claim on patient's behalf

Pharmacy agrees to accept patient's insurance and files a manual claim with insurer after dispensing the product, taking on increased risk of claim denial and increased Days Sales Outstanding.



B — Patient self-submits claim

Pharmacy declines to accept insurance and requests patient to pay. Patient pays at point of sale or receives credit from pharmacy. Patient files receipt with insurer for reimbursement.



Pharmacy declines to accept insurance and requests patient to pay. Patient is unable to provide payment and walks away.

The calculations we present below focus on an average "retail pharmacy" dispense of a non-specialty, non-biologic prescription drug with a dispense value of **$50 to $75.** We also include an illustration for a specialty drug with a dispense value of **$2,250 to $2,750** in the Appendices, to show the significant impact of avoided costs of financing a receivable or bad debt on a higher priced drug.

Scenario A: Pharmacy submits claim on patient's behalf

In this scenario, a pharmacy agrees to accept patient's insurance and files a manual claim with the insurance plan after dispensing the prescription medication. By doing so, it takes on the increased administrative burden of manual filing, the financial costs of a longer cycle of days sales outstanding (DSO) between the dispense and receiving the payment on the claim, and the increased risk of claim denial. The key corresponding "avoided expenditures" consist of:

- **Financial costs of longer claim processing and payment cycle**: A manual verification of benefits and submission of a claim via email, fax or postal service translates into a relatively long DSO cycle for the pharmacy.

  We assumed 4 to 6 weeks (28–42 days) DSO for retail pharmacy and 4 to 18 weeks (28–126 days) for specialty pharmacy for manual claims based on typical processes observed prior to electronic claims and current manual submissions. In comparison, the electronic claims processing and payment cycle for ESC is seven days for ESC outside of Quebec, and one day in Quebec.

  This longer DSO cycle in turn translates into additional expenditures for the pharmacy in the form of working capital costs, aka "cost of money." Typically, this cost can be approximated by the observed interest rates on short-term debt, e.g., approximately 4.0% to 4.5% per year.[9]

- **Financial costs of increased denials:** Another notable element of a pharmacy's "cost of money" in this scenario arises from increased denials of manually submitted claims due to inaccurate or outdated information obtained from a patient, erroneous or incomplete submissions and other similar factors. Ultimately, an instance of the denied claim results in a "bad debt" loss on a sale, as well as potential loss of a dissatisfied customer.

- **Labour costs of submitting a claim on a patient's behalf**: A manual verification of benefits and submission of a claim also translates into an administrative burden on a pharmacy's workforce. Based on interviews, a typical process for a trained pharmacist takes between 8 and 10 minutes to prepare and submit a paper-based claim.[10]

Based on this valuation approach, electronic claims processing is worth between **$5.50 to $9.00** per claim for a retail dispense of $50 to $75.

Figure 4: Incremental expenditures to a pharmacy from having to submit claims on patient's behalf (retail pharmacy)

Retail pharmacy: **Assumptions and resulting calculated values**	***Low***	***High***
Financial costs of longer claim processing and payment cycle, and increased denials		
Average retail dispense	$50	$75
Required rate of return on working capital, annual	4.0%	4.5%
Days sale outstanding (dispense to claim payment)	28	42
Probability of having to re-file corrected claim	2%	2%
Probability of revenue loss – claim rejection with no payment	2.5%	3.5%
Estimated financial costs, total	$1.50	$3.00
Labour costs of submitting a claim on a patient's behalf, for one claim		
Time to file initial claim submission, minutes	8	10
Fully burdened cost of labour/min, blended cost of pharmacy assistant & pharmacy technician positions	$0.50	$0.90
Probability of having to re-file corrected claim	2%	2%
Estimated labour costs, total	$4.00	$6.00
Value of electronic claims processing service, per claim based on avoided incremental expenditures of submitting claim on a patient's behalf, rounded	**$5.50**	**$9.00**

Scenario B: Patient self-submits a claim

As an alternative to submitting a claim on a patient's behalf, a pharmacy may choose to refuse a patient's private insurance and request that he or she pays for the prescription medication out of pocket at the time of the dispense, and the patient then files the purchase receipt with the insurer for reimbursement. Although by doing so, the pharmacy bypasses the inconvenience and risks of manual claims submission, it is nonetheless faced with other expenditures in this "patient self-submission" scenario:

- **Third-party transaction fees**: As noted earlier, the pharmacy is likely to incur fees to process payments made with a credit or debit card, or via mobile payment system. Transaction fees vary across service providers; transaction processing fees range from 0.2% to 2.5% per transaction, depending on the mode of payment used.[11, 12]
- **Financial and labour costs of extending credit to patients:** Prior to the advent of electronic claims processing in the 1990s, it was a common practice for Canadian pharmacists to extend credit to patients on prescriptions that they dispensed, e.g., while a verification of benefits was underway, or with self-pay patients. In a self-pay scenario, we assume this practice may re-emerge in some instances with accompanying costs of capital on outstanding receivables, bad debt, and labour costs of credit setup, follow-up and collection efforts.
- **Financial and labour costs of a lost sale when patient is unable to pay:** Finally, some prescriptions will be abandoned with the patient unable to provide payment. In addition to the societal toll of such events, a pharmacy would lose the operating profit generally earned on a prescription medication dispense as well as any future refills and accompanying retail or "front of store" sales. As this analysis is on a per-claim basis, we focused on the initial dispense only. Moreover, a pharmacy will have to absorb the cost of employee time spent reviewing the prescription and communicating with the patient – which is typically covered by the dispensing fee shared by the insurer and patient.

  Published statistics in Canada on medication non-adherence due to financial constraints on out-of-pocket costs for prescription drugs can serve as a reasonable, conservative proxy for this probability of a patient "walking away" from a prescription or primary non-adherence of 5.1% to 6.0%.[13]

The value of electronic claims processing service on the basis of the avoided incremental expenditures likely to be encountered with the patient self-submission process ranges from **$1.25 to $3.00** per claim for a retail dispense of $50 to $75.

Figure 5: Incremental expenditures to a pharmacy from not accepting insurance and requiring self-pay (retail pharmacy)

Retail pharmacy: assumptions and resulting calculated values	**Low**	**High**
Third-party transaction fees		
Average retail dispense	$50	$75
Probability of patient paying via credit card, debit card or mobile payment app (vs. cash or check)	76%	76%
Transaction processing fees, % of sale, weighted average	0.6%	1.3%
Estimated transaction processing costs, per claim	$0.25	$0.70
Financial and labour costs of extending credit to patients		
Average retail dispense	$50	$75
Probability of patient needing payment assistance via credit on account from pharmacy	2%	4%
Probability of approving credit on account	80%	80%
Time to set up credit/payment plan, minutes	25	25
Time for follow-up and collection efforts, minutes	35	35
Fully burdened cost of labour/min, pharmacy assistant	$0.50	$0.60
Required rate of return on working capital, annual	4.0%	4.5%
Days sale outstanding (dispense to collection)	35	42
Probability of patient defaulting on credit	2.5%	3.5%
Estimated financial and labour costs of extending credit, per claim	$0.50	$1.10

Financial and labour costs of a lost sale when patient is unable to pay		
Average retail dispense	$50	$75
Dispenses per claim	1	1
Average accompanying front of store sale	$17	$25
Time spent on reviewing Rx and communicating with patient, minutes	10	15
Fully burdened cost of labour/min, pharmacy assistant	$0.50	$0.60
Probability of patient being unable to pay	5.1%	6.0%
Retail pharmacy operating profit margin, back of store	8.0%	12.5%
Pharmacy operating profit margin, front of store	5.5%	8.5%
Estimated costs of a lost sale, per claim	$0.50	$1.00
Value of electronic claims processing service, per claim based on avoided incremental expenditures associated with patient self-submission process, rounded	**$1.25**	**$3.00**

Bringing together the two scenarios

Assuming that in some cases the pharmacy would accept insurance, and in other cases it would require self-pay, the value provided to a traditional retail pharmacy was estimated at **$3.50 to $6 per claim**, based on expenditures avoided by a pharmacy when it has access to an electronic claims processing platform.

Figure 6: Calculated ranges of value under the income approach

Retail pharmacy	Weighting	Low	High
Income approach – value based on avoided expenditures at a retail pharmacy			
Scenario A: pharmacy submits claim on patient's behalf	50%	$5.50	$9.00
Scenario B: patient self-submits a claim	50%	$1.25	$3.00
Value of electronic claims processing service, per claim based on avoided incremental expenditures, rounded		**$3.50**	**$6.00**

Market approach

An additional valuation technique we employed was to consider whether there are current examples of businesses paying for technology services on a transaction basis. We identified a number of such examples for the reader's consideration.

Case studies

Given the value that pharmacies receive today via services that PBMs provide, there are already examples to consider of businesses paying for services on a transaction basis. A few of these examples follow below. Please refer to the Appendices for a more detailed presentation of these case studies, along with illustrative calculations of how such fees would apply to a retail pharmacy dispense with a value of $50 to $70.

- **Pharmacy direct and indirect renumeration (DIR) fees:** In the US, it is a common practice for PBMs to charge pharmacies fees for managed network participation, service levels and performance on measures such as adherence to drug regulations, comprehensive medication review completion rate and formulary compliance. Higher performing pharmacies pay lower fees as compared with lower performing pharmacies. Fees are generally structured on a per transaction basis.
- **Merchant transaction fees charged by credit/debit card issuers and mobile payment systems:** Transaction fees are charges that merchants must pay to process customer payments made with a credit or debit card, or via mobile payment system. These merchant charges are commonly referred to as credit card processing fees, but this usually refers to a combination of different fees, including interchange fees, processing fees and assessment fees – all of which are separate fees involved in processing a credit card transaction. They're also informally referred to as swipe fees or merchant fees.

  Transaction fees vary across service providers, typically the credit card processing fees ranges from 1.3% to 2.5% per transaction and the debit card processing fees are flat between $0.1 to $0.4 per transaction.[14, 15]
- **Transaction processing fees charged by copay and free prescription medication voucher program administrators**: Copay coupons and vouchers are offered to patients by pharmaceutical manufacturers for some drugs and can be used to cover the cost difference related to the purchase of a branded prescription medication. Manufacturer copay cards are helpful tools for patients on plans with high deductibles, high copays, limited drug formularies, and rare or complex diseases.

  In the US, pharmaceutical manufacturers often engage third party copay card program management companies such as TrialCard and PrudentRx to administer the programs. Typical fee structures paid by manufacturers to program administrators include transaction processing fees, meant to compensate the program administrator for adjudicating the corresponding electronic claims with the manufacturer acting as the payer. Per transaction fees tend to fall in the range of USD $1.00 to USD $3.00 (equivalent to approximately CAD $1.50 to CAD $4.00 assuming an exchange rate of $1.00 USD is equal to $1.36 CAD).
- **Subscription fee charged to pharmacies for Green Shield Canada performance scorecards**: Green Shield Canada, a nonprofit that provides individual health benefits as well as administration services, planned to implement a performance-based penalty system with pharmacies. As part of implementing this system over time, it created a subscription program that allowed a pharmacy to view a scorecard that included details on performance metrics that could result in eventual fees in a later phase of the program. The pharmacy could use the scorecard to improve on performance metrics going forward. The monthly subscription fee differs based on the type of pharmacy that is subscribing to the scorecard, mainly based on claims volume.[16]
- **Expedited pharmacy claim payment fees**: TELUS, a provider of telecommunications and information technology products and services that includes pharmacy claims processing services in Canada, has a fee structure for pharmacies in Canada that includes fees for expedited payment of claims. As noted in "Section 4: General Policies and Procedures" of the TELUS Health Assure Claims Pharmacy Manual, the fee for next-day payment of claims is at $0.20, and the fee for twice a month payment is at $0.10 per claim, whereas monthly payment of claims is free of service charge.[17]

Concluding comments

Canadian PBMs play a critical role in enabling insurers and pharmacy providers to deliver convenience, safety and affordability to their end customers. Without the PBMs, both insurers and pharmacy providers would need to build much more costly technology infrastructure or revert to more manual processes that put an increased burden on their members and customers. PBMs ensure fair pricing, along with guaranteed and timely payment to support a smooth customer experience, while supporting clinical quality and appropriateness.

It is clear that the existence of a shared technology platform benefits all parties involved. If additional funding is provided from across the 5 key stakeholders, further enhancements can be introduced to benefit the ecosystem (e.g., new claim standards, ePA, enhanced reporting and audits). Our analysis shows that pharmacies today are already benefiting from PBMs, approximately **$3.50 to $6.00 per claim**. If pharmacies financially contributed to PBMs in Canada, there would be further improvements to the ecosystem that would benefit patients, insurers, employers, but especially pharmacy providers.

Appendices

Industry background and constituents

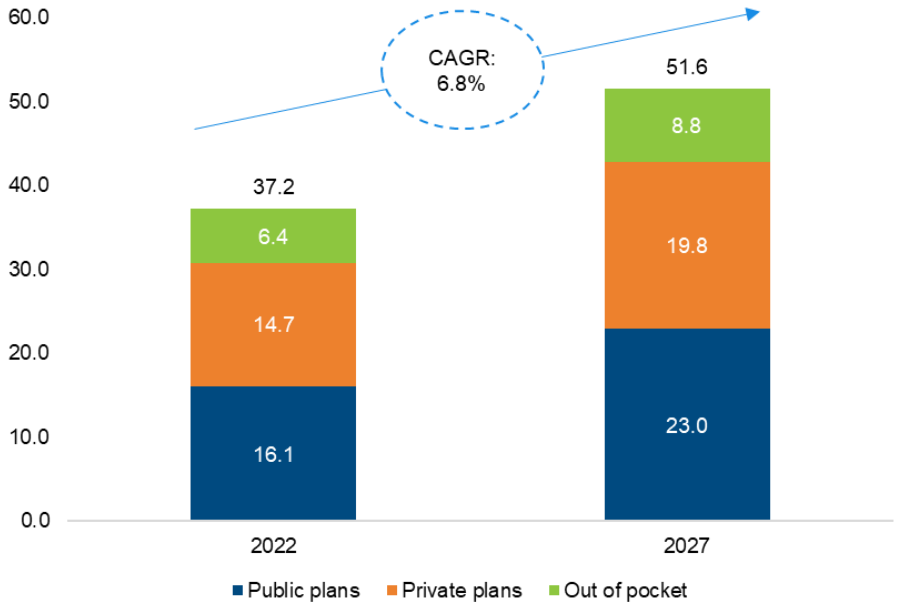
In recent years, pharmaceutical drug spending has accounted for an increasingly large proportion of spending in the Canadian health care system. Growing faster than any other component of health care, expenditures on drugs have surpassed spending on physician compensation to become the second-largest health care system cost in Canada, after hospitals. This influences Canadians' access to important prescription drugs and the sustainability of Canada's health care system.

Prescription sales increased from $30.7 billion in 2019 to approximately $37.2 billion in 2022, representing a compound annual growth rate (CAGR) of 6.6%.[18,19] 43% of costs were paid for through provincial drug plans, 40% by private insurance and 17% by individual out-of-pocket spending.[20] 85% were sold through pharmacies, with the remaining 15% dispensed in hospital settings.[21]

As presented in **Figure 7**, both sales volume and prices are forecasted to grow further from 2022 to 2027 at a CAGR of 6.8%.[22]

The projections are driven by factors including an aging population, growing prevalence of chronic conditions, greater utilization of prescription medications and expanding scope of pharmacy practice.[23]

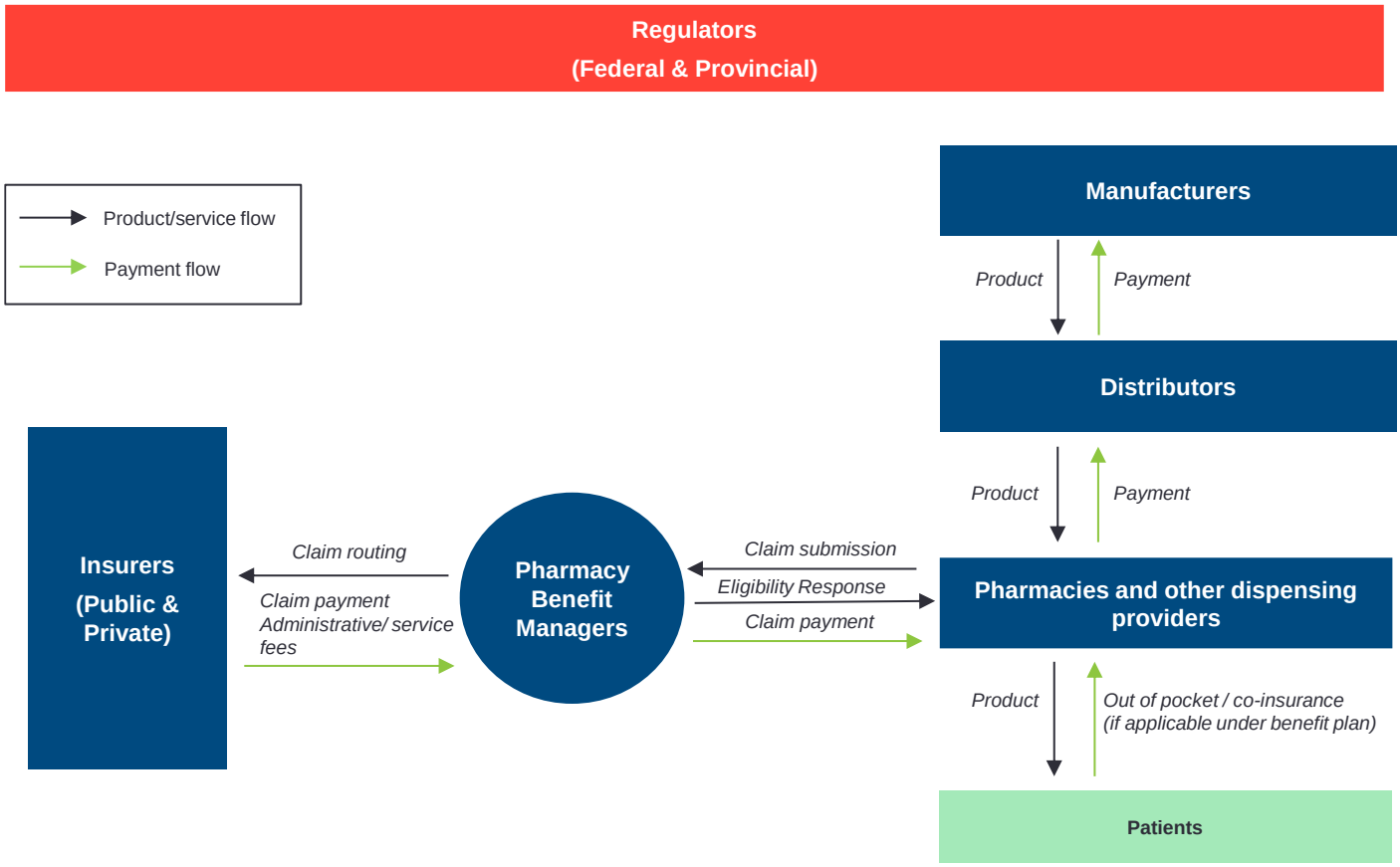
Figure 7: Projected prescription drug spending trend by funding source, 2022-2027 ($million)



Prescription drug distribution and payment system in Canada

The distribution and payment system for prescription pharmaceuticals in Canada is complex and highly regulated. Five key constituents ensure delivery to patients and funding of prescribed therapies – pharmaceutical manufacturers, wholesalers/distributors, pharmacy providers, insurers and PBMs. They are overseen by regulators at the federal and provincial levels.

Figure 8: Canadian prescription drug distribution and payment model



Regulatory framework[24]

Canada's Food and Drugs Act (FDA) applies to all medical products (drugs, medical devices and natural health products) sold in Canada, whether manufactured in Canada or imported. The FDA and the Food and Drug Regulations (FDA Regulations) seek to ensure the safety of medical products by governing their manufacture, distribution, sale and advertisement. Thus, the federal government, through Health Canada, authorizes the sale and distribution of drugs.

Furthermore, the FDA states that a person cannot sell a prescription drug to a member of the general public unless they are licensed by a province to dispense prescription drugs. Hence, while Health Canada is responsible for determining whether a drug requires a prescription or not, provinces can place further restrictions on its sale and distribution.

While each province has its own governing legislation, the dispensing and sale of drugs is generally considered to be a controlled act that is restricted to members of regulated health care professions. Regulated health care professionals must also be specifically authorized to sell and dispense drugs by the legislation that governs their profession. Most often, prescription drugs are dispensed to consumers from licensed pharmacies and by licensed pharmacists. However, other regulated health care professionals, such as physicians and dentists, are also authorized by their governing legislation to dispense drugs.

Distribution chain

The physical flow of medication from a manufacturer to a patient generally involves a “wholesale” and a “retail” stage.

Wholesale distribution

The wholesale stage involves three variants of how a drug is delivered to pharmacy providers – distribution through independent pharmacy wholesalers and distributors (IPDs), self-distribution by pharmacies and direct distribution by manufacturer.

- **IPD distribution:** As independent intermediaries between the manufacturers and providers such as retail pharmacies, IPDs stock and supply a wide range of prescription pharmaceuticals as well as typical retail pharmacy products. Well over 50% of all prescription pharmaceuticals in Canada are distributed to pharmacies through IPDs, with this share increasing. McKesson Canada is the largest pharmacy distributor in the country, delivering a third of all medications needed in the country each day. In total, it handles about 40% of all retail and hospital volume.[25] Kohl & Frisch Limited, which acquired AmerisourceBergen Canada in 2013 and is the only Canadian-owned national full-line distributor, has eight distribution centers across Canada.[26] Other distributors, such as Unipharm Wholesale Drugs Ltd, UPE Group of Companies and McMahon Distributeur Pharmaceutique Inc., tend to be more regionally focused.
- **Self-distribution by pharmacies:** Under self-distribution, distribution centers are maintained by pharmacy chains, banner and franchise groups, for supply to pharmacies within the group. Self-distribution involves similar roles and activities to those of IPDs, but within a group of pharmacies. Major self-distributors include Shoppers Drug Mart, Groupe Jean Coutu, Familiprix Inc., Lawton's Drugstore and London Drugs.
- **Direct distribution:** In direct distribution, as the name implies, a manufacturer distributes directly to health care providers who dispense or administer the prescription medication. This mode of distribution, already having represented the smallest proportion of the market, is declining further.

While ancillary terms may vary, such as discounts for prompt payment, the price paid by wholesalers to manufacturers for pharmaceuticals is based on the provincial formulary or manufacturers' list price. In the case of generic drugs, the price to distributors is discounted by the distribution fee (or markup) allowing the drugs to be distributed to pharmacies at their invoice price.

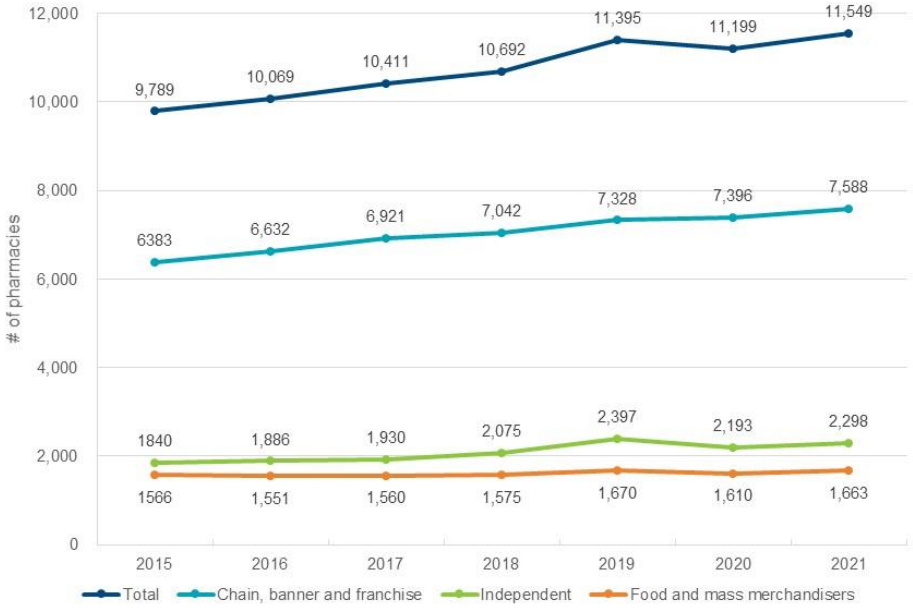
Retail distribution[27]

Canada’s more than 11,500 retail pharmacies can be classified into five categories by type of ownership and location.

- **Independents:** An independent pharmacy is not affiliated with a corporate-owned banner, franchise or chain program. The name of the store is unique to it, and the owner controls, among other matters, the ordering, marketing strategies and store image.
- **Banners:** Banner pharmacies are independently owned pharmacies that are affiliated with a central office. They pay fees for the right to use a recognized name and to participate in centralized buying, marketing, professional programs and other services. While banner stores usually assume a required “look and feel,” the stores themselves are independently owned and the owners retain a high level of autonomy in areas such as local marketing and professional services.
- **Franchises**: Franchise arrangements vary widely for retail pharmacies in Canada. The franchisees do not necessarily own the physical store or the fixtures, and master leases are usually held by the franchisor. However, they enjoy some autonomy in local marketing, buying and in-store services, as well as access to programs developed by the head office.
- **Chains:** Chain pharmacies employ pharmacy managers who are salaried employees. Head office directs all marketing, merchandising, buying and professional programs as well as other matters.
- **Food Store & Mass Merchandisers (Food/Mass):** Food and mass merchandiser pharmacies are departments within supermarket or mass merchandise outlets. They employ salaried pharmacy managers (except in Quebec, where regulations require pharmacists to own the dispensary). The managers follow the direction of the head office for all marketing, merchandising, buying, professional activities and other matters.

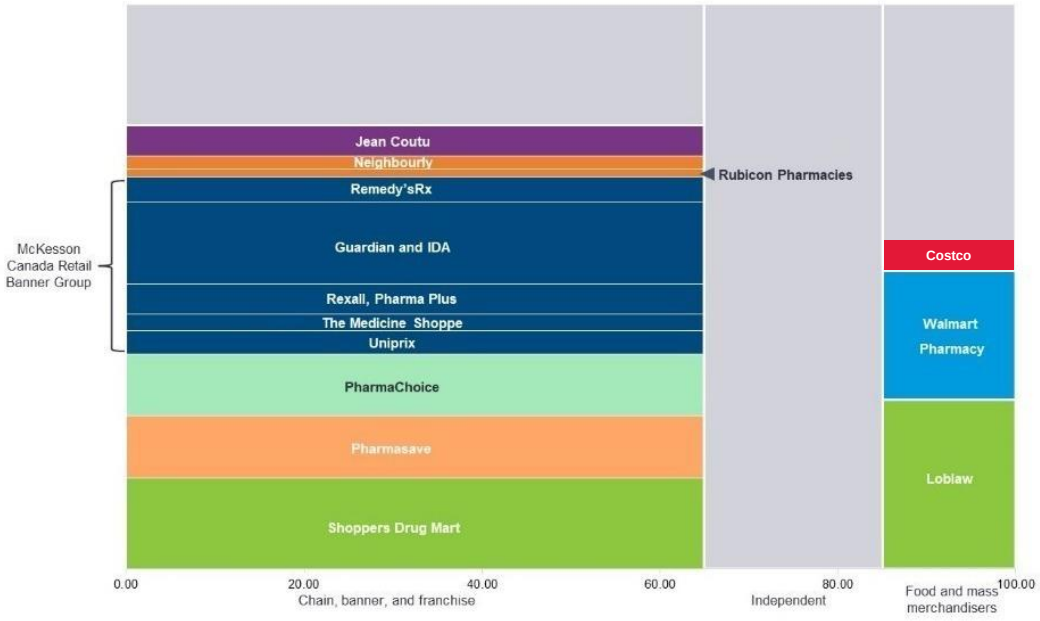
While the business models vary across the different retailer formats, prescription sales typically account for over 50% of a pharmacy retailer's sales. The landscape shifted toward large chains about 20 years ago, when the market share of independents fell from 31% to 21%. Since then, the share of independent stores has remained relatively flat at 20%.

Figure 9: Canadian retail pharmacies by outlet type, 2015-2021[28]



Overall, the Canadian retail pharmacy market is rather fragmented. The two largest retail pharmacy groups in Canada by number of locations are Shoppers Drug Mart (Pharmaprix in Quebec) with over 1,200 outlets, and Guardian & I.D.A. with over 1,100 outlets. They account for close to 20% of all retail outlets in Canada. Other major retailers include Pharmasave and PharmaChoice with 843 and 823 outlets, respectively. Together, these four pharmacy groups account for about 34% of all retail pharmacy outlets in Canada.[29]

Figure 10: Canadian retail pharmacies, market share of outlets by category[30]



In addition to traditional retail pharmacies, three other pharmacy types are part of the distribution chain at the retail level:

- **Specialty pharmacies** focus on offering specialty drugs that are high cost, often administered intravenously, require specialized handling and typically treat patients with complex diseases.
- **Infusion centers** provide patients with specialized therapy and nursing services that focus on drug injection and infusion services, engaging with health care providers to improve the patient experience. They manage various therapeutic areas, including gastroenterology, rheumatology, geriatrics and pediatrics.[31]
- **Mail order/virtual pharmacies** enable patients to fill prescriptions without going to the pharmacy in person. They carry prescription drugs, over-the-counter medications and some specialty drugs.

Illustrative application of income approach analysis to a specialty pharmacy

The calculations of value presented in this report focus on a "retail pharmacy" dispense of a non-specialty, non-biologic prescription drug with a dispense value of **$50 to $75**, for simplicity. In this Appendix, we also include an illustration for a specialty drug with a dispense value of **$2,250 to $2,750**, to show the significant impact of avoided costs of financing a receivable or bad debt on a higher priced drug.

In this illustration, driven by higher financial costs associated with dispensing a specialty product, the value provided to a specialty pharmacy was estimated at **$55 to $110 per claim**, as follows.

Scenario A: Pharmacy submits claim on patient's behalf

Specialty pharmacy: Assumptions and resulting calculated values	**Low**	**High**
Financial costs of longer claim processing and payment cycle, and increased denials		
Average specialty dispense	$2,250	$2,750
Required rate of return on working capital, annual	4.0%	4.5%
Days sale outstanding (dispense to claim payment)	28	126
Probability of having to re-file corrected claim	10%	15%
Probability of revenue loss – claim rejection with no payment	2.5%	3.5%
Estimated financial costs, total	$64.00	$121.00
Labour costs of submitting a claim on a patient's behalf, for one claim		
Time to file initial claim submission, minutes	8	10
Fully burdened cost of labour/min, pharmacy technician	$0.70	$0.90
Probability of having to re-file corrected claim	10%	15%
Estimated labour costs, total	$6.00	$10.00
Value of electronic claims processing service, per claim based on avoided incremental expenditures of submitting a claim on a patient's behalf, rounded	**$70.00**	**$131.00**

Scenario B: Patient self-submits a claim

Specialty pharmacy: Assumptions and resulting calculated values	Low	High
Third-party transaction fees		
Average specialty dispense	$2,250	$2,750
Probability of patient paying via credit card, debit card or mobile payment app (vs. cash or check)	76%	76%
Transaction processing fees, % of sale, weighted average	0.6%	1.3%
Estimated transaction processing costs, per claim	$11.00	$26.00
Financial and labour costs of extending credit to patients		
Average specialty dispense	$2,250	$2,750
Probability of patient needing payment assistance via credit on account from pharmacy	75%	85%
Probability of approving credit on account	80%	80%
Time to set up credit/payment plan, minutes	25	25
Time for follow-up and collection efforts, minutes	35	35
Fully burdened cost of labour/min, pharmacy assistant	$0.50	$0.60
Required rate of return on working capital, annual	4.0%	4.5%
Days sale outstanding (dispense to collection)	35	126
Probability of patient defaulting on credit	2.5%	3.5%
Estimated financial and labour costs of extending credit, per claim	$30.00	$58.00
Financial and labour costs of a lost sale when patient is unable to pay		
Average specialty dispense	$2,250	$2,750
Dispenses per claim	1	1
Time spent on reviewing Rx and communicating with patient, minutes	10	15
Fully burdened cost of labour/min, pharmacy technician	$0.50	$0.60
Probability of patient being unable to pay	5.1%	6.0%
Specialty pharmacy operating profit margin, back of store	2.0%	3.5%
Estimated costs of a lost sale, per claim	$2.50	$6.50
Value of electronic claims processing service, per claim based on avoided incremental expenditures associated with patient self-submission process, rounded	**$44.00**	**$91.00**

Bringing together the two scenarios

Assuming that in some cases the pharmacy would accept insurance, and in other cases it would require self-pay, the value provided to a specialty pharmacy was estimated at **$55 to $110 per claim**, based on expenditures avoided by a pharmacy when it has access to an electronic claims processing platform.

Specialty pharmacy	Weighting	Low	High
Income approach – value based on avoided expenditures at a specialty pharmacy			
Scenario A: pharmacy submits claim on patient's behalf	50%	$70.00	$131.00
Scenario B: patient self-submits a claim	50%	$44.00	$91.00
Value of electronic claims processing service, per claim based on avoided incremental expenditures, rounded		**$55.00**	**$110.00**

Key assumptions used in quantifying value

The valuation model presented in this report is driven by a set of assumptions developed using market data and ESC's experience – including the assumptions outlined below.

Assumption	Selected range	Source
Average dispense value	Retail: $50 to $75 Specialty: $2,250 to $2,750	Based on ESC's experience
Required rate of return on working capital, annual	4% to 4.5%	Yield on one-year and two-year Government of Canada marketable bonds as of February 2023, as reported by S&P Capital IQ
Scenario A: Pharmacy submits claim on patient's behalf		
Days sales outstanding (dispense to claim payment)	Retail: 28 to 42 Specialty: 28 to 126	Expected time lag between the date of a dispense and the date a claim is paid by the insurer in the manual claim filing scenario, based on interviews with pharmacists and pharmacy managers
Probability of having to re-file corrected claim	Retail: 2% Specialty: 10% to 15%	Based on interviews with pharmacists and pharmacy managers
Probability of revenue loss – claim rejection with no payment	2.5% to 3.5%	Based on ESC's experience
Time to file initial claim submission	8 to 10 minutes	Time it would take a pharmacy assistant to fill out and submit a claim, based on interviews with pharmacists and pharmacy managers
Fully burdened cost of labour, per minute	Retail: $0.5 to $0.6 Specialty: $0.7 to $0.9	Based on fully burdened cost of labour calculations for pharmacy assistants and pharmacy technicians with various levels of experience. Benchmarking data sourced from Economic Research Institute, Inc., *Salary Assessor*, reported as of February 2023, GGFL LLP, *Employees and the Cost of Owning a Small Business*, and S&P Capital IQ
Scenario B: Patient self-submits a claim		
Probability of payment via credit card, debit card or mobile payment app (vs. cash or check)	76%	Combined probability of a consumer using credit, debit and mobile payment methods (e.g., Apple Pay or Google Pay) in a retail transaction, as reported in Bank of Canada, *2021 Methods-of-Payment Survey Report*[25]
Transaction processing fees, % of sale	0.6% to 1.3%	Weighted average of ranges of transaction fees cited for various payment methods by: Retail Council of Canada, *Payment and Credit Card Fees*[28], JPMorgan, *Payments Market Share Handbook Thirteenth Edition*[29] and Interac, *Understanding Business Fees*.[32] Weighting based on probability of using each payment method, as reported in Bank of Canada, *2021 Methods-of-Payment Survey Report*[25]
Probability of patient needing payment assistance via credit on account from pharmacy	Retail: 2% to 4% Specialty: 75% to 85%	Retail – based on % of Canadians earning less than $5,000 to 10,000 per year, specialty – less than $100,000 per year, as reported by Statista. *Percentage distribution of income of full-time workers in Canada in 2020, by level of income*.[33]
Probability of approving credit on account	80%	Based on ESC's experience and interviews with pharmacists and pharmacy managers
Time to set up credit/ payment plan, minutes	25	Based on ESC's experience and interviews with pharmacists and pharmacy managers
Time for follow-up and collection efforts, minutes	35	Based on ESC's experience and interviews with pharmacists and pharmacy managers
Fully burdened cost of labour/min, pharmacy assistant	$0.5 to $0.6	Based on fully burdened cost of labour calculations for pharmacy assistants and pharmacy technicians with various levels of experience. Benchmarking data sourced from

Appendices

Assumption	Selected range	Source
		Economic Research Institute, Inc., *Salary Assessor*, reported as of February 2023, GGFL LLP, *Employees and the Cost of Owning a Small Business*, and S&P Capital IQ
Days sales outstanding (dispense to collection)	Retail: 35 to 42 Specialty: 35 to 126	Based on interviews with pharmacists and pharmacy managers, matching the expected time lag between the date of a dispense and the date a reimbursement claim is paid by the insurer to the patient
Probability of patient defaulting on credit	2.5% to 3.5%	Based on probability of manual claim rejection by insurer with no payment to pharmacy cited above, as a conservative proxy for the probability applicable when a patient files the claim for reimbursement
Average accompanying retail sale	$17 to $25	Calculated based on front of store sales being approximately 33.3% of back of store pharmacy sales based on observed market data
Time spent on reviewing Rx and communicating with patient, minutes	10–15	Based on ESC's experience and interviews with pharmacists and pharmacy managers
Probability of patient being unable to pay	5.1% to 6%	Cost-related medication nonadherence observed in Canada, as reported by Canadian Medical Association journal Open, *The consequences of patient charges for prescription drugs in Canada: a cross-sectional survey*[30]
Pharmacy operating profit margin	Retail: 8.0% to 12.5% Specialty: 2.0% to 3.5% Front of store (retail): 5.5% to 8.5%	Based on consideration of profit margins of publicly traded companies that operate retail and specialty pharmacies in Canada and the US, as reported by S&P Capital IQ in February 2023

Glossary[34]

- **Claims administration:** Processing and paying of claims made under shared policies, including the reporting of claims to insurance carriers and the management of claims.
- **Claim audit:** Retroactive review of claims filed by a pharmacy to identify improper payments by the PBM on behalf of an insurer, and to verify that patients received correct medications in appropriate doses.
- **Cost containment:** Strategies that integrate efforts to reduce an organization's existing costs and control current and future costs.
- **Cost of capital:** Minimum rate of return a company must earn to recover its financing costs.
- **Days sales outstanding:** Average number of days that a company takes to collect revenue after a sale has been made.
- **Dispensing:** Process of preparing and providing a prescription drug to a patient.
- **Drug:** A unique combination of active ingredient, strength and form.
- **Formulary:** A list of medications and related products that are covered by a given insurance plan, supported by current evidence-based medicine, judgment of physicians, pharmacists and other experts in the diagnosis and treatment of disease and preservation of health. The primary purpose of the formulary is to encourage the use of safe, effective and most affordable medications.
- **Formulary management:** Integrated patient care process which enables insurers, physicians, pharmacists and other health care professionals to work together to promote clinically sound, cost-effective medication therapy and positive therapeutic outcomes. An example of a formulary management policy is requiring generic or biosimilar substitution.
- **Health Canada:** Federal agency responsible for establishing standards for the safety and nutritional quality of all foods sold in Canada. The department exercises this mandate under the authority of the *Food and Drugs Act* and pursues its regulatory mandate under the *Food and Drug Regulations*.
- **Infusion centers:** Healthcare providers that deliver infusion therapy (drugs administered via needle or catheter). In Canada, infusions are almost exclusively delivered at manufacturer-sponsored infusion centers.
- **Out-of-pocket spend:** Healthcare costs not covered by insurance that are paid for by a patient.
- **Overhead:** Costs that are not directly attributable to a specific business process, production of goods, or delivery of a specific service.
- **Pharmacy, mail order:** An alternative means for dispensing prescription drugs to retail pharmacies, that mails dispensed products to patients or physicians. A mail order pharmacy is confined primarily to persons with chronic conditions and its ability to dispense is limited in Canada.
- **Pharmacy, retail:** Also known as a community pharmacy, a traditional "brick-and-mortar" pharmacy that is licensed to sell or dispense drugs to the public.
- **Pharmacy, specialty:** A type of pharmacy that offers services and medications to help treat rare and complex medical conditions. Many medications that a specialty pharmacy provides need special handling, storage and administration and are usually costly.
- **Pharmaceutical distributors:** Intermediaries that ship pharmaceutical products from manufacturers to pharmacies and other providers.
- **Pharmaceutical manufacturers:** Companies that develop and manufacture innovative medicines, generic pharmaceuticals and over-the-counter drug products.
- **Pharmacy providers:** Healthcare professionals authorized to dispense prescription drugs to consumers – most notably, pharmacists.
- **Plan design:** Refers to the three main components of public and private drug insurance plans: eligibility criteria, a formulary, and cost sharing terms

- **Prescription pharmaceuticals:** Medications prescribed to a patient by a health professional to help manage health conditions. They are regulated by Health Canada through the Food and Drugs Act to ensure their safety, effectiveness and quality.
- **Required rate of return:** Return required by investors before they will commit money to an investment at a given level of risk.

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