Prescription Opioid Trends in Canada

An independent IQVIA report on measuring and understanding the use of prescription opioids dispensed in 2015 and 2020

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Introduction

Opioids are a group of psychoactive medications commonly used for the treatment of moderate to severe pain associated with acute and chronic medical conditions or as treatments for opioid dependence. The medication, use as a single product or in combination with others, has an important role to play in drug treatment, but only if used in a way that is both safe and effective. In addition to its analgesic properties, opioids have the potential for physical and psychological dependence.

All of those who study and deliver health care and set the policy and standards of care that inform treatment for opioid abuse are challenged to achieve the right balance. How can we reduce human suffering while minimizing the equally painful impact of opioid dependence? There are no easy answers to this question, but the available data could inform the way forward for practitioners, researchers, educators, and policy makers, ultimately for the betterment of the patient's health.

Our focus at IQVIA is to help optimize health by bringing data and fact-based insights forward to better inform decision makers in this critical area, with the utmost respect of privacy and data security. This report provides a timely view of trends of opioid prescriptions dispensed in community pharmacies (excluding hospitals) in Canada for the years 2015 and 2020, segmented by demographics and provinces/regions to illustrate progress and remaining concerns.

The statistics and analysis featured in this report were sourced from the IQVIA Health Insights Dashboard, part of a collaboration with the IQVIA Advisory Board for Advancement in Health. The Board, composed of 11 stakeholders of influence in the domain of healthcare and data management, serves to promote responsible access and use of health data to help shed light on some of the most challenging health issues facing Canadians.

The Board's driving belief is the concept of a connected health system—one that leverages effective, efficient, and ethical data sharing from all available sources—to help stakeholders make fully informed decision. One of the Board's main goals is to make the Health Insights Dashboard accessible to key stakeholders (governments, politicians, professional orders, physicians, organizations) to demonstrate the added value of using health data to inform them regularly and draw their attention to certain facts.

This report was produced independently by IQVIA Canada as a public service, without industry or government funding. IQVIA complies with all legislation relating to the protection of personal health information. IQVIA does not collect any data on prescription drugs that can identify a patient or that can be used for this purpose.

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National Opioid Utilization Highlights

The opioid epidemic has impacted the country for over a decade. According to a report published by Health Canada in June 2021, Canada had its worst opioid overdose year in 2020, since the Public Health Agency of Canada (PHAC) began monitoring this crisis in 2016.

While the human toll of the opioid epidemic is being addressed differently across the country, efforts in managing prescription opioids and in supporting medication-assisted treatment are showing measurable progress in several provinces, while certain hot spots remain.

**FEWER PEOPLE ARE FILLING OPIOID PRESCRIPTIONS**

Overall, when comparing the year 2015 to 2020, prevalence* of opioid prescriptions dispensed declined in all provinces as changes were made in regulations and clinical guidelines.

The proportion of the total Canadian population who have been dispensed at least one prescription in a community pharmacy, decreased from 13.1% in 2015 to 11.5% in 2020, representing an absolute reduction of 1.6%. Likewise, the number of people who have been dispensed opioids declined 6.8% in 2020, compared to the study period in 2015.

THE NUMBER OF PRESCRIPTIONS DISPENSED CONTINUES TO GROW

The number of opioid prescriptions dispensed in Canada increased by 15.4% between 2015 and 2020, driven by various programs to treat opioid dependence, albeit with a decrease in medication cost of 18.3%. This represents an average of 6.8 prescriptions dispensed per person in 2015, compared to 8.4 prescriptions per person in 2020, an increase of 23.5%. Many factors contributed to fluctuating costs, including the number of prescriptions, drug prices, changes in the pricing structure and the availability of alternatives.

General statistics on opioid use

Prevalence of opioid prescribing	Individuals who have used opioids	Opioid prescriptions dispensed	Opioid costs
2020 **11.5%**	2020 **4,368,084**	2020 **36,752,869**	2020 **$908,132,677**
⬇	⬇	⬆	⬇
2015 **13.1%**	2015 **4,686,789**	2015 **31,838,112**	2015 **$1,111,578,142**

"North America has the highest rates of opioid prescribing in the world which has undoubtedly led to increased patient and societal harm. The Canadian government announced the country was in the midst of an Opioid Crisis in 2016 which led to a multitude of interventions being implemented across Canada with the goal of reducing opioid use. This report provides reassuring data from community pharmacies from 2015 and 2020 which shows that the overall number of people dispensed opioids has decreased whilst the dispensing of medications to manage opioid dependency has increased. While reducing opioid prescribing is a big step in the right direction, increased efforts are required to treating the physical and psychological causes of pain by providing accessible and affordable evidence-based pharmacological and non-pharmacological treatments for all Canadians."

— Justin Turner PhD, Co-Director, Canadian Deprescribing Network

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* Prevalence ratios are calculated as follows:

Number of individuals who filled at least one opioid prescription in 2015 and 2020
_____
Total Canada or provincial population in 2015 and 2020 (source: Statistics Canada)
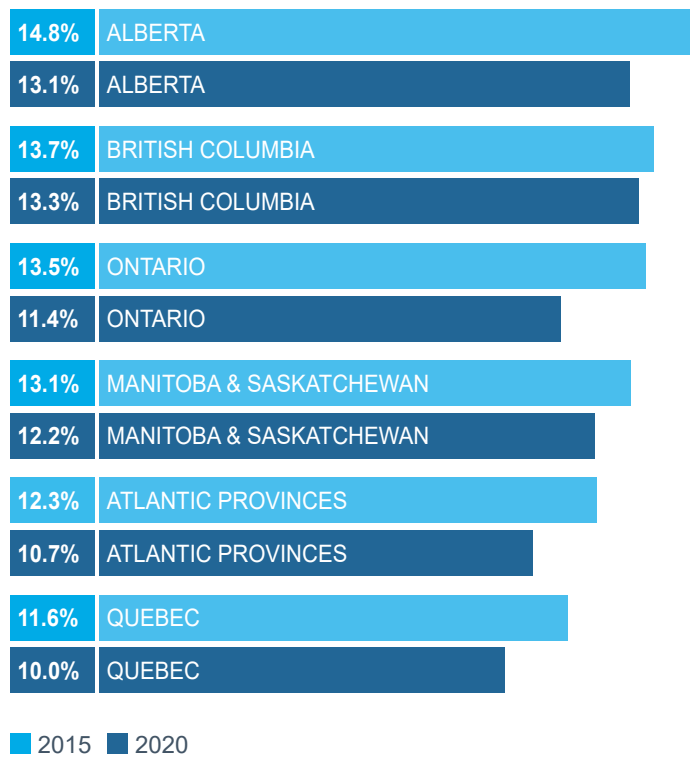
Provincial Prevalence Trends

PREVALENCE RATIOS FOR OPIOID PRESCRIPTIONS DISPENSED IN COMMUNITY PHARMACIES DECREASED IN 2020 COMPARED TO 2015 IN ALL CANADIAN PROVINCES.

In 2020, British Columbia and Alberta had the highest prevalence rates in Canada with 13.3% and 13.1%, respectively.

- At 10%, Quebec had the lowest prevalence rate for opioid dispensing in Canada in 2020.
- In 2020, Ontario's prevalence rate was 2.1% lower than in 2015.

All major Canadian regions experienced a notable decrease between 2015 and 2020, with the exception of Vancouver / Victoria which showed an increase of 0.8%.

Provincial prevalence for opioid dispensing

2015	2020	Region
14.8%	13.1%	ALBERTA
13.7%	13.3%	BRITISH COLUMBIA
13.5%	11.4%	ONTARIO
13.1%	12.2%	MANITOBA & SASKATCHEWAN
12.3%	10.7%	ATLANTIC PROVINCES
11.6%	10.0%	QUEBEC

■ 2015 ■ 2020

Prevalence for opioid dispensing in key Canadian regions

2015	2020	Region
16.3%	14.5%	EDMONTON
16.1%	14.9%	NEW BRUNSWICK
14.6%	14.2%	WINNIPEG
13.9%	11.0%	NEWFOUNDLAND
13.0%	11.1%	QUEBEC
12.8%	11.2%	PRINCE EDWARD ISLAND
11.3%	12.1%	VANCOUVER/VICTORIA
11.3%	9.7%	GATINEAU
11.2%	9.9%	REGINA/SASKATOON
10.9%	9.5%	NOVA SCOTIA
10.4%	10.3%	CALGARY
10.2%	10.0%	OTTAWA
9.5%	7.9%	MONTREAL
8.7%	7.3%	TORONTO

■ 2015 ■ 2020
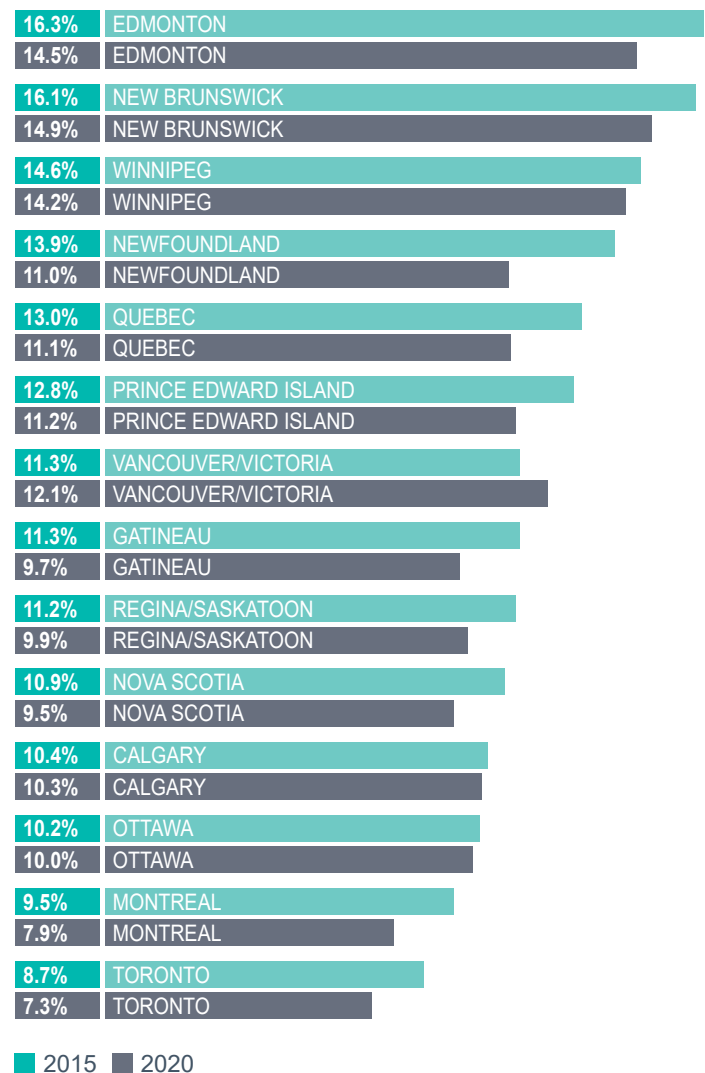
Demographic Analysis

In 2020, almost 1 in 9 people in the study population has been dispensed opioids — an estimate of more than 4.4 million Canadians

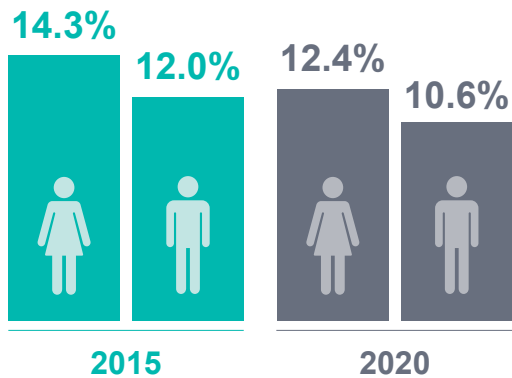| PEOPLE PRESCRIBED OPIOIDS* BY REGION - CANADA 2020		
	Prevalence	**# Per Capita**
AB	13.1%	1 in 8
BC	13.3%	1 in 8
MN&SK	12.2%	1 in 8
ATL.P	10.7%	1 in 9
ON	11.4%	1 in 9
QC	10.0%	1 in 10
CANADA	**11.5%**	**1 in 9**

* People who were dispensed an opioids prescription

Prevalence of opioid dispensing by sex

14.3% 12.0% 12.4% 10.6%

2015   2020

In Canada in 2020, the prevalence rate decreased to 12.4% for women and 10.6% for men.

Prevalence of opioid dispensing in females, by age group

■ 2015 ■ 2020

	0-18	19-45	46-70	71+
2015	0.5%	10.2%	18.3%	32.1%
2020	1.1%	10.0%	15.9%	23.9%
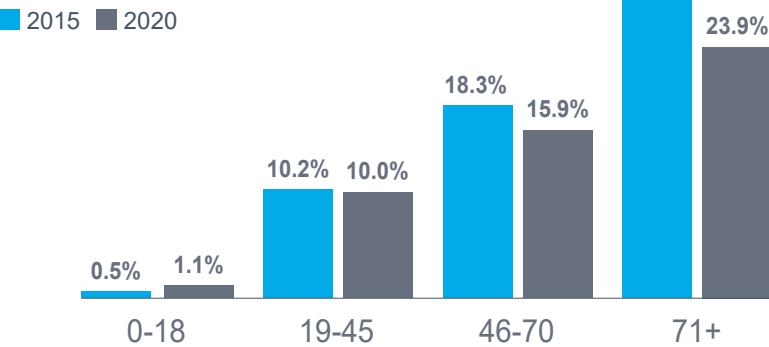
Prevalence of opioid dispensing in males, by age group

■ 2015 ■ 2020

	0-18	19-45	46-70	71+
2015	0.5%	8.7%	17.5%	31.9%
2020	1.0%	8.5%	15.5%	23.8%
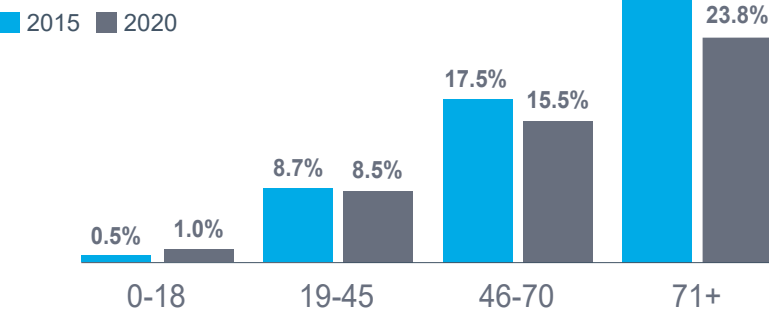
In 2020, women aged 71 and over had the highest prevalence rate in Canada at 23.9%.

Number of individuals for which at least one opioid prescription was dispensed, by age group.

■ 2015 ■ 2020

Age group	2015	2020
0-18	34,952	86,777
19-45	1,279,497	1,328,008
46-70	2,183,886	2,013,198
71+	1,188,454	940,101
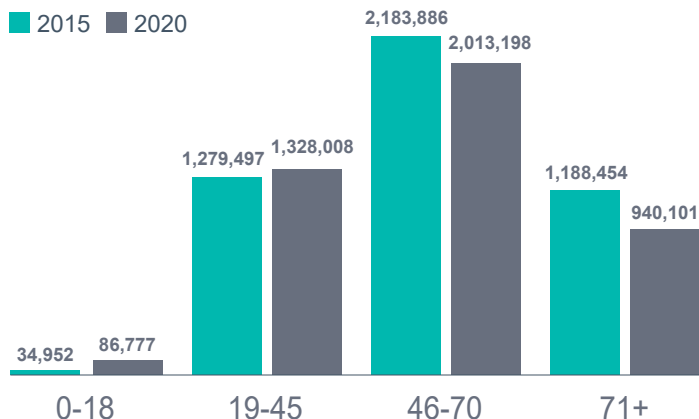
In both 2015 and 2020, the number of individuals who were dispensed opioids was highest in the 46 to 70-year-old age bracket.

Prevalence of opioid dispensing by age group for a treatment period greater than 6 months

■ 2015 ■ 2020

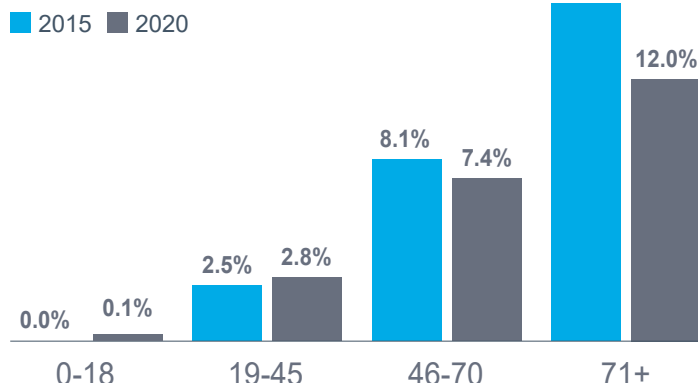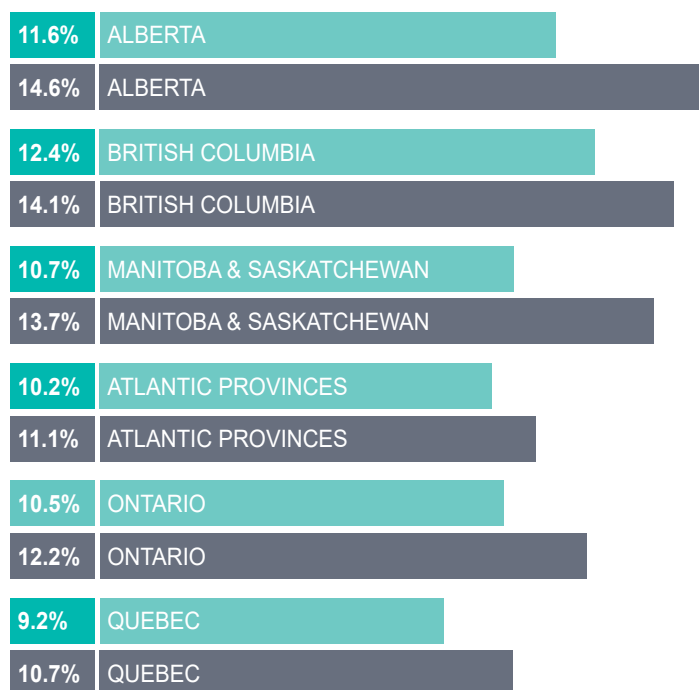| Age group	2015	2020
0-18	0.0%	0.1%
19-45	2.5%	2.8%
46-70	8.1%	7.4%
71+	15.4%	12.0%

The prevalence rate in Canada in 2020 for a treatment duration of more than 6 months was 7.4% in individuals between 46 and 70 years old, and 12% for those 71 years and over.

Prevalence in opioid dispensing by sex, by province, 2020

Province	Men	Women
ALBERTA	11.6%	14.6%
BRITISH COLUMBIA	12.4%	14.1%
MANITOBA & SASKATCHEWAN	10.7%	13.7%
ATLANTIC PROVINCES	10.2%	11.1%
ONTARIO	10.5%	12.2%
QUEBEC	9.2%	10.7%

■ Men ■ Women

In 2020, the prevalence rate among women in each province was consistently higher than that of men, reaching a peak of 14.6% in Alberta.

Prevalence in opioid dispensing by sex, by province and by age group, 2020

PROVINCE	MEN			WOMEN		
	19-45	46-70	71+	19-45	46-70	71+
QC	7.6%	12.7%	19.6%	10.5%	13.2%	19.2%
ON	8.0%	15.5%	25.3%	10.6%	15.9%	25.5%
ATL.P	8.1%	13.6%	21.7%	9.6%	13.8%	21.5%
MB&SK	9.3%	17.3%	22.7%	14.2%	19.4%	23.7%
BC	10.3%	17.3%	25.2%	13.0%	17.9%	26.2%
AB	9.0%	19.8%	28.8%	14.0%	21.9%	**29.8%**

In 2020, women aged 71 and over living in the province of Alberta had the highest prevalence rate in Canada at 29.8%.

OPIOID USE BY DOSAGE

Morphine milligram equivalent (MME) is a standardized method for measuring opioid doses and reflects the strength of opioids.

Low: Average daily dose per patient < 50
Medium: Average daily dose per patient 50 <= 90
High: Average daily dose per patient > 90

People who were dispensed opioids in Canada overall, and in all provinces, mostly obtained their opioids at low doses, less than 50 MME per day, for both 2015 and 2020.

The number of people who were dispensed opioids in Canada and in all provinces decreased for all dosages (low, medium and high) when comparing 2015 and 2020.

Number of individuals in Canada who were dispensed opioids, by dose

	All	Low	Medium	High
2015	4,656,789	3,831,237	540,219	315,333
2020	4,368,084	3,601,013	476,827	290,244
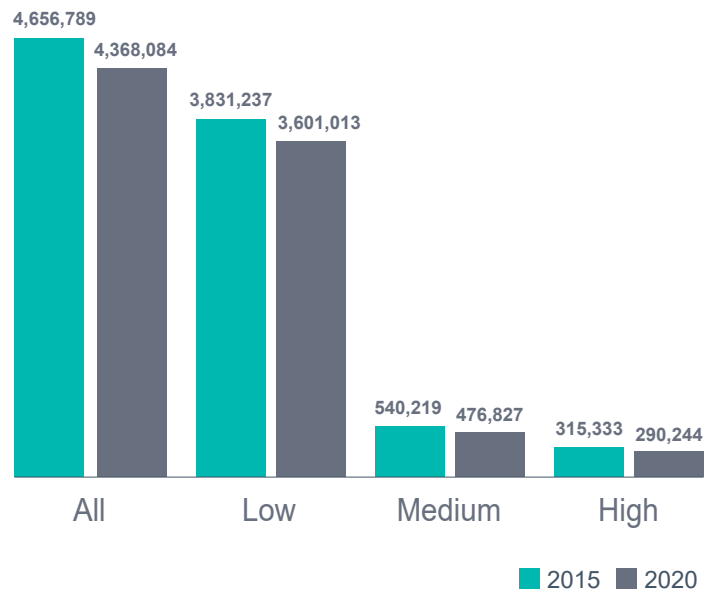
Opioid Dependence Treatments

In Canada, methadone and buprenorphine/naloxone are the drugs most frequently used for opioid dependence as part of a medication-assisted treatment and recovery program.

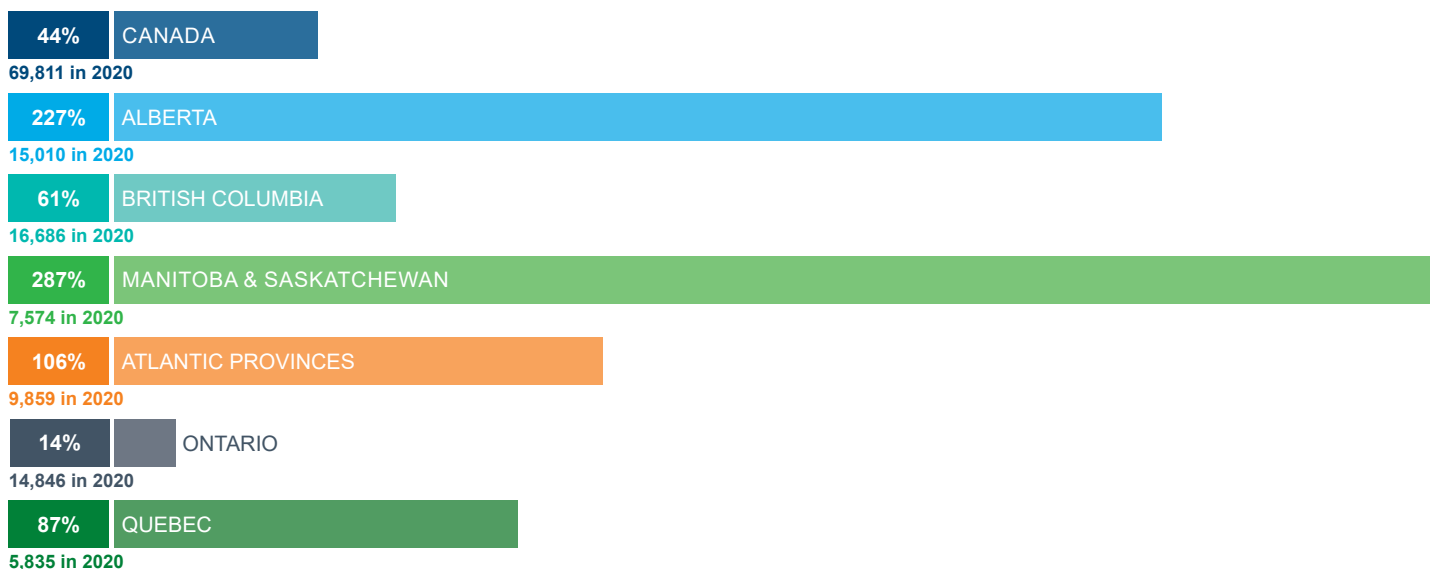**Increase in the number of people who were dispensed opioids for the treatment of opioid dependence between 2015 and 2020***

44%	CANADA

69,811 in 2020

227%	ALBERTA

15,010 in 2020

61%	BRITISH COLUMBIA

16,686 in 2020

287%	MANITOBA & SASKATCHEWAN

7,574 in 2020

106%	ATLANTIC PROVINCES

9,859 in 2020

14%	ONTARIO

14,846 in 2020

| 87%	QUEBEC

5,835 in 2020

Comparison between 2015 and 2020 statistics demonstrates that more Canadians are accessing opioids to treat dependence, largely driven by uptake of buprenorphine/naloxone. As indicated previously in this report, the number of opioid prescriptions dispensed in Canada increased by 15.4% between 2015 and 2020, driven by various medication-assisted treatment programs to treat opioid misuse and dependence. This is an important indicator of the effects of increased funding and support for treatment programs to address addiction.

Frequently dispensed daily, buprenorphine / naloxone is a combination drug used to treat opioid dependence that has seen a 190% increase in prescriptions in Canada between 2015 and 2020.

Over 60% of buprenorphine/naloxone prescriptions dispensed in Canada were filled in Ontario pharmacies, increasing by 133% in 2020 as compared to 2015.

Number of buprenorphine/naloxone prescriptions dispensed in Canada and Ontario, 2015 and 2020

Canada: 1,578,495 (2015), 4,586,614 (2020)
Ontario: 1,170,411 (2015), 2,728,047 (2020)

■ 2015 ■ 2020
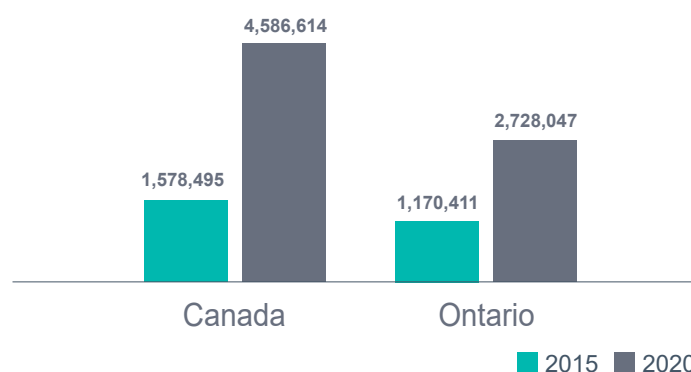
* Corresponds to number of individuals using Methadone and Buprenorphine / Naloxone.
Methadone may be used for pain in a low proportion.

Methadone can be used to treat opioid dependency or for pain. When used for dependence, it is frequently dispensed on a daily basis, which increases the volume of prescriptions.

Almost 14 million methadone prescriptions were dispensed in Canada in 2020, two-thirds (9 million prescriptions) in the province of Ontario alone.
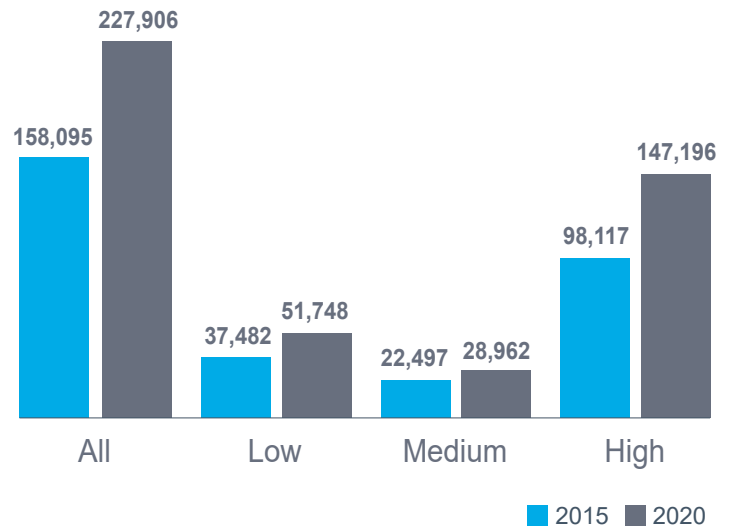
Approximately 70% of methadone prescriptions dispensed in Ontario were dispensed on a daily basis under the Ontario Drug Benefit Program[1].

Number of methadone prescriptions dispensed in Canada and Ontario, 2015 and 2020

Canada: 11,775,995 (2015), 13,670,840 (2020)
Ontario: 7,902,213 (2015), 9,011,331 (2020)

2015   2020
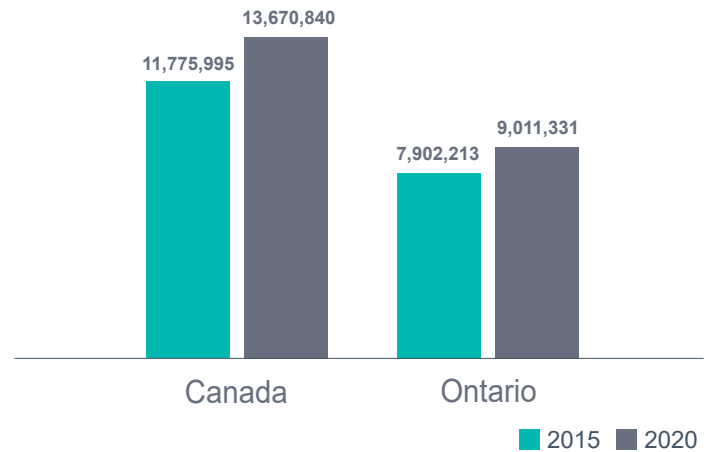
The number of people who were dispensed opioids in Canada for the treatment of dependence for all dosages increased when comparing 2015 and 2020.

Number of individuals who were dispensed opioids for dependence treatment

All: 158,095 (2015), 227,906 (2020)
Low: 37,482 (2015), 51,748 (2020)
Medium: 22,497 (2015), 28,962 (2020)
High: 98,117 (2015), 147,196 (2020)

2015   2020

1. Chief Administrator's Notice: Ontario Drug Benefit Methadone Maintenance Treatment Reimbursement Policy (gov.on.ca)

Prescribing Analysis

Change in proportion of NEW opioid prescriptions dispensed for PAIN in Canada - 2015 vs. 2020

- GPs: -32%
- Orthopedists: -25%
- General surgeons: -26%
- Interns/Residents: -2%
- Plastic surgeons: -22%
- OB/GYNs: -27%
- Oncologists: -8%
- Urologists: -27%
- Emergency physicians: -30%
- Anesthesiologists: -39%

Legend:
- GPs
- Orthopedists
- General surgeons
- Interns/Residents
- Plastic surgeons
- OB/GYNs
- Oncologists
- Urologists
- Emergency physicians
- Anesthesiologists
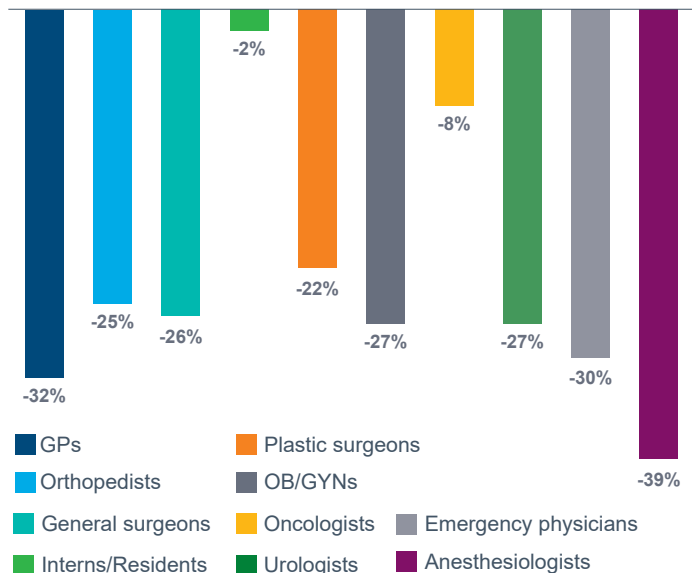
Between 2015 and 2020, the top ten medical specialties that initiated new therapy starts for pain management for various causes, all posted a reduction in the average number of new opioid prescriptions dispensed, ranging from 2% (interns/residents) to 39% (anesthesiologists).

Anesthesiologists and general practitioners experienced the largest decrease in new opioid prescriptions, respectively 39% and 32%.

Individuals who obtained their opioid prescriptions from 1, 2, 3 or 4+ prescribers 2015 vs. 2020
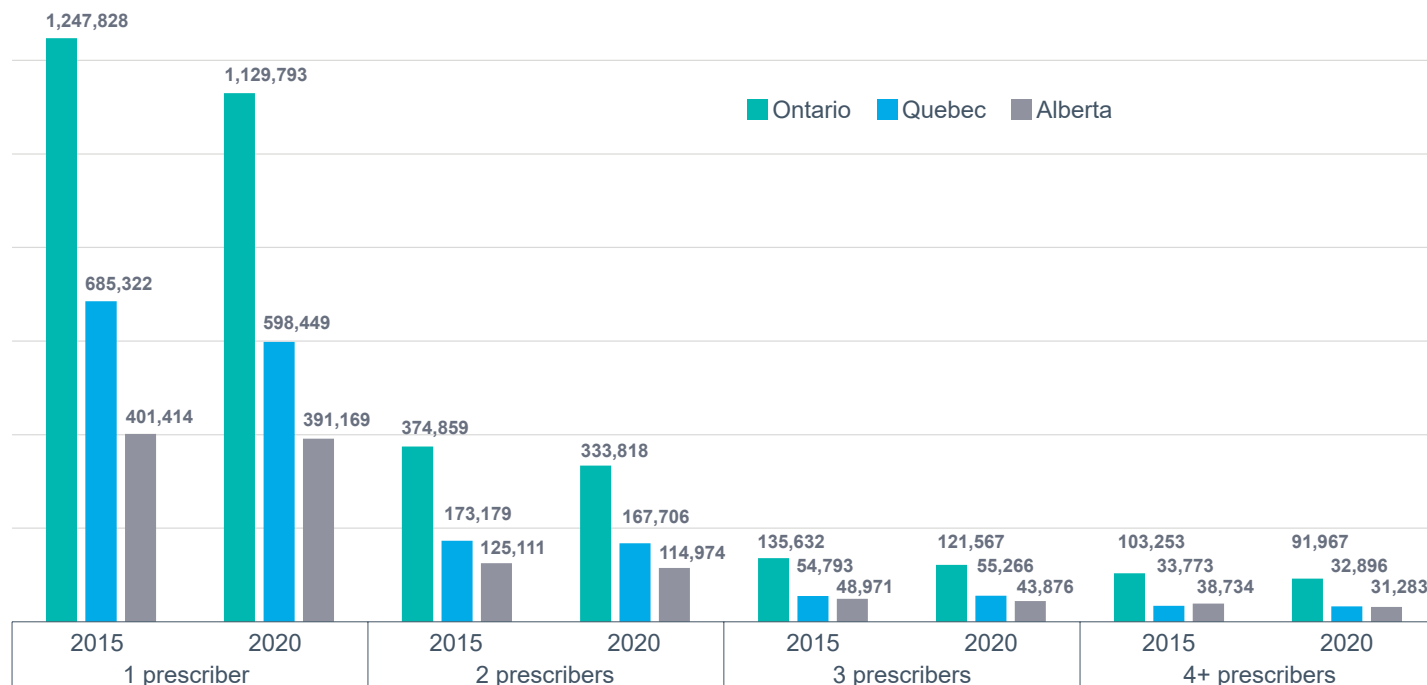
For both 2015 and 2020, the vast majority of people who were dispensed opioids obtained their prescriptions from one prescriber.*

Legend: Ontario, Quebec, Alberta

	1 prescriber		2 prescribers		3 prescribers		4+ prescribers	
	2015	2020	2015	2020	2015	2020	2015	2020
Ontario	1,247,828	1,129,793	374,859	333,818	135,632	121,567	103,253	91,967
Quebec	685,322	598,449	173,179	167,706	54,793	55,266	33,773	32,896
Alberta	401,414	391,169	125,111	114,974	48,971	43,876	38,734	31,283

* Prescribers' prescription data is not available for Newfoundland, Prince Edward Island, Manitoba and British Columbia

Recommendations for Health Stakeholders

All who study and deliver health care – and set the policies and standards of care that guide treatment for opioid dependence – must persist in finding solutions. At IQVIA, our goal is to help improve care by providing essential data and evidence that supports decision makers, researchers, and educators in this critical area.

Using this information, stakeholders could:

- Systematically review national and provincial prescription data for opioids and other drugs with high potential for abuse, from all sources, to determine current and emerging trends that may impact care providers, patients, governments, or regulatory authorities.

- Monitor and assess prescribing trends which vary considerably between provinces and evaluate the impact of programs put in place.

- Pay particular attention to provinces or regions where opioid consumption is increasing the most and and develop an awareness and training strategy for the professionals concerned.

- Evaluate prescribing trends for other pain medication.

Efforts to minimize harm associated with opioid therapy while maintaining appropriate access to therapy, include risk management interventions such as post-market surveillance, education programs for healthcare professionals and patients, restrictions on who can prescribe and dispense drugs, refill limitations, and informed patient consent agreements. To treat pain, pharmaceutical companies are researching non-opioid therapies and digital therapeutic devices that are effective and less addictive.

In the battle against opioid abuse, it is important to remember that improving the health and well-being of humans applies equally to those with severe and intractable pain. Through the intelligent, individualized application of improved standards of care and the development of alternative pain-management approaches, there is the potential to reduce the public health crisis while addressing the individual crisis of the person in pain.

Further research is needed to understand the drivers of these findings, and to evaluate the impact of the release of Canadian and provincial guidelines and programs on future opioid treatment patterns. IQVIA is well positioned to assist federal and provincial governments, policy makers, health care professionals, researchers, and educators, by informing them of prescribing trends for drugs that are currently under scrutiny.

Data Sources and Methodology

The statistics and analysis featured in this report were sourced from the IQVIA Health Insights Dashboard on opioids prescriptions dispensed to the Canadian population in 2015 and 2020. Population data from Statistics Canada was used to calculate proportions and rates.

The dashboard is designed to answer three basic questions: how many prescriptions, for how many individuals, by which prescriber specialties. Other types of information are accessible such as prevalence rates, the number of individuals by area, by sex, age, and reason for use (pain and dependence).

The data collected for this dashboard is fully anonymized, comes exclusively from opioid prescriptions dispensed by community pharmacies, and represents approximately 80% of all opioid prescriptions dispensed in Canada. Estimation algorithms to assess the missing 20% and thus obtain an overview. Constant application of the same estimation algorithms provides a reliable representation of trends and changes in opioid use over time. All forms and strengths are considered, except for injections, suppositories and intranasal.

List of molecules included in analysis:

CLASS	MOLECULE
Opioid Agonists	Codeine
	Hydromorphone
	Morphine
	Oxycodone
	Fentanyl
	Meperidine
	Methadone (pain)
	Methadone (dependence)
Opioid Partial/ Mixed Agonists	Tramadol
	Pentazocine
	Buprenorphine (pain)
	Buprenorphine (dependence)

The data for selection of the geographic territory includes:

- Canada
- Alberta
- British Columbia
- Manitoba and Saskatchewan combined
- Ontario
- Atlantic provinces combined (4)
- Québec

- Total population: The number of individuals estimated by Statistics Canada that serves as the denominator for the calculation of prevalence.
- People prescribed opioids: Number of individuals who were dispensed at least one opioid prescription.
- Prevalence: Number of people who were dispensed opioids divided by the total population.
- Prescriptions: Number of opioid prescriptions dispensed by community pharmacies.
- Prescribers: Number of prescribers who prescribed at least one opioid prescription dispensed in a community pharmacy.
- Prescriber data not available for Newfoundland, Prince Edward Island, Manitoba, and British Columbia.

LIMITATIONS

There are limitations using IQVIA data, which does not include information about:

- Prescriptions that were written but never dispensed
- Prescriptions dispensed in hospital or in prisons
- Medication that was not consumed by patients
- Diagnoses for which prescriptions were dispensed
- Clinical indication or morbidity
- This report does not take into account the use of illicit opioids, nor the effects of possible disruptions from the COVID-19 pandemic.

This report is based on the following IQVIA data services:

CANADIAN COMPUSCRIPT AUDIT

The Canadian CompuScript audit measures the number of prescriptions dispensed by Canadian community pharmacies at the provincial level. For each product the following data elements are collected: manufacturer, form, strength, new and refill prescriptions, prescription size and price (includes mark-up and dispensing fees), transaction location and data month. The CompuScript sample is drawn from a panel of over 6,500 pharmacies, representing more than 59% of all retail pharmacies in Canada from both chain and independent pharmacies. Records are collected electronically each month for pharmacies with independent computer systems. The sample data is then used to produce statistical estimates for each province.

IQVIA GEOGRAPHIC PRESCRIPTION MONITOR (GPM)

GPM provides the most comprehensive and reliable source of retail prescription activity in Canada. It is designed to measure retail demand by monitoring the dispensing of prescription drugs from pharmacies to patients. GPM provides the total number of prescriptions, units dispensed, and the cost of prescriptions for different therapeutic markets.

IQVIA LONGITUDINAL PRESCRIPTION DATA

IQVIA Longitudinal Prescription Data (LRx) is a longitudinal patient prescription dataset based on retail pharmacy data. It enables the longitudinal tracking of patient prescription activity.

IQVIA PRESCRIBER-LEVEL DATA

IQVIA prescriber-level data provides projected aggregated prescribing data and market shares. A statistical process (projection methodology) estimates the prescription volume for the total universe using the pharmacies in six provinces: Alberta, Saskatchewan, Ontario, Quebec, New Brunswick and Nova Scotia. To conform with the strictest requirements on the release of prescriber-level data in Canada, the projected data is aggregated in a way that masks the actual prescribing statistics for each individual prescriber.

About IQVIA

IQVIA is a leading global provider of advanced analytics, technology solutions, and clinical research services to the life sciences industry. IQVIA creates intelligent connections across all aspects of healthcare through its analytics, transformative technology, big data resources and extensive domain expertise. IQVIA Connected Intelligence™ delivers powerful insights with speed and agility — enabling customers to accelerate the clinical development and commercialization of innovative medical treatments that improve healthcare outcomes for patients. With approximately 70,000 employees, IQVIA conducts operations in more than 100 countries.

Established in Canada in 1960, IQVIA is one of the leading providers of real-world health insights serving the Canadian medical-pharmaceutical sector. Its excellent reputation is based on its ability to forge partnerships with different stakeholders in the public and private sectors who share the same objective: continuous improvement of the quality of healthcare within a more connected healthcare ecosystem.

As a trusted healthcare partner and neutral authority for over 60 years, IQVIA Canada has answered essential questions from governments, university researchers, decision-makers and public health institutions seeking to know more about diseases, develop policies and improve public welfare. Offering the world's largest source of curated healthcare data, IQVIA provides pan-Canadian data that covers both the public and private sector. Better use of health information by various stakeholders could support three objectives:

• Serve as tools to support effective decision-making
• Ensure maintenance of best practices
• Allow exploration of new research pathways

IQVIA is a global leader in protecting individual patient privacy. The company uses a wide variety of privacy-enhancing technologies and safeguards to protect individual privacy while generating and analyzing information on a scale that helps healthcare stakeholders identify disease patterns and correlate with the precise treatment path and therapy needed for better outcomes. IQVIA's insights and execution capabilities help biotech, medical device and pharmaceutical companies, medical researchers, government agencies, payers and other healthcare stakeholders tap into a deeper understanding of diseases, human behaviours, and scientific advances in an effort to advance their path toward cures.

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