Prescription Opioid Trends in Canada

An independent IQVIA report on measuring and understanding the use of prescription opioids dispensed from 2019 to 2021

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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 in opioid prescriptions dispensed in community pharmacies (excluding hospitals) in Canada comparing the year 2019, the year before the coronavirus pandemic, with pandemic years 2020 and 2021, segmented by demographics and provinces/regions to illustrate progress and remaining concerns. See page 13 for limitations to using IQVIA data.

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

The Boards' 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 Boards' 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 and draw attention to certain trends.

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 preoccupied the country for more than a decade. According to a report released by Health Canada in March 2022, Canada experienced its worst year for opioid overdoses in 2020 since the Public Health Agency of Canada (PHAC)* began monitoring this crisis in 2016. Between January and December 2021, 7,560 deaths apparently related to opioid intoxication were recorded, which is approximately 21 deaths per day. During this same time period, 88% of all apparent opioid-related accidental deaths occurred in British Columbia, Alberta and Ontario and were predominantly among men between the ages of 20 and 59.

While the human toll of the opioid crisis is measured differently across the country, efforts to manage the prescription of opioids and support drug dependence treatment are yielding measurable results in several provinces, though there remains some hot spots. What follows is the second report on opioid prescribing in Canada prepared by IQVIA for the years 2019, 2020 and 2021.

For Canada as a whole, there is a decrease in prevalence in 2020 compared to 2019, and a rebound in 2021. The same trend is observed for the number of users and the number of opioid prescriptions dispensed. This can be explained by a general decrease in medical consultations in Canada** during the first wave of the pandemic compared to 2019, the pre-pandemic year.

The proportion of the total Canadian population that received at least one prescription for opioids from a community pharmacy decreased from 12.6% in 2019 to 12.2% in 2021. This represents an average of approximately 8 prescriptions per individual for each of the three years observed.

General statistics on opioid use in Canada

	PREVALENCE	INDIVIDUALS WHO HAVE USED OPIOIDS	OPIOID PRESCRIPTIONS DISPENSED	COST OF OPIOIDS DISPENSED IN COMMUNITY PHARMACIES
2021	12.2%	4,678,244	37,194,748	$885,739,750
2020	11.5%	4,371,028	36,766,194	$887,847,745
2019	12.6%	4,737,688	38,505,016	$903,296,832

* https://sante-infobase.canada.ca/mefaits-associes-aux-substances/opioides-stimulants. The data has been updated for the period January to December 2021.
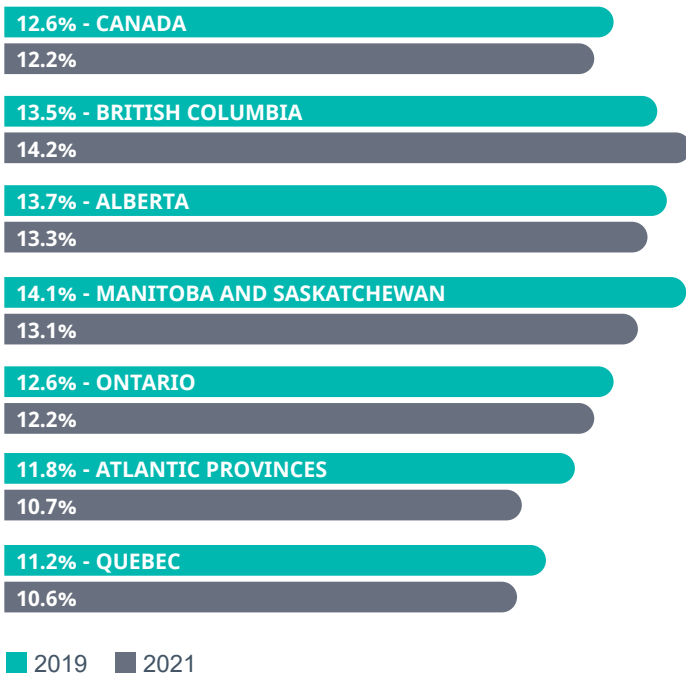** https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/physician-services

Provincial Prevalence Trends

DECREASE IN PREVALENCE RATES BETWEEN 2019 AND 2021

Prevalence rates decreased between 2019 and 2021 in all Canadian provinces except British Columbia which saw an increase of 0.7% from 13.5% in 2019 to 14.2% in 2021. Quebec has the lowest rate of prevalence in Canada for the three years observed with 10.6% in 2021.
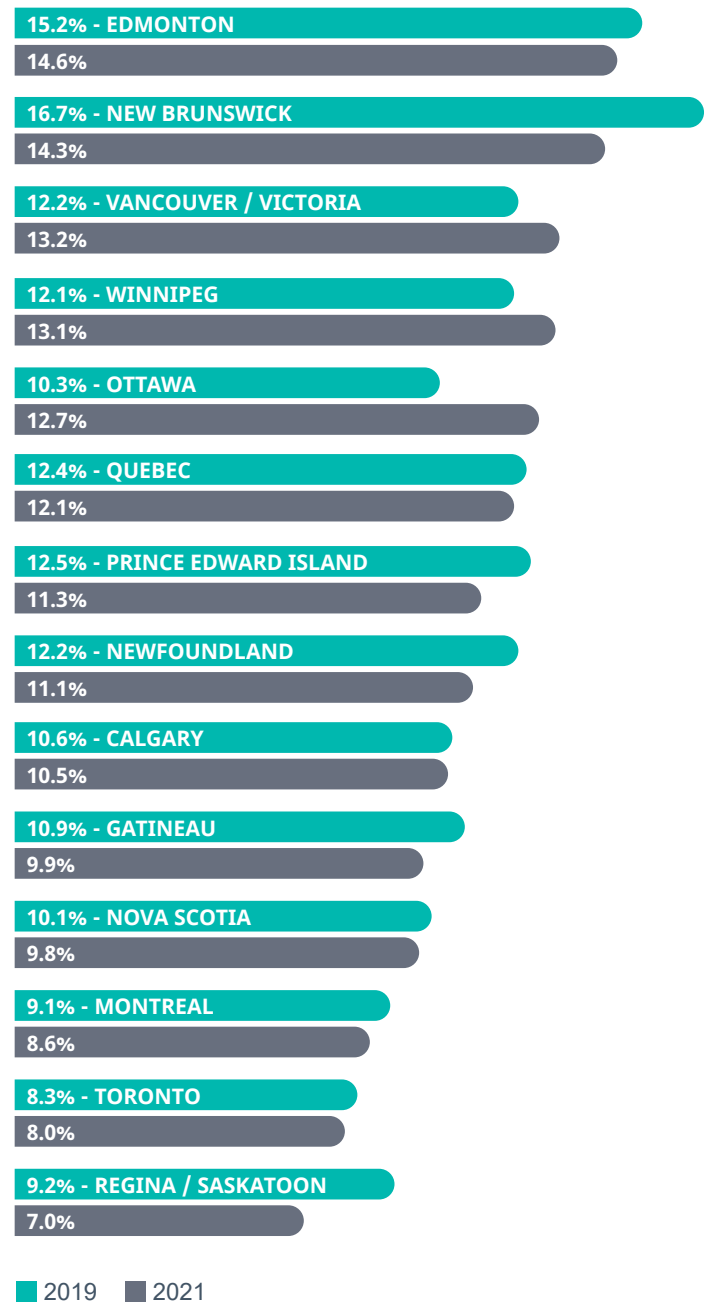
Provincial prevalence for opioid dispensing

	2019	2021
CANADA	12.6%	12.2%
BRITISH COLUMBIA	13.5%	14.2%
ALBERTA	13.7%	13.3%
MANITOBA AND SASKATCHEWAN	14.1%	13.1%
ONTARIO	12.6%	12.2%
ATLANTIC PROVINCES	11.8%	10.7%
QUEBEC	11.2%	10.6%

■ 2019 ■ 2021

PREVALENCE OF OPIOID DISPENSING IN MAJOR CANADIAN REGIONS

Between 2019 and 2021, most major Canadian regions saw a decrease in opioid dispensing prevalence with the exception of increases of 1% in Vancouver/Victoria and Winnipeg, and 2.4% in Ottawa.

Prevalence for opioid dispensing in key Canadian regions

	2019	2021
EDMONTON	15.2%	14.6%
NEW BRUNSWICK	16.7%	14.3%
VANCOUVER / VICTORIA	12.2%	13.2%
WINNIPEG	12.1%	13.1%
OTTAWA	10.3%	12.7%
QUEBEC	12.4%	12.1%
PRINCE EDWARD ISLAND	12.5%	11.3%
NEWFOUNDLAND	12.2%	11.1%
CALGARY	10.6%	10.5%
GATINEAU	10.9%	9.9%
NOVA SCOTIA	10.1%	9.8%
MONTREAL	9.1%	8.6%
TORONTO	8.3%	8.0%
REGINA / SASKATOON	9.2%	7.0%

■ 2019 ■ 2021

Demographic Analysis

In 2021, about 1 in 8 people in Canada received at least one prescription for opioids from a community pharmacy — a number estimated at more than 4.6 million Canadians nationally.

PEOPLE PRESCRIBED OPIOIDS* BY REGION - CANADA 2021		
	Prevalence	**# Per Capita**
AB	13.3%	1 in 8
BC	14.2%	1 in 7
MN / SK	13.1%	1 in 8
ATL.P	10.7%	1 in 9
ON	12.2%	1 in 8
QC	10.6%	1 in 9
CANADA	**12.2%**	**1 in 8**

* People who were dispensed at least one opioid prescription.

Prevalence of opioid dispensing by sex

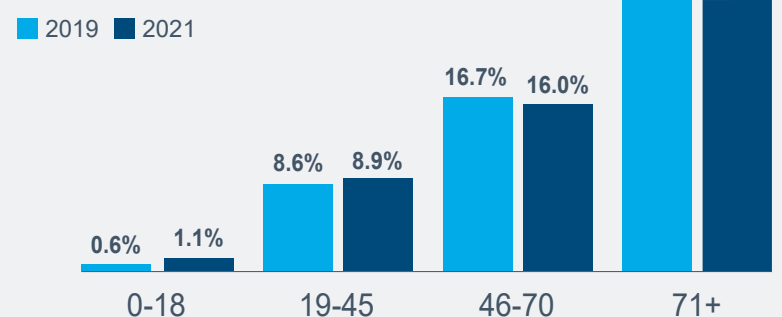**13.6%** **11.5%** **13.3%** **11.1%**

2019 **2021**
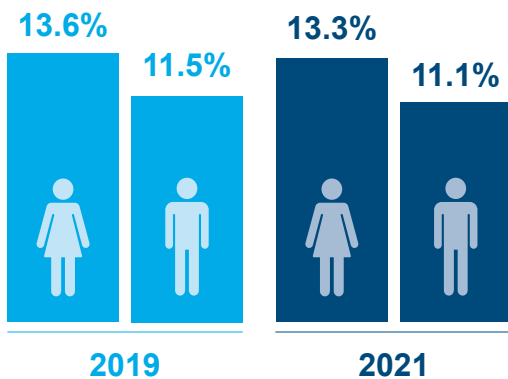
In Canada, the prevalence rate between 2019 and 2021 fell from 13.6% to 13.3% for women and from 11.5% to 11.1% for men. For both women and men, the prevalence decreased in 2020 compared to 2019 to increase again in 2021.
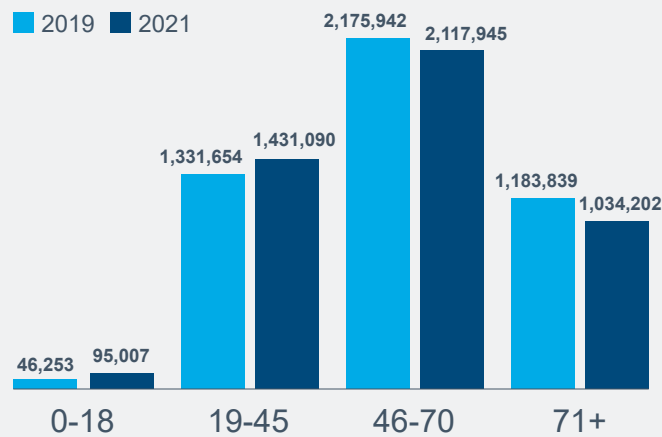
Prevalence of opioid dispensing in females, by age group

■ 2019 ■ 2021

	0-18	19-45	46-70	71+
2019	0.6%	11.6%	17.8%	30.2%
2021	1.2%	12.4%	17.0%	26.0%
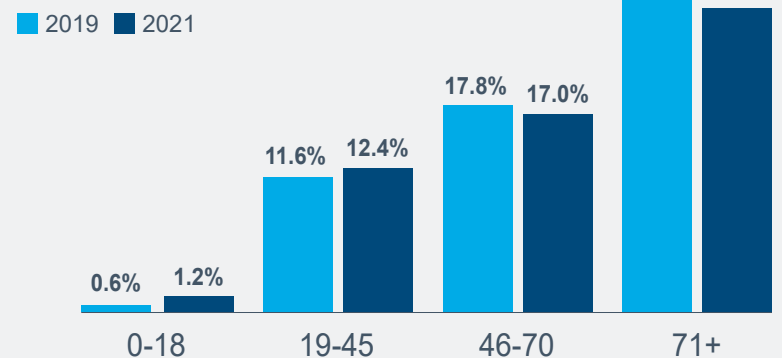
Prevalence of opioid dispensing in males, by age group

■ 2019 ■ 2021

|	0-18	19-45	46-70	71+
2019	0.6%	8.6%	16.7%	30.4%
2021	1.1%	8.9%	16.0%	26.0%

The prevalence rate by age group for women and men is similar for the three years observed except in the 19-45 age group where the prevalence in 2021 is much higher among women (12.4%) than among men (8.9%), a difference of 3.5%.

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

■ 2019 ■ 2021

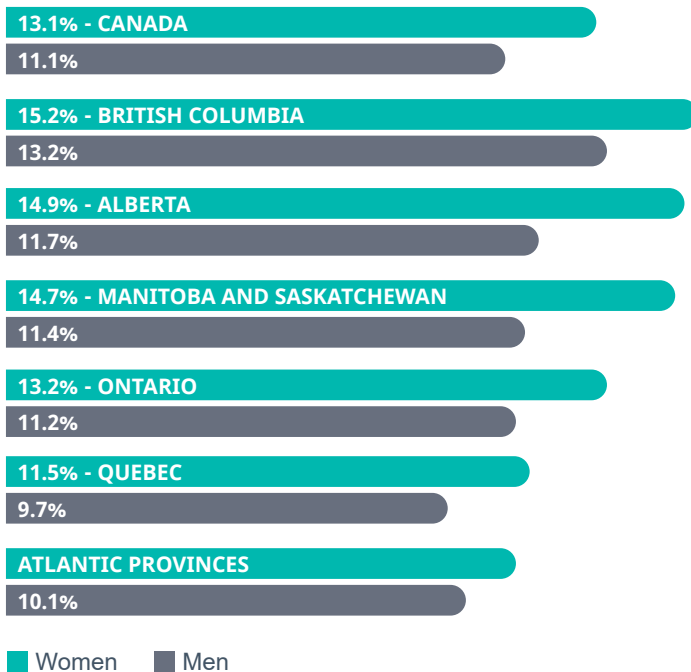| Age group	2019	2021
0-18	46,253	95,007
19-45	1,331,654	1,431,090
46-70	2,175,942	2,117,945
71+	1,183,839	1,034,202

In Canada, for the two years observed, the 46 to 70 age group has the highest number of opioid users.

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

■ 2019 ■ 2021

Age group	2019	2021
0-18	0.0%	0.1%
19-45	2.7%	2.8%
46-70	7.9%	7.4%
71+	15.0%	12.5%
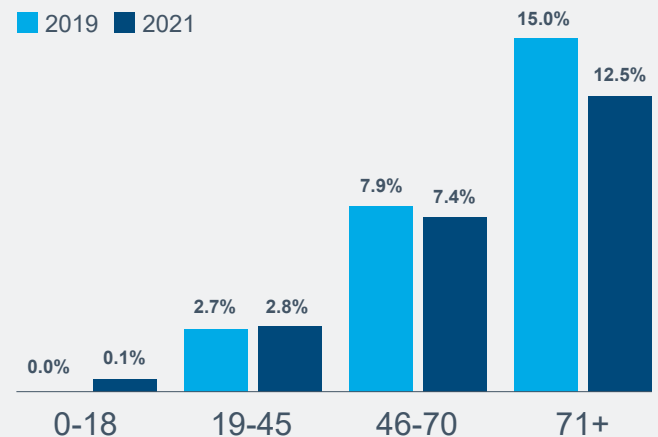
In Canada, for a duration of treatment greater than 6 months, the age group of 71 years and over has the highest prevalence rate. However, for this same age group, there is a decrease in prevalence from 15% in 2019 to 12.5% in 2021.

Prevalence in opioid dispensing by sex, by province, 2021

Province	Women	Men
CANADA	13.1%	11.1%
BRITISH COLUMBIA	15.2%	13.2%
ALBERTA	14.9%	11.7%
MANITOBA AND SASKATCHEWAN	14.7%	11.4%
ONTARIO	13.2%	11.2%
QUEBEC	11.5%	9.7%
ATLANTIC PROVINCES		10.1%

■ Women ■ Men

In 2021, the prevalence among women in every province is consistently higher than that of men, peaking at 15.2% in British Columbia.

Prevalence in opioid dispensing by sex, by province and by age group, 2021

	WOMEN			MEN		
PROVINCE	**19-45**	**46-70**	**71+**	**19-45**	**46-70**	**71+**
AB	13.8%	22.2%	**32.3%**	9.2%	19.8%	31.0%
CB	14.2%	18.7%	28.8%	11.0%	18.0%	27.9%
ON	11.8%	16.9%	27.9%	8.5%	16.1%	27.7%
MB & SK	15.4%	20.5%	26.1%	9.9%	18.2%	25.3%
ATL.P	9.6%	13.6%	22.1%	8.0%	13.4%	22.5%
QC	11.5%	13.9%	20.4%	7.9%	13.2%	21.5%

In 2021, women aged 71 and over in Alberta had the highest prevalence in Canada at 32.3%.

OPIOID USE BY DOSAGE

Morphine milligram equivalent[1] (MME) is a standardized method for measuring opioid doses and reflects the strength of opioids.
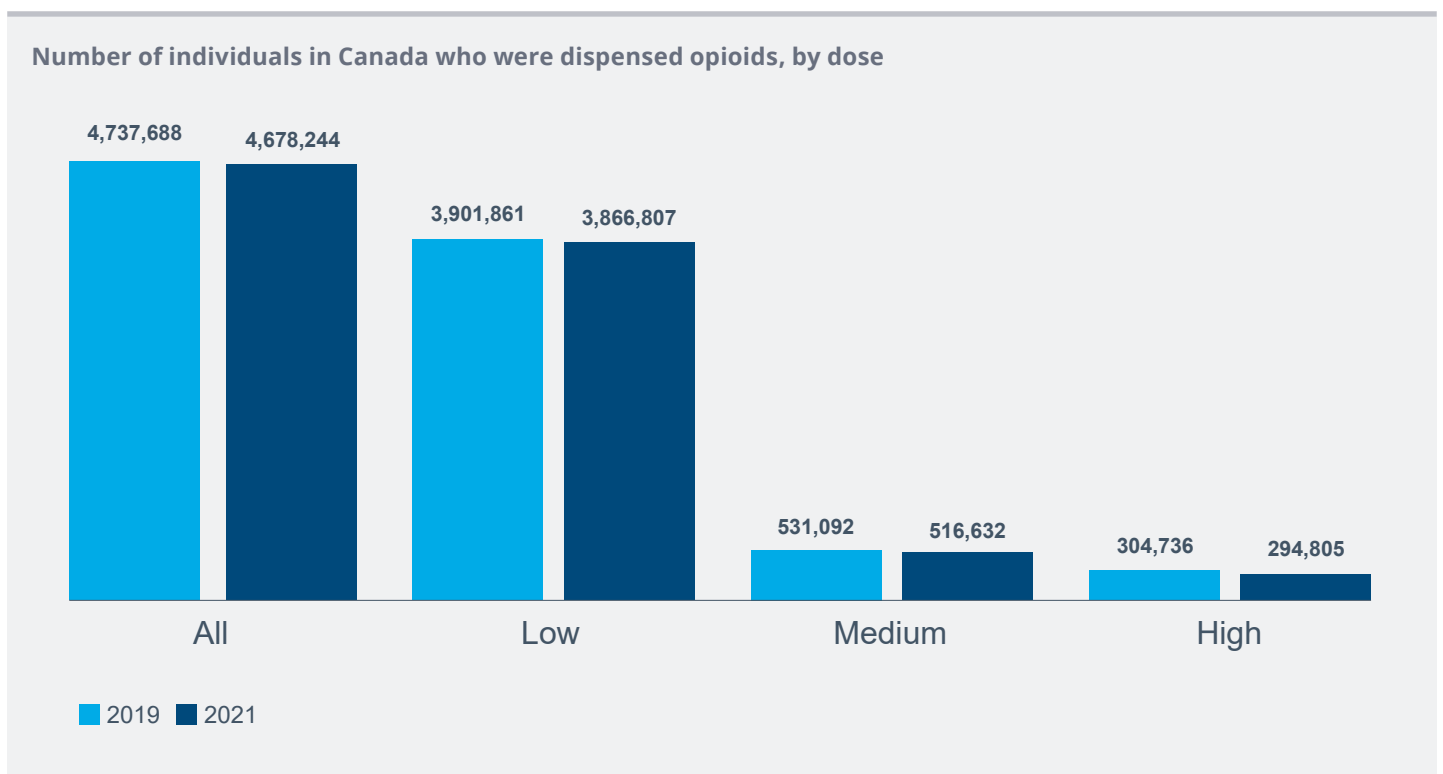
Low: Average MME daily dose per patient < 50

Medium: Average MME daily dose per patient 50 <= 90

High: Average MME daily dose per patient > 90

Opioid users across Canada and in all provinces overwhelmingly obtained their opioids at low doses, less than 50 MME per day, in all years observed.

For all doses (low, medium and high), the number of individuals dispensed opioids in Canada decreased between 2019 and 2020 with a rebound between 2020 and 2021.
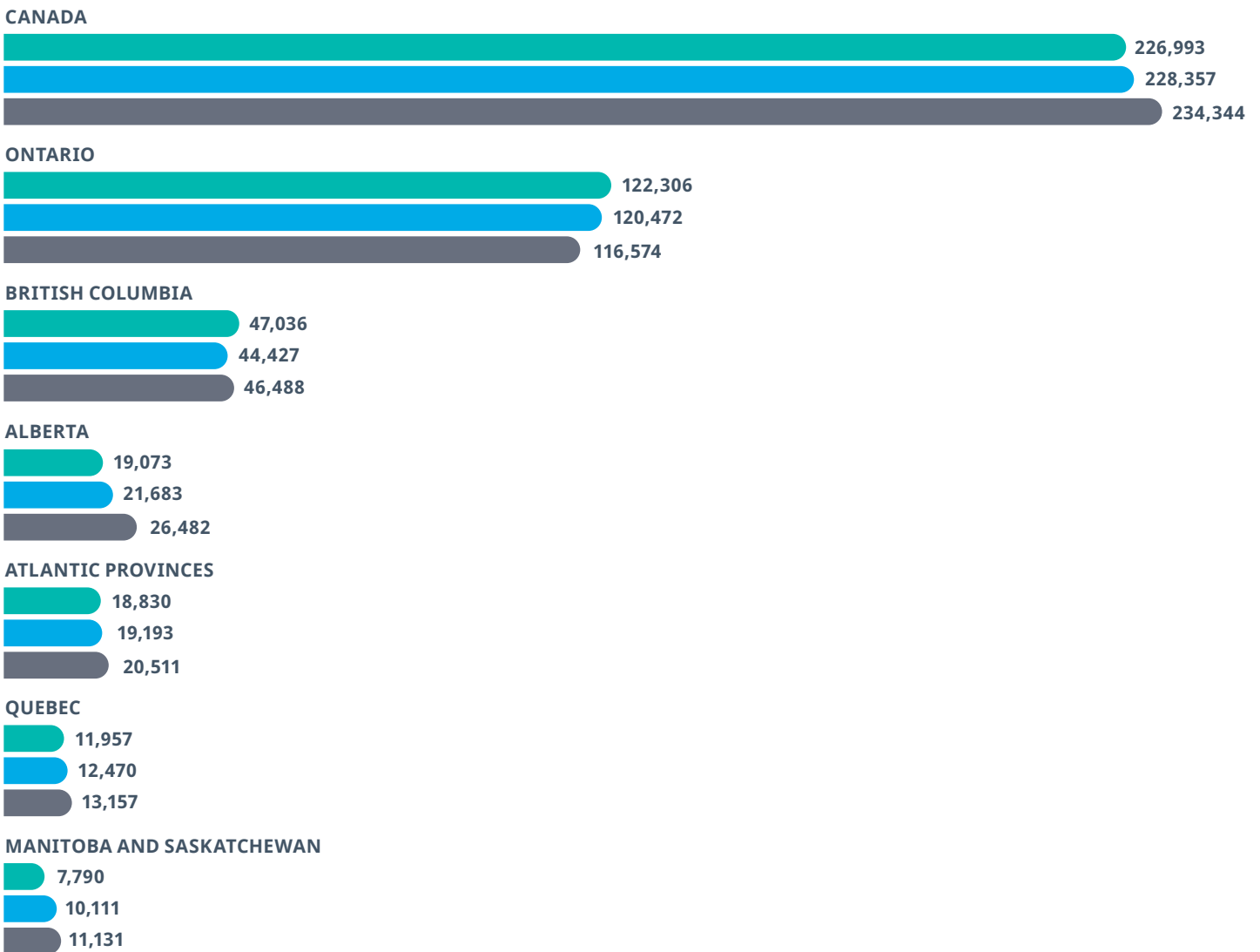
Number of individuals in Canada who were dispensed opioids, by dose

	All	Low	Medium	High
2019	4,737,688	3,901,861	531,092	304,736
2021	4,678,244	3,866,807	516,632	294,805

■ 2019 ■ 2021

Opioid Dependence Treatments

Frequently dispensed daily, methadone and buprenorphine/naloxone are the medications most often used to treat opioid dependence, although methadone is also used to treat pain in a small proportion of the prescriptions analysed. At the national level, the number of individuals who have had access to opioids to treat dependence is relatively stable for the three years observed. It is at the provincial level that we see notable fluctuations in the number of users with an increase for 2020 and 2021 of 30% and 10% in Manitoba/Saskatchewan (+2,321 and +1,020), and 14% and 22% in Alberta (+2,610 and +4,799). Meanwhile, British Columbia recorded a decrease of 6% in 2020 (-2,609) and an increase of 5% in 2021 (+2,061). Only Ontario presented a decrease in the number of users for 2020 and 2021 with -1% and -3%, which represents 1,834 and 3,898 fewer users.
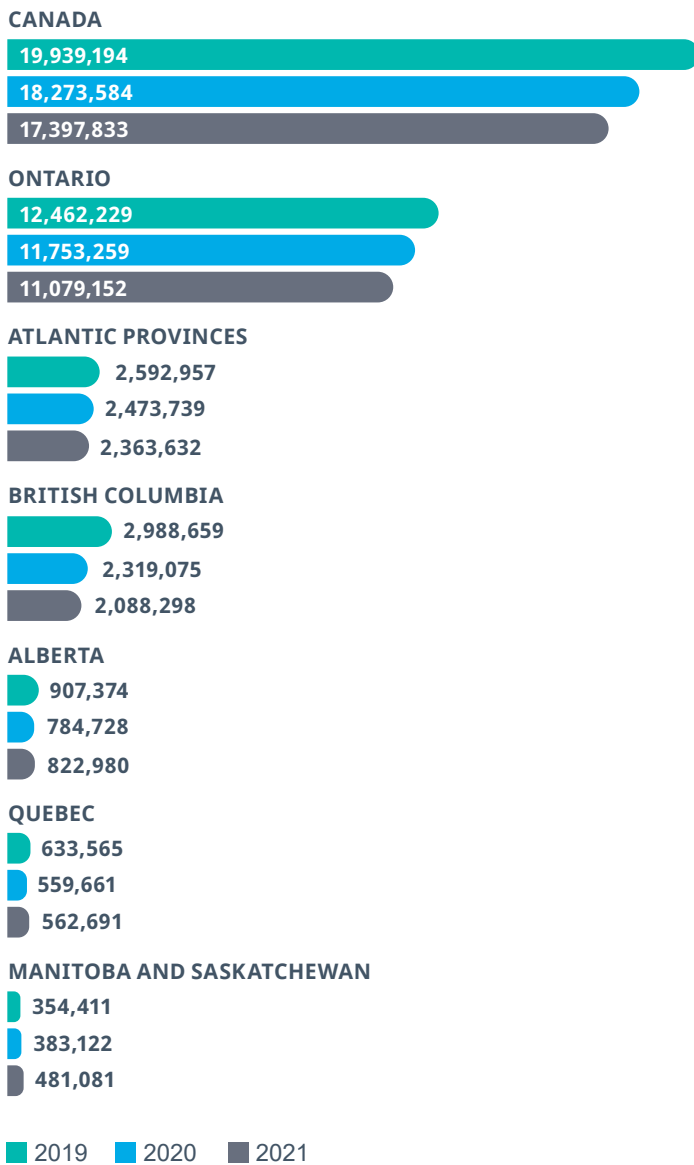
Increase in number of individuals dispensed opioids for dependence treatment – 2019, 2020 and 2021*

CANADA
- 226,993
- 228,357
- 234,344

ONTARIO
- 122,306
- 120,472
- 116,574

BRITISH COLUMBIA
- 47,036
- 44,427
- 46,488

ALBERTA
- 19,073
- 21,683
- 26,482

ATLANTIC PROVINCES
- 18,830
- 19,193
- 20,511

QUEBEC
- 11,957
- 12,470
- 13,157

MANITOBA AND SASKATCHEWAN
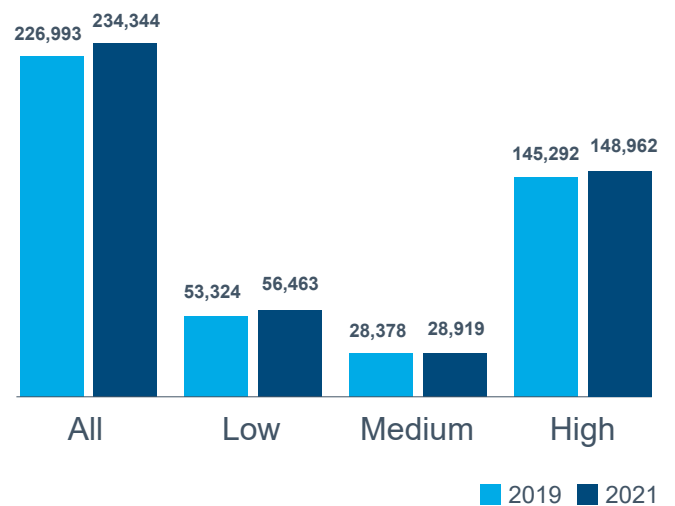- 7,790
- 10,111
- 11,131

■ 2019 ■ 2020 ■ 2021

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

In Canada as a whole, between 2019 and 2021, there was a decrease in the number of prescriptions for methadone and buprenorphine/naloxone, which are used mainly for the treatment of dependence, except in Manitoba/Saskatchewan where there was an increase from 354,411 to 481,081 prescriptions between 2019 and 2021. Ontario alone accounts for 64% of prescriptions dispensed in Canada for dependence treatment, of which around 70% of methadone prescriptions are dispensed daily. Some provinces have implemented programs to treat opioid dependence, including Ontario with a daily prescription program supported by the Ontario government,[2] hence the high number of prescriptions. This may be an indicator of the impact of programs in place to address addiction.

Number of opioid prescriptions dispensed for dependence treatment - 2019, 2020 and 2021*

CANADA
19,939,194
18,273,584
17,397,833

ONTARIO
12,462,229
11,753,259
11,079,152

ATLANTIC PROVINCES
2,592,957
2,473,739
2,363,632

BRITISH COLUMBIA
2,988,659
2,319,075
2,088,298

ALBERTA
907,374
784,728
822,980

QUEBEC
633,565
559,661
562,691

MANITOBA AND SASKATCHEWAN
354,411
383,122
481,081

■ 2019 ■ 2020 ■ 2021

Number of individuals who were dispensed opioids for dependence treatment by dosage

	All	Low	Medium	High
2019	226,993	53,324	28,378	145,292
2021	234,344	56,463	28,919	148,962

■ 2019 ■ 2021

In Canada, the number of opioid users for the treatment of dependence over the three years analyzed increased slightly each year with 64% of individuals (148,962) receiving high-dose prescriptions.

2. Chief Administrator's Notice: Ontario Drug Benefit Methadone Maintenance Treatment Reimbursement Policy (gov.on.ca)
* Corresponds to the number of methadone and buprenorphine/naloxone users. Methadone can be used for pain in a small proportion.

Prescribing Analysis

In 2021, 2,523,756 individuals received their opioid prescriptions from a single prescriber* for an average of 5 prescriptions or 214 units per user (1 unit = 1 tablet or 1 oral solution). As for the 170,591 users who received their opioid prescriptions from 4 or more prescribers, they received an average of 31 prescriptions or 1,284 units.

**Individuals who obtained their opioid prescriptions from 1, 2, 3 or 4+ prescribers* - 2021**

Legend: 1 Prescriber, 2 Prescribers, 3 Prescribers, 4+ Prescribers

- 2,523,756
- 704,430
- 245,903
- 170,591
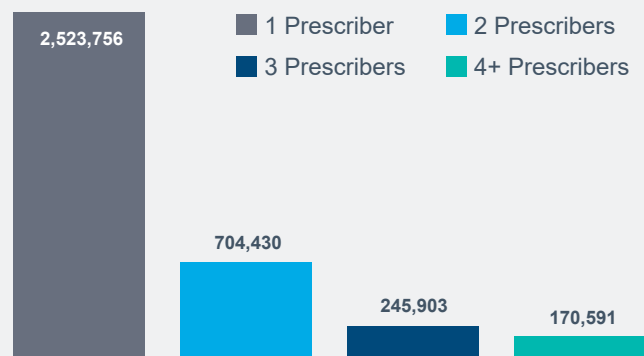
Average number of prescriptions and units per opioid user by number of prescribers* - 2021

Individual prescribers	Average prescriptions per user	Average units per user
1 Prescriber	5	214
2 Prescribers	11	474
3 Prescribers	17	728
4+ Prescribers	31	1,284

Prescriber* Analysis - Dependence

In 2021, 86,246 individuals received their prescriptions for opioids to treat **dependence** from a single prescriber* for an average of 61 prescriptions or 2,053 units per user. As for the 25,760 users who received their opioid prescriptions from 4 or more prescribers, they received an average of 130 prescriptions and 4,568 units. The number of opioid units appears high (1 unit = 1 tablet or 1 oral solution).

Individuals who received their opioids to treat dependence through 1, 2, 3 or 4+ prescribers* - 2021

Legend: 1 Prescriber, 2 Prescribers, 3 Prescribers, 4+ Prescribers

- 86,246
- 41,233
- 20,024
- 25,760
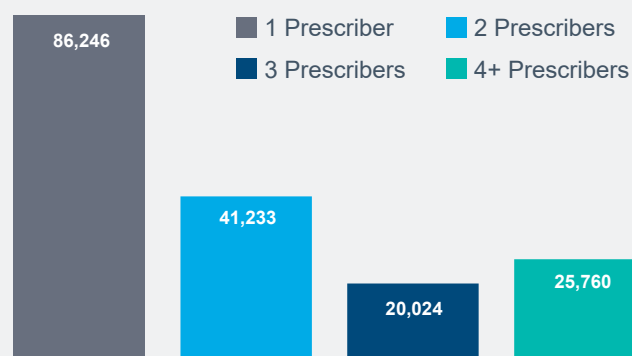
Average number of prescriptions and units per user of opioids to treat dependence by number of prescribers* - 2021

Individual prescribers	Average prescriptions per use	Average units per user
1 Prescriber	61	2,053
2 Prescribers	83	2,891
3 Prescribers	100	3,561
4+ Prescribers	130	4,568

* 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 2019, 2020 and 2021. 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 gender, age, and reason for use (pain and dependence).

The data collected for this dashboard is fully anonymized, comes exclusively from opioid prescriptions dispensed by a panel of community pharmacies, and represents approximately 80% of all opioid prescriptions dispensed in Canada (new Rx and refills). Estimation algorithms were used to assess the missing 20% and thus obtain a complete picture of opioid dispensing allowing a representative analysis. 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 key indicators and graphs presented in this report correspond to 12 months of the years 2019, 2020 and 2021.

The geographic territories include:

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

- 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 79,000 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.

IQVIA