



Chartbook

June 2018

Pan-Canadian Trends in the Prescribing of Opioids and Benzodiazepines, 2012 to 2017



Canadian Institute
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About this chartbook

- This chartbook provides Canadian and provincial trends in the prescribing of opioids, including the latest year of data available (January 1 to December 31, 2017). It builds on the November 2017 report [Pan-Canadian Trends in the Prescribing of Opioids, 2012 to 2016](#) from the Canadian Institute for Health Information (CIHI).
- In addition, this chartbook provides, for the first time, Canadian and provincial trends in the prescribing of benzodiazepines and benzodiazepine-related drugs. These drugs are commonly used to treat anxiety and insomnia, and their use can be potentially inappropriate, especially among seniors. In addition, they are sometimes used concurrently with opioids, which can increase the risk of serious harm.
- [Supplementary data tables](#) providing breakdowns and trending information in more detail are available online.



Key findings

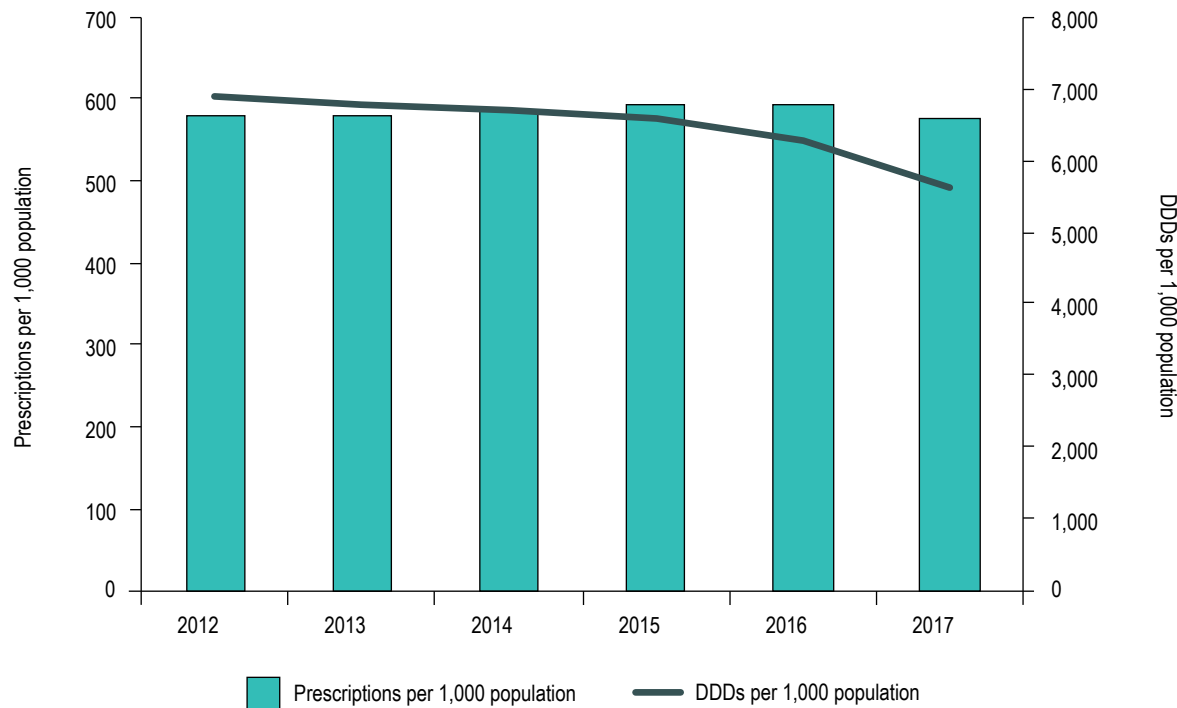
- The overall quantity of opioids dispensed in Canada, as measured by the number of defined daily doses (DDDs) per 1,000 population, declined by 10.1% between 2016 and 2017.
 - Dispensing of prescription opioids decreased from 6,269 DDDs per 1,000 population in 2016 to 5,633 DDDs per 1,000 population in 2017.
 - The decline between 2016 and 2017 was more than twice that between 2015 and 2016, and it exceeded the overall decline between 2012 and 2016.
 - 21.3 million prescriptions for opioids were dispensed in 2017, compared with 21.7 million in 2016. This is the first decline in overall prescription numbers between 2012 and 2017.
- The overall quantity of benzodiazepines and benzodiazepine-related drugs dispensed in Canada, as measured by the number of DDDs per 1,000 population, declined by 5.9% between 2016 and 2017.
 - Dispensing of benzodiazepines and benzodiazepine-related drugs decreased from 13,010 DDDs per 1,000 population to 12,248 DDDs per 1,000 population.



Opioid prescribing

The overall quantity of opioids dispensed in Canada declined by 10.1% between 2016 and 2017.

Figure 1 Opioid prescribing trends, Canada,*
2012 to 2017



Both the number of prescriptions and the amount of opioids prescribed per 1,000 population decreased between 2012 and 2017.

In 2017, the top 4 strong opioids (fentanyl, hydromorphone, morphine and oxycodone) accounted for 57% of all opioid prescriptions dispensed.

Notes

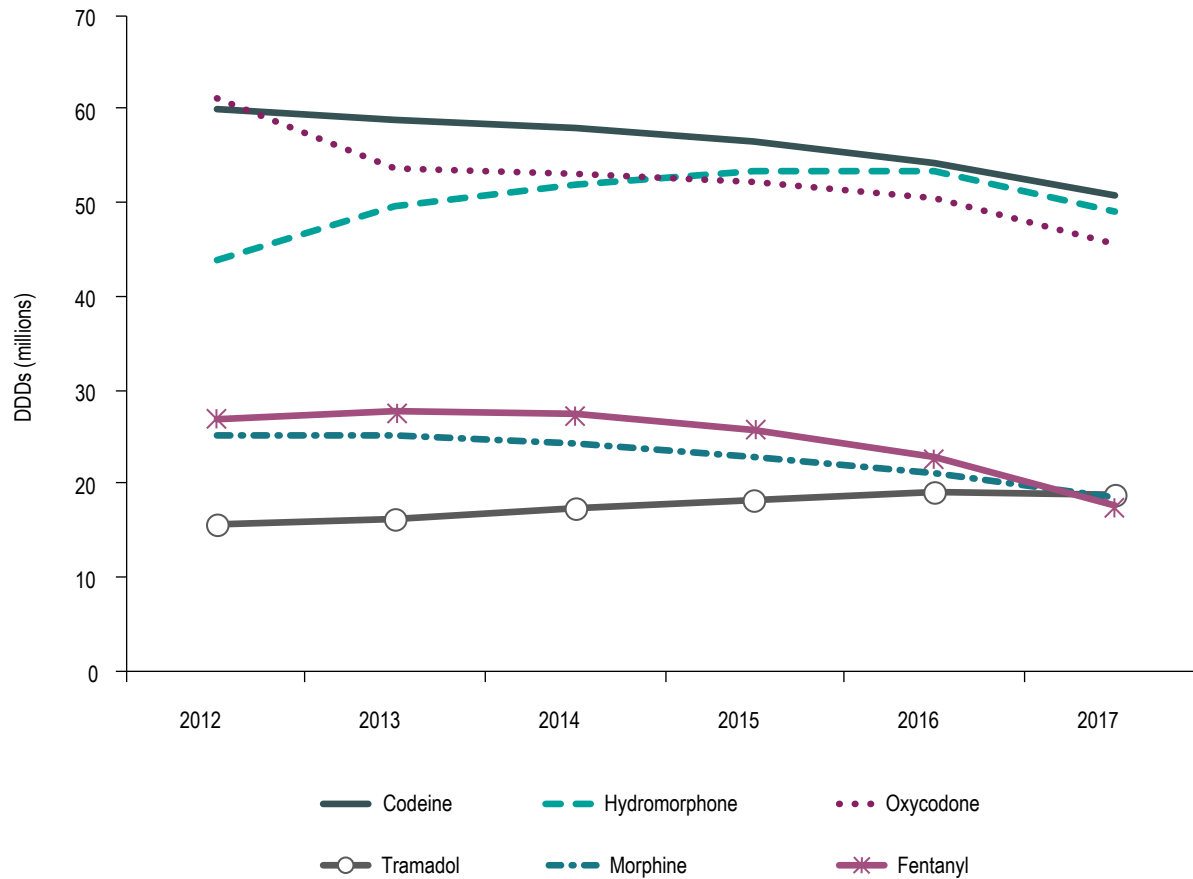
* Data was not available for the territories.

DDDs: Defined daily doses.

Source

Prepared using data from CompuScript, IQVIA.

Figure 2 Top 6 opioids by defined daily doses dispensed per year, Canada,* 2012 to 2017



A look at the top 6 prescription opioids, which accounted for 96% of all opioid prescriptions, shows a decrease in the number of DDDs between 2016 and 2017.

From 2016 to 2017, fentanyl had the largest decrease at almost 23%; tramadol had the lowest decrease at just less than 1%.

Notes

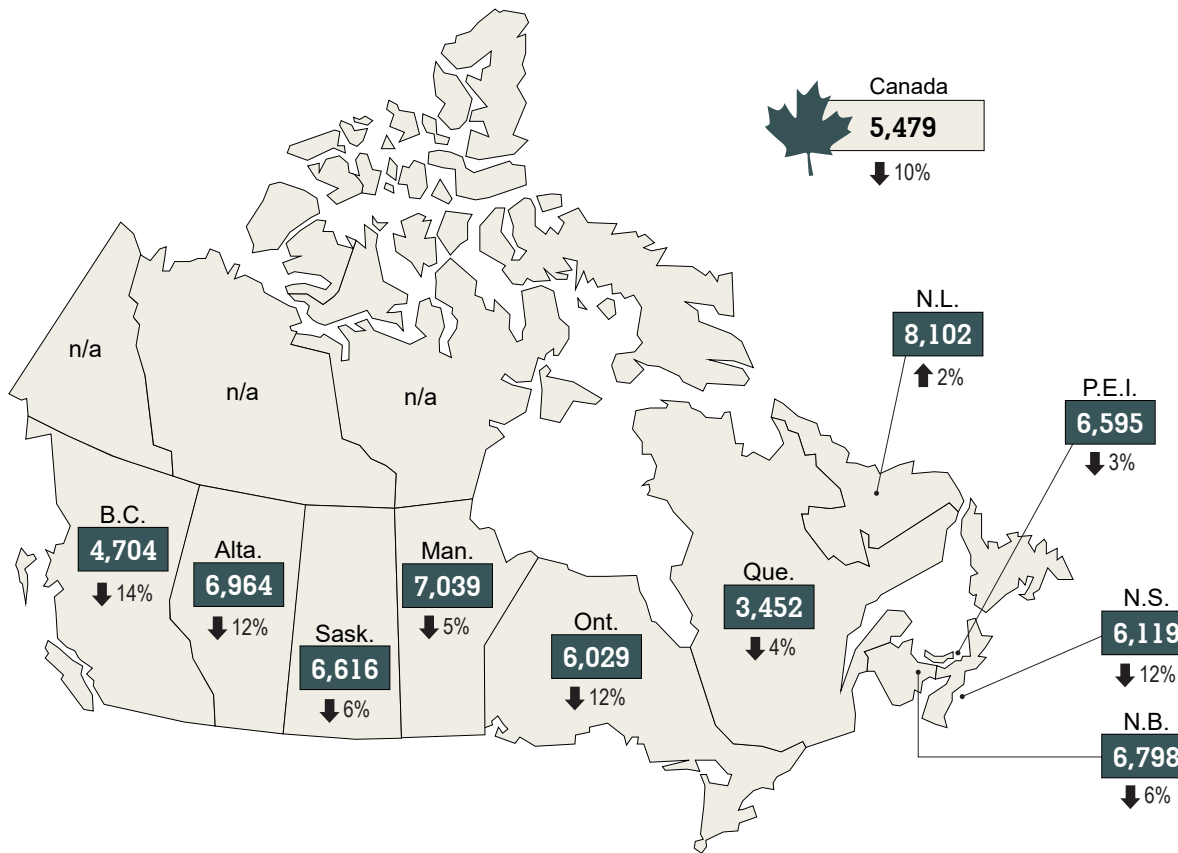
* Data was not available for the territories.

DDDs: Defined daily doses.

Source

Prepared using data from CompuScript, IQVIA.

Figure 3 Defined daily doses per 1,000 population for top 6 opioids, Canada,* 2017



British Columbia had the largest decrease in the rate of prescribed opioids, at 14%, followed by Nova Scotia, Ontario and Alberta, each at 12%.

Notes

* Data was not available for the territories.

↓ ↑ Percentage change in prescribing from 2016 to 2017.

n/a: Not available.

Source

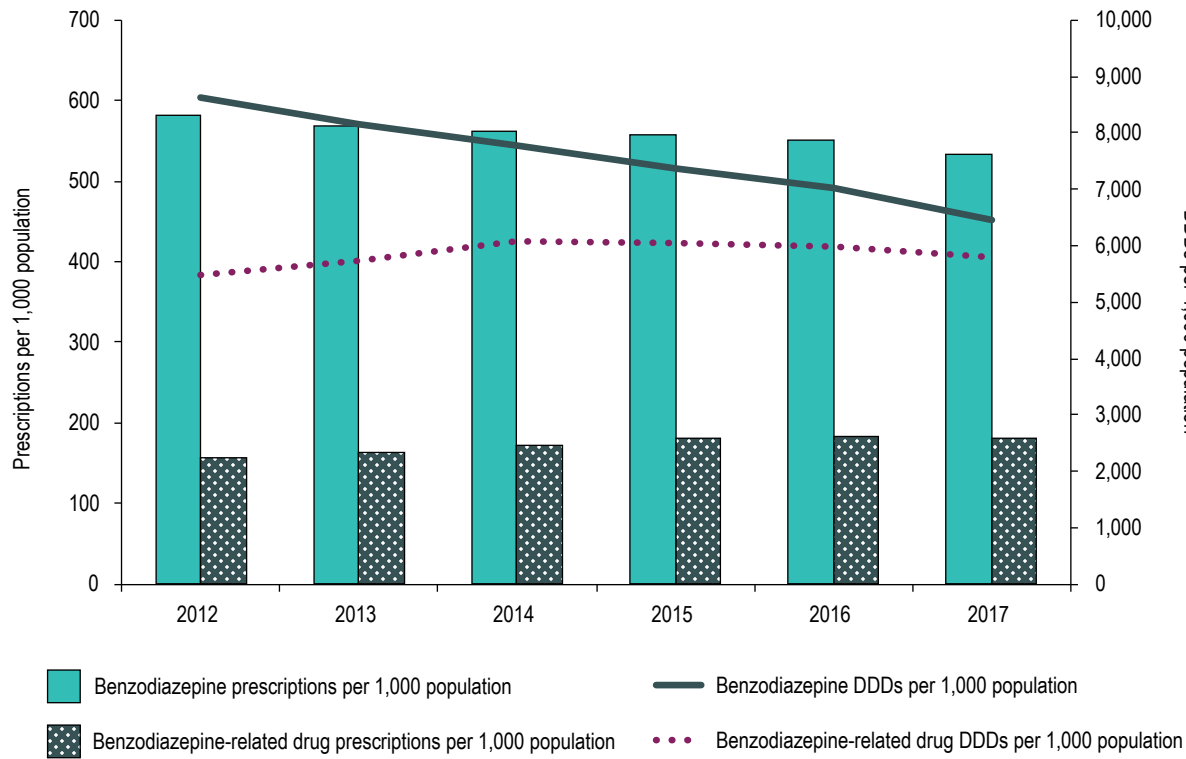
Prepared using data from CompuScript, IQVIA.



Benzodiazepine and benzodiazepine-related drug prescribing

The overall quantity of benzodiazepines and benzodiazepine-related drugs dispensed in Canada declined by 5.9% between 2016 and 2017.

Figure 4 Benzodiazepines and benzodiazepine-related drugs, prescribing trends, Canada,* 2012 to 2017



Both the number of prescriptions and the amount of benzodiazepines and benzodiazepine-related drugs prescribed per 1,000 population decreased between 2016 and 2017.

Notes

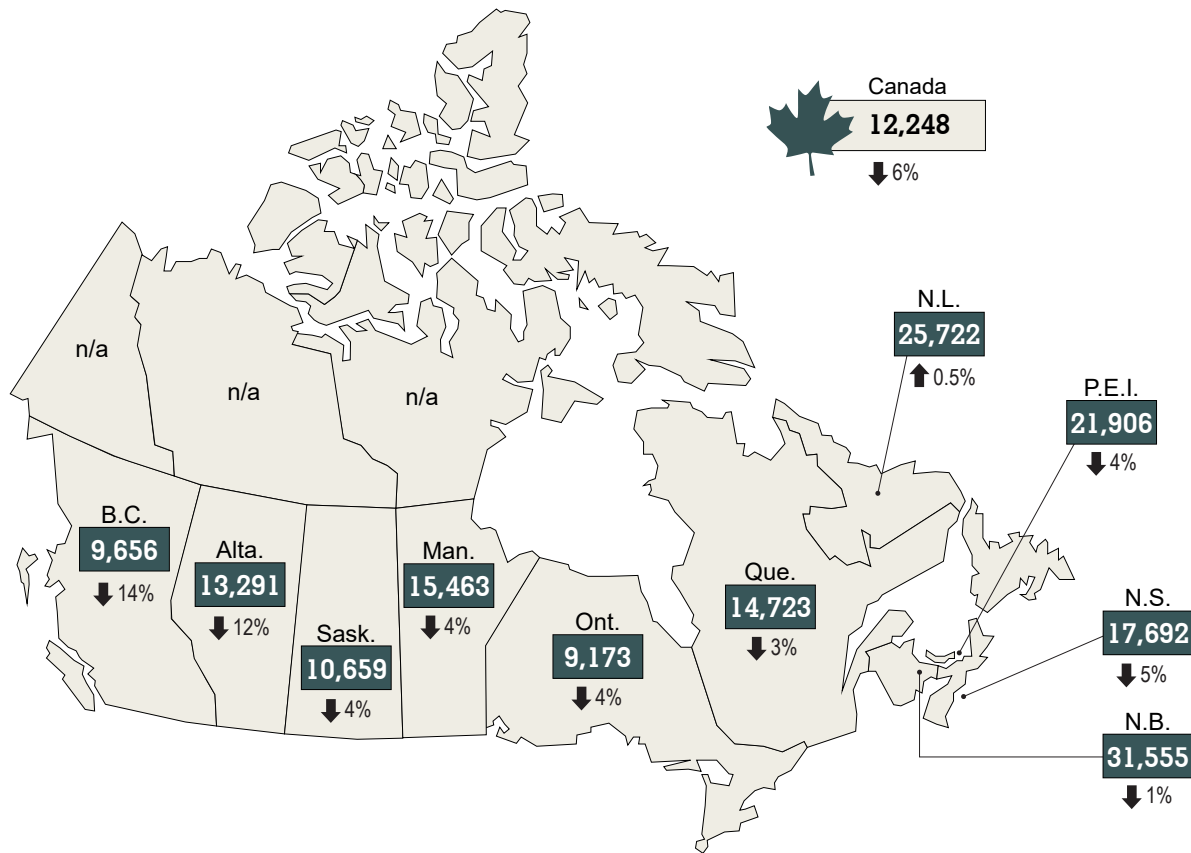
* Data was not available for the territories.

DDDs: Defined daily doses.

Source

Prepared using data from CompuScript, IQVIA.

Figure 5 Defined daily doses per 1,000 population, Canada,* for benzodiazepines and benzodiazepine-related drugs, 2017



British Columbia and Alberta had the largest decreases in the rate of prescribed benzodiazepines and benzodiazepine-related drugs.

Notes

* Data was not available for the territories.

↓ ↑ Percentage change in prescribing from 2016 to 2017.

n/a: Not available.

Source

Prepared using data from CompuScript, IQVIA.



Data sources and methodology

Data sources

- CIHI prepared the data using CompuScript data from IQVIA. The CompuScript database includes Canadian aggregate dispensed prescriptions data projected from a sample of more than 6,000 pharmacies, representing more than 60% of all retail pharmacies in Canada.
- The DDDs for opioids, benzodiazepines and benzodiazepine-related drugs were based on the World Health Organization (WHO) Collaborating Centre for Drug Statistics Methodology.¹
- The DDD for codeine was based on the International Narcotic Control Board standard for analgesia of 240 mg per day.²

Methodology

- The following WHO Anatomical Therapeutic Chemical (ATC) codes were identified for inclusion:
 - N01AH (opioid anesthetics)
 - N02A (opioids)
 - N03AE (benzodiazepine derivatives)
 - N05BA (benzodiazepine derivatives)
 - N05CD (benzodiazepine derivatives)
 - N05CF (benzodiazepine-related drugs)
 - R05DA (opium alkaloids and derivatives)
 - R05FA (opium derivatives and expectorants)
 - R05FB (other cough suppressants and expectorants)
- Drugs from the above ATCs were included in the analysis if one of the chemical ingredients was considered an opioid, a benzodiazepine or a benzodiazepine-related drug.

Methodology (cont'd)

Exclusions

- Not all drugs and/or dosage forms were included in the analysis:
 - Injectable and rectal dosage forms were included in overall general statistics only and were excluded from all other calculations.
 - Methadone and buprenorphine/naloxone combinations were excluded from all analyses, as these products are most often used to treat addiction and the focus of this report is opioids used for pain relief.
 - Clobazam (N05BA09) was excluded from the analysis as it is used primarily to treat seizure disorders and is not subject to inappropriate use.

Limitations

- Sampling can result in under- or over-estimates of the number of prescriptions dispensed. However, given the large sample size, the stratified nature of the sample and the stringent data quality checks completed, the IQVIA CompuScript data was considered to provide good representation of prescription drugs dispensed in Canada.
- Not all drugs prescribed are dispensed and not all drugs dispensed are consumed. At present, it is not possible to determine the proportion of prescriptions that are not filled nor the quantity of prescribed medication that is not consumed.
- Only prescription drugs that were acquired through prescriptions and from a community pharmacy (even if some of the drugs were diverted) were included.
- Non-prescription sources of drugs, such as over-the-counter medications and illicit drugs, were not included.

Appendix: Data tables for figures

Figure 1 Opioid prescribing trends, Canada,* 2012 to 2017

Calendar year	Prescriptions per 1,000 population	DDDs per 1,000 population
2012	579	6,870
2013	578	6,763
2014	587	6,714
2015	594	6,567
2016	593	6,269
2017	575	5,633

Notes

* Data was not available for the territories.

DDDs: Defined daily doses.

Source

Prepared using data from CompuScript, IQVIA.

Figure 2 Top 6 opioids by defined daily doses dispensed per year, Canada,* 2012 to 2017

Calendar year	Codeine	Hydromorphone	Oxycodone	Tramadol	Morphine	Fentanyl
2012	60.1	43.8	61.0	15.5	25.1	26.9
2013	58.7	49.7	53.7	16.3	25.2	27.6
2014	58.0	52.0	53.1	17.2	24.2	27.3
2015	56.4	53.3	52.3	18.2	22.7	25.7
2016	54.2	53.3	50.4	19.1	21.1	22.8
2017	50.7	49.0	45.7	18.9	18.5	17.6

Notes

* Data was not available for the territories.

Defined daily doses in millions.

Source

Prepared using data from CompuScript, IQVIA.

Figure 3 Defined daily doses per 1,000 population for top 6 opioids, Canada,* 2017

Province	Defined daily doses per 1,000 population for top 6 opioids, 2017	Percentage change in DDDs from 2016 to 2017
Newfoundland and Labrador	8,102	+2%
Prince Edward Island	6,595	-3%
Nova Scotia	6,119	-12%
New Brunswick	6,798	-6%
Quebec	3,452	-4%
Ontario	6,029	-12%
Manitoba	7,039	-5%
Saskatchewan	6,616	-6%
Alberta	6,964	-12%
British Columbia	4,704	-14%
Canada*	5,479	-10%

Note

* Data was not available for the territories.

Source

Prepared using data from CompuScript, IQVIA.

Figure 4 Benzodiazepines and benzodiazepine-related drugs, prescribing trends, Canada,* 2012 to 2017

Calendar year	Benzodiazepine prescriptions per 1,000 population	Benzodiazepine-related drug prescriptions per 1,000 population	Benzodiazepine DDDs per 1,000 population	Benzodiazepine-related drug DDDs per 1,000 population
2012	582	156	8,622	5,470
2013	569	164	8,146	5,743
2014	562	173	7,776	6,066
2015	558	180	7,377	6,047
2016	552	183	7,020	5,990
2017	533	180	6,463	5,786

Notes

* Data was not available for the territories.

DDDs: Defined daily doses.

Source

Prepared using data from CompuScript, IQVIA.

Figure 5 Defined daily doses per 1,000 population, Canada,* for benzodiazepines and benzodiazepine-related drugs, 2017

Province	Defined daily doses per 1,000 population for benzodiazepines and benzodiazepine-related drugs	Percentage change from 2016 to 2017
Newfoundland and Labrador	25,722	+0.5%
Prince Edward Island	21,906	-4%
Nova Scotia	17,692	-5%
New Brunswick	31,555	-1%
Quebec	14,723	-3%
Ontario	9,173	-4%
Manitoba	15,463	-4%
Saskatchewan	10,659	-4%
Alberta	13,291	-12%
British Columbia	9,656	-14%
Canada*	12,248	-6%

Note

* Data was not available for the territories.

Source

Prepared using data from CompuScript, IQVIA.

References

1. World Health Organization. [ATC/DDD Index 2018](#). Accessed February 2018.
2. International Narcotic Control Board. [Narcotic Drugs: Estimated World Requirements for 2018 — Statistics for 2016](#). 2017.



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