



# TRP Alberta

TRACKED PRESCRIPTION PROGRAM

ANNUAL REPORT  
2022-2023



Administered by CPSA, TPP Alberta is a partnership between several provincial healthcare organizations:



# About TPP Alberta

Alberta's Tracked Prescription Program (TPP Alberta) has monitored the use of prescription drugs prone to misuse in the province since 1986.

## **Our mission**

TPP Alberta collects data and provides useful reporting to clinicians, member organizations and stakeholders to:

- Promote appropriate use and stewardship of TPP-targeted medications.
- Optimize safe prescribing and patient care.
- Decrease societal burdens related to the use, misuse and non-medical use of monitored medications.
- Contribute to the health of the public.

## **Our vision**

To use data to optimize patient care and the health of the public.

# Highlights from 2022-2023

## Machine Learning Initiative

Data collected by TPP Alberta was used to create a machine learning model to help physicians better predict which patients may be at risk of adverse outcomes following an opioid prescription.

Team members from CPSA's Analytics, Innovation & Research team, along with researchers from Okaki Health and the University of Alberta, analyzed over six million opioid dispensations to predict the risk of emergency department visits, hospitalizations or deaths within 30 days of prescription. Preliminary analysis shows this model can identify patients at risk of adverse outcomes related to opioid use with close to 90 per cent accuracy, suggesting significant potential for use of this model to increase responses, and reduce morbidity and mortality.

The research findings were published in the Journal of the American Medical Association in December 2022 and received some coverage by local media in early 2023. Future steps include implementing and testing the model in real time, to eventually make it available to physicians in Alberta.

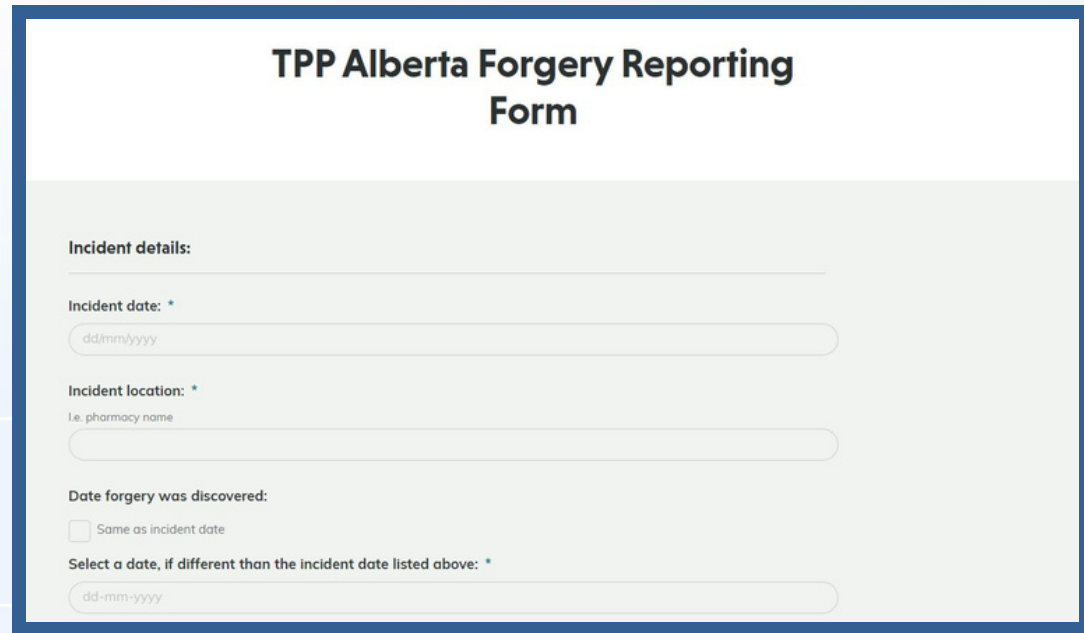


# Highlights from 2022-2023

## Forgeries Reporting

Healthcare professionals have a responsibility to support appropriate drug use and prevent drug diversion. This responsibility includes taking steps to prevent and address forgeries.

TPP Alberta has developed a guidance document for prescribers about forgeries, and an online form on CPSA's secure website allows prescribers and dispensers to report forgeries easily so they can be actioned quickly. Once TPP Alberta receives a forgery report, we complete the necessary documentation, notify the appropriate parties and provide the prescriber or dispenser with specific steps that should be taken.



The image shows a screenshot of the 'TPP Alberta Forgery Reporting Form'. The form is titled 'TPP Alberta Forgery Reporting Form' and is set against a light green background. It contains several sections for data entry:

- Incident details:** A horizontal line for general incident information.
- Incident date: \***: A text input field with a placeholder 'dd/mm/yyyy'.
- Incident location: \***: A text input field with a placeholder 'I.e. pharmacy name'.
- Date forgery was discovered:** A section with a checkbox labeled 'Same as incident date'.
- Select a date, if different than the incident date listed above: \***: A text input field with a placeholder 'dd-mm-yyyy'.

# Highlights from 2022-2023

## Website

Launched in 2021, TPP Alberta's website ([tppalberta.ca](http://tppalberta.ca)) provides physicians, pharmacists and their teams with the information they need to make informed prescribing decisions. The site includes a resource section, publication archive, and online forms for reporting forgeries and loss or theft of TPP pads.

## Data Quality Initiatives

When prescriber misattributions and errors are identified, TPP Alberta works with originating pharmacies to support a correction process, providing advice on error prevention and following up to confirm corrections were made.

In 2022, TPP Alberta established a **Data Quality Subcommittee** to improve the accuracy of TPP data, by identifying issues and how they can best be proactively addressed. Objectives include developing additional guidance for prescribers and dispensers on how they can prevent errors and contribute to high-quality data.

- ✓ The Medication Lists page was the most visited on TPP Alberta's site in 2022, with over **20,000** views.
- ✓ In 2022-2023, **601** PIN data error reports were received and **246** corrections were closed.
- ✓ Data quality intervention letters were issued to **215** pharmacists and **13** prescribers.



# Highlights from 2022-2023

## MD & NP Snapshot: Prescribing Reports

The Prescribing Snapshot reports are produced and distributed to physicians and nurse practitioners quarterly by CPSA and the College of Registered Nurses of Alberta (CRNA). They contain individualized information on prescribing practices, based on TPP data and focusing on evidence-informed thresholds. In 2022, TPP Alberta supported the refinement of the Snapshot reports to include antibiotic data.

The image shows two logos stacked vertically. The top logo consists of the letters 'MD' in a large, teal, serif font, followed by the word 'snapshot' in a smaller, teal, sans-serif font. The bottom logo consists of the letters 'NP' in a large, dark green, serif font, followed by the word 'Snapshot' in a smaller, dark green, sans-serif font. The background of the logos is a light blue hexagonal pattern with white dots and lines.

## Risk Mitigation

A new section was added to CPSA's MD Snapshot-Prescribing in early 2023, with data on patients considered opioid-naïve (meaning based on TPP data, they did not receive an opioid dispense in the 180 days prior to the current dispense).

Using the latest available evidence, this new section of data focuses on identifying the patterns and characteristics linked with an increased risk of short-term opioid use progressing to longer-term opioid use. The first report containing this data was distributed in March 2023 to 10,740 prescribers.

# Highlights from 2022-2023

## Antibiotic Atlas

In 2022, TPP Alberta released the annual Antibiotic Prescription Atlas. Highlights include:

- Patterns for numbers of prescriptions, patients and dispenses continued to decline to levels lower than those observed in 2020, prior to the onset of the COVID-19 pandemic.
- The degree of socio-economic deprivation seems to correlate with the rate of antibiotic consumption in a given geographical area.

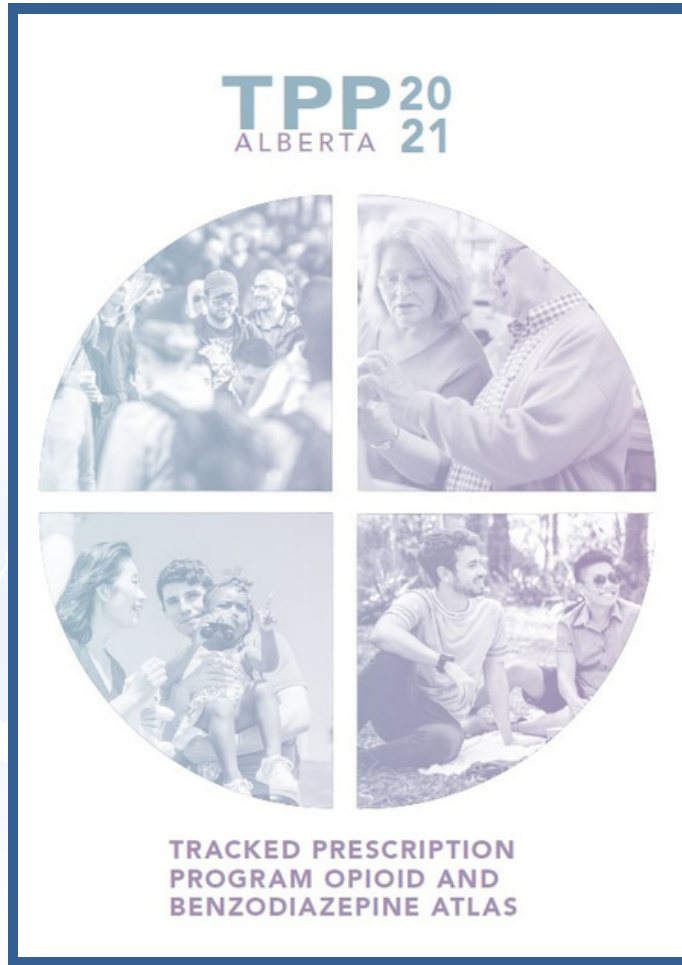
New additions to the 2021 Atlas include:

- The inclusion of all routes of antibiotic administration (previous versions only included the oral route).
- A subdivision of the 0-4 age group, so information for infants can be viewed separately.
- An expanded breakdown of geographic patterns.
- A preliminary analysis of prescriber versus dispense location.





# Highlights from 2022-2023



## Opioid and Benzodiazepine Atlas

In 2022, TPP Alberta released the annual Opioid and Benzodiazepine Atlas. Highlights include:

- Continuing decline in overall consumption of opioids, and benzodiazepines and z-drugs (BDZ/Zs).
  - Since 2016, overall opioid prescriptions have dropped by one third, and BDZ/Zs by one fifth.
- An association between a higher deprivation index and highest consumption of opioids and BDZ/Zs.
- Widespread use of opioid agonist treatment (OAT), with many patients receiving care via virtual services.

# TPP Atlas Trends: Antibiotics

## Use of Prescription Antibiotics in Alberta

2016-2021

Years	Patients	Prescriptions	Dispenses	Population
2016	1,573,696	3,096,375	3,293,790	4,252,720
2017	1,602,206	3,147,609	3,351,818	4,285,997
2018	1,604,970	3,146,997	3,356,219	4,306,822
2019	1,647,833	3,223,406	3,436,747	4,371,154
2020	1,312,807	2,508,330	2,735,693	4,421,681
2021	1,221,148	2,296,094	2,511,630	4,442,676
Trends				

Note: All values have increased as compared to the 2020 Atlas, due to the inclusion of all forms and routes of antibiotics in 2021. The 2020 Atlas included only oral route values.

In the 2021 Atlas, values for 2016 through 2020 have been recalculated to include all forms and routes.

Years	Patients /1,000 pop	Prescriptions /1,000 pop	DDDs /1,000 pop
2016	370	728	16.2
2017	374	734	16.2
2018	373	731	16.1
2019	377	737	15.9
2020	297	567	12.7
2021	275	517	11.5
Trends			

# TPP Atlas Trends: Antibiotics

## Patient by Prescriber Type

2016-2021

Prescriber Type	Prescriptions	Dispenses	Patients	Prescribers	Pharmacies	Patients per Prescriber
Physician	1,769,621	1,965,035	979,644	12,354	1,643	79
Dentist	305,770	310,671	234,012	910	1,614	257
Pharmacist	122,465	128,677	93,644	4,367	1,605	21
Optometrist	43,926	46,330	36,201	748	1,275	48
Nurse Practitioner	26,950	31,425	19,844	582	1,177	34
Dental Hygienist	424	451	374	6	199	62
Dietician	177	180	149	1	89	149

\* 26,761 (1.2%) prescriptions have no Prescriber Type identified.

Note: Prescriptions from Pharmacist Prescribers include prescription adaptations, renewals and/or emergency prescribing. Pharmacists with an additional prescribing authorization may also initiate prescriptions and/or manage ongoing therapy.



# TPP Atlas Trends: Antibiotics

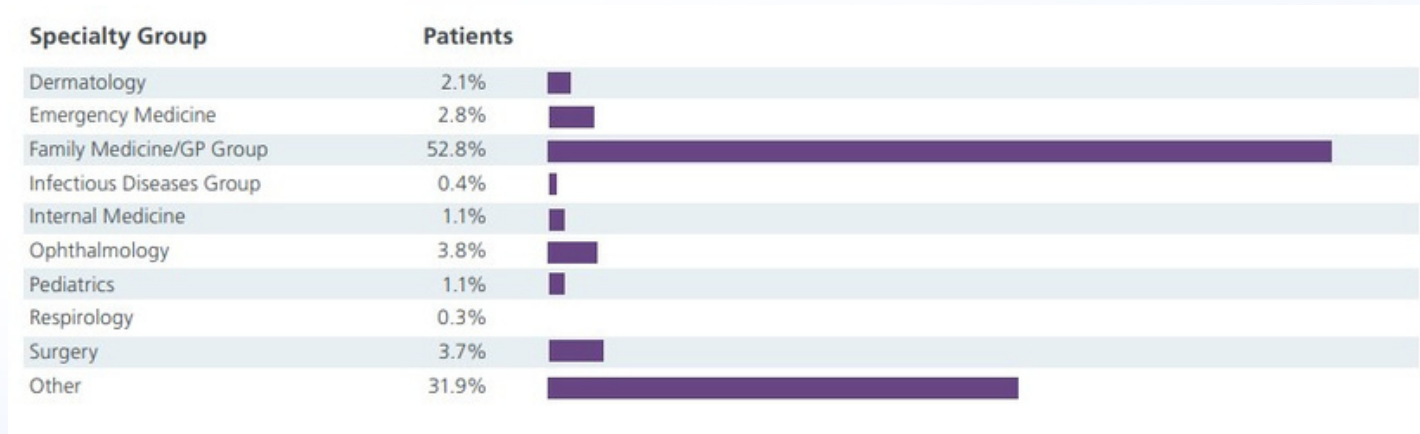
## Patient Numbers by Antibiotic\*

2016-2021

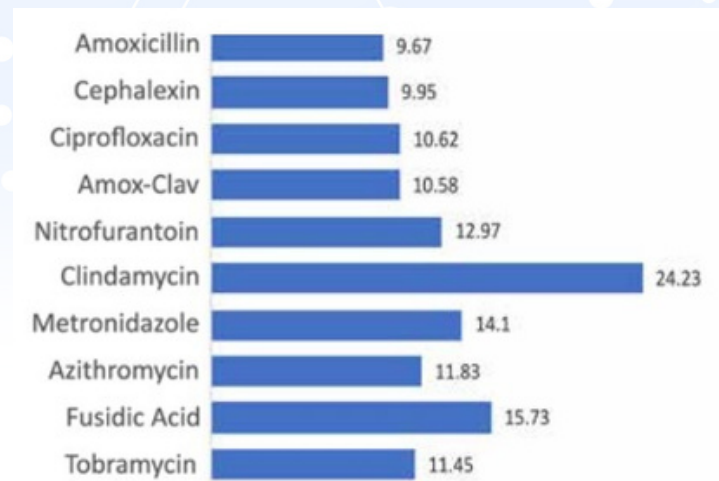
Antibiotic	2016	2017	2018	2019	2020	2021	Trend 2016-2021	2021
Amoxicillin	537,909	540,049	529,939	549,413	376,264	340,376		
Cephalexin	192,306	196,118	198,962	202,152	185,545	175,279		
Ciprofloxacin	223,050	211,812	206,681	202,658	171,731	152,545		
Amox-Clav	145,075	166,067	172,620	181,671	133,716	119,497		
Nitrofurantoin	97,207	100,416	104,163	111,909	109,831	105,676		
Clindamycin	118,723	118,519	113,836	112,202	104,531	101,348		
Metronidazole	94,480	102,859	104,598	108,076	98,734	97,175		
Azithromycin	201,012	223,083	231,918	254,470	130,453	87,799		
Fusidic Acid	95,724	97,142	97,403	105,775	88,584	87,006		
Tobramycin	86,697	87,203	93,251	102,962	81,304	72,378		
Doxycycline	82,171	90,251	98,728	108,156	82,362	71,529		
Mupirocin	56,081	60,188	64,748	66,051	60,558	64,107		
Cefixime	34,682	44,210	50,072	56,747	56,164	60,184		
Smx-Tmp	65,994	60,778	53,700	54,108	50,236	48,014		
Moxifloxacin	55,185	56,722	55,569	57,160	42,500	44,776		
Penicillin	63,098	64,195	62,762	62,145	42,755	33,302		
Framycetin	31,162	31,525	31,795	31,786	30,647	30,612		
Clarithromycin	128,167	114,923	96,462	85,231	41,246	26,683		
Minocycline	30,529	29,187	27,653	26,619	24,268	23,726		
Fosfomicin	8,310	13,693	16,363	17,488	17,707	18,553		
Erythromycin	30,203	29,649	29,608	20,747	11,418	17,608		
Gramicidin - Neomycin	14,093	14,670	15,221	16,057	14,134	14,351		
Levofloxacin	37,732	34,511	32,905	29,441	18,846	13,680		

\*Only the most commonly-prescribed antibiotics are shown, representing over 95% of all antibiotics dispensed. Appendix A shows other commonly prescribed antibiotics in Alberta.

# TPP Atlas Trends: Antibiotics



Patients by  
Specialty Group  
.....  
2021



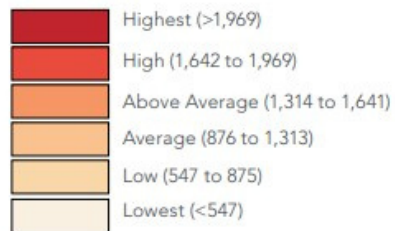
Average Treatment Days  
per patient by Antibiotic  
.....  
2021

# TPP Atlas Trends: Opioids

## Geographic Analyses 2021

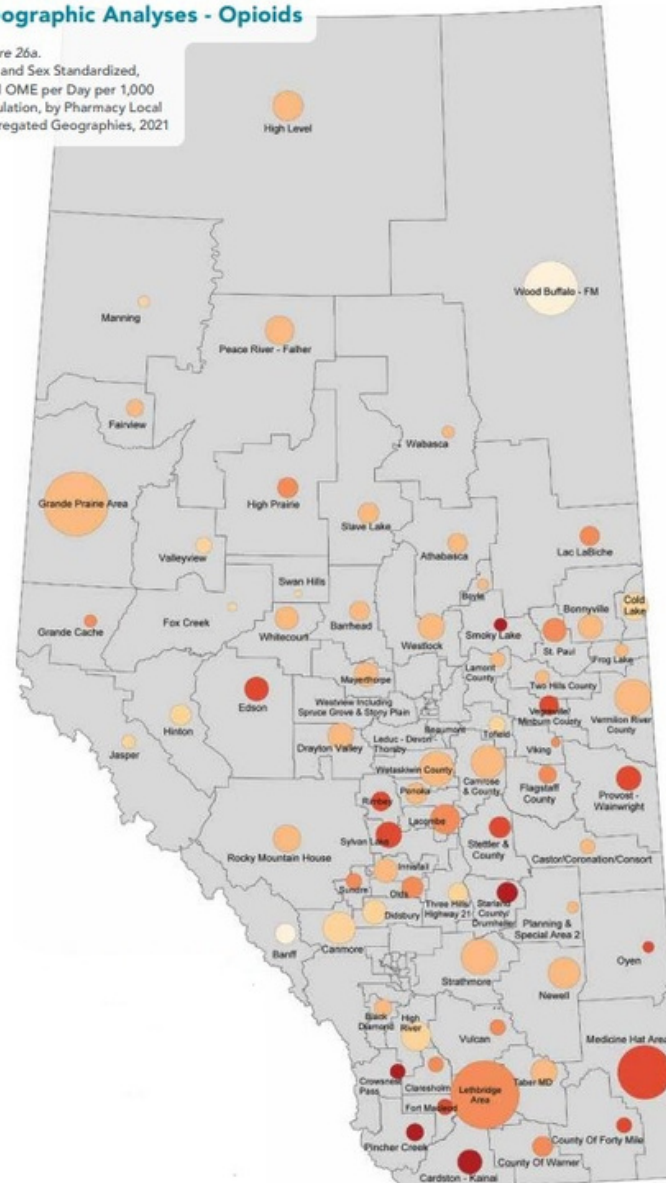
Legend: Provincial and Urban Maps

Total OME per Day  
per 1,000 Population



### Geographic Analyses - Opioids

Figure 26a.  
Age and Sex Standardized,  
Total OME per Day per 1,000  
Population, by Pharmacy Local  
Aggregated Geographies, 2021





# TPP Atlas Trends: Opioids

Year	Prescriptions	Patients	Prescribers	Pharmacies	Population	OME per day per 1000 Population	Patients per 1000 Population	Patients ≥90 OME per 1000 Population
2016	2,031,459	654,615	14,789	1,584	4,252,720	1,637	153.9	3.7
2017	1,934,191	634,281	15,330	1,391	4,285,997	1,431	148.0	3.2
2018	1,770,029	597,031	15,213	1,481	4,306,822	1,260	138.6	2.8
2019	1,663,890	573,022	14,906	1,540	4,371,154	1,194	131.1	2.6
2020	1,549,401	489,066	14,902	1,603	4,421,681	1,164	110.6	2.5
2021	1,470,641	457,893	14,913	1,640	4,442,676	1,094	103.1	2.3

6 year trend

## Use of Prescription Opioids in Alberta 2016-2021

One in 10 people were prescribed an opioid in 2021, and one third fewer patients compared to 2016.

## Prescriptions, Patients, and Prescribers, by Prescriber Type 2021

Prescriber Type	Prescriptions	Percent	Patients	Percent	Prescribers	Percent
Physicians	1,240,725	85.2	361,159	73.0	10,444	70.1
Dentists	104,236	7.2	89,529	18.1	551	3.7
Pharmacists	82,874	5.7	34,308	6.9	3,458	23.2
Nurse Practitioners	28,261	1.9	9,503	1.9	456	3.1

Note: Prescriptions sum does not match the summary value in Table 1 because only the four major prescriber groups are shown.  
 Note: Patients sum does not match the summary values in Table 1 because patients may obtain prescriptions from more than one prescriber type.  
 Note: Prescriptions from Pharmacist Prescribers include prescription adaptations, renewals and/or emergency prescribing. Pharmacists with an additional prescribing authorization may also initiate prescriptions and/or manage ongoing therapy.

Main Ingredient	2016	2017	2018	2019	2020	2021	2021	6 Year Trend
Codeine	503,476	474,187	427,964	398,099	314,637	269,976		
Tramadol	127,838	137,718	143,413	145,148	137,861	145,689		
Oxycodone	74,039	63,355	54,427	47,597	42,808	40,858		
Hydromorphone	29,663	31,268	32,981	34,563	35,612	38,871		
Morphine	16,464	15,273	14,523	13,680	13,620	14,326		
Buprenorphine	6,673	7,759	9,583	11,546	12,812	14,168		
Methadone	5,363	5,702	6,217	6,732	7,539	8,027		
Fentanyl	4,743	4,351	3,979	3,662	3,566	3,536		
Butalbital	908	830	753	684	634	562		
Tapentadol	1,001	886	806	684	604	539		

## Patients by Top 10 Ingredients 2016-2021

# TPP Atlas Trends: Benzodiazepines

## Use of Prescription Benzodiazepines in Alberta ..... 2016-2021

Year	Prescriptions	Patients	Prescribers	Pharmacies	DDD's per 1000 Population	Patients per 1000 Population	Patients ≥ 2 DDDs	Patients ≥ 2 DDDs per 1000 Population
2016	1,284,641	386,883	12,738	1,419	41.0	91.0	14,728	3.5
2017	1,204,345	369,800	13,151	1,386	36.6	86.3	12,256	2.9
2018	1,127,396	355,831	13,398	1,471	33.5	82.6	10,771	2.5
2019	1,056,883	343,216	13,376	1,538	30.8	78.5	9,813	2.2
2020	1,075,987	330,124	13,772	1,599	29.9	74.7	9,848	2.2
2021	1,037,530	327,376	13,940	1,635	28.7	73.7	9,077	2.0
6 year trend								

Prescriber Type	Prescriptions	Percent	Patients	Percent	Prescribers	Percent
Physicians	964,598	92.97	317,506	96.99	9,780	70.16
Pharmacists	48,624	4.69	27,181	8.30	3,634	26.07
Nurse Practitioners	9,897	0.95	4,921	1.50	420	3.01
Dentists	6,716	0.65	5,387	1.65	105	0.75

## Prescriptions, Patients, and Prescribers, by ..... Prescriber Type 2021

Note: Prescriptions sum does not match the summary value in Table 10 because only the four major prescriber groups are shown.

Note: Patients sum does not match the summary values in Table 10 because patients may obtain prescriptions from more than one prescriber type.

Note: Prescriptions from Pharmacist Prescribers include prescription adaptations, renewals and/or emergency prescribing. Pharmacists with an additional prescribing authorization may also initiate prescriptions and/or manage ongoing therapy.

# TPP Atlas Trends: Benzodiazepines

## BDZ/Z Patients by Top 10 Ingredients ..... 2016-2021

Main Ingredient	2016	2017	2018	2019	2020	2021	2021	6 Year Trend
Zopiclone	192,225	180,547	169,621	158,730	150,859	145,024		
Lorazepam	151,540	144,662	141,591	139,682	134,238	136,468		
Clonazepam	53,687	50,204	47,829	45,692	45,028	44,121		
Zolpidem	17,645	17,473	17,095	16,889	16,679	16,205		
Diazepam	15,965	14,097	12,784	12,346	12,442	12,679		
Temazepam	24,094	19,553	16,474	14,131	12,857	11,735		
Alprazolam	10,066	9,118	8,280	7,577	7,012	6,515		
Clobazam	3,400	3,380	3,473	3,534	3,680	3,834		
Triazolam	3,401	3,136	3,149	3,288	3,030	3,048		
Midazolam	1,305	1,518	1,561	1,696	1,906	2,071		

Year	Prescriptions	Patients	Prescribers	Pharmacies	Elderly Population	Elderly Patient DDDs	DDD in Elderly Patients per 1000 Elderly Population	Elderly Patients per 1000 Elderly Population
2016	340,903	108,852	9,017	1,363	506,800	61,187	120.7	214.8
2017	337,183	107,078	9,397	1,354	529,962	57,203	107.9	202.1
2018	328,355	105,555	9,675	1,433	551,546	54,543	98.9	191.4
2019	317,453	103,700	9,694	1,495	580,391	52,680	90.8	178.7
2020	330,926	102,007	10,192	1,574	610,970	52,440	85.8	167.0
2021	330,638	103,927	10,258	1,606	639,123	52,854	82.7	162.6
6 year trend								

## Use of BDZ/Z in Elderly Patients ..... 2016-2021



# TPP Atlas Trends: Concurrent

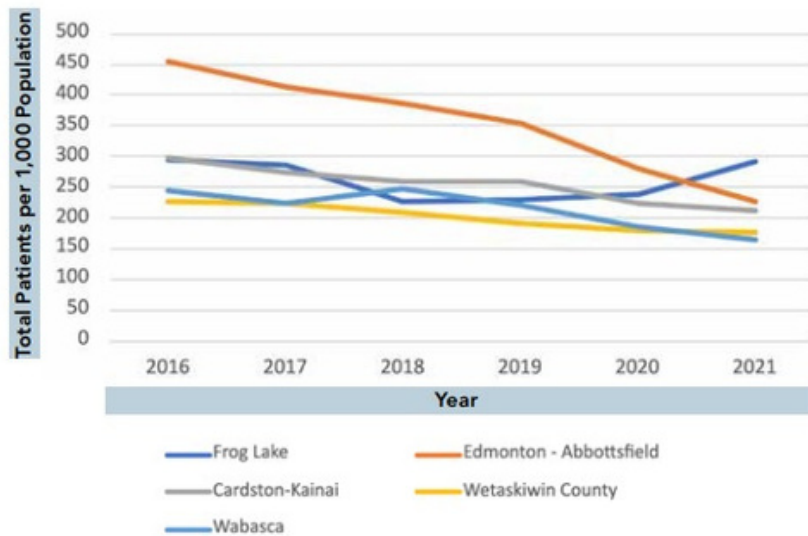
## Use of Opioids and Benzodiazepines/ Z-drugs in Albertans 65+ ..... 2016-2021

Year	Patients	Patients per 1000 population	Patients $\geq 90$ OMEs and $\geq 2$ DDDs	Elderly Patients	Elderly Patients per 1000 Elderly Population
2016	134,809	32	47	38,601	76
2017	123,569	29	27	37,245	70
2018	111,887	26	15	34,959	63
2019	103,181	24	15	33,416	58
2020	94,961	22	13	31,616	52
2021	90,904	21	12	31,841	50

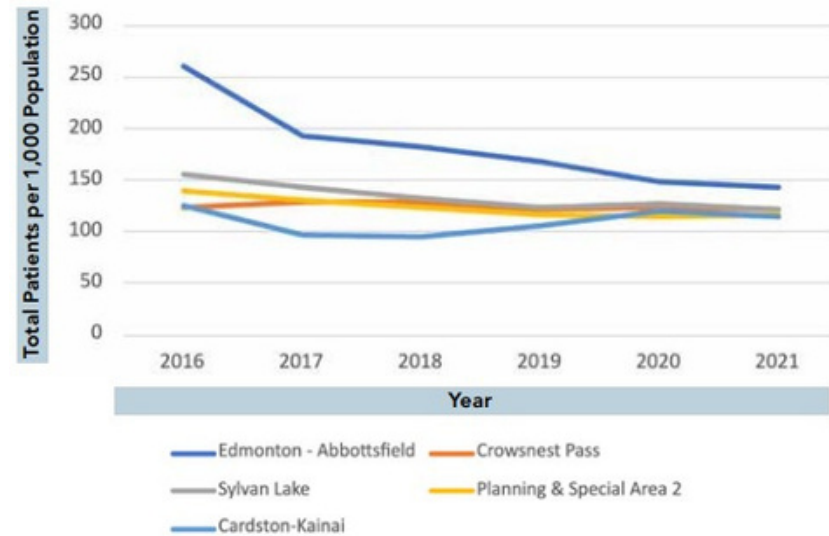
6 year trend

Note: Concurrent Opioid BDZ/Z patients are patients who received both opioid and BDZ/Z prescriptions within the same quarter. Patients included were dispensed opioid and BDZ/Z prescriptions concurrently in one or more quarters.

# Pharmacy Local Aggregated Geographies: Five-Year Trends for the Top Five Regions

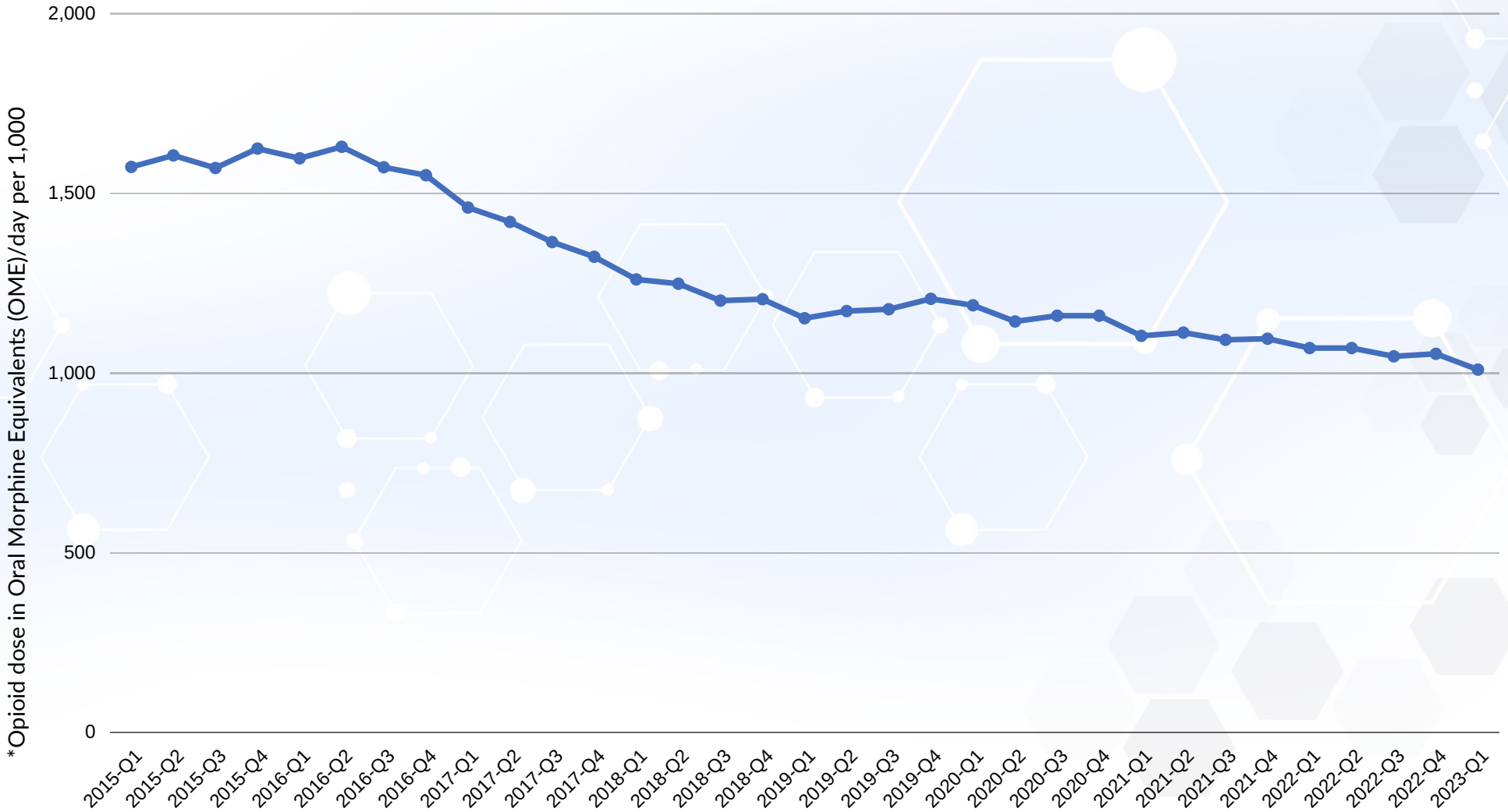


Opioid Patients  
.....  
2021 rates



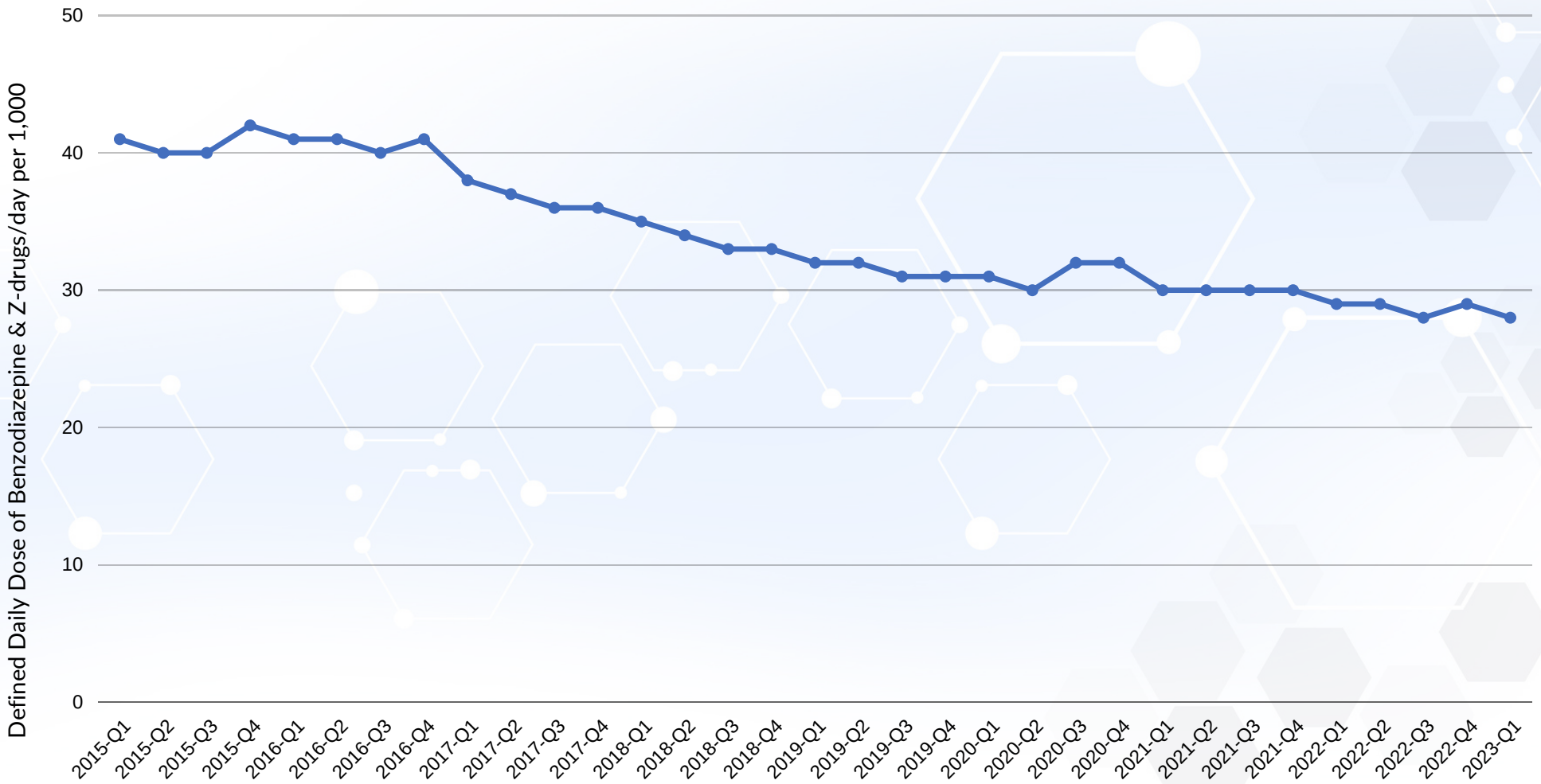
BDZ/Z Patients  
.....  
2021 rates

# TPP Alberta 2015-2023: OME\* Rates/1,000 population





# TPP Alberta 2015-2023: Benzodiazepine & Z-drug Rates/1,000 population



# TPP Alberta Grant Report: Financial Summary

		GAMS Grant ID			Grant-011405		
		UNAUDITED FINANCIAL REPORTING FOR GRANTS					
		MULTI-YEAR AGREEMENT					
		Final Report			YEAR 3 of 3		
<b>Grant Recipient:</b>	<b>College of Physicians &amp; Surgeons of Alberta</b>						
<b>Description of Grant:</b>	<b>TPP Alberta</b>						
<b>Term of Agreement:</b>	1-Apr-20	to	31-Mar-23	<b>Date:</b>	21-Apr-23		
<b>Financial Reporting for the Period:</b>	1-Apr-22	to	31-Mar-23				
	Current Fiscal Period			Full Term of Agreement			
	Year-To-Date			Agreement-To-Date			
	Budget	Actuals	Variance	Budget	Actuals	Variance	
	12 months	12 months		36 months	36 months		
<b>Revenue</b>							
Contribution from Alberta Health (Surplus)	-	-	-	30,417.39	30,417.39	-	
Contribution from Alberta Health	715,820.00	631,504.00	(84,316.00)	2,096,126.61	2,004,640.61	(91,486.00)	
Government Grant - Investment Income	-	6,450.32	6,450.32	-	7,086.80	7,086.80	
Grant - Other Sources	137,400.00	137,400.00	-	397,200.00	397,200.00	-	
CPSA Contribution	178,450.00	179,468.00	1,018.00	532,444.00	533,375.00	931.00	
<b>Total Revenue</b>	<b>1,031,670.00</b>	<b>954,822.32</b>	<b>(76,847.68)</b>	<b>3,056,188.00</b>	<b>2,972,719.80</b>	<b>(83,468.20)</b>	
<b>Expense</b>							
<b>General Program Expenditures</b>							
Consulting	240,000.00	266,889.88	26,889.88	728,213.00	685,125.88	(43,087.12)	
Legal	1,000.00	-	(1,000.00)	2,250.00	138.60	(2,111.40)	
Occupancy Costs	29,400.00	26,899.46	(2,500.54)	83,550.00	79,239.93	(4,310.07)	
Operating Costs	59,850.00	52,576.00	(7,274.00)	172,302.00	167,124.00	(5,178.00)	
Printing, Supplies & Courier	20,450.00	4,393.19	(16,056.81)	45,187.00	11,305.13	(33,881.87)	
Special printing	382,500.00	321,319.99	(61,180.01)	1,134,999.00	998,140.45	(136,858.55)	
Travel, Meals & Accommodation	-	28.98	28.98	-	28.98	28.98	
Sub-total	733,200.00	672,107.50	(61,092.50)	2,166,501.00	1,941,102.97	(225,398.03)	
<b>Staffing Costs</b>							
Salaries & Benefits	294,740.00	266,887.40	(27,852.60)	877,453.00	764,187.45	(113,265.55)	
Professional Development	3,630.00	1,372.30	(2,257.70)	12,010.00	7,566.63	(4,443.37)	
Sub-total	298,370.00	268,259.70	(30,110.30)	889,463.00	771,754.08	(117,708.92)	

# TPP Alberta Grant Report: Financial Summary

<b>Committee Expenses</b>						
Sundry	-	100.00	100.00	-	300.00	300.00
Telephone & Fax	100.00	-	( 100.00 )	224.00	-	( 224.00 )
Sub-total	100.00	100.00	-	224.00	300.00	( 76.00 )
<b>Total Expenses</b>	<b>1,031,670.00</b>	<b>940,467.20</b>	<b>( 91,202.80 )</b>	<b>3,056,188.00</b>	<b>2,713,157.05</b>	<b>( 343,030.95 )</b>
<b>Surplus &lt; Deficit &gt;</b>	-	14,355.12	14,355.12	-	259,562.75	259,562.75
<b>Unexpended Funding</b>						
	Opening Balance: Prior Year's <Deficit>		Year 2 (April 2021 - March 2022)		245,207.63	
<input checked="" type="checkbox"/> Attached Request(s) for	Add (Subtract) Current Surplus/ (Deficit):		12 months (April 2022 - March 2023)		14,355.12	
Retention of Unexpended Funding Form (FINAL YEAR ONLY)	Less: Approved Request(s) for Retention of Unexpended Funding (FINAL YEAR ONLY)				-	
	Closing Balance: <Deficit>		31-Mar-23		<u>259,562.75</u>	
<b>Finance Contact:</b>			<b>Program Contact:</b>			
Josh Eberhart	780-401-0987	Ed Jess	(780) 969-4946			
Name	Phone #	Name	Phone #			
			4/21/2023			
<b>Finance Approval:</b>						
Tracy Simons	Chief Financial Officer (780) 969-4983	21-Apr-23	<input checked="" type="checkbox"/> <i>Tracy Simons</i>			
Name	Position / Phone #	Date	Tracy Simons, CPA CA Chief Financial Officer Signed by: Tracy Simons			



# TPP Alberta: Resources

TPP Alberta website: [tppalberta.ca](http://tppalberta.ca)

[TPP Alberta Medication List](#)

[TPP Alberta Program Guide](#)

[2021 TPP Alberta Atlas](#)

[2021 TPP Alberta Antibiotic Prescription Atlas](#)

**TPP Alberta**  
TRACKED PRESCRIPTION PROGRAM

[Ordering a TPP Pad](#) [Register to Prescribe](#) [Prescribers with Restrictions](#) [News & Updates](#) [Pad Safety](#) [Forgeries](#) [FAQs](#) [Medication Lists](#)

The Tracked Prescription Program (TPP) Alberta (formerly known as the Triplicate Prescription Program) has been monitoring the use of prescription drugs prone to misuse in the province since 1986, using data to optimize safe patient care.

[Important resources](#) [Most recent news & updates](#)