
Alberta Opioid Response Surveillance Report: First Nations Peoples in Alberta



The Alberta First Nations
Information Governance Centre

Alberta 

Health, Government of Alberta
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The Alberta First Nations Information Governance Centre
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Alberta Opioid Response Surveillance Report: First Nations People in Alberta

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Disclaimer

This surveillance report presents emergency department visits, hospitalizations, prescription drug dispensing from community pharmacies, emergency medical services, and mortality data associated with opioids and other drugs in Alberta. Data sources are updated and verified at differing time periods.

Results are subject to change based on differences in data submission schedules and updates from the various data systems. Data may change in later reporting as it is submitted by the medical examiner, health facilities, supervised consumption services, and pharmacies. **Recent data may be less complete due to delays in data submission.**

The number of drug overdose deaths related to fentanyl/opioids may change (including increases/decreases in previous numbers) as certification of deaths can take six months or longer, and certification of cause of death may lead to a change in classification.

Apparent deaths: Preliminary evidence suggests that the death was most likely a drug overdose.

Confirmed deaths: A Medical Examiner has determined the cause of death based on all available evidence, and listed the cause of death on a death certificate (including the substances directly involved in the overdose).

Fentanyl related poisoning deaths: Deaths in which fentanyl or a fentanyl analogue was identified as a cause of death (these may also have involved non-fentanyl opioids).

Non-fentanyl opioid related poisoning deaths: Deaths in which an opioid (not fentanyl or a fentanyl analogue) was identified as a cause of death. Due to the added complexity of non-fentanyl opioid related poisoning deaths, there is a three-month delay in identifying these preliminary (apparent) cases for surveillance purposes compared to fentanyl related deaths.

Manner of death is determined by Alberta's Office of the Chief Medical Examiner. Manner of death may be either accidental (i.e., unintentional), suicide (i.e., intentional), homicide, or undetermined. This report presents accidental and undetermined deaths grouped together as "unintentional deaths". Suicide and homicide deaths are not included in this report.

Highlights

- First Nations Peoples in Alberta have higher rates in all measured indicators compared to non-First Nations Peoples. According to Indigenous Services Canada, 6.5% of Albertans are Indigenous and approximately half are First Nations Peoples (3.4%)¹. While First Nations Peoples represent 3.4% of the Alberta population, they represent 20% of all apparent unintentional opioid poisoning deaths between 2016 and 2022. This has also increased over time from 14% of all unintentional opioid poisoning deaths in 2016 to 24% of all unintentional opioid poisoning deaths in 2022.
- The rate of unintentional opioid poisoning deaths has increased over time among both First Nations Peoples and non-First Nations Peoples. Among non-First Nations Peoples, the rate decreased in 2019 before increasing again in 2020. The disparity between First Nations Peoples and non-First Nations Peoples increased between 2016 and 2021, while decreasing slightly in 2022.
- In 2022, the rate of unintentional opioid poisoning deaths per 100,000 decreased slightly among both First Nations and non-First Nations Peoples.
- Among First Nations Peoples, the role of non-pharmaceutical drugs, such as carfentanil, methamphetamine and fentanyl, has continued to increase since 2019. In 2021 and 2022, fentanyl represented 95% and 96% of all apparent opioid poisoning deaths.
- The South Zone, Calgary Zone and, more recently, the Edmonton Zone represent the Zones where indicators related to opioid use were highest among First Nations Peoples. The City of Calgary and City of Edmonton saw the largest proportion of unintentional opioid related deaths among First Nations Peoples.

¹Indigenous Services Canada. (2022). Indigenous peoples in Alberta. Retrieved from: <https://www.sac-isc.gc.ca/eng/1647614714525/1647614742912>
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Key Points

Apparent unintentional poisoning deaths related to opioids

- Rates of apparent unintentional opioid drug poisoning deaths per 100,000 were on average 8.6 and 8.4 times higher among First Nations Peoples compared to non-First Nations People in 2021 and 2022.
- First Nations Peoples represent 20% of all apparent unintentional opioid poisoning deaths in Alberta from January 1, 2016 to December 31, 2022.
- Among First Nations Peoples, the proportion of apparent unintentional opioid drug poisoning deaths involving fentanyl have increased since 2016. Fentanyl was involved in 95% and 96% of deaths in 2021 and 2022 respectively.
- Among First Nations Peoples, in 2021, the rate of apparent unintentional opioid poisoning deaths per 100,000 was highest in the Calgary Zone followed by the South Zone. In 2022, the highest rate was in the South Zone. The Calgary Zone saw an increase in rate in 2021, which declined in 2022, the South Zone saw an increase in both 2021 and 2022.
- Among First Nations Peoples, the proportion of opioid poisoning deaths occurring among males in 2022 was closer to 2019, with 59% of deaths occurring in males. However, this is an increase from 2016 where 53% of deaths were among males. While males represent a higher proportion of deaths compared to females among First Nations Peoples, the proportion of deaths in First Nation females is much higher than in non-First Nations Peoples.

Confirmed drug poisoning deaths

- In 2022, among both First Nations and non-First Nations Peoples, fentanyl poisoning contributed to the highest proportion of all unintentional drug & alcohol poisoning deaths.
- From 2019-2022, Carfentanil saw the largest increase in drugs contributing to substance toxicity deaths among both First Nations and non-First Nations Peoples. Fentanyl was also among the top substances to see an increase and Methamphetamine increased by around 119% among First Nations and 92% among non-First Nations Peoples. Heroin and oxycodone decreased among both First Nations and non-First Nations Peoples.

Health care utilization related to opioid use

- From January 1, 2016 until December 31, 2022, Emergency department visits and hospitalizations related to opioids and other drugs were higher among First Nations Peoples compared to non-First Nations Peoples.
- In 2022, compared to non-First Nations Peoples, First Nations females represented a larger proportion of emergency department visits and hospitalization for opioids and other drugs. Females represented 50% and 56% of all emergency department visits and hospitalizations among First Nations Peoples during this time.
- The rate of emergency department visits for opioids and other drugs among First Nations Peoples was generally highest in the South Zone, followed by the Calgary Zone. However, in 2021 the Calgary Zone was higher than the South Zone and in 2022, the South Zone was slightly higher than the Edmonton Zone, followed by the Calgary Zone.
- The rate of hospitalizations for opioids and other drugs among First Nations Peoples was generally highest in the South Zone, however, in 2022, the rate was highest in the Edmonton Zone.

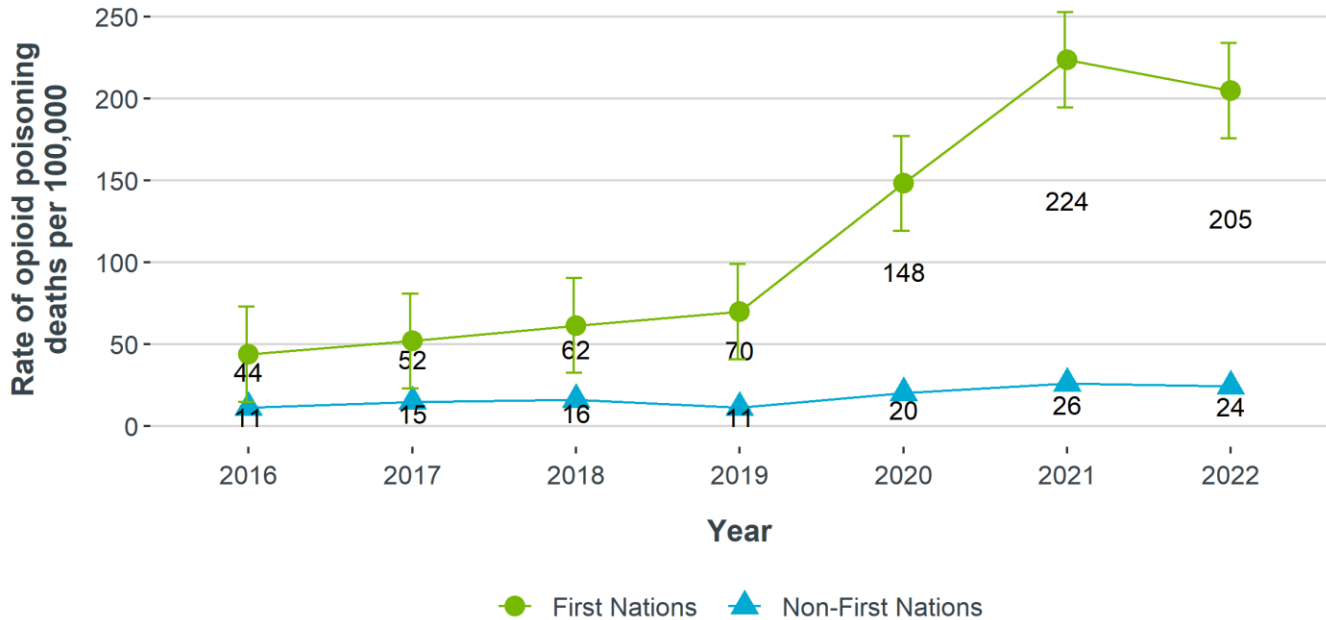
Opioid and opioid agonist treatment (OAT) dispensing from community pharmacies

- Between 2016 and 2021, the rate of unique individuals receiving an opioid dispense from a community pharmacy has decreased each year among both First Nations and non-First Nations Peoples. There was a slight increase in 2022 among First Nations Peoples only.
- Among both First Nations and non-First Nations Peoples between 2016 to 2022, the rate of unique individuals prescribed Buprenorphine/Naloxone for OAT has increased by around 510%.
- In 2022, the rate of unique individuals' dispensed buprenorphine/naloxone for OAT was nearly 8 times higher and the rate of methadone prescribing was nearly 6 times higher among First Nations Peoples compared to non-First Nations Peoples.
- In 2022, among First Nations Peoples, the rate of unique individuals dispensed buprenorphine/naloxone and methadone was highest in the South Zone. Of note, the rate of unique individuals' dispensed buprenorphine/naloxone in the South Zone was 2 times higher than the next highest rate, the Calgary Zone.

Mortality data

Apparent unintentional opioid poisoning deaths (fentanyl & non-fentanyl opioids)

FIGURE 1: RATE OF APPARENT UNINTENTIONAL OPIOID POISONING DEATHS PER 100,000 AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES BY YEAR. JANUARY 1, 2016 TO DECEMBER 31, 2022.



- Among First Nations Peoples, the rate of apparent unintentional opioid poisoning deaths per 100,000 increased each year between 2016 and 2021. In 2022, the rate of apparent unintentional opioid poisoning deaths per 100,000 appears to decrease slightly (though in the margin of error). Between 2016 and 2019, the rate increased by 59% (between 14% and 18% each year). Between 2019 and 2021, the rate of apparent unintentional opioid poisoning deaths per 100,000 increased by 219%. The rate of apparent unintentional opioid poisoning deaths per 100,000 in 2020 was double the rate in 2019 (112% increase). In 2021, the rate of apparent unintentional opioid poisoning deaths per 100,000 increased by 51% compared to 2020. While the rate of apparent unintentional opioid poisoning deaths per 100,000 in 2022 has decreased slightly (-8%) compared to the preceding year, it represents a 366% increase compared to 2016.
- Among non-First Nations Peoples, the rate of apparent unintentional opioid poisoning deaths per 100,000 was relatively stable between 2016 and 2019, increasing by an average of 19% between 2016 and 2018 and decreasing by 30% between 2018 and 2019. In 2020, the rate nearly doubled, increasing by 78%. The rate continued to increase in 2021 an additional 29%. The rate decreased between 2021 and 2022 by 6%. While the rate of apparent unintentional opioid poisoning deaths in non-First Nations Peoples decreased slightly in 2019 and 2022, overall, from 2016 to 2022 there was a 113% increase.
- The rate of apparent unintentional opioid poisoning deaths per 100,000 person years was higher among First Nations Peoples from 2016 to 2022. From 2016 to 2018, the rates among First Nation Peoples were between 3-4 times the rates in non-First Nations peoples. In 2019, the rate of opioid overdose deaths decreased among non-First Nations Peoples, but increased among First Nations Peoples, resulting in the rate of opioid poisoning deaths among First Nations Peoples to increase to 6.2 times the rate among non-First Nations Peoples. While the rate of apparent unintentional opioid poisoning deaths increased in 2020 and 2021 among both First Nations and non-First Nations Peoples, the disparity between them also increased. In 2020, the rate of apparent unintentional opioid poisoning deaths among First Nations Peoples was 7.3 times the rate compared to non-First Nations poisoning, and 8.6 times in 2021. This gap began stabilize in 2022, dropping to 8.4 times the rate of non-First Nations Peoples, but is still higher compared to 2019 (a reference period prior to the COVID-19 Pandemic).

TABLE 1: COUNT AND PERCENTAGE OF APPARENT UNINTENTIONAL OPIOID POISONING DEATHS AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY YEAR. JANUARY 1, 2016 TO DECEMBER 31, 2022.

Year	First Nations		Non-First Nations		Total
	Count	Annual Percent	Count	Annual Percent	
2016	72	14%	461	86%	533
2017	85	12%	611	88%	696
2018	102	13%	667	87%	769
2019	117	20%	476	80%	593
2020	249	23%	857	77%	1,106
2021	373	25%	1,113	75%	1,486
2022	344	24%	1,067	76%	1,411
Total	1,342	20%	5,252	80%	6,594

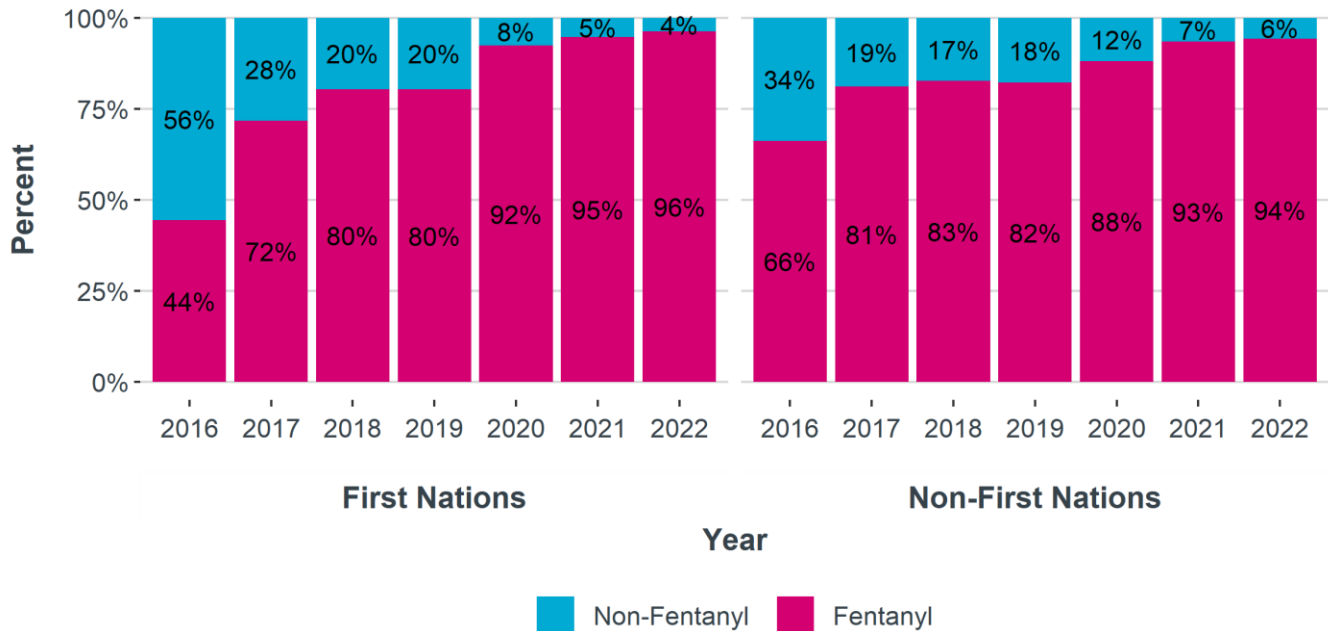
- The proportion of apparent unintentional opioid poisoning deaths among First Nations Peoples has increased over time, from 14% in 2016 to 25% in 2021.
- The percent of all annual apparent unintentional opioid poisoning deaths occurring among First Nations Peoples began to increase in 2019 and peaked in 2021. In 2021, First Nations people represented 25% of all opioid poisoning deaths that year.

TABLE 2: COUNT AND PERCENTAGE OF APPARENT UNINTENTIONAL OPIOID POISONING DEATHS AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES BY MUNICIPALITY. JANUARY 1, 2022 TO DECEMBER 31, 2022.

Geography	First Nations		Non-First Nations	
	Count	Percent	Count	Percent
Calgary	78	23%	392	37%
Edmonton	140	41%	389	36%
Red Deer	7	2%	35	3%
Fort McMurray	<5	Suppressed	12	1%
Grande Prairie	5	1%	28	3%
Lethbridge	27	8%	46	4%
Medicine Hat	<5	Suppressed	20	2%
Other locations in Alberta, by Zone				
North Zone	14	4%	25	2%
Edmonton Zone	6	2%	41	4%
Central Zone	16	5%	45	4%
Calgary Zone	18	5%	20	2%
South Zone	29	8%	14	1%
Total	344	100%	1,067	100%

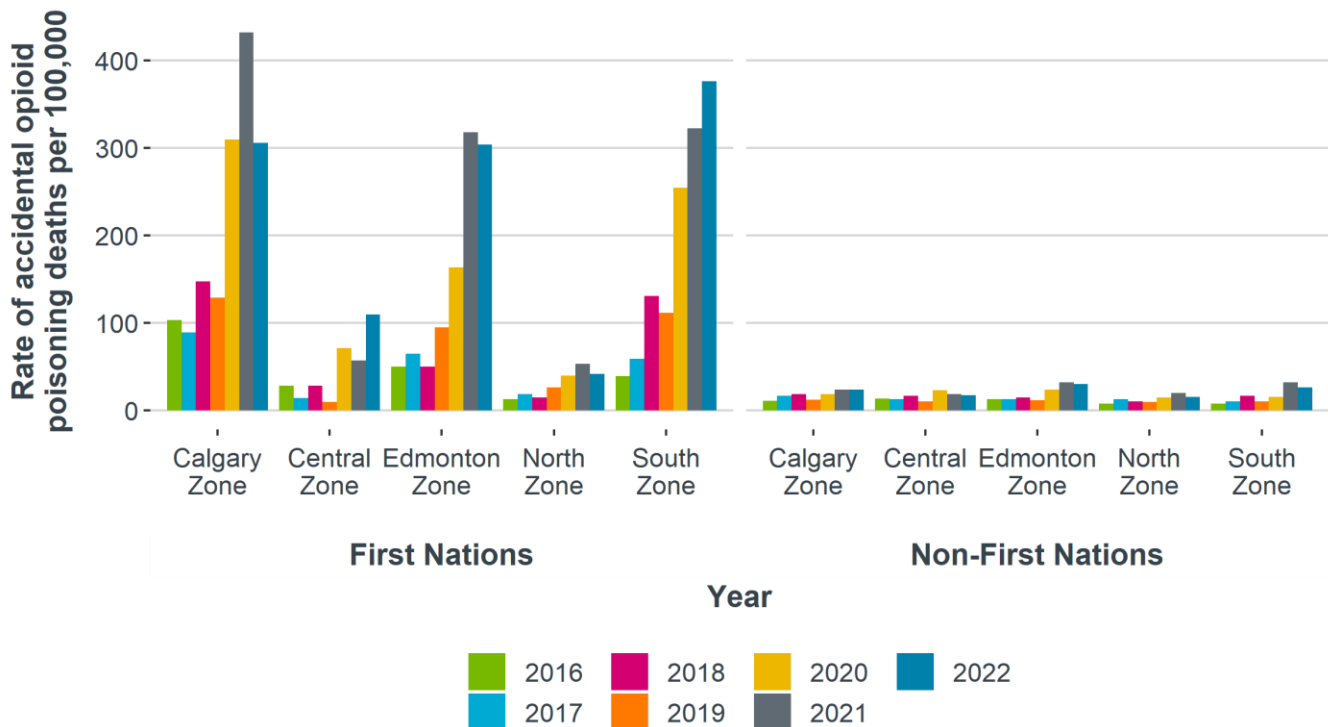
- From January 1, 2022 to December 31, 2022, the majority of apparent unintentional opioid poisoning deaths among both First Nations Peoples and non-First Nations Peoples occurred in the larger cities in Alberta, 75% among First Nations Peoples and 86% among non-First Nations Peoples. Specifically, 64% of the deaths among First Nations Peoples and 74% of the deaths among non-First Nations Peoples occurred in Edmonton and Calgary.
- A larger proportion of apparent unintentional opioid poisoning deaths among First Nations Peoples occurred in other locations in the Calgary and South Zones compared to non-First Nations Peoples, 13% vs 3%.

FIGURE 2: PERCENTAGE OF FENTANYL VS. NON-FENTANYL OPIOID APPARENT UNINTENTIONAL POISONING DEATHS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY YEAR. JANUARY 1, 2016 TO DECEMBER 31, 2022.



- The proportion of apparent unintentional opioid poisoning deaths related to Fentanyl was smaller among First Nations Peoples in 2016 (44%) compared to non-First Nations Peoples (66%).
- Since 2016, the proportion of fentanyl related deaths has increased among both First Nations Peoples and non-First Nations Peoples. In 2022, the proportion of apparent unintentional opioid poisoning deaths was similar among First Nations Peoples (96% vs 94%).

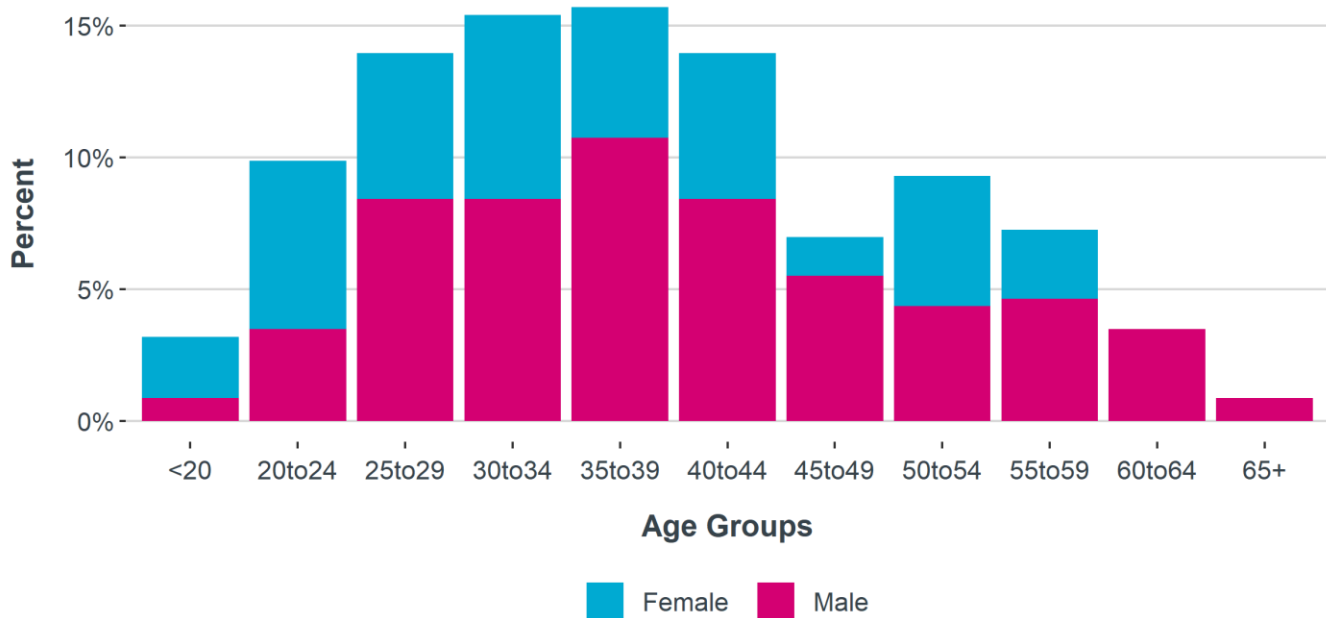
FIGURE 3: RATE OF APPARENT UNINTENTIONAL OPIOID POISONING DEATHS PER 100,000 PERSON YEARS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY ZONE. JANUARY 1, 2016 TO DECEMBER 31, 2022.



- In 2020, 2021 and 2022, the rate of apparent unintentional opioid poisoning deaths per 100,000 person years was higher in all Zones among First Nations Peoples compared to non-First Nations Peoples. In 2021, the difference in rate was greatest in the Calgary Zone, and in 2022, the difference was greatest in the South Zone.
- In 2021, among First Nations Peoples, the highest rate of apparent unintentional opioid poisoning deaths occurred in the Calgary Zone (the highest recorded rate to date) followed by the South Zone. In 2021, among non-First Nations Peoples the highest rate was in the Edmonton Zone followed by the South Zone. This changed slightly in 2022, where the highest rate of apparent unintentional opioid poisoning deaths per 100,000 occurred in the South Zone among First Nations Peoples and remained the Edmonton Zone among non-First Nations Peoples.
- Among First Nations Peoples, the rate of apparent unintentional opioid poisoning deaths increased in most Zones in 2020 and 2021, except in the Central Zone, which decreased in 2021. Notable increases were observed in the Calgary, Edmonton, and South Zones. Further increases were seen in 2022 in the South and Central Zones.
- Among non-First Nations Peoples, all Zones saw increases in 2020 and in 2021 (except the Central Zone in 2021). All the Zones decreased in 2022, except the Calgary Zone, which stayed the same.
- From 2016-2022, the largest increase in apparent unintentional opioid poisoning deaths was also in the South Zone among First Nations Peoples (857%) and non-First Nations (245%) Peoples. In 2022, the rate of apparent unintentional opioid poisoning deaths in the South Zone was 14 times higher among First Nations Peoples compared to non-First Nations Peoples.

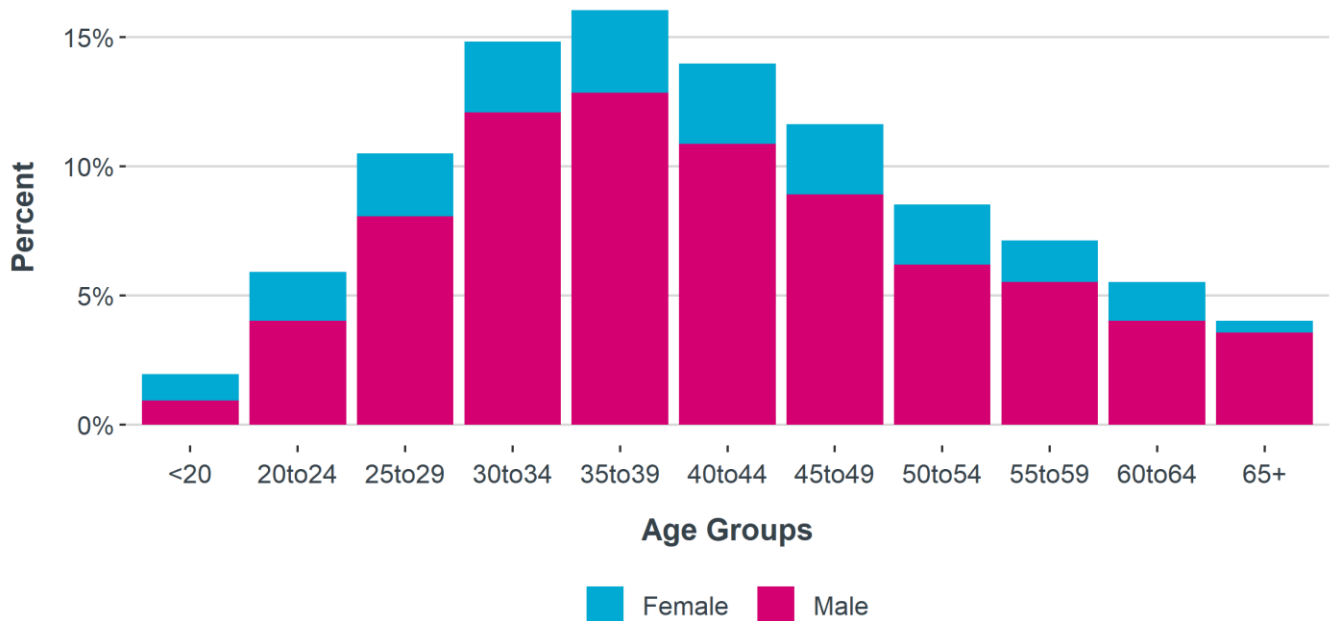
Demographics of apparent unintentional opioid poisoning decedents

FIGURE 4: DEATHS DUE TO APPARENT UNINTENTIONAL OPIOID POISONING AMONG FIRST NATIONS PEOPLES, BY SEX AND AGE. JANUARY 1, 2022 TO DECEMBER 31, 2022



- Among First Nations Peoples, the proportion of apparent unintentional opioid poisoning deaths among males increased in 2020 to 65% and returned to 59% in 2022. This is similar to 2019, where 58% of deaths were among males.
- Among First Nations Peoples, 30 to 34 years of age males and 30 to 34 years of age females represent 7% and 8% respectively of all apparent unintentional opioid deaths in 2022. This age group (30-34) is the highest proportion of female deaths. The highest proportion of male deaths is in the 35 to 39 age groups at 11%.

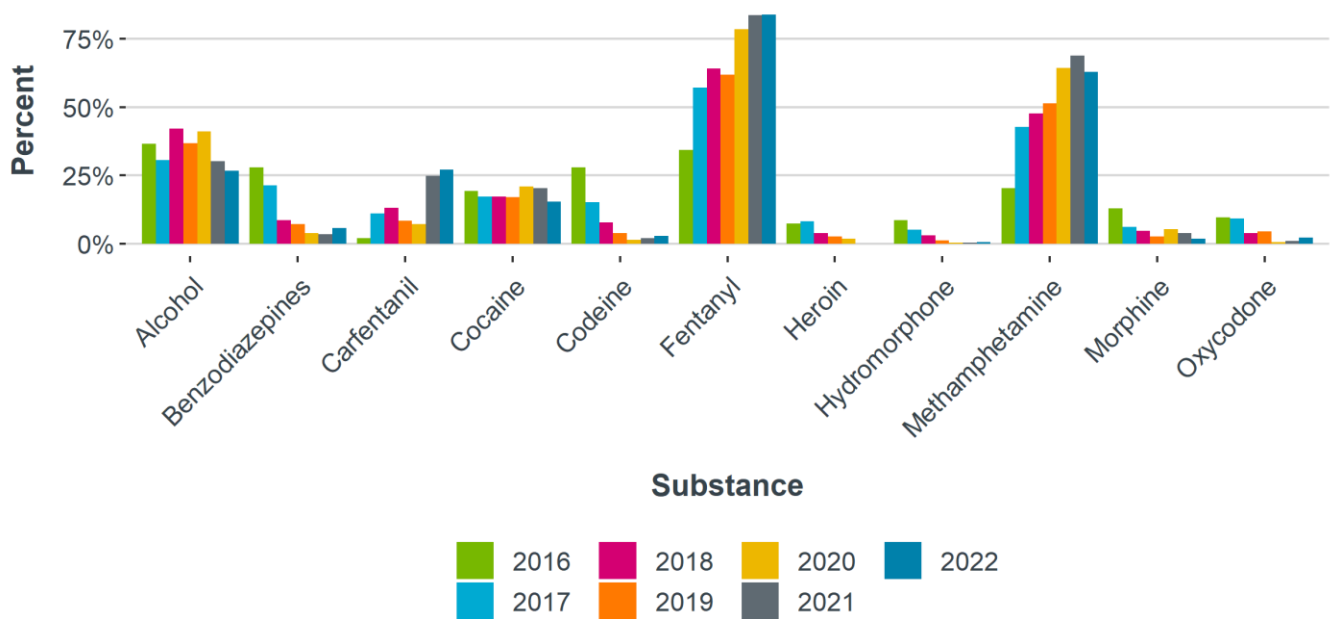
FIGURE 5: DEATHS DUE TO APPARENT UNINTENTIONAL OPIOID POISONING AMONG NON-FIRST NATIONS PEOPLES, BY SEX AND AGE. JANUARY 1, 2022 TO DECEMBER 31, 2022



- Among non-First Nations Peoples, the proportion of apparent unintentional opioid poisoning deaths among males increased in 2020 to 80% and returned to 77% in 2022, which is the same as 2019, where 77% of deaths were among males.
- In 2022, the highest proportion of deaths among non-First Nations Peoples occurred in males ages 35 to 39, 13% of all deaths among non-First Nations Peoples. This age groups saw the most deaths among females as well, 3% of all deaths.
- In 2022, compared to non-First Nations Peoples, the proportion of deaths among females was higher among First Nations Peoples, 41% in 2022 among First Nations Peoples, versus 23% in 2022 among non-First Nations Peoples.

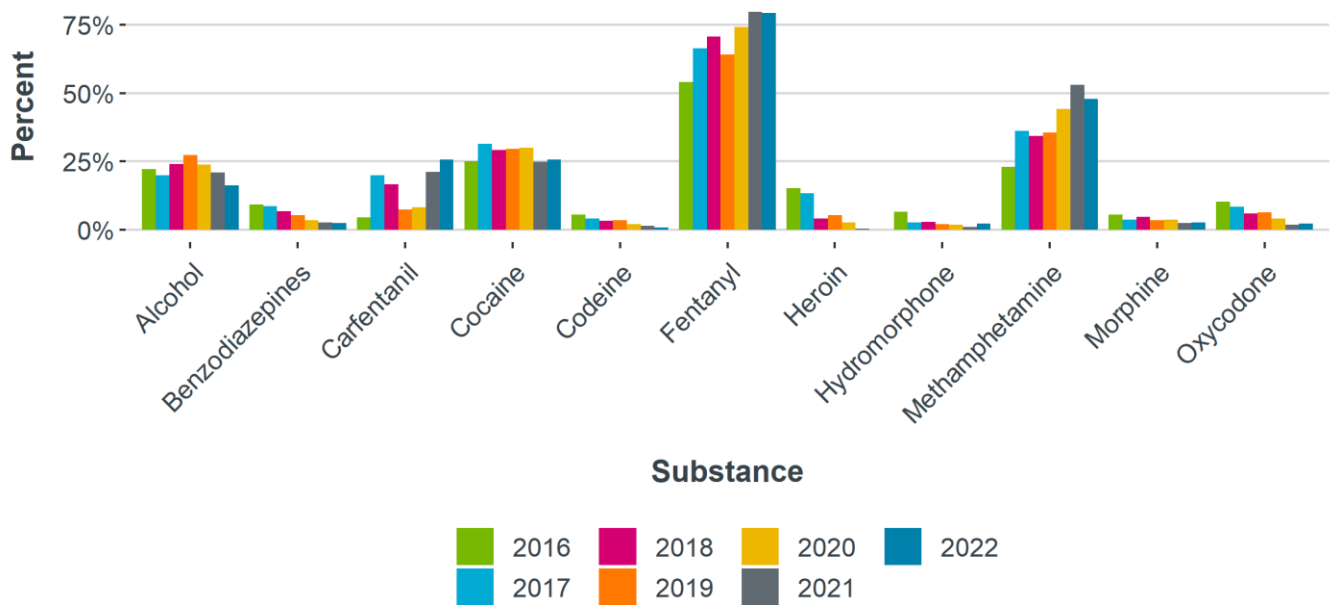
Confirmed drug and alcohol poisoning deaths

FIGURE 6: FREQUENCY OF SUBSTANCES CAUSING CONFIRMED ACUTE POISONING DEATHS (UNINTENTIONAL ONLY) AMONG FIRST NATIONS PEOPLES. JANUARY 1, 2016 TO DECEMBER 31, 2022



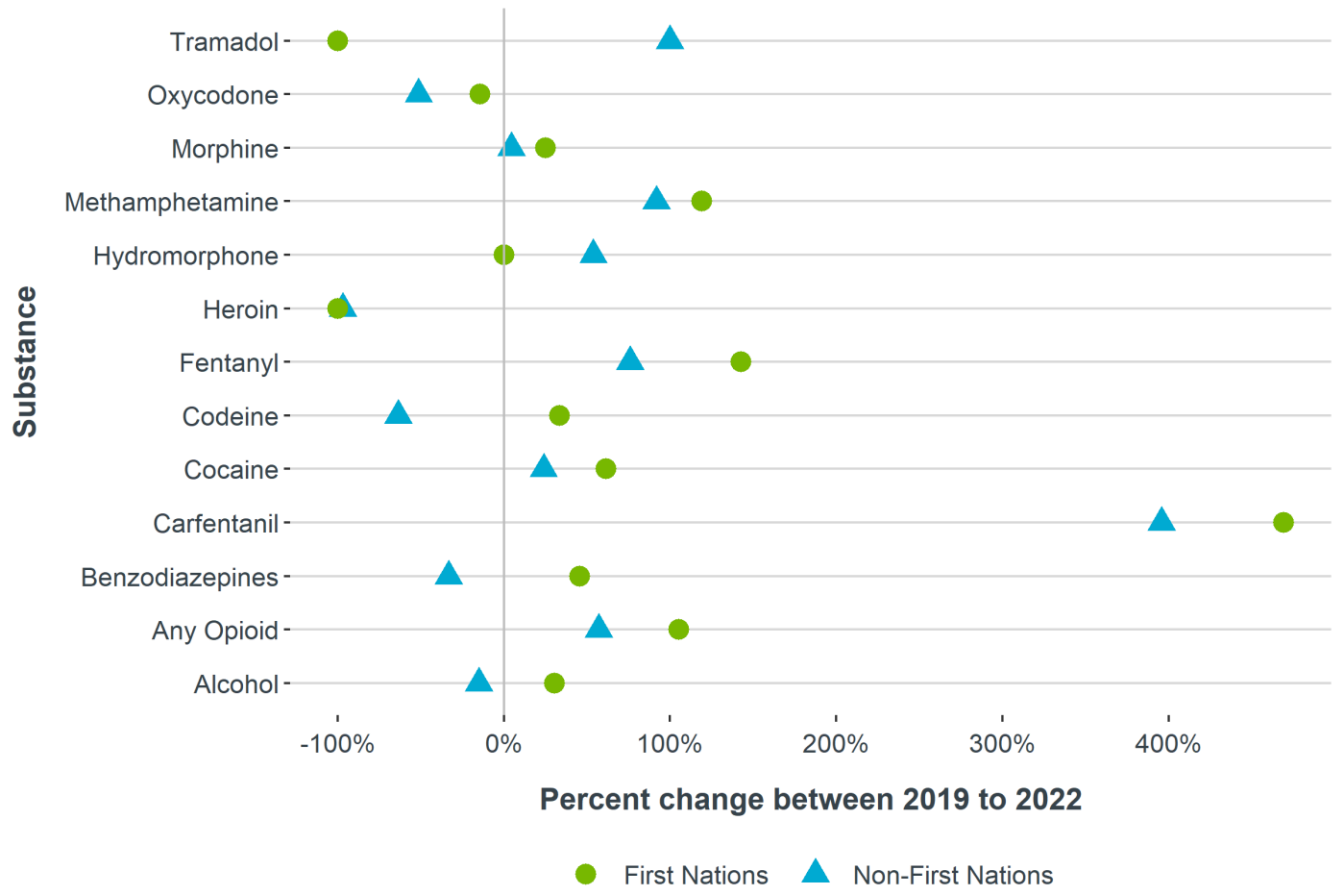
- Among First Nations Peoples in 2021 and 2022, fentanyl and methamphetamine were the most frequent substances to contribute to deaths and occurred in 84% and 69% of deaths (respectively) in 2021, and 84% and 63% of deaths (respectively) in 2022.
- Among First Nations Peoples in 2022, carfentanil, fentanyl and methamphetamine had increases in attribution to unintentional drug poisoning deaths compared to 2016. Compared to 2016, by 2022, benzodiazepines, codeine, heroin, hydromorphone, morphine, and oxycodone have had decreased attribution in drug poisoning deaths.

FIGURE 7: FREQUENCY OF SUBSTANCES CAUSING CONFIRMED ACUTE POISONING DEATH (UNINTENTIONAL ONLY) AMONG NON-FIRST NATIONS PEOPLES. JANUARY 1, 2016 TO DECEMBER 31, 2022



- Among non-First Nations Peoples in 2021 and 2022, fentanyl and methamphetamine were the most frequent substances to be attributed to death and occurred in 80% and 53% (respectively) in 2021 and 79% and 48% (respectively) in 2022. The occurrence of both substances have increased since 2016 and 2019 (prior to the COVID-19 pandemic). The presence of other non-pharmaceutical drugs, like heroin, have decreased. Heroin was attributed to 15% of deaths in 2016 and less than 1% in 2021. Compared to 2016, benzodiazepines, codeine, hydromorphone, and oxycodone have also decreased in 2022.
- Both methamphetamine, fentanyl, and alcohol are attributed to a higher proportion of deaths among First Nations Peoples compared to non-First Nations Peoples. A lower proportion of deaths are attributed to cocaine among First Nations Peoples compared to non-First Nations Peoples

FIGURE 8: PERCENT DIFFERENCE IN SUBSTANCES CAUSING CONFIRMED UNINTENTIONAL ACUTE POISONING DEATH FROM 2019 TO 2022, AMONG FIRST NATIONS AND NON-FIRST NATIONS PEOPLES IN ALBERTA

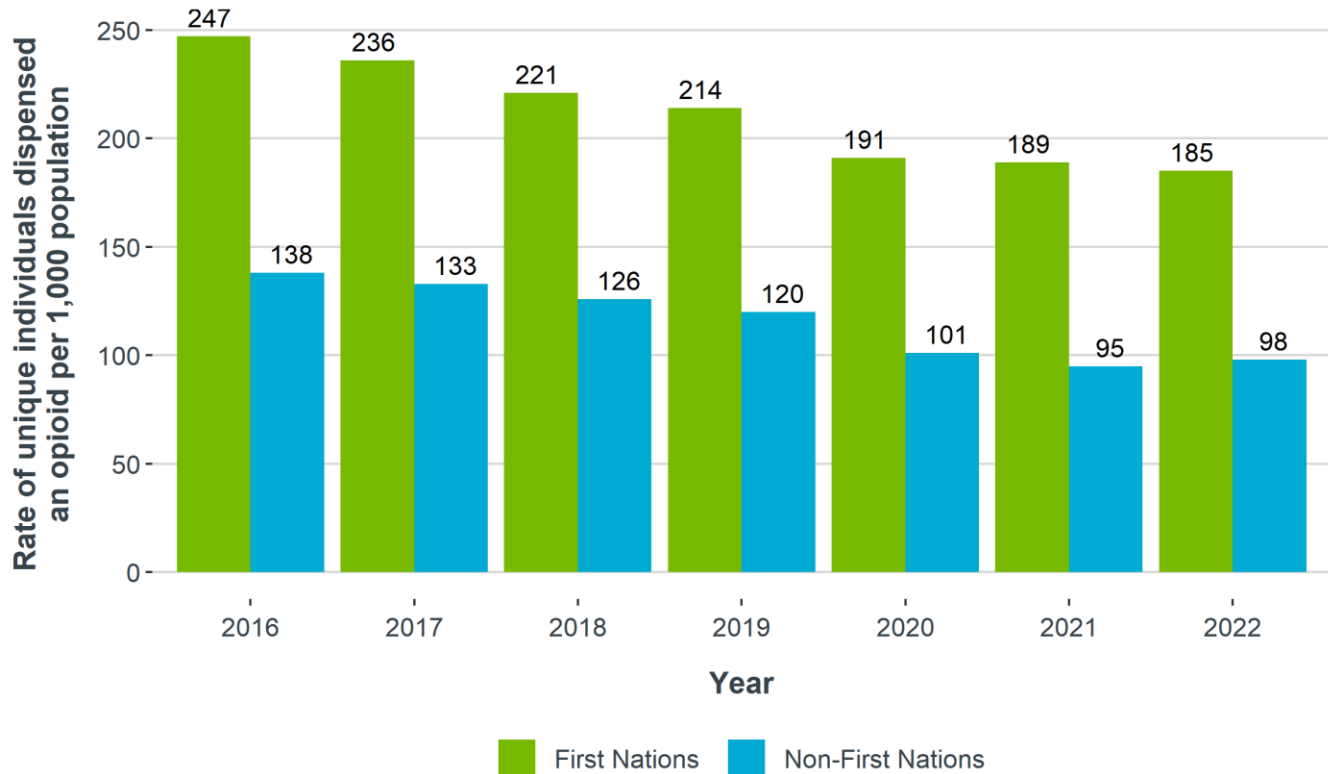


Note(s): This figure uses 2019 as a reference when presenting the percent change (previous reports have used 2016) because 2019 was the last full year before the COVID-19 Pandemic, which brought with it wide spread social disruption and a substantial rise in unintentional substance toxicity deaths.

- Among First Nations Peoples, carfentanil (469%), fentanyl (143%) and methamphetamine (119%) saw the largest increases as a substance contributing to causing death in acute poisoning deaths from 2019-2022. Tramadol (-100%) and heroin (-100%) saw a decrease.
- Among non-First Nations Peoples, carfentanil (396%), methamphetamine (92%), and fentanyl (76%) saw the largest increase as a substance contributing to cause of death in acute poisoning deaths from 2019-2021. The largest decrease was seen in heroin (-97%) and codeine (-64%). Tramadol saw an increase of 100%, however, deaths where tramadol was listed as a contributing cause remain small. Increases in small numbers can lead to larger relative percent increases; however, due to the smaller deaths involving Tramadol, these are not as relevant as substances such as carfentanil, methamphetamine, and fentanyl.

Opioid dispensing data

FIGURE 9: RATE OF OPIOID DISPENSING (UNIQUE INDIVIDUALS WITH AT LEAST ONE DISPENSATION) PER 1,000, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, JANUARY 1, 2016 TO DECEMBER 31, 2022.



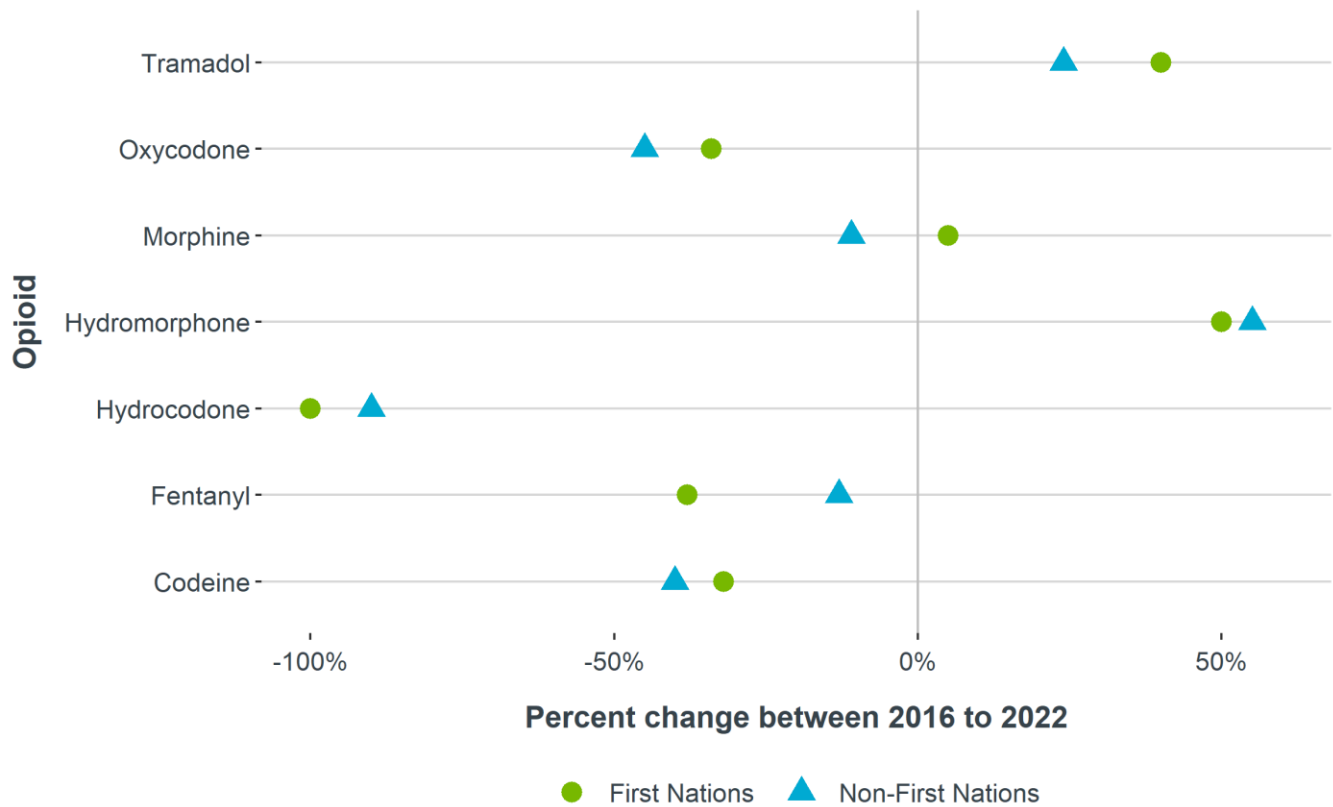
- From 2016 to 2021, the rate of opioid dispensing from community pharmacies among both First Nations Peoples and non-First Nations Peoples, decreased year over year until 2021. There was a slight increase in 2022 among Non-First Nations Peoples only.
- Compared to 2016, this represents a 25% decrease for First Nations Peoples and a 29% decrease for non-First Nations Peoples. Compared to 2019, this represents a 14% decrease for First Nations Peoples and a 18% decrease for non-First Nations Peoples.
- The rate of opioid dispensing from community pharmacies has consistently been higher in First Nations Peoples compared to non-First Nations Peoples. From 2016-2022, the rate of opioid dispensing among First Nations Peoples was just under two times the rate of opioid dispensing among non-First Nations Peoples, suggesting the gap has closed slightly.

TABLE 3: OPIOID DISPENSING AMONG FIRST NATION PEOPLES AND NON-FIRST NATIONS PEOPLES, BY SEX, AND MEDIAN AGE. JANUARY 1, 2022 TO DECEMBER 31, 2022.

Sex	First Nations		Non-First Nations	
	Proportion of individuals dispensed an opioid	Median Age	Proportion of individuals dispensed an opioid	Median Age
Female	55%	45	54%	53
Male	45%	46	46%	55

- In 2022, among both First Nations Peoples and non-First Nations Peoples, females were more likely to be dispensed an opioid from a community pharmacy.
- In 2022, among First Nations Peoples, the median age of both males and females receiving an opioid dispensed from a community pharmacy was 8-9 years younger than non-First Nations Peoples receiving an opioid dispensed from a community pharmacy.

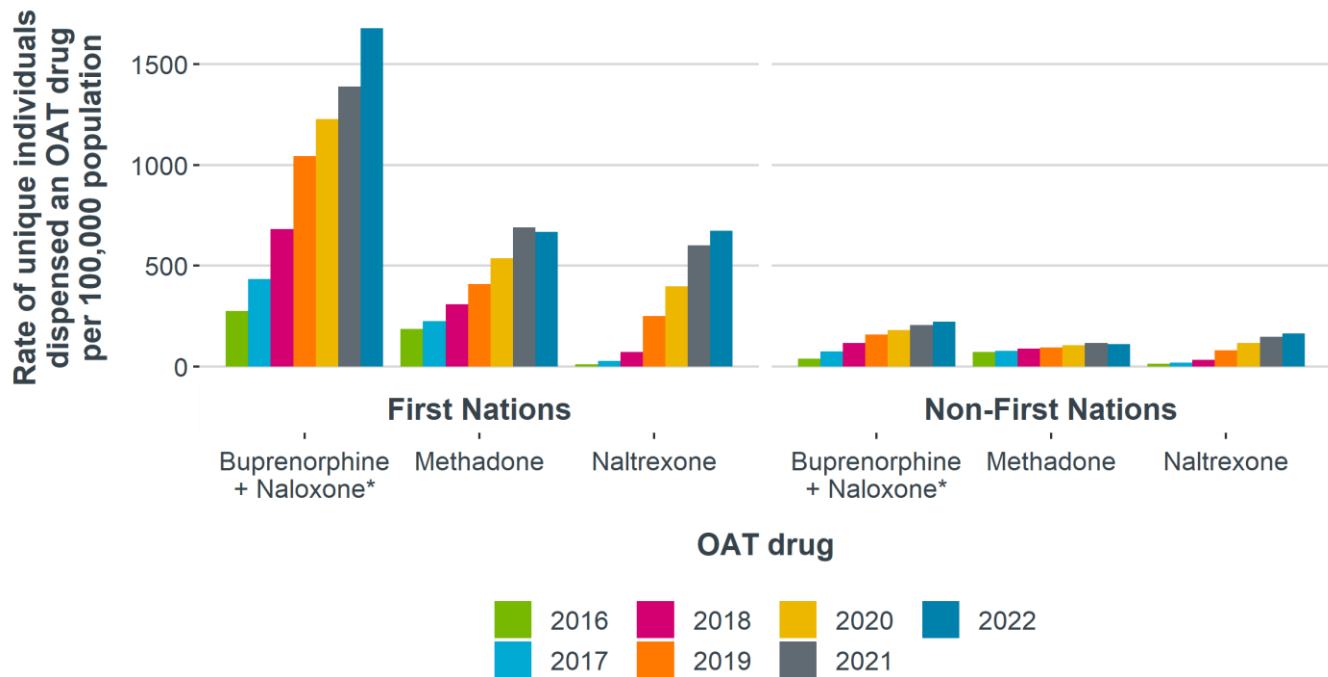
FIGURE 10: PERCENTAGE DIFFERENCE IN OPIOID DISPENSING (UNIQUE INDIVIDUALS WITH AT LEAST ONE DISPENSATION), AMONG FIRST NATIONS PEOPLE AND NON-FIRST NATIONS PEOPLES, ALBERTA, 2016-2022.



- Among First Nations Peoples, tramadol, morphine and hydromorphone were the only opioids that saw an increase in dispensing rates from community pharmacies between 2016 and 2022, 40%, 5% and 50% respectively. All other opioids saw a decrease in their rate of dispensing from community pharmacies.
- Among non-First Nations Peoples, tramadol and hydromorphone were the only opioids that saw an increase in dispensing rates from community pharmacies between 2016 and 2022, 24% and 55% respectively. All other opioids saw a decrease in their rate of dispensing from community pharmacies.

Opioid agonist treatment

FIGURE 11: OPIOID AGONIST TREATMENT (OAT) DRUG DISPENSING RATE (UNIQUE INDIVIDUALS WITH AT LEAST ONE DISPENSATION) PER 100,000 AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, JANUARY 1, 2016 TO DECEMBER 31, 2022.



*Buprenorphine + Naloxone combinations used in opioid dependence (See Data notes – Community pharmacy drug dispensing)

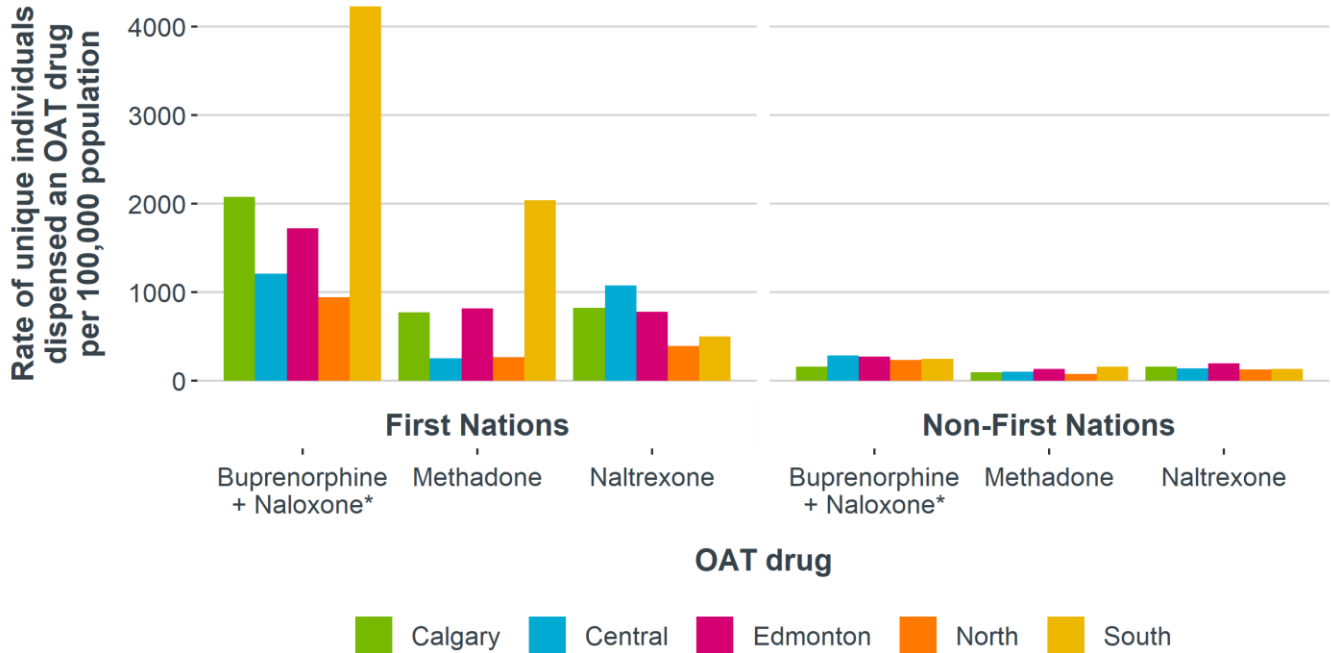
- In 2022, the rate of unique individuals dispensed buprenorphine + naloxone for OAT was 7.6 times higher among First Nations Peoples compared to non-First Nations Peoples. In 2022, Methadone dispenses were 6.0 times higher among First Nations Peoples. In 2022, Naltrexone dispenses were 4 times higher among First Nations Peoples.
- From 2016 to 2022, the rate of buprenorphine + naloxone, methadone and naltrexone for OAT dispensed per 100,000 among First Nations Peoples increased by 510%, 260% and 6650%, respectively.
- From 2016 to 2022, the rate of buprenorphine + naloxone, methadone and naltrexone for OAT dispensed per 100,000 among non-First Nations Peoples increased by 469%, 56%, 1078%, respectively.

TABLE 4: OAT DRUG PRODUCT DISPENSING AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY SEX AND MEDIAN AGE. JANUARY 1, 2022-DECEMBER 31, 2022.

Sex	First Nations		Non-First Nations	
	Proportion of individuals dispensed an OAT product	Median Age	Proportion of individuals dispensed an OAT product	Median Age
Female	52%	35	42%	42
Male	48%	36	58%	42

- Among First Nations Peoples dispensed an OAT product (Buprenorphine + naloxone, Methadone, or Naltrexone) from a community pharmacy in 2022, females represented a slightly higher proportion.
- Among non-First Nations Peoples dispensed a drug product for OAT from a community Pharmacy in 2022, males represented a higher proportion.

FIGURE 12: OAT DRUG DISPENSING RATE (UNIQUE INDIVIDUALS WITH AT LEAST ONE DISPENSATION) AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY ZONE. JANUARY 1, 2022 TO DECEMBER 31, 2022.

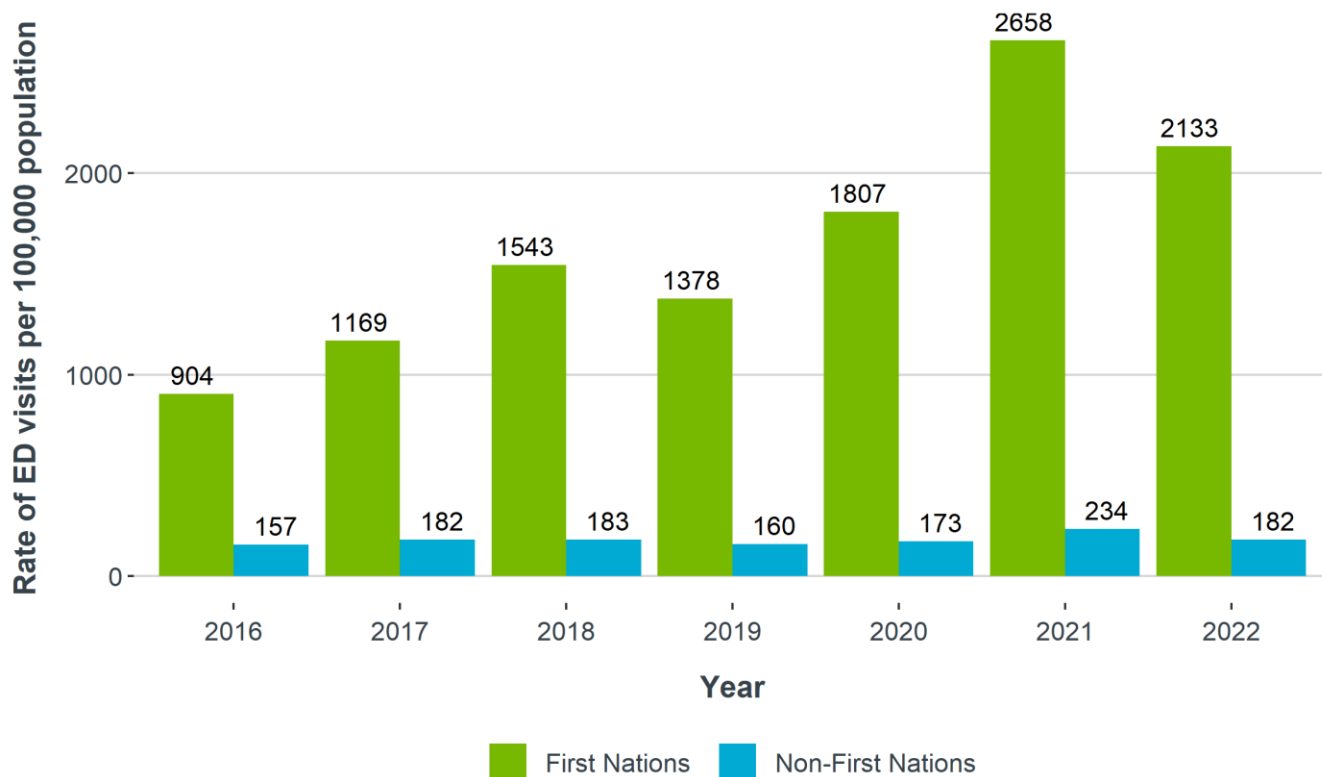


*Buprenorphine + Naloxone combinations used in opioid dependence (See Data notes – Community pharmacy drug dispensing)

- In 2022, the rate of methadone and buprenorphine + naloxone dispensing to unique individuals was highest in the South Zone among First Nation Peoples. The rate of buprenorphine + naloxone dispensing to unique individuals in the South Zone was higher than any other Zone and 2 times higher than the second highest rate (Calgary Zone). In 2022, among First Nations Peoples, the rate of naltrexone dispensing was highest in the Central Zone.
- In 2022, among non-First Nation Peoples, the rate of buprenorphine + naloxone dispensing to unique individuals was highest in the Central Zone and the rate of methadone dispensing to unique individuals was highest in the South Zone. In 2022, among non-First Nations Peoples, the rate of naltrexone dispensing was highest in the Edmonton Zone.

Emergency department visits

FIGURE 13: RATE OF EMERGENCY DEPARTMENT (ED) VISITS RELATED TO OPIOIDS AND OTHER DRUGS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, PER 100,000 PERSON YEARS. JANUARY 1, 2016 TO DECEMBER 31, 2022.



- The rate of ED visits related to opioids and other drugs increased by an average of 31% between 2016 and 2018 before decreasing by 11% in 2019, among First Nations Peoples. In 2020, among First Nations Peoples, the rate increased by 31% and increased again by 47% between 2020 and 2021. In 2022, the rate of emergency department visits related to opioids and other drugs, among First Nations Peoples, has decreased by 20% compared to 2021.
- The rate of ED visits related opioids and other drug increased by 16% between 2016-2017 among non-First Nations Peoples. In 2018, among non-First Nations Peoples, the rate stayed the same, before decreasing by 13% in 2019. In 2020, the rate increased by 8% and increased again by 35% between 2020 and 2021 among non-First Nations Peoples. In 2022, the rate of emergency department visits related to opioids and other drugs among non-First Nations Peoples has decreased by 22% compared to 2021.
- Compared to non-First Nations Peoples, First Nations Peoples have had higher rates of ED visits related to opioids and other drugs for the entire time period considered. The rate was 6 times higher in 2016-2017, 8 times higher in 2018, 9 times higher in 2019, 10 times higher in 2020, 11 times higher in 2021, and 12 times higher in 2022.

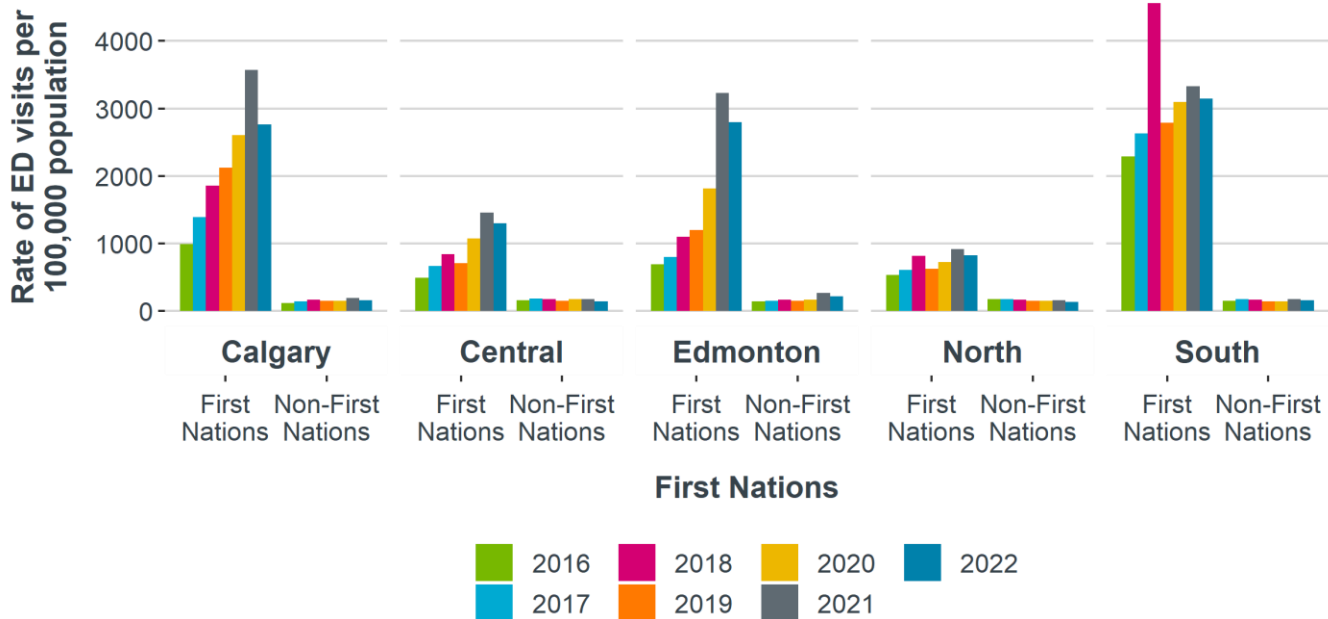
TABLE 5: EMERGENCY DEPARTMENT (ED) VISITS RELATED TO OPIOIDS AND OTHER DRUGS AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY SEX, AND MEDIAN AGE. JANUARY 1, 2022 TO DECEMBER 31, 2022.

Sex	First Nations		Non-First Nations	
	Proportion of ED Visits	Median Age	Proportion of ED Visits	Median Age
Female	50%	33	33%	35
Male	50%	34	67%	38

- Among First Nations Peoples in 2022, there was a similar proportion of emergency department visits related to opioids and other drugs in males and females.

- Among non-First Nations Peoples in 2022, the majority of emergency department visits related to opioids and other drugs occurred in males.

FIGURE 14: RATE OF EMERGENCY DEPARTMENT (ED) VISITS RELATED TO OPIOIDS AND OTHER DRUGS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BY ZONE, PER 100,000 PERSON YEARS. JANUARY 1, 2016 TO DECEMBER 31, 2022.



- Among First Nations Peoples, the rate of emergency department visits related to opioids and other drugs was highest in the South Zone, followed by Calgary Zone in nearly every year from 2016-2022. In 2021, the Calgary Zone surpassed the South Zone for the highest rate. In 2022, the Edmonton Zone surpassed the Calgary Zone for second highest rate. The Edmonton Zone saw the largest percent increase (303%) between 2016 and 2022.
- Among non-First Nations Peoples, the Zone with the highest rate of emergency department visits related to opioids and other drugs changed from year to year. The Edmonton Zone saw the largest percent increase (51%) between 2016 and 2022 and had the highest rate from 2021 to 2022.

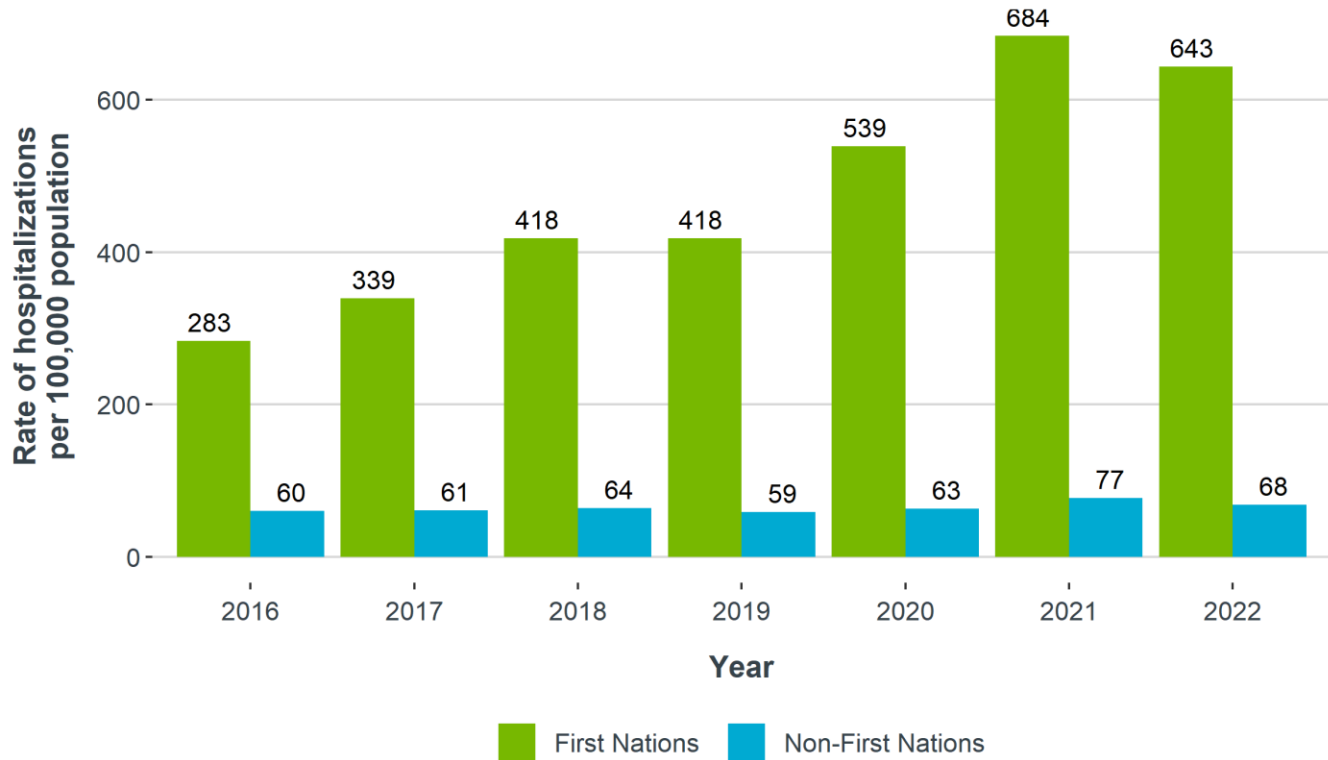
TABLE 6: TOP 10 FACILITIES UTILIZED FOR EMERGENCY DEPARTMENT VISITS RELATED TO OPIOIDS AND OTHER DRUGS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES. JANUARY 1, 2022 TO DECEMBER 31, 2022.

First Nations				Non-First Nations			
Rank	Facility	Count	Percent of all visits*	Rank	Facility	Count	Percent of all visits*
1	Royal Alexandra Hospital	846	24%	1	Royal Alexandra Hospital	1,635	20%
2	University of Alberta Hospital	235	7%	2	Peter Lougheed Centre	771	10%
3	Peter Lougheed Centre	215	6%	3	Sheldon M Chumir Centre	619	8%
4	Chinook Regional Hospital	202	6%	4	University of Alberta Hospital	566	7%
5	NorthEast Community Health Centre	195	5%	5	Foothills Medical Centre	477	6%
6	Sheldon M Chumir Centre	183	5%	6	Rockyview General Hospital	436	5%
7	Rockyview General Hospital	172	5%	7	NorthEast Community Health Centre	356	4%
8	Foothills Medical Centre	171	5%	8	Grey Nuns Community Hospital	283	4%
9	Cardston Health Centre	119	3%	9	South Health Campus	278	3%
10	Misericordia Community Hospital	109	3%	10	Red Deer Regional Hospital Centre	266	3%

*Percentage of the total respective 3,584 (First Nations) and 7,979 (Non-First Nations) ED visits related to harm associated with opioids and other drug use that occurred at the specified facility. Includes ED visits for all behavioural and mood disorders due to opioid use, and poisoning by all substances-all causes (F11 and T40 opioid related ICD-10 codes, any diagnosis field).

Hospitalizations

FIGURE 15: RATE OF HOSPITALIZATIONS RELATED TO OPIOIDS AND OTHER DRUGS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, PER 100,000 PERSON YEARS. JANUARY 1, 2016 TO DECEMBER 31, 2022.



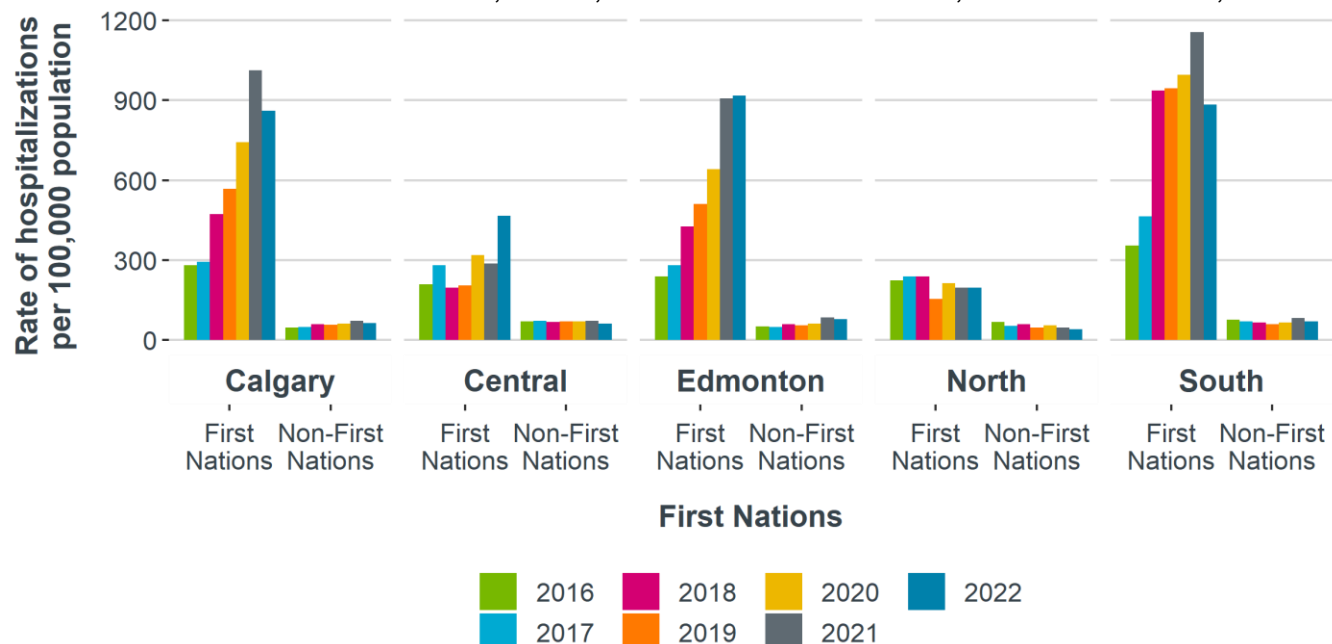
- Among First Nations Peoples, the rate of hospitalizations related to opioids and other drugs increased by 20% and 23% between 2016-2017 and 2017-2018. It remained unchanged in 2019 and increased again by 29% and 27% in 2020 and 2021. In 2022, the rate of hospitalizations related to opioids and other drugs decreased by 6% among First Nations Peoples.
- Among non-First Nations Peoples, the rate of hospitalizations related to opioids and other drugs increased by 2% and 5% between 2016-2017 and 2017-2018. It decreased in 2019 by 8% and increased again by 7% and 22% in 2020 and 2021. In 2022, the rate of hospitalizations related to opioids and other drugs decreased by 12% among non-First Nations Peoples.
- On average, between 2016-2017, the rate of hospitalizations among First Nations Peoples was 5 times the rate in non-First Nations Peoples. This increased to 7 in 2018-2019 and 9 in 2020-2022.

TABLE 7: HOSPITALIZATIONS RELATED TO OPIOIDS AND OTHER DRUGS, AMONG FIRST NATIONS PEOPLES AND NON-FIRST NATIONS PEOPLES, BT SEX, AND MEDIAN AGE. JANUARY 1, 2022 TO DECEMBER 31, 2022.

Sex	First Nations		Non-First Nations	
	Proportion of hospitalizations	Median Age	Proportion of hospitalizations	Median Age
Female	56%	33	39%	38
Male	44%	36	61%	41

- Among First Nations Peoples in 2022, a higher proportion of hospitalizations related to opioids and other drugs were among females.
- Among non-First Nations Peoples in 2022, a higher proportion of hospitalizations related to opioids and other drugs were among males.

FIGURE 16: RATE OF HOSPITALIZATIONS RELATED TO OPIOIDS AND OTHER DRUGS, AMONG FIRST NATIONS PEOPLES AND NON-FRIST NATIONS PEOPLES BY ZONE, PER 100,000 PERSON YEARS. JANUARY 1, 2016 TO DECEMBER 31, 2022.



- Among First Nations Peoples, from 2016 to 2022, the rate of hospitalizations related opioids and other drugs in the Edmonton Zone saw the largest increase, 286%. Among First Nations Peoples, the South Zone had the highest rate of hospitalizations related to opioids and other drugs in 2021 and the Edmonton Zone in 2022.
- Among non-First Nations Peoples, from 2016 to 2022, the rate of hospitalizations related opioids and other drugs in the Edmonton Zone saw the largest increase, 54%. Among non-First Nations Peoples, the Edmonton Zone had the highest rate of hospitalizations related to opioids and other drugs in 2021 and 2022.

TABLE 8: TOP 10 FACILITIES UTILIZED FOR HOSPITALIZATIONS RELATED TO OPIOIDS AND OTHER DRUGS AMONG FIRST NATIONS PEOPLES AND NON-FRIST NATIONS PEOPLES. JANUARY 1, 2022 TO DECEMBER 31, 2022.

First Nations				Non-First Nations			
Rank	Facility	Count	Percent of all visits*	Rank	Facility	Count	Percent of all visits*
1	Royal Alexandra Hospital	347	32%	1	Royal Alexandra Hospital	730	25%
2	Peter Lougheed Centre	120	11%	2	Peter Lougheed Centre	432	15%
3	Foothills Medical Centre	93	9%	3	Foothills Medical Centre	312	11%
4	Chinook Regional Hospital	78	7%	4	University Of Alberta Hospital	227	8%
5	University Of Alberta Hospital	73	7%	5	Rockyview General Hospital	198	7%
6	Rockyview General Hospital	44	4%	6	South Health Campus	136	5%
7	Centennial Centre for Mental Health & Brain Injury	42	4%	7	Red Deer Regional Hospital Centre	123	4%
8	Misericordia Community Hospital	32	3%	8	Centennial Centre for Mental Health & Brain Injury	99	3%
9	Grey Nuns Community Hospital	31	3%	9	Medicine Hat Regional Hospital	88	3%
10	Red Deer Regional Hospital Centre	24	2%	10	Grey Nuns Community Hospital	86	3%

*Percentage of the total respective 1,081 (First Nations) and 2,956 (Non-First Nations) inpatient visits related to harm associated with opioids and other drug use that occurred at the specified facility. Includes hospitalizations for all behavioural and mood disorders due to opioid use, and poisoning by all substances-all causes. (All F11 and T40 opioid related ICD-10 codes, any diagnosis field)

Data notes

Data sources for report

- Emergency department data – National Ambulatory Care Reporting System (NACRS)
- Hospitalization data – Discharge Abstract Database (DAD)
- Alberta Health Care Insurance Plan (AHCIP) Quarterly Population Registry Files
- Alberta Health Postal Code Translation File (PCTF)
- Pharmaceutical Information Network (PIN)
- Office of the Chief Medical Examiner (OCME) MEDIC data

First Nations Assignment

Each record from the various data sources listed above has a PHN assigned either from primary data collection or through a deterministic linkage process (Note: not all records have a PHN depending on the data source). The linked records are further linked to the First Nations Registry to identify First Nations individuals. The First Nations registry would include anyone ever having registered with the Alberta Health Care Insurance Plan as either status First Nation or Inuit and would also include some Alberta residents belonging to out of province bands. Non-Status First Nations and Metis cannot be identified in the AHCIP population registry so would not be included. The registry also includes individuals on accounts where the main account holder is First Nations (even though the other individuals on the account may not have a First Nations band identifier uniquely assigned to them).

Mortality data

The following substances are used to identify opioid poisoning deaths. Fentanyl: fentanyl, 3-methylfentanyl, acetylfentanyl, furanylfentanyl, norfentanyl, butyrylfentanyl, despropionylfentanyl, acrylfentanyl, methoxyacetylfentanyl, cyclopropylfentanyl, fluoroisobutyrylfentanyl (FIBF), or carfentanil Non-fentanyl opioids: non-specified opiate, heroin, oxycodone, hydromorphone, morphine, codeine, tramadol, illicit synthetic opioids (e.g., U-47700), buprenorphine, or methadone Fentanyl-related deaths are any deaths in which fentanyl or a fentanyl analogue was identified as a cause of death (these may also have involved non-fentanyl opioids). Non-fentanyl related deaths are deaths in which an opioid other than fentanyl or a fentanyl analogue was identified as a cause of death.

Emergency visits

Emergency Department (ED) visits are defined by the Alberta MIS chart of accounts. Specifically, the three Functional Centre Accounts used to define any ACCS (Alberta Care Classification System) visits into an emergency visit could be:

71310 – Ambulatory care services described as emergency

71513 – Community Urgent Care Centre (UCC). As of 2014, the UCCs in Alberta are listed below:

Airdrie Regional Health Centre, Cochrane Community Health Centre, North East Edmonton Health Centre, Health First Strathcona, Okotoks Health and Wellness Centre, Sheldon M Chumir Centre, South Calgary Health Centre

71514 – Community Advanced Ambulatory Care Centre (AACC). As of 2014, the only AACC in Alberta is La Crete Health Centre

Hospitalizations

Hospitalization data - Discharge Abstract Database (DAD) (records from 1993 to present)

Community pharmacy drug dispensing

The Pharmaceutical Information Network (PIN) Database is used to estimate dispensation events for the province only from community pharmacies. Variability can be dependent on the way the drug is prescribed.

PIN records can change due to data reconciliations, which may affect results. Results are more stable with older data. Opioid dependency drugs are defined by the ATC code (Anatomical Therapeutic Chemical), as given in the table below.

ACT Code	Drug name	ACT Grouping
N07BC51	Buprenorphine + Naloxone (includes the brand name Suboxone™)	Drugs used in opioid dependence
N07BC02	Methadone	Drugs used in opioid dependence
N07BB04	Naltrexone	Drugs used in alcohol dependence
N07BC01	Buprenorphine (injectable)	Drugs used in opioid dependence
N02AA03	Hydromorphone	Hydromorphone

The following DINs were excluded since they are indicated for pain relief by Health Canada. 02247701, 02247700, 02241377, 02247699, 02247698, 02247694, 02242964, 02474921. The following DINs were *included* as Hydromorphone because they were identified as being related to Hydromorphone iOAT: 02491680, 02145928, 02145936, 02146126, 02244797, 02460610, 02469413, 02468468. Opioid dispensing data is obtained from the Pharmaceutical Information Network (PIN). PIN does not have information on the specific condition the opioid was prescribed for. Opioid types are defined by ATC Code, as given in the table below:

ATC Code	Drug Name	ATC Name
N07BC51, N02AE01, N04BC51	BUPRENORPHINE	BUPRENORPHINE, Other
N02AF01	BUTORPHANOL	BUTORPHANOL
M03BA53, M03BB53, N02AA59, N02AA79, N02AJ06, N02AJ07, N02BA51, N02BE51, R05DA04, R05DA202, R05FA023	CODEINE	CODEINE, CODEINE AND ACETYLSALICYLIC ACID, CODEINE AND PARACETAMOL, OPIUM DERIVATIVES AND EXPECTORANTS, COMBINATIONS
N01AH01, N01AH03, N01AH06, N02AB03, N01AH02, N01AH51	FENTANYL	FENTANYL
R05DA03, R05DA201, R05FA022	HYDROCODONE	HYDROCODONE, OPIUM DERIVATIVES AND EXPECTORANTS
N02AA03	HYDROMORPHONE	HYDROMORPHONE
N07BC02	METHADONE	METHADONE
N02AA01	MORPHINE	MORPHINE
N02AF02	NALBUPHINE	NALBUPHINE
N02AA02	OPIUM	OPIUM
N02AA05, N02AA55, N02AJ17, N02AJ18, N02BA51, N02BE51	OXYCODONE	OXYCODONE, OXYCODONE AND ACETYLSALICYLIC ACID, OXYCODONE AND NALOXONE, OXYCODONE AND PARACETAMOL
N02AD01	PENTAZOCINE	PENTAZOCINE
N02AB02	PETHIDINE	Other
N02AX06	TAPENTADOL	Other
N02AX02, N02AJ13, N02AX52	TRAMADOL	TRAMADOL, TRAMADOL AND PARACETAMOL

The following DINs are excluded from the opioid dispensing data because they have been identified as drugs used to treat opioid dependence: 02244290, 02247374, 02394596, 02394618, 02295695, 02295709, 02408090, 02408104, 02424851, 02424878, 02453908, 02453916, 02468085, 02468093, 02481979. The following DINs were *excluded* because they were identified as being related to Hydromorphone iOAT: 02491680, 02145928, 02145936, 02146126, 02244797, 02460610, 02469413, 02468468. The following DINs were excluded because they do not contain opioids: 02239141, 02254468

Note: There are many DIN numbers associated with each ATC code. Not all the DIN numbers for a given ATC code were included when classifying the ATC codes to a Drug name in the table above. Some ATC codes were classified in multiple categories (e.g. N02BA51 is classified as Codeine and Oxycodone). In this case, the main ingredients of a specific drug were used to further classify a drug in an ATC category. Only drugs (represented by a corresponding DIN numbers) where the main ingredient was identified in the table above were included in the respective categories

² The ATC name for R05DA20 is "combinations" which include drugs that contain codeine, hydrocodone, and normethadone hydrochloride.

Classifications of codeine and hydrocodone were based on both drug identification number and ATC code.

³ The ATC name for R05FA02 is "opium derivatives and expectorants" which include drugs that contain codeine and hydrocodone. Classifications of these drugs were based on both drug identification number and ATC code.