

Alberta Health

Alberta Opioid Response Surveillance Report

2018 Q4

March, 2019

Highlights

- The most up-to-date data shows that 746 people died from an apparent accidental opioid poisoning in 2018.
- On average, 2 individuals die every day in Alberta as a result of an apparent accidental opioid poisoning.
- In the most recent quarter, 159 people died from an apparent accidental fentanyl-related poisoning, compared to 180 people in the previous quarter.
- There continues to be a high number of fentanyl-related deaths in the province, however, the number in the most recent quarter is comparatively less than the previous.

Key points

Apparent accidental poisoning deaths related to fentanyl

- In the fourth quarter of 2018, there were **159** apparent accidental poisoning deaths related to fentanyl in Alberta. By comparison, there were **180** of these deaths in the third quarter of 2018.
- From January 1, 2018 to December 31, 2018, **88 per cent** of deaths occurred in larger urban municipalities (Edmonton, Calgary, Red Deer, Grande Prairie, Fort McMurray, Lethbridge, Medicine Hat).
- In the fourth quarter of 2018, the Calgary Zone (**71**) and Edmonton Zone (**49**) had the highest numbers of fentanyl deaths. The Calgary Zone continued to have the highest rate per 100,000 person years at **18.8** (a decrease from last reporting period), compared to the provincial average of **15.5** per 100,000 person years.

Apparent accidental poisoning deaths related to non-fentanyl opioids

- In the third quarter of 2018, there were **25** apparent accidental poisoning deaths related to an opioid other than fentanyl in Alberta. By comparison, there were **26** of these deaths in the second quarter of 2018. In 2017, **32** apparent accidental poisoning deaths related to an opioid other than fentanyl occurred in the third quarter.
- From January 1, 2018 to September 30, 2018, **63 per cent** of non-fentanyl opioid-related deaths occurred in larger urban municipalities (Edmonton, Calgary, Red Deer, Grande Prairie, Fort McMurray, Lethbridge, Medicine Hat).
- In the third quarter of 2018, the Calgary Zone (**11**) and South Zone (**8**) had the highest number of these deaths. The South Zone had the highest rate at **5.6** per 100,000 person years, compared to a provincial average of **2.2** per 100,000 person years.

Confirmed drug poisoning deaths

- Among all confirmed drug and alcohol poisoning deaths (accidental and suicide) in 2017 and 2018, opioids (fentanyl or non-fentanyl) were directly involved in **80 per cent** of deaths. **20 per cent** of all confirmed drug and alcohol poisoning deaths (accidental and suicide) did not involve any opioid.
- In addition to opioids, multiple substances often contribute to an opioid poisoning death. This may be a result of an individual using multiple substances including opioids, or through the contamination of non-opioid drugs with opioids such as fentanyl.
- In 2018, **78 per cent** of accidental fentanyl related deaths listed at least one other substance as contributing to death, the most frequent being methamphetamine (**44 per cent**) and cocaine (**32 per cent**).

Emergency department visits

- In the third quarter of 2018, there were **2,930** emergency and urgent care visits related to harm associated with opioids and other drug use. In the previous quarter, there were **2,974** emergency and urgent care visits related to opioids and other substances of misuse.
- In the third quarter of 2018, emergency and urgent care visits related to harm associated with opioids and other drug use occurred among **2,460** unique individuals, of whom **13 per cent** had more than one visit.

Supervised consumption services

- In the most recent quarter (October to December, 2018), there were **86,572** visits to supervised consumption services sites in Edmonton, Calgary, and Lethbridge. In the same time period, there were on a monthly average, **1,748** unique clients who attended these sites, and **983** overdoses were attended to at these sites.

Disclaimer

This surveillance report presents emergency department visits, hospitalizations, prescription drug dispensing from community pharmacies, emergency medical services, naloxone kit dispensing, supervised consumption services visits, 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 "accidental deaths". Suicide/intentional deaths are only reported for confirmed deaths. Homicide deaths are not included in this report.

Throughout this report: Q1 = January to March Q2 = April to June Q3 = July to September Q4 = October to December

Local Geographic Areas (LGAs) refers to 132 geographic areas created by Alberta Health and Alberta Health Services to support local health service planning, monitoring, public health surveillance, and deep dive analytics.

For more details on data sources and methods, please see the **Data notes** section at the end of this report.

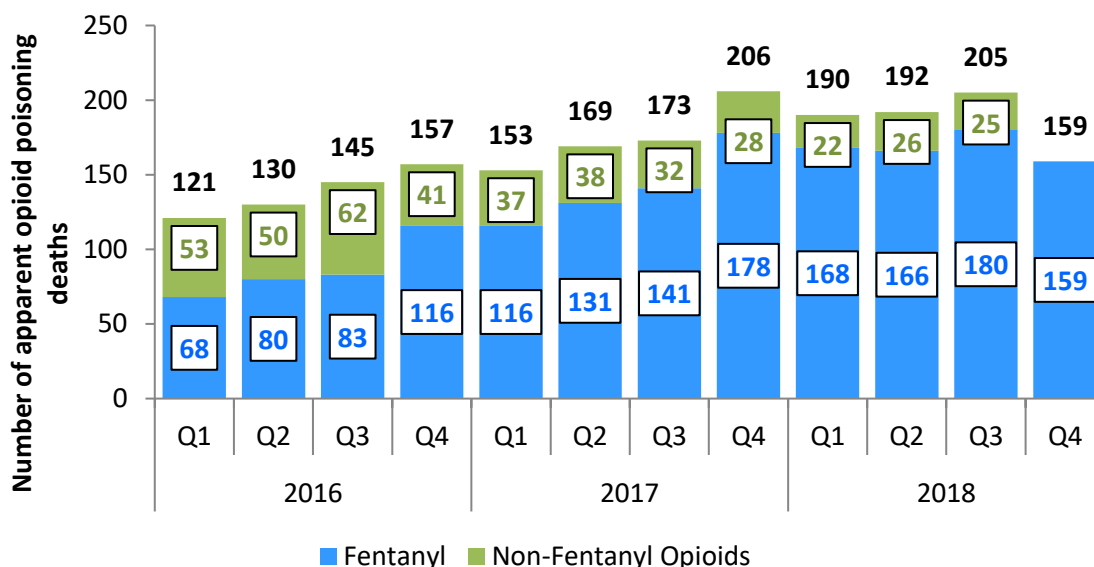
Table of contents

Key points.....	2
Disclaimer.....	3
Mortality data: Apparent accidental opioid poisoning deaths.....	5
Fentanyl and non-fentanyl related deaths.....	5
Fentanyl related deaths.....	6
Non-fentanyl opioid related deaths.....	9
Municipalities of Edmonton and Calgary (opioid related deaths)	11
Demographics and recent medical history of apparent accidental opioid poisoning decedents.....	13
Confirmed drug and alcohol poisoning deaths (accidental and suicide).....	15
Emergency department visits	17
Hospitalizations	18
Methadone & buprenorphine/naloxone dispensing from community pharmacies.....	19
Emergency Medical Services	20
Prescription opioid dispensing	22
Community based naloxone kits.....	23
Supervised consumption services	25
Appendix 1: Opioid related poisoning deaths in major Albertan cities	27
Apparent accidental opioid poisoning deaths, by Municipality (based on place of overdose). January 1, 2018 to December 31, 2018.	27
Data notes.....	34

Mortality data: Apparent accidental opioid poisoning deaths

Fentanyl and non-fentanyl related deaths

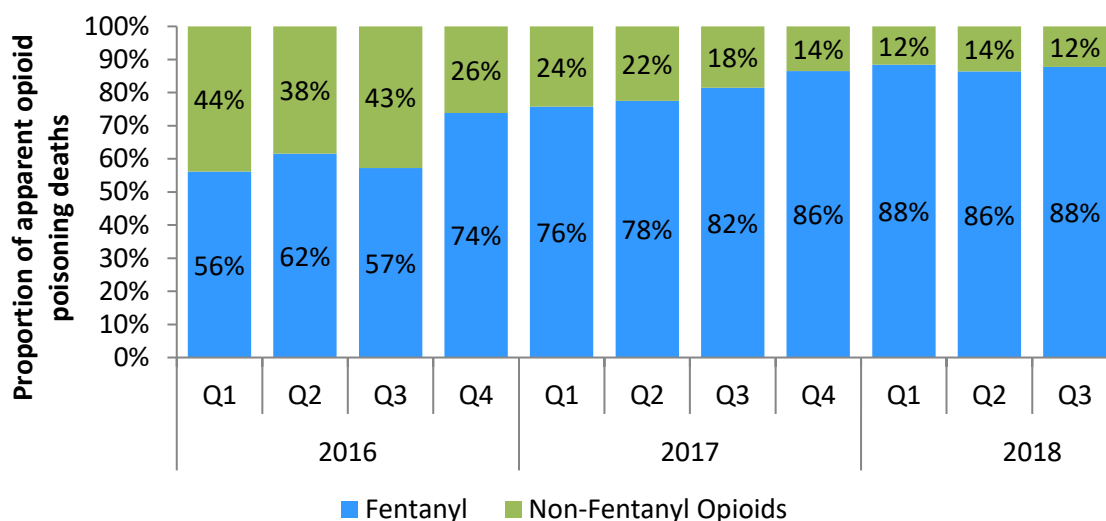
Figure 1: Number of apparent accidental opioid poisoning deaths related to any opioid, by quarter. January 1, 2016 to December 31, 2018.



*Only fentanyl related opioid deaths are available for most recent quarter

- Since January 1, 2016 **1,842** individuals have died from an accidental opioid poisoning in Alberta. Figure 2: Proportion of fentanyl vs. non-fentanyl related apparent accidental opioid poisoning deaths, by quarter. January 1, 2016 to September 30, 2018.

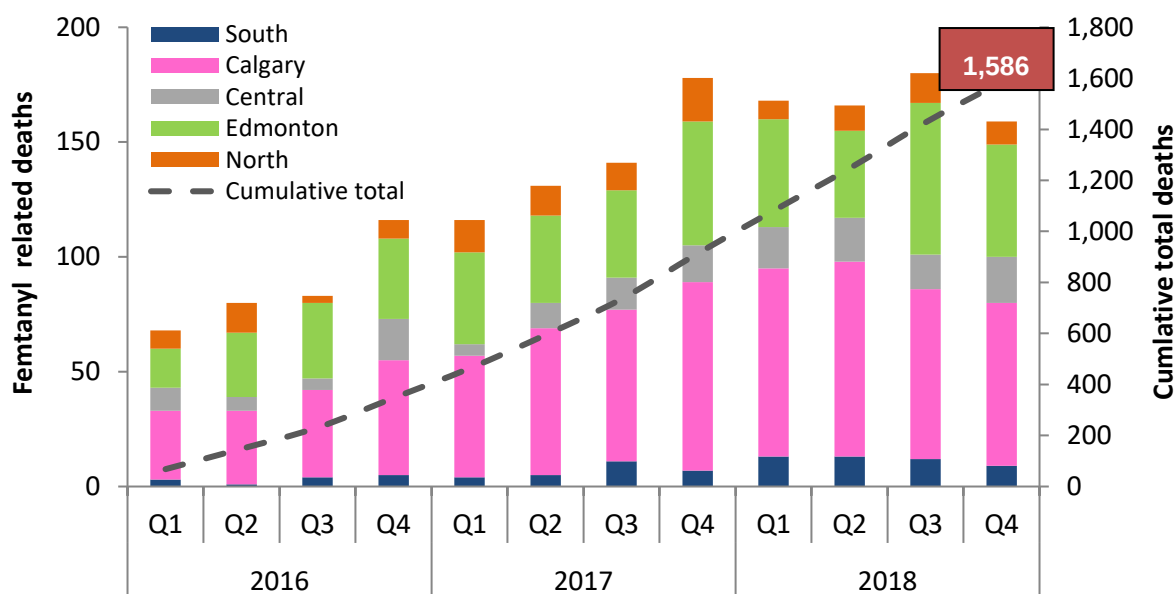
Figure 2: Proportion of fentanyl vs. non-fentanyl related apparent accidental opioid poisoning deaths, by quarter. January 1, 2016 to June 30, 2018.



- Almost all opioid poisoning deaths are now related to fentanyl. In the last quarter of 2018, 88 per cent of all opioid poisoning deaths were related to fentanyl.

Fentanyl related deaths

Figure 3: Number of apparent accidental fentanyl poisoning deaths, by Zone (based on place of death) and quarter. January 1, 2016 to December 31, 2018.



- Since January 1, 2016, a total of 1,586 individuals in Alberta died from an apparent accidental drug poisoning death related to fentanyl (347 in 2016, 566 in 2017, and 673 in 2018).
- In 2018, on average, 168 individuals in Alberta died from an apparent accidental drug poisoning death related to fentanyl per quarter, while in 2017, on average, 142 individuals died from an apparent accidental drug poisoning death related to fentanyl per quarter.

Table 1: Number of apparent accidental fentanyl poisoning deaths, by quarter.

South Zone	3	1	4	5	4	5	11	7	13	13	12	9	88
Calgary Zone	30	32	38	50	53	64	66	82	82	85	74	71	727
Central Zone	10	6	5	18	5	11	14	16	18	19	15	20	157
Edmonton Zone	17	28	33	35	40	38	38	54	47	38	66	49	483
North Zone	8	13	3	8	14	13	12	19	8	11	13	10	132
Alberta	68	80	83	116	116	131	141	178	168	166	180	159	1,586
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	

Table 2: Rate (per 100,000 person years) and number of apparent accidental drug poisoning deaths related to fentanyl, by Zone (based on place of death). January 1, 2016 to December 31, 2018.

	2016		2017		2018 YTD*	
	Count	Rate	Count	Rate	Count	Rate
South Zone	13	4.3	27	8.8	47	15.3
Calgary Zone	150	9.3	265	16.2	312	18.8
Central Zone	39	8.1	46	9.5	72	14.7
Edmonton Zone	113	8.4	170	12.4	200	14.4
North Zone	32	6.5	58	11.8	42	8.5
Alberta	347	8.2	566	13.2	673	15.5

- The Calgary and Edmonton Zones continue to have the highest number of apparent accidental poisoning deaths related to fentanyl. In 2018, the Calgary Zone continued to have the highest rate per 100,000 person years at 18.8, compared to a provincial average of 15.5 per 100,000 person years. The South Zone had the second highest rate of 15.3 per 100,000 person years.

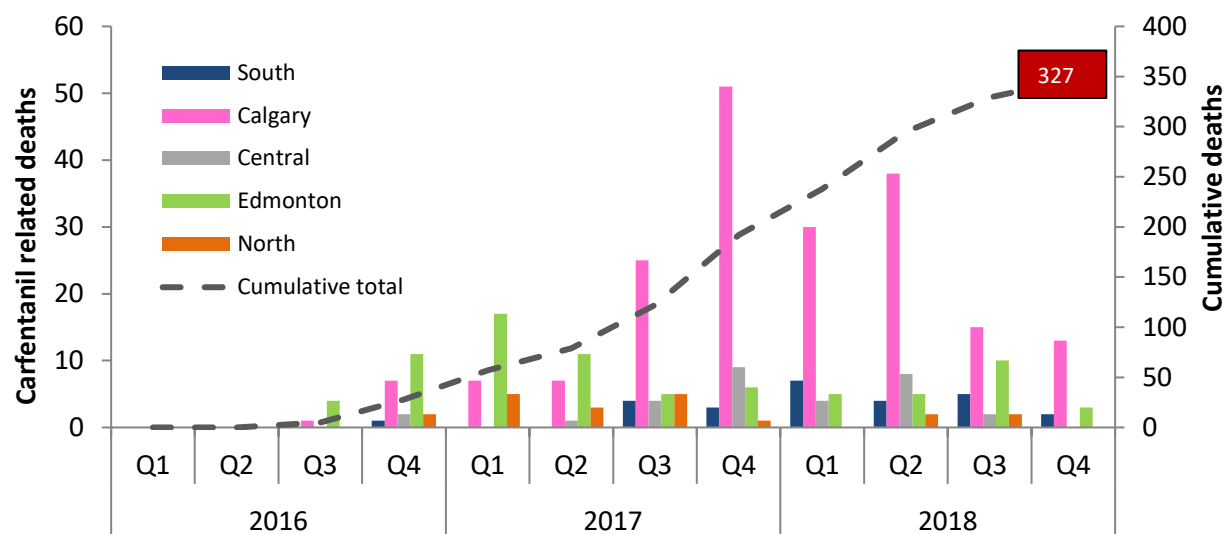
Table 3: Rate (per 100,000 person years) and number of apparent accidental drug poisoning deaths related to fentanyl, by municipality (based on place of death). January 1, 2016 to December 31, 2018.

	2016		2017		2018	
	Count	Rate	Count	Rate	Count	Rate
Lethbridge	8	8.3	15	15.3	25	25.1
Medicine Hat	2	2.9	7	10.2	12	17.5
Calgary	144	10.9	240	18.0	292	21.9
Red Deer	23	21.1	23	21.4	47	43.8
Edmonton	99	10.2	136	13.7	181	18.3
Fort McMurray	9	11.1	14	17.6	11	13.9
Grande Prairie	10	13.5	27	36.4	23	31.0
Total	295	10.8	463	16.8	591	20.9

- The municipalities of Calgary and Edmonton continue to have the highest number of apparent accidental poisoning deaths related to fentanyl. In 2018, the Municipality of Red Deer had the highest rate of apparent drug poisoning deaths related to fentanyl per 100,000 person years, followed by the Municipality of Grande Prairie and Lethbridge.

Figure 4: Number of apparent accidental drug poisoning deaths related to carfentanil, by Zone (based on place of death) and quarter. January 1, 2016 to December 31, 2018.

Subcategory of fentanyl deaths from Figure 3



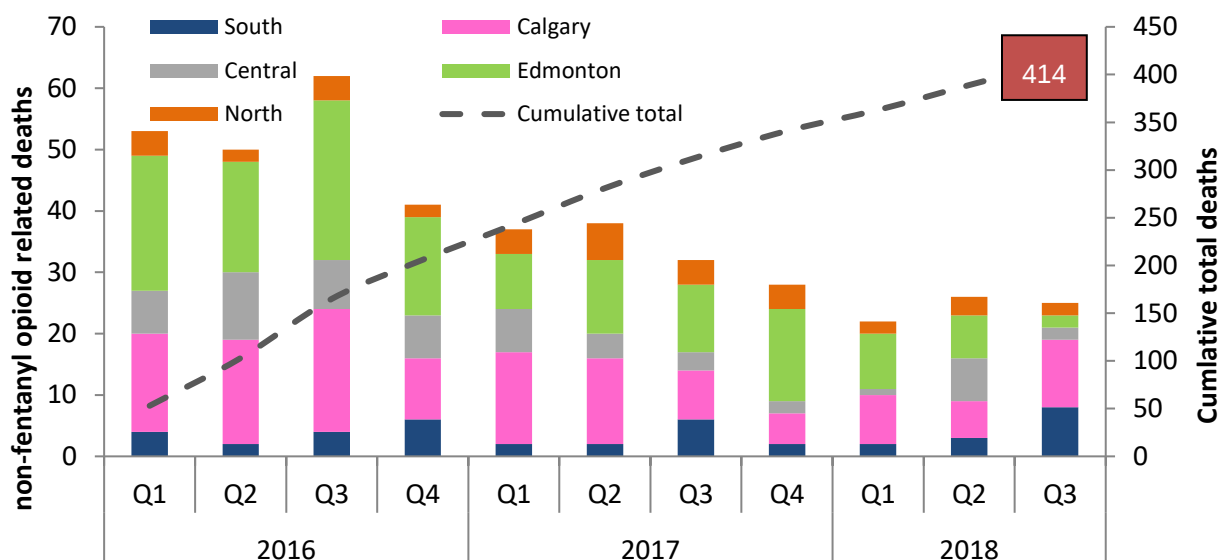
- The first Alberta carfentanil cases were detected in the third quarter of 2016, with 28 cases occurring in all of 2016. In 2017, 164 individuals in Alberta died from a drug poisoning related to carfentanil, and 155 in 2018.
- The number of carfentanil cases peaked in the last quarter of 2017 (70 deaths), and since then, the numbers have decreased, with 18 occurring in the last quarter of 2018.
- 56 per cent of all carfentanil deaths have occurred in the Calgary Zone. In the fourth quarter of 2018, 72 per cent of carfentanil deaths occurred in the Calgary Zone, an increase from the previous quarter (44 per cent). As of December 31, 2018, the South Zone had the highest rate of carfentanil deaths per 100,000, as did the City of Lethbridge.

Table 4: Number of apparent accidental carfentanil poisoning deaths, by quarter (*Subcategory of fentanyl deaths from Table 1*)

South Zone	0	0	0	1	0	0	4	3	7	4	5	2	27
Calgary Zone	0	0	1	7	7	7	25	51	30	38	15	13	194
Central Zone	0	0	0	2	0	1	4	9	4	8	2	0	30
Edmonton Zone	0	0	4	11	17	11	5	6	5	5	10	3	77
North Zone	0	0	0	2	5	3	5	1	0	2	2	0	20
Alberta	0	0	5	23	29	22	43	70	46	57	34	18	347
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	

Non-fentanyl opioid related deaths

Figure 5: Number of apparent accidental drug poisoning deaths related to an opioid other than fentanyl, by Zone (based on place of death) and quarter. January 1, 2016 to September 30, 2018.



- Since January 1, 2016, a total of 414 individuals in Alberta have died from apparent accidental drug poisoning related to an opioid other than fentanyl (206 in 2016, 135 in 2017, and 73 in 2018 YTD).

Table 5: Number of apparent accidental drug poisoning deaths related to an opioid other than fentanyl, by quarter.

South Zone	4	2	4	6	2	2	6	2	2	3	8	41
Calgary Zone	16	17	20	10	15	14	8	5	8	6	11	130
Central Zone	7	11	8	7	7	4	3	2	1	7	2	59
Edmonton Zone	22	18	26	16	9	12	11	15	9	7	2	147
North Zone	4	2	4	2	4	6	4	4	2	3	2	37
Alberta	53	50	62	41	37	38	32	28	22	26	25	414
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	

*YTD = January 1, 2018 to September 30, 2018

Table 6: Rate (per 100,000 person years) and number of apparent accidental drug poisoning deaths related to an opioid other than fentanyl, by Zone (based on place of death). January 1, 2016 to September 30, 2018.

	2016		2017		2018 YTD*	
	Count	Rate	Count	Rate	Count	Rate
South Zone	16	5.3	12	3.9	13	5.6
Calgary Zone	63	3.9	42	2.6	25	2.0
Central Zone	33	6.9	16	3.3	10	2.7
Edmonton Zone	82	6.1	47	3.4	18	1.7
North Zone	12	2.4	18	3.7	7	1.9
Alberta	206	4.9	135	3.2	73	2.2

- The Calgary and Edmonton Zones continue to have the highest number of these deaths. In 2018 YTD, the South Zone had the highest rate per 100,000 person years at 5.6, compared to the provincial average of 2.2 per 100,000 person years.

Table 7: Rate (per 100,000 person years) and number of apparent accidental drug poisoning deaths related to an opioid other than fentanyl, by municipality (based on place of death). January 1, 2016 to September 30, 2018.

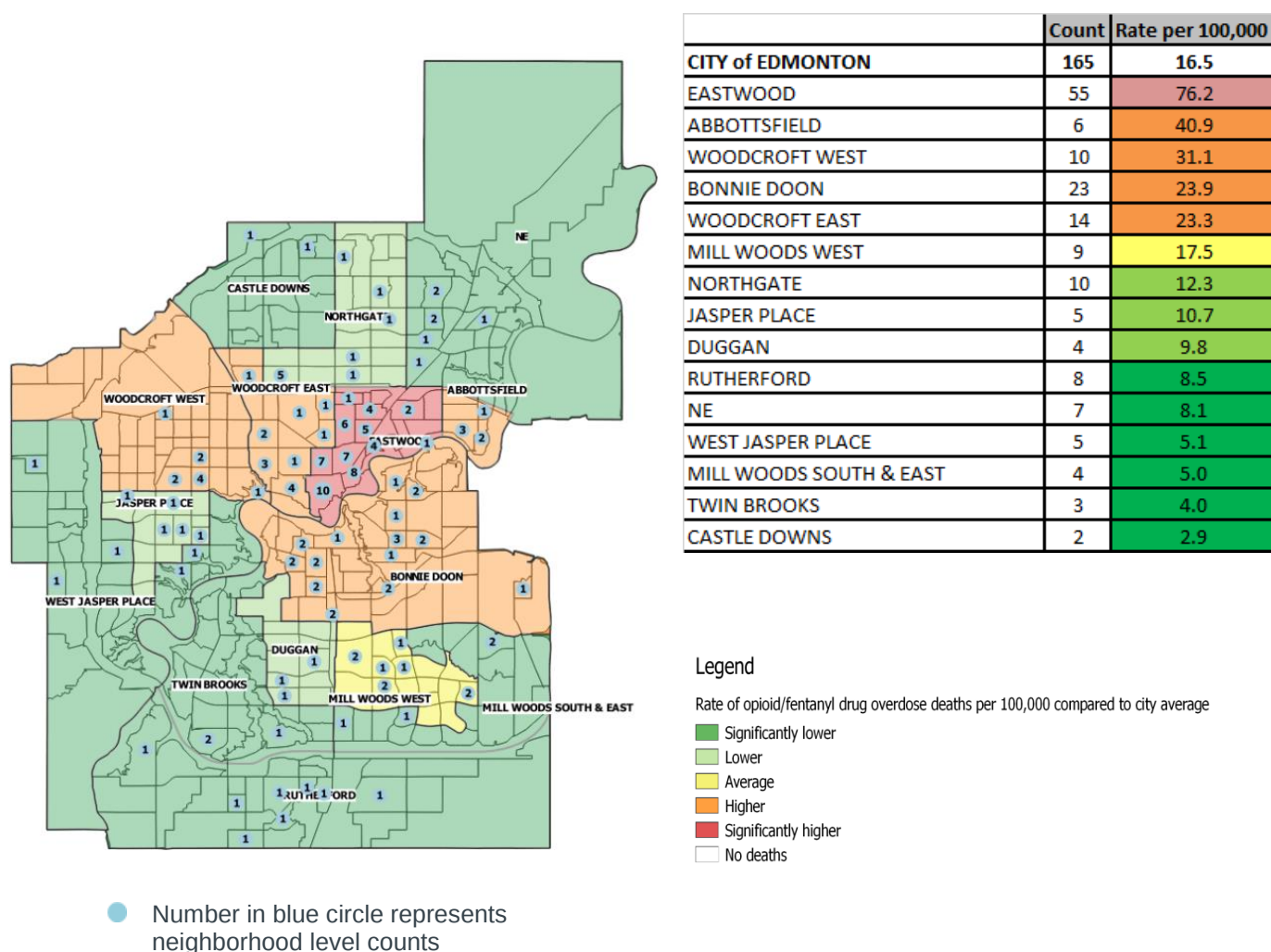
	2016		2017		2018 YTD*	
	Count	Rate	Count	Rate	Count	Rate
Lethbridge	4	4.1	3	3.1	4	5.4
Medicine Hat	4	5.9	3	4.4	3	5.8
Calgary	47	3.6	33	2.5	20	2.0
Red Deer	12	11.0	7	6.5	4	5.0
Edmonton	66	6.8	41	4.1	14	1.9
Fort McMurray	1	1.2	2	2.5	0	0.0
Grande Prairie	1	1.4	4	5.4	1	1.8
Total	135	5.0	93	3.4	46	2.2

- The municipalities of Calgary and Edmonton continue to have the highest number of these deaths. In the 2018 YTD, the Municipality of Medicine Hat had the highest rate of apparent accidental drug poisoning deaths related to an opioid other than fentanyl per 100,000 person years, followed by Lethbridge and Red Deer.

*YTD = January 1, 2018 to September 30, 2018

Municipalities of Edmonton and Calgary (opioid related deaths)

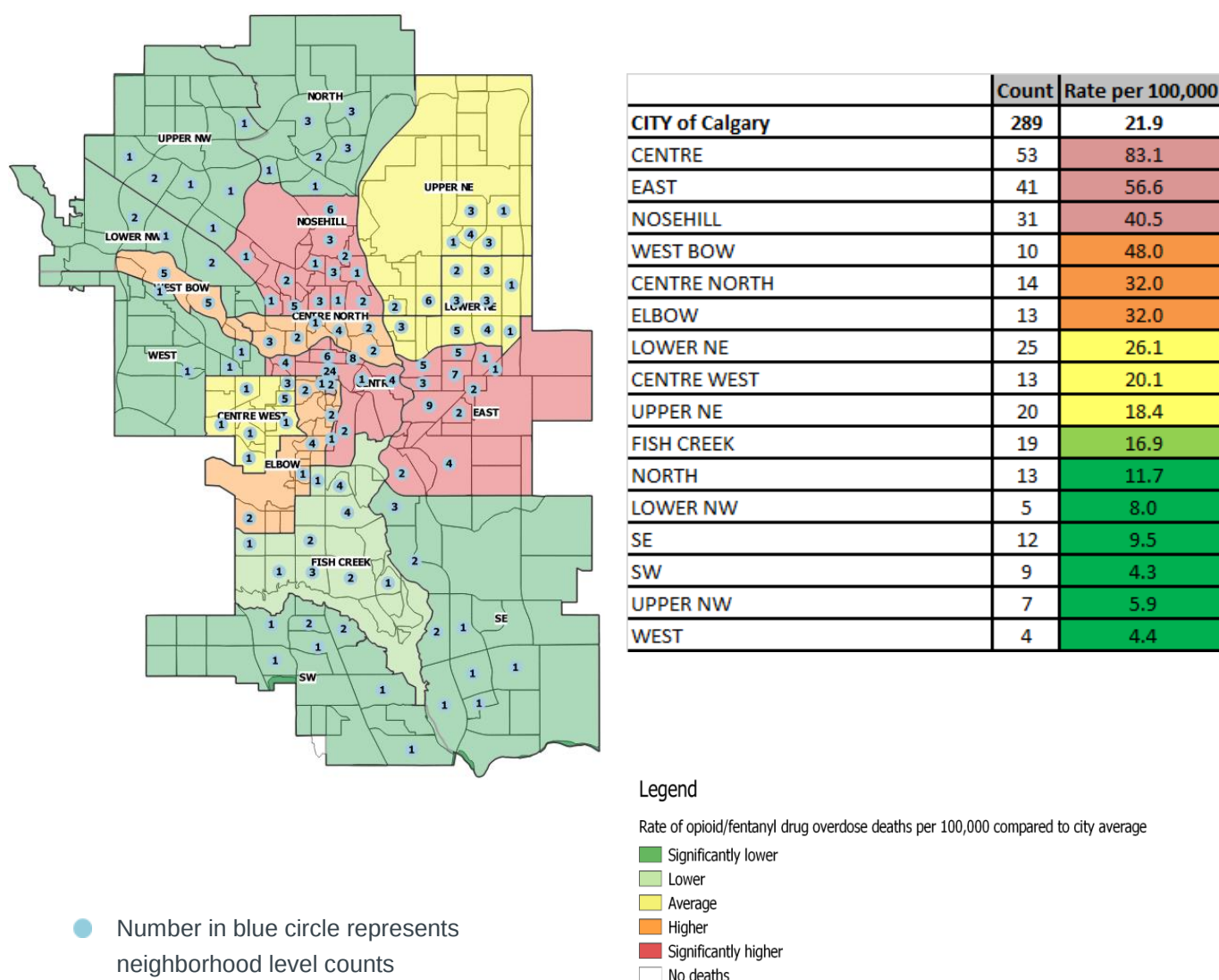
Figure 6: Rate (per 100,000 person years) and counts of apparent accidental opioid poisoning deaths, in the Municipality of Edmonton, based on place of overdose, by LGA. January 1, 2018 to December 31, 2018.



- Within the Municipality of Edmonton, the LGA with a **significantly higher** rate of apparent accidental opioid poisoning deaths **compared to the municipality average** was Eastwood. However, 67 per cent of the total deaths occurred in LGAs outside of this area.
- The place where the overdose occurred was the same as the individual's home address for 51 per cent of fentanyl-related deaths in Edmonton.
- The neighborhoods with more than five deaths were Downtown (10), Boyle Street (8), Central McDougall (7), McCauley (7), and Alberta Avenue (6).

Note: Place of death was used as the place of the overdose, except in instances where the place of death occurred in a hospital and there was no record of where the overdose occurred. In Edmonton, a hospital was the place of death in 11 per cent of deaths.

Figure 7: Rate (per 100,000 person years) and counts of apparent accidental opioid poisoning deaths, in the Municipality of Calgary, based on place of overdose, by LGA. January 1, 2018 to December 31, 2018.

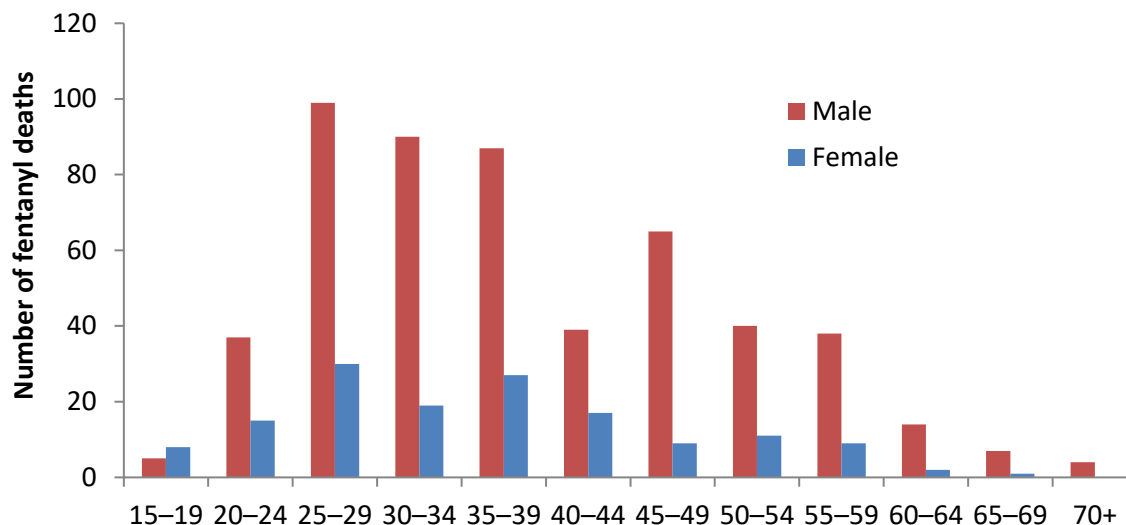


- Within the Municipality of Calgary, the LGAs with **significantly higher** rates of apparent accidental opioid poisoning deaths **compared to the municipality average** were Nosehill, Centre, and East. However, 57 per cent of the total deaths occurred in LGAs outside of these areas.
- The place where the overdose occurred was the same as the individual's home address for 60 per cent of fentanyl-related deaths in Calgary.
- The neighborhoods with more than five deaths were Beltline (24), Dover (9), Downtown East Village (8), Forest Lawn (7), Downtown core (6), Sunridge (6), and Huntington Hills (6).

Note: Place of death was used as the place of the overdose, except in instances where the place of death occurred in a hospital and there was no record of where the overdose occurred. In Calgary, a hospital was the place of death in 14 per cent of deaths.

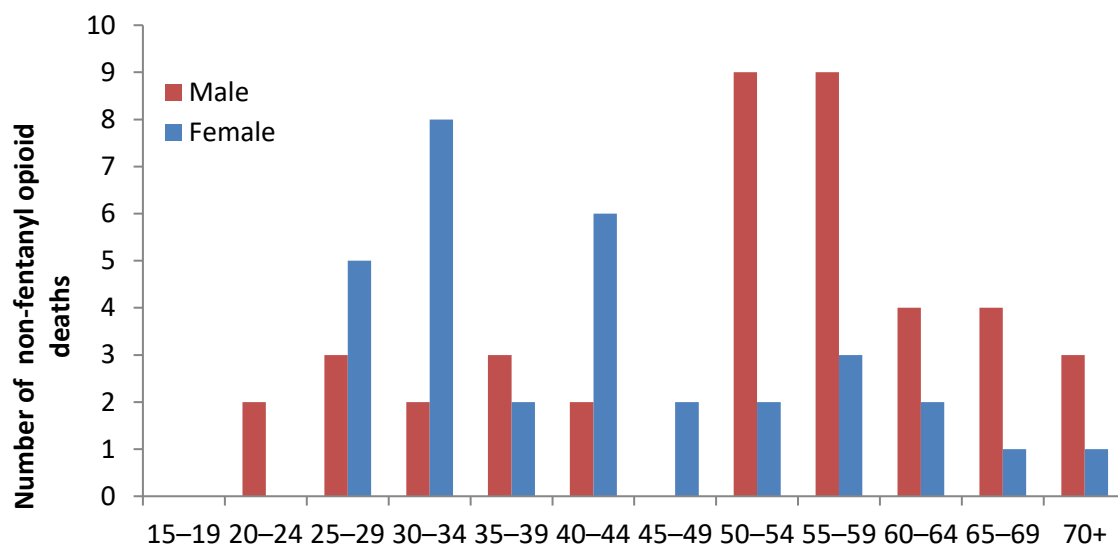
Demographics and recent medical history of apparent accidental opioid poisoning decedents

Figure 8: Apparent accidental poisoning deaths related to fentanyl, by sex and age. January 1, 2018 to December 31, 2018.



- 78 per cent of apparent accidental drug poisoning deaths related to fentanyl were among males. Among males and females, the highest number of deaths occurred among individuals spanning the ages of 25 to 29 years.

Figure 9: Apparent accidental poisoning deaths related to an opioid other than fentanyl, by sex and age, January 1, 2018 to September 30, 2018.



- 56 per cent of apparent accidental poisoning deaths related to an opioid other than fentanyl were among males. Among males, the highest number of deaths occurred among individuals spanning the ages of 50 to 59 years, among females, 30 to 34.

Figure 10: Proportion of apparent accidental poisoning deaths related to fentanyl, by medical history within the 30 days before the date of death. January 1, 2018 to September 30, 2018.

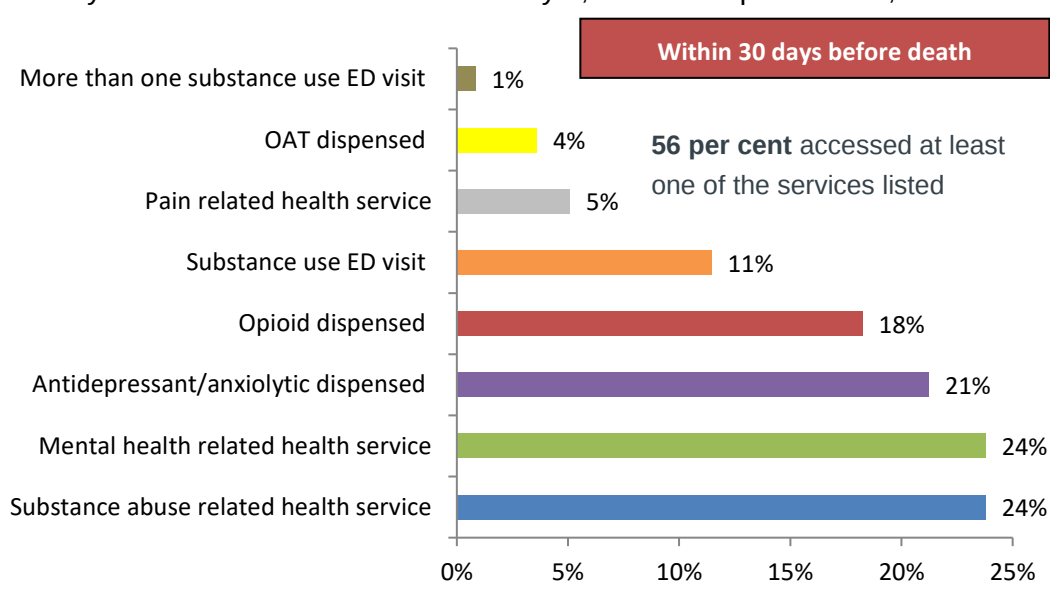
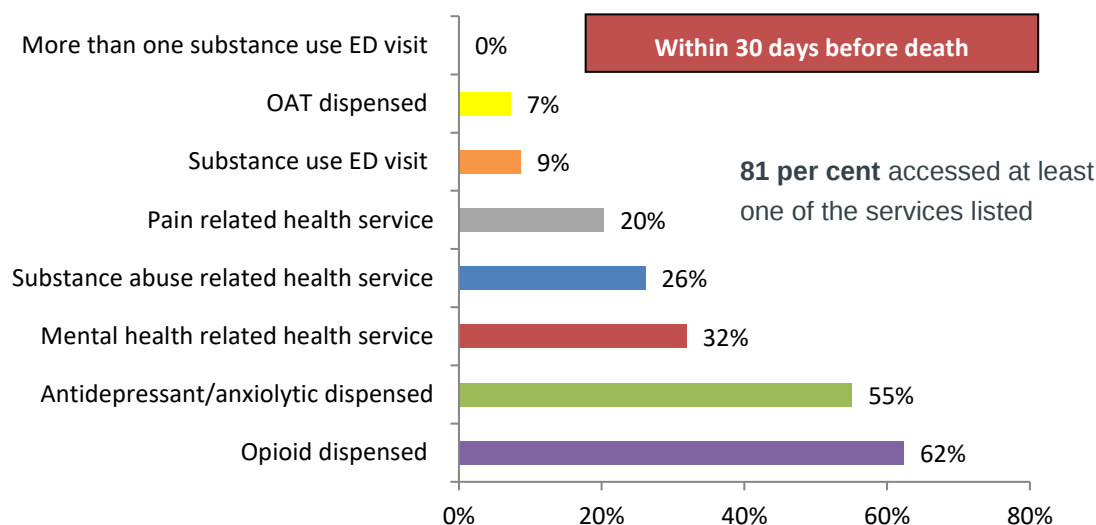


Figure 11: Proportion of apparent accidental poisoning deaths related to an opioid other than fentanyl, by medical history within the 30 days before the date of death, January 1, 2018 to September 30, 2018.



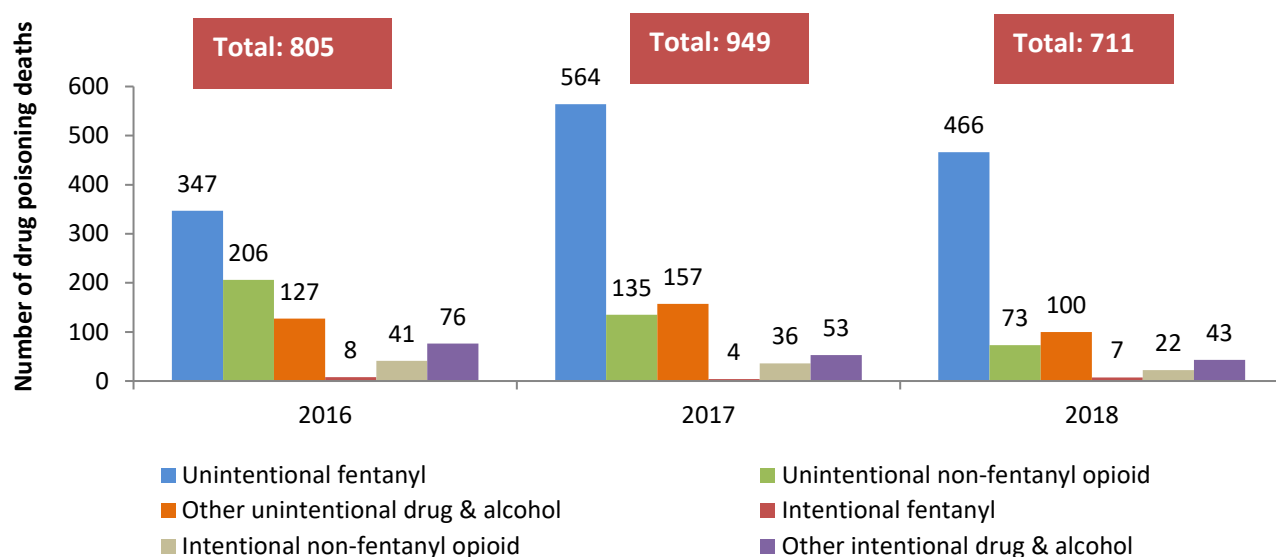
- Among apparent accidental poisoning deaths related to fentanyl, the most frequent health care utilization within 30 days before the individual's date of death was having mental health or substance use related visit.
- Among apparent accidental poisoning deaths poisoning related to an opioid other than fentanyl, having an opioid dispensed from a community pharmacy was the most frequent health care utilization in the 30 days prior to death.

Note: 92% of individuals had their personal health number (PHN) available, and were included in this analysis. The above includes the number of individuals who sought one of the services at least once. Individuals can be counted in more than one category. Health service means a physician, inpatient, or emergency department visit. Dispensed means, a dispensing event from a community pharmacy.

Confirmed drug and alcohol poisoning deaths (accidental and suicide)

Figure 12: Number of confirmed drug and alcohol poisoning deaths in Alberta, by drug causing death, manner of death, and year. 2016 to 2018.

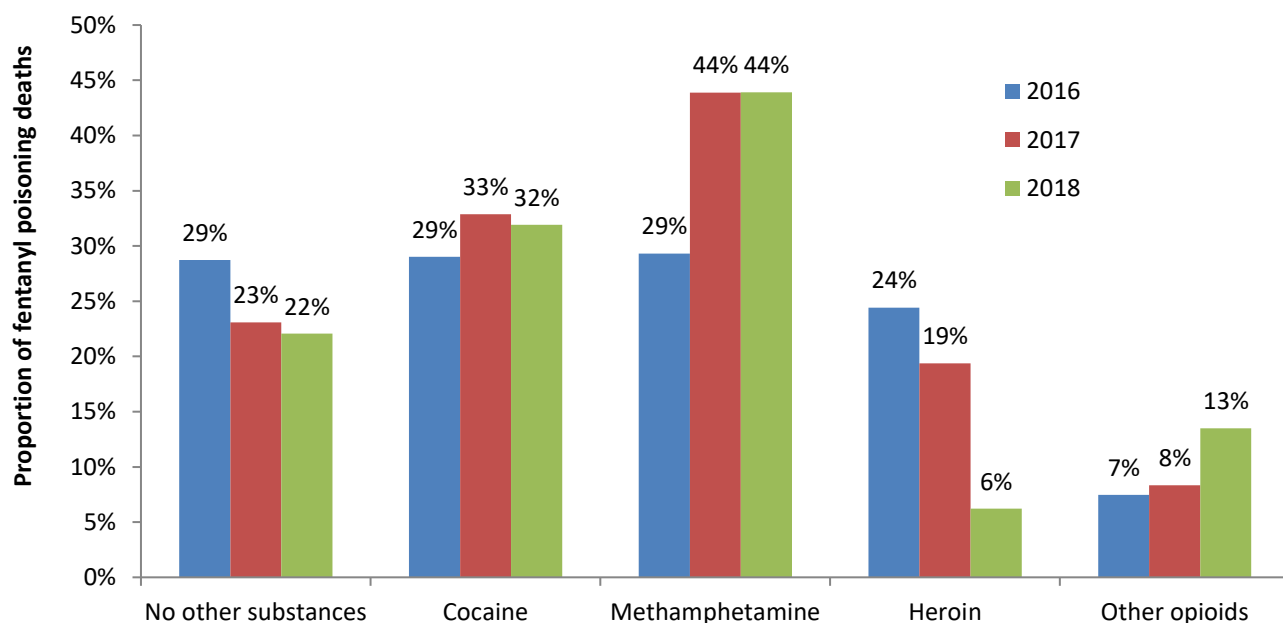
Some drug poisoning deaths in 2017, and many drug poisoning deaths in 2018, are currently under review by the Office of the Chief Medical Examiner and have not been confirmed. Therefore, upon completion of all cases, the final number of total drug poisoning deaths in 2017 and 2018 will be higher than the current number.



- From 2016 to 2018, the proportion of all drug poisoning deaths that were unintentional (accidental) increased from 84 per cent to 90 per cent, while the proportion of all drug poisoning deaths that were intentional (suicide) decreased from 16 per cent to 10 per cent.
- From 2016 to 2018, the proportion of unintentional (accidental) drug poisoning deaths involving any opioid (non-fentanyl or fentanyl) increased from 81 per cent to 84 per cent, while the proportion of unintentional (accidental) drug poisoning deaths not involving any opioid decreased from 19 per cent to 16 per cent.
- From 2016 to 2018, the proportion of intentional (suicide) drug poisoning deaths involving any opioid (non-fentanyl or fentanyl) increased from 39 per cent to 40 per cent, while the proportion of intentional (suicide) drug poisoning deaths not involving any opioid decreased from 61 per cent to 60 per cent.
- From 2016 to 2018, approximately 20 per cent of all opioid related poisoning deaths (accidental and suicides) also listed alcohol as contributing to the poisoning death. Alcohol was the only substance listed as causing death in 85 (3 per cent) of all drug and alcohol poisoning deaths from 2016 to 2018. 95 per cent were accidental poisoning deaths, and 5 per cent were suicides.

Note: Certification of more complex drug overdose deaths involving less potent opioids and drugs may take longer than fentanyl related deaths to certify, and therefore, maybe underreported in more recent years. The above includes deaths where the cause was due to acute poisoning by an exogenous substance where the manner was intentional (suicide) or unintentional (accidental). “Other drugs” refers to non-opioid prescription drugs and illicit drugs such as cocaine.

Figure 13: Confirmed fentanyl poisoning deaths (accidental) in Alberta, by most common additional substances causing death and year. 2016 to 2018.

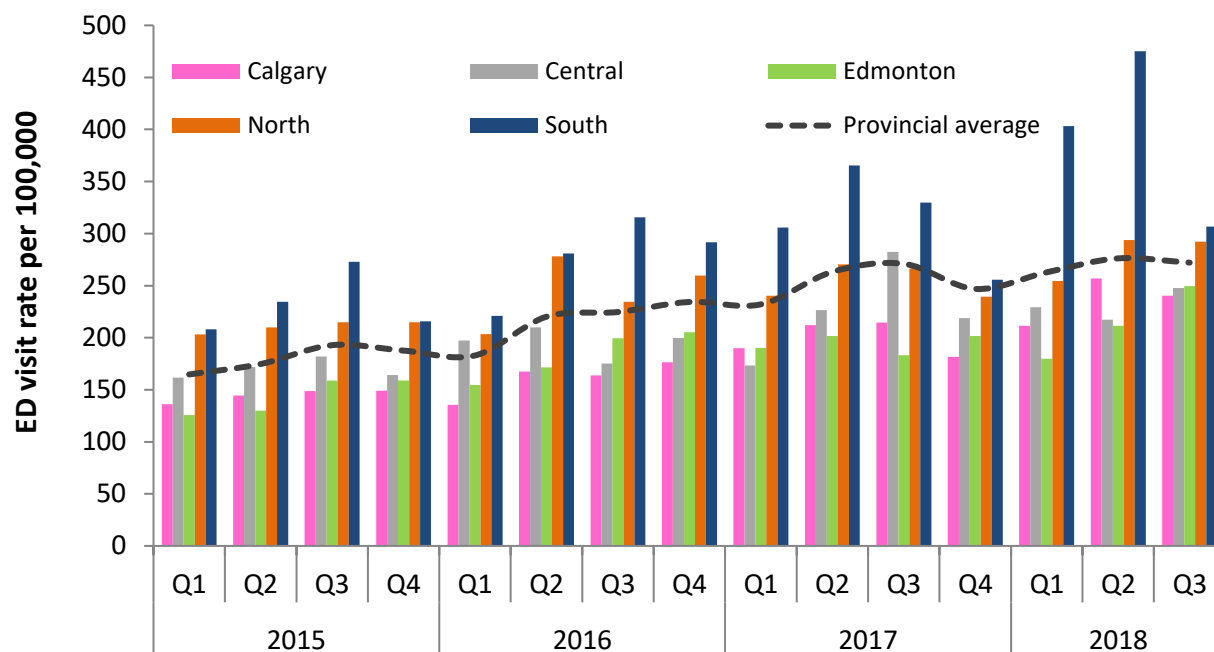


- In 2018, approximately 22 per cent of all fentanyl poisoning deaths had no other substances listed on the death certificate as causing death, while 44 per cent had methamphetamine listed, 32 per cent had cocaine listed, and 6 per cent had heroin listed.
- The proportion of fentanyl poisoning deaths where methamphetamine was also listed as causing death was 1.5 times higher in 2018 compared to 2016 (44 per cent in 2018, 29 per cent in 2016), and the same when compared to 2017 (44 per cent).
- The proportion of fentanyl poisoning deaths where cocaine was also listed as causing death was similar in 2016, 2017, and 2018 (32 per cent in 2018, 33 per cent in 2017, 29 per cent in 2016).
- The proportion of fentanyl poisoning deaths where heroin was also listed as causing death in has decreased from 24 per cent in 2016, to 6 per cent in 2018.

Note: “Other opioids” includes: morphine, oxycodone, codeine, and hydromorphone (ICD-10 T40.2). “Other synthetic opioids” includes: tramadol, buprenorphine, and illicit synthetic opioids such as U47700 (ICD-10 T40.4). Since multiple substances may be listed on one death certificate, deaths can be counted more than once in each category. Other substances contributing to death are taken from Part 1 of the medical certificate of death. This has changed from previous quarterly reporting, where substances contributing to death were taken from both Parts 1 and 2 of the medical certificate of death. In addition to changes resulting from more completed reviews of deaths, this change in methodology may have resulted in differences from previously reported proportions.

Emergency department visits

Figure 14: Rate of emergency department (ED) visits related to harm associated with opioids and other drug use, by quarter and Zone, per 100,000 person years. January 1, 2015 to September 30, 2018.



- The provincial *rate* of ED visits related to harm associated with opioids and other drug use increased by 65 per cent from the first quarter of 2015 to the third quarter of 2018. From the second quarter of 2018 to the third quarter of 2018, the rate decreased by 1.5 per cent.
- In 2018, on average, the *rate* of ED visits related to harm associated with opioids and other drug use was the highest in the South Zone (395 visits per 100,000 person years); approximately 46 per cent higher than the provincial average over this period (270 visits per 100,000 person years). The South Zone saw the largest decrease in the *rate* of ED visits from the second quarter to the third quarter (35 per cent decrease).
- In 2018, the Calgary and Edmonton Zones had the highest *number* of ED visits related to harm associated with opioids and other drug use (30 and 25 per cent of all provincial ED visits related harm associated with opioids and other drug use respectively).

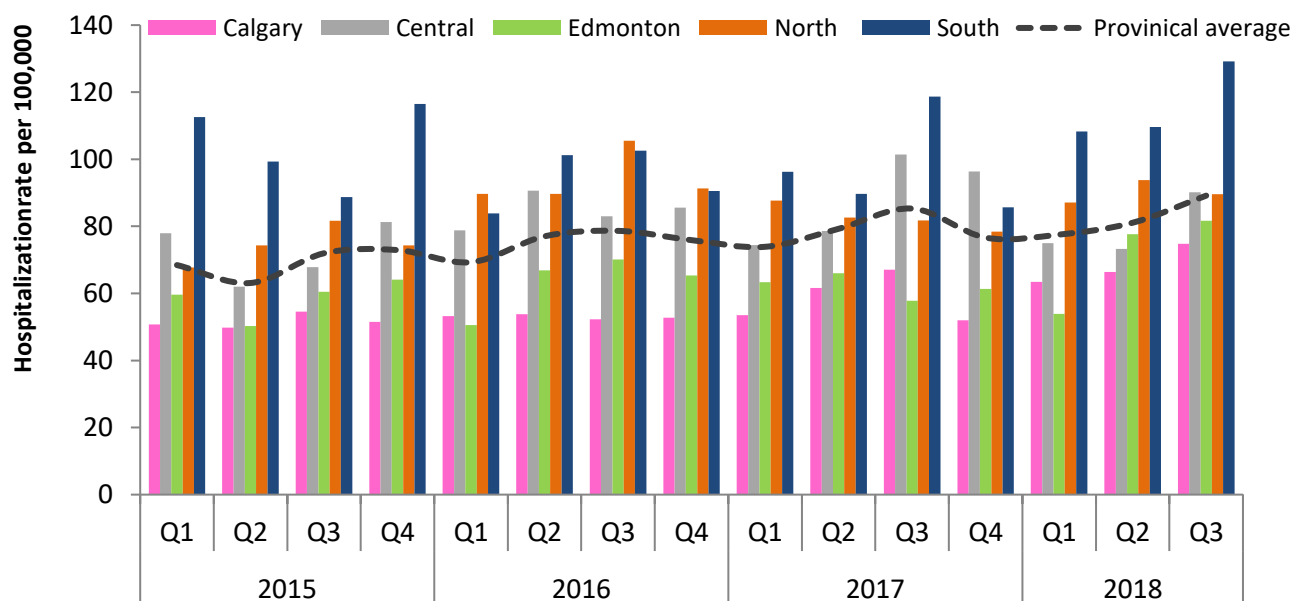
Table 8: Top 10 ED facilities utilized for emergency visits related to harm associated with opioids and other drug use, January 1, 2015 to September 30, 2018

Rank	Facility	Count	% of all visits*	Rank	Facility	Count	% of all visits*
1	Royal Alexandra Hospital	4,339	12%	6	Red Deer Regional Hospital	1,610	4%
2	Peter Lougheed Centre	3,704	10%	7	South Health Campus	1,518	4%
3	Rockyview General Hospital	2,911	8%	8	Chinook Regional Hospital	1,423	4%
4	Foothills Medical Centre	2,855	8%	9	Grey Nuns Community Hospital	1,377	4%
5	U of A Hospital	2,171	6%	10	Sheldon M Chumir Center	1,205	3%

*Percentage of the total 36,079 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. (All F11 and T40 ICD-10 codes, any diagnosis field)

Hospitalizations

Figure 15: Rate of hospitalizations related to harm associated with opioids and other drug use, by quarter and Zone, per 100,000 person years. January 1, 2015 to September 30, 2018.



- The *rate* of hospitalizations related to harm associated with opioids and other drug use increased by 30 per cent from the first quarter of 2015 to the third quarter of 2018. From the second quarter of 2018 to the third quarter of 2018, the rate increased by 10 per cent.
- In 2018, on average, the *rate* of hospitalizations related to harm associated with opioids and other drug use was the highest in the South Zone (116 hospitalizations per 100,000 person years); approximately 40 per cent higher than the provincial average (83 hospitalizations per 100,000 person years).
- In 2018, the Calgary and Edmonton Zones had the highest *number* of hospitalizations related to harm associated with opioids and other drug use (32 and 28 per cent of all hospitalizations related to harm associated with opioids and other drug use per quarter, respectively).

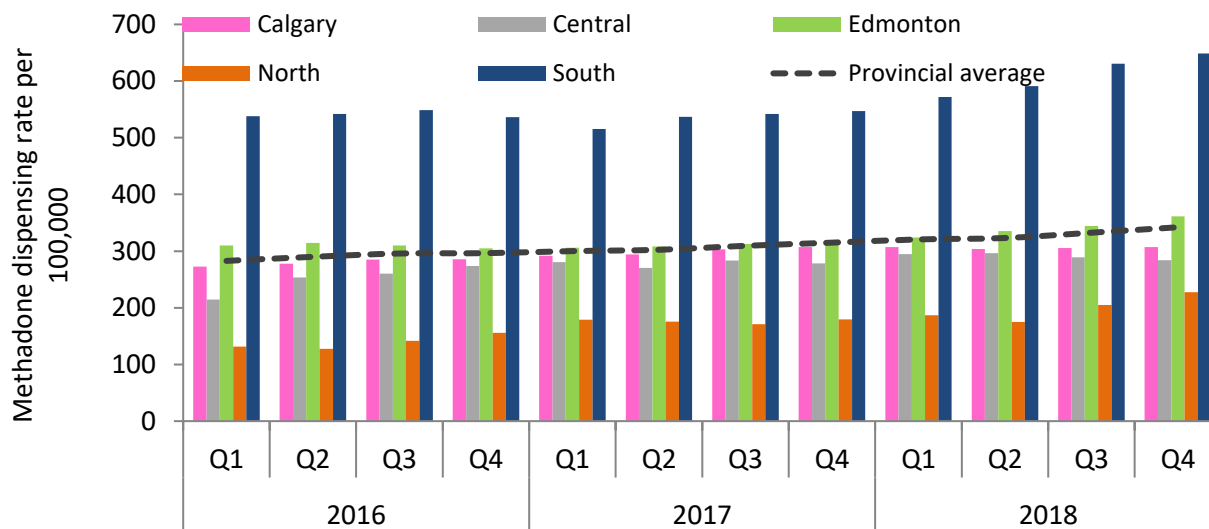
Table 9: Top 10 facilities utilized for hospitalizations related to harm associated with opioids and other drug use, January 1, 2015 to September 30, 2018.

Rank	Facility	Count	Percent of all stays*	Rank	Facility	Count	Percent of all stays*
1	Royal Alexandra Hospital	2,087	17%	6	Red Deer Regional Hospital	538	4%
2	Foothills Medical Centre	1,333	11%	7	South Health Campus	403	3%
3	Peter Lougheed Centre	1,331	11%	8	Grey Nuns Community Hospital	399	3%
4	Rockyview General Hospital	799	7%	9	Chinook Regional Hospital	386	3%
5	University Of Alberta Hospital	792	7%	10	Medicine Hat Regional Hospital	384	3%

*Percentage of the total 12,067 inpatient stays 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 ICD-10 codes, any diagnosis field)

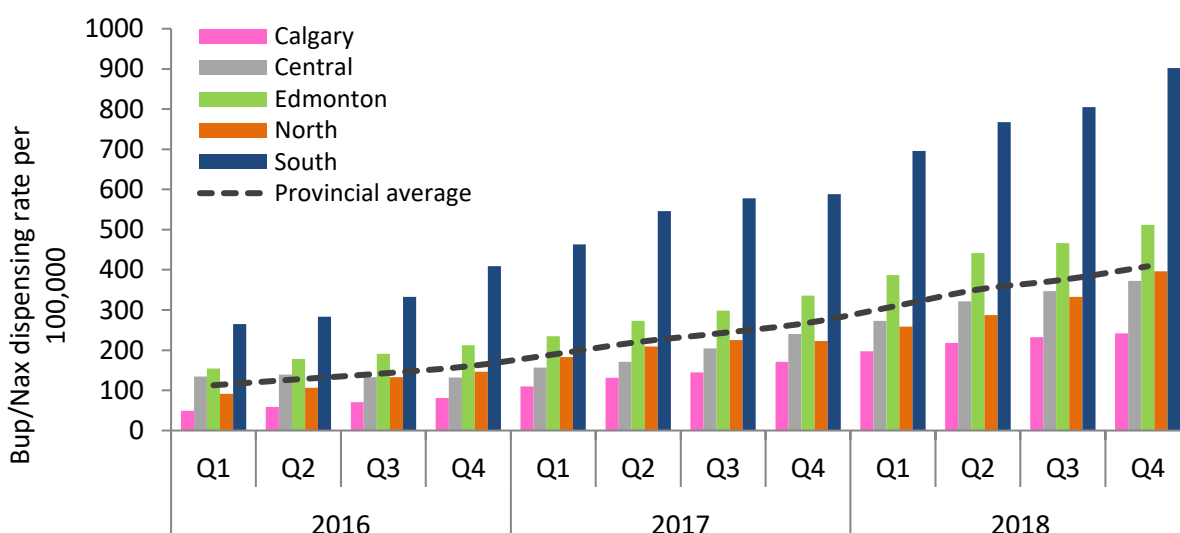
Methadone & buprenorphine/naloxone dispensing from community pharmacies

Figure 16: Rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000, by quarter and Zone. January 1, 2016 to December 31, 2018.



- In Alberta, the rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000 increased slightly from the second third to the fourth quarter of 2018 by 3 per cent. The South Zone had the highest rate in the fourth quarter of 2018, 190 per cent higher than the provincial average (649 per 100,000 vs. 342 per 100,000).

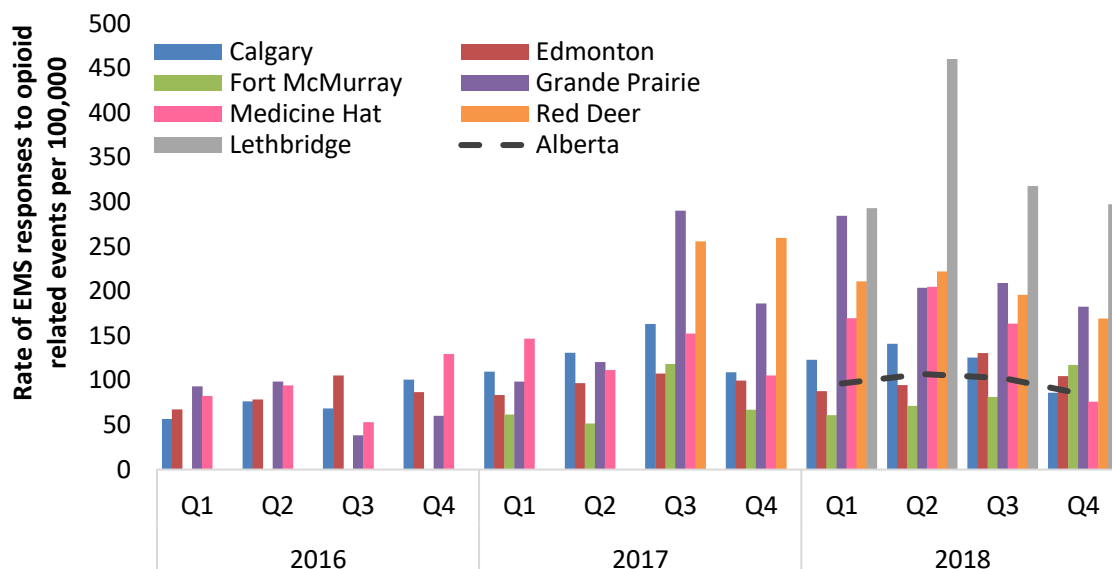
Figure 17: Rate of unique individuals dispensed buprenorphine/naloxone (generic brands and Suboxone™) indicated for opioid dependence from community pharmacies per 100,000, by quarter and Zone. January 1, 2016 to December 31, 2018.



- In Alberta, the rate of unique individuals dispensed buprenorphine/naloxone indicated for opioid dependence from community pharmacies per 100,000 continues to increase, as seen by the 9 per cent increase from the third to the fourth quarter of 2018. The South Zone had the highest rate in the third quarter of 2018, 221 per cent higher than the provincial average (902 per 100,000 vs. 409 per 100,000).

Emergency Medical Services

Figure 18: Rate (per 100,000 person years) of Emergency Medical Services (EMS) responses to opioid related events, by month and municipality. January 1, 2016 to December 31, 2018.



Note: Red Deer EMS data became available June, 2017, EMS data for Lethbridge and the majority of Alberta became available in 2018 (with the exception of a few smaller communities).

- In 2018, the provincial rate of EMS responses to opioid related events per 100,000 peaked in the second quarter (107), followed by a moderate decrease towards the end of the year (84). This trend was similar among the larger municipalities (except Ft.McMurray), where the rate peaked during the year, followed by a lower rate by the end of the year.
- In 2018, the larger municipalities (except Ft. McMurray) in Alberta had a higher rate of EMS responses to opioid related events per 100,000 than the provincial average. Grande Prairie, Red Deer, and Lethbridge had the highest rates in 2018.

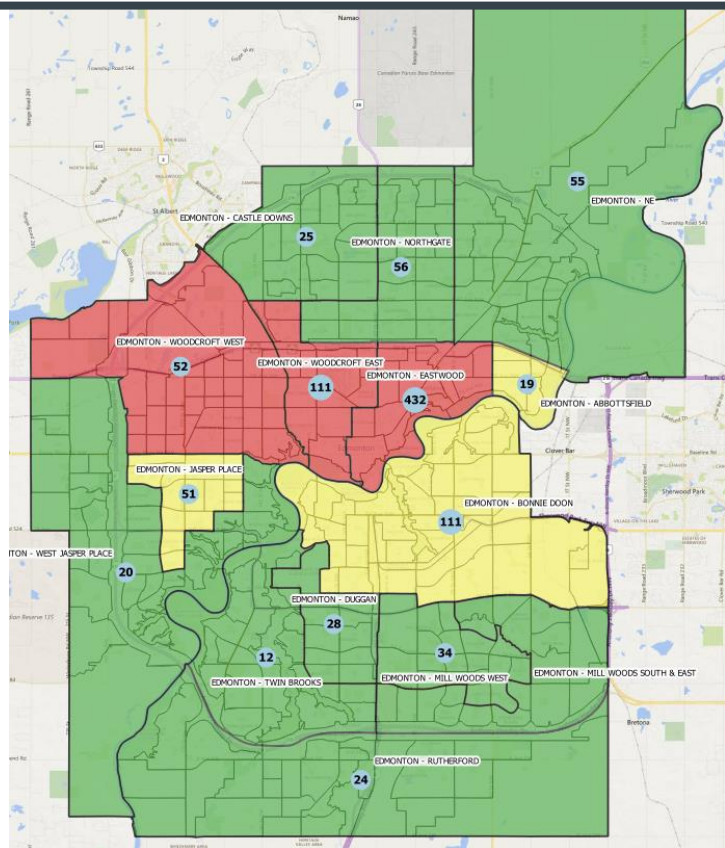
Table 10: Rate (per 100,000 person years) and count of Emergency Medical Services (EMS) responses to opioid related events, by year and municipality. January 1, 2018 to December 31, 2018.

	2016		2017		2018	
	count	rate	count	rate	count	rate
Calgary	988	76	1,693	128	1,595	119
Edmonton	814	85	950	97	1,045	105
Ft. McMurray	-	-	58	55	65	61
Grande Prairie	53	66	127	164	164	209
Medicine Hat	61	84	88	121	105	141
Red Deer*	-	-	137	258	212	216
Lethbridge	-	-	-	-	336	491
Alberta	-	-	-	-	4,206	98

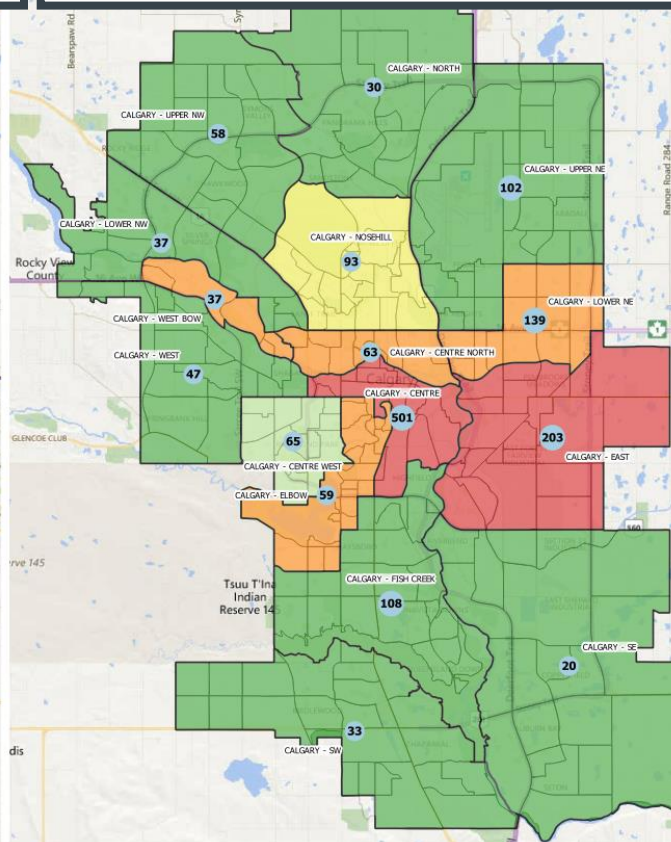
*EMS data for Red Deer became available June, 2017. Count and rate is based on events from July to December, 2017

Figure 19: Rate (per 100,000 person years) and count of Emergency Medical Services (EMS) responses to opioid related events, by LGA. January 1, 2018 to December 31, 2018.

Edmonton average: 105 per 100,000 person years (n =1,045)



Calgary average: 121 per 100,000 person years (n =1,595)



Legend

Rate of EMS opioid related responses per 100,000 compared to city average

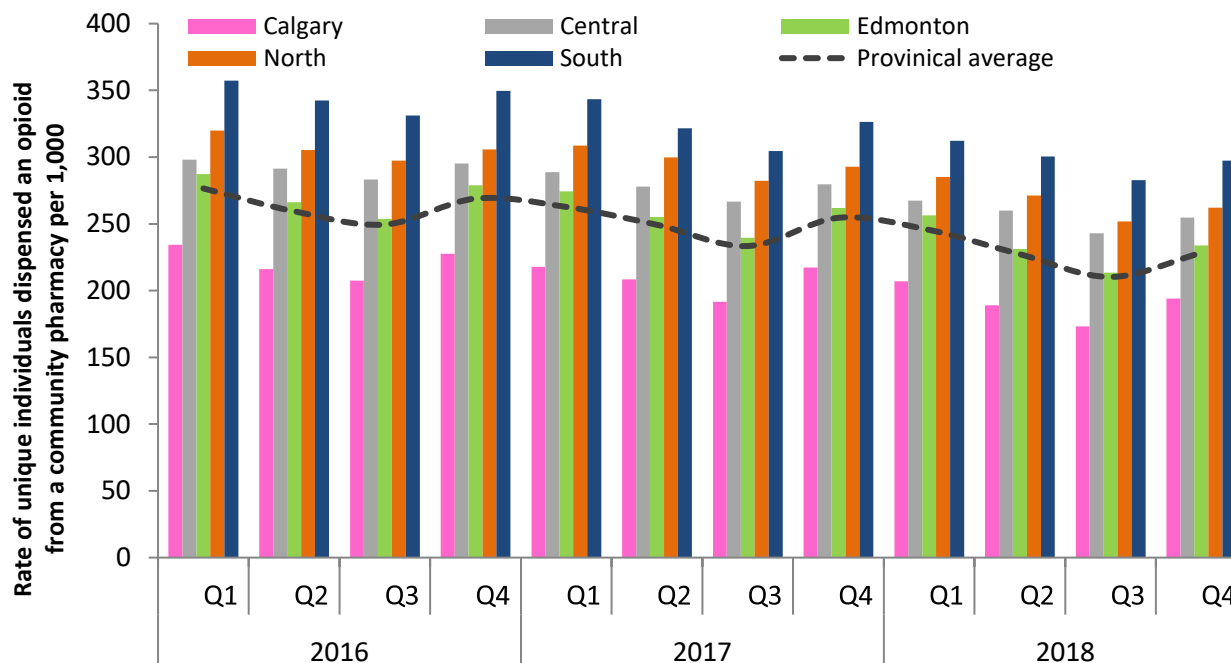
- Significantly lower
- Lower
- Average
- Higher
- Significantly higher

- Number in blue circle represents counts (numerator)

- Of the opioid related EMS events that occurred in Edmonton (1,045), the highest rate (598 per 100,000 person years) and count (432) was in the Eastwood area. The LGAs with **significantly higher** rates of opioid related EMS events **compared to the city average** were Eastwood, and Woodcroft East & West.
- Of the opioid related EMS events that occurred in Calgary (1,595), the highest rate (786 per 100,000 person years) and count (501) was in Calgary Centre. The LGAs with **significantly higher** rates of opioid related EMS events **compared to the city average** were Calgary Centre and East.

Prescription opioid dispensing

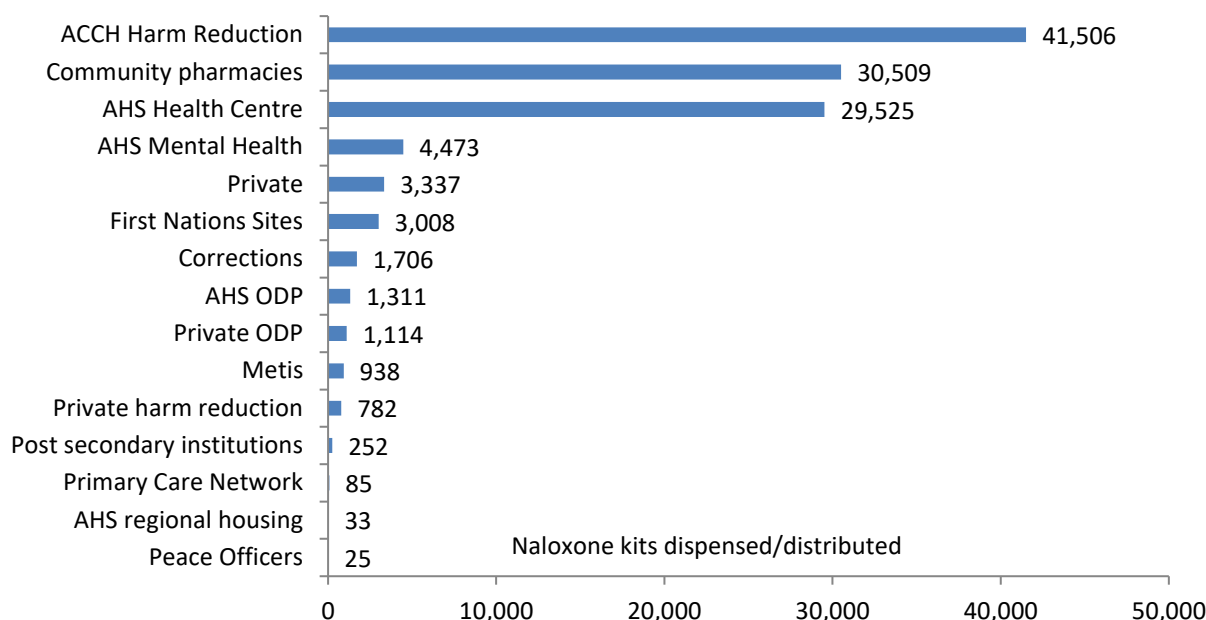
Figure 20: Rate of unique individuals dispensed an opioid from a community pharmacy per 1,000, by Zone and quarter. January 1, 2016 to December 31, 2018.



- Comparing the first quarter of 2016 to the last quarter of 2018, the rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 decreased by 17.5 per cent in Alberta. The average per cent decrease from quarter to quarter in this time period was 1.5 per cent.
- All Zones saw a similar decrease in this time period, ranging from a 15 to 19 per cent decrease. The South Zone has the highest rate of unique individuals dispensed an opioid from a community pharmacy per 1,000. In the last quarter of 2018, the rate in the South Zone was approximately 31 per cent higher than the provincial average (298 per 1,000 vs. 228 per 1,000).

Community based naloxone kits

Figure 22: Naloxone kits dispensed/distributed by registered site type, January 1, 2016 to December 31, 2018.



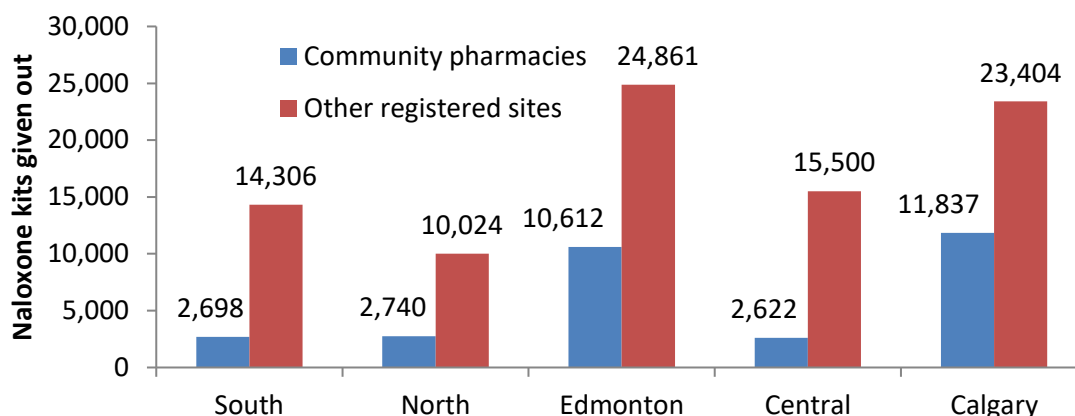
- From January 1, 2016 to December 31, 2018, 121,854 naloxone kits were dispensed in Alberta through Alberta Health Services' (AHS') naloxone program, and 7,709 reversals were self-reported. Approximately 3,250 naloxone kits were distributed in Alberta by the Alberta Community Council on HIV (ACCH) between July 2015 and January 2016. In January 2016, AHS began its naloxone program through registered distribution sites.

Table 11: Number of registered sites, January 1, 2016 to December 31, 2018.

	South	Calgary	Central	Edmonton	North	Total
Community pharmacies	87	396	133	382	114	1,112
AHS Health Centre	46	74	52	49	85	306
Medical First Response	16	15	26	12	26	95
AHS Mental Health	4	22	13	32	14	85
Private	16	21	15	27	7	86
First Nations sites	3	5	8	5	25	46
Primary Care Network	0	5	3	6	2	16
Corrections	2	4	1	3	1	11
ACCH Harm Reduction	2	1	1	1	3	8
Post-Secondary Institutions	0	3	1	5	0	9
Metis	0	0	0	1	8	9
AHS Regional Housing	0	3	0	3	0	6
Private Opioid Dependency Program	2	0	1	2	1	6
Peace Officers	0	2	0	1	2	5
AHS Opioid Dependency Program	1	1	0	1	1	4
Private Harm Reduction	0	0	1	2	0	3
Total	179	552	255	532	289	1,807

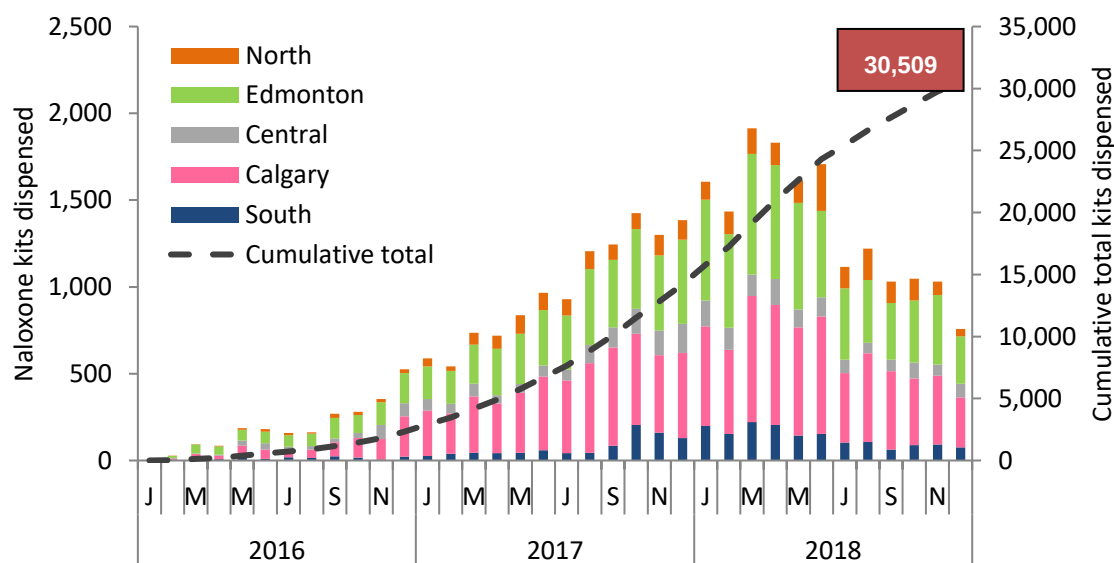
Note: Naloxone kits dispensing data from community pharmacies comes from Alberta Blue Cross. All other kit distribution data comes from the AHS Naloxone Kit Program.

Figure 23: Naloxone kits dispensed/distributed by community pharmacies and other registered sites, by Zone. January 1, 2016 to December 31, 2018.



- Throughout the province, non-pharmacy sites are dispensing more naloxone kits than community pharmacies (74 per cent of all kits given out by non-pharmacy sites).
- While the Calgary and Edmonton Zone have dispensed the highest total volume of kits in the province (30 per cent each), in the most recent quarter, the South Zone had the highest per 100,000 rate of kits dispensed from both community pharmacies and other registered sites, three times higher than the provincial average.

Figure 24: Naloxone kits dispensed by community pharmacies, by Zone and month. January 1, 2016 to December 31, 2018.



- Across Alberta, in 2018, community pharmacies dispensed an average of 1,359 kits per month, a decrease of 9 per cent from the previous reporting period (previous report: 1,577 per month). Since January 1, 2016, 30,509 naloxone kits have been dispensed from community pharmacies in Alberta.
- The median age of an individual receiving a naloxone kit dispensed from a community pharmacy was 31 years, and 57 per cent were male (of the individuals who disclosed their demographic information to the pharmacy).

Note: Naloxone kit dispensing data from community pharmacies comes from Alberta Blue Cross. All other kit distribution data comes from the AHS community based naloxone program.

Supervised consumption services

The following includes data from community supervised consumption services only. For Edmonton, the three sites, Boyle Street Community Services, Boyle MacCauley Health Centre, and George Spady are included. Data from the Royal Alexandra inpatient services is not included. The Lethbridge site (ARCHES) is the only site that provides inhalation services.

Figure 25: Number of visits per month and site, January 1, 2018 to December 31, 2018

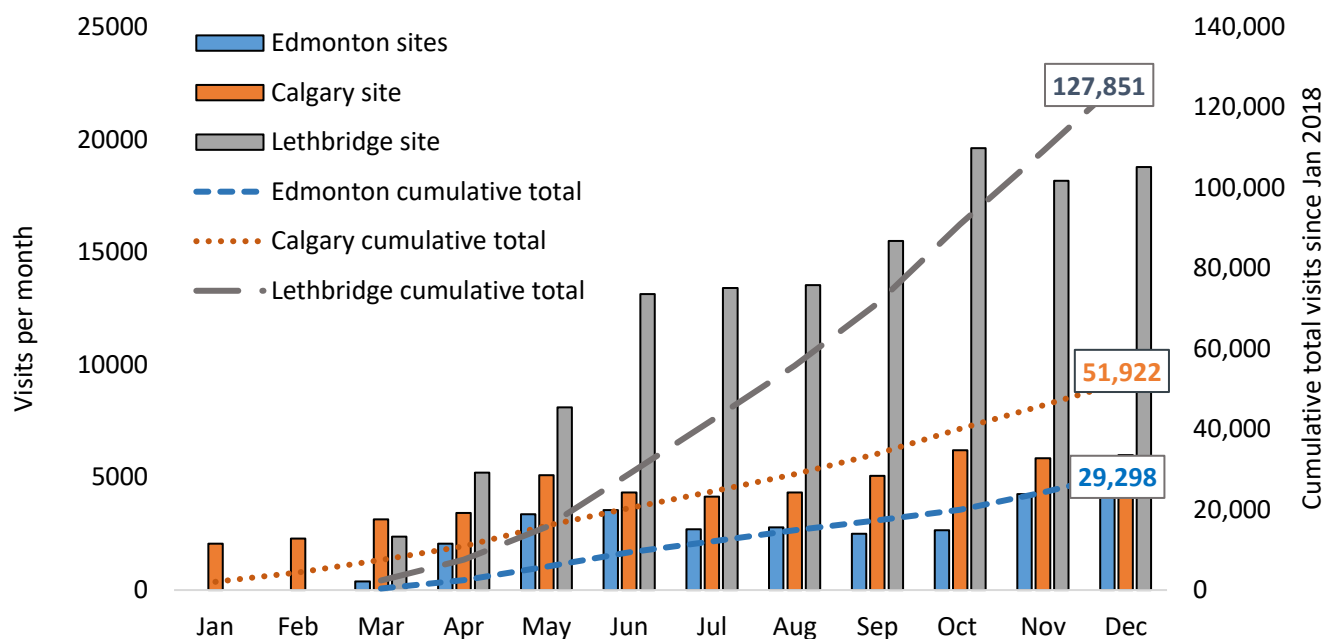


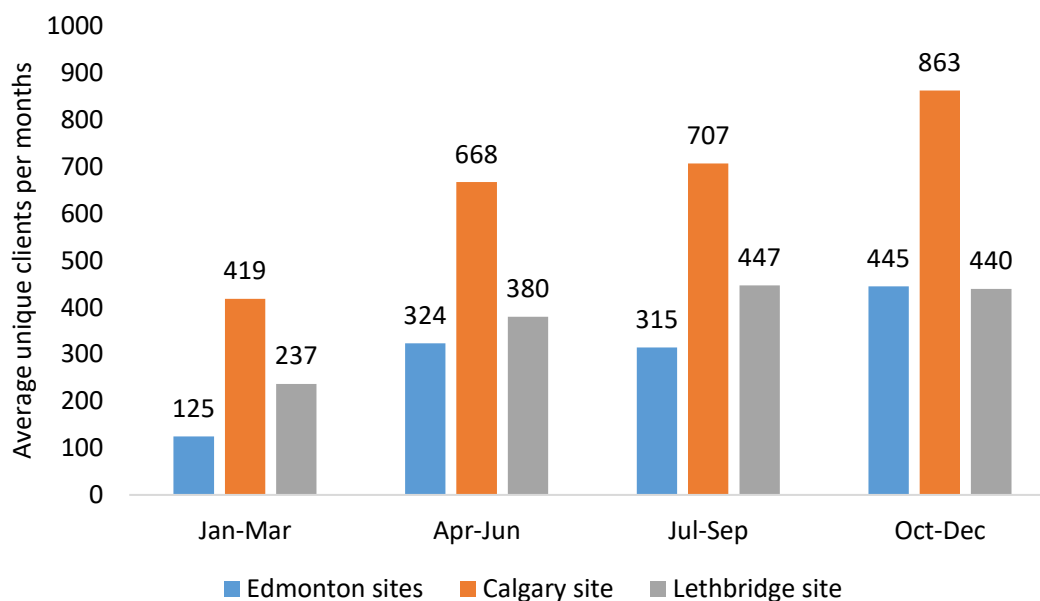
Table 12: Number of visits per month and site, January 1, 2018 to December 31, 2018

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site total
Edmonton			390	2,059	3,362	3,553	2,701	2,780	2,494	2,663	4,256	5,040	29,298
Calgary	2,054	2,281	3,134	3,425	5,102	4,327	4,151	4,332	5,065	6,204	5,858	5,989	51,922
Lethbridge			2,375	5,214	8,117	13,133	13,412	13,544	15,494	19,617	18,167	18,778	127,851
Month total	2,054	2,281	5,899	10,698	16,581	21,013	20,264	20,656	23,053	28,484	28,281	29,807	209,071

Note: The Lethbridge site opened in February, 2018. In Edmonton, Boyle Street opened March, 2018, George Spady opened April, 2018, and Boyle MacCauley Health Centre opened November, 2018.

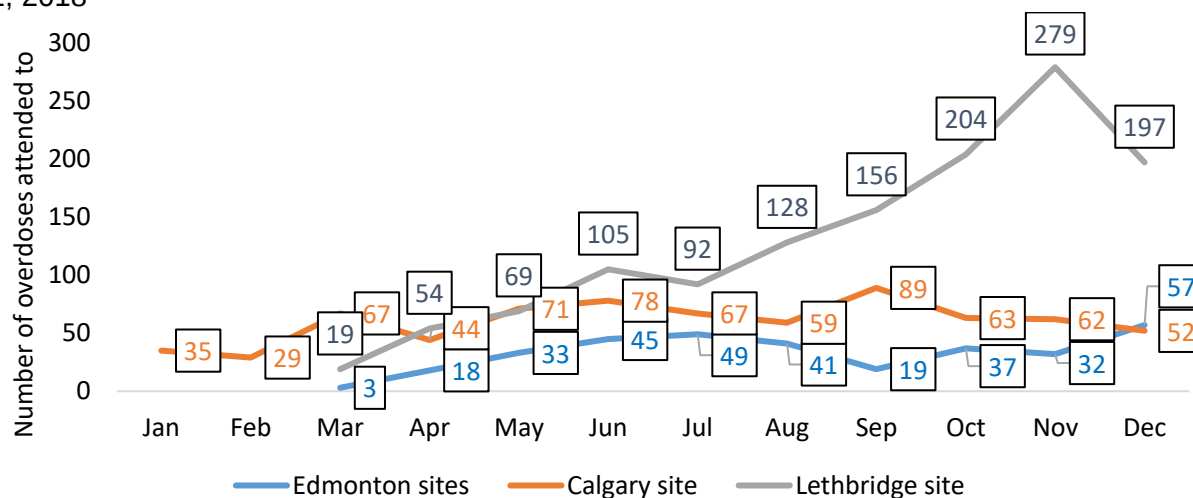
- From October, 2018 to December, 2018 (latest quarter) on average, per month, there were 3,986 visits to Edmonton sites, 6,017 visits to the Calgary site, and 18,854 visits to the Lethbridge site.
- Compared to the last quarter, in the most recent quarter (October to December 2018), the Edmonton sites saw an increase in visits of 50 per cent.
- Compared to the last quarter, in the most recent quarter (October to December 2018), the Calgary site saw an increase in visits of 33 per cent.
- Compared to the last quarter, in the most recent quarter (October to December 2018), the Lethbridge site saw an increase in visits of 33 per cent.

Figure 26: Average unique clients per month, by quarter and site, January 1, 2018 to December 31, 2018



- Compared to the last quarter, in the most recent quarter (October to December 2018) Edmonton sites saw a 42 percent increase in average monthly unique clients, the Calgary site saw an increase of 22 per cent in average monthly unique clients, and the Lethbridge site saw a decrease of 2 per cent in average monthly unique clients.

Figure 27: Total number of attended overdoses* per month and site, January 1, 2018 to December 31, 2018



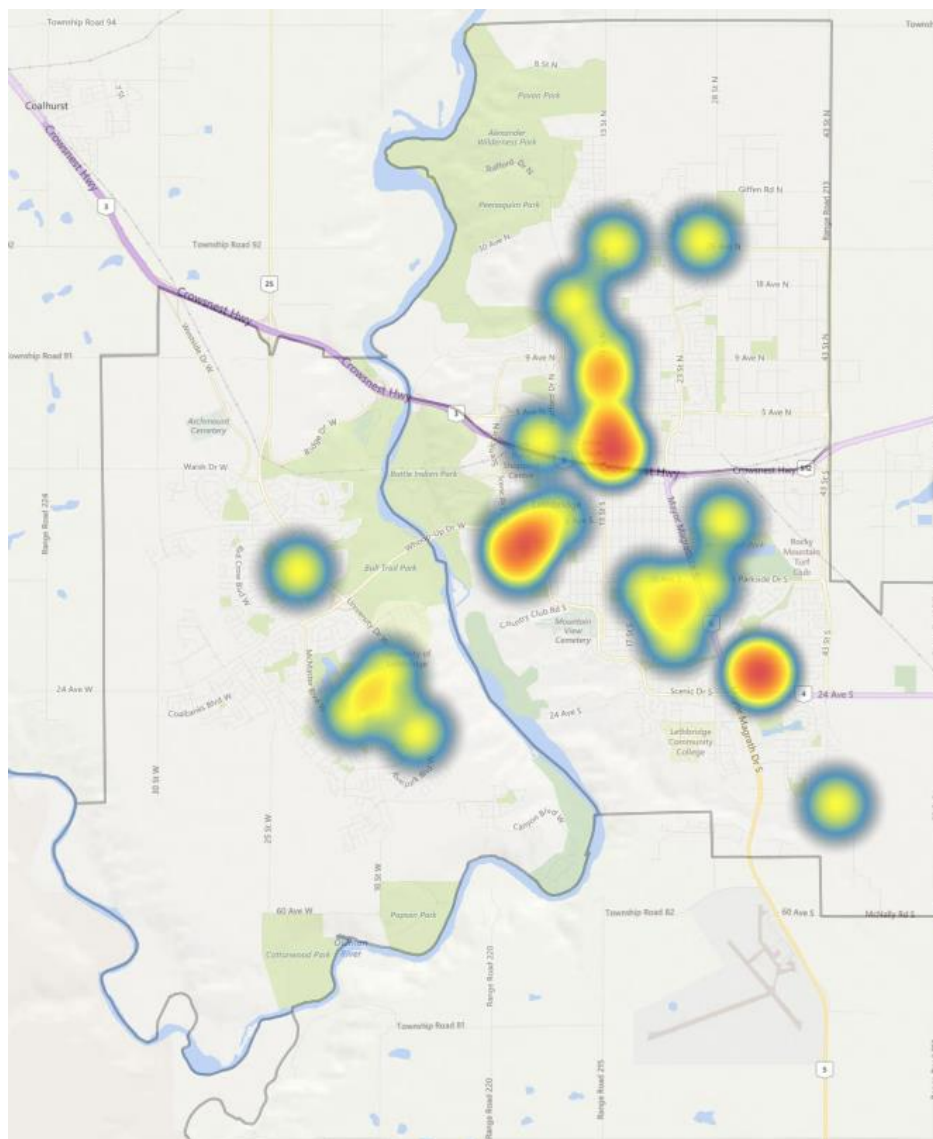
- From January to December 2018, 334 overdoses have been attended to at Edmonton sites, 716 at the Calgary site, and 1,303 at the Lethbridge site. There were zero fatal drug poisoning events across all sites.
- From January to December 2018, on a monthly average, there were 11 attended overdoses for every 1,000 visits to the Edmonton sites, 14 attended overdoses for every 1,000 visits to the Calgary site, and 10 attended overdoses for every 1,000 visits to the Lethbridge site.

*drug poisoning event requiring intervention including, but not limited to, the provision of oxygen, administration of naloxone, and/or requesting medical attendance.

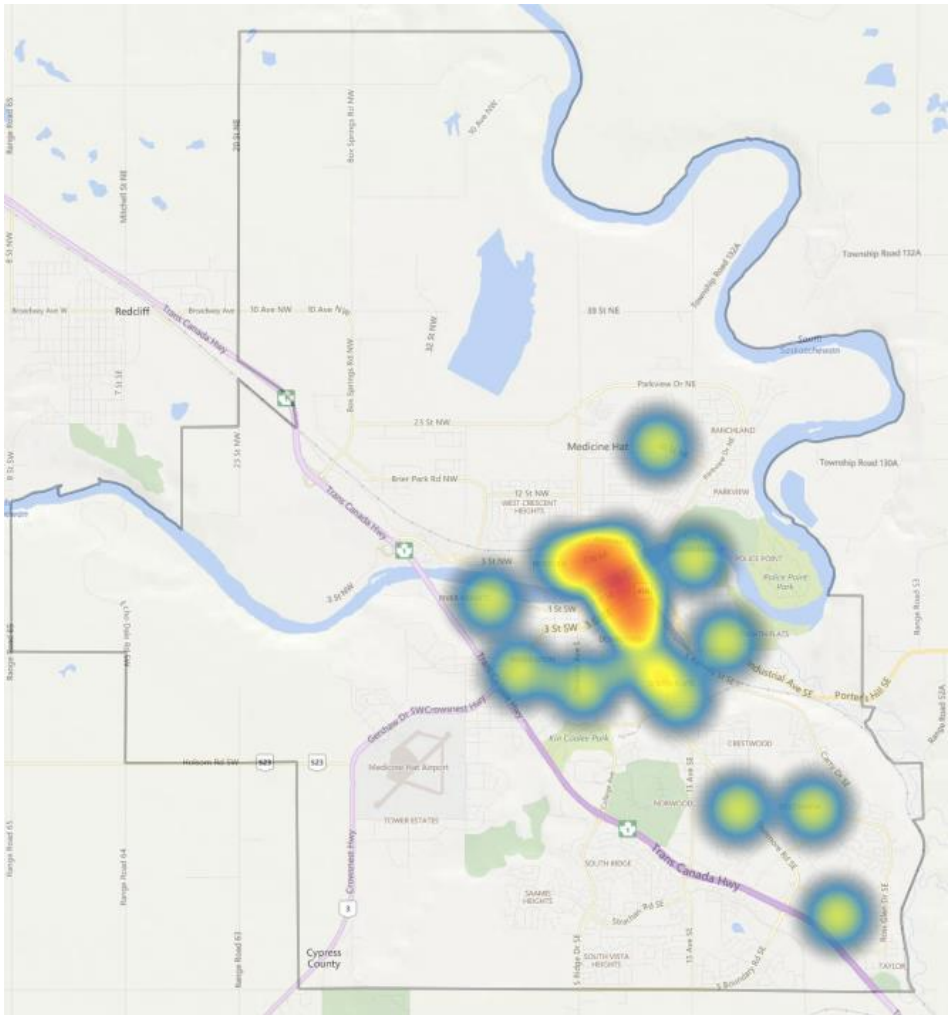
Appendix 1: Opioid related poisoning deaths in major Albertan cities

Apparent accidental opioid poisoning deaths, by Municipality (based on place of overdose). January 1, 2018 to December 31, 2018.

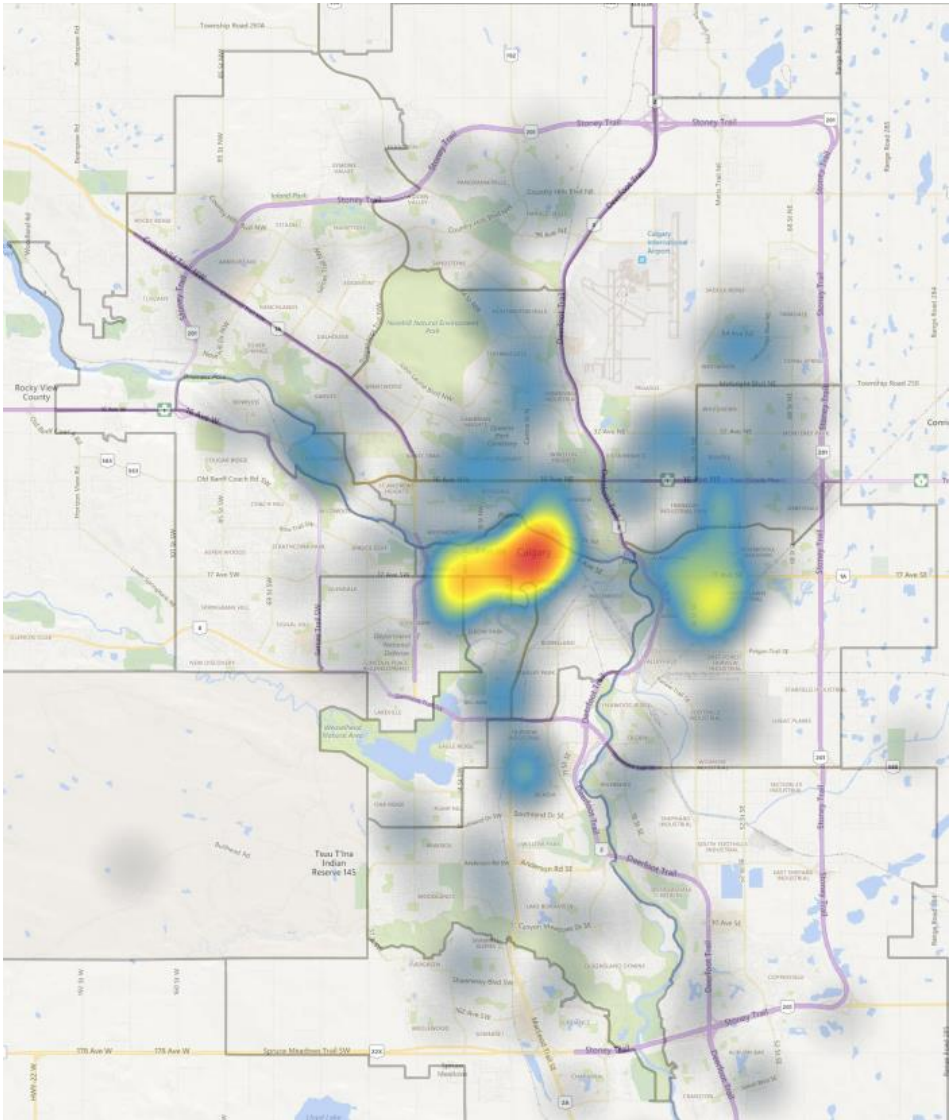
Lethbridge



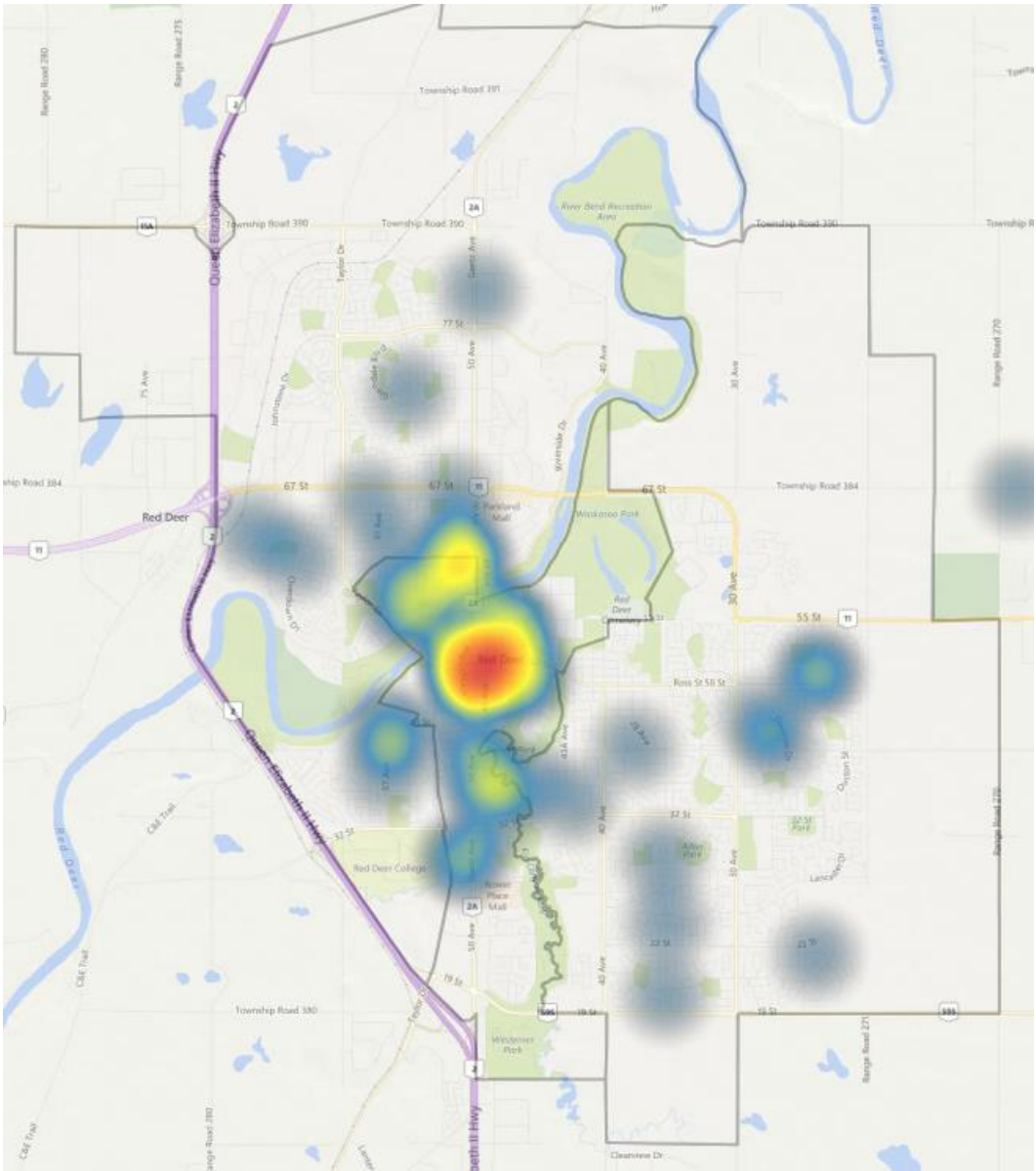
Medicine Hat



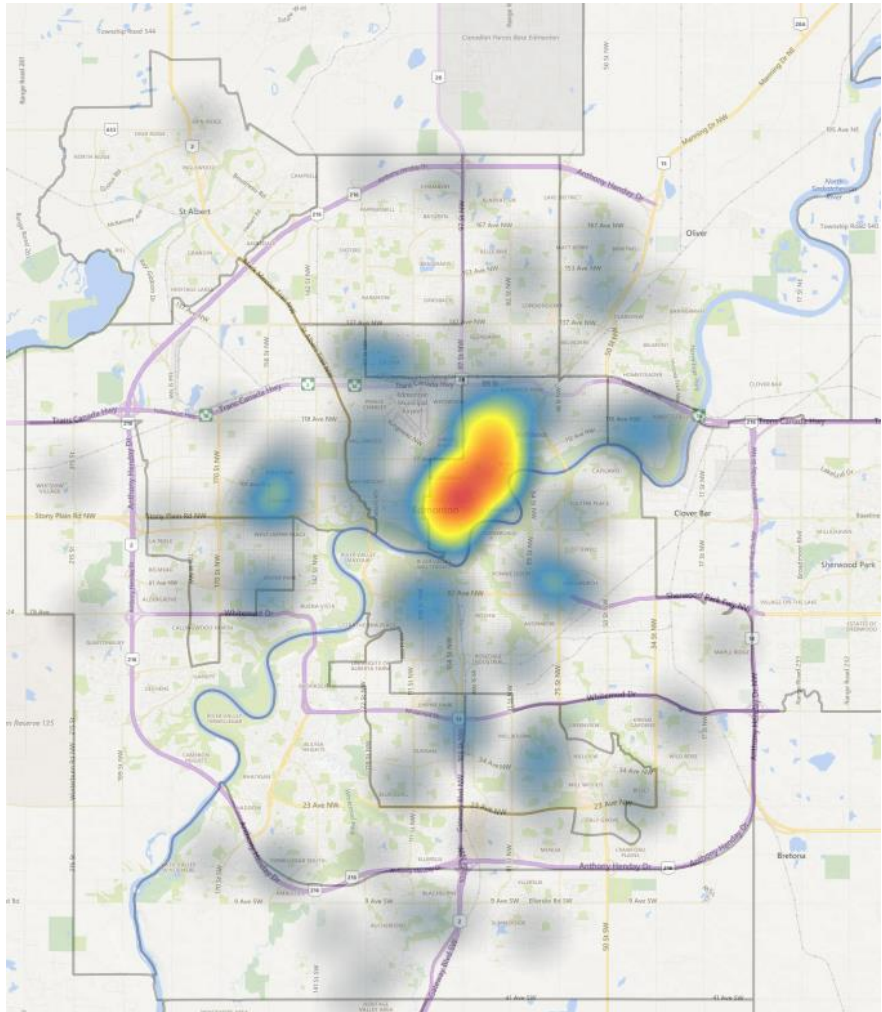
Calgary



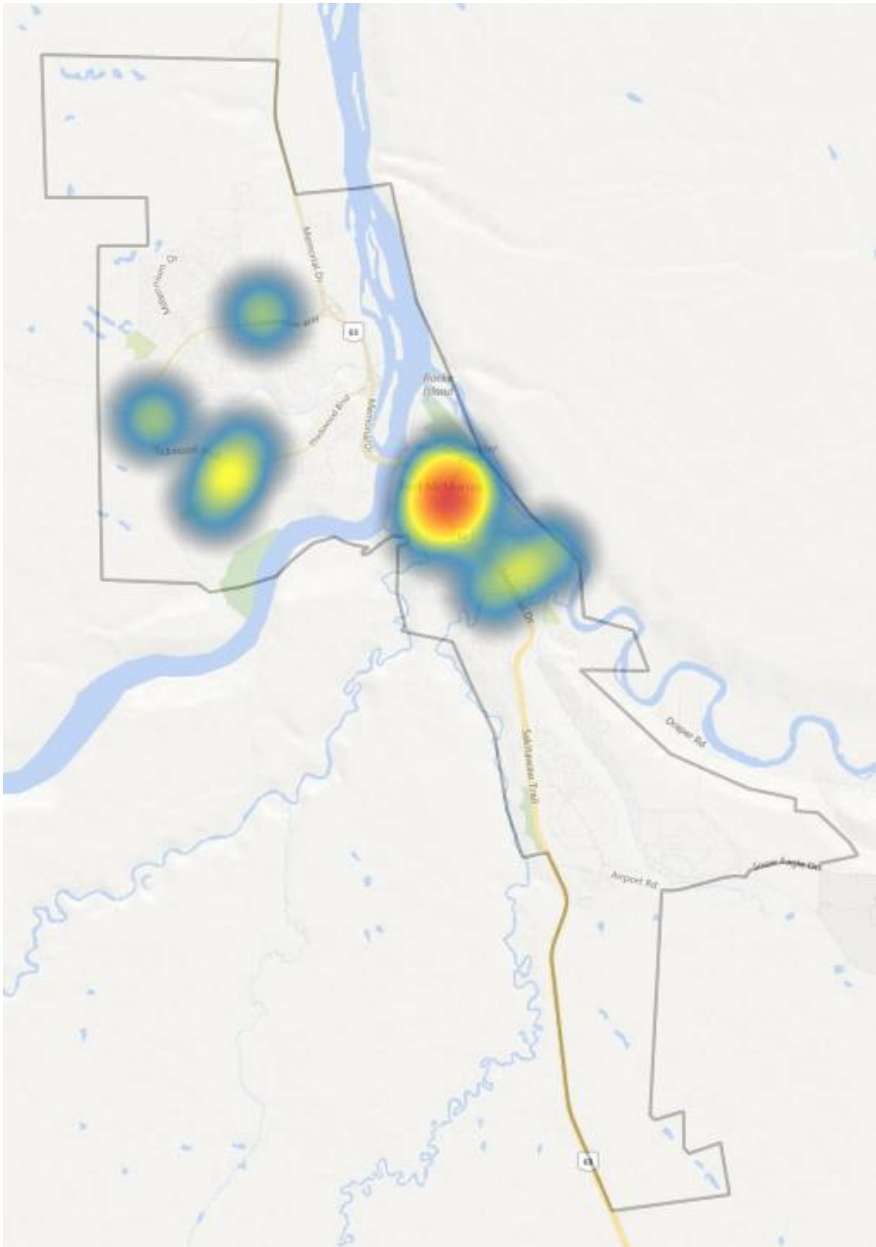
Red Deer



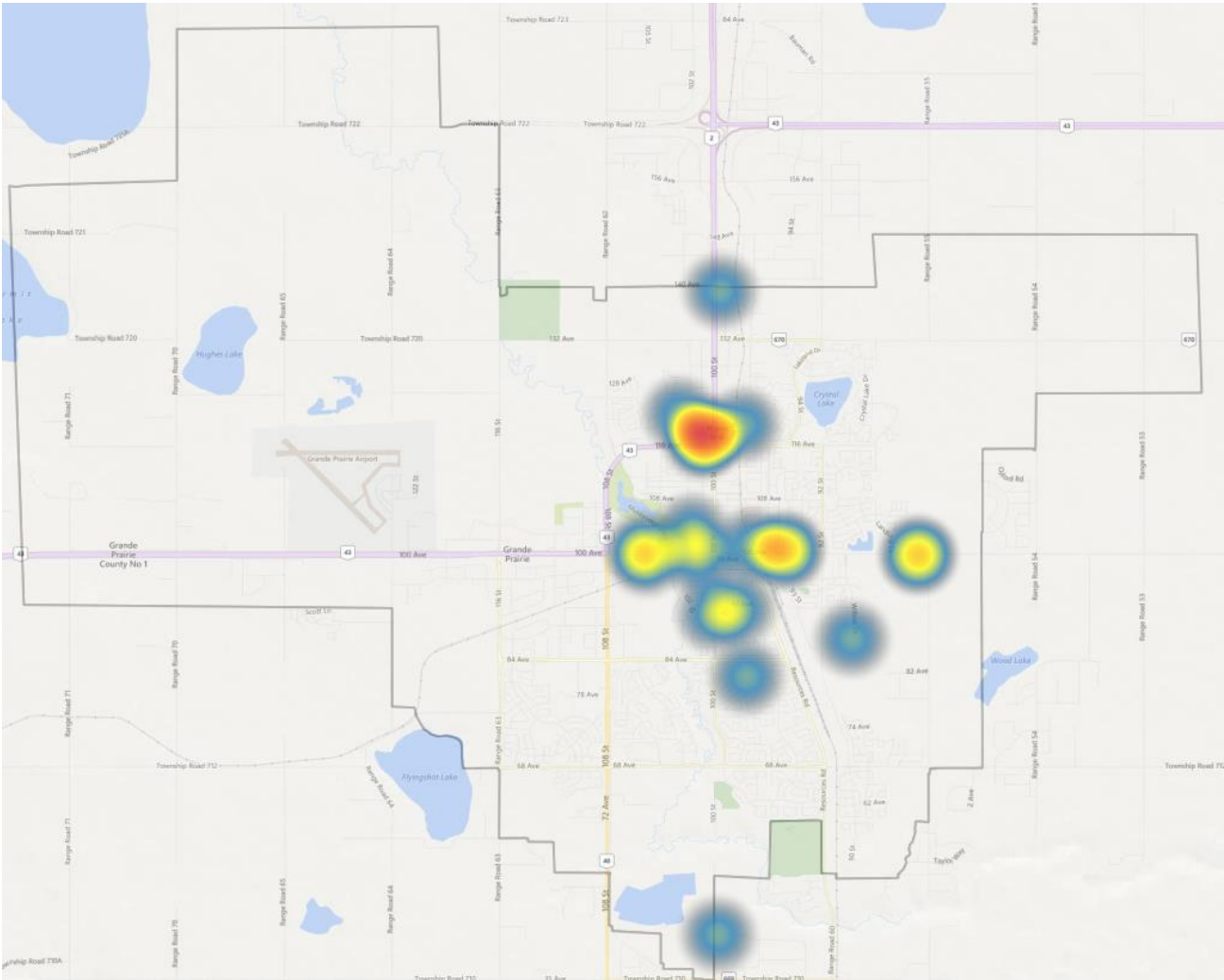
Edmonton



Fort McMurray



Grande Prairie



Data notes

Data source(s) for report

Emergency department data-National Ambulatory Care Reporting System (NACRS)

Hospitalization data -Discharge Abstract Database (DAD)

Physician claims data –Supplemental Enhanced Service Event (SESE)

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

AHS EMS Direct delivery and AHS contractors-ground ambulance services data

Community based naloxone kit program

Alberta Blue Cross Data (community pharmacy naloxone kit dispensing)

Supervised consumption services

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 Medical Services data

Emergency Medical Services (EMS) data comes from AHS EMS Direct delivery and most AHS Contractor – ground ambulance services. Air ambulance and Interfacility Transfers are not included. AHS direct delivery does 97 per cent of the operational responses in the Municipality of Edmonton, 99 per cent in the Municipality of Calgary, and approximately 82 per cent in the entire province of Alberta. MS opioid related events refer to any EMS response where the Medical Control Protocol of Opiate Overdose was documented and/or naloxone was administered.

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:

1. 71310 – Ambulatory care services described as emergency
2. 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
3. 71514 – Community Advanced Ambulatory Care Centre (AACC). As of 2014, the only AACC in Alberta is La Crete Health Centre

Community pharmacy drug dispensing

4. The Pharmaceutical Information Network (PIN) Database is used to estimate dispensation events for the province between 2014 and 2016 **only from community pharmacies**. Variability can be dependent on the way the drug is prescribed.
5. The PIN database is up-to-date. 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.

ATC Code	Drug Name	ATC Grouping
N07BC51	Buprenorphine, combinations	Drugs used in opioid dependence
N07BC02	Methadone	Drugs used in opioid dependence

The following DINs were excluded since they are indicated for pain relief by Health Canada. 02247701, 02247700, 02241377, 02247699, 02247698, 02247694

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
N02AA59, N02AA79, R05DA04, R05DA20 ¹ , R05FA02 ² , M03BA53, M03BB53, N02BE51, and N02BA51	CODEINE	CODEINE
R05DA03, R05DA20 ³ , R05FA02 ⁴	HYDROCODONE	HYDROCODONE
N02AB03, N01AH01	FENTANYL	FENTANYL
N02AA03	HYDROMORPHONE	HYDROMORPHONE
N02AA01	MORPHINE	MORPHINE
N02AA05, N02AA55, N02BE51, and N02BA51	OXYCODONE	OXYCODONE
N02AX02, N02AX52	TRAMADOL	TRAMADOL
N07BC02	METHADONE	METHADONE
N02AA	NATURAL OPIUM ALKALOIDS	OTHER
N02AA02	OPIUM	OTHER
N02AB02	PETHIDINE	OTHER
N02AC04, N02AC54	DEXTROPROPOXY PHENE	OTHER
N01AH03	SUFENTANIL	OTHER
N01AH06	REMIFENTANIL	OTHER
N01AX03	KETAMINE	OTHER
R05DA20	NORMETHADONE	OTHER
N02AD01	PENTAZOCINE	OTHER
N02AE01, N04BC51	BUPRENORPHINE	OTHER
N02AF01	BUTORPHANOL	OTHER
N02AF02	NALBUFINE	OTHER
N02AX06	TAPENTADOL	OTHER

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

¹ 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.

² 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.

³ See footnote #1

⁴ See footnote #2