

Alberta

Opioid

Response

Surveillance

Report

Q3 2019

December 2019

Alberta 

Health, Government of Alberta

December 2019

Alberta Opioid Response Surveillance Report: Q3 2019

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Highlights

- The most up-to-date data shows that 458 people have died from an apparent accidental opioid poisoning so far in 2019.
- By comparison, in same time period in 2018, there were 576 apparent accidental opioid poisoning deaths (511 fentanyl deaths from January to September 2018, 65 non-fentanyl opioid deaths from January to June, 2018).
- On average, just under 2 individuals die every day in Alberta as a result of an apparent accidental opioid poisoning.
- In the most recent quarter, 120 people died from an apparent accidental fentanyl-related poisoning, compared to 156 people in the previous quarter.
- So far, in 2019, the annual provincial per 100,000 person years rate of fentanyl poisoning deaths is 20 per cent lower than the rate in 2018, and 6 per cent lower than the rate in 2017.

Key points

Apparent accidental poisoning deaths related to fentanyl

- In the third quarter of 2019, there were 120 apparent accidental poisoning deaths related to fentanyl in Alberta. By comparison, there were 156 of these deaths in the second quarter of 2019.
- From January 1, 2019 to September 30, 2019, 82 per cent of deaths occurred in larger urban municipalities (Edmonton, Calgary, Red Deer, Grande Prairie, Fort McMurray, Lethbridge, Medicine Hat).
- In the third quarter of 2019, the Calgary Zone (49) and Edmonton Zone (42) had the highest numbers of fentanyl deaths. In the first nine months of 2019, the Calgary Zone had the highest rate per 100,000 person years at 13.5, compared to the provincial average of 12.4 per 100,000 person years.

Apparent accidental poisoning deaths related to non-fentanyl opioids

- In the second quarter of 2019, there were 25 apparent accidental poisoning deaths related to an opioid other than fentanyl in Alberta. By comparison, there were 23 of these deaths in the first quarter of 2019.
- In the first half of 2019, 71 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 second quarter of 2019, the Edmonton Zone (11) and Calgary Zone (7) had the highest number of these deaths. In the second quarter of 2019, the South Zone had the highest rate at 3.9 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 2019, opioids (fentanyl or non-fentanyl) were directly involved in 75 per cent of deaths. 25 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 2019, 81 per cent of accidental fentanyl related deaths listed at least one other substance as contributing to death, the most frequent being methamphetamine (49 per cent) and cocaine (28 per cent).

Emergency department visits

- In the second quarter of 2019, there were 2,836 emergency and urgent care visits related to opioids and other drug use. In the previous quarter, there were 2,622 emergency and urgent care visits related to opioids and other drug use.
- In the second quarter of 2019, emergency and urgent care visits related to opioid and other drug use occurred among 2,370 unique individuals, of whom 13 per cent had more than one visit.

Supervised consumption services

- In the most recent quarter (July to September 2019), there were 93,282 visits to supervised consumption services sites in Edmonton, Calgary, Lethbridge, and Grande Prairie. In the same time period, there were on a monthly average, 2,259 unique clients who attended these sites, and 625 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.

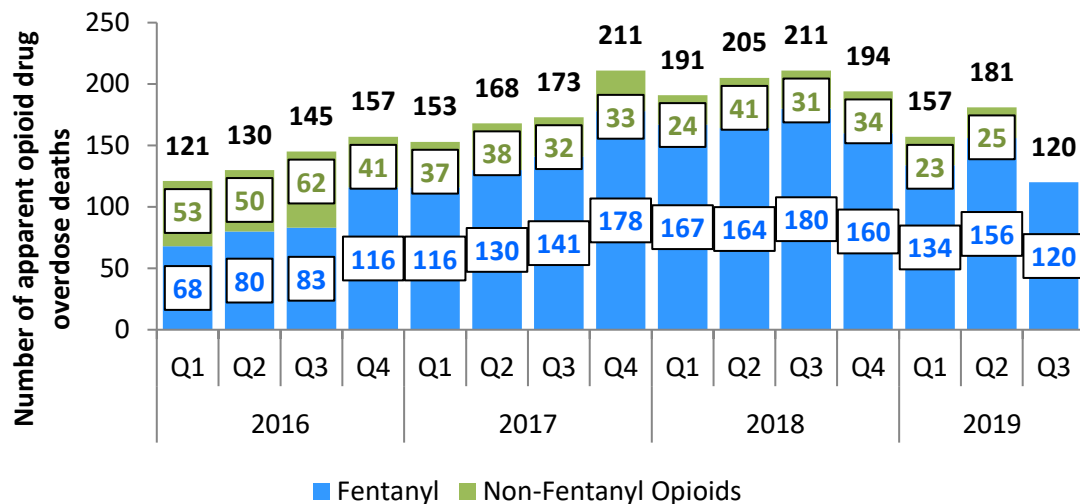
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Mortality data: Apparent accidental opioid poisoning deaths

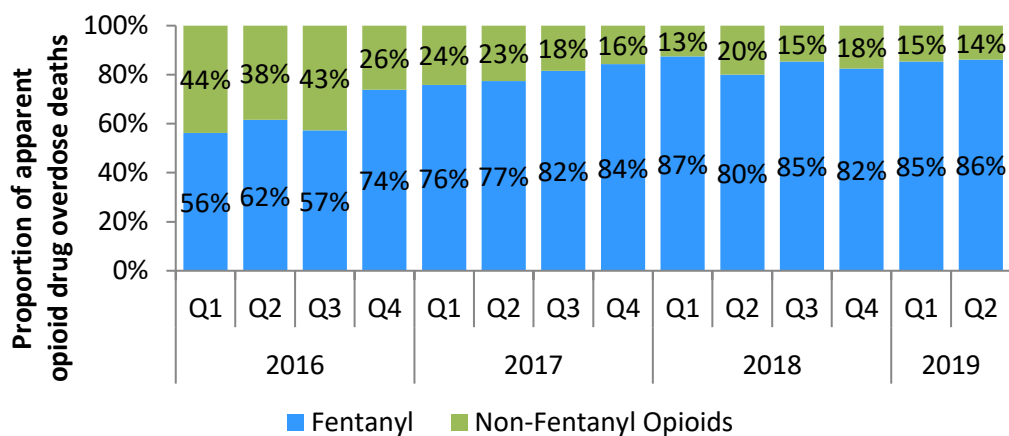
Fentanyl and non-fentanyl related deaths

Figure 1: Number of apparent accidental opioid poisoning deaths related to any opioid, by quarter. January 1, 2016 to September 30, 2019. *Only fentanyl related opioid deaths are available for most recent quarter



- Since January 1, 2016 **2,397** individuals have died from an accidental opioid poisoning in Alberta.

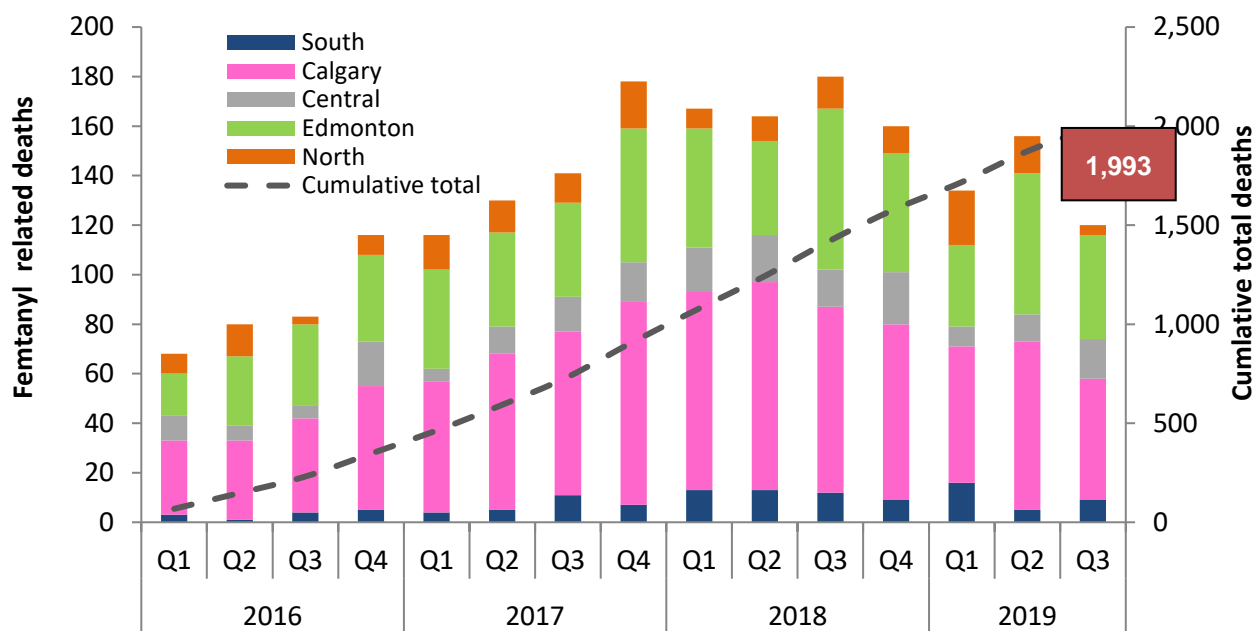
Figure 2: Proportion of fentanyl vs. non-fentanyl related apparent accidental opioid poisoning deaths, by quarter. January 1, 2016 to June 30, 2019.



- Almost all opioid poisoning deaths are now related to fentanyl. In the second quarter of 2019, 86 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 September 30, 2019.



- Since January 1, 2016, 1,993 individuals in Alberta died from an apparent accidental drug poisoning death related to fentanyl (347 in 2016, 565 in 2017, 671 in 2018, and 410 in 2019).
- In 2019, on average, 137 individuals in Alberta died from an apparent accidental drug poisoning death related to fentanyl per quarter, while in 2018, on average, 168 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. January 1, 2016 to September 30, 2019

South Zone	3	1	4	5	4	5	11	7	13	13	12	9	16	5	9	117
Calgary Zone	30	32	38	50	53	63	66	82	81	84	75	71	55	66	49	896
Central Zone	10	6	5	18	5	11	14	16	18	19	15	21	8	11	16	193
Edmonton Zone	17	28	33	35	40	38	38	54	47	38	65	48	34	56	42	614
North Zone	8	13	3	8	14	13	12	19	8	10	13	11	22	15	4	173
Alberta	68	80	83	116	116	130	141	178	167	164	180	160	134	156	120	1,993
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	

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 September 30, 2019.

	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
South Zone	13	4.3	27	8.8	47	15.3	30	12.9
Calgary Zone	150	9.3	264	16.2	311	18.7	172	13.5
Central Zone	39	8.1	46	9.5	72	14.7	35	9.7
Edmonton Zone	113	8.4	170	12.4	198	14.3	132	12.4
North Zone	32	6.5	58	11.8	43	8.7	41	11.3
Alberta	347	8.2	565	13.2	671	15.5	410	12.4

- The Calgary and Edmonton Zones continue to have the highest number of apparent accidental poisoning deaths related to fentanyl. As of the third quarter in 2019, the Calgary Zone had the highest rate per 100,000 person years at 13.5, compared to a provincial average of 12.4 per 100,000 person years. The South Zone had the second highest rate of 12.9 per 100,000 person years.

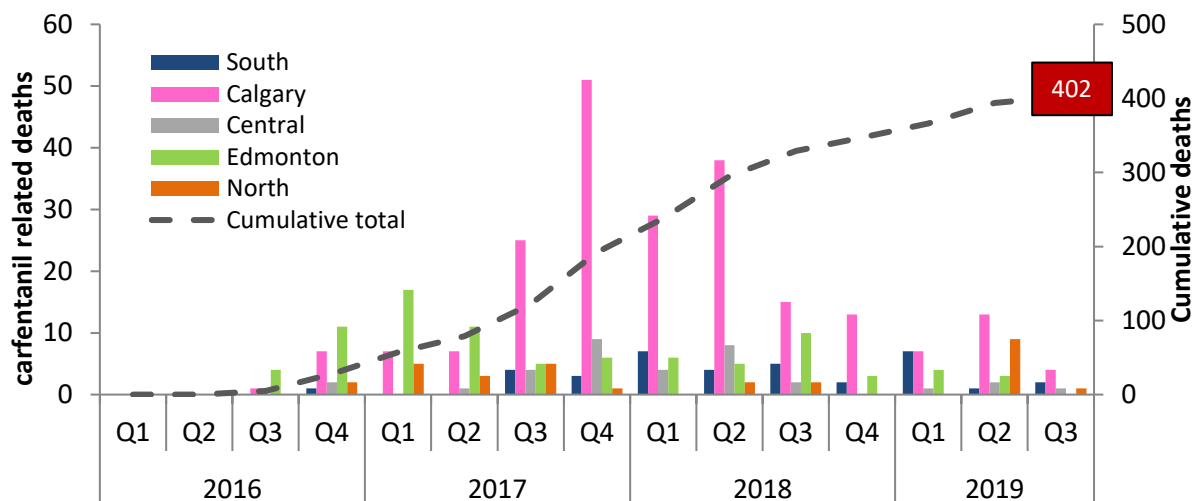
Table 3: Rate (per 100,000 person years) and number of apparent accidental drug poisoning deaths related to fentanyl, by municipality (based on place of death). January 1, 2016 to September 30, 2018.

	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Lethbridge	8	8.3	15	15.3	25	25.1	15	20.4
Medicine Hat	2	2.9	7	10.2	12	17.5	7	13.6
Calgary	144	10.9	239	18.0	291	21.8	160	15.7
Red Deer	23	21.1	23	21.4	46	42.8	12	14.7
Edmonton	99	10.2	136	13.7	179	18.1	118	15.4
Fort McMurray	9	11.1	14	17.6	11	13.9	6	10.1
Grande Prairie	10	13.5	27	36.4	24	32.4	19	34.0
Total	295	10.8	461	16.7	588	21.3	337	16.0

- The municipalities of Calgary and Edmonton continue to have the highest number of apparent accidental poisoning deaths related to fentanyl. As of the second quarter in 2019, the Municipality of Grande Prairie had the highest rate of apparent drug poisoning deaths related to fentanyl per 100,000 person years, followed by the Municipality of Lethbridge. However, both these municipalities have seen a decrease in their rate since the previous reporting period.

*YTD = January 1 to September 30, 2019

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 September 30, 2019. *Subcategory of fentanyl deaths from Figure 3*



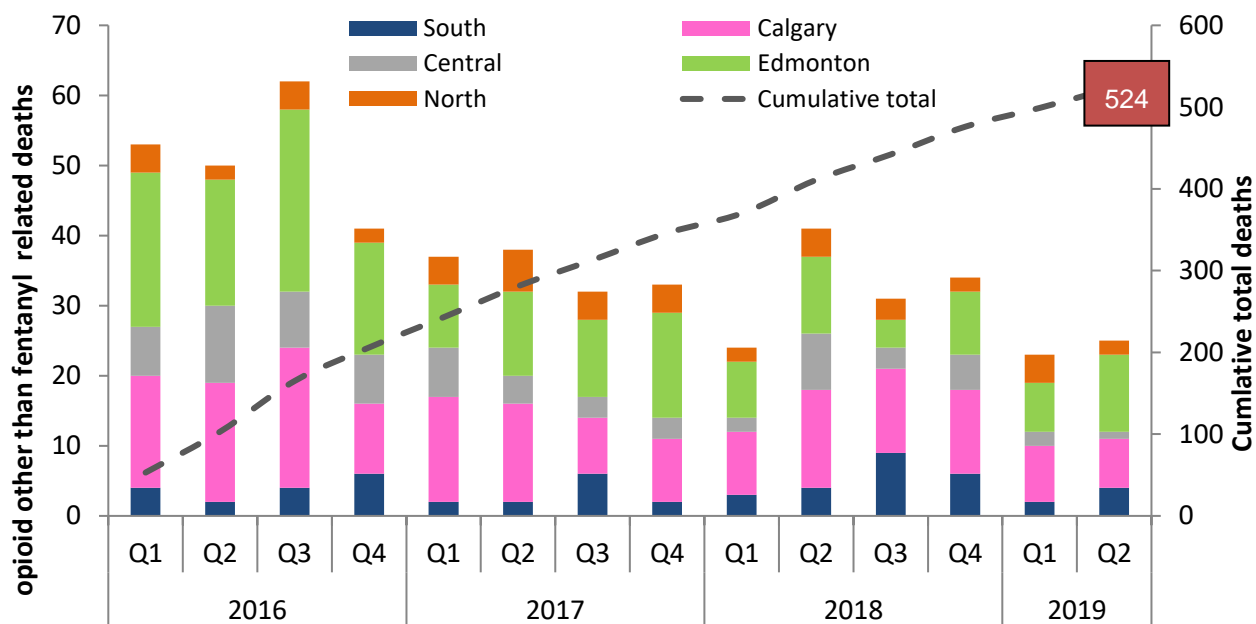
- The first Alberta carfentanil cases were detected in the third quarter of 2016, with 28 cases occurring in all of 2016. In 2017, 164 individuals in Alberta died from a drug poisoning related to carfentanil, 155 in 2018, and 55 in 2019.
- The number of carfentanil cases peaked in the last quarter of 2017 (70 deaths), and since then, the numbers have decreased, with 55 occurring in the first nine months of 2019.
- To date, as of September 30, 2019, 54 per cent of all carfentanil deaths have occurred in the Calgary Zone. In the third quarter of 2019, the highest proportion of carfentanil deaths occurred in the Calgary Zone (50 per cent, 4 deaths). There was only one carfentanil death in the North Zone in the third quarter of 2019, compared to 9 in the previous quarter.
- As of September 30, 2019, the South Zone had the highest rate of carfentanil deaths per 100,000 (4.3) among the Zones, and the municipality of Grande Prairie had the highest rate among the seven largest Albertan municipalities (10.7).

Table 4: Number of apparent accidental carfentanil poisoning deaths, by quarter (Subcategory of fentanyl deaths from Table 1). January 1, 2016 to September 30, 2019.

South Zone	0	0	0	1	0	0	4	3	7	4	5	2	7	1	2	36
Calgary Zone	0	0	1	7	7	7	25	51	30	38	15	13	7	13	4	217
Central Zone	0	0	0	2	0	1	4	9	4	8	2	0	1	2	1	34
Edmonton Zone	0	0	4	11	17	11	5	6	5	5	10	3	4	3	0	85
North Zone	0	0	0	2	5	3	5	1	0	2	2	0	0	9	1	30
Alberta	0	0	5	23	29	22	43	70	46	57	34	18	19	28	8	402
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	

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 June 30, 2019.



- Since January 1, 2016, a total of 524 individuals in Alberta have died from apparent accidental drug poisoning related to an opioid other than fentanyl (206 in 2016, 140 in 2017, 130 in 2018, and 48 in the first half of 2019).

Table 5: Number of apparent accidental drug poisoning deaths related to an opioid other than fentanyl, by quarter. January 1, 2016 to June 30, 2019

South Zone	4	2	4	6	2	2	6	2	3	4	9	6	2	4	56
Calgary Zone	16	17	20	10	15	14	8	9	9	14	12	12	8	7	171
Central Zone	7	11	8	7	7	4	3	3	2	8	3	5	2	1	71
Edmonton Zone	22	18	26	16	9	12	11	15	8	11	4	9	7	11	179
North Zone	4	2	4	2	4	6	4	4	2	4	3	2	4	2	47
Alberta	53	50	62	41	37	38	32	33	24	41	31	34	23	25	524
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	

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 June 30, 2019.

	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
South Zone	16	5.3	12	3.9	22	9.5	6	3.9
Calgary Zone	63	3.9	46	2.8	47	3.8	15	1.8
Central Zone	33	6.9	17	3.5	18	4.9	3	1.2
Edmonton Zone	82	6.1	47	3.4	32	3.1	18	2.5
North Zone	12	2.4	18	3.7	11	3.0	6	2.5
Alberta	206	4.9	140	3.3	130	4.0	48	2.2

- The Calgary and Edmonton Zones continue to have the highest number of these deaths. In the first half of 2019, the South Zone had the highest rate per 100,000 person years at 3.9, 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 June 30, 2019.

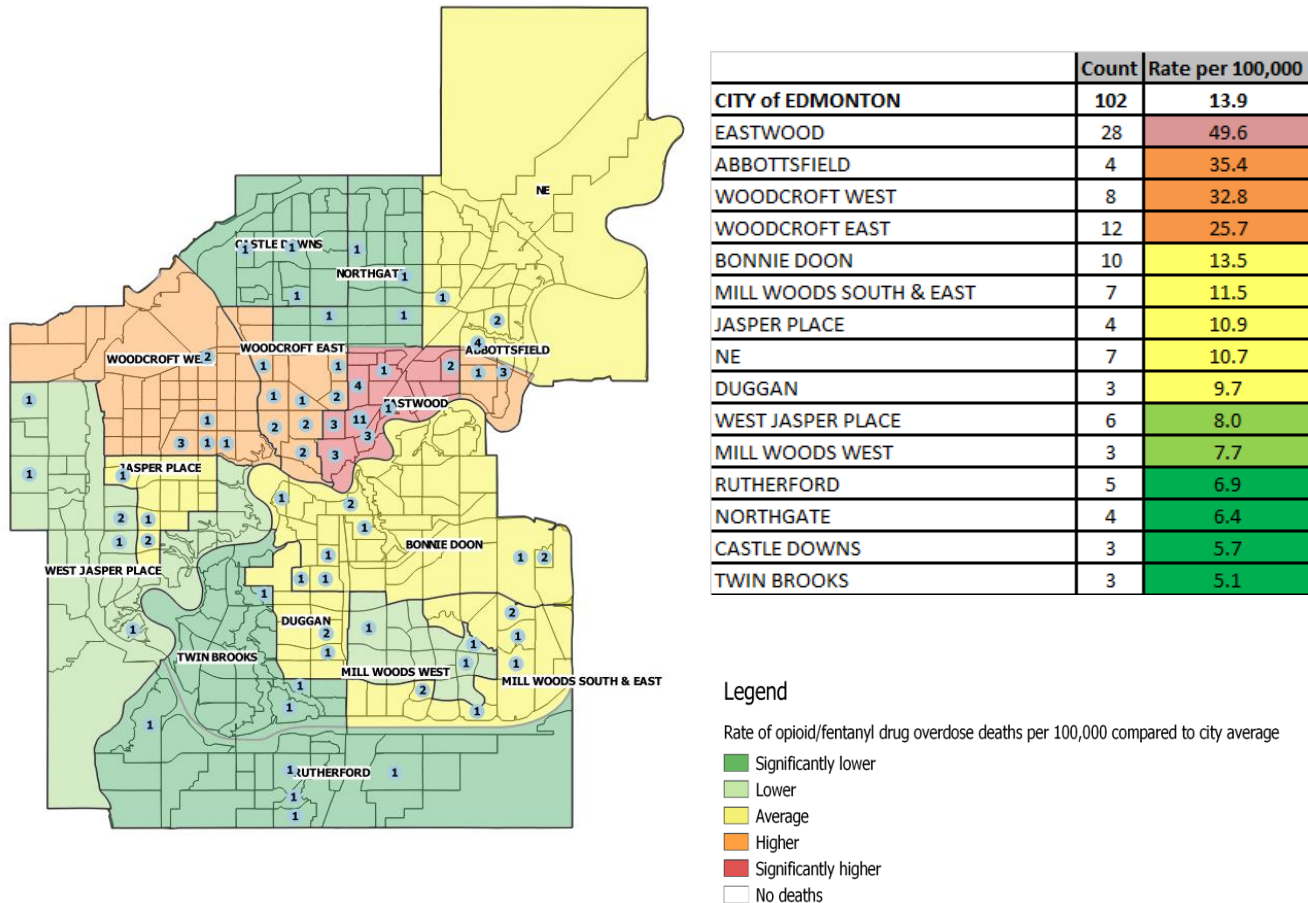
	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Lethbridge	4	4.1	3	3.1	7	9.4	3	6.1
Medicine Hat	4	5.9	3	4.4	5	9.7	2	5.8
Calgary	47	3.6	35	2.6	32	3.2	13	1.9
Red Deer	12	11.0	7	6.5	7	8.7	1	1.8
Edmonton	66	6.8	41	4.1	28	3.8	14	2.7
Fort McMurray	1	1.2	2	2.5	0	0.0	0	0.0
Grande Prairie	1	1.4	4	5.4	2	3.6	1	2.7
Total	135	5.0	95	3.5	81	3.9	34	2.4

- The municipalities of Calgary and Edmonton continue to have the highest number of these deaths. In the second quarter of 2019, the Municipality of Lethbridge had the highest rate of apparent accidental drug poisoning deaths related to an opioid other than fentanyl per 100,000 person years, followed by Medicine Hat.

*YTD = January 1 to June 30, 2019

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, 2019 to September 30, 2019.

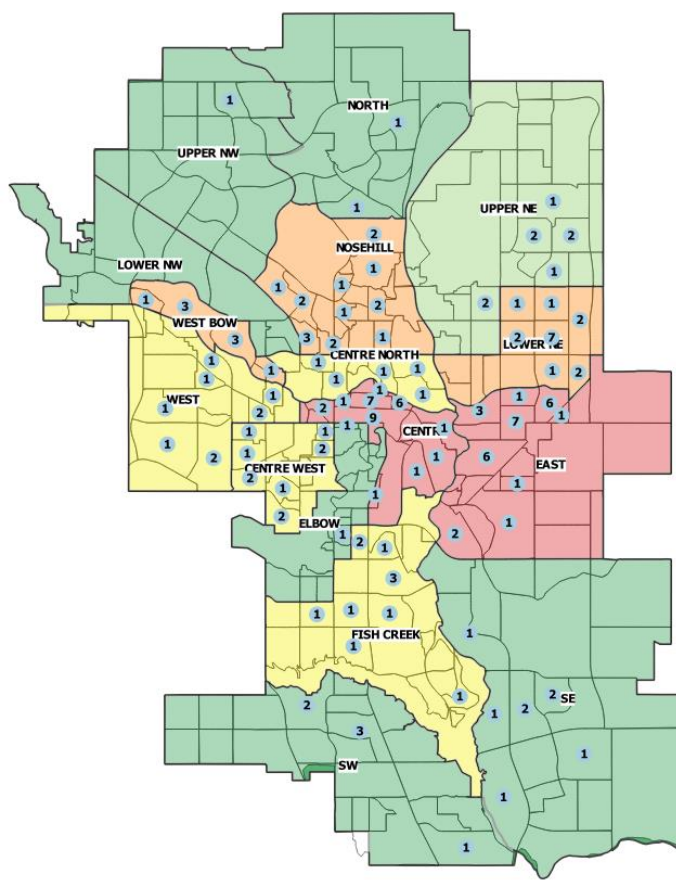


● Number in blue circle represents neighborhood level counts

- Within the Municipality of Edmonton, the LGAs with a **higher** rate of apparent accidental opioid poisoning deaths **compared to the municipality average** were Eastwood, Abbotsfield, and Woodcroft West and East. However, 49 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 59 per cent of fentanyl-related deaths in Edmonton.
- The neighborhoods that had four or more deaths were McCauley (11), Homesteader (4), and Alberta Avenue (4).

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 13 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, 2019 to September 30, 2019.



	Count	Rate per 100,000
CITY of Calgary	160	15.7
CENTRE	31	63.1
EAST	28	49.3
WEST BOW	8	48.9
NOSEHILL	16	26.8
LOWER NE	16	21.6
CENTRE WEST	10	19.9
CENTRE NORTH	5	14.5
WEST	9	12.8
FISH CREEK	11	12.8
UPPER NE	8	9.8
SE	8	8.1
SW	6	7.0
ELBOW	2	6.4
NORTH	2	2.3
UPPER NW	1	1.1
LOWER NW	0	0.0

Legend

Rate of opioid/fentanyl drug overdose deaths per 100,000 compared to city average

- Significantly lower
- Lower
- Average
- Higher
- Significantly higher
- No deaths

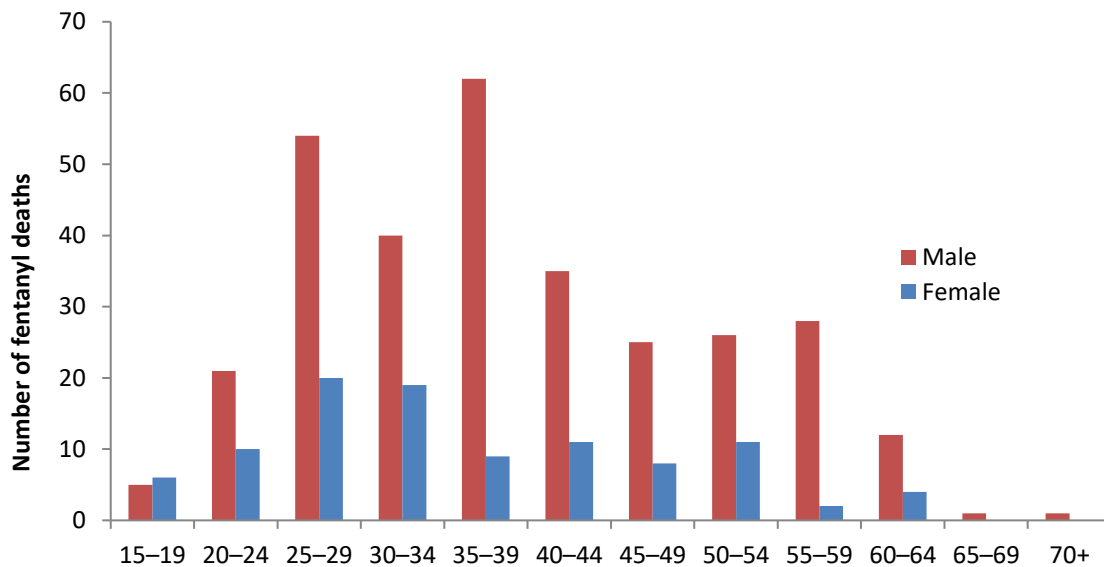
● Number in blue circle represents neighborhood level counts

- Within the Municipality of Calgary, the LGAs with **higher** rates of apparent accidental opioid poisoning deaths **compared to the municipality average** were West Bow, Nosehill, Lower NE, Centre, and East. However, 38 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 71 per cent of fentanyl-related deaths in Calgary.
- The neighborhoods that had seven or more deaths were Beltline (9), Pineridge (7), Downtown core (7), and Forest Lawn (7).

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 12 per cent of deaths.

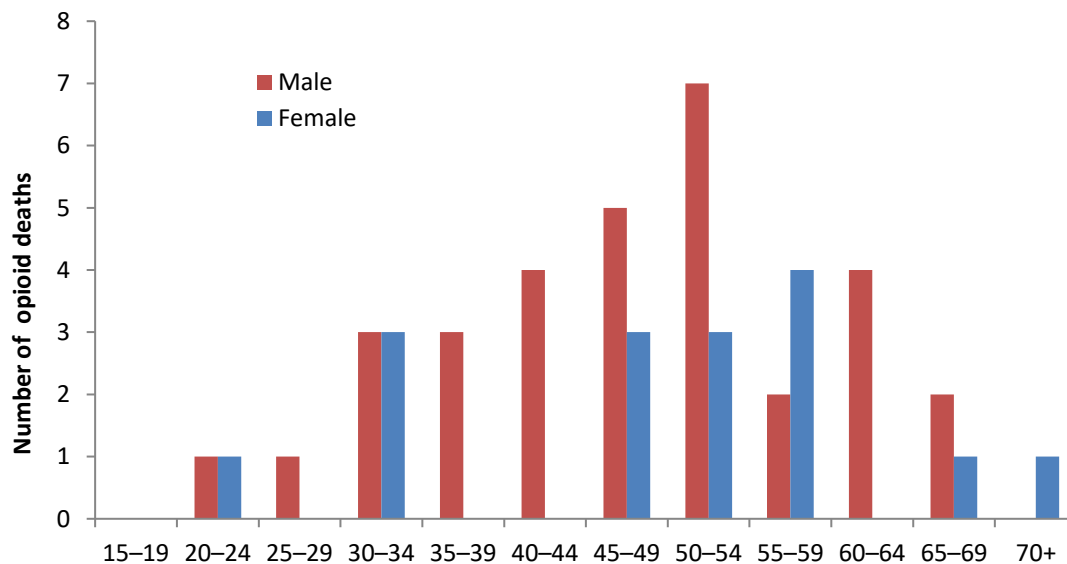
Demographics and recent medical history of apparent accidental opioid poisoning decedents

Figure 8: Apparent accidental poisoning deaths related to fentanyl, by sex and age. January 1, 2019 to September 30, 2019.



- 76 per cent of apparent accidental drug poisoning deaths related to fentanyl were among males. Among males, the five-year age group to see the highest proportion of deaths was 35 to 39 years, and among females, 25 to 29 years.

Figure 9: Apparent accidental poisoning deaths related to an opioid other than fentanyl, by sex and age, January 1, 2019 to June 30, 2019.



- 67 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 54, among females, 55 to 59.

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, 2019 to June 30, 2019.

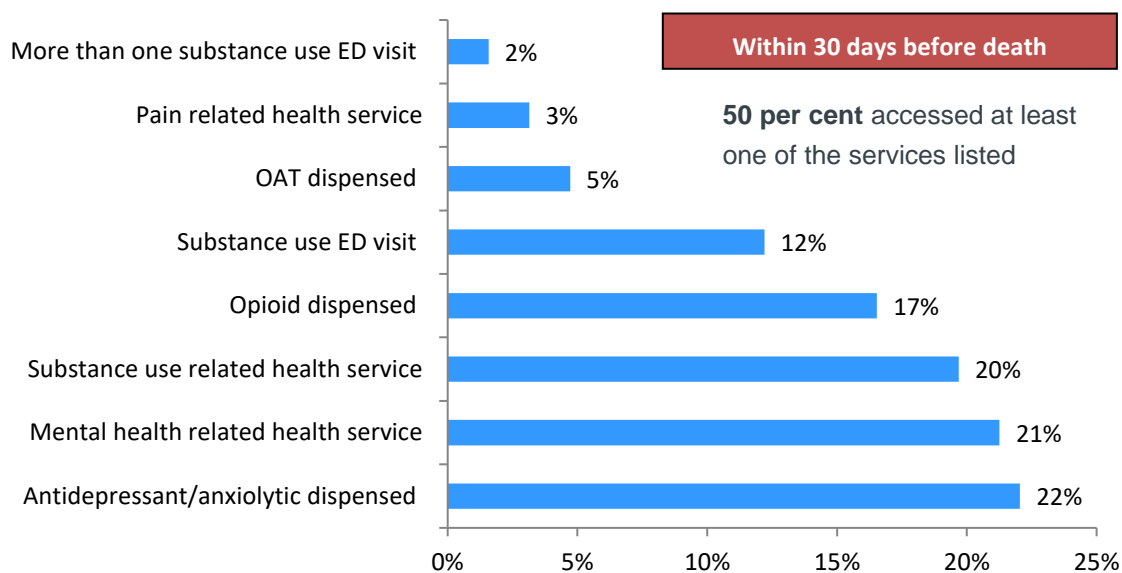
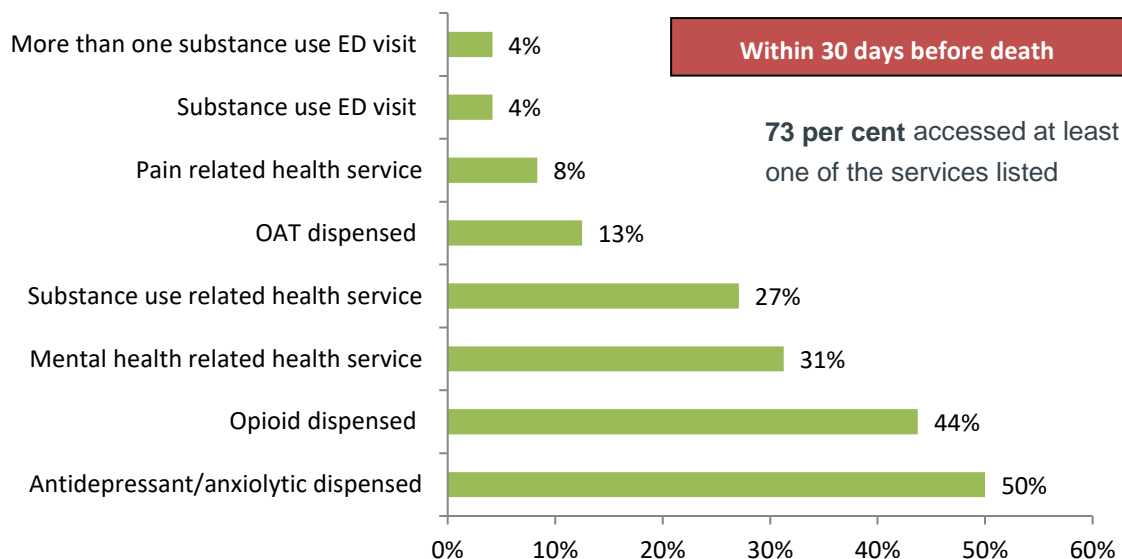


Figure 11: Proportion of apparent accidental poisoning deaths related to an opioid other than fentanyl, by medical history within the 30 days before the date of death, January 1, 2019 to June 30, 2019.



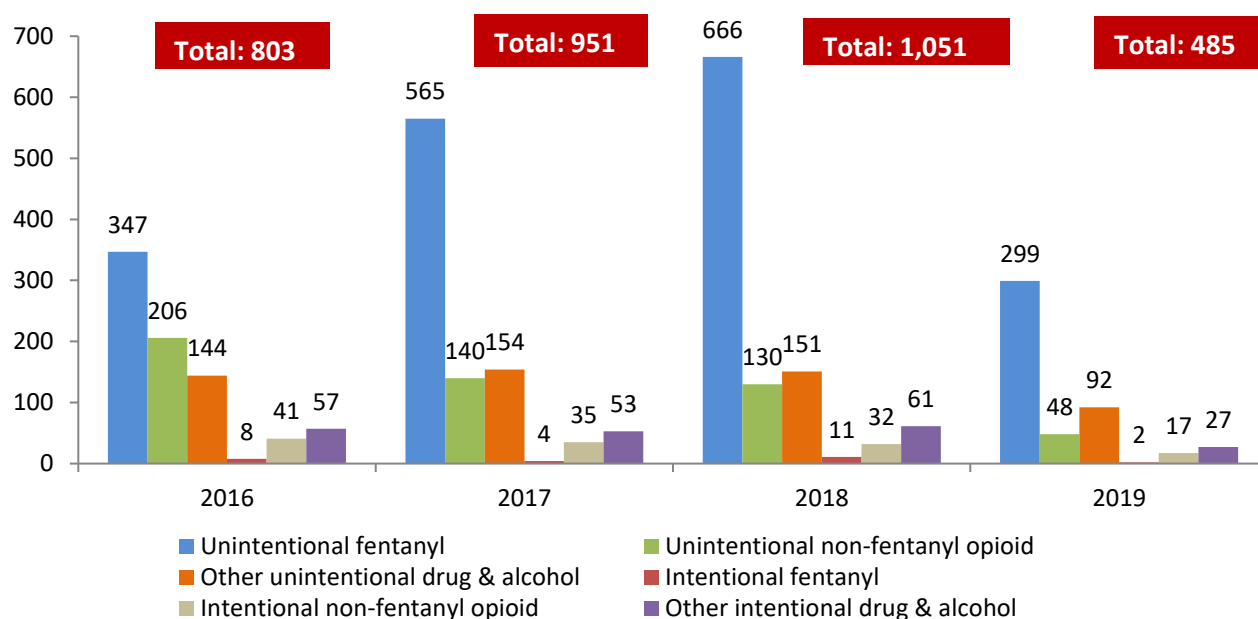
- Among apparent accidental poisoning deaths related to fentanyl, the most frequent health care utilization within 30 days before the individual's date of death was having a substance use or mental health related visit, or having an antidepressant or anxiolytic dispensed.
- Among apparent accidental poisoning deaths poisoning related to an opioid other than fentanyl, having an opioid or an antidepressant or anxiolytic 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 2019.

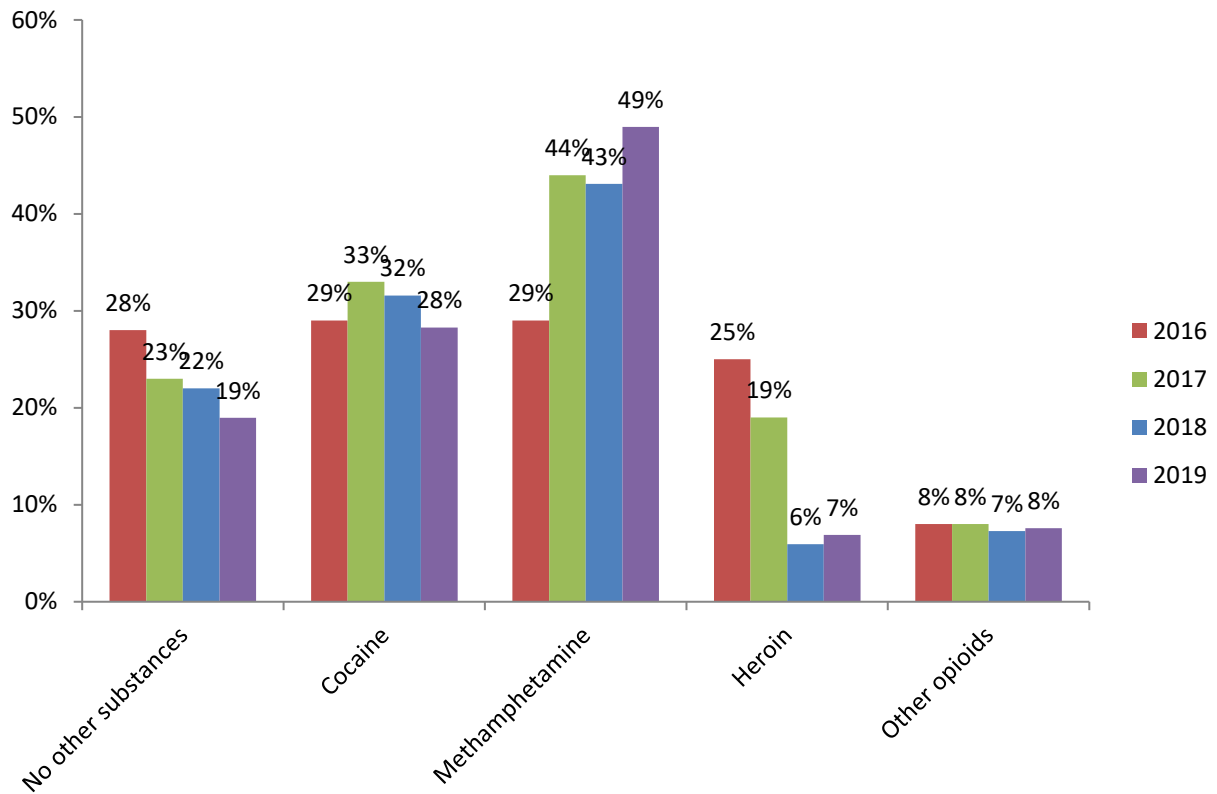
Some drug poisoning deaths in 2018 and 2019 are currently under review by the Office of the Chief Medical Examiner and have not been confirmed. Therefore, upon completion of all cases, the final number of total drug poisoning deaths in 2018 and 2019 will be higher than the current number.



- From 2016 to 2019, the proportion of all drug poisoning deaths that were unintentional (accidental) increased from 84 per cent to 91 per cent.
- Compared to 2016, in 2019, the proportion of unintentional (accidental) drug poisoning deaths involving any opioid (non-fentanyl or fentanyl) remained similar, at about 80 per cent of all accidental drug poisoning deaths.
- From 2016 to 2019, the proportion of intentional (suicide) drug poisoning deaths involving any opioid (non-fentanyl or fentanyl) decreased from 46 per cent to 41 per cent.
- In 2019, approximately 24 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 22 (5 per cent) of all drug and alcohol poisoning deaths in 2019. 94 per cent were accidental poisoning deaths, and 6 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 2019.

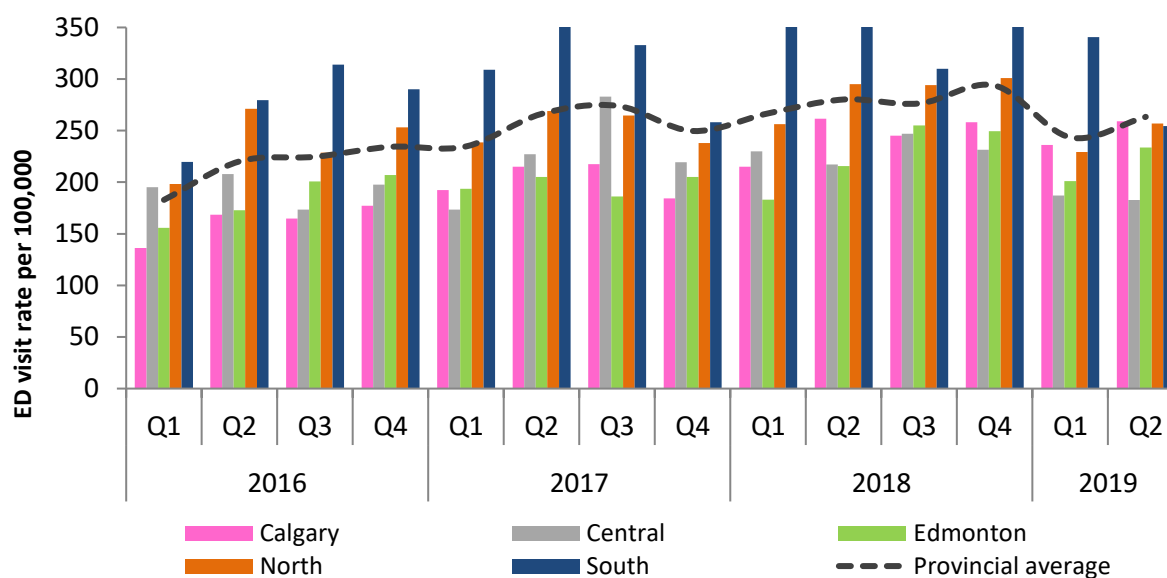


- In 2019, approximately 19 per cent of all fentanyl poisoning deaths had no other substances listed on the death certificate as causing death, while 49 per cent had methamphetamine listed, 28 per cent had cocaine listed, and 7 per cent had heroin listed.
- The proportion of fentanyl poisoning deaths where methamphetamine was also listed as causing death was 1.7 times higher in 2019 compared to 2016 (49 per cent in 2019, 29 per cent in 2016).
- The proportion of fentanyl poisoning deaths where cocaine was also listed as causing death was similar from 2016 to 2019 (28 per cent in 2019, 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 25 per cent in 2016, to 7 per cent in 2019.

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 opioids and other drug use, by quarter and Zone, per 100,000 person years. January 1, 2016 to June 30, 2019.



- The provincial rate of ED visits related to opioids and other drug use increased by 44 per cent from the first quarter of 2016 to the second quarter of 2019. From the first quarter of 2019 to the second quarter of 2019, the rate increased by 8 per cent (2,622 visits in Q1 2019 and 2,836 visits in Q2 2019). However this rate was still 10 per cent lower than the rate in the last quarter of 2018.
- In the second quarter of 2019, the rate of ED visits related to opioids and other drug use was the highest in the Calgary Zone (259 visits per 100,000 person years); approximately 1 per cent higher than the provincial average over this period (263 visits per 100,000 person years). The South Zone saw the largest decrease in the rate of ED visits from the last quarter of 2018 to the second quarter of 2019 (45 per cent decrease).
- In 2019, the Calgary and Edmonton Zones had the highest number of ED visits related to opioids and other drug use (37 and 28 per cent of all provincial ED visits to opioids and other drug use respectively).

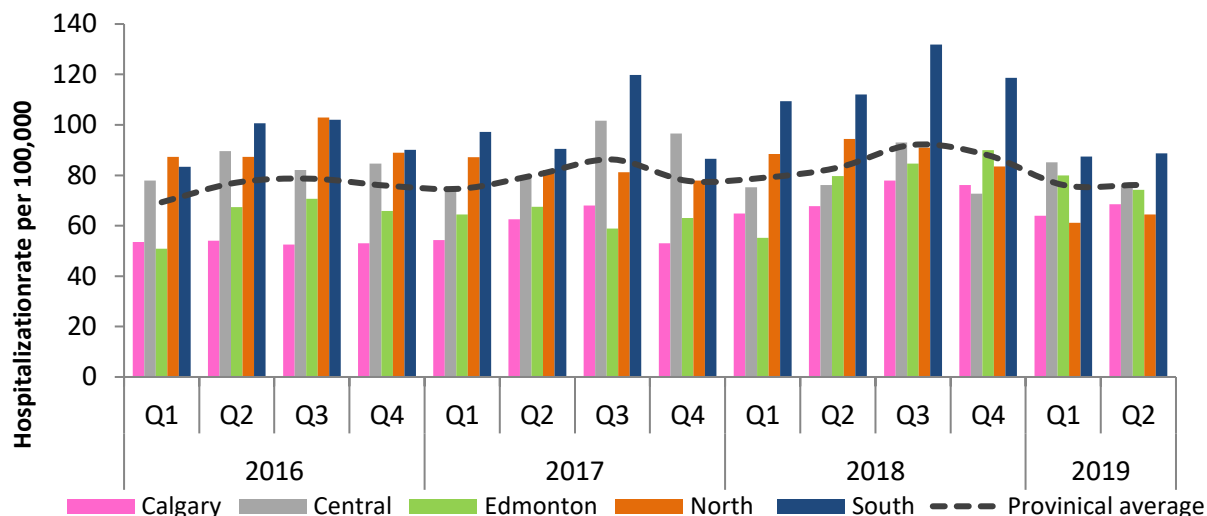
Table 8: Top 10 ED facilities utilized for emergency visits related to opioids and other drug use, January 1, 2016 to June 30, 2019

Rank	Facility	Count	% of all visits*	Rank	Facility	Count	% of all visits*
1	Royal Alexandra Hospital	4,967	13%	6	South Health Campus	1,554	4%
2	Peter Lougheed Centre	3,733	10%	7	Red Deer Regional Hospital	1,504	4%
3	Rockyview General Hospital	3,134	8%	8	Chinook Regional Hospital	1,389	4%
4	Foothills Medical Centre	2,886	8%	9	Sheldon M Chumir Center	1,486	4%
5	U of A Hospital	2,070	6%	10	Grey Nuns Community Hospital	1,383	4%

*Percentage of the total 37,102 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 opioids and other drug use, by quarter and Zone, per 100,000 person years. January 1, 2016 to June 30, 2019.



- The rate of hospitalizations related to opioids and other drug use increased by 10 per cent from the first quarter of 2016 to the second quarter of 2019. From the first quarter of 2019 to the second quarter of 2019, the rate remained the same. However, this rate was still 13 per cent lower than the rate in the last quarter of 2018.
- In the second quarter of 2019 the rate of hospitalizations related to opioids and other drug use was the highest in the South Zone (89 hospitalizations per 100,000 person years); approximately 17 per cent higher than the provincial average (76 hospitalizations per 100,000 person years).
- In 2019, the Calgary and Edmonton Zones had the highest number of hospitalizations related to harm associated with opioids and other drug use (33 and 33 per cent of all hospitalizations related to harm associated with opioids and other drug use per quarter, respectively).

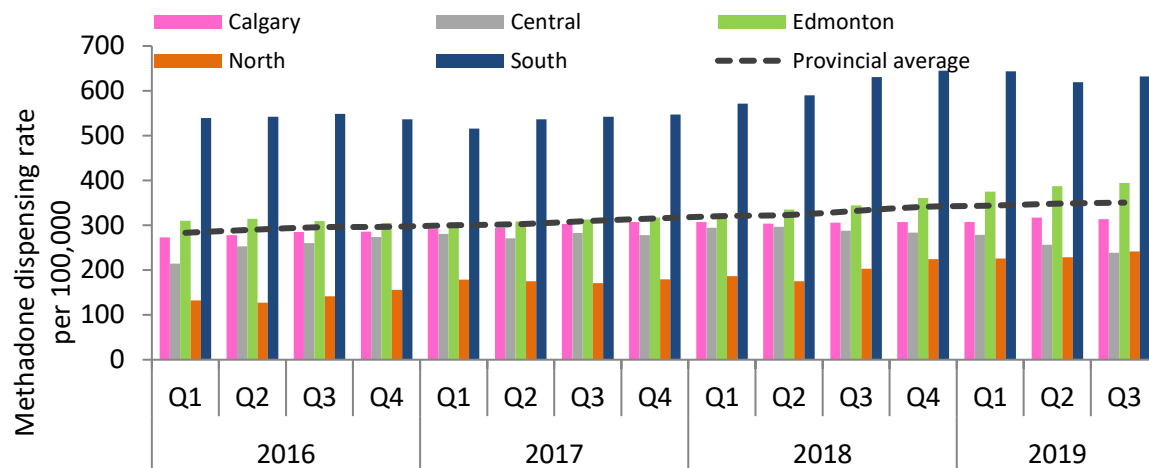
Table 9: Top 10 facilities utilized for hospitalizations related to harm associated with opioids and other drug use, January 1, 2016 to June 30, 2019.

Rank	Facility	Count	Percent of all stays*	Rank	Facility	Count	Percent of all stays*
1	Royal Alexandra Hospital	2,151	18%	6	Red Deer Regional Hospital	537	5%
2	Foothills Medical Centre	1,285	11%	7	South Health Campus	410	3%
3	Peter Lougheed Centre	1,267	11%	8	Chinook Regional Hospital	386	3%
4	Rockyview General Hospital	845	7%	9	Grey Nuns Community Hospital	375	3%
5	University Of Alberta Hospital	732	6%	10	Misericordia Community Hosp	360	3%

*Percentage of the total 11,733 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)

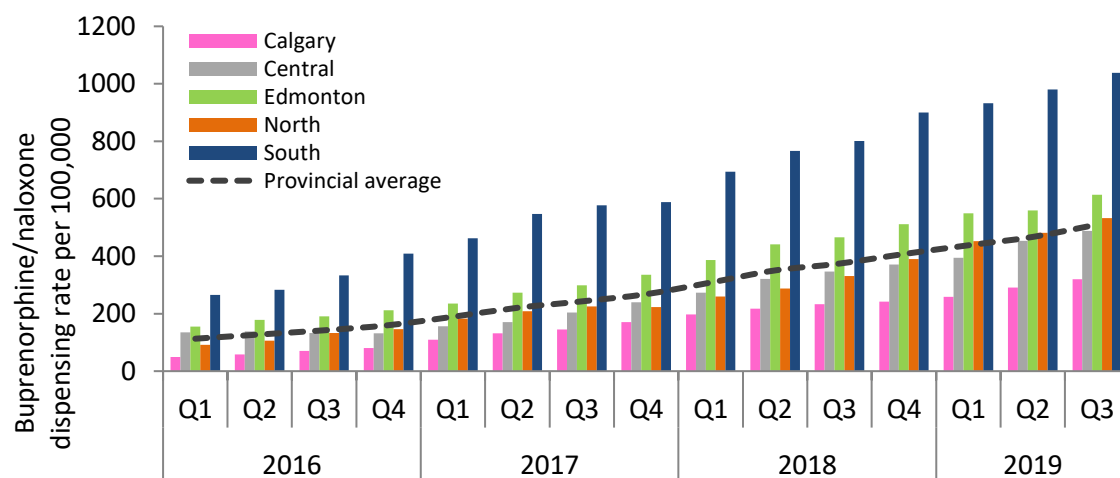
Methadone & buprenorphine/naloxone dispensing from community pharmacies

Figure 16: Rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000 person years, by quarter and Zone. January 1, 2016 to September 30, 2019.



- In Alberta, the rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000 person years increased slightly from the second quarter of 2019 to the third quarter by 1 per cent. The South Zone had the highest rate in the third quarter of 2019, 180 per cent higher than the provincial average (632 per 100,000 person years vs. 352 per 100,000 person years).

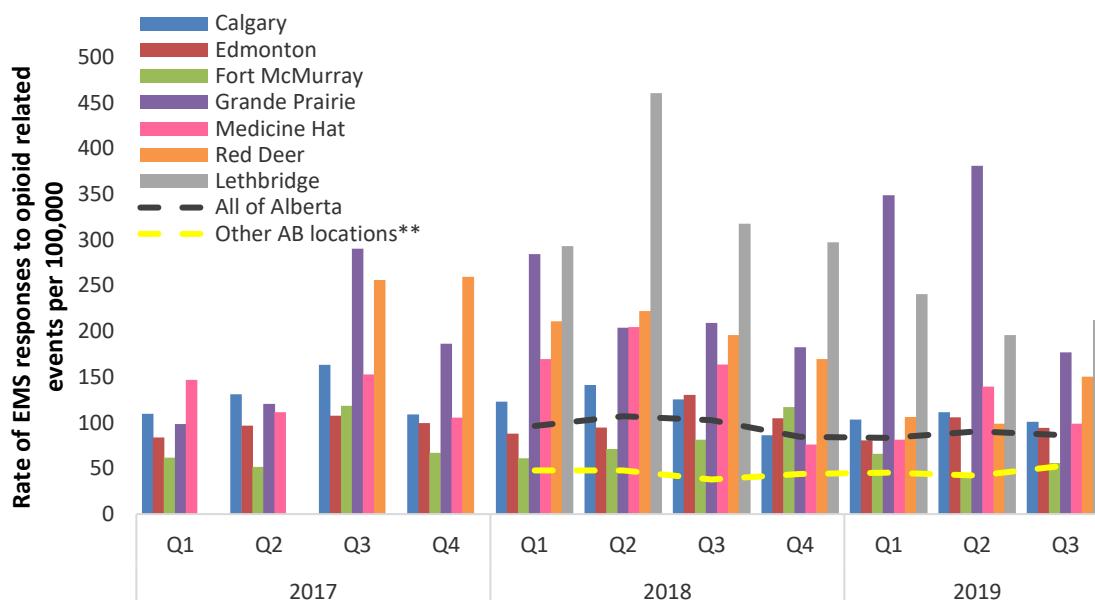
Figure 17: Rate of unique individuals dispensed buprenorphine/naloxone (generic brands and Suboxone™) indicated for opioid dependence from community pharmacies per 100,000 person years, by quarter and Zone. January 1, 2016 to September 30, 2019.



- In Alberta, the rate of unique individuals dispensed buprenorphine/naloxone indicated for opioid dependence from community pharmacies per 100,000 person years continues to increase, as seen by the 9 per cent increase from the second quarter of 2019 to the third. The South Zone had the highest rate in the third quarter of 2019, 204 per cent higher than the provincial average (1038 per 100,000 person years vs. 510 per 100,000 person years).

Emergency Medical Services

Figure 18: Rate (per 100,000 person years) of Emergency Medical Services (EMS) responses to opioid related events, by quarter and municipality. January 1, 2016 to September 30, 2019. Note: Red Deer EMS data reported starting July 2017, EMS data for Lethbridge and the majority of Alberta became available in 2018 (with the exception of a few smaller communities).



- In the third quarter of 2019, the provincial rate of EMS responses to opioid related events per 100,000 person years was slightly lower compared to the rate in second quarter of 2019 (86 vs. 90). The per 100,000 person years rate in the first nine months of 2019 is lower compared to the annual provincial rate in 2018 (87 vs 98).
- In the third quarter 2019, Fort McMurray was the only municipality whose rate of EMS responses to opioid related events per 100,000 person years was lower than the provincial average. Grande Prairie and Lethbridge had the highest rates in the third quarter of 2019, though both municipalities saw a decrease compared to the previous quarter.

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 September 30, 2019.

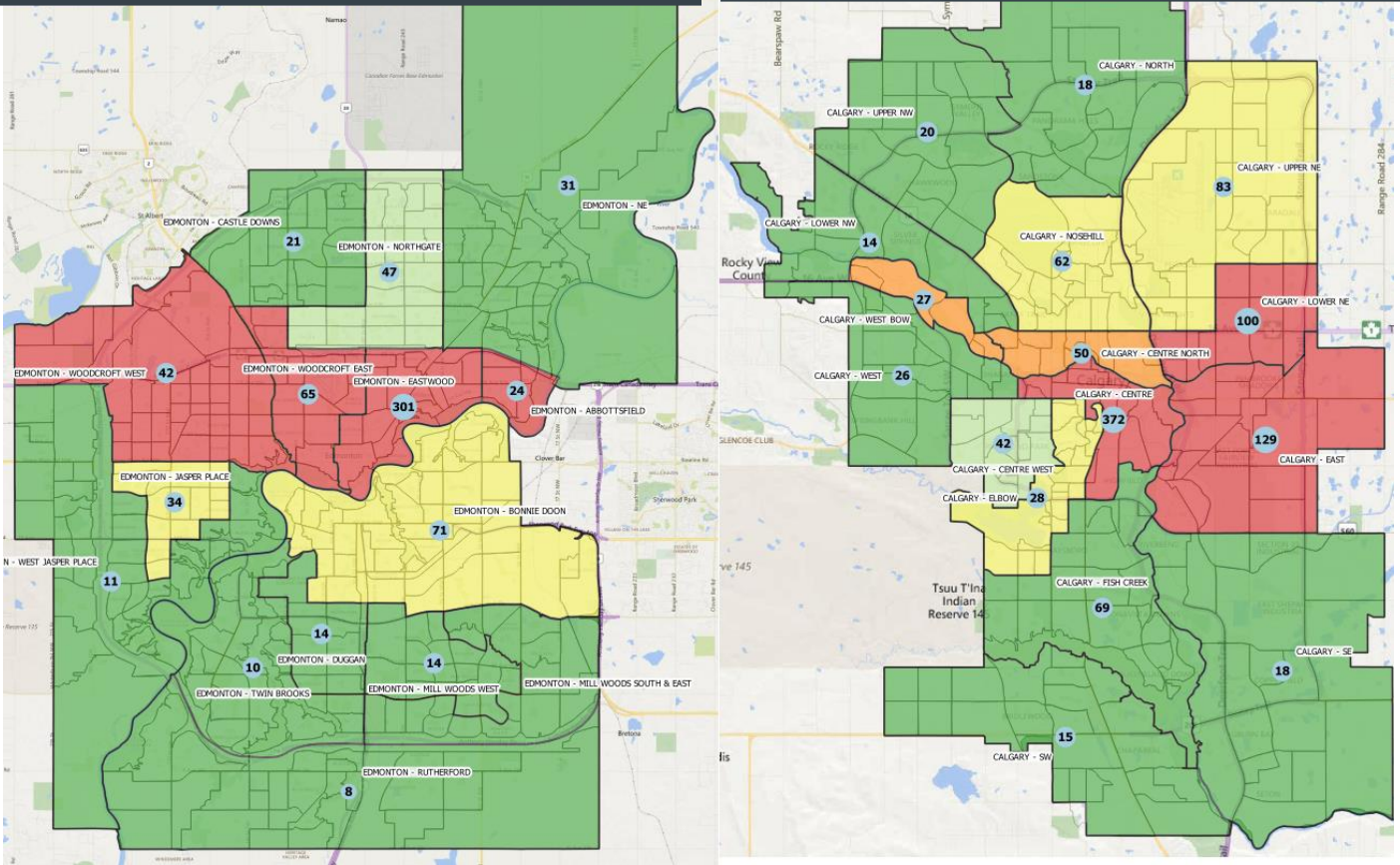
	2017		2018		2019 YTD	
	count	rate	count	rate	count	rate
Calgary	1,693	128	1,595	119	1,073	105
Edmonton	950	97	1,045	105	717	94
Ft. McMurray	58	55	65	61	32	39
Grande Prairie	127	164	164	209	169	286
Medicine Hat	88	121	105	141	55	98
Red Deer*	137	258	212	216	97	132
Lethbridge	-	-	336	491	159	308
Other AB locations**	-	-	684	44	559	47
Alberta	-	-	4,206	98	2,861	87

*Reporting of EMS data for Red Deer started July 2017. Count and rate is based on events from July to December 2017. YTD = January 1 to September 30, 2019. **Communities outside of the largest seven municipalities specified.

Figure 19: Rate (per 100,000 person years) and count of Emergency Medical Services (EMS) responses to opioid related events, by LGA. January 1, 2019 to September 30, 2019.

Edmonton average: 94 per 100,000 person years (n =717)

Calgary average: 105 per 100,000 person years (n =1,073)



Legend

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

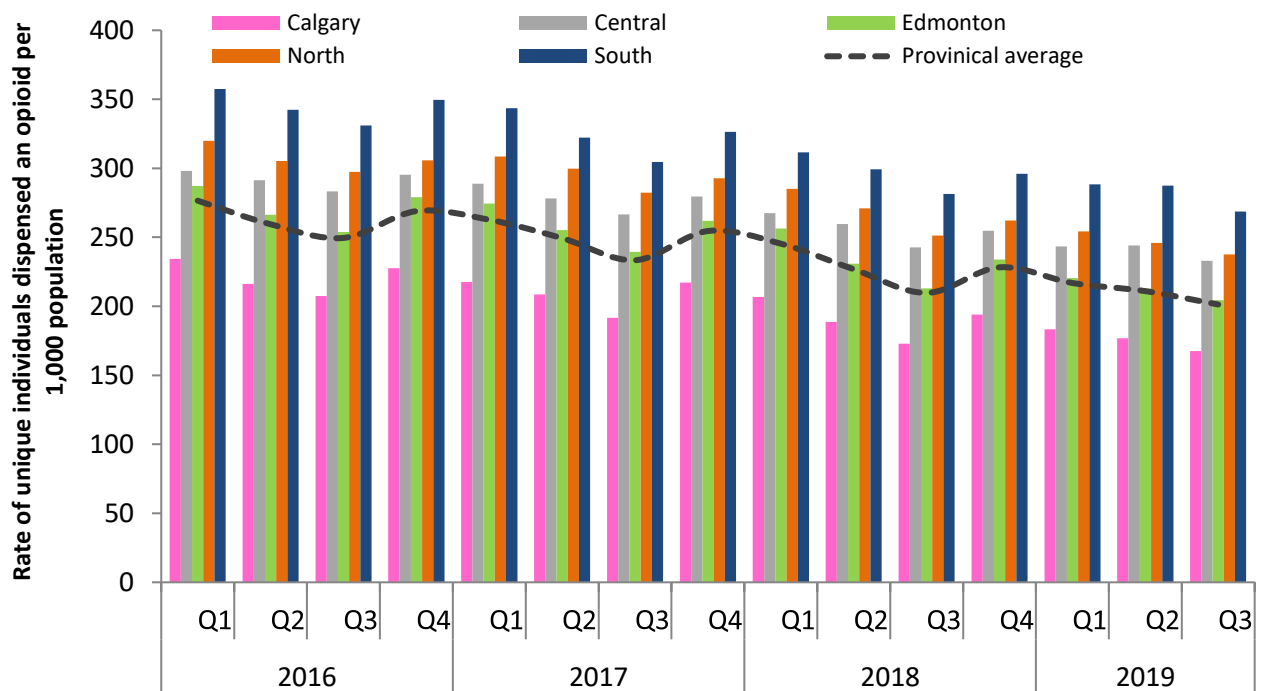
- Significantly lower
- Lower
- Average
- Higher
- Significantly higher

● Number in blue circle represents counts (numerator)

- Of the opioid related EMS events that occurred in Edmonton (717) in the first nine months of 2019, the highest rate (533 per 100,000 person years) and count (301) was in the Eastwood area. The LGAs with significantly higher rates of opioid related EMS events compared to the municipality average were Eastwood, Abbottsfield, and Woodcroft West and East.
- Of the opioid related EMS events that occurred in Calgary (1,073), the highest rate (757 per 100,000 person years) and count (372) was in Calgary Centre. The LGAs with significantly higher rates of opioid related EMS events compared to the municipality average were Calgary Centre, Lower North East, and East.

Prescription opioid dispensing

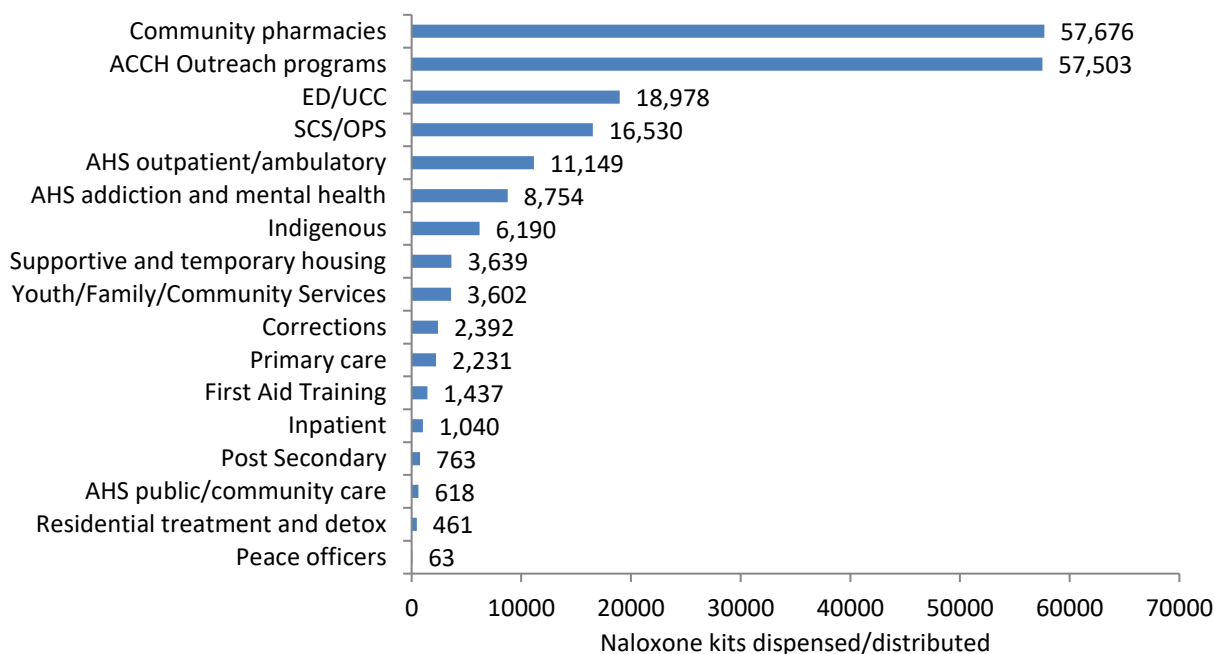
Figure 20: Rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 person years, by Zone and quarter. January 1, 2016 to September 30, 2019.



- Comparing the first quarter of 2016 to the third quarter of 2019, the rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 person years decreased by 27 per cent in Alberta. The average per cent decrease from quarter to quarter in this time period was 2 per cent.
- All Zones saw a similar decrease in this time period, ranging from a 22 to 29 per cent decrease. The South Zone has the highest rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 person years. In the third quarter of 2019, the rate in the South Zone was approximately 34 per cent higher than the provincial average (281 per 1,000 person years vs. 210 per 1,000 person years).

Community based naloxone kits

Figure 22: Naloxone kits dispensed/distributed by registered site type, January 1, 2016 to September 30, 2019.

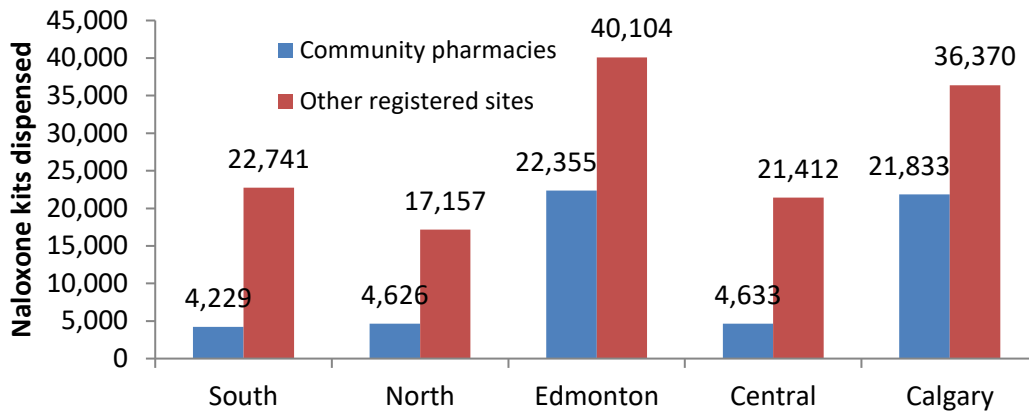


- From January 1, 2016 to September 30 2019, 195,460 naloxone kits were dispensed in Alberta through Alberta Health Services' (AHS') naloxone program, and 12,830 reversals were self-reported. Approximately 3,250 naloxone kits were distributed in Alberta by the Alberta Community Council on HIV (ACCH) 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 September 30, 2019.

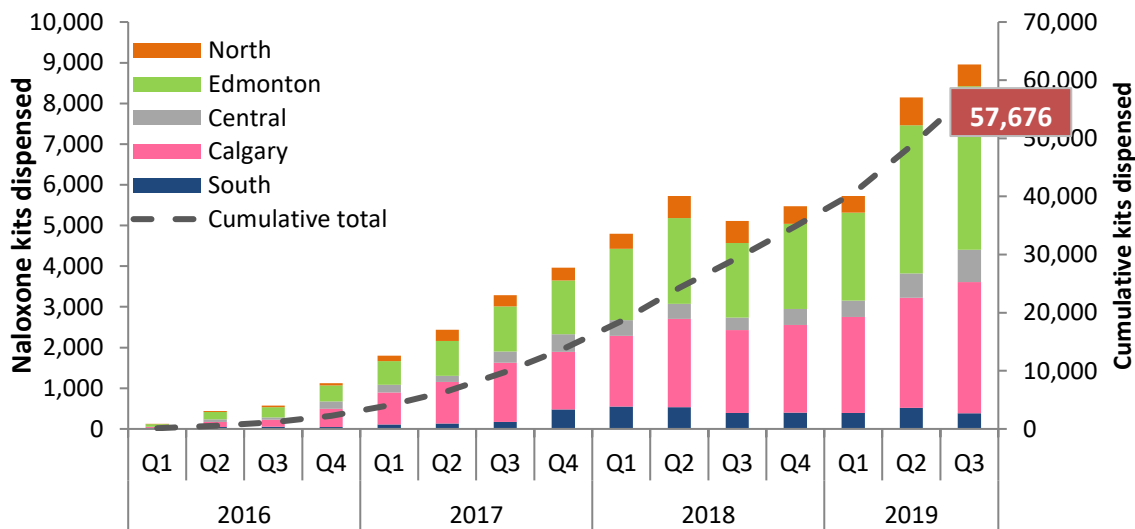
	South	Calgary	Central	Edmonton	North	Total
Community pharmacies	96	415	148	420	126	1,205
AHS outpatient and ambulatory	24	55	33	40	48	200
AHS addiction and MH	9	27	27	45	21	129
ED	14	18	28	12	34	106
Medical First Response	16	15	28	11	30	100
Primary Care	16	17	13	32	7	85
AHS public/community health	5	10	11	5	38	69
Indigenous	3	8	6	5	37	59
EMS	8	13	8	16	10	55
Youth/family/community services	3	13	6	15	1	38
Supportive and temporary housing	1	11	5	4	1	22
Residential treatment and Detox	4	5	4	4	2	19
Post Secondary	0	6	1	6	2	15
Inpatient	0	7	0	3	2	12
Corrections	2	4	1	3	1	11
ACCH outreach	2	3	1	1	4	11
SCS/OPS	1	2	1	4	1	9
First Aid Programs	0	3	4	2	0	9
Peace Officers	0	2	1	1	2	6
Total	204	634	326	629	367	2,160

Figure 23: Naloxone kits dispensed/distributed by community pharmacies and other registered sites, by Zone. January 1, 2016 to September 30, 2019.



- Throughout the province, non-pharmacy sites are dispensing more naloxone kits than community pharmacies (70 per cent of all kits given out by non-pharmacy sites).
- While the Calgary and Edmonton Zones have dispensed the highest total volume of kits in the province (32 per cent in Edmonton, 30 per cent in Calgary), in the third quarter of 2019, the South Zone had the highest per 100,000 person years rate of kits dispensed from both community pharmacies and other registered sites, two times higher than the provincial average.

Figure 24: Naloxone kits dispensed by community pharmacies, by Zone and month. January 1, 2016 to September 30, 2019.



- Across Alberta, in the first nine months of 2019, community pharmacies dispensed an average of 7,608 kits per quarter, an increase of about 44 per cent compared to 2018 (5,275 per quarter). Since January 1, 2016, 57,676 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 29 years, and 58 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, three sites, Boyle Street Community Services, Boyle McCauley Health Centre, and George Spady are included. Data from the Royal Alexandra inpatient site is not included. The Lethbridge site (ARCHES) is the only site that provides inhalation services.

Figure 25: Number of visits per quarter and site. January 1, 2018 to September 30, 2019.

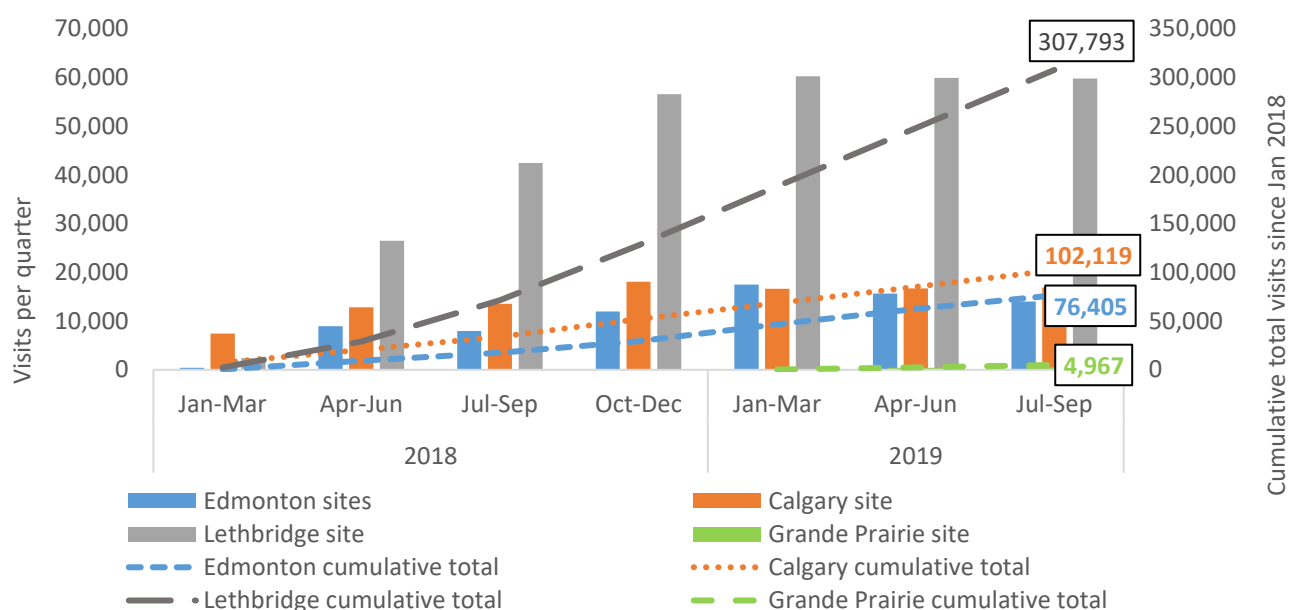


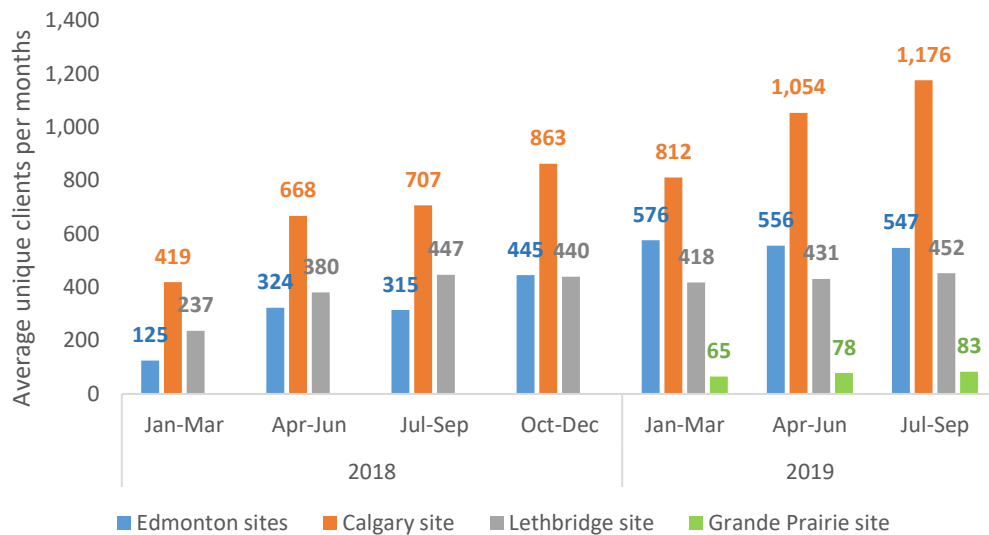
Table 12: Number of visits per quarter and site. January 1, 2018 to September 30, 2019.

	2018				2019			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Site total
Edmonton sites	390	8,974	7,975	11,961	17,489	15,641	13,975	76,405
Calgary site	7,469	12,854	13,548	18,051	16,623	16,694	16,880	102,119
Lethbridge site	2,375	26,464	42,450	56,562	60,260	59,901	59,781	307,793
Grande Prairie site (March 2019)					293	2,028	2,646	4,967
Quarter Total	10,234	48,292	63,973	86,574	94,665	94,264	92,681	491,284

Note: The Lethbridge site opened in February 2018. In Edmonton, Boyle Street opened March 2018, George Spady opened April 2018, and Boyle McCauley Health Centre opened November 2018. The Grande Prairie site opened March 2019. The Sheldon M. Chumir site in Calgary opened in October 2017.

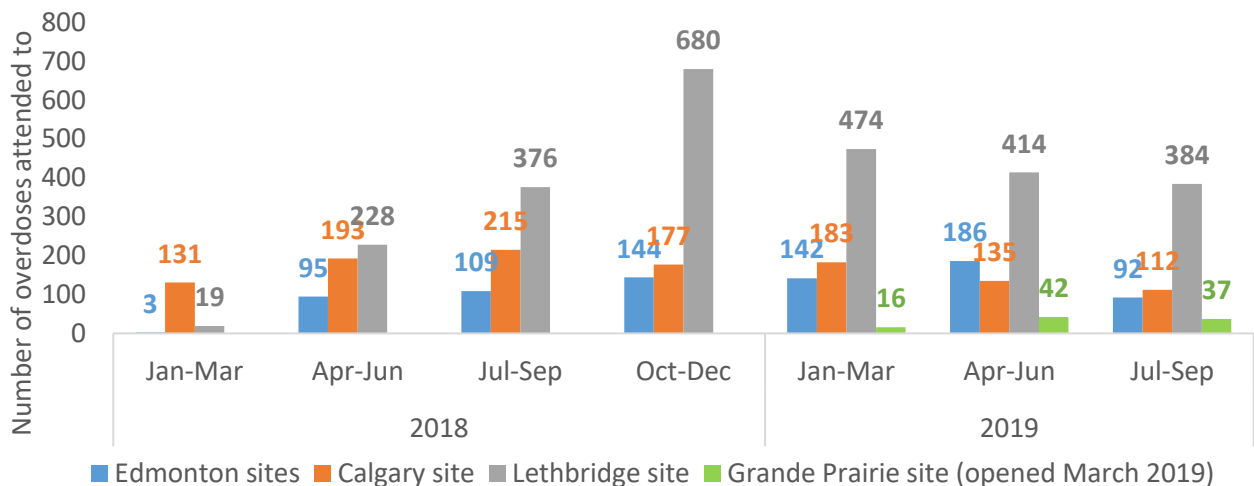
- From July to September 2019 (latest quarter) on average, per month, there were 4,458 visits to Edmonton sites, 5,627 visits to the Calgary site, 19,927 visits to the Lethbridge site, and 882 visits to the Grande Prairie site.
- Compared to the last quarter, in the most recent quarter, the Edmonton sites saw a decrease in visits of 11 per cent.
- Compared to the last quarter, in the most recent quarter, the Calgary site saw an increase in visits of 1 per cent.
- Compared to the last quarter, in the most recent quarter, the Lethbridge site saw a decrease in visits of less than 1 per cent.
- Compared to the last quarter, in the most recent quarter, the Grande Prairie site saw an increase in visits of 30 per cent.

Figure 26: Average monthly unique clients per quarter and site. January 1, 2018 to September 30, 2019.



- Compared to the last quarter, in the most recent quarter (July to September 2019) Edmonton sites saw a 2 percent decrease in average monthly unique clients, the Calgary site saw an increase of 12 per cent, the Lethbridge site saw an increase of 5 per cent, and the Grande Prairie site saw an increase in average monthly unique clients of 7 per cent.

Figure 27: Total number of attended overdoses* per quarter and site. January 1, 2018 to September 30, 2019.



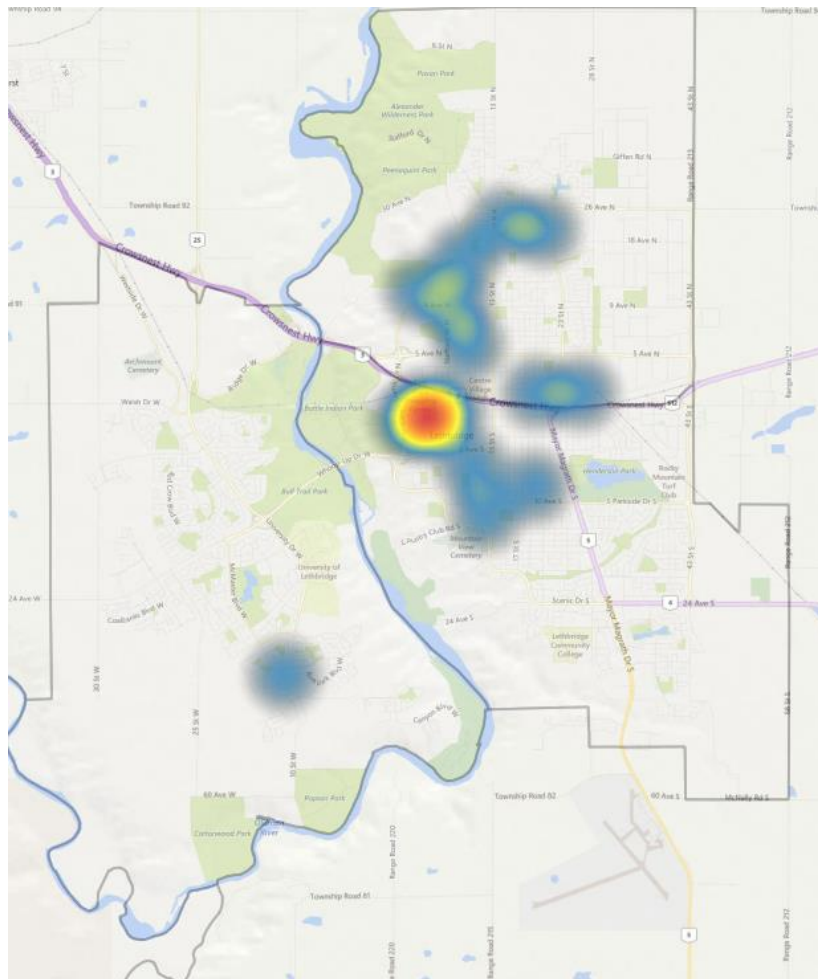
- From July to September 2019, 192 overdoses have been attended to at Edmonton sites, 112 at the Calgary site, 384 at the Lethbridge site, and 37 at the Grande Prairie site. There were zero fatal drug poisoning events across all sites.
- From July to September 2019, there were 7 attended overdoses for every 1,000 visits to the Edmonton sites, 7 attended overdoses for every 1,000 visits to the Calgary site, 6 attended overdoses for every 1,000 visits to the Lethbridge site, and 14 attended overdoses for every 1,000 visits to the Grande Prairie site.

*drug poisoning event requiring intervention including, but not limited to, the provision of oxygen, administration of naloxone, and/or requesting medical attendance. Grande Prairie site opened March 2019.

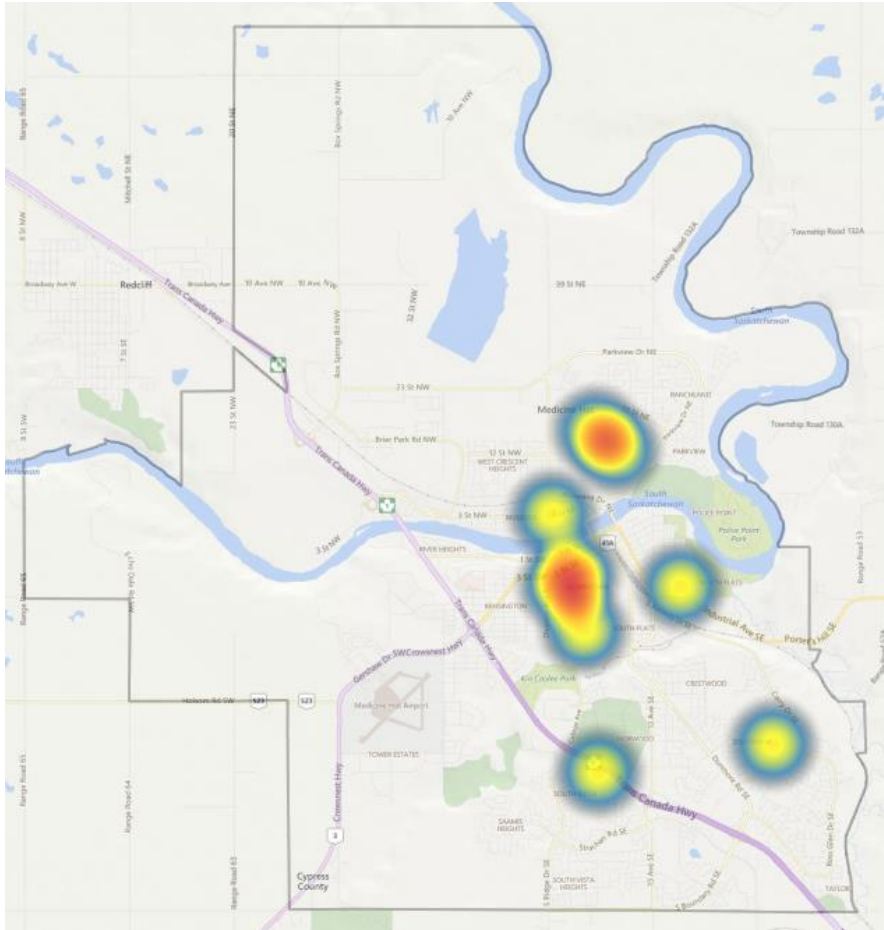
Appendix 1: Opioid related poisoning deaths in major Albertan cities

Apparent accidental opioid poisoning deaths, by Municipality (based on place of overdose). January 1, 2019 to September 30, 2019.

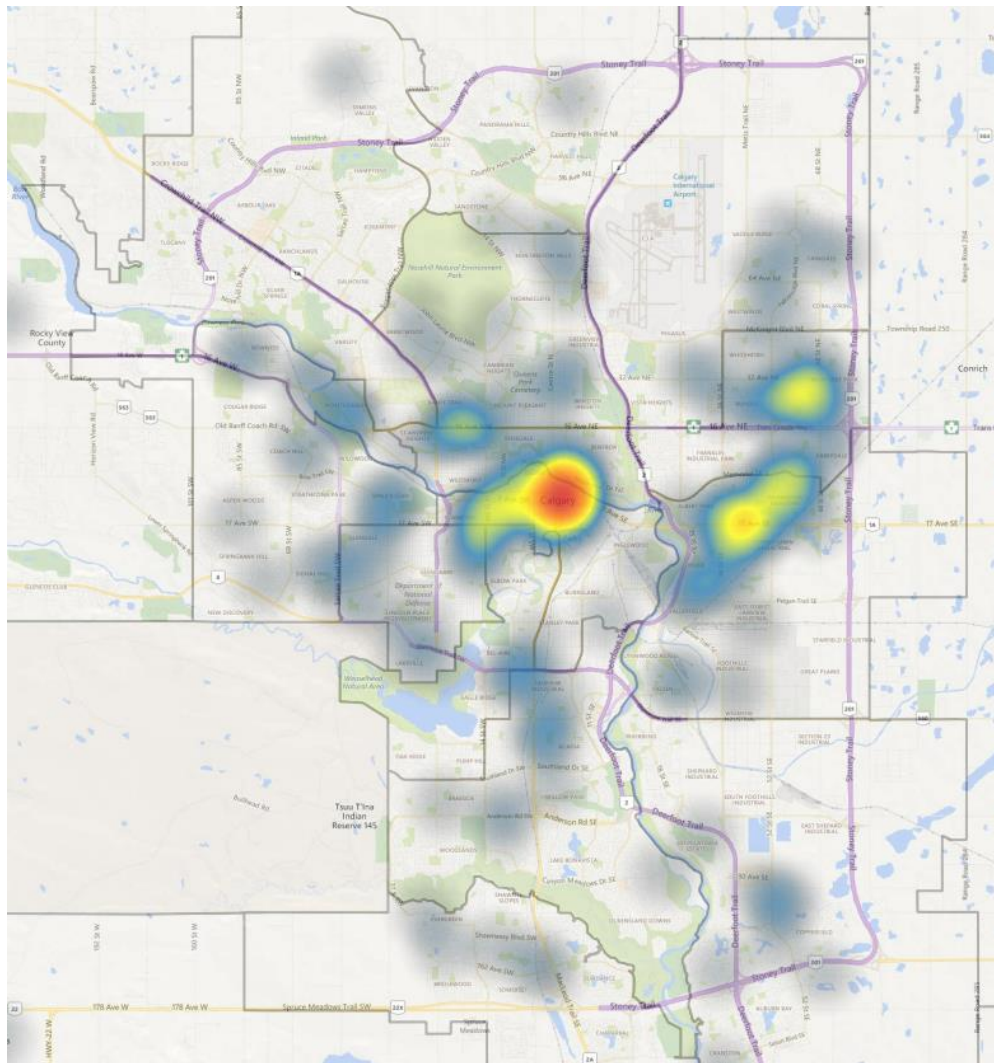
Lethbridge



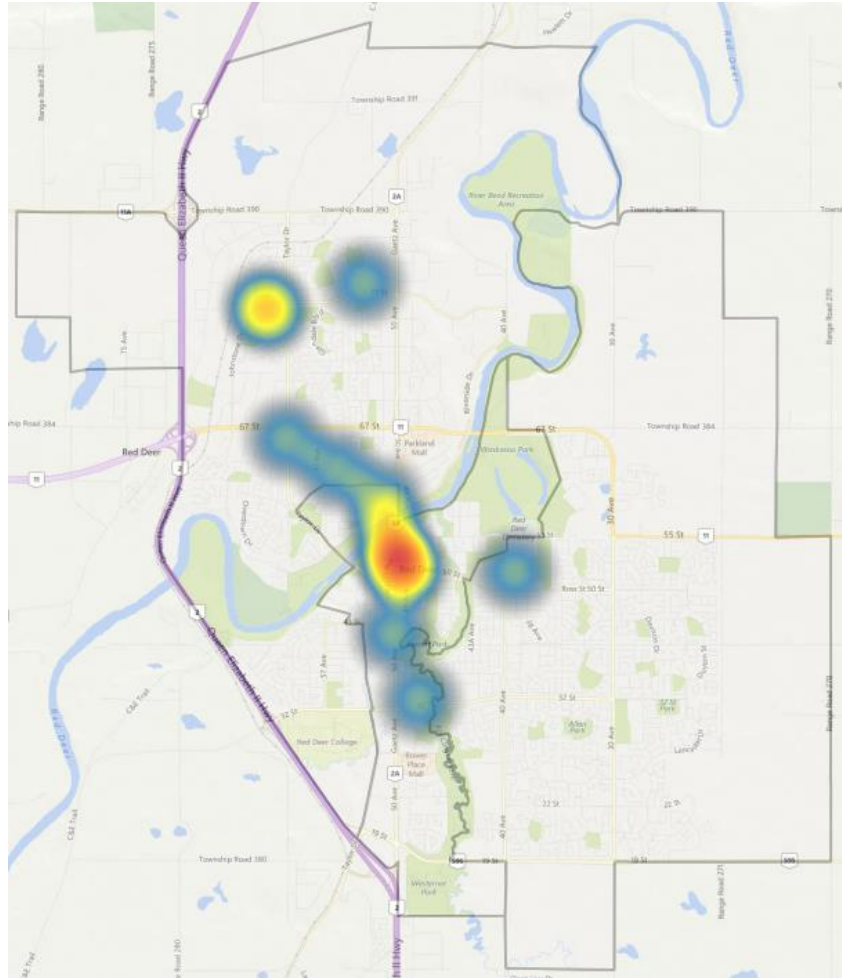
Medicine Hat



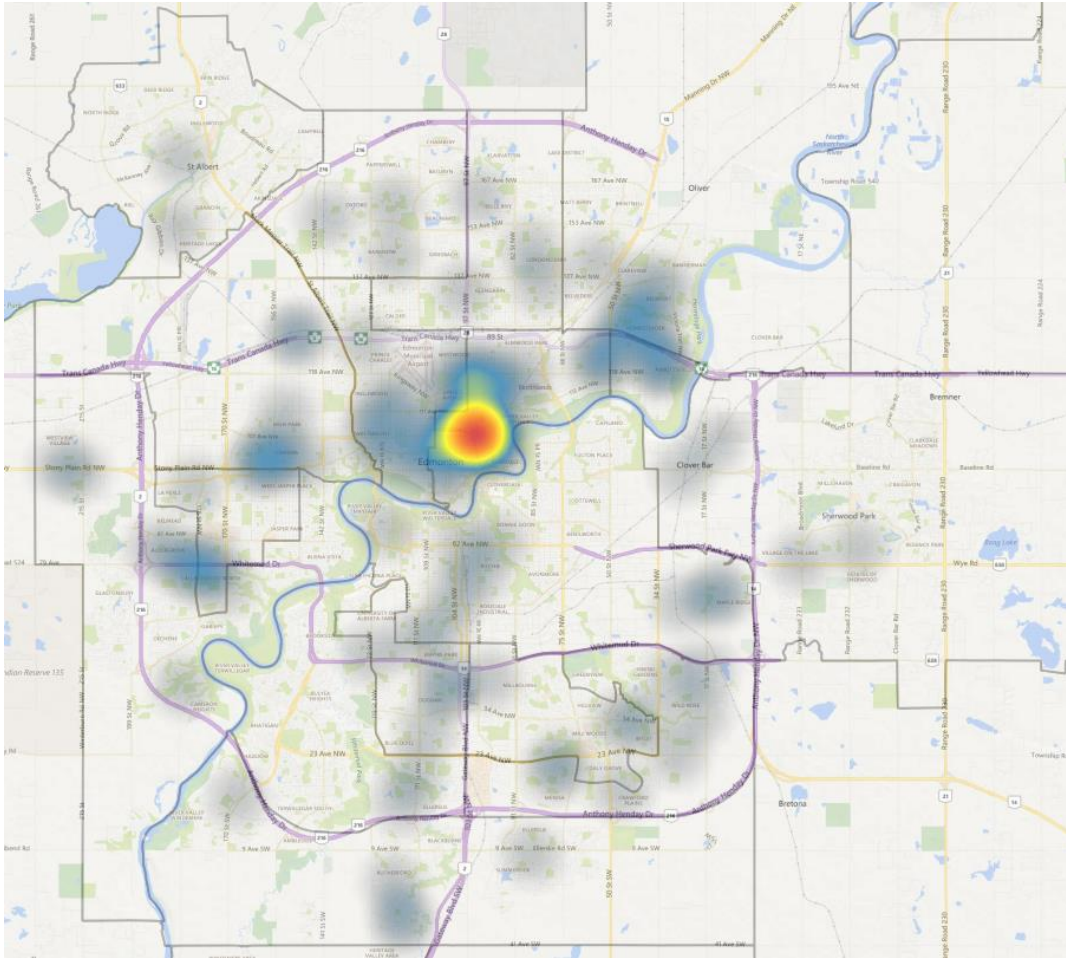
Calgary



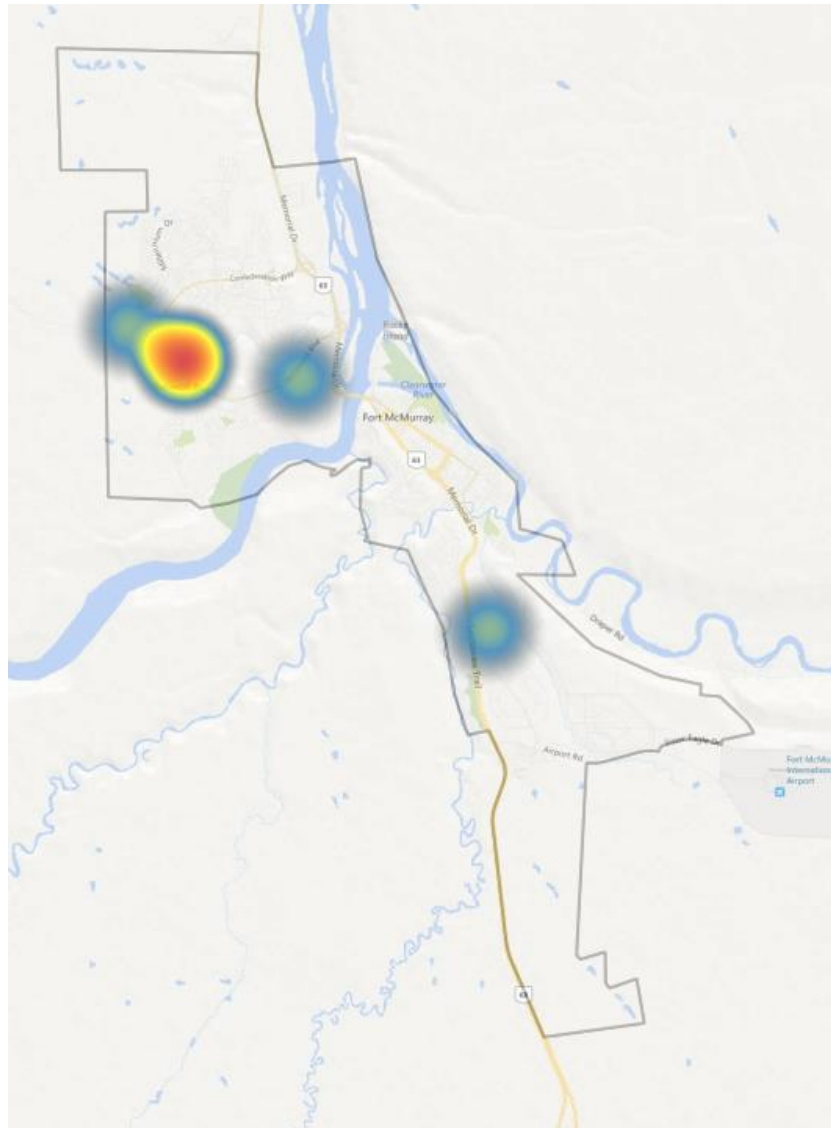
Red Deer



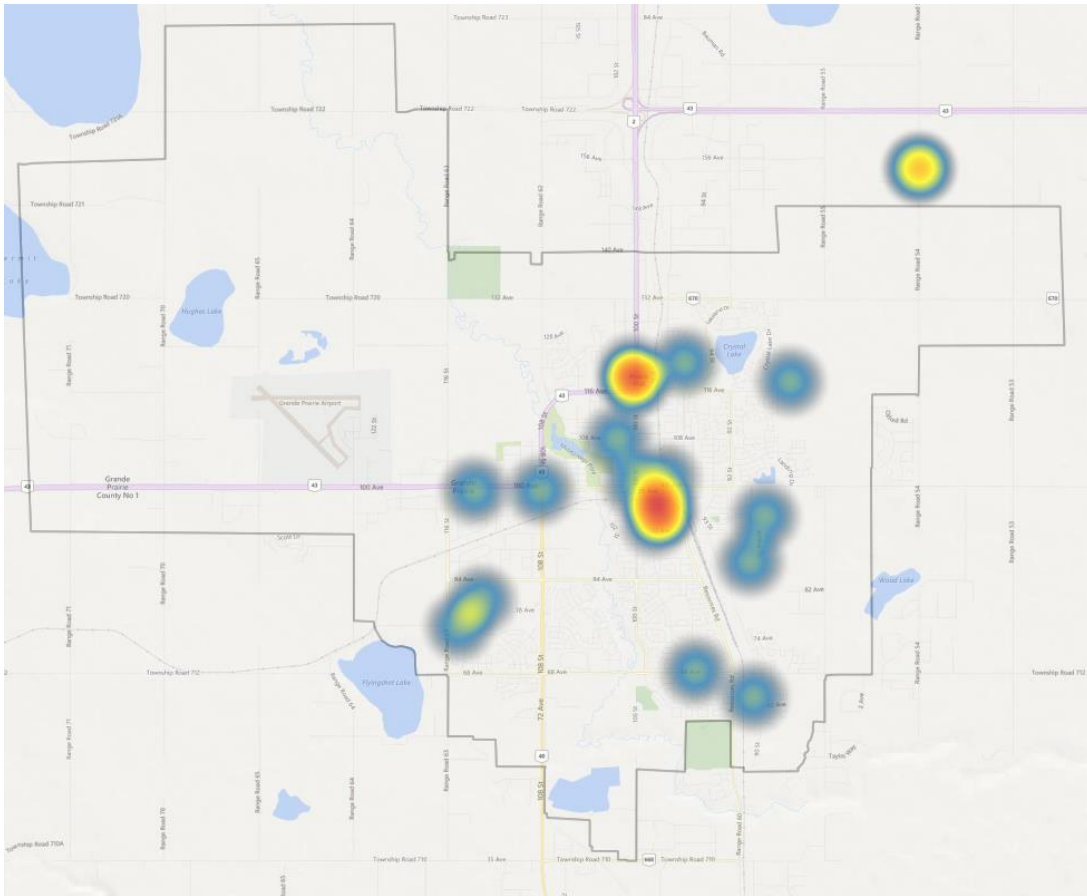
Edmonton



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. EMS 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:

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

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.

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 ⁴See footnote #2