

Alberta

Opioid
Response
Surveillance
Report

Q4 2019

March 2020

Alberta 

Health, Government of Alberta

March 2020

Alberta Opioid Response Surveillance Report: Q4 2019

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Highlights

- The most up-to-date data shows that 603 people have died from an apparent accidental opioid poisoning in 2019.
- By comparison, in same time period in 2018, there were 769 apparent accidental opioid poisoning deaths (668 fentanyl deaths from January to December 2018, 101 non-fentanyl opioid deaths from January to September, 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, 109 people died from an apparent accidental fentanyl-related poisoning, compared to 121 people in the previous quarter.
- The 2019 annual provincial per 100,000 person years rate of fentanyl poisoning deaths is 23 per cent lower than the rate in 2018, and 10 per cent lower than the rate in 2017.

Key points

Apparent accidental poisoning deaths related to fentanyl

- In the fourth quarter of 2019, there were 109 apparent accidental poisoning deaths related to fentanyl in Alberta. By comparison, there were 121 of these deaths in the third quarter of 2019.
- From January 1, 2019 to December 31, 2019, 82 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 2019, the Edmonton (46) and Calgary Zone (39) had the highest numbers of fentanyl deaths. In 2019, the Calgary and South Zone were tied as having the highest rate per 100,000 person years at 12.6. The Edmonton Zone had a similar rate of 12.5 per 100,000 person years. The provincial average was 11.9 per 100,000 person years.

Apparent accidental poisoning deaths related to non-fentanyl opioids

- In the third quarter of 2019, there were 25 apparent accidental poisoning deaths related to an opioid other than fentanyl in Alberta. By comparison, there were 29 of these deaths in the second quarter of 2019.
- In the first nine months 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 third quarter of 2019, the Calgary (15) and Edmonton Zone (4) had the highest number of these deaths. In the third quarter of 2019, the North Zone had the highest rate at 3.3 per 100,000 person years, compared to a provincial average of 2.4 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 73 per cent of deaths. 27 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, 80 per cent of accidental fentanyl related deaths listed at least one other substance as contributing to death, the most frequent being methamphetamine (48 per cent) and cocaine (29 per cent).

Emergency department visits

- In the third quarter of 2019, there were 2,778 emergency and urgent care visits related to opioids and other drug use. In the previous quarter, there were 2,836 emergency and urgent care visits related to opioids and other drug use.
- In the third quarter of 2019, emergency and urgent care visits related to opioid and other drug use occurred among 2,350 unique individuals, of whom 12 per cent had more than one visit.

Supervised consumption services

- In the most recent quarter (October to December 2019), there were 106,812 visits to supervised consumption services sites in Edmonton, Calgary, Lethbridge, and Grande Prairie. In the same time period, there were on a monthly average, 2,261 unique clients who attended these sites, and 639 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.

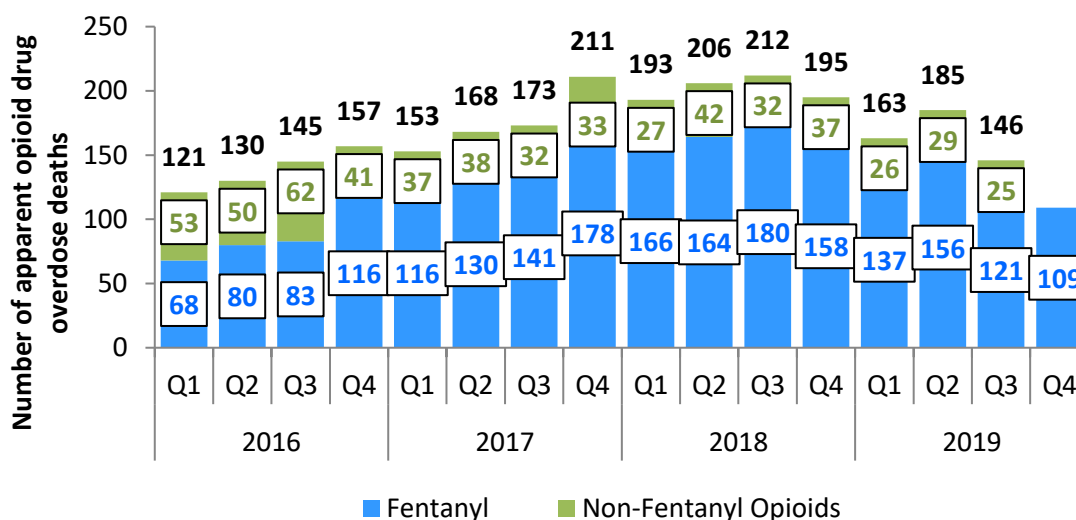
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Mortality data: Apparent accidental opioid poisoning deaths

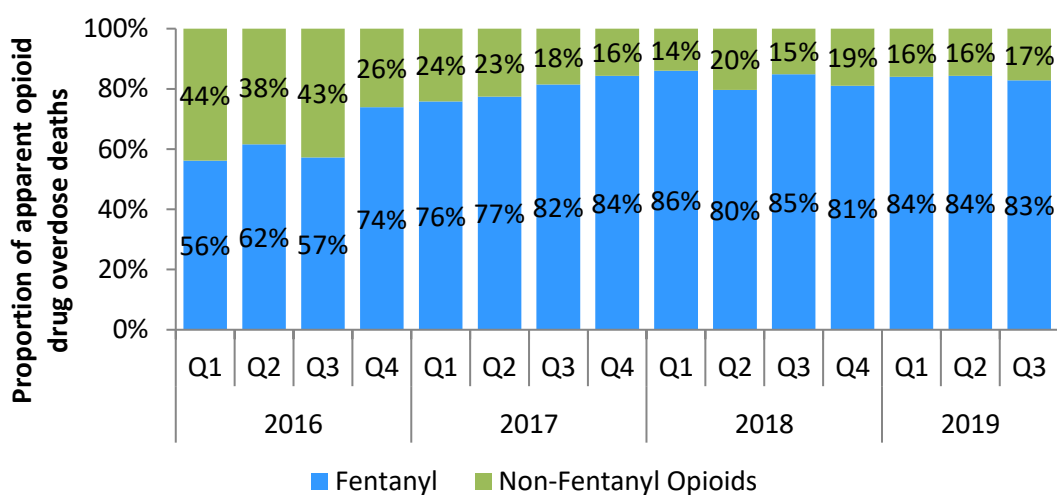
Fentanyl and non-fentanyl related deaths

Figure 1: Number of apparent accidental opioid poisoning deaths related to any opioid, by quarter. January 1, 2016 to December 31, 2019. *Only fentanyl related opioid deaths are available for most recent quarter



- Since January 1, 2016 **2,667** individuals have died from an accidental opioid poisoning in Alberta.

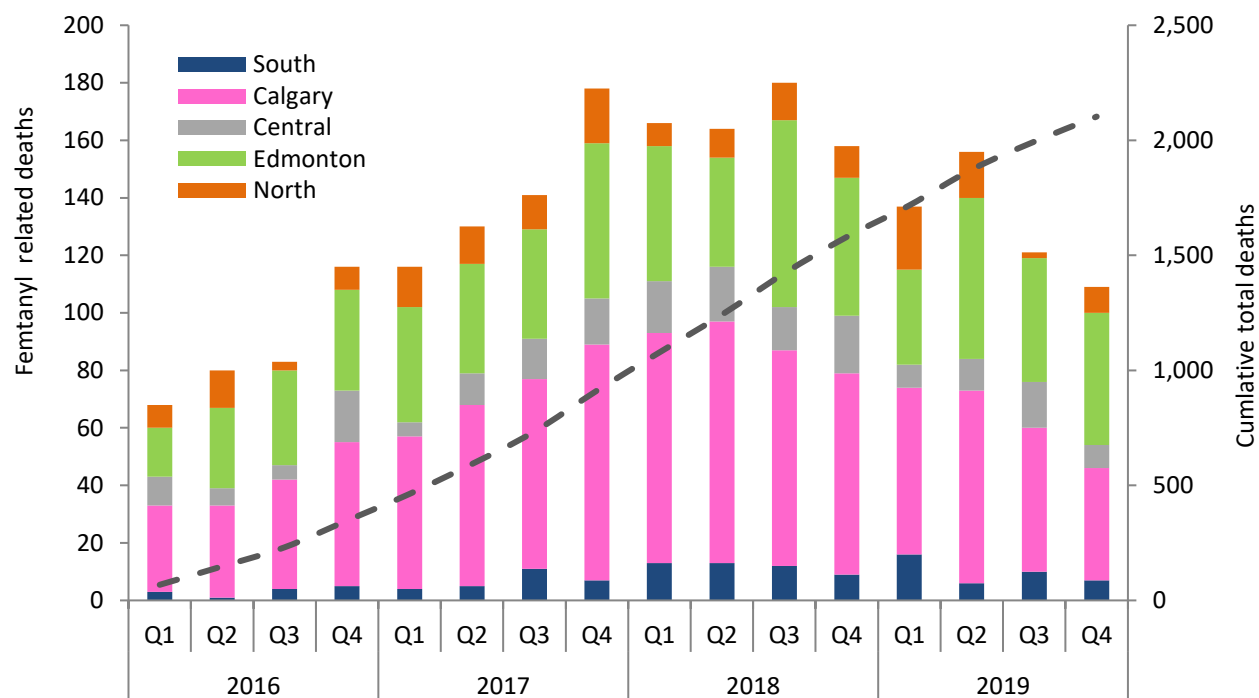
Figure 2: Proportion of fentanyl vs. non-fentanyl related apparent accidental opioid poisoning deaths, by quarter. January 1, 2016 to September 30, 2019.



- Almost all opioid poisoning deaths are now related to fentanyl. In the third quarter of 2019, 83 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, 2019.



- Since January 1, 2016, 2,103 individuals in Alberta died from an apparent accidental drug poisoning death related to fentanyl (347 in 2016, 565 in 2017, 668 in 2018, and 523 in 2019). The number of fentanyl poisoning deaths in 2019 was 7 per cent lower than the number in 2017 and 21 per cent lower than the number of deaths in 2018.
- In 2019, on average, 131 individuals in Alberta died from an apparent accidental drug poisoning death related to fentanyl per quarter, while in 2018, on average, 167 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 December 31, 2019

South	3	1	4	5	4	5	11	7	13	13	12	9	16	6	10	7	126
Calgary	30	32	38	50	53	63	66	82	80	84	75	70	58	67	50	39	937
Central	10	6	5	18	5	11	14	16	18	19	15	20	8	11	16	8	200
Edmonton	17	28	33	35	40	38	38	54	47	38	65	48	33	56	43	46	659
North	8	13	3	8	14	13	12	19	8	10	13	11	22	16	2	9	181
Alberta	68	80	83	116	116	130	141	178	166	164	180	158	137	156	121	109	2,103
	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	Q4 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 December 31, 2019.

	2016		2017		2018		2019	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
South Zone	13	4.3	27	8.8	47	15.3	39	12.6
Calgary Zone	150	9.3	264	16.2	309	18.6	214	12.6
Central Zone	39	8.1	46	9.5	72	14.7	43	8.9
Edmonton Zone	113	8.4	170	12.4	198	14.3	178	12.5
North Zone	32	6.5	58	11.8	42	8.5	49	10.1
Alberta	347	8.2	565	13.2	668	15.4	523	11.9

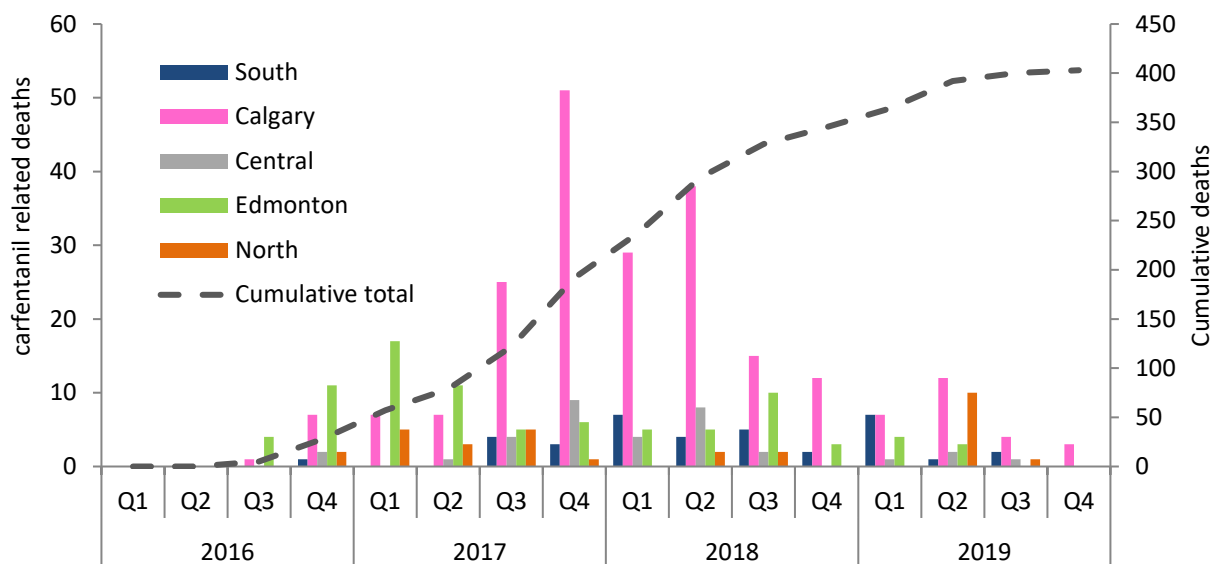
- The Calgary and Edmonton Zones continue to have the highest number of apparent accidental poisoning deaths related to fentanyl. In 2019, the Calgary and South Zone were tied as having the highest rate per 100,000 person years at 12.6, compared to a provincial average of 11.9 per 100,000 person years. All Zones had a noticeable decrease in the rate of fentanyl poisoning deaths from 2018 to 2019.

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, 2019.

	2016		2017		2018		2019	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Lethbridge	8	8.3	15	15.3	25	25.1	16	16.3
Medicine Hat	2	2.9	7	10.2	12	17.5	10	14.5
Calgary	144	10.9	239	18.0	289	21.7	199	14.6
Red Deer	23	21.1	23	21.4	47	44.8	17	15.6
Edmonton	99	10.2	136	13.7	179	18.1	157	15.4
Fort McMurray	9	11.1	14	17.6	11	13.9	8	10.1
Grande Prairie	10	13.5	27	36.4	23	31.0	24	32.2
Total	295	10.8	461	16.7	586	21.3	431	15.3

- The municipalities of Calgary and Edmonton continue to have the highest number of apparent accidental poisoning deaths related to fentanyl. In 2019, the Municipality of Grande Prairie had the highest rate of apparent drug poisoning deaths related to fentanyl per 100,000 person years. All of the largest municipalities, except Grande Prairie, had a noticeable decrease in the rate of fentanyl poisoning deaths from 2018 to 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 December 31, 2019. *Subcategory of fentanyl deaths from Figure 3*



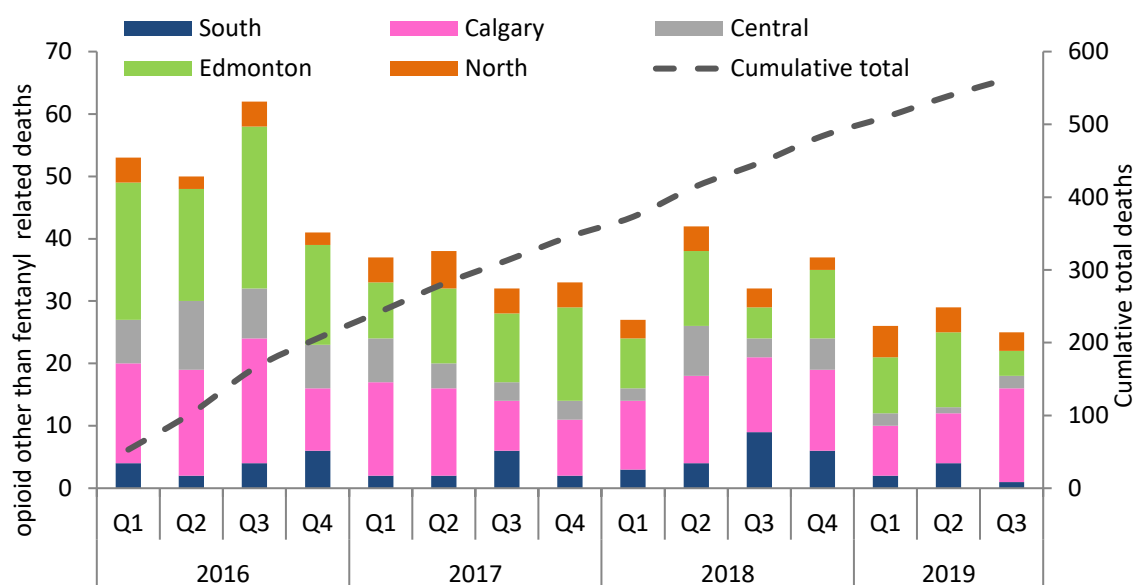
- The first Alberta carfentanil cases were detected in the third quarter of 2016, with 28 cases occurring in all of 2016. In 2017, 164 individuals in Alberta died from a drug poisoning related to carfentanil, 153 in 2018, and 58 in 2019.
- The number of carfentanil cases peaked in the last quarter of 2017 (70 deaths), and since then, the numbers have decreased significantly, with 58 occurring in 2019.
- To date, 54 per cent of all carfentanil deaths have occurred in the Calgary Zone. In the last quarter of 2019, all carfentanil deaths occurred in the Calgary Zone (3 deaths).
- In 2019, the South Zone had the highest rate of carfentanil deaths per 100,000 (3.2) among the Zones, and the municipality of Grande Prairie had the highest rate among the seven largest Albertan municipalities (9.4).

Table 4: Number of apparent accidental carfentanil poisoning deaths, by quarter (Subcategory of fentanyl deaths from Table 1). January 1, 2016 to December 31, 2019.

South	0	0	0	1	0	0	4	3	7	4	5	2	7	1	2	0	36
Calgary	0	0	1	7	7	7	25	51	29	38	15	12	7	13	4	3	218
Central	0	0	0	2	0	1	4	9	4	8	2	0	1	2	1	0	34
Edmonton	0	0	4	11	17	11	5	6	5	5	10	3	4	3	0	0	84
North	0	0	0	2	5	3	5	1	0	2	2	0	0	9	1	0	31
Alberta	0	0	5	23	29	22	43	70	45	57	34	17	19	28	8	3	403
	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	Q4 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 September 30, 2019.



- Since January 1, 2016, a total of 564 individuals in Alberta have died from apparent accidental drug poisoning related to an opioid other than fentanyl (206 in 2016, 140 in 2017, 138 in 2018, and 80 in the first nine months of 2019).

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

South	4	2	4	6	2	2	6	2	3	4	9	6	2	4	1	57
Calgary	16	17	20	10	15	14	8	9	11	14	12	13	8	8	15	190
Central	7	11	8	7	7	4	3	3	2	8	3	5	2	1	2	73
Edmonton	22	18	26	16	9	12	11	15	8	12	5	11	9	12	4	190
North	4	2	4	2	4	6	4	4	3	4	3	2	5	4	3	54
Alberta	53	50	62	41	37	38	32	33	27	42	32	37	26	29	25	564
	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 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, 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	7	3.0
Calgary Zone	63	3.9	46	2.8	50	4.0	31	2.4
Central Zone	33	6.9	17	3.5	18	4.9	5	1.4
Edmonton Zone	82	6.1	47	3.4	36	3.5	25	2.3
North Zone	12	2.4	18	3.7	12	3.2	12	3.3
Alberta	206	4.9	140	3.3	138	4.2	80	2.4

- The Calgary and Edmonton Zones continue to have the highest number of these deaths. In the first nine months of 2019, the North Zone had the highest rate per 100,000 person years at 3.3, compared to the provincial average of 2.4 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, 2019.

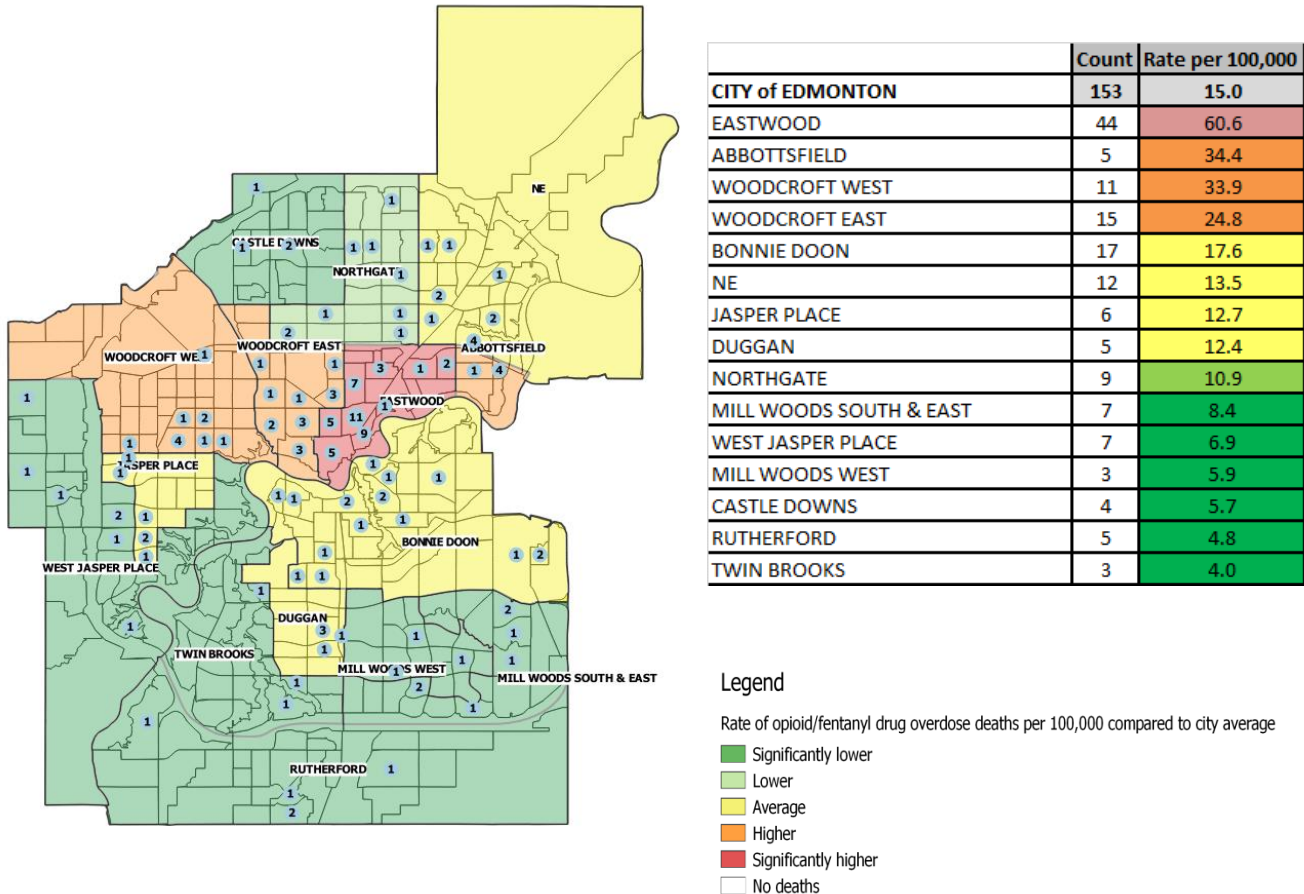
	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Lethbridge	4	4.1	3	3.1	7	9.4	3	4.1
Medicine Hat	4	5.9	3	4.4	5	9.7	3	5.8
Calgary	47	3.6	35	2.6	32	3.2	26	2.6
Red Deer	12	11.0	7	6.5	7	8.7	2	2.4
Edmonton	66	6.8	41	4.1	30	4.0	19	2.5
Fort McMurray	1	1.2	2	2.5	1	1.7	2	3.4
Grande Prairie	1	1.4	4	5.4	2	3.6	2	3.6
Total	135	5.0	95	3.5	84	4.1	57	2.7

- The municipalities of Calgary and Edmonton continue to have the highest number of these deaths. In the first nine months of 2019, 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.

*YTD = January 1 to September 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 December 31, 2019.

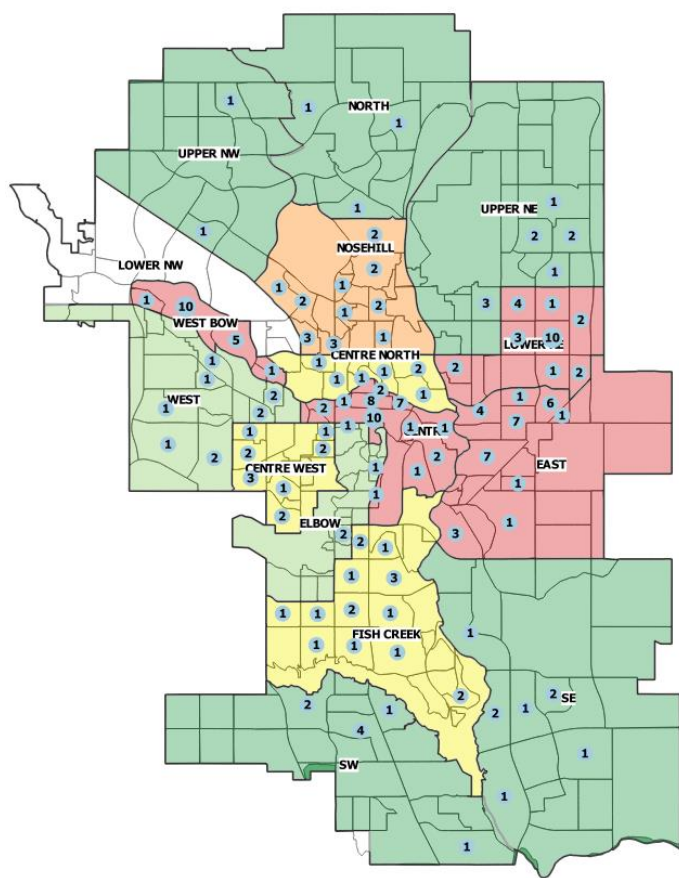


● Number in blue circle represents neighborhood level counts

- 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, 51 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 68 per cent of fentanyl-related deaths in Edmonton.
- The neighborhoods that had five or more deaths were McCauley (11), Boyle Street (9), Alberta Avenue (7), Central McDougall (5), and Downtown (5).

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 December 31, 2019.



	Count	Rate per 100,000
CITY of Calgary	208	15.4
WEST BOW	17	80.8
CENTRE	37	55.9
EAST	31	42.8
LOWER NE	25	26.0
NOSEHILL	18	23.2
CENTRE WEST	12	18.4
CENTRE NORTH	7	15.7
FISH CREEK	17	15.1
WEST	10	10.9
ELBOW	4	9.8
UPPER NE	9	7.8
SW	8	7.0
SE	8	6.1
NORTH	3	2.6
UPPER NW	2	1.6
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

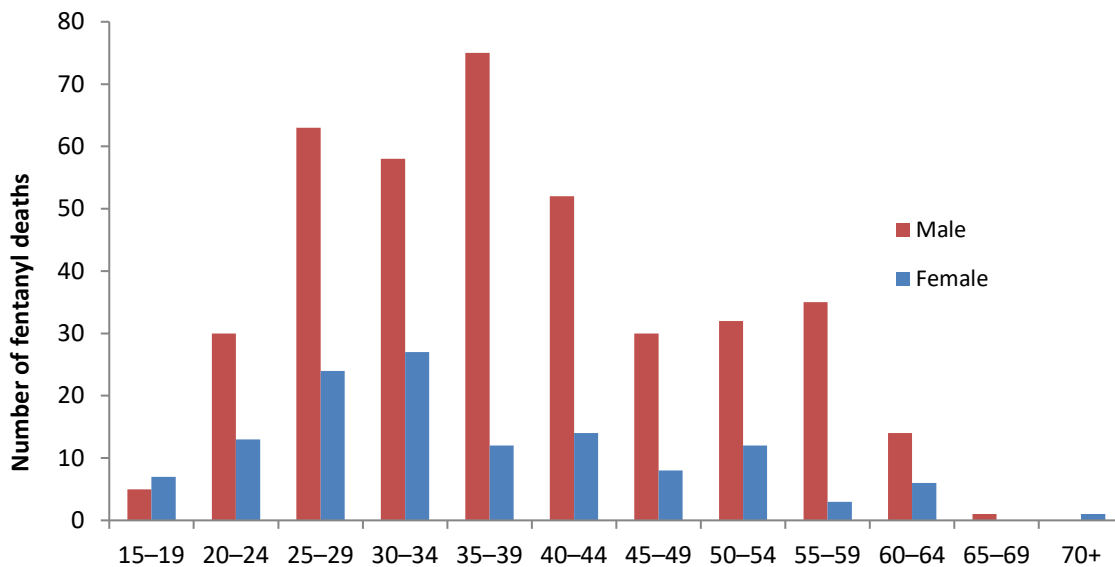
● Number in blue circle represents neighborhood level counts

- 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 (10), Bowness (10), Pineridge (10), Downtown core (8), Downtown East Village (8), Dover (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.

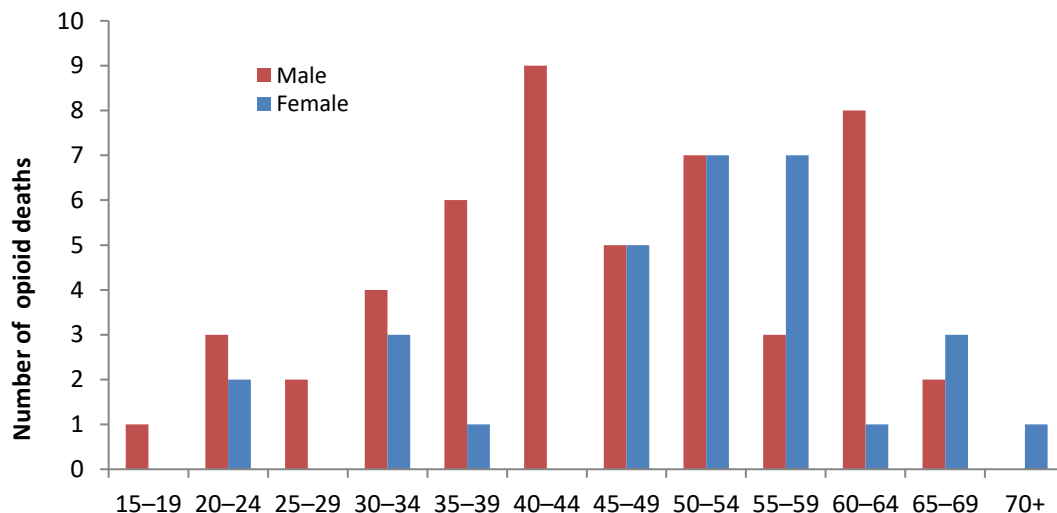
Demographics and recent medical history of apparent accidental opioid poisoning decedents

Figure 8: Apparent accidental poisoning deaths related to fentanyl, by sex and age. January 1, 2019 to December 31, 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, 30 to 34 years.

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



- 63 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 40 to 44, among females, 50 to 54 and 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 September 30, 2019.

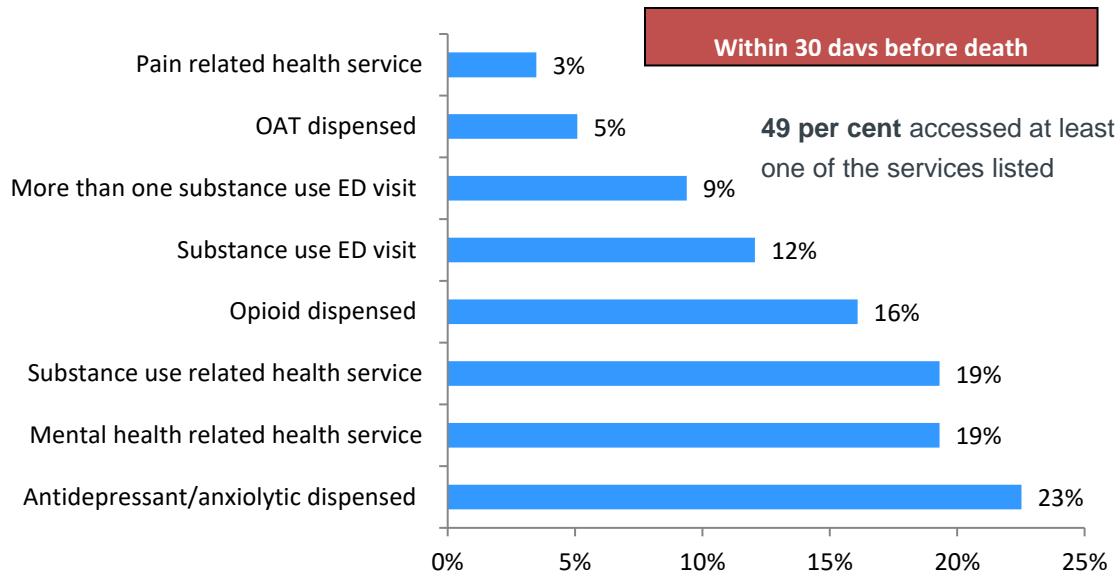
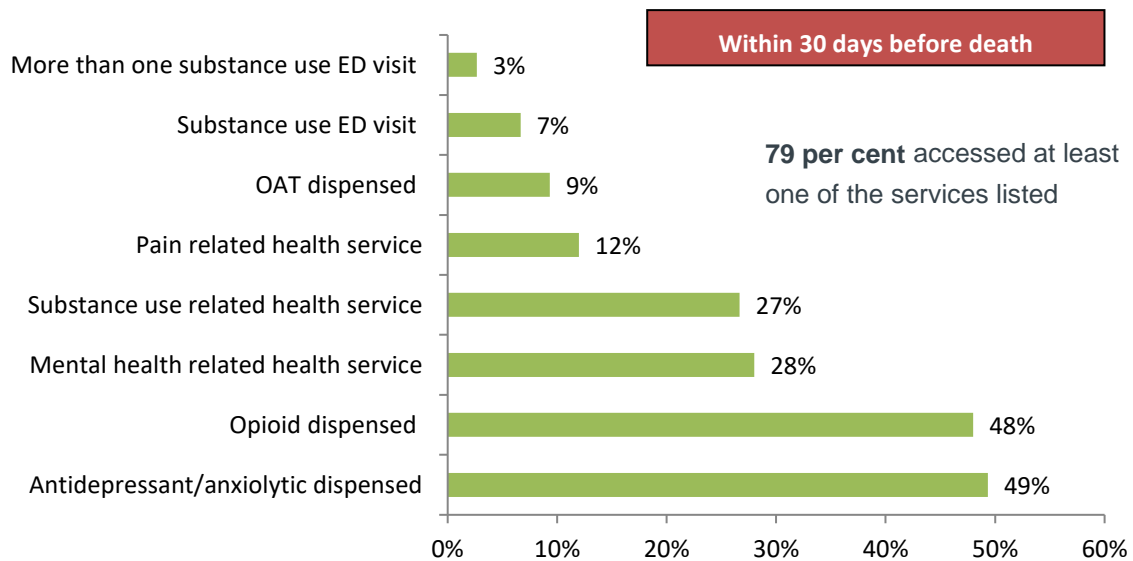


Figure 11: Proportion of apparent accidental poisoning deaths related to an opioid other than fentanyl, by medical history within the 30 days before the date of death, January 1, 2019 to September 30, 2019.



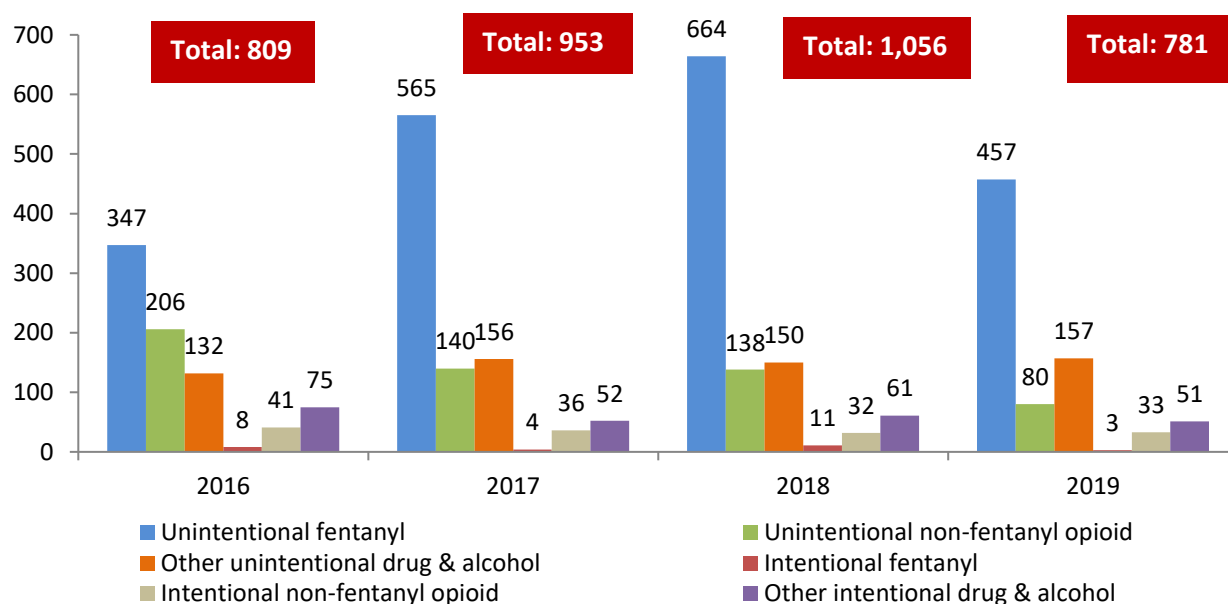
- Among apparent accidental poisoning deaths related to fentanyl, the most frequent health care utilization within 30 days before the individual's date of death was having an antidepressant or anxiolytic dispensed, followed by a substance use or mental health related visit.
- Among apparent accidental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

Note: 91% 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.

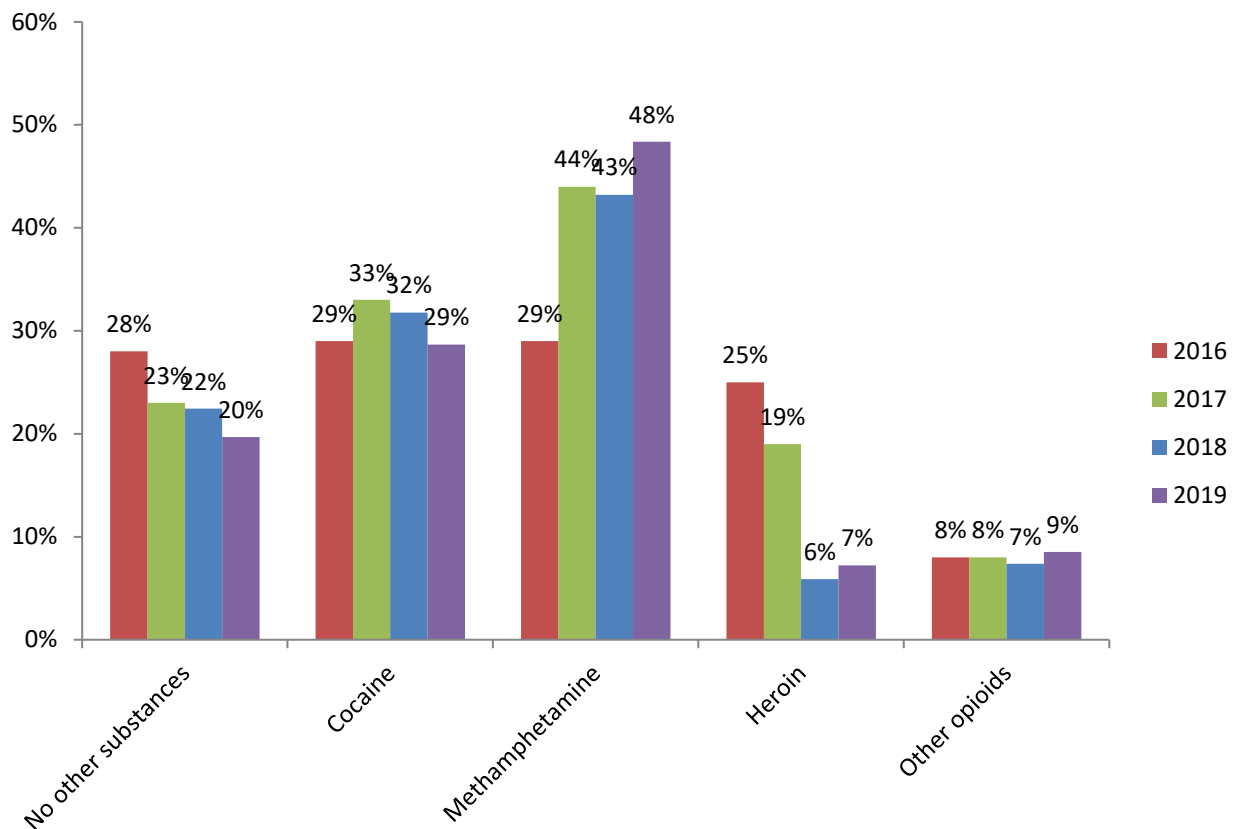
Some drug poisoning deaths in 2018 and 2019 are currently under review by the Office of the Chief Medical Examiner and have not been confirmed. Therefore, upon completion of all cases, the final number of total drug poisoning deaths in 2018 and 2019 will be higher than the current number.



- From 2016 to 2019, the proportion of all drug poisoning deaths that were unintentional (accidental) increased from 85 per cent to 89 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) remained similar, at about 40 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 43 (6 per cent) of all drug and alcohol poisoning deaths in 2019. 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 2019.

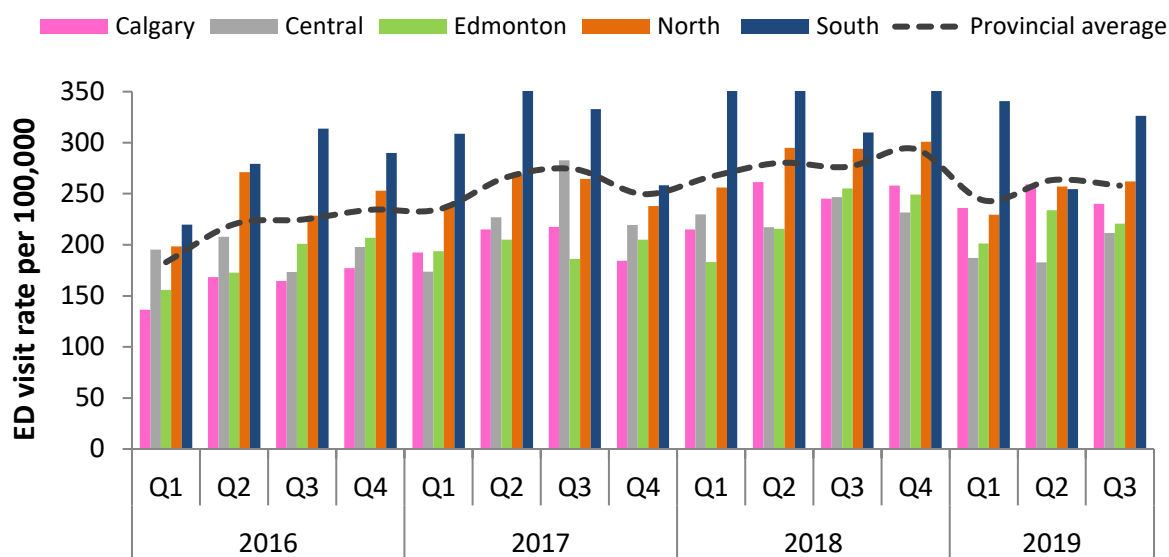


- In 2019, approximately 20 per cent of all fentanyl poisoning deaths had no other substances listed on the death certificate as causing death, while 48 per cent had methamphetamine listed, 29 per cent had cocaine listed, and 7 per cent had heroin listed.
- The proportion of fentanyl poisoning deaths where methamphetamine was also listed as causing death was 1.7 times higher in 2019 compared to 2016 (48 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 (29 per cent in 2019, 33 per cent in 2018, 32 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 September 30, 2019.



- The provincial rate of ED visits related to opioids and other drug use increased by 41 per cent from the first quarter of 2016 to the third quarter of 2019. From the second quarter of 2019 to the third quarter of 2019, the rate decreased by 2 per cent (2,836 visits in Q2 2019 and 2,778 visits in Q3 2019). Compared to Q3 2018, the Q3 2019 rate was 7 per cent lower.
- In the third quarter of 2019, the rate of ED visits related to opioids and other drug use was the highest in the South Zone (326 visits per 100,000 person years); approximately 26 per cent higher than the provincial average over this period (258 visits per 100,000 person years).
- 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).

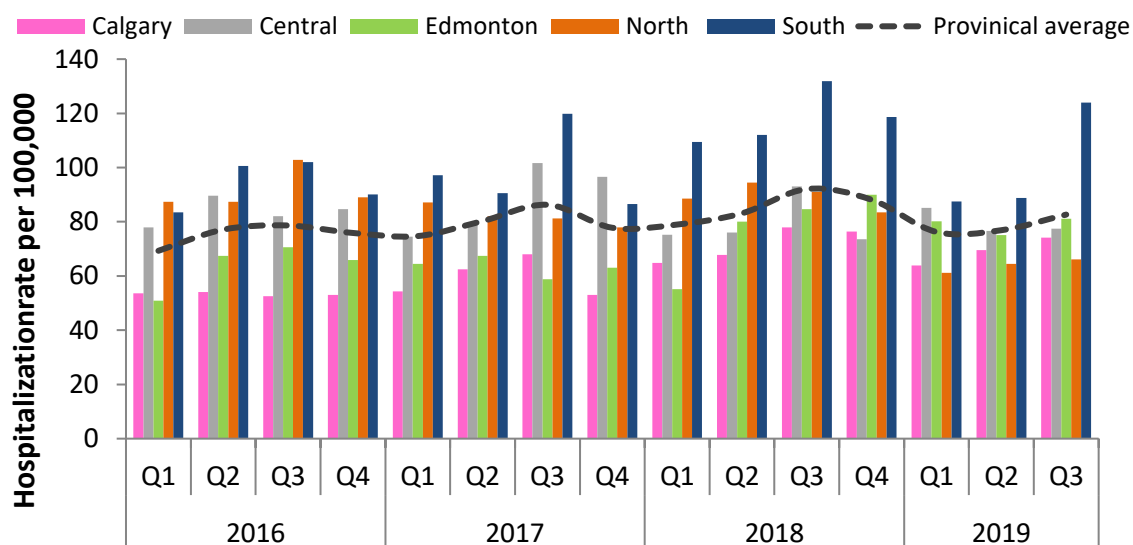
Table 8: Top 10 ED facilities utilized for emergency visits related to opioids and other drug use, January 1, 2016 to September 30, 2019

Rank	Facility	Count	% of all visits*	Rank	Facility	Count	% of all visits*
1	Royal Alexandra Hospital	5,390	13%	6	South Health Campus	1,665	4%
2	Peter Lougheed Centre	4,009	10%	7	Sheldon M Chumir Center	1,624	4%
3	Rockyview General Hospital	3,375	8%	8	Red Deer Regional Hospital	1,591	4%
4	Foothills Medical Centre	3,065	8%	9	Chinook Regional Hospital	1,547	4%
5	U of A Hospital	2,185	5%	10	Grey Nuns Community Hospital	1,475	4%

*Percentage of the total 39,880 ED visits related to 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 September 30, 2019.



- The rate of hospitalizations related to opioids and other drug use increased by 19 per cent from the first quarter of 2016 to the third quarter of 2019. From the second quarter of 2019 to the third quarter of 2019, the rate increased by 7 per cent. However, the rate in Q3 2019 was still 10 per cent lower than the rate in the third quarter of 2018.
- In the third quarter of 2019 the rate of hospitalizations related to opioids and other drug use was the highest in the South Zone (124 hospitalizations per 100,000 person years); approximately 50 per cent higher than the provincial average (83 hospitalizations per 100,000 person years).
- In 2019, the Calgary and Edmonton Zones had the highest number of hospitalizations related to opioids and other drug use (34 and 32 per cent of all hospitalizations related to harm associated with opioids and other drug use per quarter, respectively).

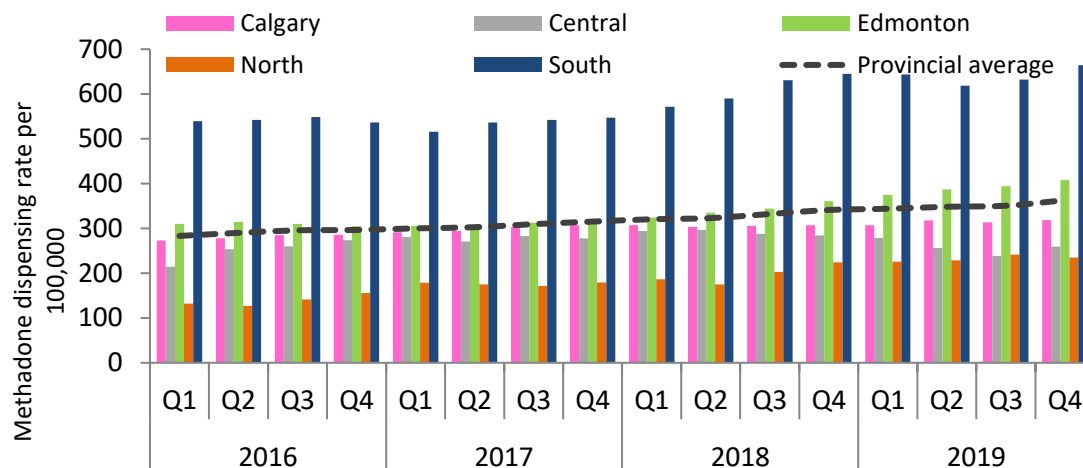
Table 9: Top 10 facilities utilized for hospitalizations related to opioids and other drug use, January 1, 2016 to September 30, 2019.

Rank	Facility	Count	Percent of all stays*	Rank	Facility	Count	Percent of all stays*
1	Royal Alexandra Hospital	2,352	19%	6	Red Deer Regional Hospital	562	4%
2	Peter Lougheed Centre	1,412	11%	7	South Health Campus	443	3%
3	Foothills Medical Centre	1,357	11%	8	Chinook Regional Hospital	420	3%
4	Rockyview General Hospital	902	7%	9	Grey Nuns Community Hospital	413	3%
5	University Of Alberta Hospital	768	6%	10	Misericordia Community Hosp	377	3%

*Percentage of the total 12,675 inpatient stays related to 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)

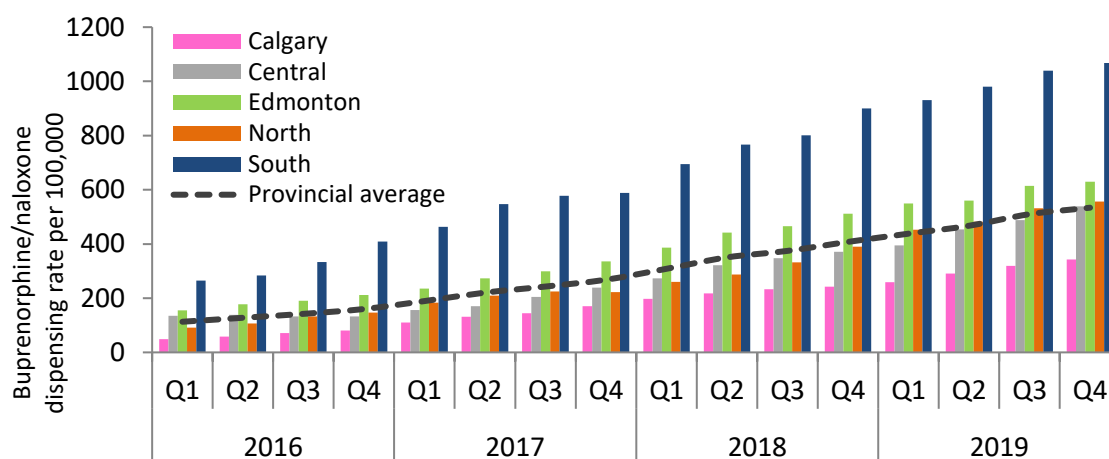
Methadone & buprenorphine/naloxone dispensing from community pharmacies

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 December 31, 2019.



- In Alberta, the rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000 person years increased from the third quarter of 2019 to the fourth quarter by 4 per cent. The South Zone had the highest rate in the fourth quarter of 2019, 183 per cent higher than the provincial average (664 per 100,000 person years vs. 363 per 100,000 person years).

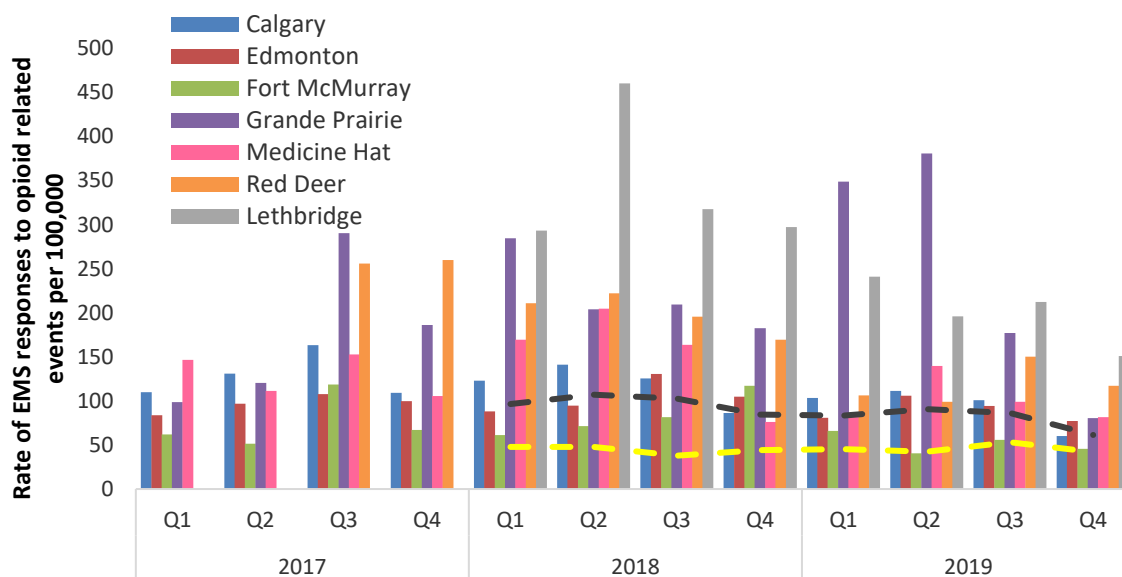
Figure 17: Rate of unique individuals dispensed buprenorphine/naloxone (generic brands and Suboxone™) indicated for opioid dependence from community pharmacies per 100,000 person years, by quarter and Zone. January 1, 2016 to December 31, 2019.



- 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 5 per cent increase from the third quarter of 2019 to the fourth. The South Zone had the highest rate in the fourth quarter of 2019, 200 per cent higher than the provincial average (1,068 per 100,000 person years vs. 534 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 December 31, 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 last quarter of 2019, the provincial rate of EMS responses to opioid related events per 100,000 person years was noticeably lower compared to the rate in third quarter of 2019 (61 vs. 86). The per 100,000 person years rate in 2019 is 18 per cent lower compared to the annual provincial rate in 2018 (80 vs 98).
- In 2019, all major Alberta municipalities had a decrease in the rate of EMS responses to opioid related events per 100,000 person years compare to 2018, except Grande Prairie. Lethbridge saw the most significant decrease (42 per cent). Lethbridge and Grande Prairie had the highest rates in 2019.

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, 2019.

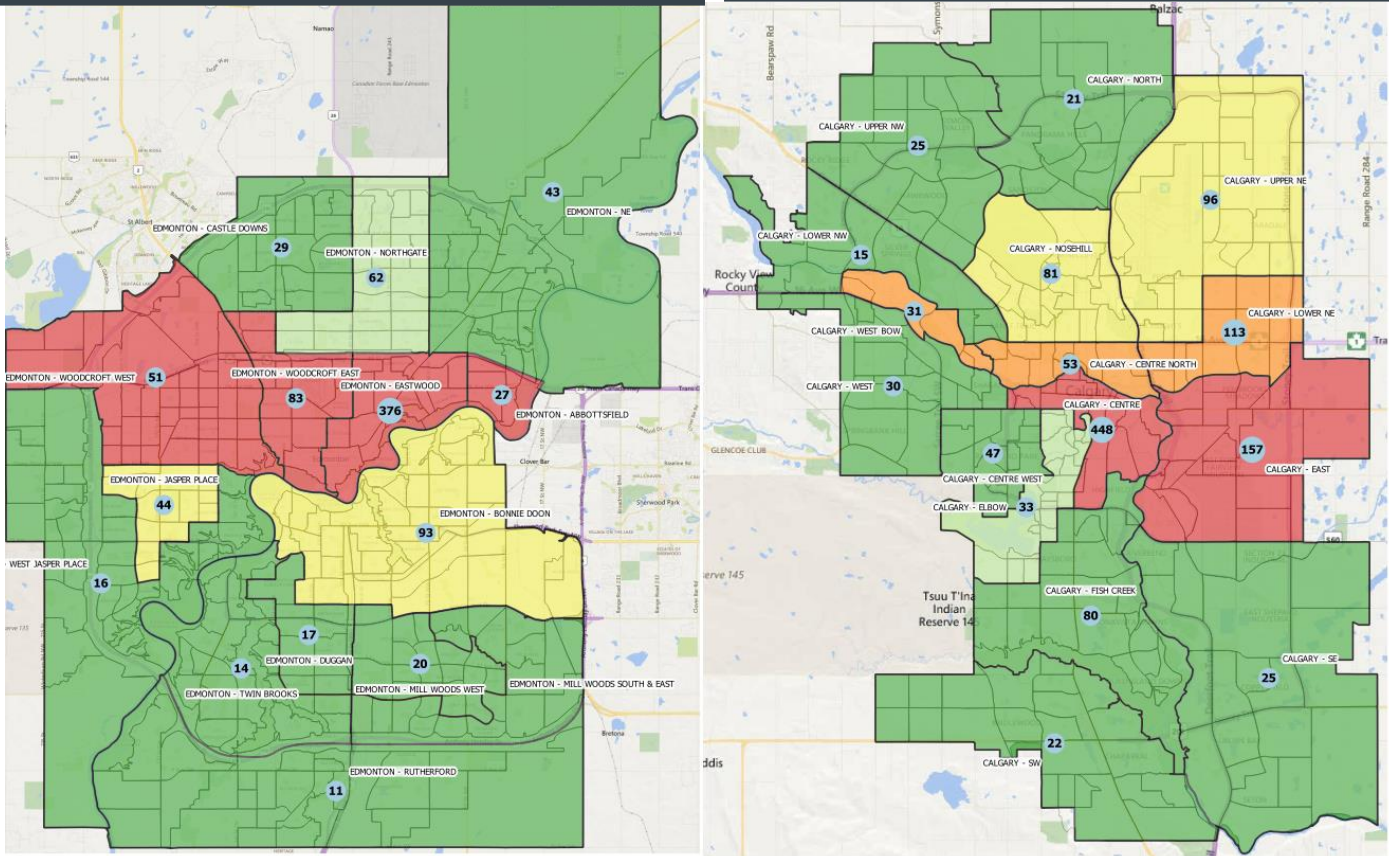
	2017		2018		2019	
	count	rate	count	rate	count	rate
Calgary	1,693	128	1,595	119	1,277	94
Edmonton	950	97	1,045	105	914	90
Ft. McMurray	58	55	65	61	41	38
Grande Prairie	127	164	164	209	184	233
Medicine Hat	88	121	105	141	69	93
Red Deer*	137	258	212	216	129	132
Lethbridge	-	-	336	491	196	285
Other AB locations**	-	-	684	44	726	46
Alberta	-	-	4,206	98	3,536	80

*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 December 31, 2019.

Edmonton average: 90 per 100,000 person years (n =914)

Calgary average: 94 per 100,000 person years (n =1,277)



Legend

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

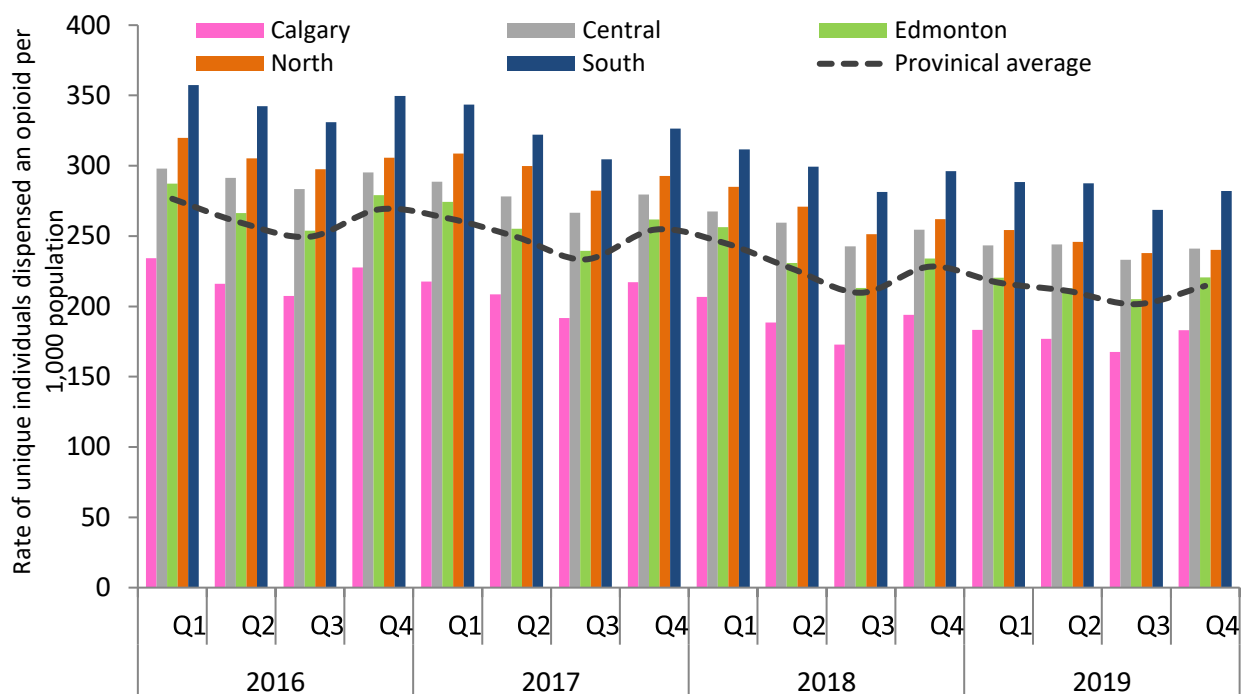
- Significantly lower
- Lower
- Average
- Higher
- Significantly higher

● Number in blue circle represents counts (numerator)

- Of the opioid related EMS events that occurred in Edmonton in 2019 (914), the highest rate (499 per 100,000 person years) and count (376) was in the Eastwood area. However, the rate in this LGA at the end of 2019 was 6 per cent lower than the rate in the previous nine months. 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 in 2019 (1,277), the highest rate (684 per 100,000 person years) and count (448) was in Calgary Centre. However, the 2019 annual rate in this LGA was 10 per cent lower than the rate in the previous nine months. The LGAs with significantly higher rates of opioid related EMS events compared to the municipality average were Calgary Centre and East.

Prescription opioid dispensing

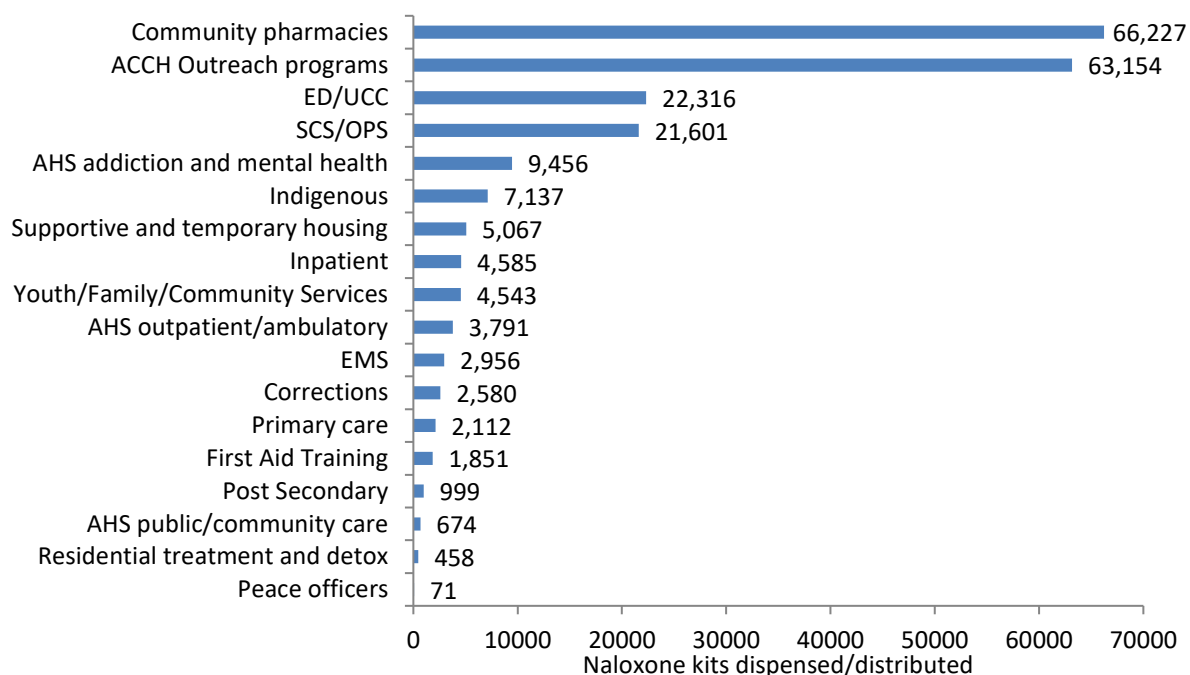
Figure 20: Rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 person years, by Zone and quarter. January 1, 2016 to December 31, 2019.



- Comparing the first quarter of 2016 to the last quarter of 2019, the rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 person years decreased by 22 per cent in Alberta. The average per cent decrease from quarter to quarter in this time period was 2 per cent. The rate increased slightly by 6 per cent in the last quarter of 2019 compared to the previous quarter.
- All Zones saw a similar decrease in this time period, ranging from a 19 to 25 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 last quarter of 2019, the rate in the South Zone was approximately 31 per cent higher than the provincial average (282 per 1,000 person years vs. 215 per 1,000 person years).

Community based naloxone kits

Figure 22: Naloxone kits dispensed/distributed by registered site type, January 1, 2016 to December 31, 2019.

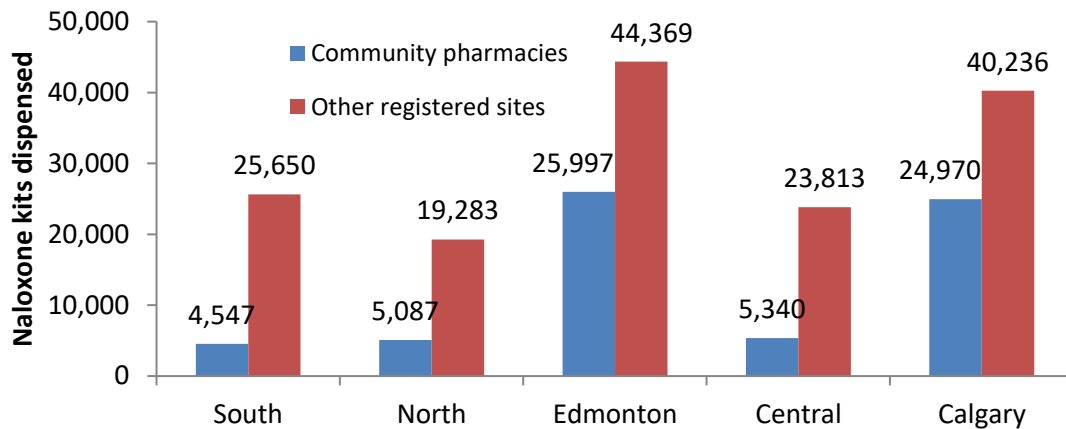


- From January 1, 2016 to December 31, 2019, 219,578 naloxone kits were dispensed in Alberta through Alberta Health Services' (AHS) naloxone program, and 14,672 reversals were self-reported. Approximately 3,250 naloxone kits were distributed in Alberta by the Alberta Community Council on HIV (ACCH) between 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, 2019.

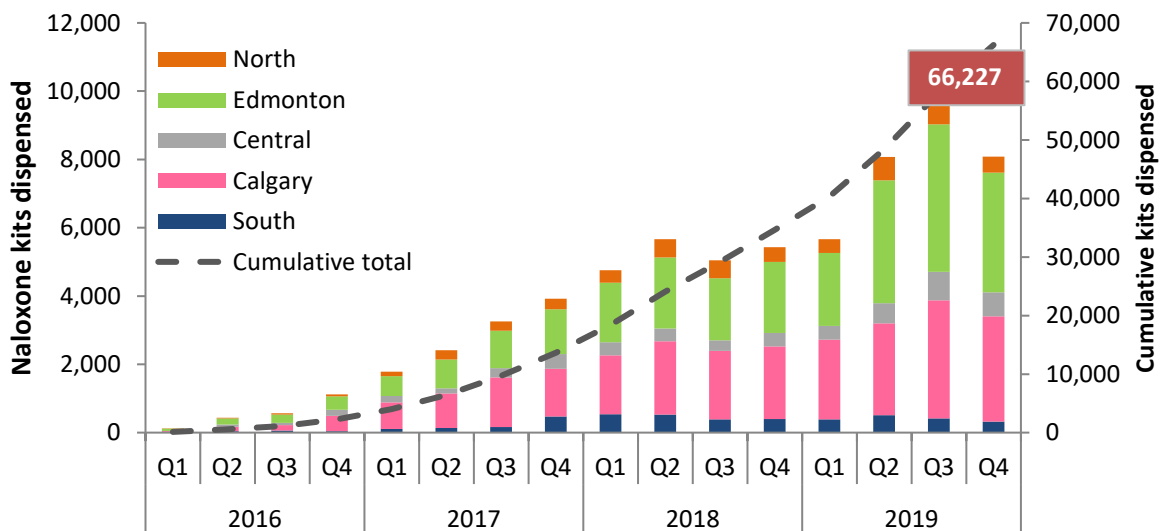
	South	Calgary	Central	Edmonton	North	Total
Community pharmacies	96	422	151	427	128	1,224
Inpatient	15	16	19	16	35	101
AHS addiction and MH	10	30	22	42	21	125
ED	15	19	29	14	37	114
Medical First Response	16	15	28	12	31	102
Primary Care	15	21	13	30	9	88
AHS public/community health	5	8	11	20	34	78
Indigenous	4	9	5	6	35	59
EMS	9	10	13	15	10	57
AHS outpatient and ambulatory	3	24	4	15	8	54
Youth/family/community services	3	12	4	16	1	36
Supportive and temporary housing	1	10	5	4	1	21
Residential treatment and Detox	3	4	4	4	2	17
Post Secondary	0	5	2	6	2	15
Corrections	2	4	1	3	1	11
ACCH outreach	2	3	1	1	3	10
SCS/OPS	1	2	1	4	1	9
First Aid Programs	0	3	4	1	0	8
Peace Officers	0	2	1	1	2	6
Total	200	619	318	637	361	2,135

Figure 23: Naloxone kits dispensed/distributed by community pharmacies and other registered sites, by Zone. January 1, 2016 to December 31, 2019.



- Throughout the province, non-pharmacy sites are dispensing more naloxone kits than community pharmacies (70 per cent of all kits given out are from 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 last 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 December 31, 2019.



- Across Alberta, in 2019, community pharmacies dispensed an average of 7,903 kits per quarter, an increase of about 51 per cent compared to 2018 (5,245 per quarter). Since January 1, 2016 66,227 naloxone kits have been dispensed from community pharmacies in Alberta.

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 December 31, 2019.

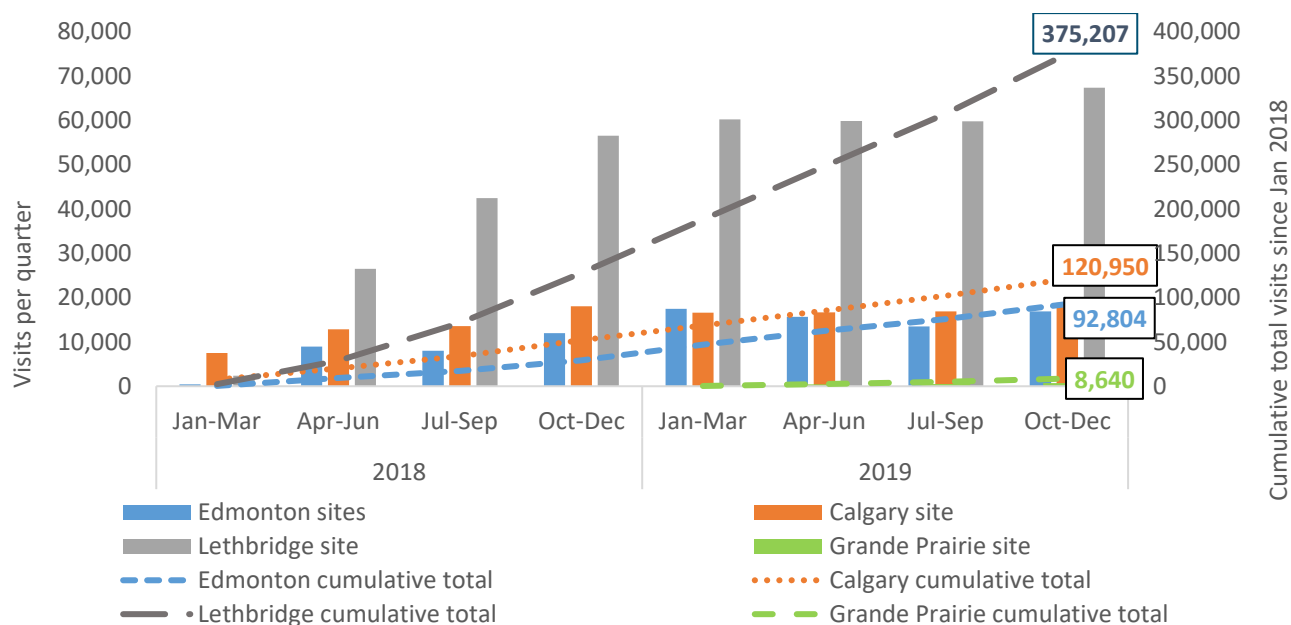


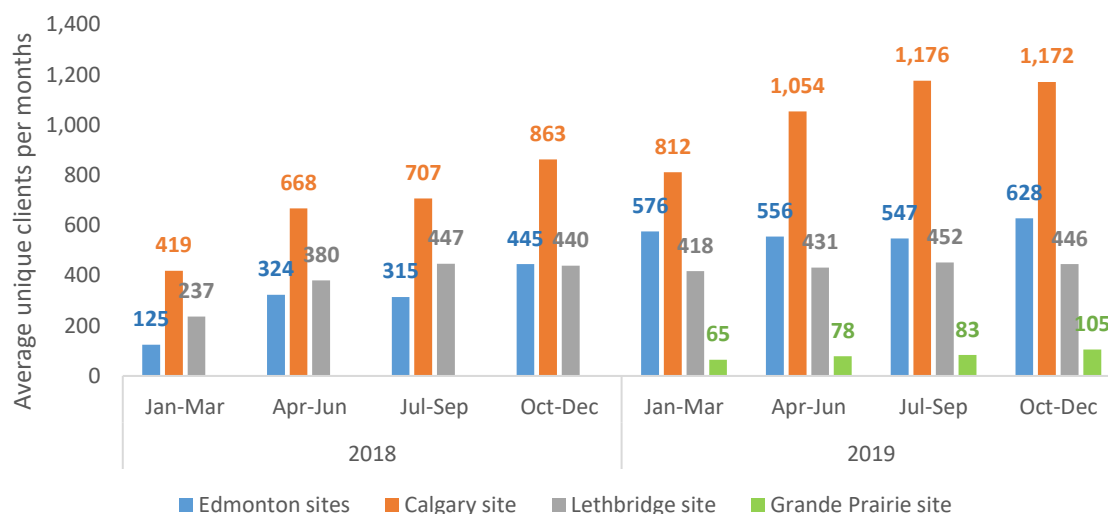
Table 12: Number of visits per quarter and site. January 1, 2018 to September 30, 2019.

	2018				2019				Site total
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
Edmonton sites	390	8,974	7,975	11,961	17,489	15,641	13,475	16,899	92,804
Calgary site	7,469	12,854	13,548	18,051	16,623	16,694	16,880	18,831	120,950
Lethbridge site	2,375	26,464	42,450	56,562	60,260	59,901	59,781	67,414	375,207
Grande Prairie site					298	2,028	2,646	3,668	8,640
Quarter Total	10,234	48,292	63,973	86,574	94,670	94,264	92,782	106,812	597,601

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.

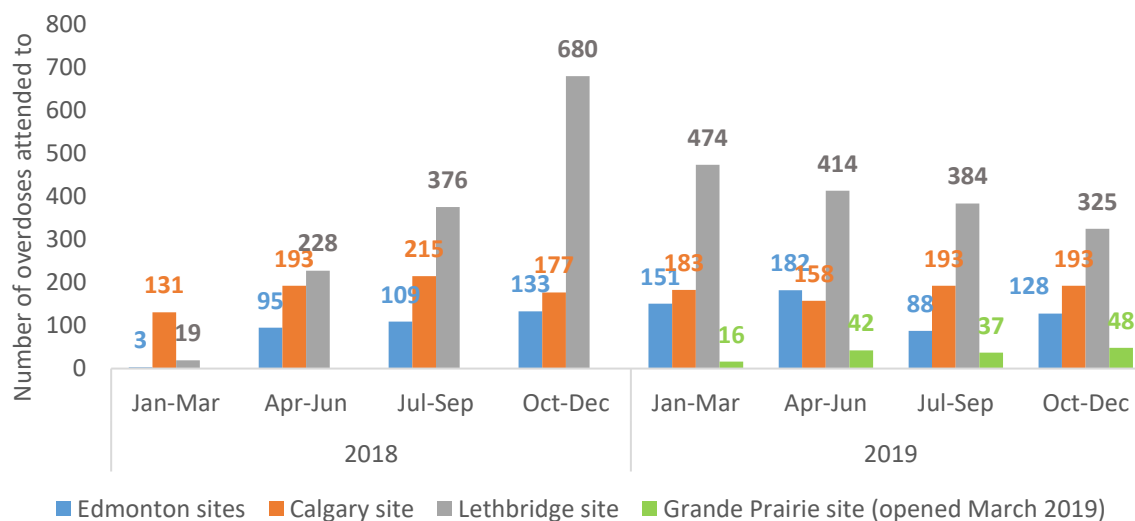
- From October to December 2019 (latest quarter) on average, per month, there were 5,633 visits to Edmonton sites, 6,227 visits to the Calgary site, 22,471 visits to the Lethbridge site, and 1,223 visits to the Grande Prairie site.
- Compared to the last quarter, in the most recent quarter, the Edmonton sites saw an increase in visits of 25 per cent.
- Compared to the last quarter, in the most recent quarter, the Calgary site saw an increase in visits of 12 per cent.
- Compared to the last quarter, in the most recent quarter, the Lethbridge site saw an increase in visits of 13 per cent.
- Compared to the last quarter, in the most recent quarter, the Grande Prairie site saw an increase in visits of 39 per cent.

Figure 26: Average monthly unique clients per quarter and site. January 1, 2018 to December 31, 2019.



- Compared to the last quarter, in the most recent quarter (October to December 2019) Edmonton sites saw a 15 percent increase in average monthly unique clients, the Calgary site a decrease of less than 1 per cent, the Lethbridge site saw a decrease of 1 per cent, and the Grande Prairie site saw an increase in average monthly unique clients of 26 per cent.

Figure 27: Total number of attended overdoses* per quarter and site. January 1, 2018 to December 31, 2019.



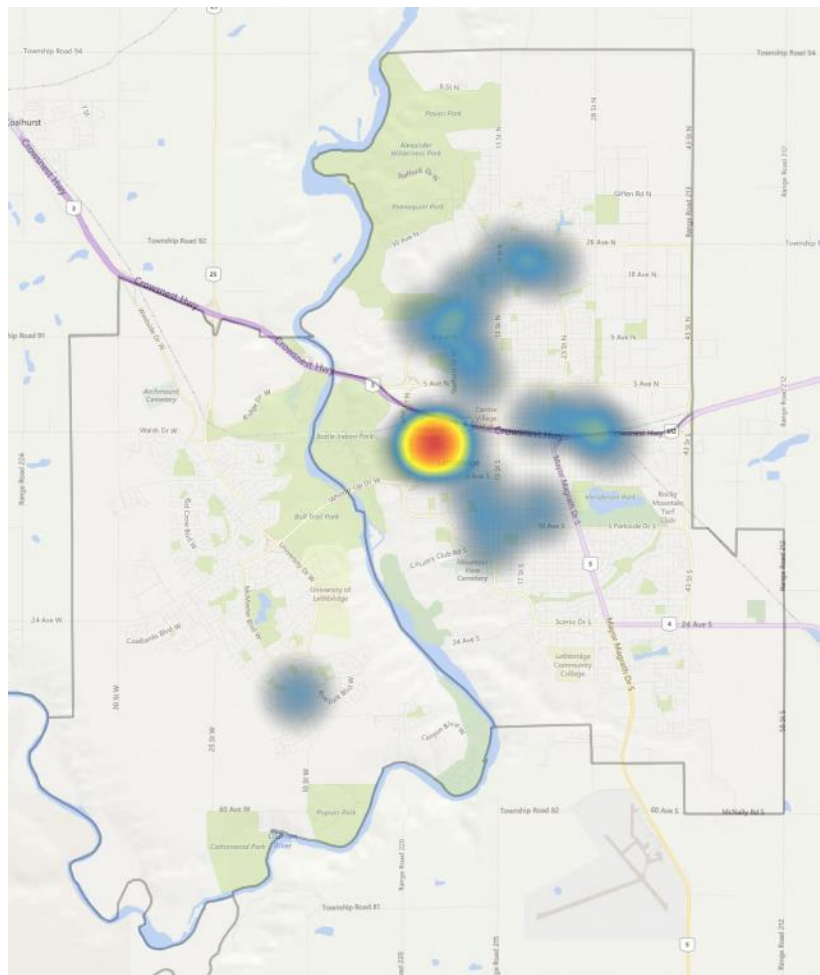
- From October to December 2019, 128 overdoses have been attended to at Edmonton sites, 138 at the Calgary site, 325 at the Lethbridge site, and 48 at the Grande Prairie site. There were zero fatal drug poisoning events across all sites.
- From October to December 2019, there were 8 attended overdoses for every 1,000 visits to the Edmonton sites, 7 attended overdoses for every 1,000 visits to the Calgary site, 5 attended overdoses for every 1,000 visits to the Lethbridge site, and 13 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.

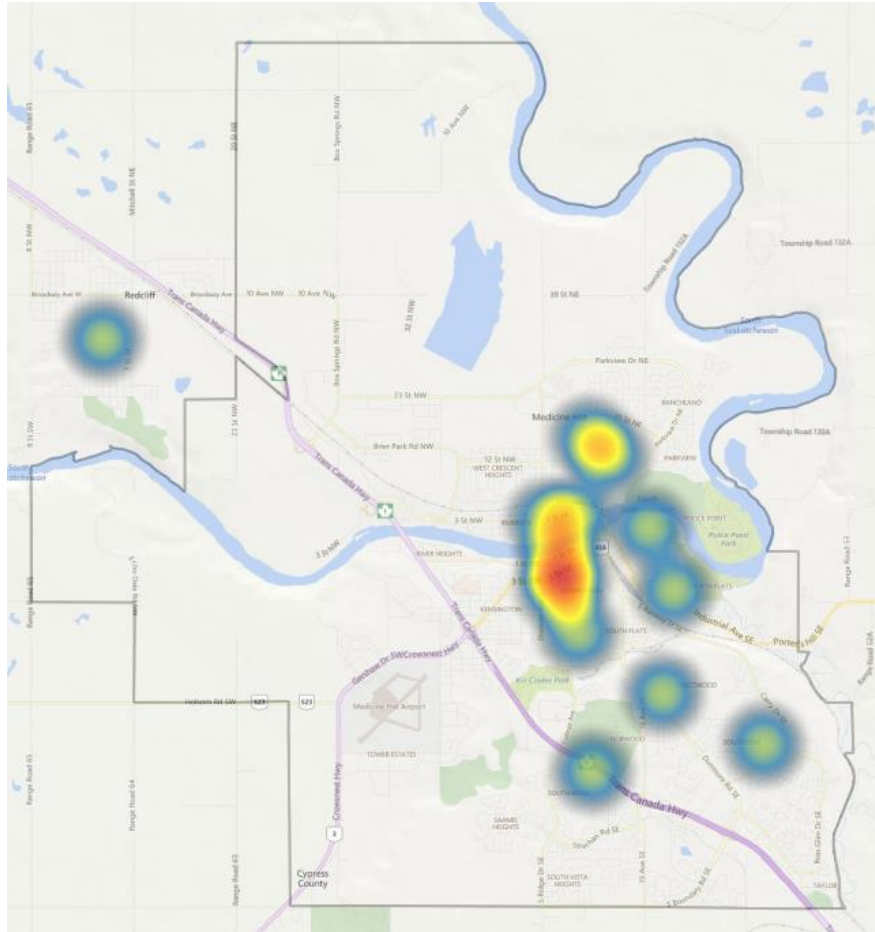
Appendix 1: Opioid related poisoning deaths in major Albertan cities

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

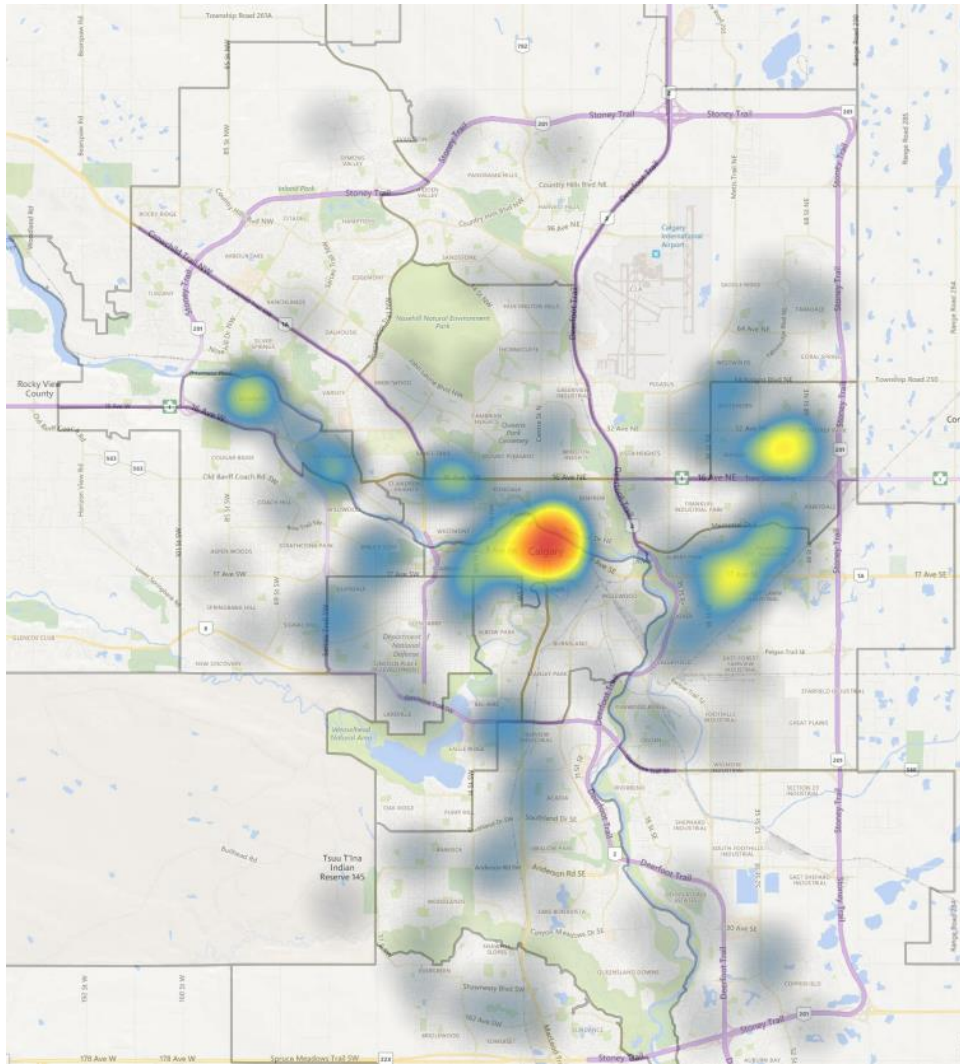
Lethbridge



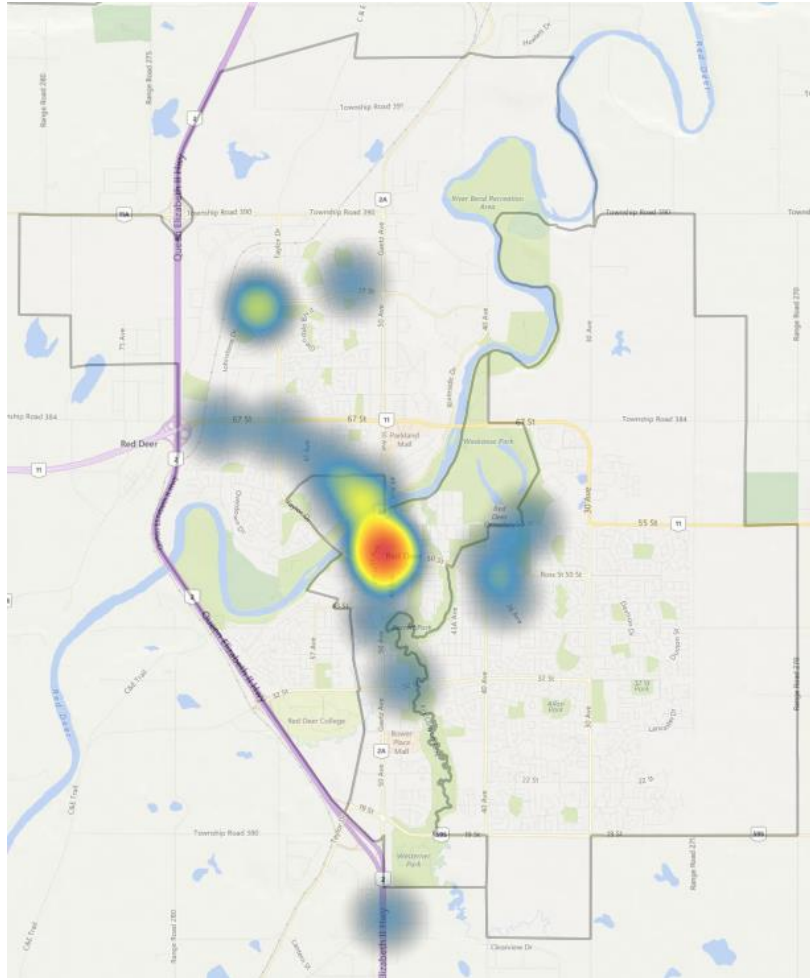
Medicine Hat



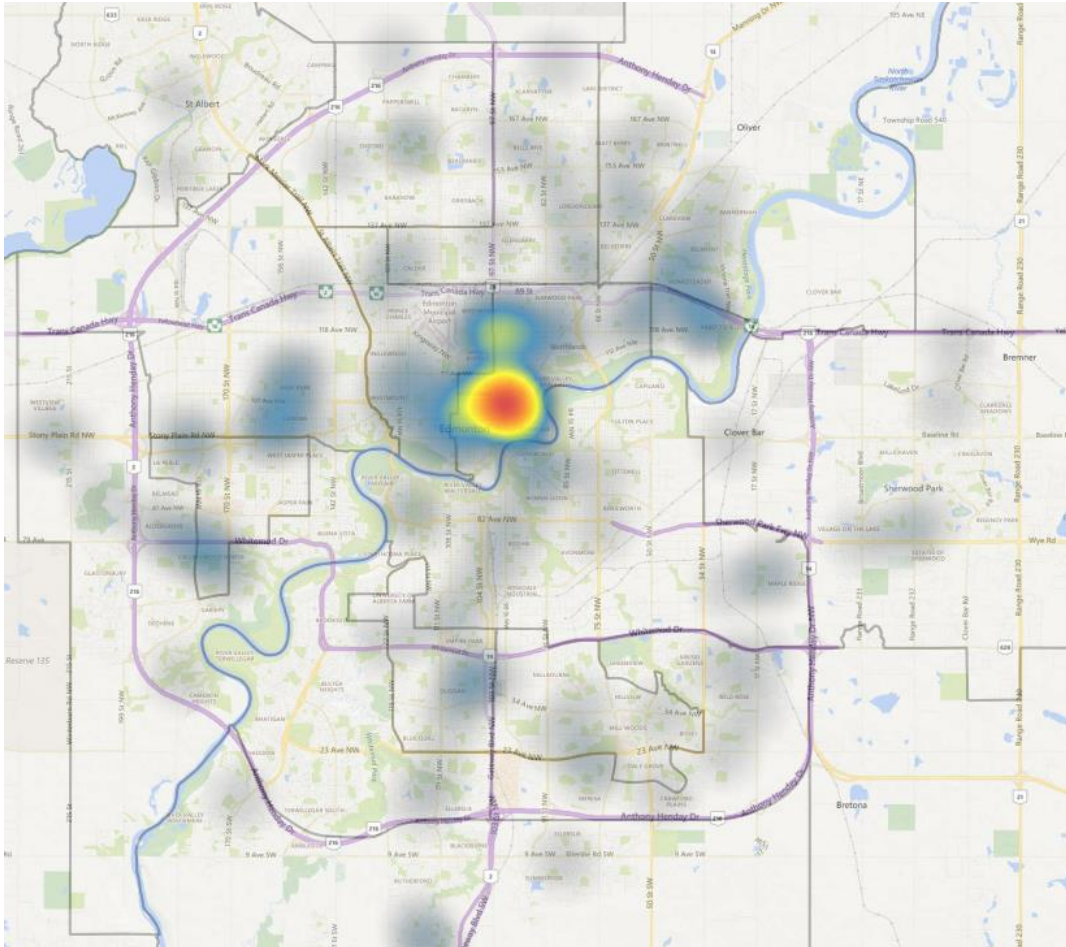
Calgary



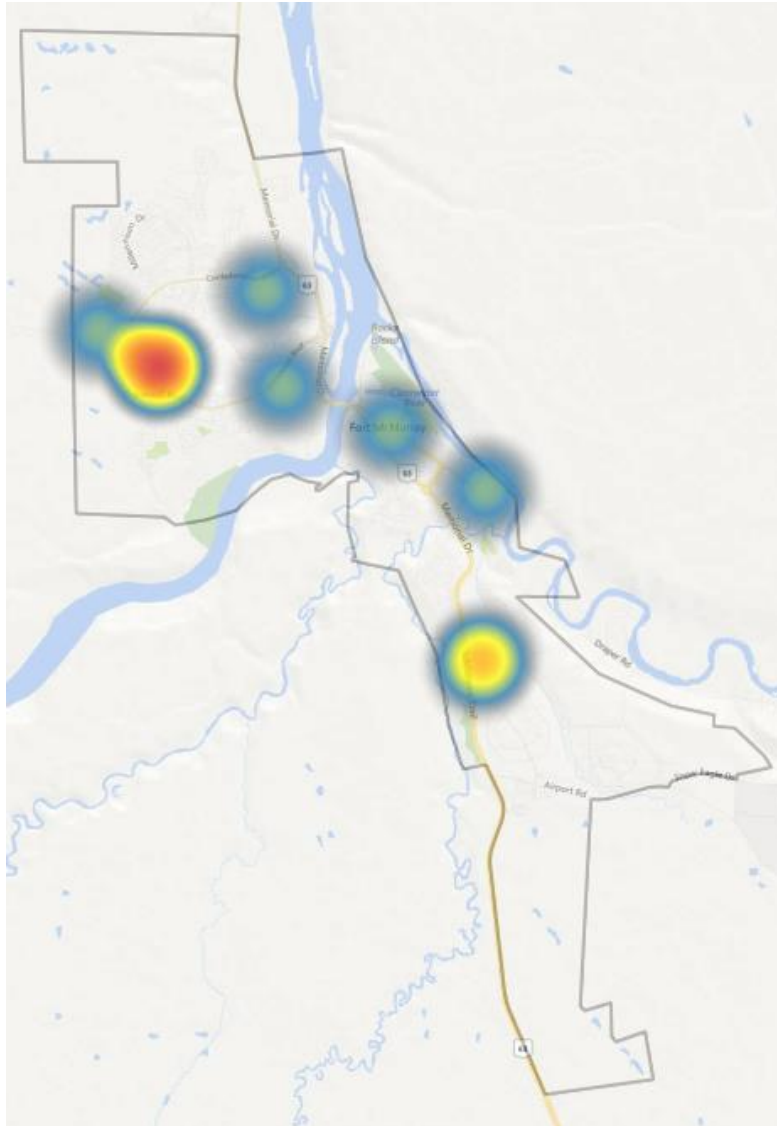
Red Deer



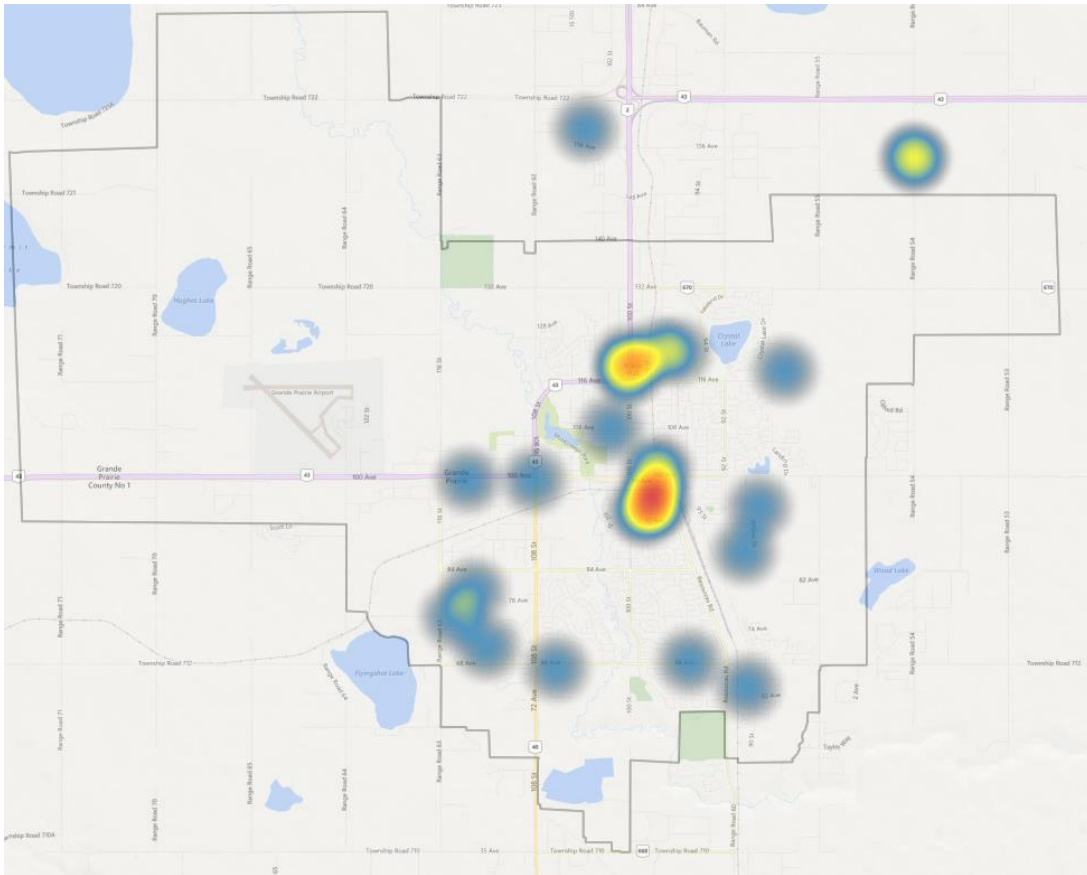
Edmonton



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.

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, 02453908, 02453916, 02468085, 02468093. The following DINs were excluded because they do not contain opioids: 02239141, 02254468

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