

**Alberta Health**

**Alberta Opioid Response Surveillance Report**

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**2019 Q1**

**June 2019**



## Highlights

- The most up-to-date data shows that 789 people died from an accidental opioid related poisoning in 2018.
- On average, in 2018, 2 individuals died every day in Alberta because of an accidental opioid related poisoning.
- In the most recent quarter, 137 people died from an accidental fentanyl related poisoning, compared to 160 people in the previous quarter.
- This means, 1.5 individuals a day are dying from an accidental fentanyl related poisoning in 2019.
- There continues to be a high number of accidental fentanyl related poisoning deaths in the province, however, the number in the most recent quarter is comparatively less than the previous.

# Key points

## Accidental fentanyl related poisoning deaths (includes apparent cases)

- In the first quarter of 2019, there were **137** accidental fentanyl related poisoning deaths in Alberta. By comparison, there were **160** of these deaths in the fourth quarter of 2018.
- From January 1, 2019 to March 31, 2019, **80 per cent** of deaths occurred in larger urban municipalities (Edmonton, Calgary, Red Deer, Grande Prairie, Fort McMurray, Lethbridge, Medicine Hat).
- In the first quarter of 2019, the Calgary Zone (**54**) and Edmonton Zone (**36**) had the highest numbers of fentanyl deaths. The South Zone had the highest rate per 100,000 population at **20.7**, compared to the provincial average of **12.5** per 100,000 population.

## Accidental non-fentanyl opioid related poisoning deaths (includes apparent cases)

- In the fourth quarter of 2019, there were **27** accidental non-fentanyl opioid related poisoning deaths in Alberta. By comparison, there were **27** of these deaths in the third quarter of 2018. In 2017, **33** accidental non-fentanyl opioid related poisoning deaths occurred in the fourth quarter.
- From January 1, 2018 to December 31, 2018, **57 per cent** of non-fentanyl opioid related deaths occurred in larger urban municipalities (Edmonton, Calgary, Red Deer, Grande Prairie, Fort McMurray, Lethbridge, Medicine Hat).
- In the third quarter of 2018, the Calgary Zone (**11**), Edmonton Zone (**6**), and South Zone (**6**) had the highest number of these deaths. In 2018, the South Zone had the highest rate at **9.1** per 100,000 population, compared to a provincial average of **3.6** per 100,000 population.

## Confirmed drug poisoning deaths

- Among all confirmed drug and alcohol poisoning deaths (accidental and suicide) in 2018, opioids (fentanyl or non-fentanyl) were directly involved in **80 per cent** of deaths. **20 per cent** of all confirmed drug and alcohol poisoning deaths (accidental and suicide) did not involve any opioid.
- In addition to opioids, multiple substances often contribute to an opioid poisoning death. This may be a result of an individual using multiple substances including opioids, or through the contamination of non-opioid drugs with opioids such as fentanyl.
- In 2018, **77 per cent** of accidental fentanyl related poisoning deaths listed at least one other substance as contributing to death, the most frequent being methamphetamine (**43 per cent**) and cocaine (**31 per cent**).

## Emergency department visits

- In the last quarter of 2018, there were **3,100** emergency and urgent care visits related to harm associated with opioids and other drug use. In the previous quarter, there were **2,920** emergency and urgent care visits related to opioids and other substances of misuse.
- In the last quarter of 2018, emergency and urgent care visits related to harm associated with opioids and other drug use occurred among **2,560** unique individuals, of whom **15 per cent** had more than one visit.

## Supervised consumption services

- In the most recent quarter (January to March 2019), there were **94,614** visits to supervised consumption services sites in Edmonton, Calgary, Lethbridge, and Grande Prairie. In the same time period, there were on a monthly average, **1,849** unique clients who attended these sites, and **863** 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.

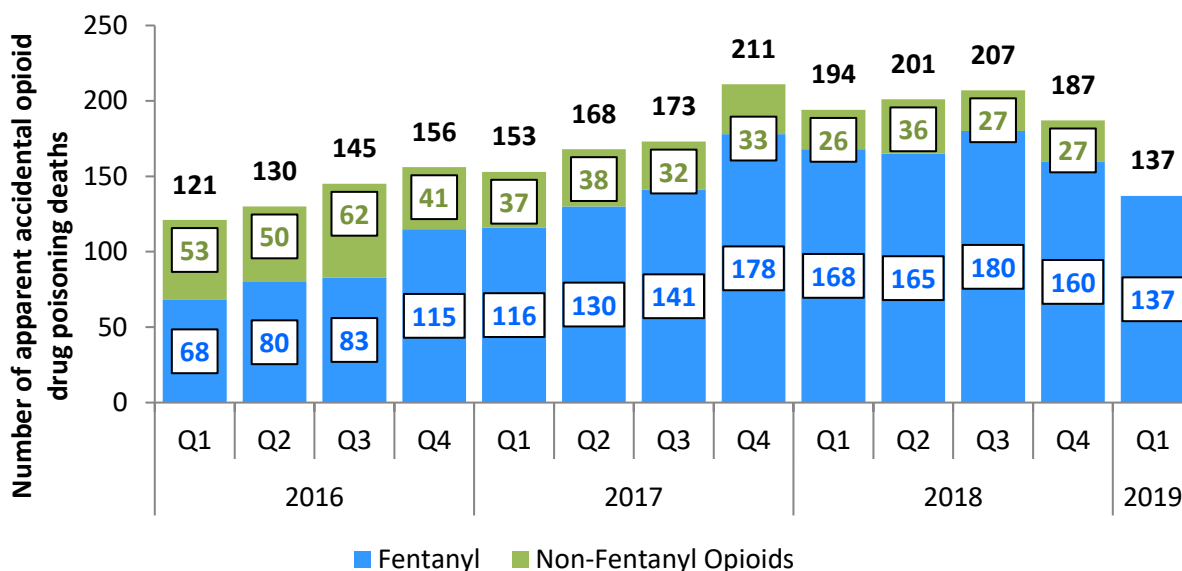
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# Mortality data: Accidental opioid related poisoning deaths (includes apparent cases)

## Fentanyl and non-fentanyl opioid related poisoning deaths

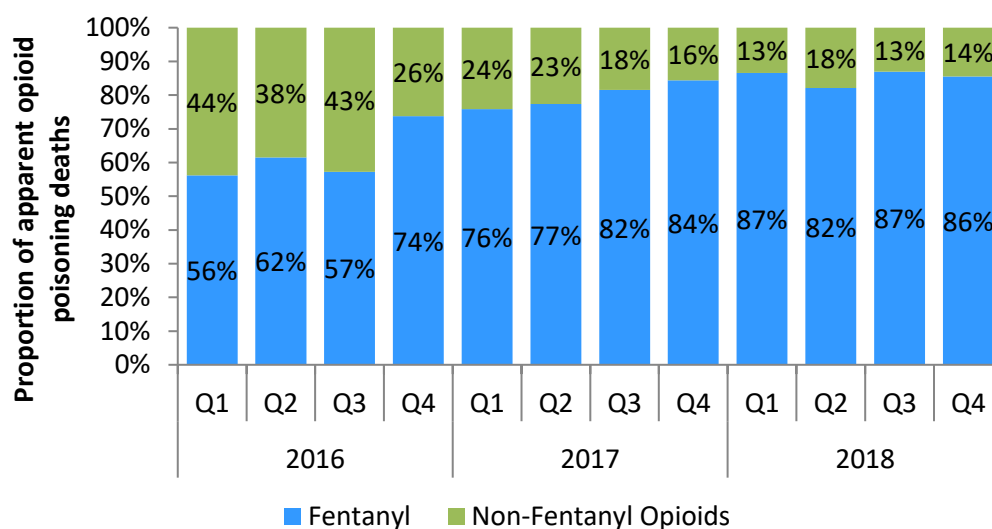
**Figure 1:** Number of accidental opioid related poisoning deaths, by quarter. January 1, 2016 to March 31, 2019.



\*Only fentanyl related poisoning deaths are available for most recent quarter

- Since January 1, 2016 **2,183** individuals have died from an accidental opioid related poisoning in Alberta.

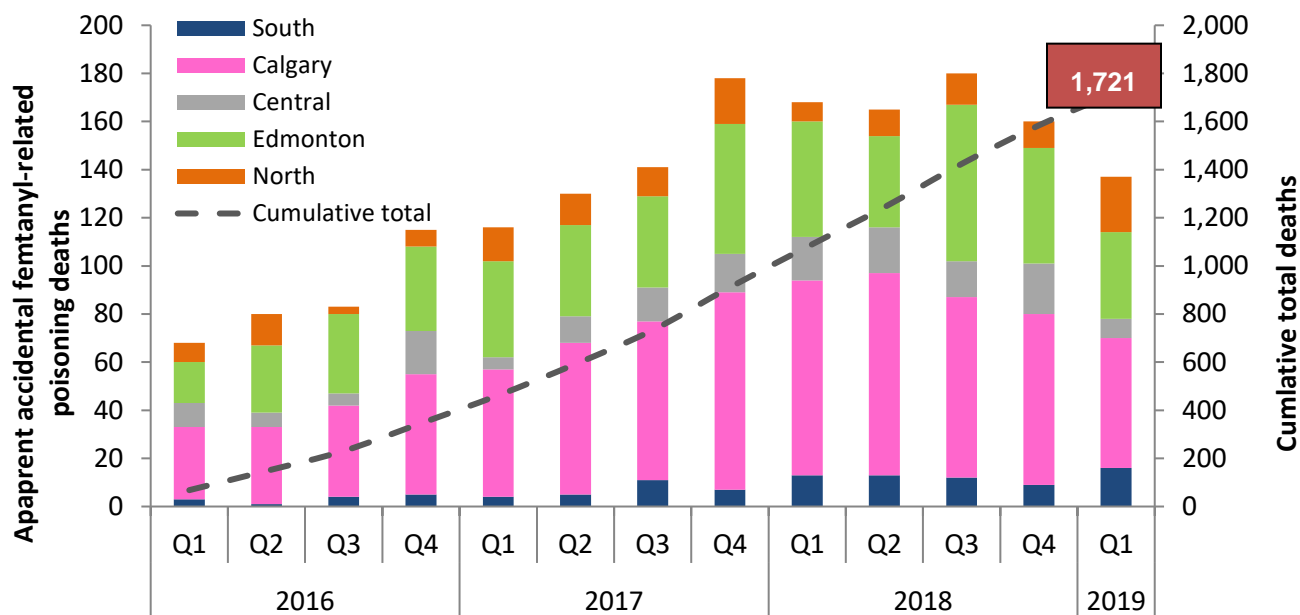
**Figure 2:** Proportion of fentanyl vs. non-fentanyl opioid related accidental poisoning deaths, by quarter. January 1, 2016 to December 31, 2018.



- Almost all accidental opioid related poisoning deaths are now related to fentanyl. In the last quarter of 2018, 86 per cent of all accidental opioid related poisoning deaths were related to fentanyl.

## Accidental fentanyl related poisoning deaths

**Figure 3:** Number of accidental fentanyl related poisoning deaths , by Zone (based on place of death) and quarter. January 1, 2016 to March 31, 2019.



- Since January 1, 2016, a total of 1,721 individuals in Alberta died from an accidental fentanyl related poisoning death (346 in 2016, 565 in 2017, 673 in 2018, and 137 in 2019).
- In the first quarter of 2019, 137 individuals in Alberta died from an accidental fentanyl related poisoning death, while in 2018, on average, 168 individuals died from an accidental fentanyl related poisoning death per quarter.

**Table 1:** Number of accidental fentanyl related poisoning deaths, by Zone and quarter. January 1, 2016 to March 31, 2019

South Zone	3	1	4	5	4	5	11	7	13	13	12	9	16	<b>103</b>
Calgary Zone	30	32	38	50	53	63	66	82	82	84	75	71	54	<b>779</b>
Central Zone	10	6	5	18	5	11	14	16	18	19	15	21	8	<b>166</b>
Edmonton Zone	17	28	33	35	40	38	38	54	47	38	65	48	36	<b>518</b>
North Zone	8	13	3	7	14	13	12	19	8	11	13	11	23	<b>155</b>
<b>Alberta</b>	<b>68</b>	<b>80</b>	<b>83</b>	<b>115</b>	<b>116</b>	<b>130</b>	<b>141</b>	<b>178</b>	<b>168</b>	<b>165</b>	<b>180</b>	<b>160</b>	<b>137</b>	<b>1,721</b>
	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	

**Table 2:** Rate (per 100,000 population) and number of accidental fentanyl related poisoning deaths , by Zone (based on place of death). January 1, 2016 to March 31, 2019.

	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
<b>South Zone</b>	13	4.3	27	8.8	47	15.3	16	20.7
<b>Calgary Zone</b>	150	9.3	264	16.2	312	18.8	54	12.7
<b>Central Zone</b>	39	8.1	46	9.5	72	14.7	8	6.6
<b>Edmonton Zone</b>	113	8.4	170	12.4	200	14.4	36	10.1
<b>North Zone</b>	31	6.3	58	11.8	42	8.5	23	19.0
<b>Alberta</b>	<b>346</b>	<b>8.2</b>	<b>565</b>	<b>13.2</b>	<b>673</b>	<b>15.5</b>	<b>137</b>	<b>12.5</b>

- The Calgary and Edmonton Zones continue to have the highest number of accidental fentanyl related poisoning deaths. In 2019, the South Zone had the highest rate per 100,000 population at 20.7, compared to a provincial average of 12.5 per 100,000 population. The North Zone had the second highest rate of 19.0 per 100,000 population.

**Table 3:** Rate (per 100,000 population) and number of accidental fentanyl related poisoning deaths , by municipality (based on place of death). January 1, 2016 to March 31, 2019.

	2016		2017		2018		2019 YTD*	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
<b>Lethbridge</b>	8	8.3	15	15.3	25	25.1	9	36.7
<b>Medicine Hat</b>	2	2.9	7	10.2	12	17.5	2	11.6
<b>Calgary</b>	144	10.9	239	18.0	291	21.8	51	15.0
<b>Red Deer</b>	23	21.1	23	21.4	47	43.8	2	7.3
<b>Edmonton</b>	99	10.2	136	13.7	180	18.2	31	12.1
<b>Fort McMurray</b>	9	11.1	14	17.6	11	13.9	4	20.3
<b>Grande Prairie</b>	10	13.5	27	36.4	24	32.4	11	59.0
<b>Total</b>	<b>295</b>	<b>10.8</b>	<b>461</b>	<b>16.7</b>	<b>591</b>	<b>21.4</b>	<b>110</b>	<b>15.7</b>

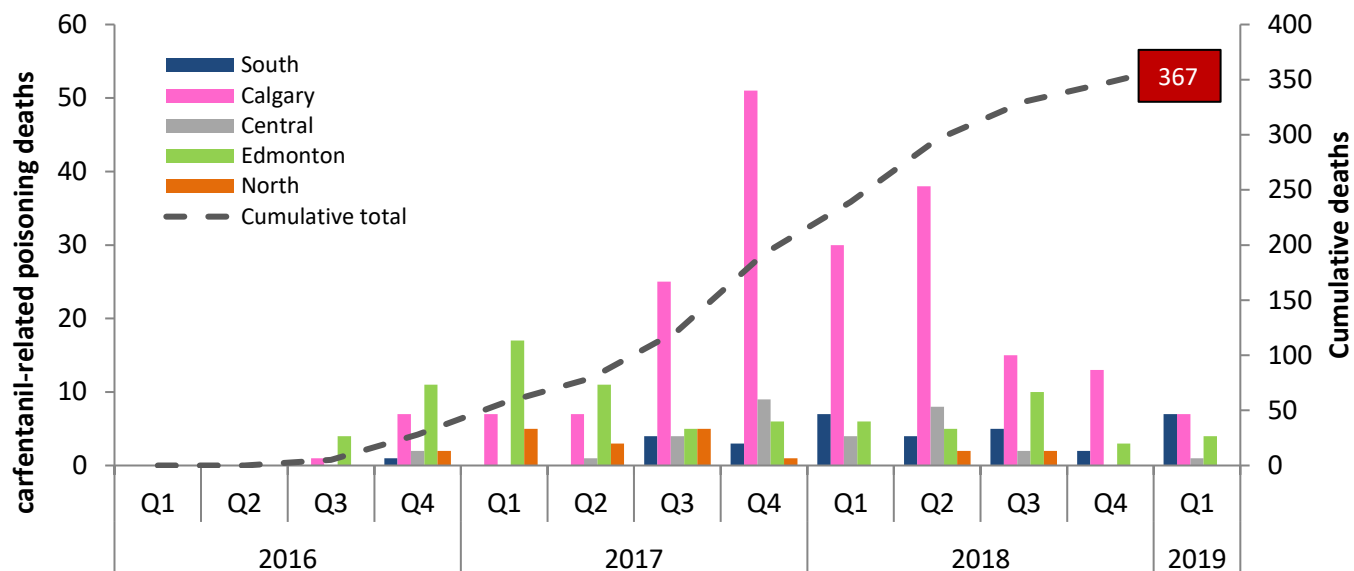
- The municipalities of Calgary and Edmonton continue to have the highest number of accidental fentanyl related poisoning deaths. In 2019, the Municipality of Grande Prairie had the highest rate of accidental fentanyl related poisoning deaths per 100,000 population, followed by the Municipality of Lethbridge.

\*YTD = January 1 to March 31, 2019



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

*Subcategory of fentanyl deaths from Figure 3*



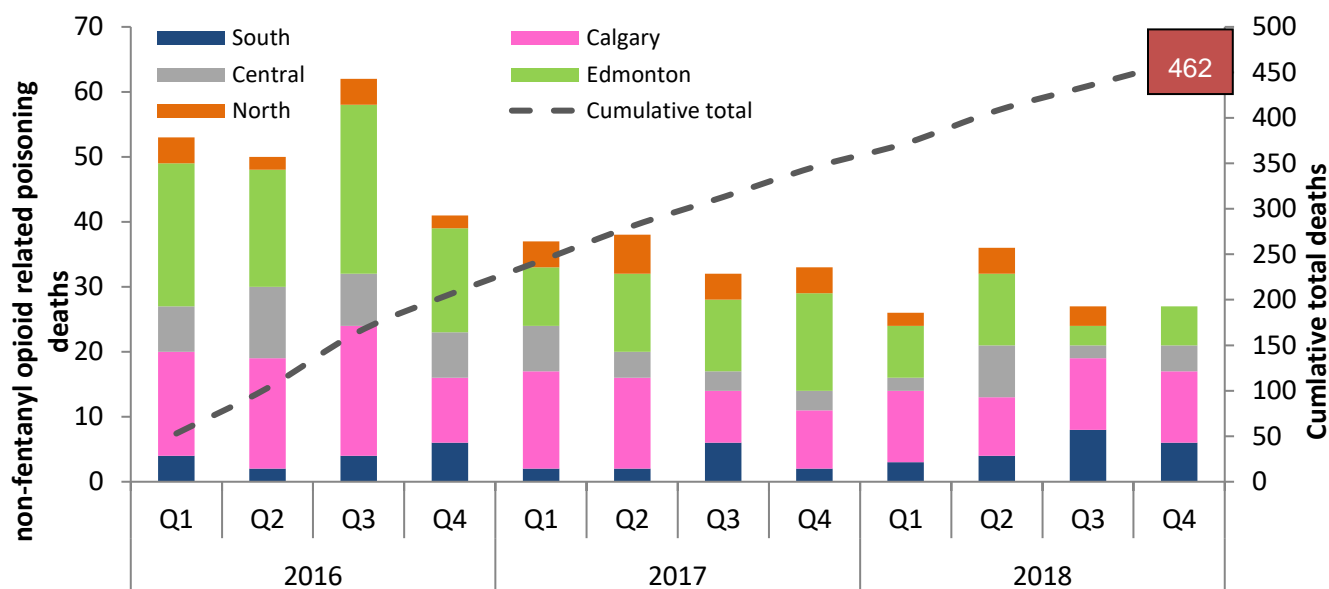
- The first Alberta carfentanil cases were detected in the third quarter of 2016, with 28 cases occurring in all of 2016. In 2017, 164 individuals in Alberta died from an accidental carfentanil-related poisoning death, 156 in 2018, and 19 in 2019.
- The number of carfentanil cases peaked in the last quarter of 2017 (70 deaths), and since then, the numbers have decreased, with 19 occurring in the first quarter of 2019.
- 55 per cent of all carfentanil-related poisoning deaths have occurred in the Calgary Zone. In the first quarter of 2019, 37 per cent of carfentanil-related poisoning deaths occurred in both the Calgary and South Zone (7 in each Zone). As of March 31, 2018, the South Zone had the highest rate of carfentanil deaths per 100,000 population, as did the Municipality of Lethbridge (8.2 per 100,00 compared to the provincial rate of 3.3 per 100,000 population).

**Table 4:** Number of accidental carfentanil-related poisoning deaths, by Zone and quarter  
(Subcategory of fentanyl deaths from Table 1). January 1, 2016 to March 31, 2019

South Zone	0	0	0	1	0	0	4	3	7	4	5	2	7	33
Calgary Zone	0	0	1	7	7	7	25	51	30	38	15	13	7	201
Central Zone	0	0	0	2	0	1	4	9	4	8	2	0	1	31
Edmonton Zone	0	0	4	11	17	11	5	6	6	5	10	3	4	82
North Zone	0	0	0	2	5	3	5	1	0	2	2	0	0	20
<b>Alberta</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>23</b>	<b>29</b>	<b>22</b>	<b>43</b>	<b>70</b>	<b>47</b>	<b>57</b>	<b>34</b>	<b>18</b>	<b>19</b>	<b>367</b>
	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	

## Non-fentanyl opioid related poisoning deaths

**Figure 5:** Number of accidental non-fentanyl opioid related poisoning deaths, by Zone (based on place of death) and quarter. January 1, 2016 to December 31, 2018.



- Since January 1, 2016, a total of 462 individuals in Alberta have died from an accidental non-fentanyl opioid related poisoning death (206 in 2016, 140 in 2017, and 116 in 2018).
- The number of individuals in Alberta that have died from an accidental non-fentanyl opioid related poisoning has significantly decreased over the last three years.

**Table 5:** Number of accidental non-fentanyl opioid related poisoning deaths, by Zone and quarter. January 1, 2016 to December 31, 2018

South Zone	4	2	4	6	2	2	6	2	3	4	8	6	<b>49</b>
Calgary Zone	16	17	20	10	15	14	8	9	11	9	11	11	<b>151</b>
Central Zone	7	11	8	7	7	4	3	3	2	8	2	4	<b>66</b>
Edmonton Zone	22	18	26	16	9	12	11	15	8	11	3	6	<b>157</b>
North Zone	4	2	4	2	4	6	4	4	2	4	3	0	<b>39</b>
<b>Alberta</b>	<b>53</b>	<b>50</b>	<b>62</b>	<b>41</b>	<b>37</b>	<b>38</b>	<b>32</b>	<b>33</b>	<b>26</b>	<b>36</b>	<b>27</b>	<b>27</b>	<b>462</b>
	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	

**Table 6:** Rate (per 100,000 population) and number of accidental non-fentanyl opioid related poisoning deaths, by Zone (based on place of death). January 1, 2016 to December 31, 2018.

	2016		2017		2018	
	Count	Rate	Count	Rate	Count	Rate
<b>South Zone</b>	16	5.3	12	3.9	21	9.1
<b>Calgary Zone</b>	63	3.9	46	2.8	42	3.4
<b>Central Zone</b>	33	6.9	17	3.5	16	4.4
<b>Edmonton Zone</b>	82	6.1	47	3.4	28	2.7
<b>North Zone</b>	12	2.4	18	3.7	9	2.4
<b>Alberta</b>	<b>206</b>	<b>4.9</b>	<b>140</b>	<b>3.3</b>	<b>116</b>	<b>3.6</b>

- The Calgary and Edmonton Zones continue to have the highest number of these deaths. In 2018 the South Zone had the highest rate per 100,000 population at 9.1, compared to the provincial average of 3.6 per 100,000 population.

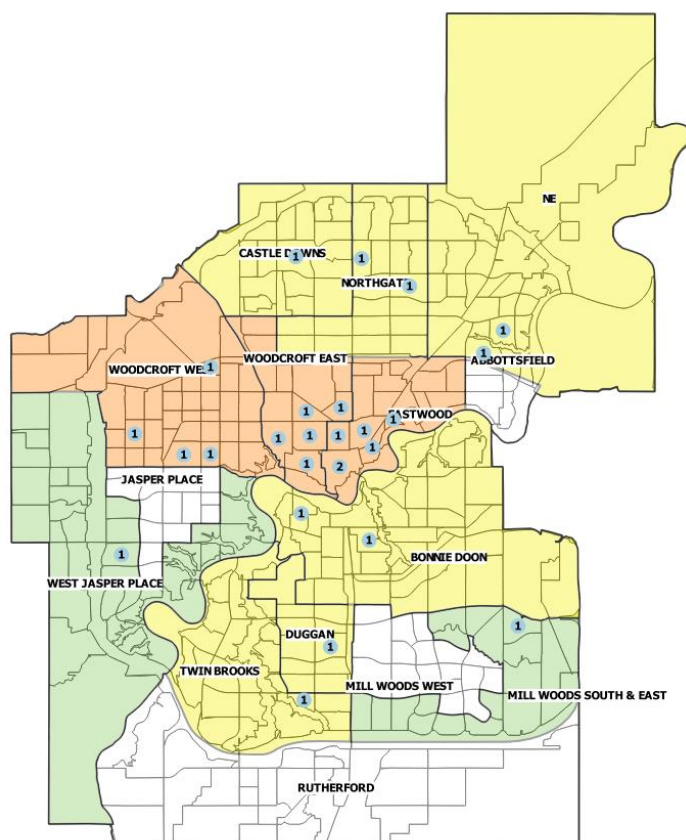
**Table 7:** Rate (per 100,000 population) and number of accidental non-fentanyl opioid related poisoning deaths, by municipality (based on place of death). January 1, 2016 to December 31, 2018.

	2016		2017		2018	
	Count	Rate	Count	Rate	Count	Rate
<b>Lethbridge</b>	4	4.1	3	3.1	4	5.4
<b>Medicine Hat</b>	4	5.9	3	4.4	3	5.8
<b>Calgary</b>	47	3.6	35	2.6	32	3.2
<b>Red Deer</b>	12	11.0	7	6.5	4	5.0
<b>Edmonton</b>	66	6.8	41	4.1	23	3.1
<b>Fort McMurray</b>	1	1.2	2	2.5	0	0.0
<b>Grande Prairie</b>	1	1.4	4	5.4	1	1.8
<b>Total</b>	<b>135</b>	<b>5.0</b>	<b>95</b>	<b>3.5</b>	<b>66</b>	<b>3.2</b>

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

## Municipalities of Edmonton and Calgary (accidental fentanyl related poisoning deaths)

**Figure 6:** Rate (per 100,000 population) and counts of accidental fentanyl related poisoning deaths, in the Municipality of Edmonton, based on place of overdose, by LGA. January 1, 2019 to March 31, 2019.



	Count	Rate per 100,000
<b>CITY of EDMONTON</b>	<b>26</b>	<b>10.1</b>
EDMONTON - WOODCROFT WEST	4	49.2
EDMONTON - WOODCROFT EAST	5	32.1
EDMONTON - EASTWOOD	6	31.9
EDMONTON - DUGGAN	1	9.7
EDMONTON - NORTHGATE	2	9.6
EDMONTON - NE	2	9.2
EDMONTON - BONNIE DOON	2	8.1
EDMONTON - CASTLE DOWNS	1	5.7
EDMONTON - TWIN BROOKS	1	5.1
EDMONTON - MILL WOODS SOUTH & E	1	4.9
EDMONTON - WEST JASPER PLACE	1	4.0
EDMONTON - JASPER PLACE	0	0.0
EDMONTON - ABBOTTSFIELD	0	0.0
EDMONTON - MILL WOODS WEST	0	0.0
EDMONTON - RUTHERFORD	0	0.0

### Legend

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

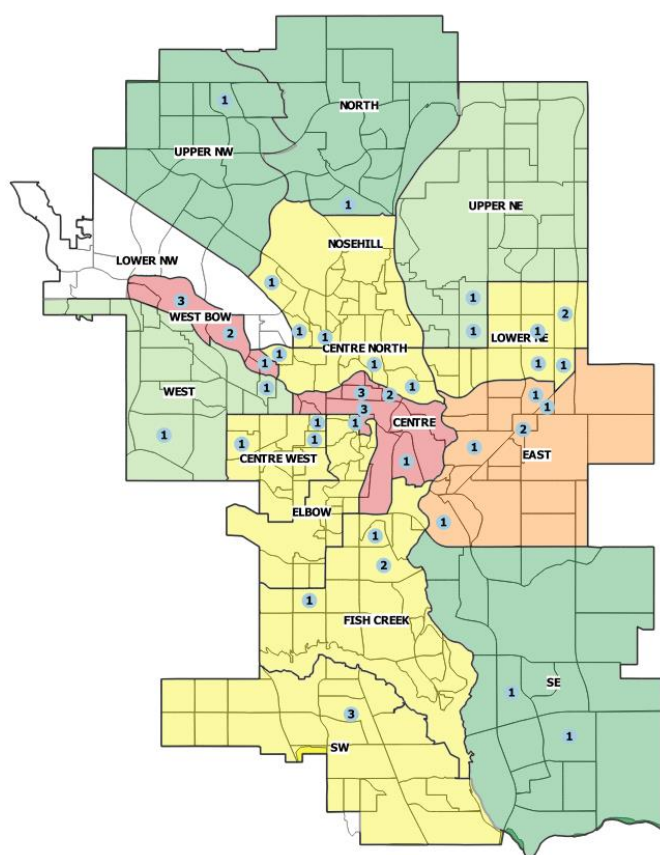
- Significantly lower
- Lower
- Average
- Higher
- Significantly higher
- No deaths

● Number in blue circle represents neighborhood level counts

- Within the Municipality of Edmonton, the LGAs with a **higher** rate of accidental fentanyl related poisoning deaths **compared to the municipality average** were Woodcroft West and East, and Eastwood. However, 42 per cent of the total deaths occurred in LGAs outside of this area.
- The place where the poisoning occurred was the same as the individual's home address for 52 per cent of fentanyl related deaths in Edmonton.

**Note:** Place of death was used as the place of the poisoning, except in instances where the place of death occurred in a hospital and there was no record of where the poisoning occurred. In Edmonton, a hospital was the place of death in 45 per cent of deaths.

**Figure 7:** Rate (per 100,000 population) and counts of accidental fentanyl related poisoning deaths, in the Municipality of Calgary, based on place of overdose, by LGA. January 1, 2019 to March 31, 2019.



● Number in blue circle represents neighborhood level counts

	Count	Rate per 100,000
<b>CITY of Calgary</b>	<b>51</b>	<b>15</b>
CALGARY - WEST BOW	6	110.1
CALGARY - CENTRE	9	55.0
CALGARY - EAST	6	31.7
CALGARY - CENTRE NORTH	3	26.1
CALGARY - LOWER NE	5	20.2
CALGARY - CENTRE WEST	3	17.9
CALGARY - NOSEHILL	3	15.1
CALGARY - FISH CREEK	4	13.9
CALGARY - SW	3	10.4
CALGARY - ELBOW	1	9.5
CALGARY - WEST	2	8.5
CALGARY - UPPER NE	2	7.3
CALGARY - SE	2	6.1
CALGARY - NORTH	1	3.5
CALGARY - UPPER NW	1	3.3
CALGARY - LOWER NW	0	0.0

#### Legend

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

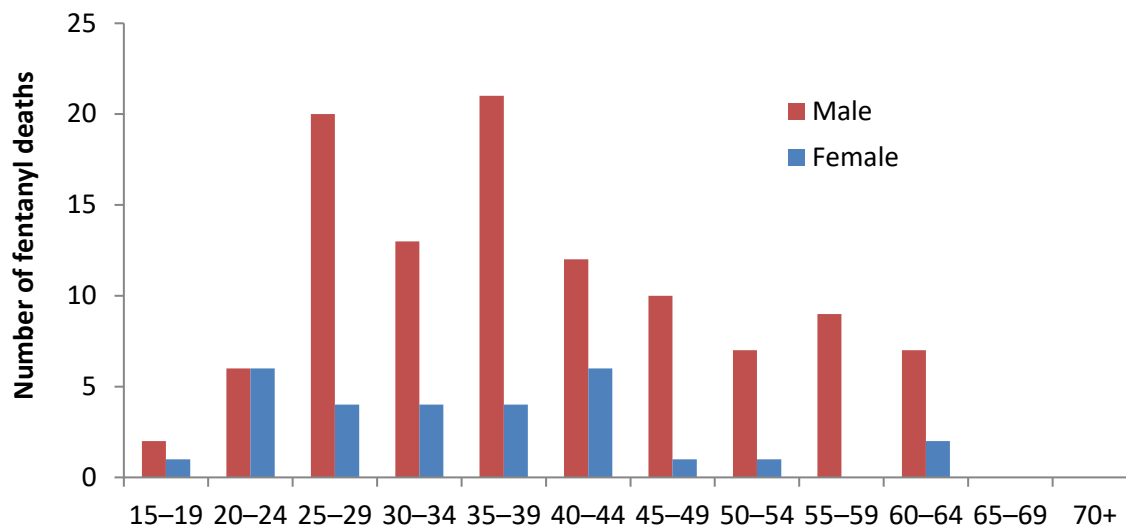
- Significantly lower
- Lower
- Average
- Higher
- Significantly higher
- No deaths

- Within the Municipality of Calgary, the LGAs with **significantly higher** rates of accidental fentanyl related poisoning deaths **compared to the municipality average** were West Bow and Centre. However, 71 per cent of the total deaths occurred in LGAs outside of these areas.
- The place where the poisoning occurred was the same as the individual's home address for 41 per cent of fentanyl related deaths in Calgary.
- The neighborhoods with three deaths were Beltline, Downtown core, Bowness, and Shawnessy.

**Note:** Place of death was used as the place of the poisoning, except in instances where the place of death occurred in a hospital and there was no record of where the poisoning occurred. In Calgary, a hospital was the place of death in 10 per cent of deaths.

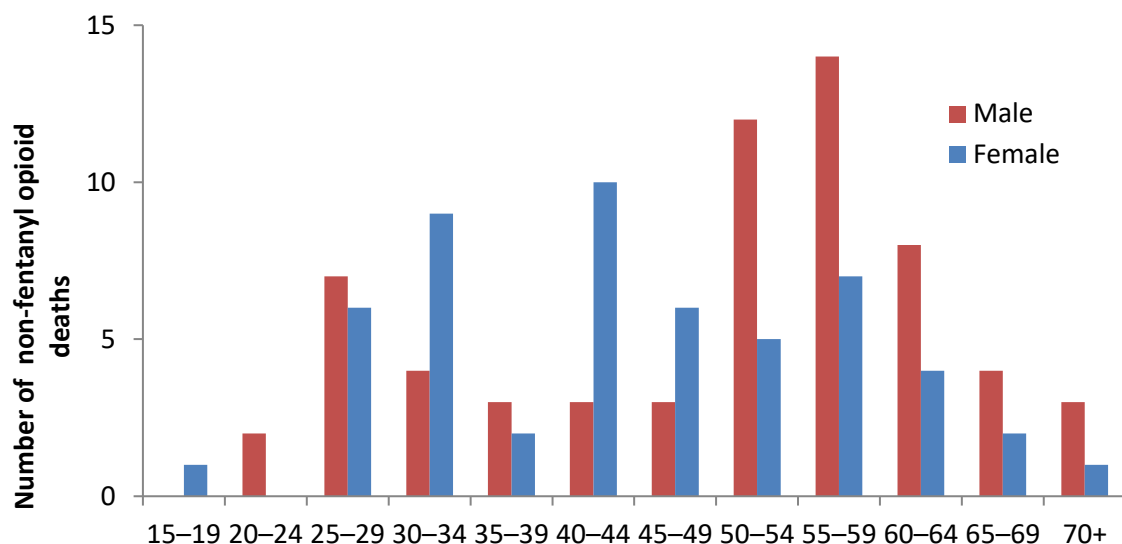
## Demographics and recent medical history of accidental opioid related poisoning decedents

**Figure 8:** Accidental fentanyl related poisoning deaths, by sex and age. January 1, 2019 to March 31, 2019.



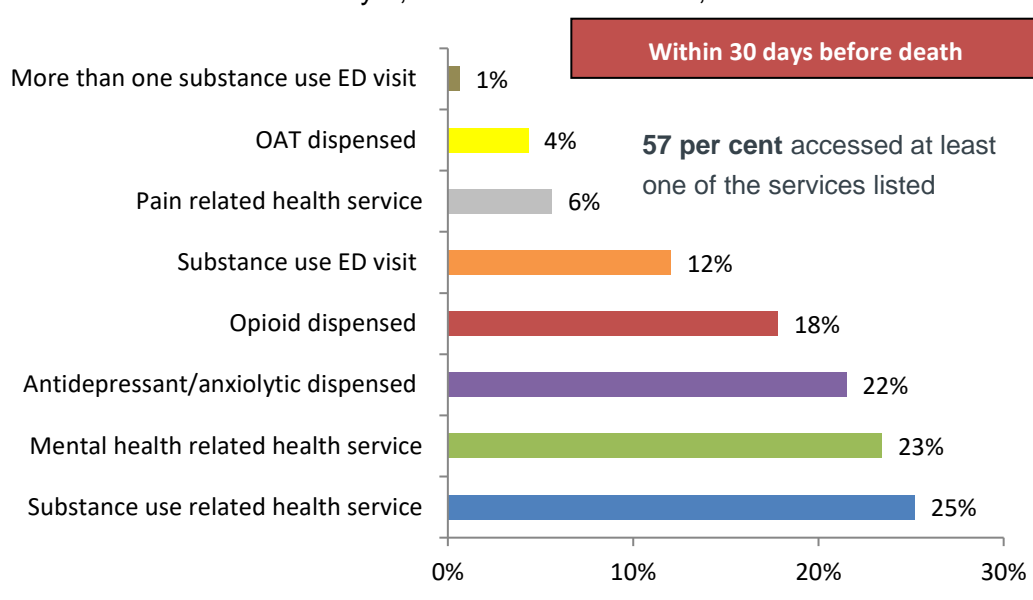
- 78 per cent of accidental fentanyl related poisoning deaths among males. Among males and females, a higher proportion of deaths occurred among individuals spanning the ages of 20 to 39 years.

**Figure 9:** Accidental non-fentanyl opioid related poisoning deaths, by sex and age, January 1, 2018 to December 31, 2018.

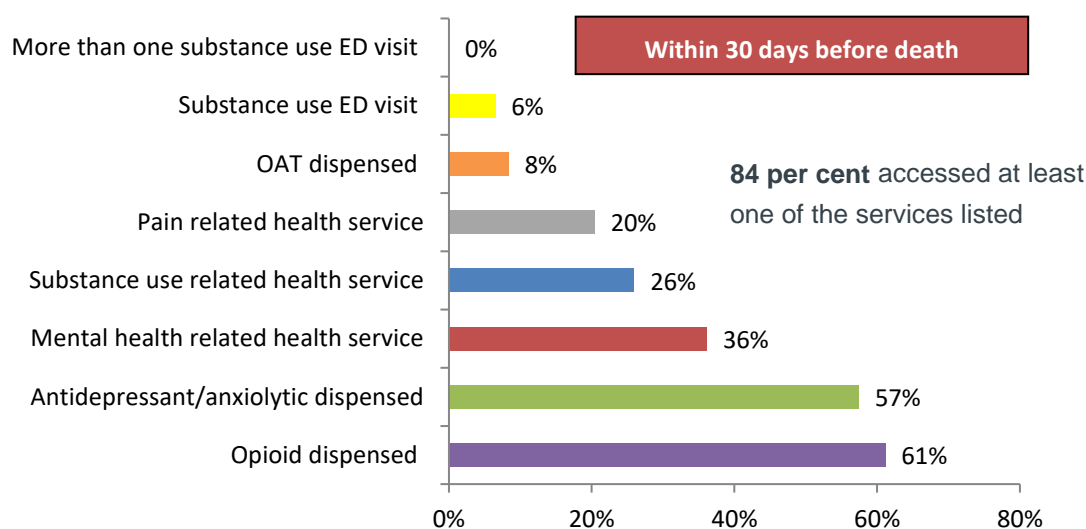


- 54 per cent of accidental non-fentanyl opioid related poisoning deaths were among males. Among males, the highest number of deaths occurred among individuals spanning the ages of 55 to 59 years, among females, 40 to 44.

**Figure 10:** Proportion of accidental fentanyl related poisoning deaths, by medical history within the 30 days before the date of death. January 1, 2018 to December 31, 2018.



**Figure 11:** Proportion of accidental non-fentanyl opioid related poisoning deaths, by medical history within the 30 days before the date of death, January 1, 2018 to December 31, 2018.



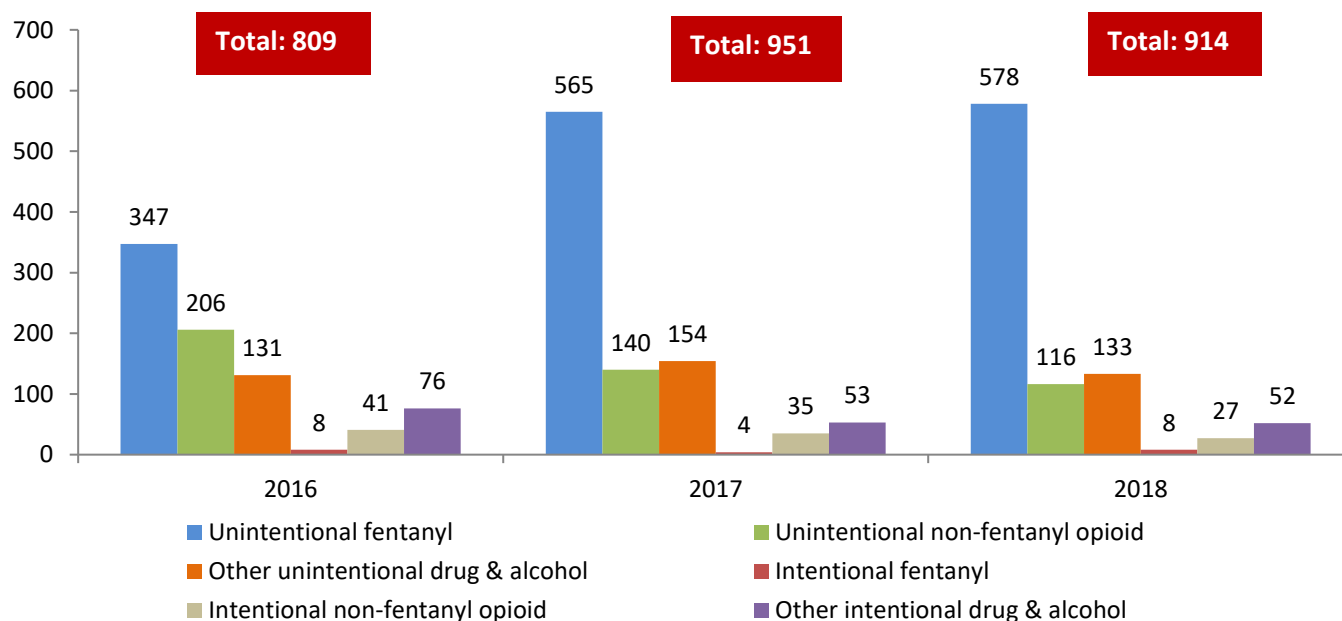
- Among accidental fentanyl related poisoning, the most frequent health care utilization within 30 days before the individual's date of death was having mental health or substance use related visit (including having an antidepressant or anxiolytic dispensed).
- Among accidental non-fentanyl opioid related poisoning deaths, 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 2018.

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

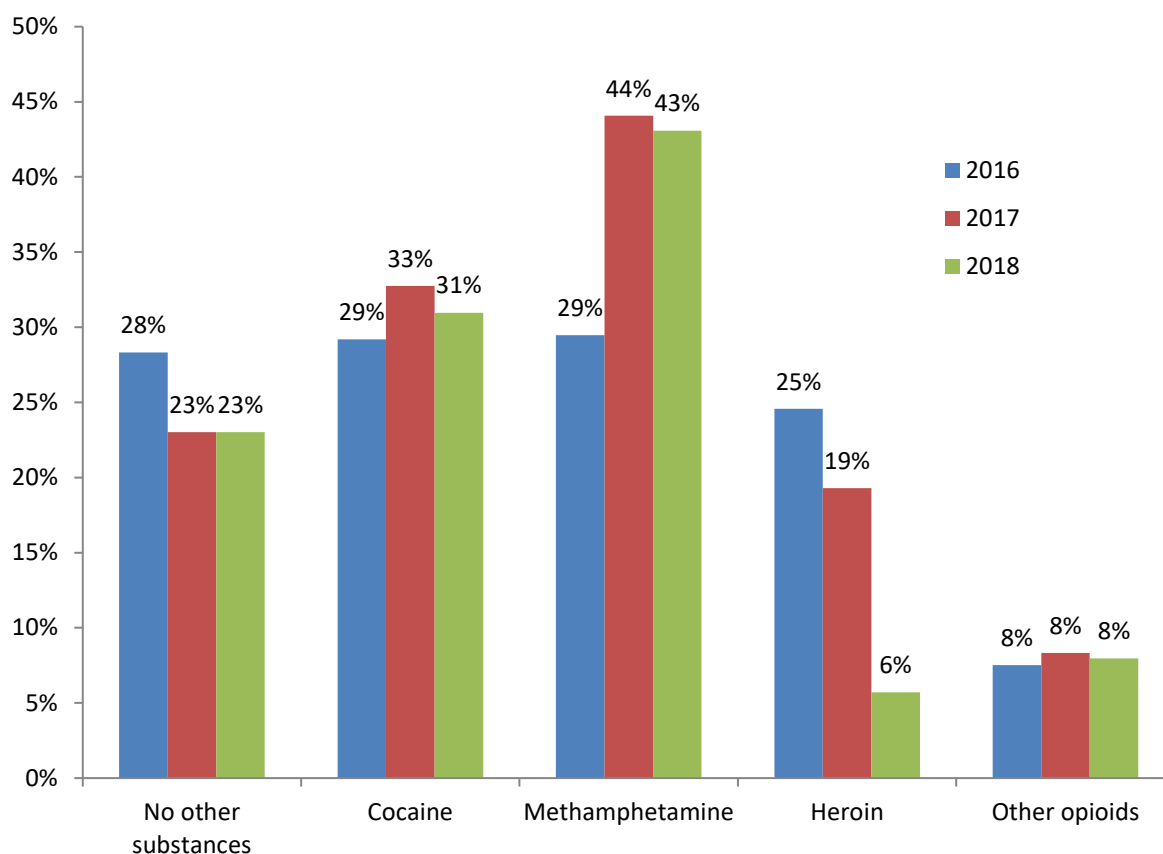


- From 2016 to 2018, the proportion of all drug poisoning deaths that were unintentional (accidental) increased from 84 per cent to 90 per cent.
- From 2016 to 2018, the proportion of unintentional (accidental) drug poisoning deaths involving any opioid (non-fentanyl or fentanyl) increased from 81 per cent to 84 per cent.
- From 2016 to 2018, the proportion of intentional (suicide) drug poisoning deaths involving any opioid (non-fentanyl or fentanyl) increased from 39 per cent to 40 per cent.
- From 2016 to 2018, approximately 20 per cent of all opioid related poisoning deaths (accidental and suicides) also listed alcohol as contributing to the poisoning death. Alcohol was the only substance listed as causing death in 102 (4 per cent) of all drug and alcohol poisoning deaths from 2016 to 2018. 95 per cent were accidental poisoning deaths, and 5 per cent were suicides.

**Note:** Certification of more complex drug poisoning 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 related poisoning deaths (accidental) in Alberta, by most common additional substances causing death and year. 2016 to 2018.

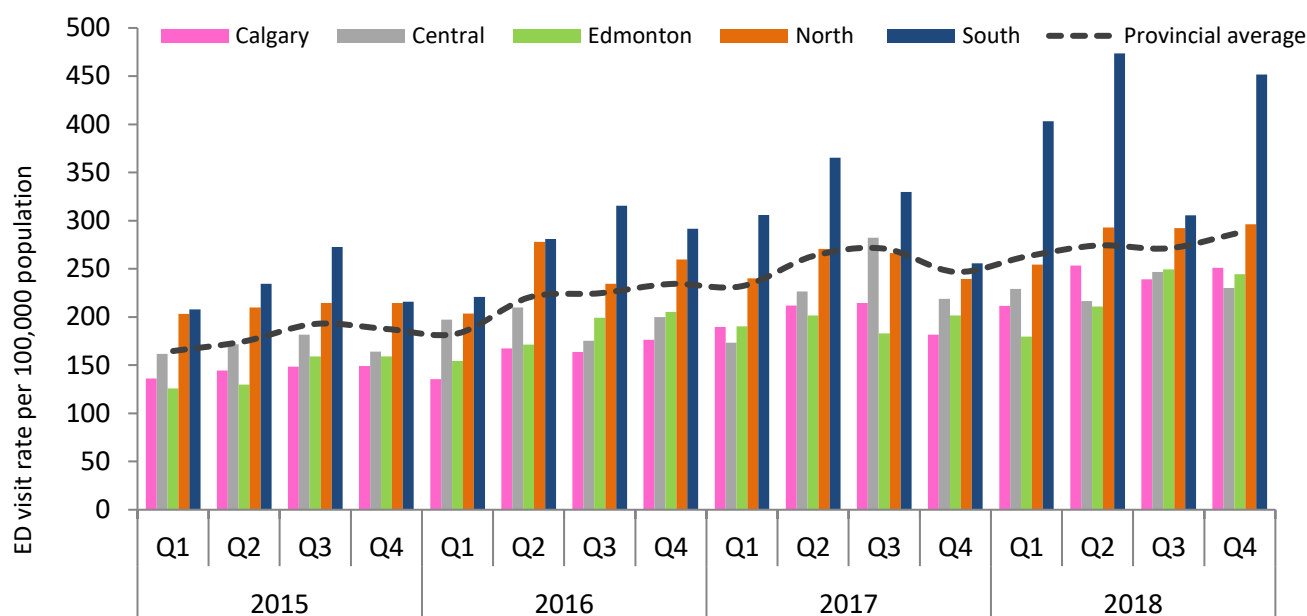


- In 2018, approximately 23 per cent of all fentanyl poisoning deaths had no other substances listed on the death certificate as causing death, while 43 per cent had methamphetamine listed, 31 per cent had cocaine listed, and 6 per cent had heroin listed.
- The proportion of fentanyl poisoning deaths where methamphetamine was also listed as causing death was 1.5 times higher in 2018 compared to 2016 (43 per cent in 2018, 29 per cent in 2016).
- The proportion of fentanyl poisoning deaths where cocaine was also listed as causing death was similar in 2016, 2017, and 2018 (31 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 6 per cent in 2018.

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

# Emergency department visits

**Figure 14:** Rate of emergency department (ED) visits related to harm associated with opioids and other drug use, by quarter and Zone, per 100,000 population. January 1, 2015 to December 31, 2018.



- The provincial *rate* of ED visits related to harm associated with opioids and other drug use increased by 75 per cent from the first quarter of 2015 to the last quarter of 2018. From the second quarter of 2018 to the third quarter of 2018, the rate increased by 6 per cent.
- In 2018, on average, the *rate* of ED visits related to harm associated with opioids and other drug use was the highest in the South Zone (409 visits per 100,000 population); approximately 49 per cent higher than the provincial average over this period (274 visits per 100,000 population). The South Zone saw the largest increase in the *rate* of ED visits from the third quarter to the fourth quarter (48 per cent increase).
- In 2018, the Calgary and Edmonton Zones had the highest *number* of ED visits related to harm associated with opioids and other drug use (31 and 26 per cent of all provincial ED visits related harm associated with opioids and other drug respectively).

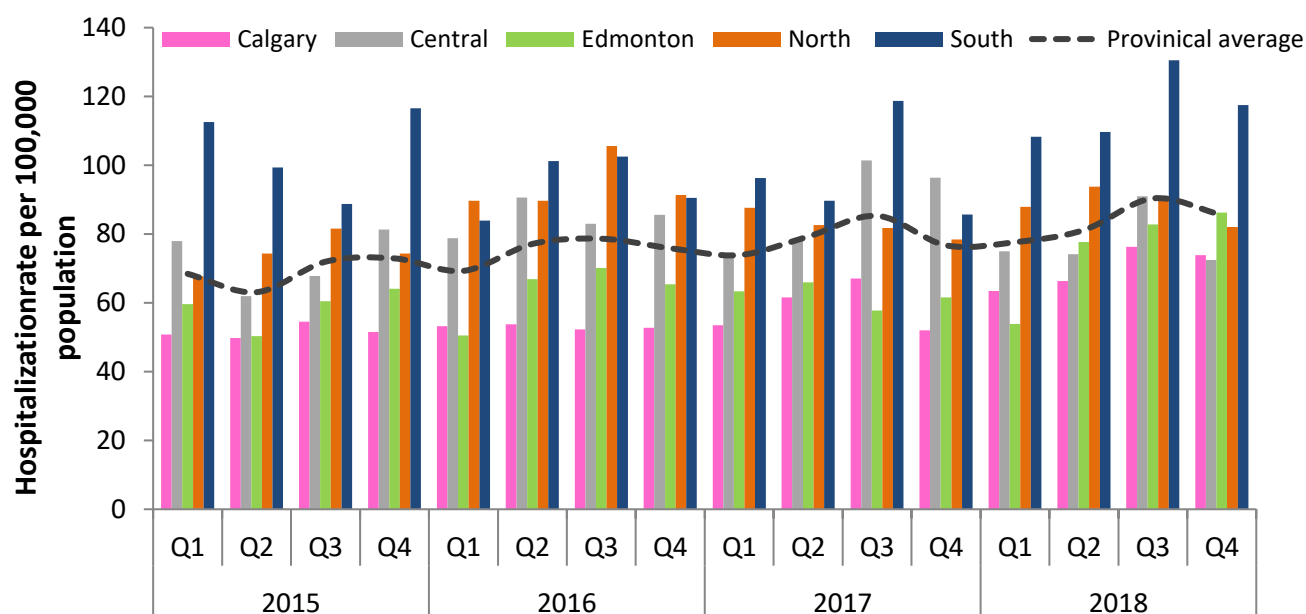
**Table 8:** Top 10 ED facilities utilized for emergency visits related to harm associated with opioids and other drug use, January 1, 2015 to December 31, 2018

Rank	Facility	Count	% of all visits*	Rank	Facility	Count	% of all visits*
1	Royal Alexandra Hospital	4,868	12%	6	Red Deer Regional Hospital	1,703	4%
2	Peter Lougheed Centre	3,931	10%	7	South Health Campus	1,647	4%
3	Rockyview General Hospital	3,177	8%	8	Chinook Regional Hospital	1,552	4%
4	Foothills Medical Centre	3,044	8%	9	Grey Nuns Community Hospital	1,464	4%
5	U of A Hospital	2,316	6%	10	Sheldon M Chumir Center	1,369	3%

\*Percentage of the total 39,148 ED visits related to harm associated with opioids and other drug use that occurred at the specified facility. Includes ED visits for all behavioural and mood disorders due to opioid use, and poisoning by all substances-all causes. (All F11 and T40 ICD-10 codes, any diagnosis field)

# Hospitalizations

**Figure 15:** Rate of hospitalizations related to harm associated with opioids and other drug use, by quarter and Zone, per 100,000 population. January 1, 2015 to December 31, 2018.



- The *rate* of hospitalizations related to harm associated with opioids and other drug use increased by 25 per cent from the first quarter of 2015 to the last quarter of 2018. From the third quarter of 2018 to the last quarter of 2018, the rate decreased by 5 per cent.
- In 2018, on average, the *rate* of hospitalizations related to harm associated with opioids and other drug use was the highest in the South Zone (116 hospitalizations per 100,000 population); approximately 40 per cent higher than the provincial average (84 hospitalizations per 100,000 population).
- In 2018, the Calgary and Edmonton Zones had the highest *number* of hospitalizations related to harm associated with opioids and other drug use (32 and 28 per cent of all hospitalizations related to harm associated with opioids and other drug use per quarter, respectively).

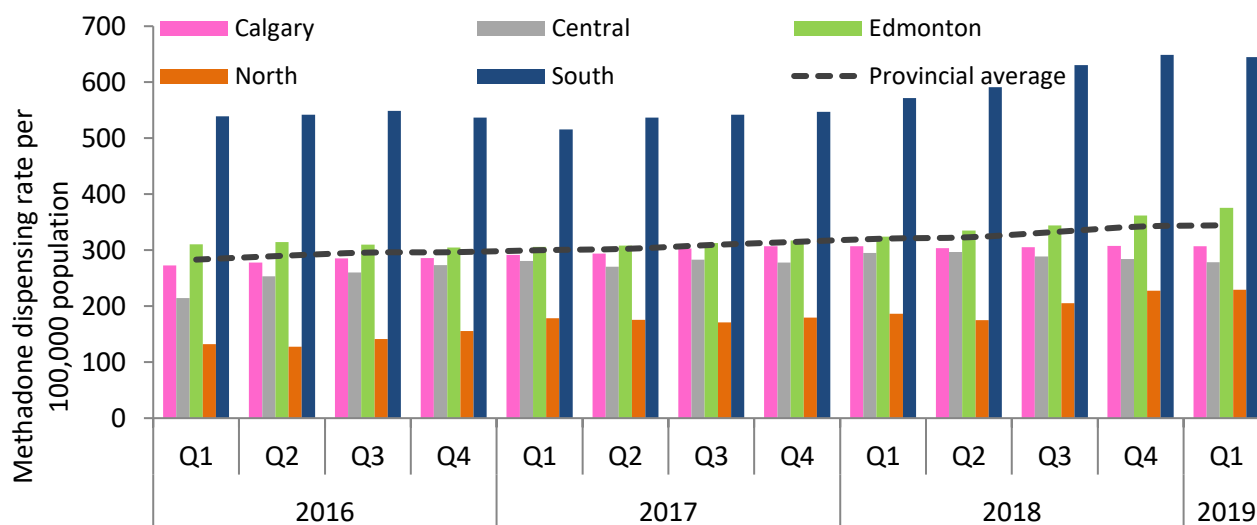
**Table 9:** Top 10 facilities utilized for hospitalizations related to harm associated with opioids and other drug use, January 1, 2015 to December 31, 2018.

Rank	Facility	Count	Percent of all stays*	Rank	Facility	Count	Percent of all stays*
1	Royal Alexandra Hospital	2,290	18%	6	Red Deer Regional Hospital	575	4%
2	Foothills Medical Centre	1,436	11%	7	South Health Campus	441	3%
3	Peter Lougheed Centre	1,422	11%	8	Grey Nuns Community Hospital	418	3%
4	Rockyview General Hospital	880	7%	9	Chinook Regional Hospital	431	3%
5	University Of Alberta Hospital	845	6%	10	Medicine Hat Regional Hospital	404	3%

\*Percentage of the total 13,005 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)

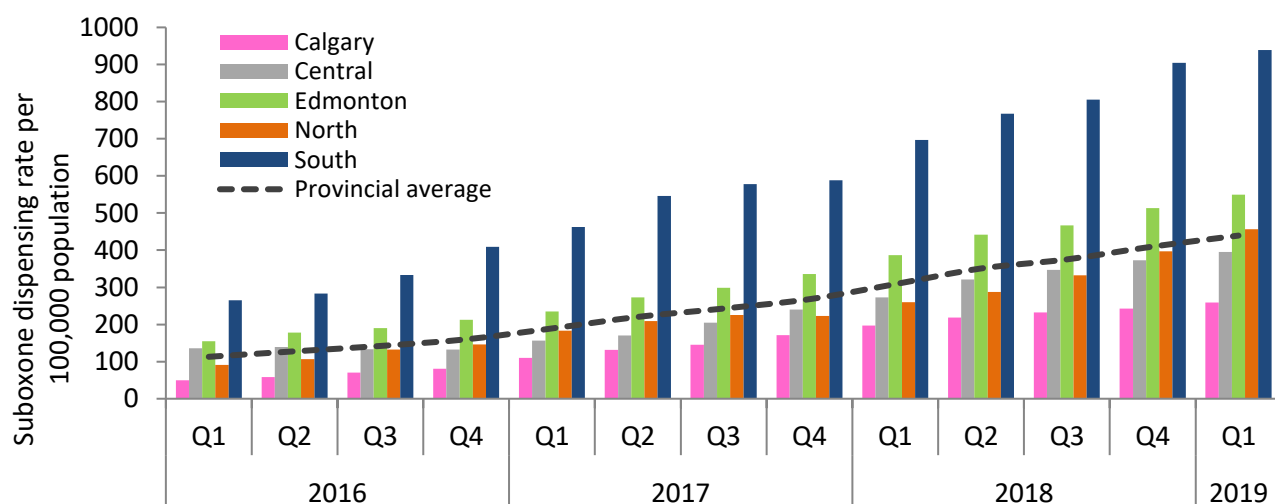
# Methadone & buprenorphine/naloxone dispensing from community pharmacies

**Figure 16:** Rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000 population, by quarter and Zone. January 1, 2016 to March 31, 2019.



- In Alberta, the rate of unique individuals dispensed methadone indicated for opioid dependence from community pharmacies per 100,000 population increased slightly from the last quarter of 2018 to the first quarter of 2019 by 1 per cent. The South Zone had the highest rate in the first quarter of 2019, 187 per cent higher than the provincial average (645 per 100,000 population vs. 344 per 100,000 population).

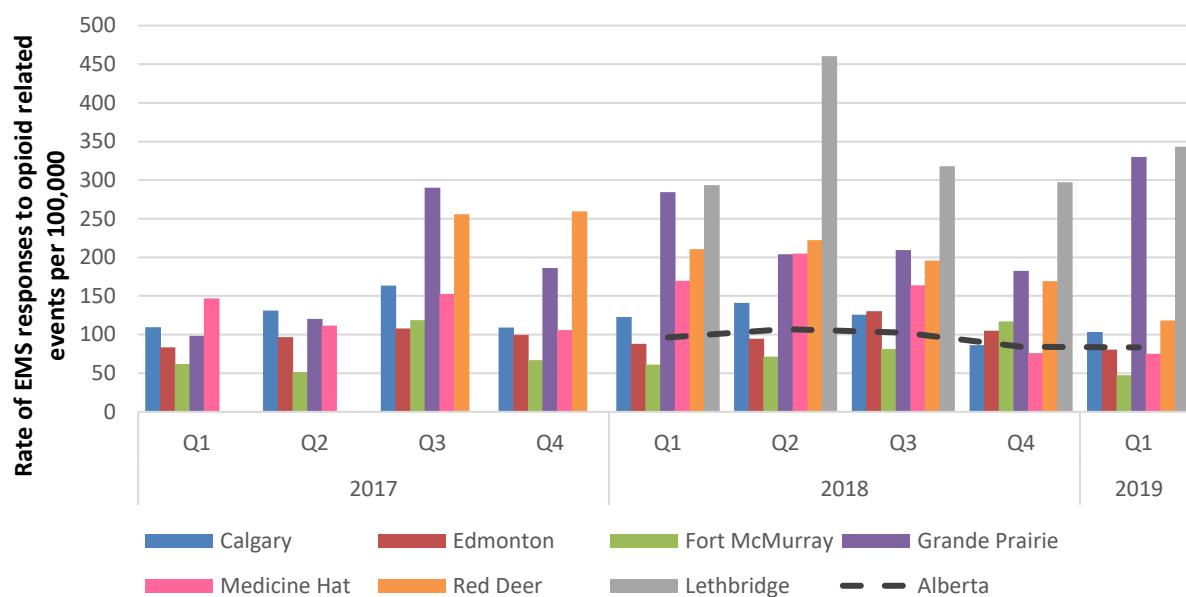
**Figure 17:** Rate of unique individuals dispensed buprenorphine/naloxone (generic brands and Suboxone™) indicated for opioid dependence from community pharmacies per 100,000 population, by quarter and Zone. January 1, 2016 to March 31, 2019.



- In Alberta, the rate of unique individuals dispensed buprenorphine/naloxone indicated for opioid dependence from community pharmacies per 100,000 population continues to increase, as seen by the 7 per cent increase from the last quarter of 2018 to the first quarter of 2019. The South Zone had the highest rate in the first quarter of 2019, 214 per cent higher than the provincial average (939 per 100,000 population vs. 439 per 100,000 population).

# Emergency Medical Services

**Figure 18:** Rate (per 100,000 population) of Emergency Medical Services (EMS) responses to opioid related events, by quarter and municipality. January 1, 2017 to March 31, 2019.



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

- In the first quarter of 2019, the provincial rate of EMS responses to opioid related events per 100,000 population was lower compared to the rate in 2018 (83 vs. 98). Similarly, all larger municipalities saw a decrease in their rate of EMS responses in the first quarter of 2019, except the municipalities of Grande Prairie and Lethbridge.
- In the first quarter 2019, the municipalities of Calgary, Grande Prairie, Red Deer, and Lethbridge had a higher rate of EMS responses to opioid related events per 100,000 population than the provincial average. Grande Prairie and Lethbridge had the highest rates in the first quarter of 2019.

**Table 10:** Rate (per 100,000 population) and count of Emergency Medical Services (EMS) responses to opioid related events, by year and municipality. January 1, 2017 to March 31, 2019.

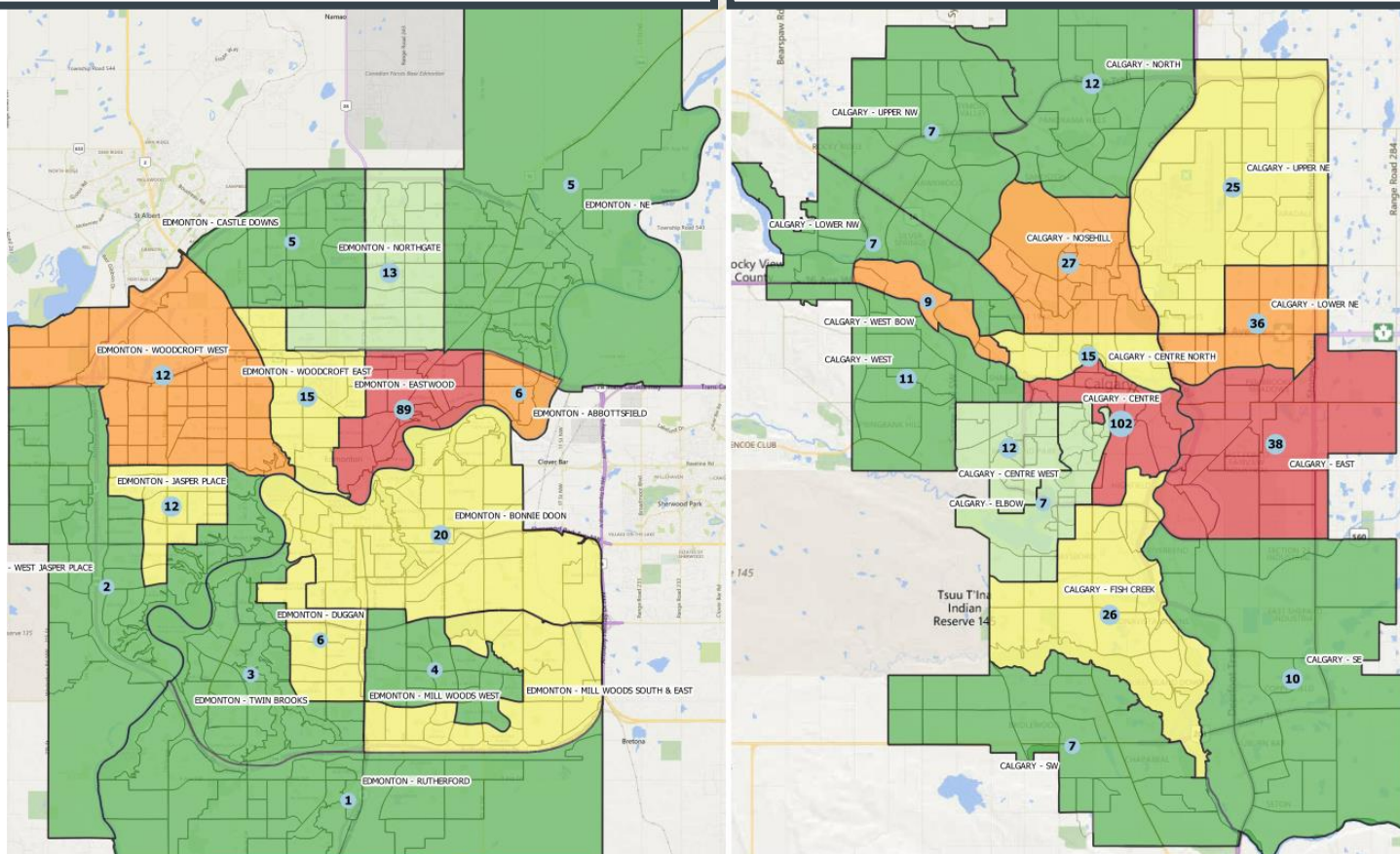
	2017		2018		2019 YTD	
	count	rate	count	rate	count	rate
Calgary	1,693	128	1,595	119	351	103
Edmonton	950	97	1,045	105	206	81
Ft. McMurray	58	55	65	61	13	48
Grande Prairie	127	164	164	209	65	330
Medicine Hat	88	121	105	141	14	75
Red Deer*	137	258	212	216	29	118
Lethbridge	-	-	336	491	59	343
Alberta	-	-	4,206	98	917	83

\*EMS data for Red Deer became available June, 2017. Count and rate is based on events from July to December, 2017. YTD = January 1 to March 31, 2019.

**Figure 19: Rate (per 100,000 population) and count of Emergency Medical Services (EMS) responses to opioid related events, by LGA. January 1, 2019 to March 31, 2019.**

**Edmonton average: 81 per 100,000 population (n =206)**

**Calgary average: 103 per 100,000 population (n =351)**



### Legend

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

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

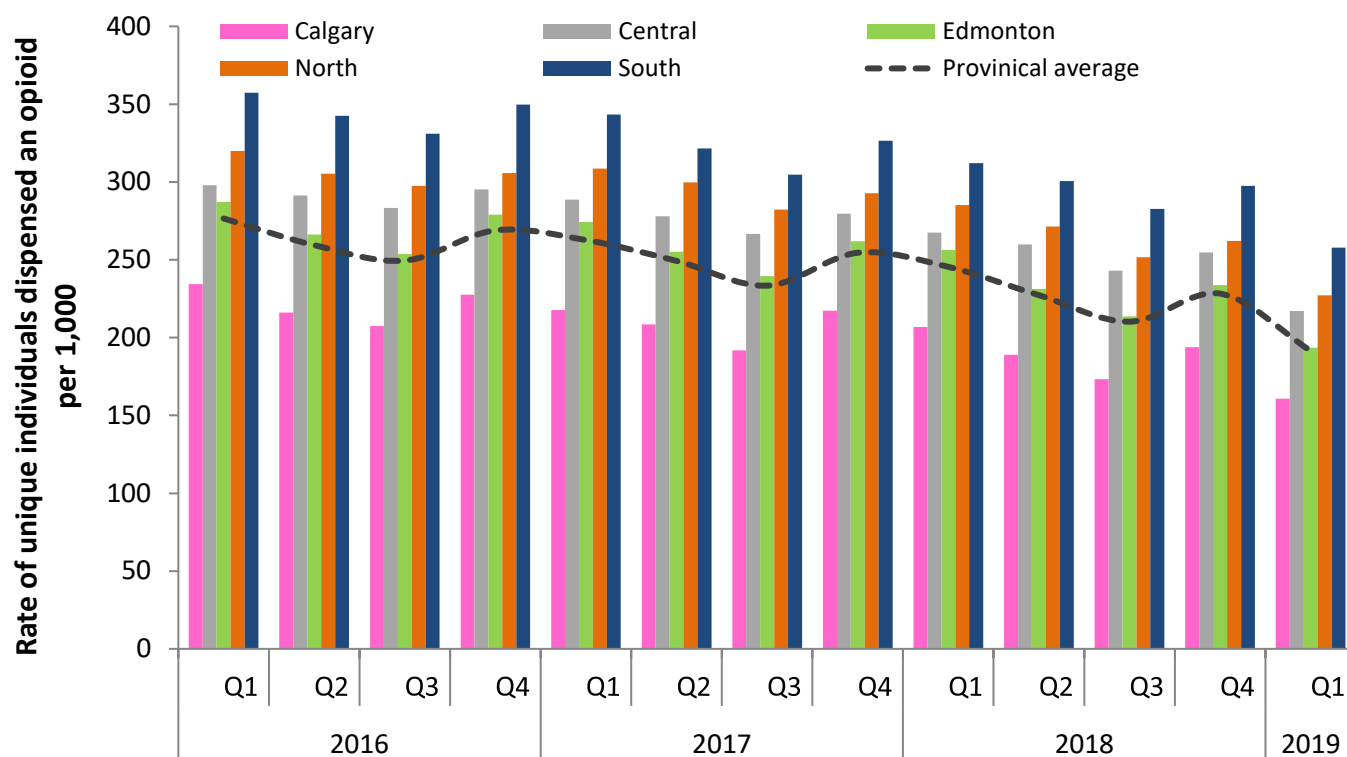
- Number in blue circle represents counts (numerator)

- Of the opioid related EMS events that occurred in Edmonton (206) in the first three months of 2019, the highest rate (473 per 100,000 population) and count (89) was in the Eastwood area. The LGAs with **significantly higher** rates of opioid related EMS events **compared to the municipality average** were Eastwood.
- Of the opioid related EMS events that occurred in Calgary (351), the highest rate (623 per 100,000 population) and count (102) was in Calgary Centre. The LGAs with **significantly higher** rates of opioid related EMS events **compared to the municipality average** were Calgary Centre and East.



# Prescription opioid dispensing

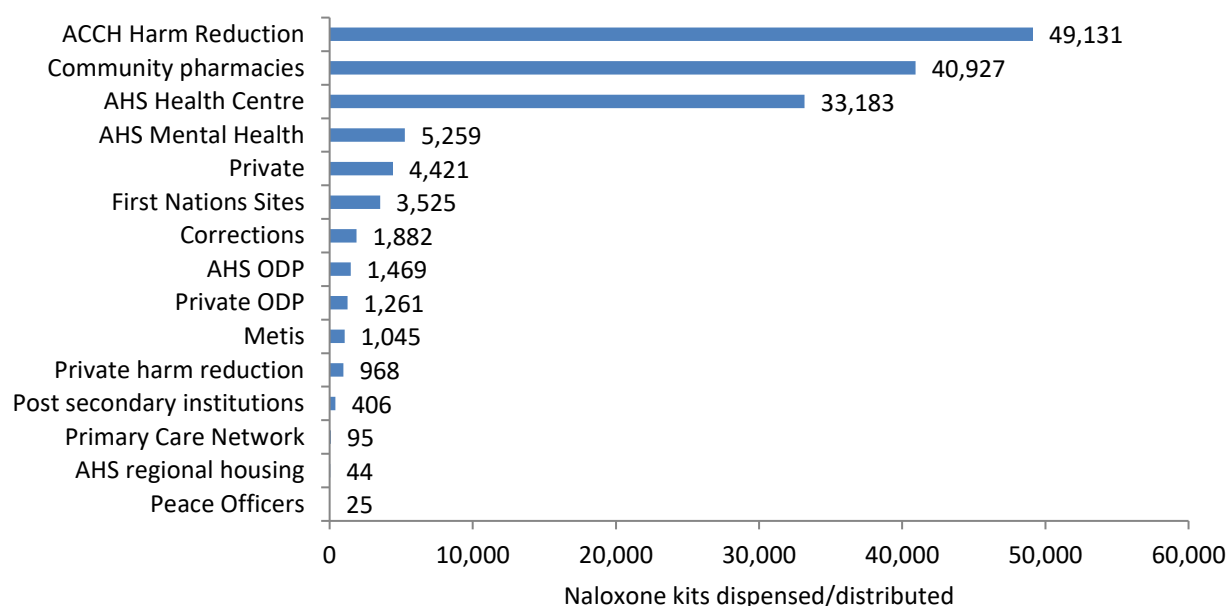
**Figure 20:** Rate of unique individuals dispensed an opioid from a community pharmacy per 1,000, by Zone and quarter. January 1, 2016 to March 31, 2019.



- Comparing the first quarter of 2016 to the first quarter of 2019, the rate of unique individuals dispensed an opioid from a community pharmacy per 1,000 decreased by 31 per cent in Alberta. The average per cent decrease from quarter to quarter in this time period was 2.8 per cent.
- All Zones saw a similar decrease in this time period, ranging from a 28 to 33 per cent decrease. The South Zone has the highest rate of unique individuals dispensed an opioid from a community pharmacy per 1,000. In the first quarter of 2019, the rate in the South Zone was approximately 35 per cent higher than the provincial average (258 per 1,000 vs. 191 per 1,000).

# Community based naloxone kits

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



- From January 1, 2016 to March 31, 2019, 146,892 naloxone kits were given out in Alberta through Alberta Health Services' (AHS') naloxone program, and 9,386 reversals were self-reported. The Alberta Community Council on HIV (ACCH) harm reduction organizations between July 2015 and January 2016 distributed approximately 3,250 naloxone kits in Alberta. In January 2016, AHS began its naloxone program through registered distribution sites.

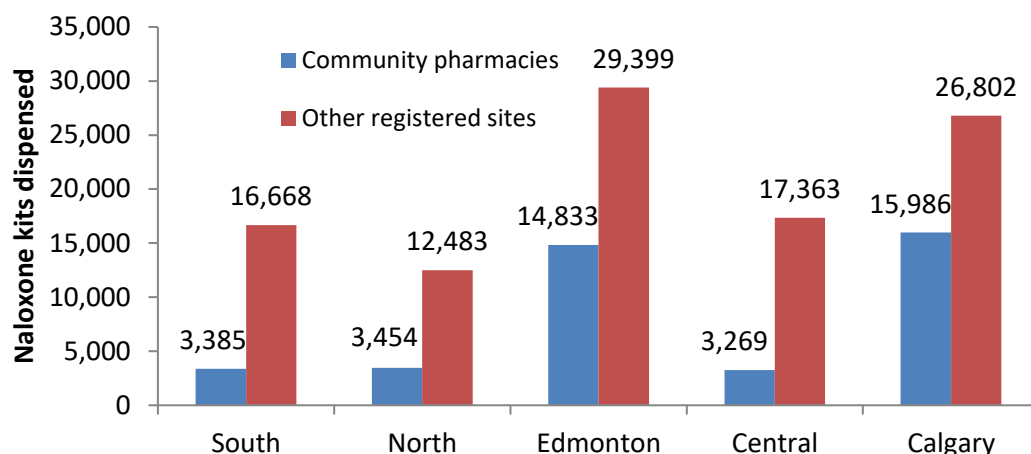
**Table 11:** Number of registered sites, January 1, 2016 to March 31, 2019.

	South	Calgary	Central	Edmonton	North	Total
Community pharmacies	91	402	138	395	120	1,146
AHS Health Centre	47	82	69	62	109	369
AHS Mental Health	5	25	22	37	16	105
Medical First Response	16	15	27	12	28	98
Private	17	25	15	33	8	98
First Nations sites	3	5	8	5	28	49
Primary Care Network	0	5	4	8	2	19
Corrections	2	4	1	3	1	11
ACCH Harm Reduction	2	2	1	1	4	10
Post-Secondary Institutions	1	3	1	5	0	10
Metis	0	0	0	1	9	10
AHS Regional Housing	0	3	0	3	0	6
Private Opioid Dependency Program	2	0	1	2	1	6
Peace Officers	0	2	0	1	2	5
AHS Opioid Dependency Program	1	1	0	1	1	4
Private Harm Reduction	0	0	1	3	0	4
<b>Total</b>	<b>187</b>	<b>574</b>	<b>288</b>	<b>572</b>	<b>329</b>	<b>1,950</b>

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

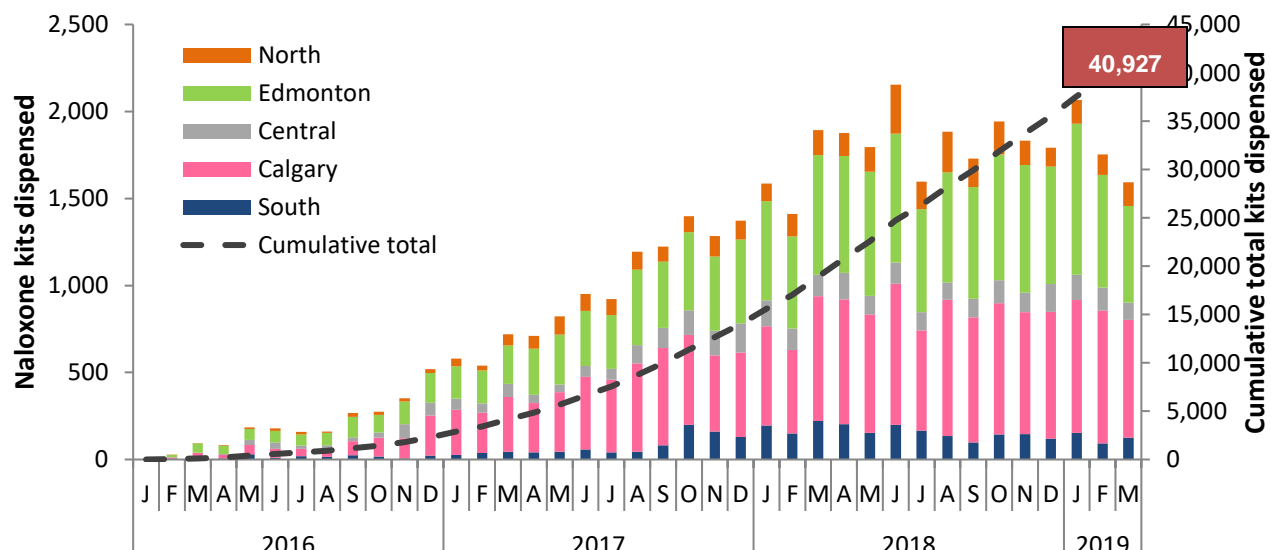


**Figure 23:** Naloxone kits dispensed/distributed by community pharmacies and other registered sites, by Zone. January 1, 2016 to March 31, 2019.



- Throughout the province, non-pharmacy sites are dispensing more naloxone kits than community pharmacies (72 per cent of all kits given out by non-pharmacy sites).
- While the Calgary and Edmonton Zone have dispensed the highest total volume of kits in the province (30 per cent each), in the first quarter of 2019, the South Zone had the highest per 100,000 population rate of kits given out from both community pharmacies and other registered sites, 84 per cent higher than the provincial average.

**Figure 24:** Naloxone kits dispensed by community pharmacies, by Zone and month. January 1, 2016 to March 31, 2019.



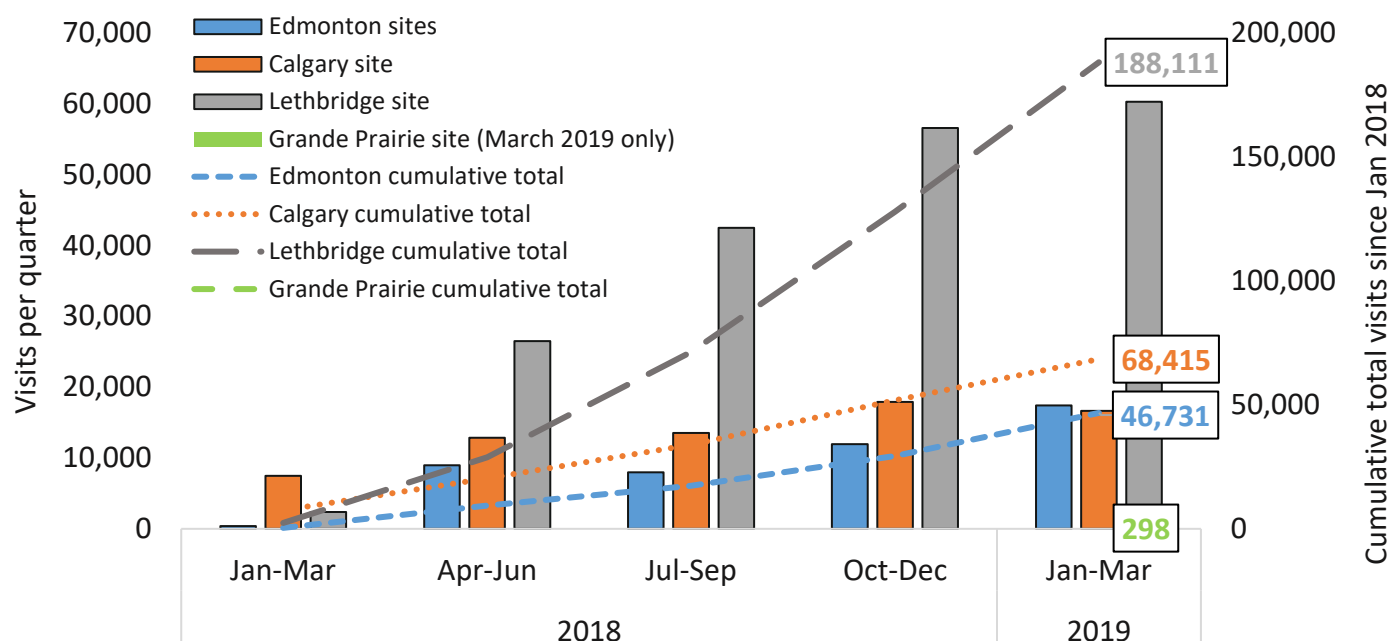
- Across Alberta, in the first three months of 2019, community pharmacies dispensed an average of 1,804 kits per month, an increase of about 1 per cent compared to 2018 (previous report: 1,791 per month). Since January 1, 2016, 40,927 naloxone kits have been dispensed from community pharmacies in Alberta.
- The median age of an individual receiving a naloxone kit dispensed from a community pharmacy was 29 years, and 57 per cent were male.

**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 March 31, 2019.



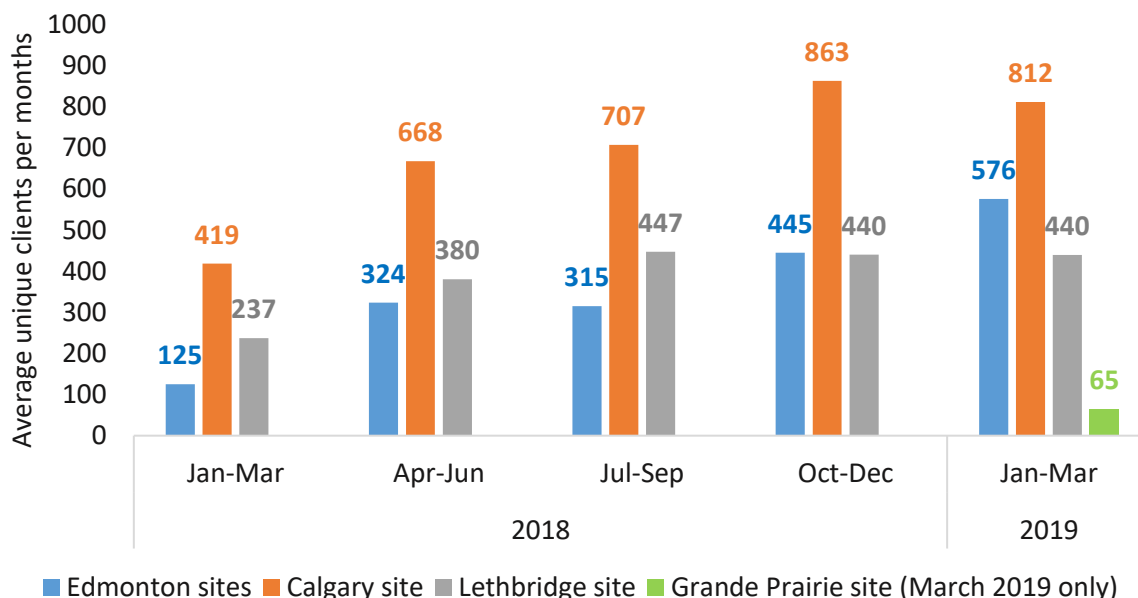
**Table 12:** Number of visits per quarter and site. January 1, 2018 to March 31, 2019.

	2018				2019	
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Site total
Edmonton sites	390	8,974	7,975	11,959	17,433	46,731
Calgary site	7,469	12,854	13,548	17,921	16,623	68,415
Lethbridge site	2,375	26,464	42,450	56,562	60,260	188,111
Grande Prairie site (March 2019 only)					298	298
Quarter Total	10,234	48,292	63,973	86,442	94,614	303,555

**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.

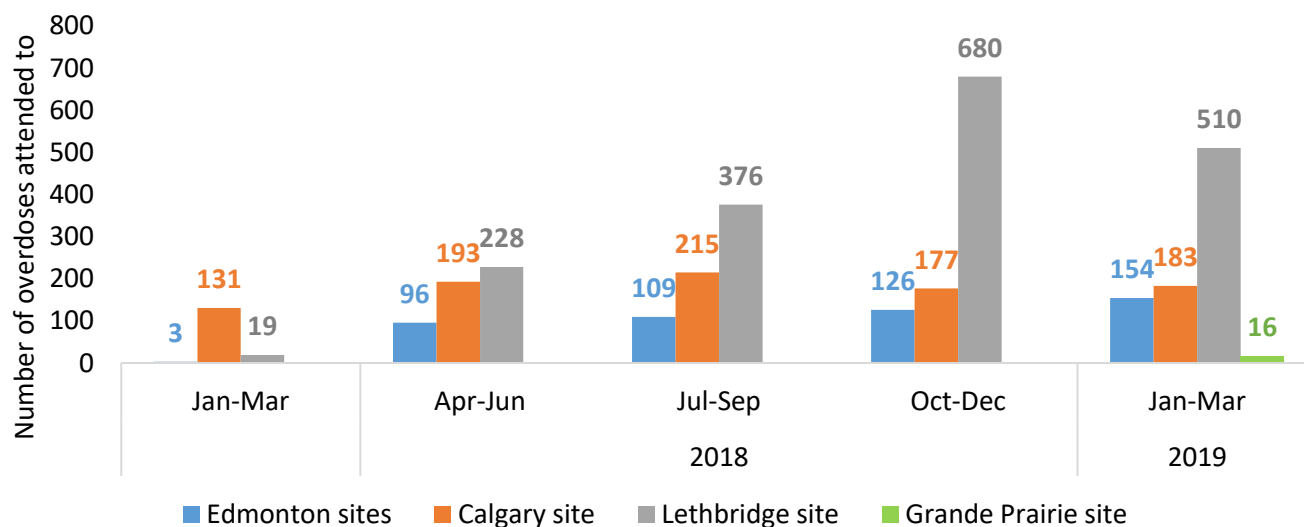
- From January to March 2019 (latest quarter) on average, per month, there were 5,811 visits to Edmonton sites, 5,541 visits to the Calgary site, and 20,087 visits to the Lethbridge site. There were 298 visits to the Grande Prairie site in March 2019.
- Compared to the last quarter, in the most recent quarter, the Edmonton sites saw an increase in visits of 46 per cent.
- Compared to the last quarter, in the most recent quarter, the Calgary site saw a decrease in visits of 7 per cent.
- Compared to the last quarter, in the most recent quarter, the Lethbridge site saw an increase in visits of 7 per cent.

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



- Compared to the last quarter, in the most recent quarter (January to March 2019) Edmonton sites saw a 30 percent increase in average monthly unique clients, the Calgary site saw a decrease of 6 per cent in average monthly unique clients, and the Lethbridge site saw no change in average monthly unique clients. In March 2019, the Grande Prairie site had 65 unique visitors.

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



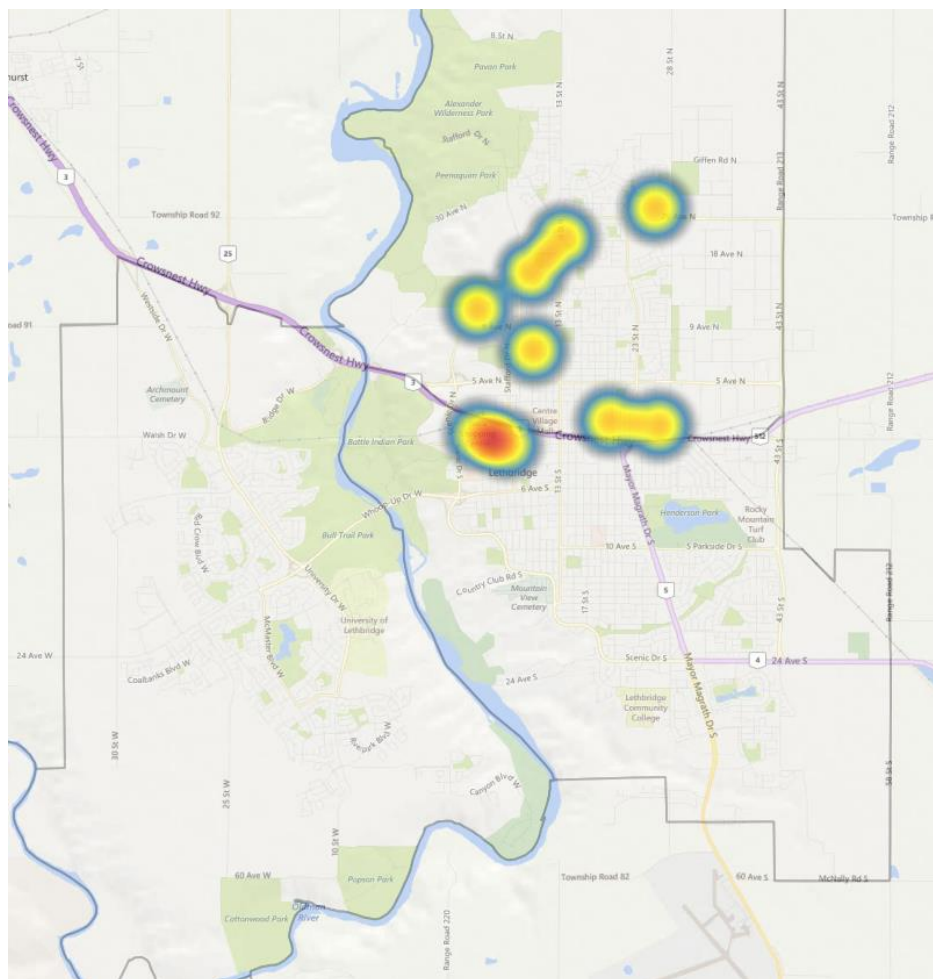
- From January to March 2019, 154 overdoses have been attended to at Edmonton sites, 183 at the Calgary site, 510 at the Lethbridge site, and 16 at the Grande Prairie site in March 2019. There were zero fatal drug poisoning events across all sites.
- From January to March 2019, on a monthly average, there were 9 attended overdoses for every 1,000 visits to the Edmonton sites, 11 attended overdoses for every 1,000 visits to the Calgary site, and 8 attended overdoses for every 1,000 visits to the Lethbridge site.

\*drug poisoning event requiring intervention including, but not limited to, the provision of oxygen, administration of naloxone, and/or requesting medical attendance. Grande Prairie data is for March only.

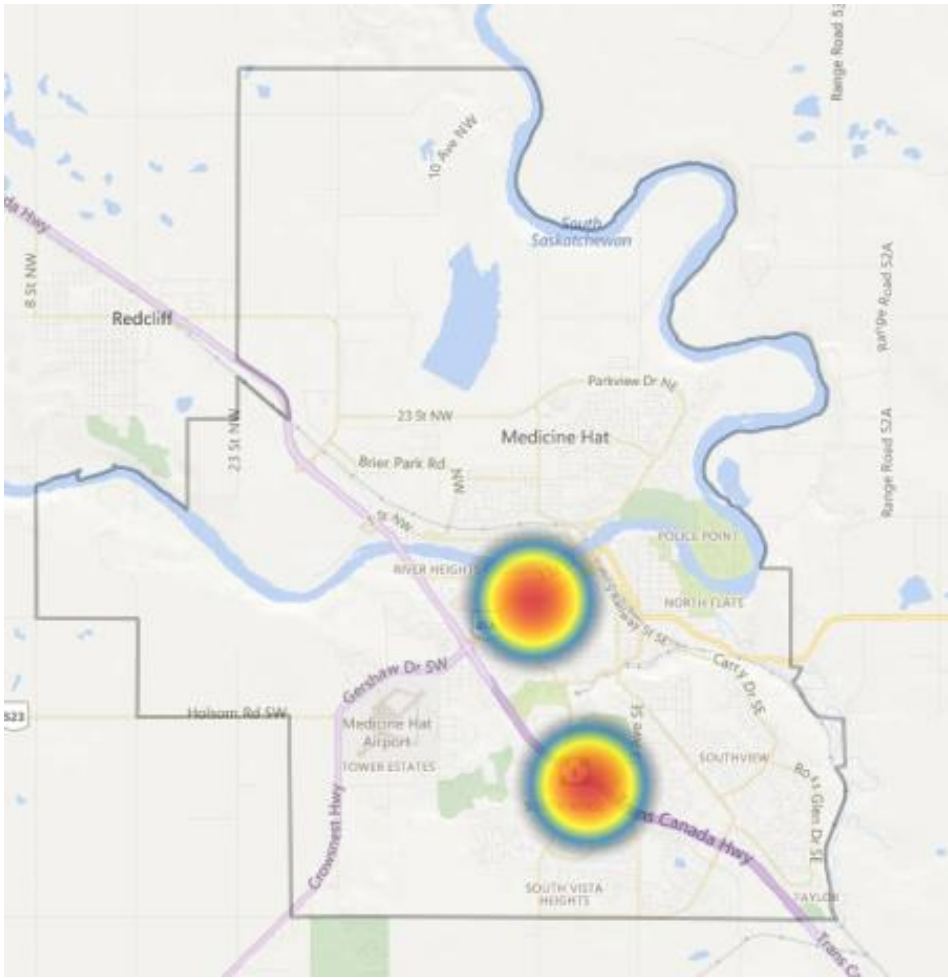
# Appendix 1: Fentanyl related poisoning deaths in major Albertan cities

Accidental opioid poisoning deaths, by Municipality (based on place of overdose).  
January 1, 2019 to March 31, 2019.

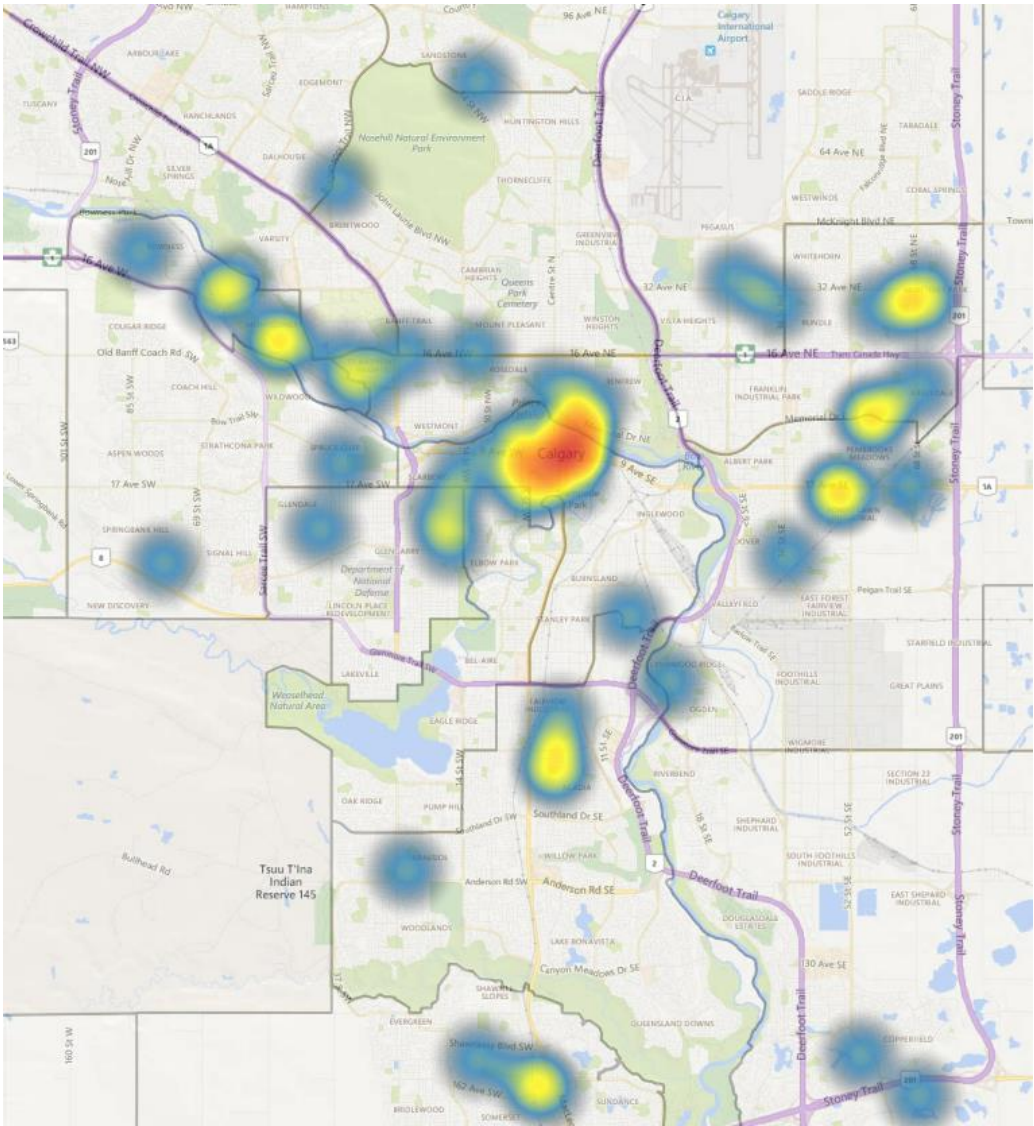
## Lethbridge



Medicine Hat

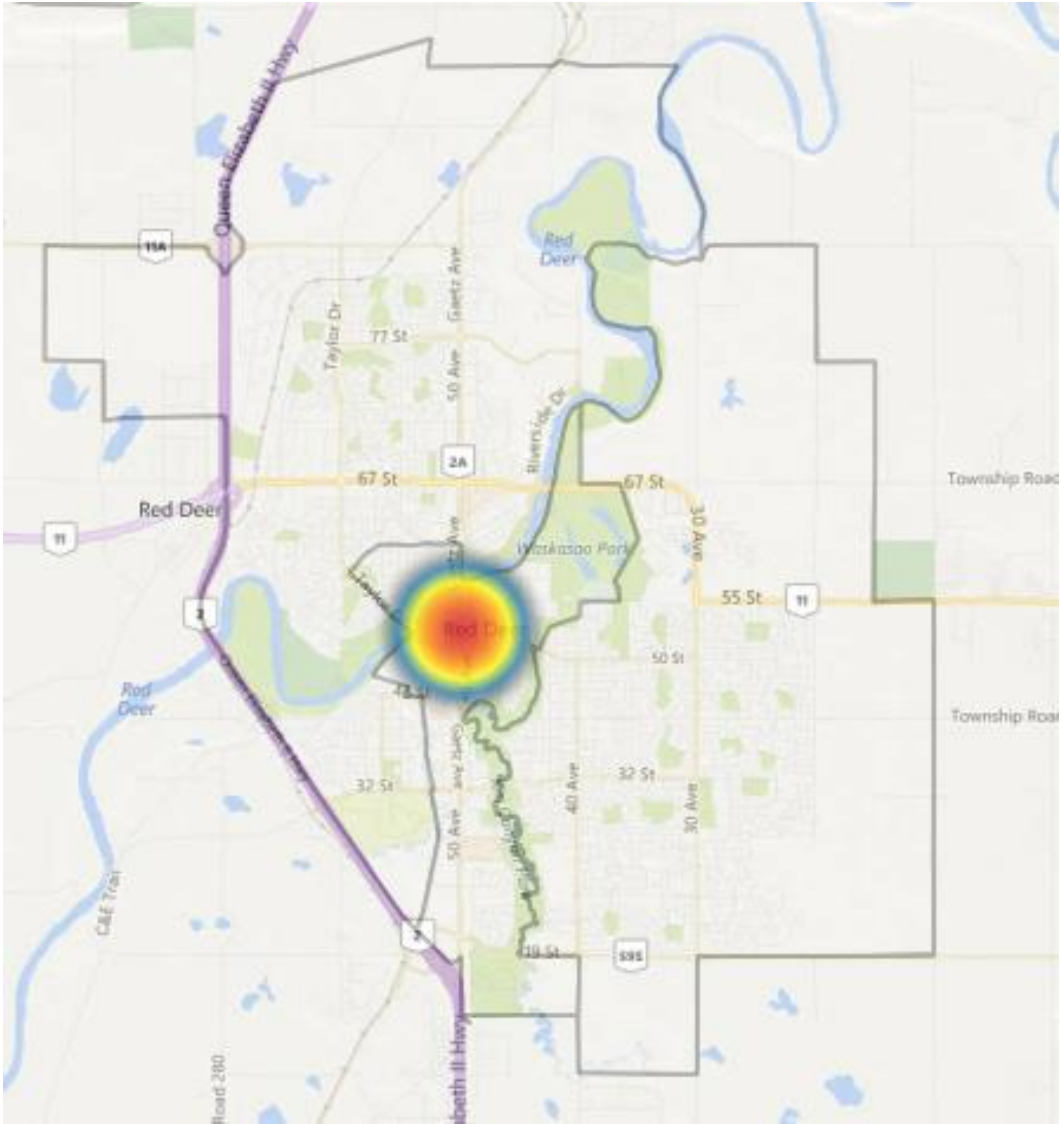


Calgary

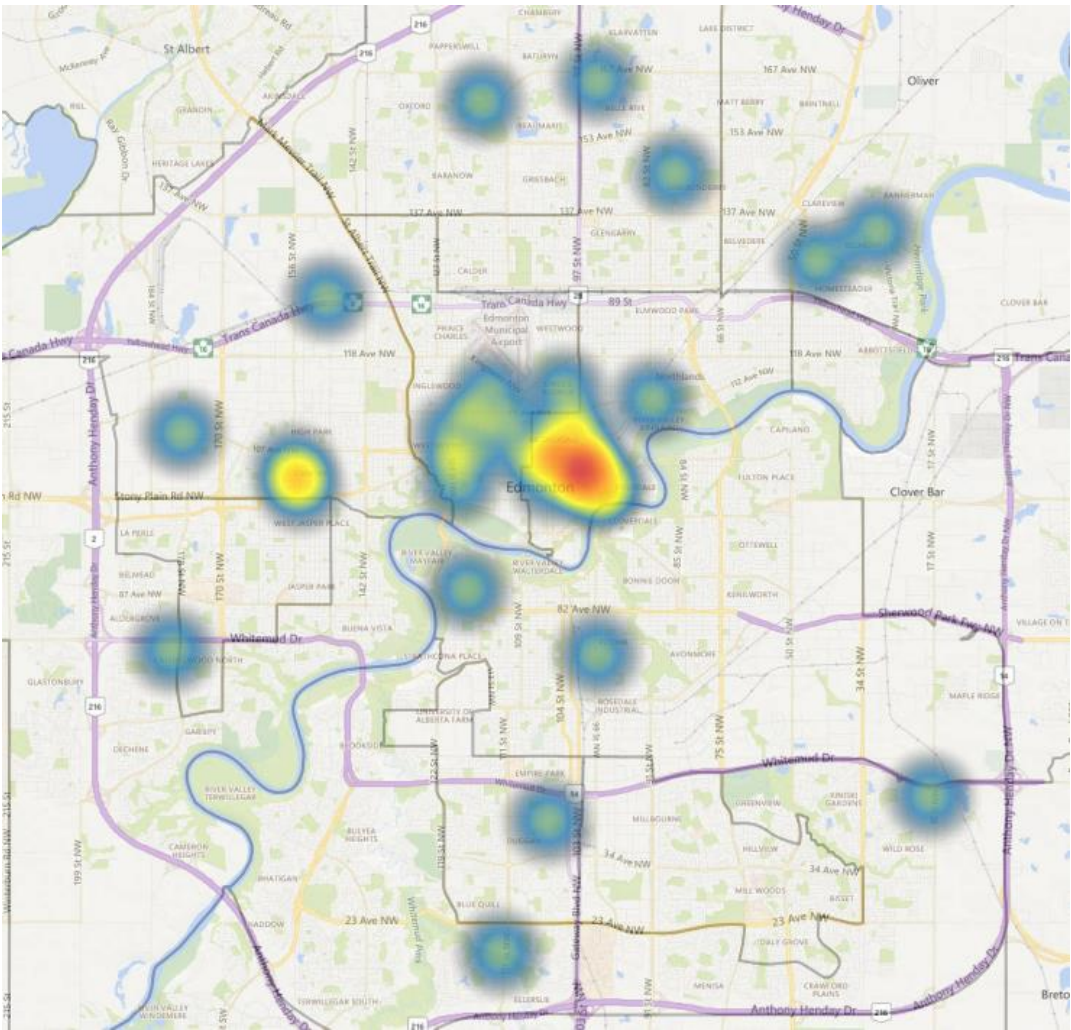




Red Deer

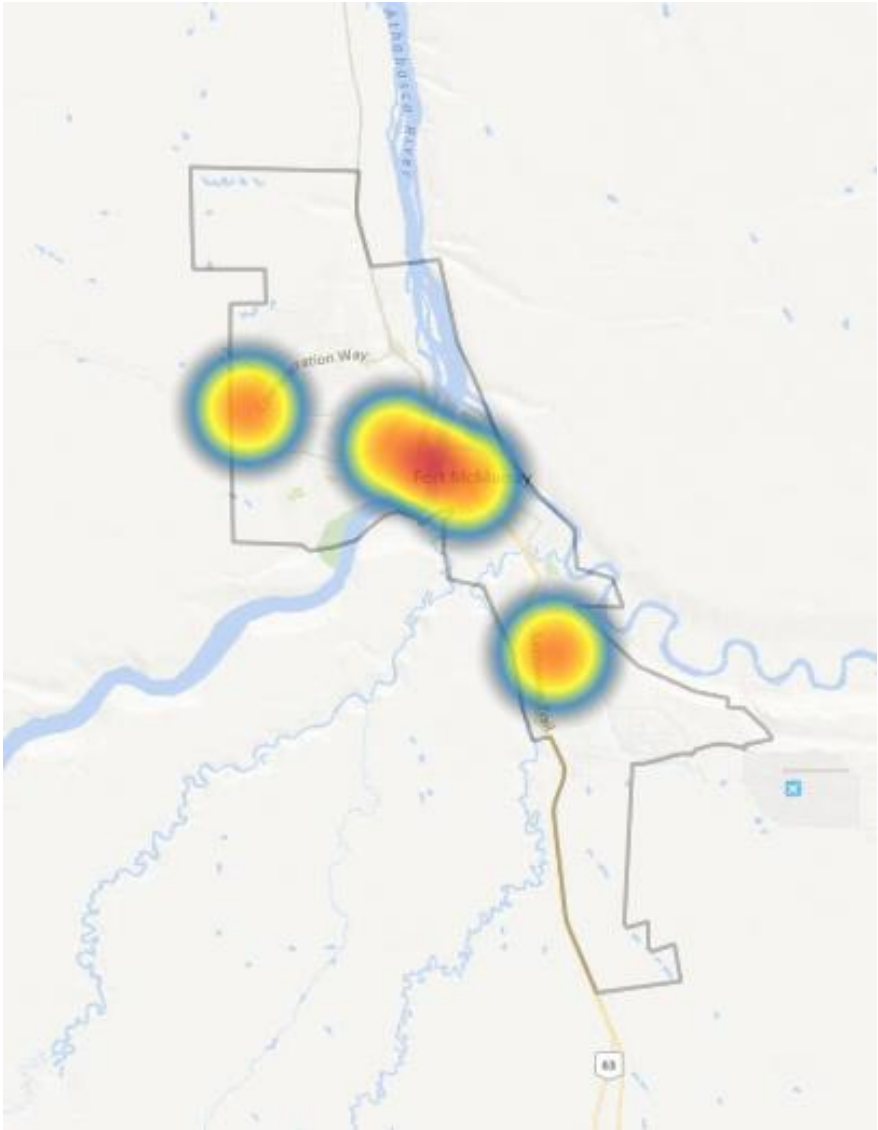


Edmonton

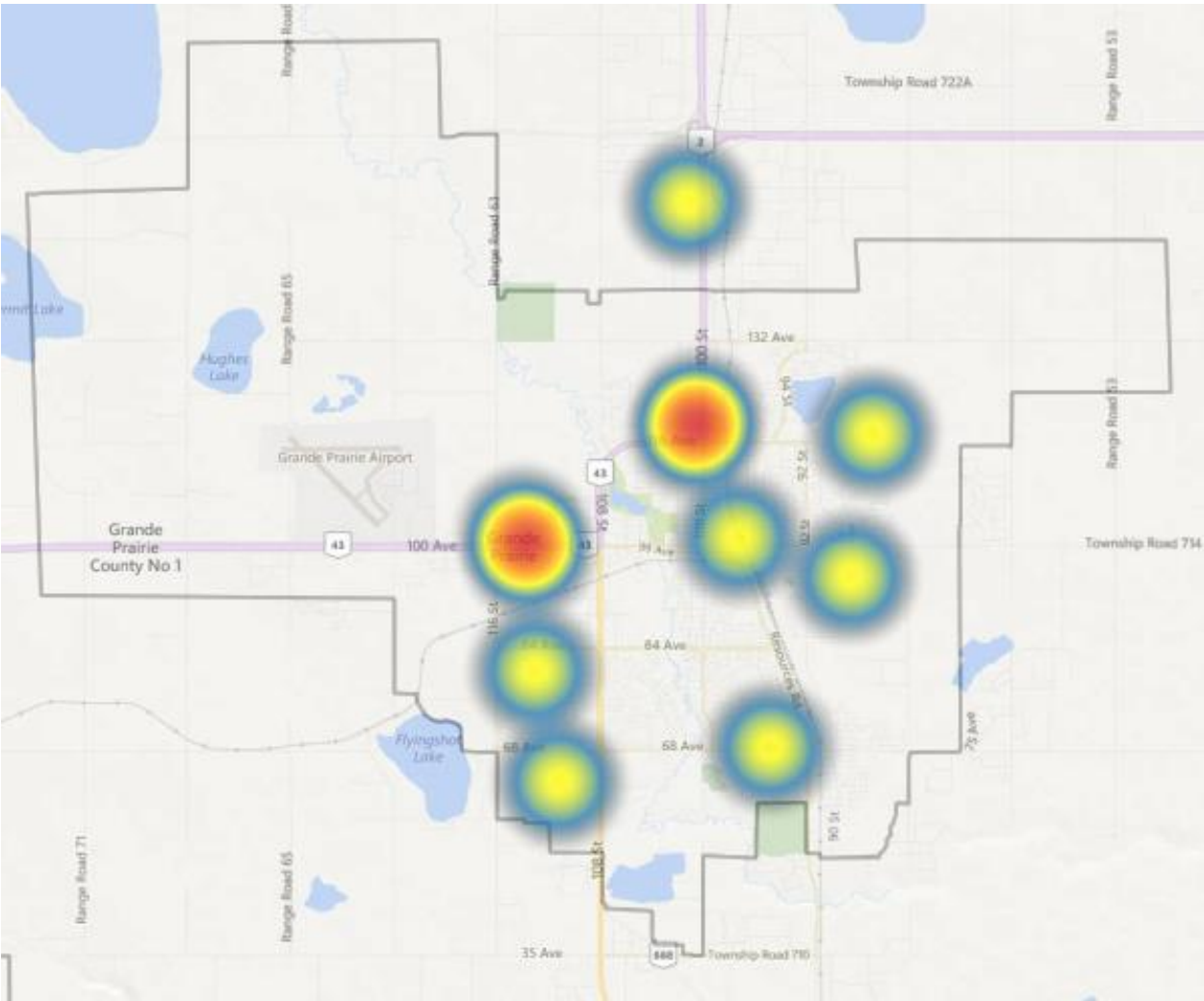




Fort McMurray



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. MS opioid related events refer to any EMS response where the Medical Control Protocol of Opiate Overdose was documented and/or naloxone was administered.

## Emergency visits

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

1. 71310 – Ambulatory care services described as emergency
2. 71513 – Community Urgent Care Centre (UCC). As of 2014, the UCCs in Alberta are listed below:
  - Airdrie Regional Health Centre, Cochrane Community Health Centre, North East Edmonton Health Centre, Health First Strathcona, Okotoks Health and Wellness Centre, Sheldon M Chumir Centre, South Calgary Health Centre
3. 71514 – Community Advanced Ambulatory Care Centre (AACC). As of 2014, the only AACC in Alberta is La Crete Health Centre

## Community pharmacy drug dispensing

4. The Pharmaceutical Information Network (PIN) Database is used to estimate dispensation events for the province between 2014 and 2016 **only from community pharmacies**. Variability can be dependent on the way the drug is prescribed.
5. The PIN database is up-to-date. PIN records can change due to data reconciliations, which may affect results. Results are more stable with older data.

Opioid dependency drugs are defined by the ATC code (Anatomical Therapeutic Chemical), as given in the table below.

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

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

Opioid dispensing data is obtained from the Pharmaceutical Information Network (PIN). PIN does not have information on the specific condition the opioid was prescribed for.

Opioid types are defined by ATC Code, as given in the table below.

ATC CODE	DRUG NAME	ATC NAME
N02AA59, N02AA79, R05DA04, R05DA20 <sup>1</sup> , R05FA02 <sup>2</sup> , M03BA53, M03BB53, N02BE51, and N02BA51	CODEINE	CODEINE
R05DA03, R05DA20 <sup>3</sup> , R05FA02 <sup>4</sup>	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, 02453916, 02453908

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> See footnote #1

<sup>4</sup> See footnote #2