Provincial Overdose Emergency Special Edition Monthly Situational Report – May 2017

This report covers the Fraser Health region, with data up to the end of May 31, 2017.

During May 2017, there was an increase in the number of overdose deaths. In light of the ongoing increase of overdose deaths, this special edition of the monthly report provides additional background information regarding the recent trends in overdose deaths and events seen within the Fraser Health region.

Illicit Drug Overdose Deaths: There was an increase in the number of overdose deaths in May (n=52) compared to April (n=44). May 2017 was also the month that had the highest number of reported deaths in the region. Overdose deaths from January to May 2017 were 72% higher compared to the same period in 2016.

Enhanced Analyses Key Findings

Fatal vs. non-fatal overdoses: There are differences in the demographics of people who survive an overdose and receive medical attention from paramedics and emergency departments, and those who are dying from an overdose; those dying are more likely to be *older*, *male,* and to be found in a *residential location*.

Post-November Surge Increase: After the 'surge' of deaths at the end of November 2016, the average weekly number of 911 calls, Emergency Department (ED) visits and deaths are above the pre-surge levels. Deaths and events decreased from December 2016 to February 2017 but this trend reversed March 2017 onwards.

Overdose Deaths: The increase in deaths after the November surge is widespread across the region. Greater increase in overdose deaths has been observed among

- Males, ages 30-59 years old
- Private residential locations
- Surrey, Chilliwack and Abbotsford

Suspected Overdose Events: The increase in overdose events seen at emergency departments is widespread but some groups and communities are experiencing greater increases in events. These include :

- Males
- Those who are homeless
- Those who have been seen in the emergency department with an overdose event in the year prior to their current event
- Abbotsford, Chilliwack, City of Langley, Mission and Surrey

Transfer to Emergency Department: *Fewer* people are accepting transportation to the emergency department by the paramedics responding to their overdose event. Surrey has seen the largest decrease in transfers to hospital.

Location of events: For people who have a home address and had paramedics respond to their overdose event and

bring them to emergency department

- 76% are having an overdose event in their *own municipality*
- 60% of these people have their event one kilometer or more away from their home address
- 16% had their overdose at home

Please visit fraserhealth.ca/overdose to learn more about the Overdose Public Health Emergency and find out where to obtain naloxone.

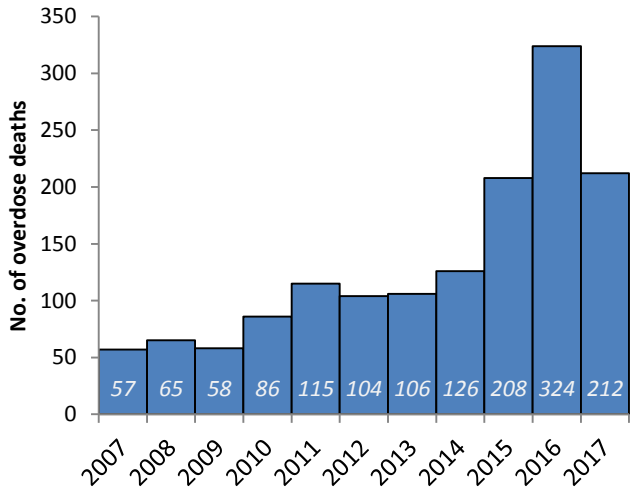
Illicit Drug Overdose Deaths - Fraser Health Region

Data Source: BC Coroner Service (additional details below). Preliminary numbers, subject to change.

Overdose deaths within Fraser Health continue to be elevated (Figure 1). May 2017 had the highest number of overdose deaths reported within the region, with 52 illicit drug overdose deaths in Fraser Health (Appendix-Figure A1).

- From January to May 2017, the annualized rate, per 100,000, of overdose deaths was lower in Fraser Health (28.3) compared to B.C. (32.0).
- In Fraser Health, overdose deaths during the first five months of 2017 were 72% and 190% higher, compared to the first five months of 2016 and 2015, respectively.
- From January to May 2017, the overdose death rate was highest among 30-39 year olds (Appendix-Figure A2). The age group 50-59 has seen the sharpest relative increase during 2017. From January to May 2017, males accounted for 85% of all overdose deaths.
- In 2017, according to the BC Coroners Service, 85% of overdose deaths in Fraser Health happened inside, with 66% in private residences. Fourteen percent happened outside on sidewalks, streets, vehicles, parks etc.
- Data up to April 2017 showed that fentanyl was detected in 71% of overdose deaths in the region, compared to 62% during 2016.
- Between 23-42% of the overdose deaths in the region, during 2015-16 for whom the Coroner investigations have been completed, were using substances alone at a residential location at the time of fatal overdose.

Figure 1. Number of illicit drug overdose deaths within Fraser Health.



Data Source: BC Coroner Service, 2017 data for Jan to April only.

Emergency Department – Suspected Overdose Events

Data Source: Fraser Health Emergency Departments (Additional details below). Preliminary numbers, subject to change.

During May 2017, 495 suspected overdose events presented to the 12 EDs in the region, compared to 498 events during the preceding month (Appendix-Figure A3).

From January to May 2017:

- There were 2243 suspected overdose events seen at Fraser Health EDs (Appendix-Table A2).
- The majority of events were among males (71%), and the highest numbers of events were among those 19-29 years old (35%), followed by those 30-39 years old (26%). Males aged 19-39 accounted for 43% of all events.
- Opioids were associated with 75% of the suspected overdose events, which is likely an underestimate due to patients and clinicians being uncertain of the exact composition of the substances consumed.

- 9% of the patients with a suspected overdose were admitted to hospital.

BC Ambulance – Suspected Overdose Events

Data Source: Patient Care Reports, BC Ambulance, BC Emergency Health Services (Additional details below). Preliminary numbers, subject to change.

Preliminary data on suspected overdose events attended by BC Ambulance up to end of May 2017

Preliminary data show that during May 2017, paramedics attended 573 events (Appendix – Figure A4). This number will likely increase as updated data is received.

From January to May 2017, paramedics responded to 3005 suspected overdose events within the Fraser Health region (Appendix – Table A3). The age and gender profile of suspected overdose events were similar to trends seen in emergency departments; the majority of the events were among males (71%) and those aged 19-39 years (56%).

From January to May 2017:

- 72% of suspected overdose events resulted in the patient being transported to a hospital.
- Paramedics administered naloxone during 411 (28%) events; additional naloxone may have been given by other first responders and by community members before paramedics arrived at the scene.
- Home/residence (40%) and street/highway (32%) were the most common locations where paramedics attended to suspected overdose events.

Naloxone Distribution

Data Source: BC Take Home Naloxone Program, BC Centre for Disease Control, data extracted July 4, 2017.

Since the declaration of the overdose emergency in April 2016, Fraser Health has worked hard to expand the number of sites distributing Take Home Naloxone kits. Since the declaration, 63 new sites were added, bringing the total number of sites to 84.

During May 2017, 1244 naloxone kits were dispensed across the region. From January to May 2017, 4751 kits were dispensed; this was over 377% higher than the same period in 2016. During 2016, 4638 Take Home Naloxone kits were dispensed within Fraser Health.

A prescription is no longer needed to obtain naloxone and individuals can directly purchase naloxone from pharmacies. Please visit fraserhealth.ca/overdose to learn more about where kits may be obtained.

Special Edition - Additional Data Analyses

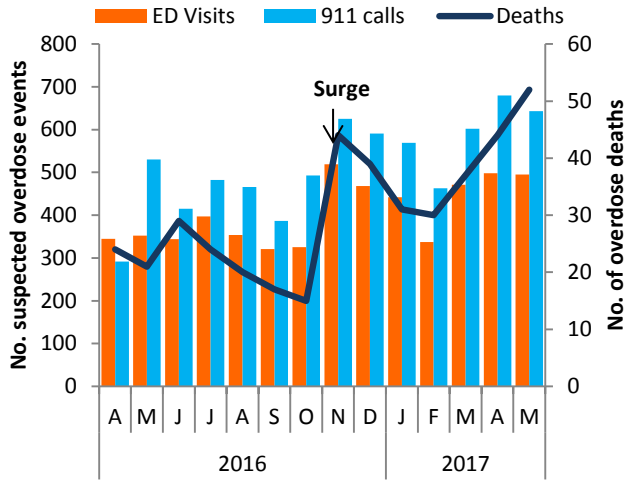
This extended edition of the monthly report aims to share additional information on what we currently know about the epidemiology of the opioid overdose crisis within the Fraser Health region to direct prevention and response efforts in our communities. Some recent actions taken by Fraser Health include:

- Opening two Supervised Consumption Sites in Surrey in June
- Community engagement and monthly surge response during cheque week
- Initiation of Suboxone induction protocols in Emergency Departments across Fraser Health

Comparison of those who are surviving and transferred to the Emergency Room and those who are dying

Over the past year, there have been fluctuations in the month-to-month numbers of deaths, as well as volumes of 911 calls and ED visits. Overall, in months where there are higher numbers of deaths, there is a corresponding increase in the volumes of suspected overdose 911 calls and ED visits (Figure 2), indicating that events and death are influenced by similar underlying factors.

Figure 2. Number of overdose deaths and suspected events within Fraser Health.



Data Source: B.C. Emergency Health Service, Fraser Health Emergency Departments and B.C. Coroner Service.

During 2017, those dying from an overdose, compared to those surviving, are more likely to be male (85% vs 71%) and be 50-64 years old (24% vs 14%) and less likely to be 19-29 years old (16% vs. 35%) (Table 1). Residential location accounts for two-thirds of overdose deaths (66%), but makes up less than half of the overdose events (40%).

Table 1. Characteristics of overdose deaths compared to suspected overdose events treated by paramedics or Fraser Health Emergency Departments – January to May 2017.

Category		Deaths (%)	Overdose events (%)
Age	<19	2	6
	19-29	16	35
	30-39	28	26
	40-49	25	18
	50-64	28	14
	65+	1	2
Gender	Male	85	71
Location	Home/residence	66	40
	Outside (street, park)	14	33
	Other	8	27
Community	Abbotsford	14	10
	Chilliwack	6	9
	Langley (City and Township)	8	6
	Maple Ridge	7	7
	Surrey	34	35
	Other	31	33

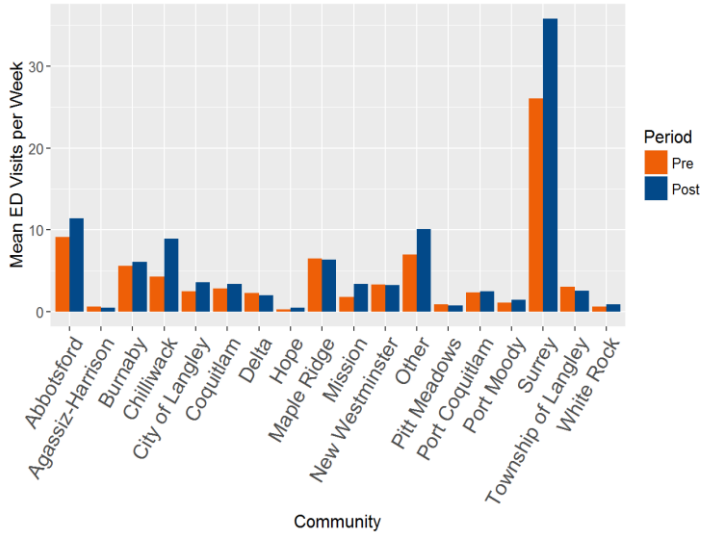
Data Source: B.C. Emergency Health Service, Fraser Health Emergency Departments and B.C. Coroner Service. Location of events is based on EHS data, rest of the events data is from Emergency Departments. Preliminary numbers, subject to change.

Changes in the epidemiology of ED visits over last six months

Between November 18, 2016 to December 2, 2016 Fraser Health, along with the rest of the province,

experienced a surge of overdose activity (Figure 2). The number of overdose events in Emergency Departments (EDs) decreased for a few months from December 2016 to February 2017. Overall, after the surge period, there has been a sustained increase compared to the number of overdose events pre-surge period across communities within the Fraser Health region (Figure 3). On average, the total number of overdose events seen at 12 Fraser Health EDs increased by 23 events per week.

Figure 3. Average number of suspected overdose events, by community, seen in Fraser Health emergency department pre and post November surge.



Data Source: *Fraser Health Emergency Departments.*

Pre period is from April 4, 2016 to November 17, 2016 and post period is from December 3, 2016 to May 6, 2017. Surge was defined as November 18 to December 2, 2016 and not included in the analyses.

The 'Other' group is made of events among non-Fraser Health region residents receiving treatment in Fraser Health.

While the total volumes of ED visits for overdose events has increased before and after the November surge, the age distribution of these events has remained the same. The gender distribution, however, has changed; males now make up an even greater proportion of the events (pre= 67%, post=73%).

The proportion of ED visits for overdose events amongst individuals with no fixed address (proxy indicator for homelessness), increased from 19% before November to 23% after.

The proportion of ED visits for overdose where the individual had a previous overdose event in the past year has increased from 32% before November to 39% after November; the proportion with events within the past 30 days increased from 9 % to 17%.

Based on data from paramedics, there has been a small decrease in the proportion of events occurring in 'street/highway' locations and a small increase in events occurring in 'business' locations. There has been no change to the severity of the events from before or after November in terms of ED triage levels and levels of consciousness scores. The amount and frequency of naloxone administered by paramedics has not changed.

There has been an overall decrease in the proportion of suspected overdose events where the individual was transported to hospital (80% pre-surge to 74% post-surge).Patients declining transportation is the main reason for not transferring to hospital. The decrease was most prominent in Surrey (80% pre-surge to 67% post-surge), and in events at a 'street or highway' location (80% pre-surge to 69% post-surge). There was no change in the transportation rate of overdose events occurring in residential locations or business locations, which have stayed around 80%.

Interventions such as the distribution of Take Home Naloxone kits and the opening of Opioid Prevention Sites may be influencing some of these shifts in epidemiology since the November surge. Further analysis will be needed to assess the potential impact of more recent changes such as the opening of the Supervised Consumption Sites.

Understanding overdose events happening in residential locations

With the majority of overdose deaths happening 'inside' and in 'private residence' locations, there is a

need to understand the epidemiological factors that may be driving these events in order to prevent deaths. Further analyses are underway at a provincial level and in Fraser Health to understand deaths that are occurring in private residences.

Fraser Health has used overdose event information where individuals have a home address, have been picked up by BC Ambulance at a 'home/residence' location and have been brought to one of our EDs between June 14, 2015 to March 31, 2017, to further our understanding of who may be at risk of dying from an overdose in a private residence location.

Please note, this location analyses is based on those with a documented address at the time of their event.

Prior health care utilization

The majority of those who had an overdose event in a residential location have had a prior interaction with the Fraser Health care system: 76% had one or more ED visits in the year before their event and 8% had two or more overdose events in the past 30 days. This suggests that most people who had an overdose event have a recent history of health issues requiring medical attention. This may present opportunities for intervening with individuals prior to them having an overdose event.

Where are these events occurring?

Data source: Location of overdose was obtained from BC Emergency Health Services ambulance dispatched coordinates and translated into a postal code and residential address postal code was obtained from Fraser Health Emergency Departments. Person was considered to be 'at home' if postal code of residential address matched the postal code of location of overdose. Date covered June 14, 2015 to April 16, 2017.

In comparing home address location to where the individual was picked up by paramedics, we found that 16% of overdose events occurred 'at home' compared to 60% of overdose events that occurred one kilometer or more away from their home. This data may suggest that being away from home is a protective factor in that the individual was using with someone who was able to call 911 in time and the person survived to get to the hospital. We do not currently have information to compare these proportions to how far away from home people were when they died of an overdose. In general, a key message for those who are going to use substances is to use with someone who can call for help and who could administer naloxone while waiting for help.

While 60% of events occurred one or more kilometers from home, 76% of the people resided in the same municipality where their overdose event occurred. This means people may be travelling outside of their immediate home neighborhood, but mostly staying within their home city.

For example in Surrey, the majority of events occur in the Surrey Central neighborhood, and 82% of those individuals have a home address in Surrey. Only 16% of overdose events in Surrey are among those living outside of Surrey. In Maple Ridge, the majority of events occur in Haney; 70% of all events in Haney were among Maple Ridge residents and 73% of all events in Maple Ridge are among local residents. Of the individuals with a home address in the Haney neighbourhood, 94% of them had their overdose event in Maple Ridge. This situation is similar across other neighborhoods and municipalities in the Fraser Health region.

Local community action to address the overdose crisis is a critical way for municipalities to reach their own residents who are at risk of overdose in their own communities.

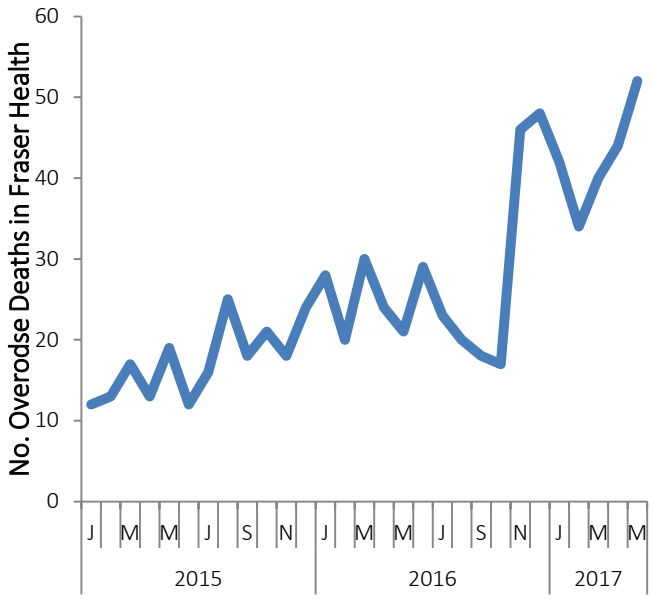
Additional Information

For more information on the Overdose Public Health Emergency, what you can do and Fraser Health's response, go to http://www.fraserhealth.ca/overdose

Appendix: Data

Overdose Deaths

Figure A1. Monthly illicit drug overdose deaths within Fraser Health.



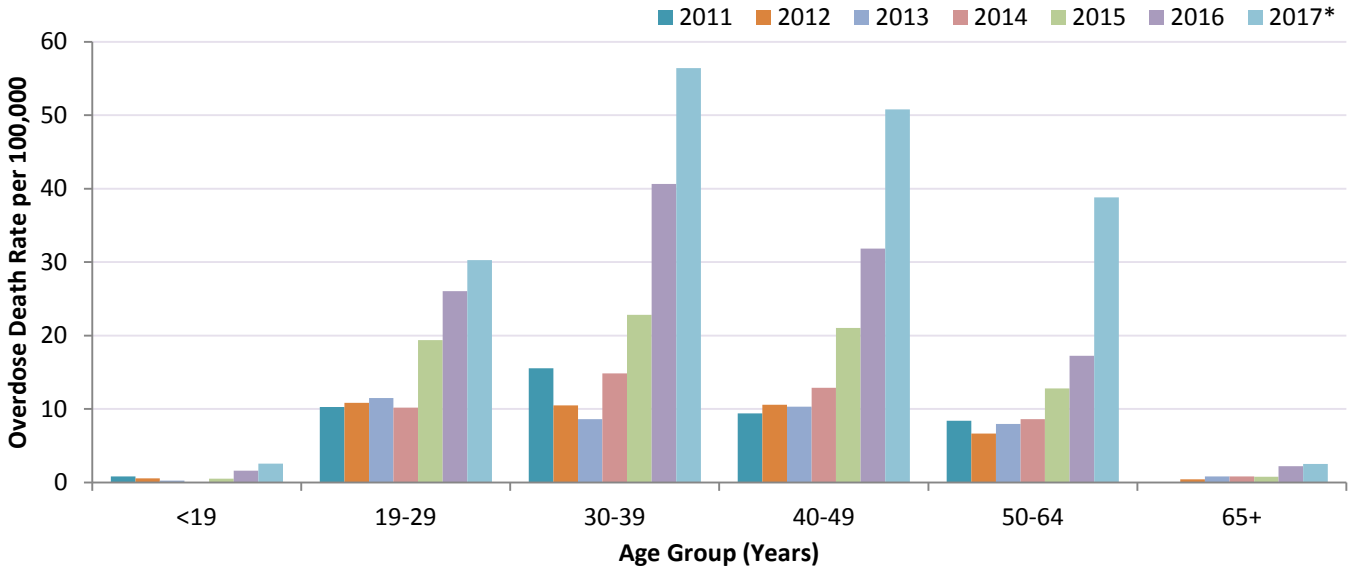
Data Source: BC Coroner Service. Preliminary data, numbers subject to change.

Table A1: Illicit drug overdose deaths within Fraser Health.

	No. Deaths Jan-May 2017	Projected* No. Deaths 2017	No. deaths 2016	% Increase (2017* vs. 2016)
BC	**640**	**1536**	**967**	**59**
Fraser Health^	**212**	**510**	**324**	**57**
Surrey	72	173	117	48
Maple Ridge	14	34	27	24
Abbotsford	29	70	39	78
Langley (City+ Township)	17	41	30	36
Burnaby	20	48	37	30
Chilliwack	11	26	12	120
Coquitlam	14	34	20	68
New Westminster	12	29	10	188
Other communities	23	55	32	72

^ BC Coroner assigns location based on location of injury (i.e. overdose) and if that is missing, location of death.
Data source: BC Coroner Service. Preliminary data, numbers subject to change.
** Projected based on available months in 2017*

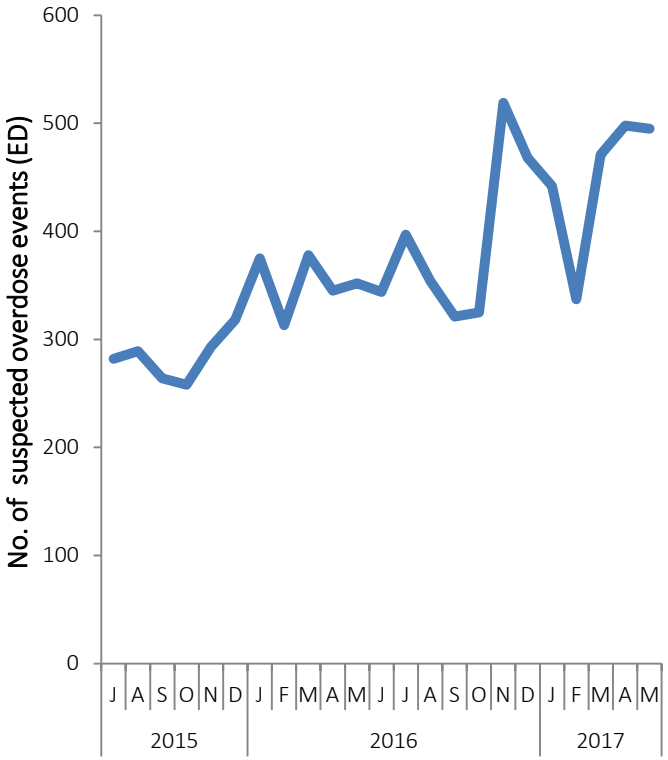
Figure A2. Illicit drug overdose death rate per 100,000 people, by age group, within Fraser Health region (2011-2017*).



Data source: BC Coroner Service. Preliminary data, numbers subject to change.
** Annualized rate based on available months in 2017*

Suspected Overdose Visits to Emergency Department

Figure A3. No. of suspected overdose events seen at Fraser Health Emergency Departments.



Data Source: Fraser Health Emergency Departments

Table A2. Suspected overdose events presenting at Fraser Health Emergency Departments.

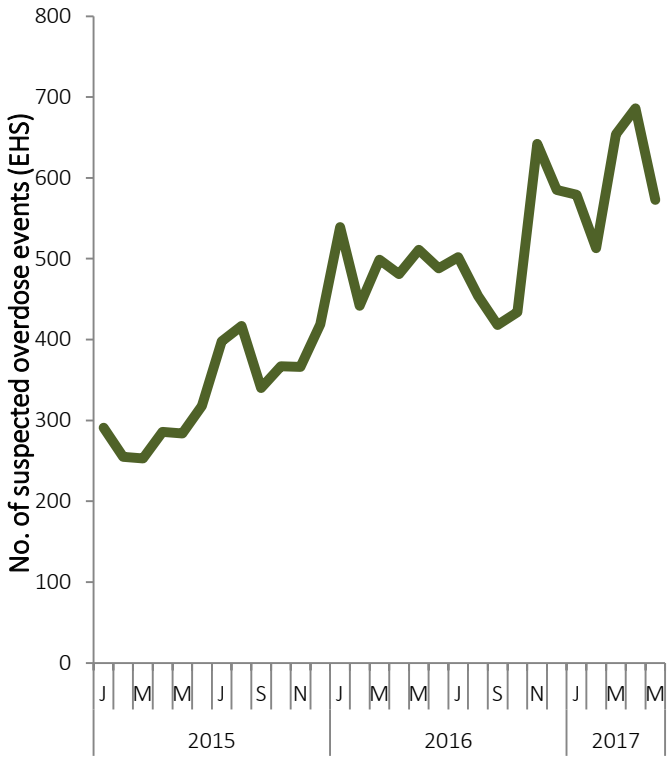
Community^ of residence	No. events May 2017 (Avg. past 12 months~)	No. events 2017 YTD (Rate per 100,000)*	No. events 2016 (Rate per 100,000)
Abbotsford	37 (44)	224 (467)	468 (407)
Agassiz-Harrison	--	9 (272)	29 (365)
Burnaby	16 (25)	124 (147)	296 (147)
Chilliwack	48 (30.9)	191 (619)	267 (361)
City of Langley	7 (12.3)	71 (786)	133 (614)
Coquitlam	17 (14)	81 (178)	141 (130)
Delta	13 (10.8)	53 (145)	104 (119)
Hope	5 (2.5)	11 (395)	23 (345)
Maple Ridge	33 (28.1)	154 (573)	325 (504)
Mission	22 (12.7)	78 (540)	113 (326)
New Westminster	8 (14.4)	64 (256)	177 (295)
Pitt Meadows	6 (4.1)	20 (321)	51 (342)
Port Coquitlam	13 (11.8)	50 (249)	120 (249)
Port Moody	9 (6.3)	37 (320)	65 (235)
Surrey	192 (143)	776 (440)	1588 (375)
Township of Langley	15 (12.1)	58 (158)	171 (195)
White Rock	--	22 (295)	40 (224)
Non-Fraser residents	51 (37.3)	220 (n/a)	380 (n/a)
Fraser Health	495 (414.3)	2243 (385)	4491 (321)

^ Community based on reported residential address. Homeless people assigned to the community where Emergency Department was located
~ based on average of past 12 months, including the most recent month
** Rate annualized based on available months for 2017*
-- counts under 5 not reported as they are potentially identifiable

Restricted to those 13 years of age or older

Suspected Overdose Events attended by BC Ambulance

Figure A4. No. of suspected overdose events attended by BC Ambulance service, within Fraser Health Region.



Data Source: Patient Care Records data from BC Emergency Service. Preliminary data, numbers subject to change. May numbers are likely lower due to delays in data transmission and reporting.

Table A3: Suspected overdose events attended by BC Ambulance service, within Fraser Health Region.

Community of event^	No. events May 2017 (Avg. past 12 months~)	No. events 2017 Jan-May (Rate per 100,000) *	No. events 2016 (Rate per 100,000)
Abbotsford	33 (59.6)	279 (582)	572 (497)
Agassiz-Harrison	--	9 (272)	37 (466)
Burnaby	36 (50)	227 (270)	484 (239)
Chilliwack	39 (41.6)	200 (648)	373 (503)
City of Langley	18 (26.7)	131 (1451)	255 (1176)
Coquitlam	38 (31.3)	167 (367)	281 (257)
Delta	11 (15.1)	64 (175)	152 (173)
Hope	5 (3.6)	19 (683)	31 (464)
Maple Ridge	31 (43.5)	197 (733)	408 (632)
Mission	20 (14)	88 (609)	124 (358)
New Westminster	22 (28.1)	135 (540)	269 (448)
Pitt Meadows	5 (5.5)	25 (402)	48 (321)
Port Coquitlam	14 (16.2)	70 (348)	149 (309)
Port Moody	5 (3.7)	16 (138)	37 (133)
Surrey	272 (258)	1263 (716)	2395 (566)
Township of Langley	18 (23.1)	101 (276)	229 (260)
White Rock	--	14 (188)	40 (224)
Fraser Health	573 (626.7)	3005 (516)	5884 (421)

Please note: Numbers for the most recent month are likely an underestimate and will increase as entry of BC Ambulance Patient Care Forms is completed.

^ Community based on location where the paramedics attended to the suspected overdose event
~ based on average of past 12 months, including the most recent month
** Rate annualized based on available months for 2017*
-- counts under 5 not reported as they are potentially identifiable

Restricted to those 13 years of age or older

Notes on Data Sources

Please note that numbers in this report are likely an underestimate. This is because first responders (fire, police or paramedics) are not called to all overdose events, not all events are seen at emergency departments and the algorithms used to detected events do not capture all the overdoses.

BC Coroner Service

Coroner numbers are preliminary and subject to change as investigations are finalized. Coroner assigns location to events based on location of overdose and location of death. The Coroner's fentanyl overdose report is one month behind overdose deaths reports due to additional time needed for fentanyl testing. Currently, the BC Coroner service combines numbers for City of Langley and Township of Langley.

The coroner illicit drug category includes street drugs (heroin, cocaine, MDMA, methamphetamine, etc.), medications that may not have been prescribed to the deceased, combinations of the above, with prescribed medications, and origin of drug not known. Additional information can be found in BC Coroner reports http://www2.gov.bc.ca/gov/content/safety/public-safety/death-investigation/statistical-reports .

Fraser Health Emergency Department Data

Fraser Health Overdose Surveillance system is a dynamic syndromic surveillance system which captures suspected overdose events among those 13 years of age or older. These are suspected events and not confirmed cases. These numbers may change as data entry is finalized. The suspected overdose events include those associated with opioids, stimulants, hallucinogens, and unspecified substances. Events were identified based on physician's discharge diagnosis, patient's stated complaint, chief complaint code assigned at triage and nursing notes associated with the chief complaint. Locations are assigned based on reported residential postal code.

BC Ambulance

Fraser Health receives weekly data from BC Ambulance, BC Emergency Health Services (EHS) via BC Centre for Disease Control. Data are based on Patient Care Forms completed by paramedics for each event they attend. The data on latest cases is delayed by a few weeks due to time needed for collection, transmission and entry of the information. Patient Care Forms are completed for more than 90% of the events attended by paramedics. These are suspected overdose vents and not confirmed cases. These numbers many change as data entry is finalized.

The suspected overdoses events are identified based on naloxone administration, provisional impression of 911 dispatch and provisional impression of the paramedics. We remove events suspected of not being overdose events and those associated primarily with alcohol. Locations are assigned based on latitude and longitude of the location where ambulance was dispatched. In addition to ambulance, other services (police, fire, community organizations etc.) may also be present during an overdose response in the community.