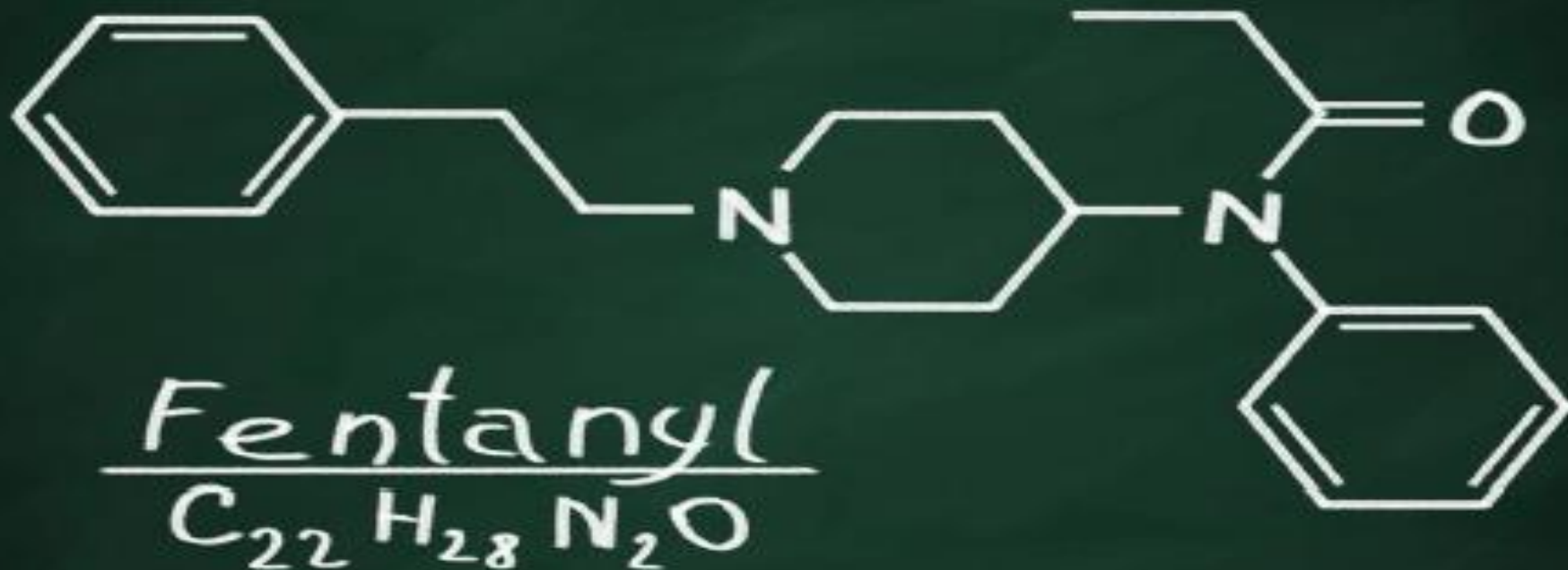


**A Response to Illicit Drug Overdoses:
Naloxone Administration in Surrey and Vancouver, British Columbia**



Len Garis, Fire Chief City of Surrey, Adjunct Professor , School of Criminology and Criminal Justice & Associate to the Centre for Social Research University of the Fraser Valley, Affiliated Research Faculty - John Jay College of Criminal Justice, and The Christian Regenhard Centre for Emergency Response Studies, New York

Canada Population: (35,000,000)



British Columbia

Population: (4,600,000)



The Problem, Enhanced Data, Technology, and Response

Origin: Understanding the scope of issues

Understanding: The person

Technology: Surrey Fire Service real time overdose data used to assist first responders; neighbourhood consumption through waste water analysis

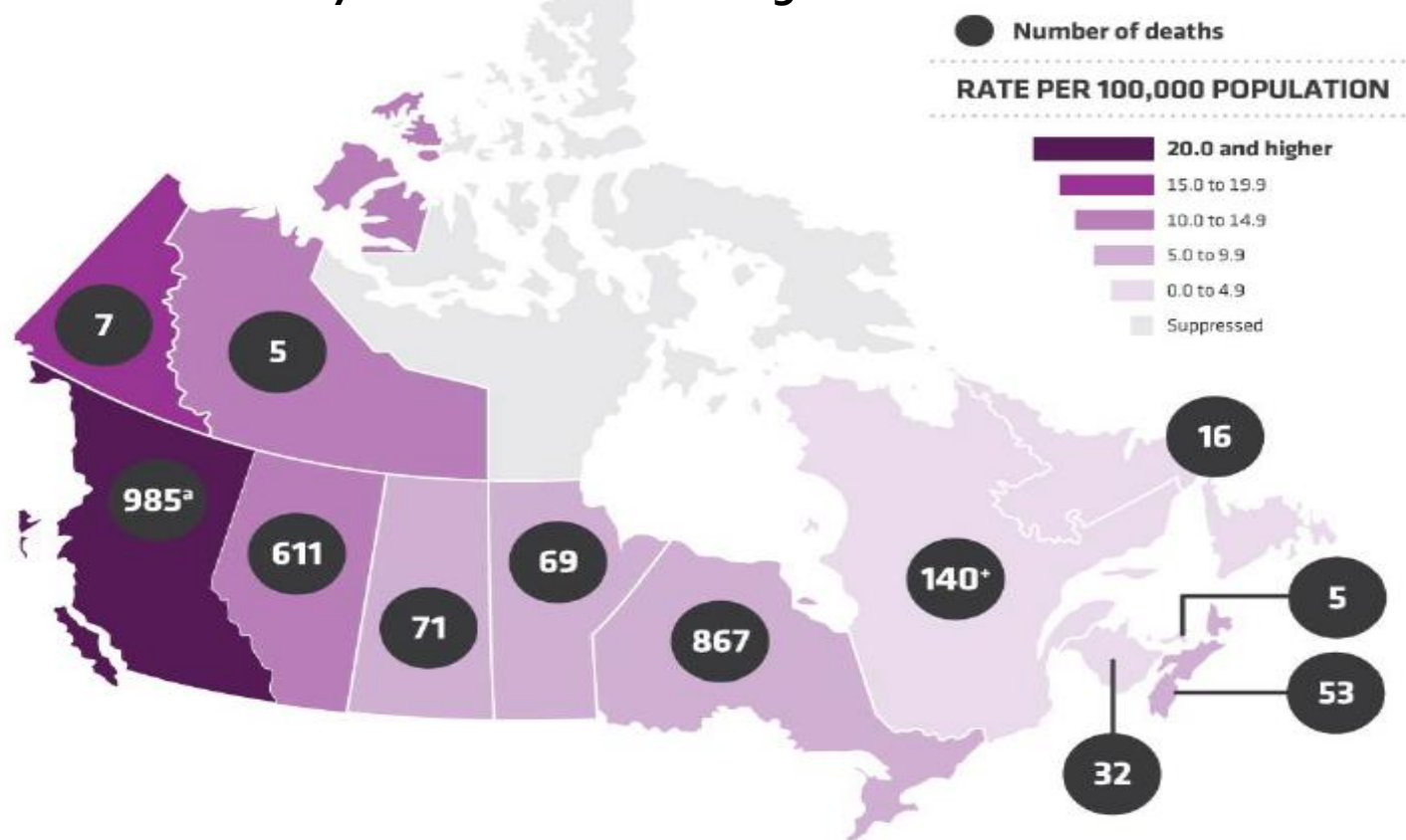
Response: Community Actions, Safe Injection, Recovery homes, Construction Worker

Canada

Population: (35,000,000)

Figure 1. Number and rate (per 100,000 population) of apparent opioid-related deaths by province or territory, 2016.

As of December 2017 the BC rate is now 29.6



BC Opioid Crisis

1,422 suspected overdose deaths in 2017

43% increase 2017 over 2016

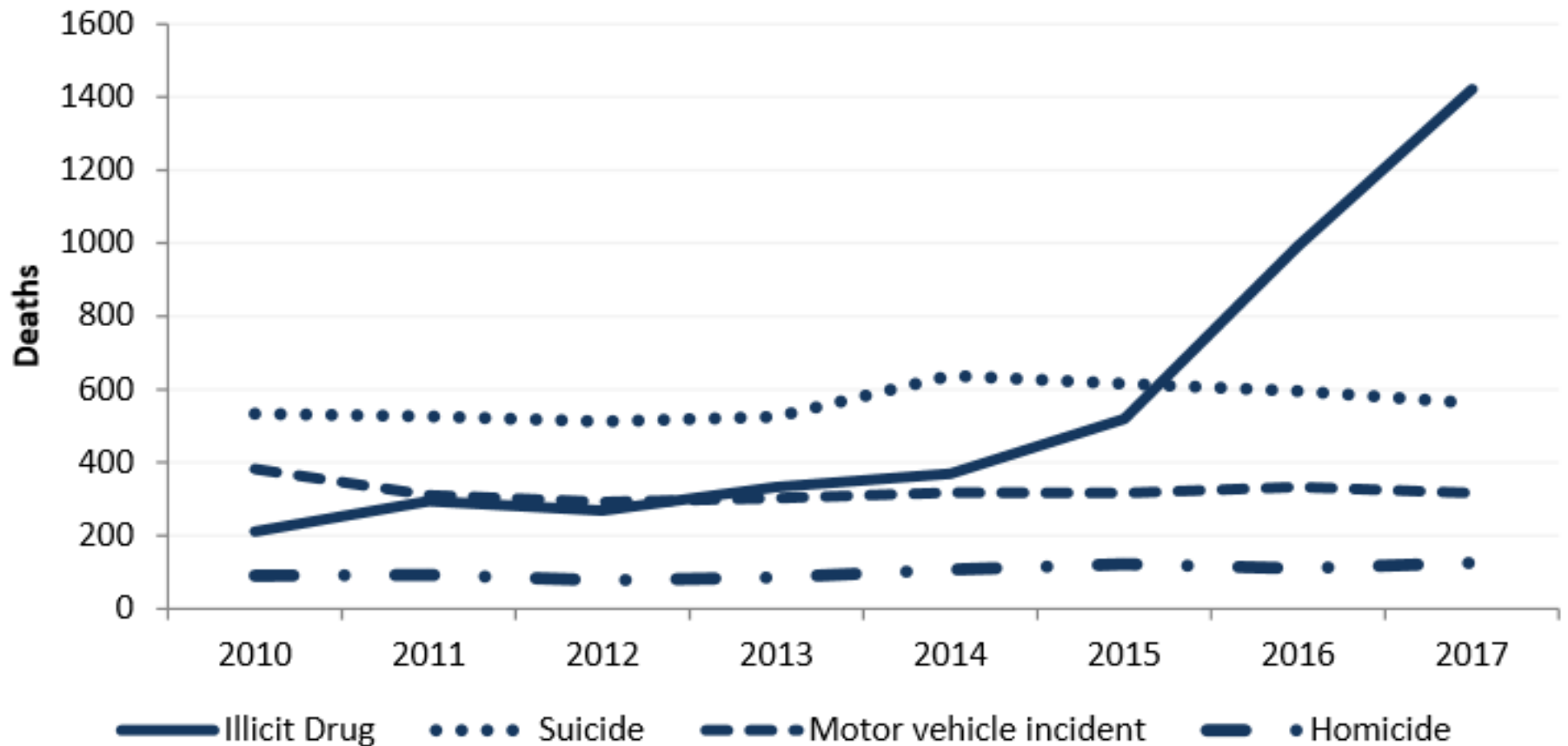
51% of those dying were 30-49

82% of those dying were male



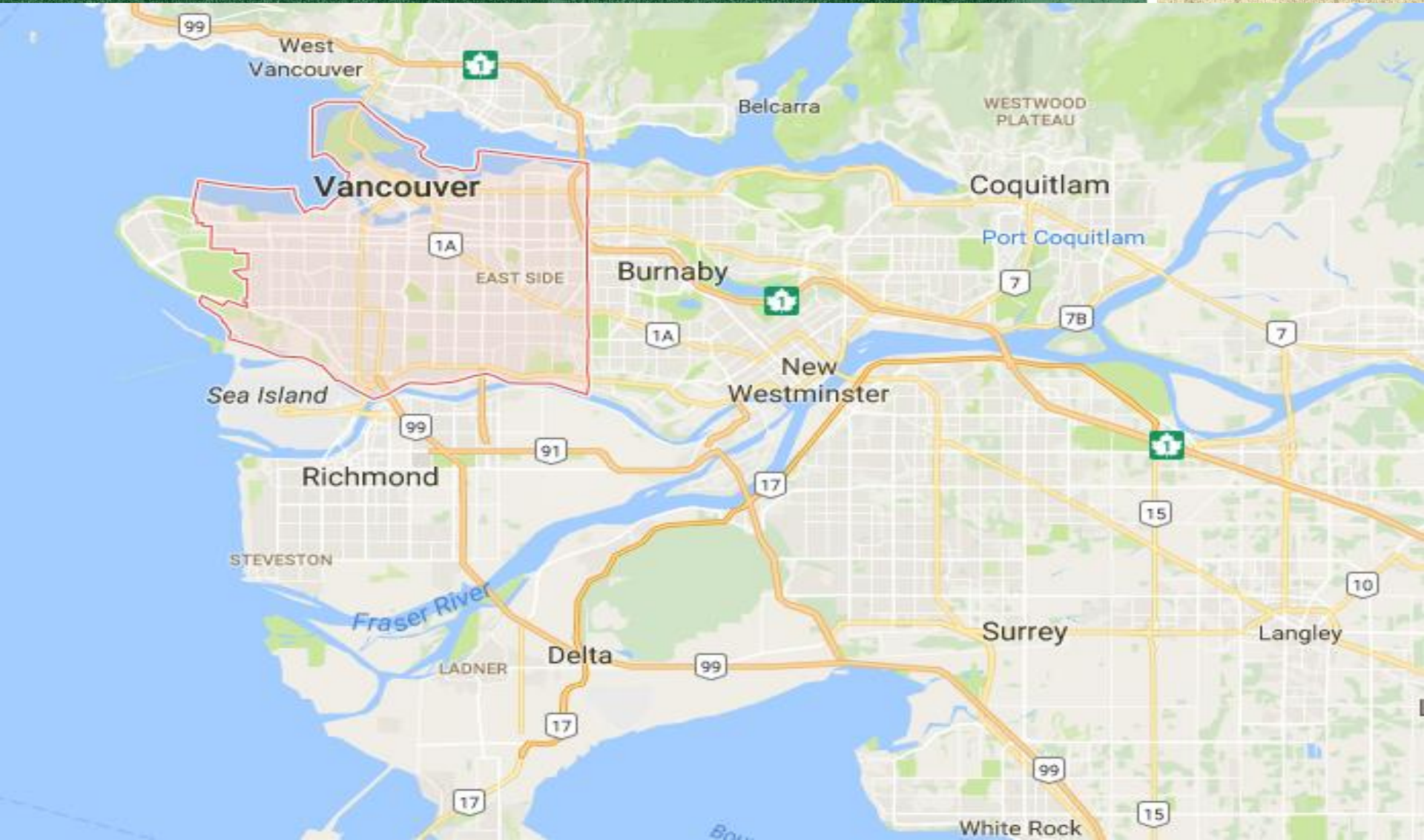
BC Opioid Crisis

Major Causes of Unnatural Deaths in BC



Vancouver / British Columbia

Population: (670,000)

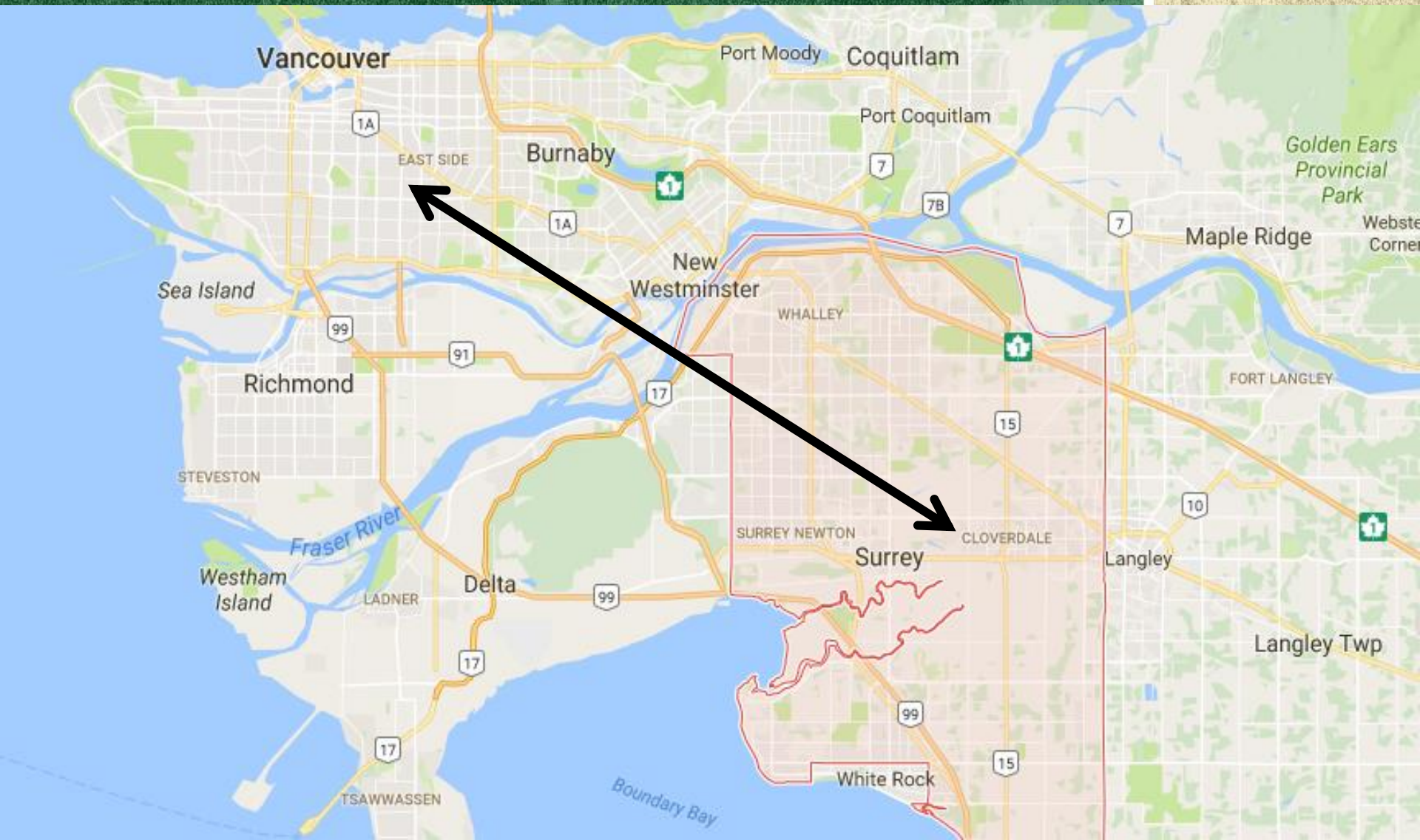


Vancouver / British Columbia



Surrey / British Columbia

Population: (520,000)



Surrey / British Columbia



In Crisis

DEATH BY

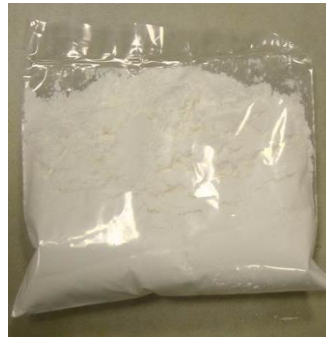


How is Fentanyl Used?

It can be found in a pill, powder, liquid, lozenge or patch form

Effects:

- Euphoria, relaxation (controls pain, emotions)
- Death – respiratory depression, cardiac arrest
- Physiologically and psychologically addictive



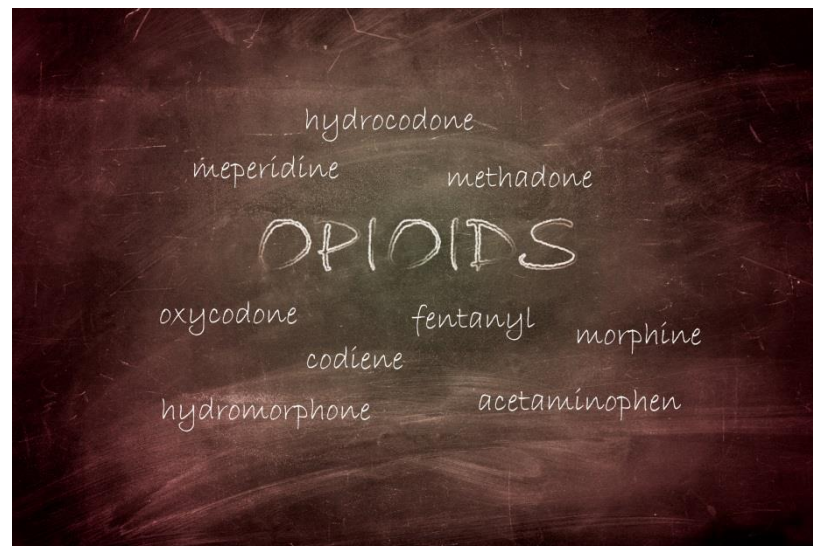
Fentanyl

Fentanyl is 50 times stronger than heroin. It is so potent that an amount the size of two (2) grains of salt is lethal to an adult.



Fentanyl

First synthesized in the 1960s by Janssen Pharmaceuticals, fentanyl was initially used as a general anesthetic during surgery. Its only acceptable, “on-label” use is for reduction of severe pain in cancer-sufferers.



Pharmaceutical



PHARMACEUTICAL COMPANIES
OF *Johnson & Johnson*



Basic Chemistry



Mexican Cartels' illicit drug labs started mixing Fentanyl with Heroin



Where is this coming from?

Why is Fentanyl Used?

It is believed the vast size of Asia's chemical industry and little regulation make it easy to import along with its component ingredients.

Simple economics:

- 1kg Heroin = \$80,000.00 CDN
- 1kg Fentanyl = \$8,000.00 CDN
- 1kg Fentanyl = 50kg Heroin
- **\$4,000,000 CDN**



Illicit Fentanyl

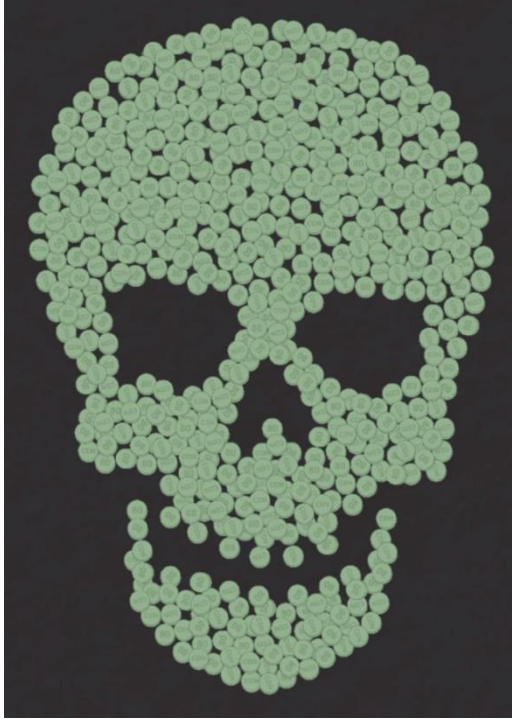
Drug traffickers are using illicit fentanyl *products* as a cutting agent in heroin and as the primary psychoactive ingredient in imitation Oxycodone pills, commonly sold as 'Oxy 80's.'



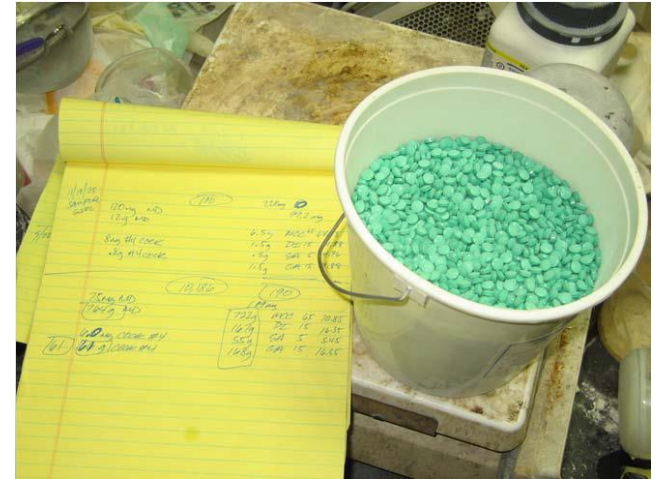
Why Fentanyl?



Counterfeit Oxycotin



Equipment Used



Hot Spots



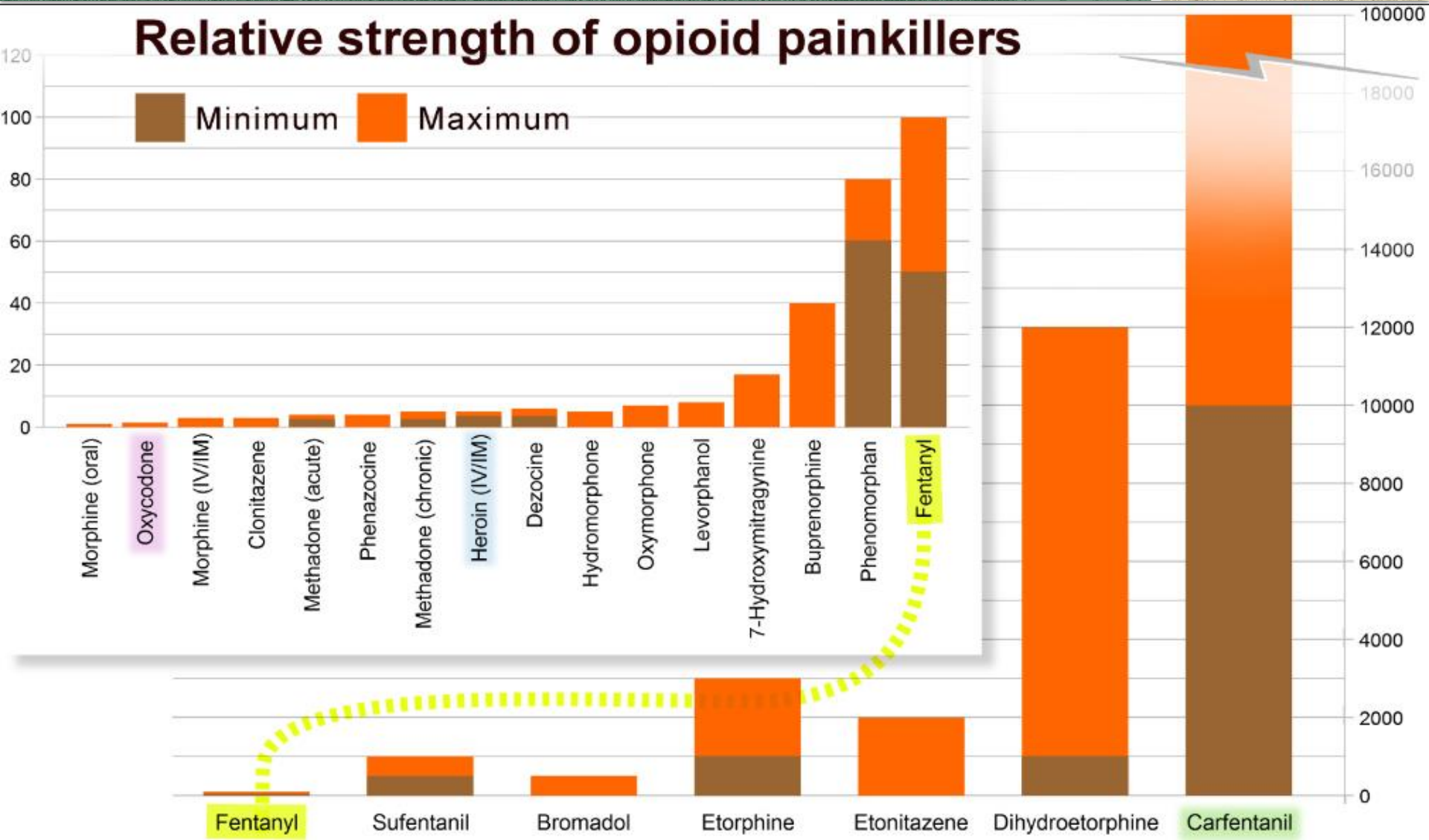
Carfentanil / Fentanyl

OPIOID POTENCY



Strength of Opioid Painkillers

Relative strength of opioid painkillers



Party Scene



Drugs Do Not Discriminate



CARRY A NALOXONE KIT



CALL 911



#STOPOVERDOSE



Drugs Do Not Discriminate



Drugs Do Not Discriminate



Know the Signs



CARRY A NALOXONE KIT



CALL 911



#STOPOVERDOSE

Symptoms

Respiratory distress, respiratory depression or arrest

Nervous system depression

Drowsiness

Reduced level or loss of consciousness

Dizziness

Nausea/vomiting

Limp body

Pin Point pupils



FENTANYL

CAN BE DEADLY WHEN CUT WITH THE DRUGS YOU'RE TAKING

KNOW YOUR SOURCE? **BE DRUG SMART**
KNOWYOURSOURCE.CA



Time of Death
2330

Cause of Death
Overdose: Fentanyl
unknowingly taken
with other drugs



FENTANYL

CAN BE DEADLY WHEN CUT WITH THE DRUGS YOU'RE TAKING

KNOW YOUR SOURCE? **BE DRUG SMART**
KNOWYOURSOURCE.CA



Drugs Do Not Discriminate



CARRY A NALOXONE KIT



CALL 911



#STOPOVERDOSE

Naloxone reversing an overdose

Naloxone has a stronger affinity to the opioid receptors than opioids, such as heroin or oxycodone, so it knocks the opioids off the receptors for a short time (30-90 minutes).

This allows the person to breathe again and reverse the overdose.

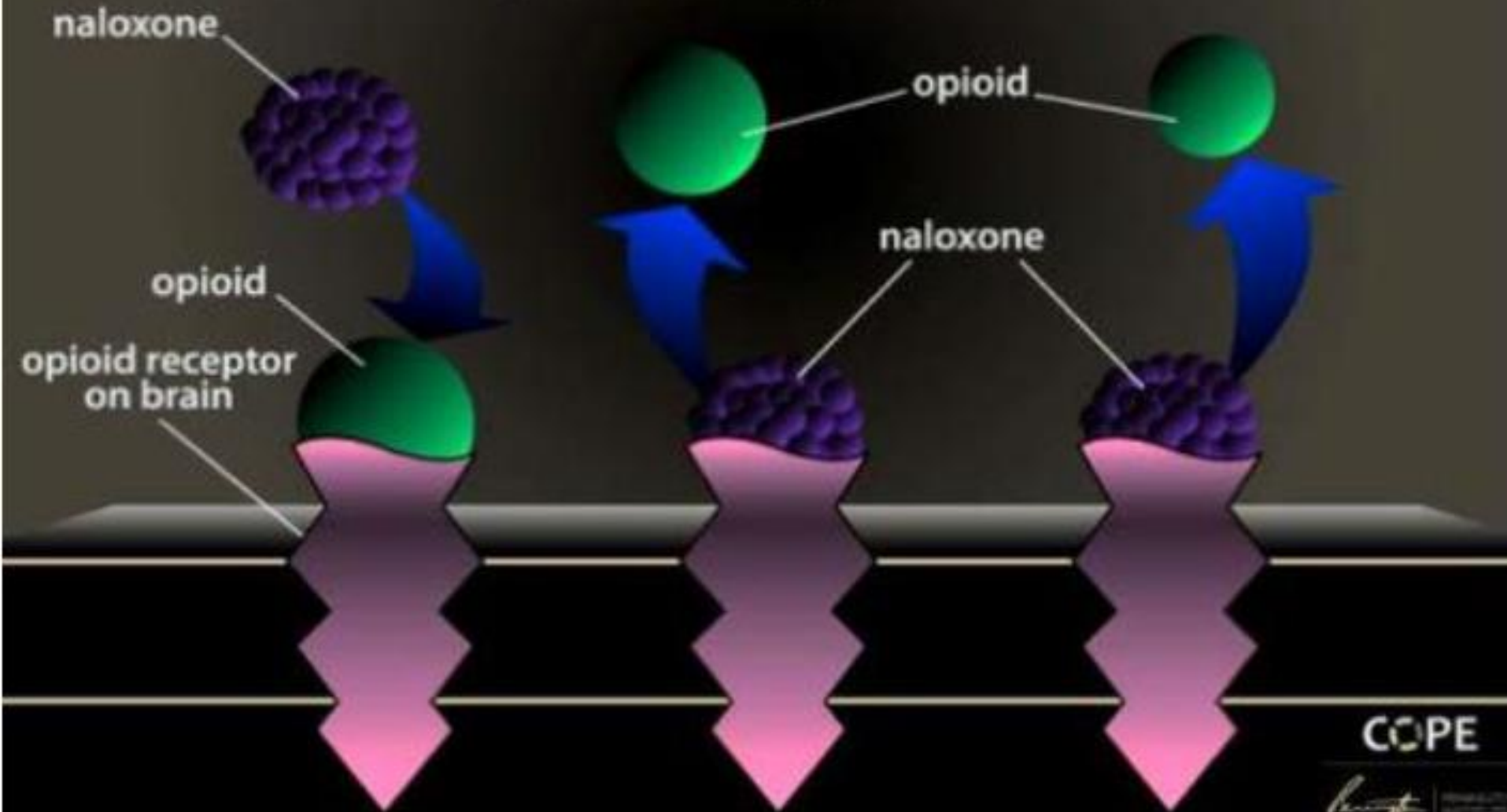




Figure 1

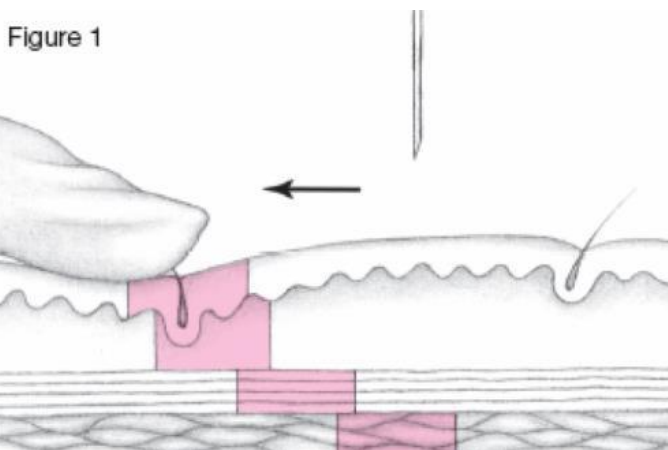


Figure 2

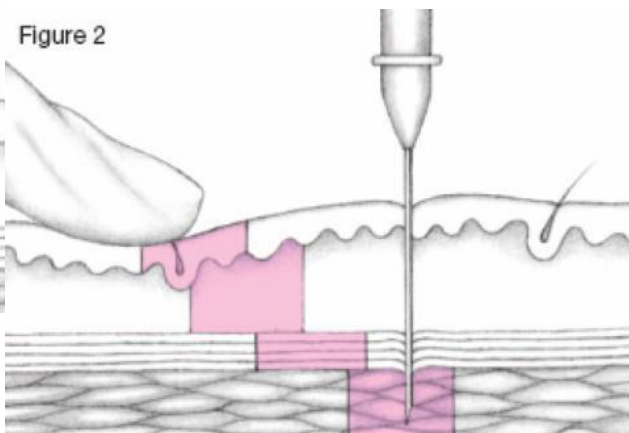
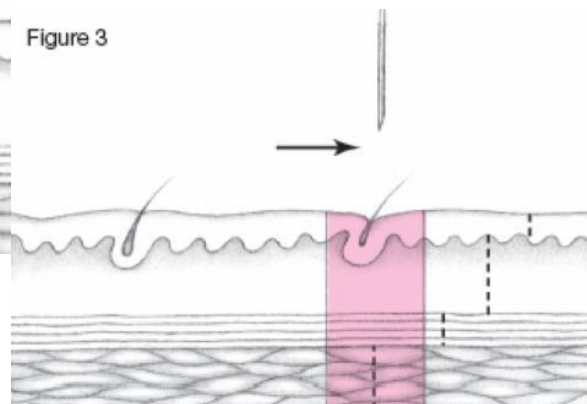


Figure 3



Overdose Deaths by Month:

2007 – 2017

Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	15	18	23	16	24	20	20	23	42	86	140
Feb	14	8	15	14	24	17	21	39	31	59	120
Mar	19	17	10	15	25	25	33	28	31	77	131
Apr	24	18	8	9	26	31	31	29	34	72	151
May	10	18	19	22	22	19	28	40	41	50	139
Jun	18	18	16	21	22	25	25	29	34	70	119
Jul	11	24	19	23	33	29	38	25	37	74	113
Aug	21	16	27	24	22	19	21	37	51	64	123
Sep	14	12	16	20	22	16	28	31	47	61	87
Oct	15	10	13	18	23	19	19	35	53	76	97
Nov	19	9	18	18	27	28	31	28	49	140	103
Dec	22	15	17	11	24	21	38	25	68	164	99
Total	202	183	201	211	294	269	333	369	518	993	1,422
Average	16.8	15.3	16.8	17.6	24.5	22.4	27.8	30.8	43.2	82.8	118.5

Overdose Deaths by Gender / Age:

2007 – 2017

Gender	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	47	49	55	49	82	75	79	86	102	196	249
Male	155	134	146	162	212	194	254	283	416	797	1,173
Total	202	183	201	211	294	269	333	369	518	993	1,422

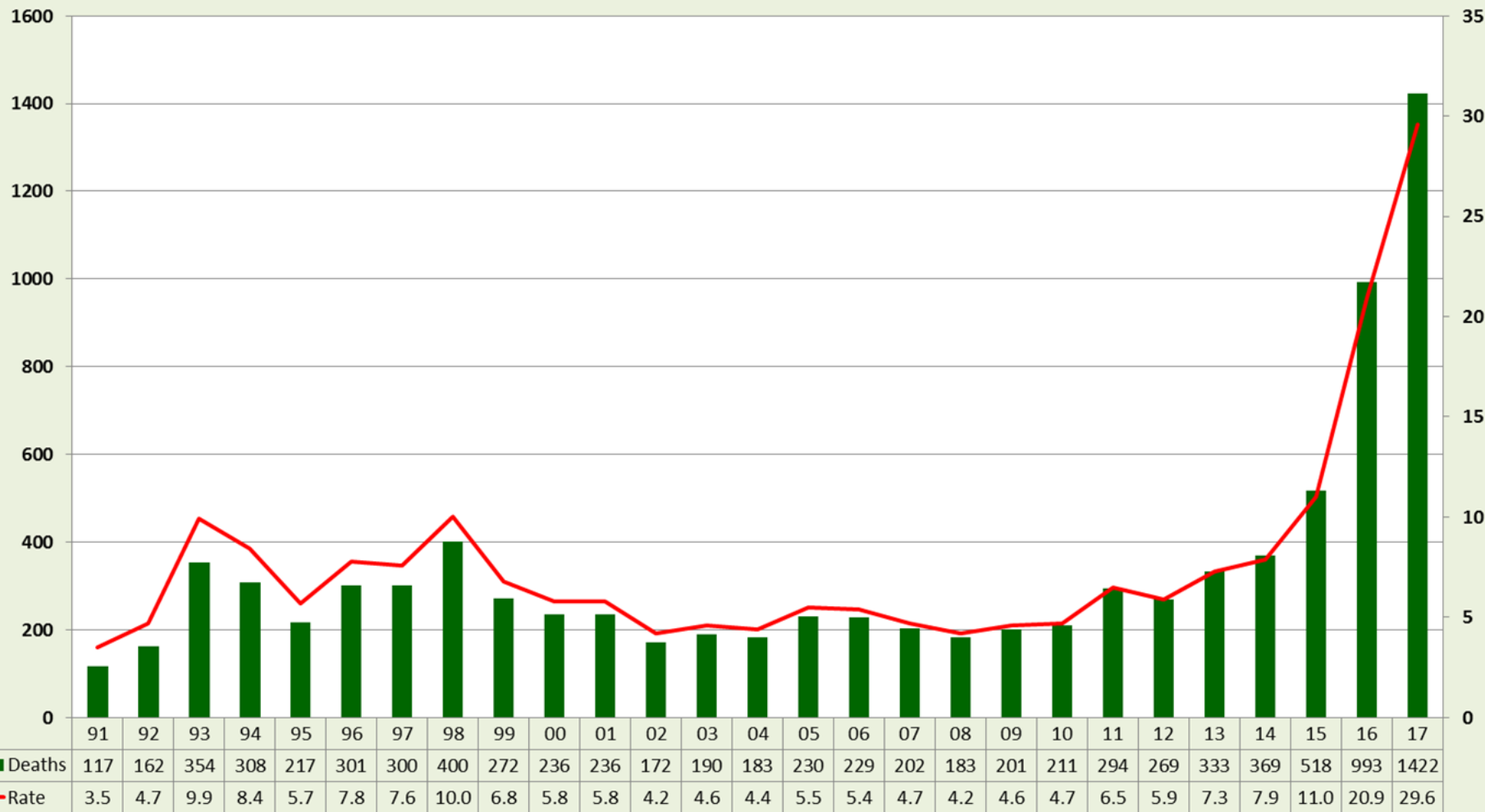
Age Group	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
10 to 18	5	6	2	4	4	5	6	3	5	12	23
19 to 29	33	36	46	40	74	61	94	83	117	207	269
30 to 39	53	48	51	49	75	61	77	101	135	264	392
40 to 49	70	42	57	66	77	66	74	85	126	233	334
50 to 59	36	43	33	45	54	56	61	72	108	226	286
60 to 69	4	8	12	7	10	19	21	25	26	48	110
70 to 79	1	0	0	0	0	1	0	0	1	3	8
Total	202	183	201	211	294	269	333	369	518	993	1,422

Overdose Deaths by City / Township:

2007 – 2017

Township	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Vancouver	59	38	60	42	69	65	80	101	136	234	358
Surrey	22	20	23	33	42	44	36	44	76	122	174
Victoria	19	29	13	13	17	17	25	20	22	69	91
Kelowna	6	2	5	9	14	8	12	12	19	47	75
Nanaimo	2	2	6	4	8	6	20	16	18	29	51
Abbotsford	3	4	4	10	16	7	10	7	26	39	49
Burnaby	9	12	8	9	10	10	13	12	16	39	41
Kamloops	11	7	7	10	2	5	8	7	7	44	39
Langley	3	6	2	3	10	5	10	10	10	30	36
Maple Ridge	5	2	6	4	4	5	10	14	29	27	33
Coquitlam	2	2	5	2	3	6	1	10	11	14	29
Chilliwack	3	4	2	2	8	8	6	6	10	12	24
Richmond	0	1	3	4	4	1	3	3	6	14	24
Prince George	5	2	4	1	6	10	7	10	12	19	22
New Westminster	1	4	2	6	6	3	5	9	12	10	22
Other Township	52	48	51	59	75	69	87	88	108	244	354
Total	202	183	201	211	294	269	333	369	518	993	1,422

Illicit Drug Overdose Deaths and Death Rate per 100,000 Population in BC: 1990 - 2017



Overdoses in Surrey and Vancouver: 2015, 2016 & 2017

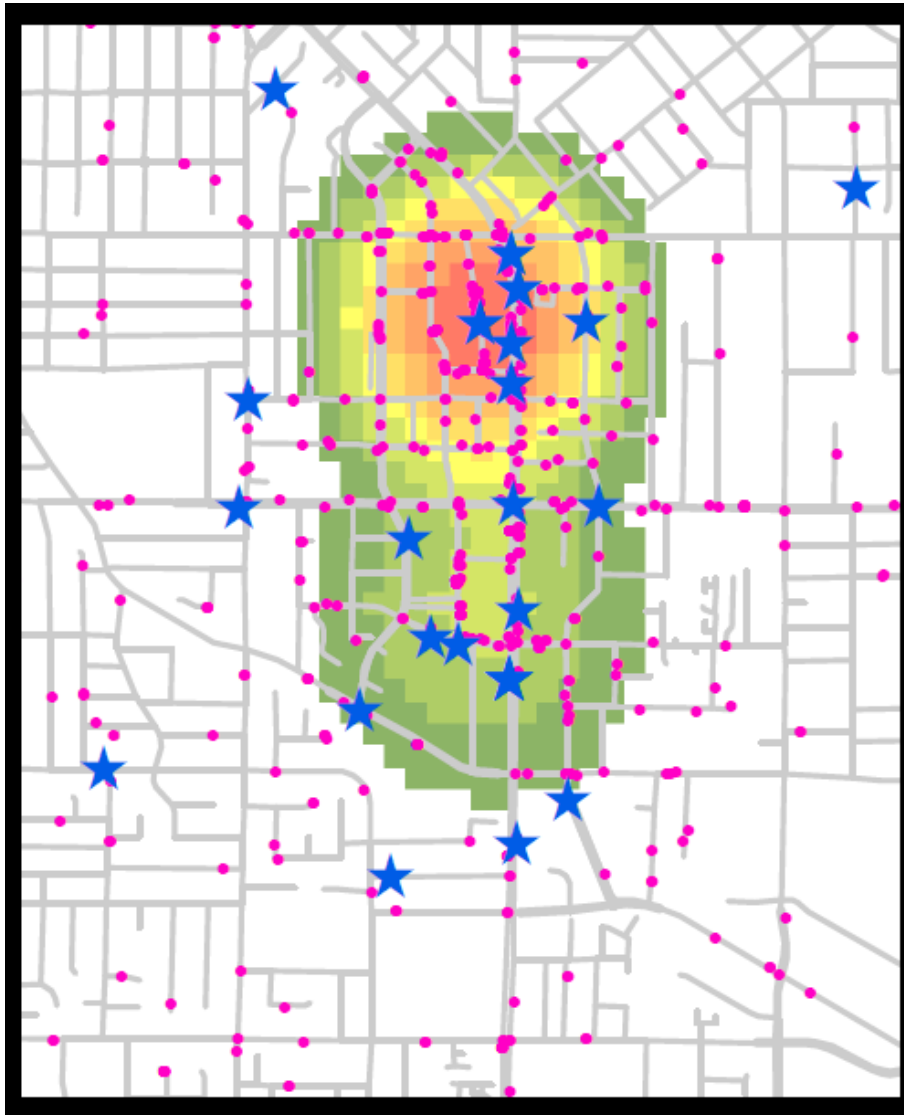
Drug Overdoses, Surrey, January 1, 2015 to December 31, 2017

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
2015	129	123	92	130	122	121	140	152	120	136	166	175	1606
2016	234	205	215	234	208	213	233	178	158	201	278	266	2623
2017	253	202	219	328	330	231	225	252	220	183	160	198	2801

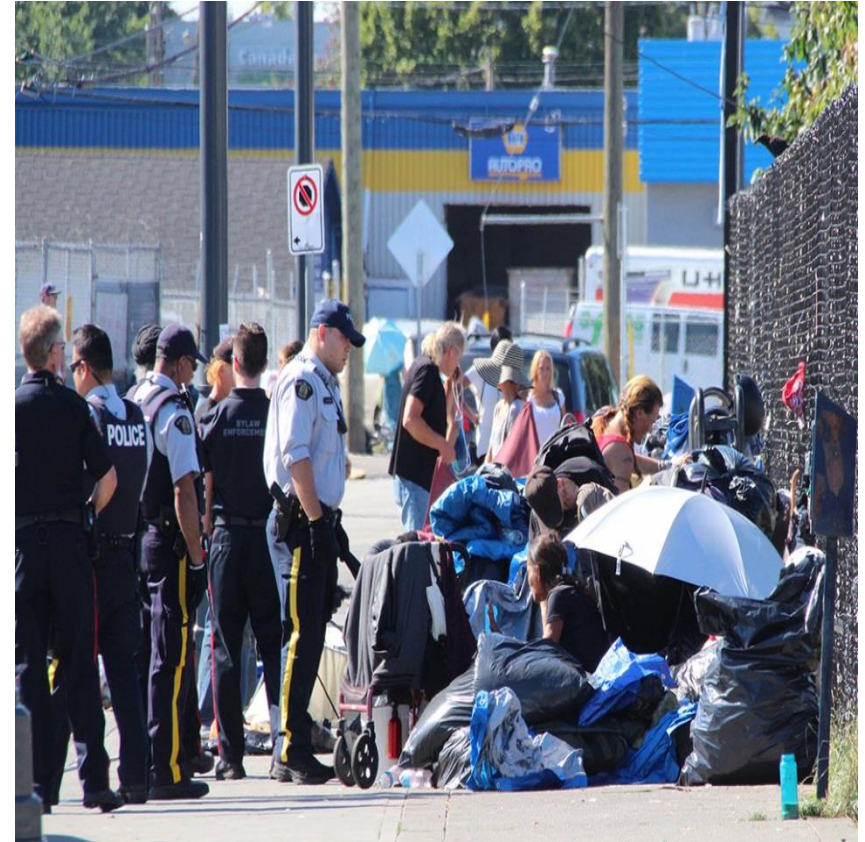
Drug Overdoses, Vancouver, January 1, 2015 to December 31, 2017

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
2015	180	138	174	195	173	210	217	264	231	236	260	258	2536
2016	255	281	258	276	250	305	310	329	373	508	745	794	4684
2017	614	504	556	671	633	535	555	462	420	385	358	424	6117

Overdoses in Surrey



135A St., Surrey



135A St., Surrey



135A St., Surrey



135A St., Surrey



Overdoses in Vancouver



Downtown Eastside, Vancouver



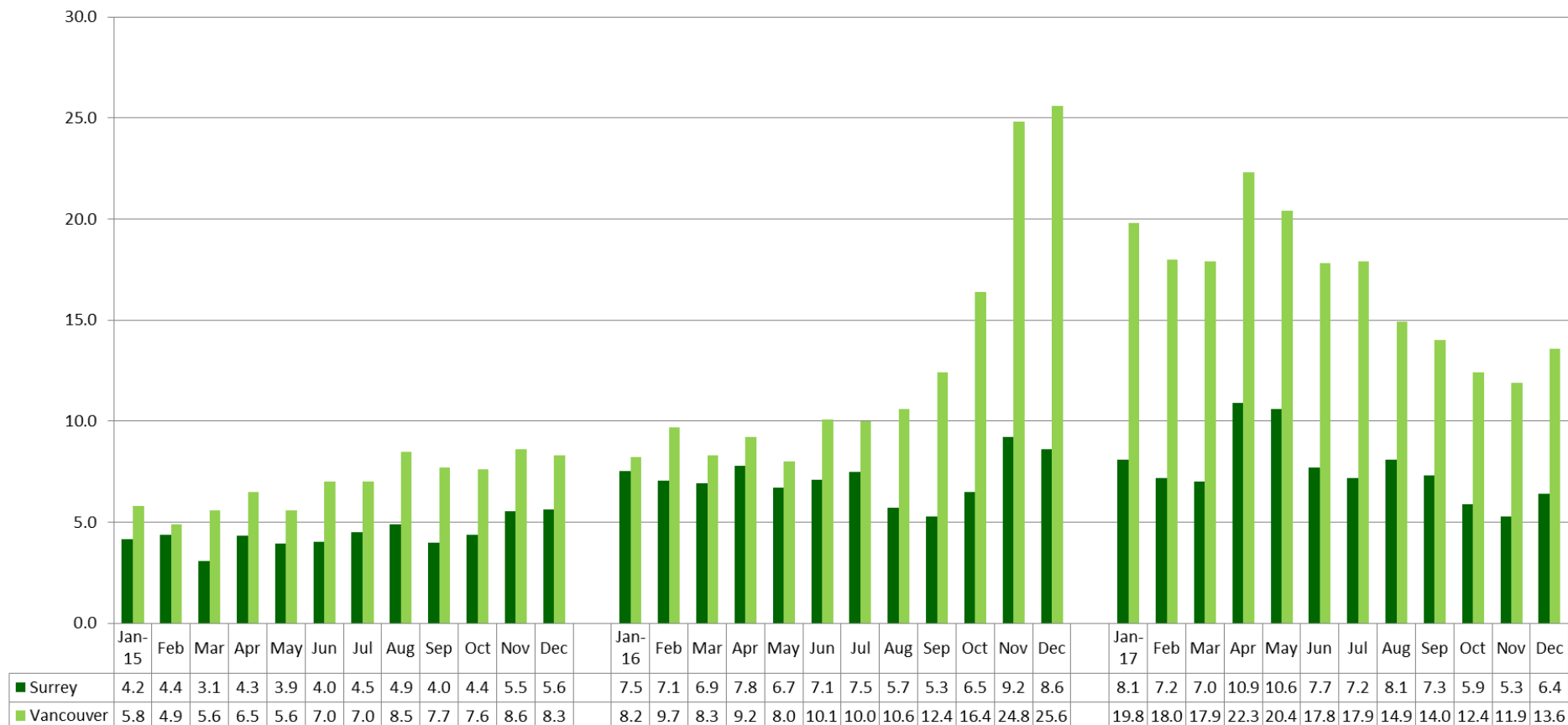
Downtown Eastside, Vancouver



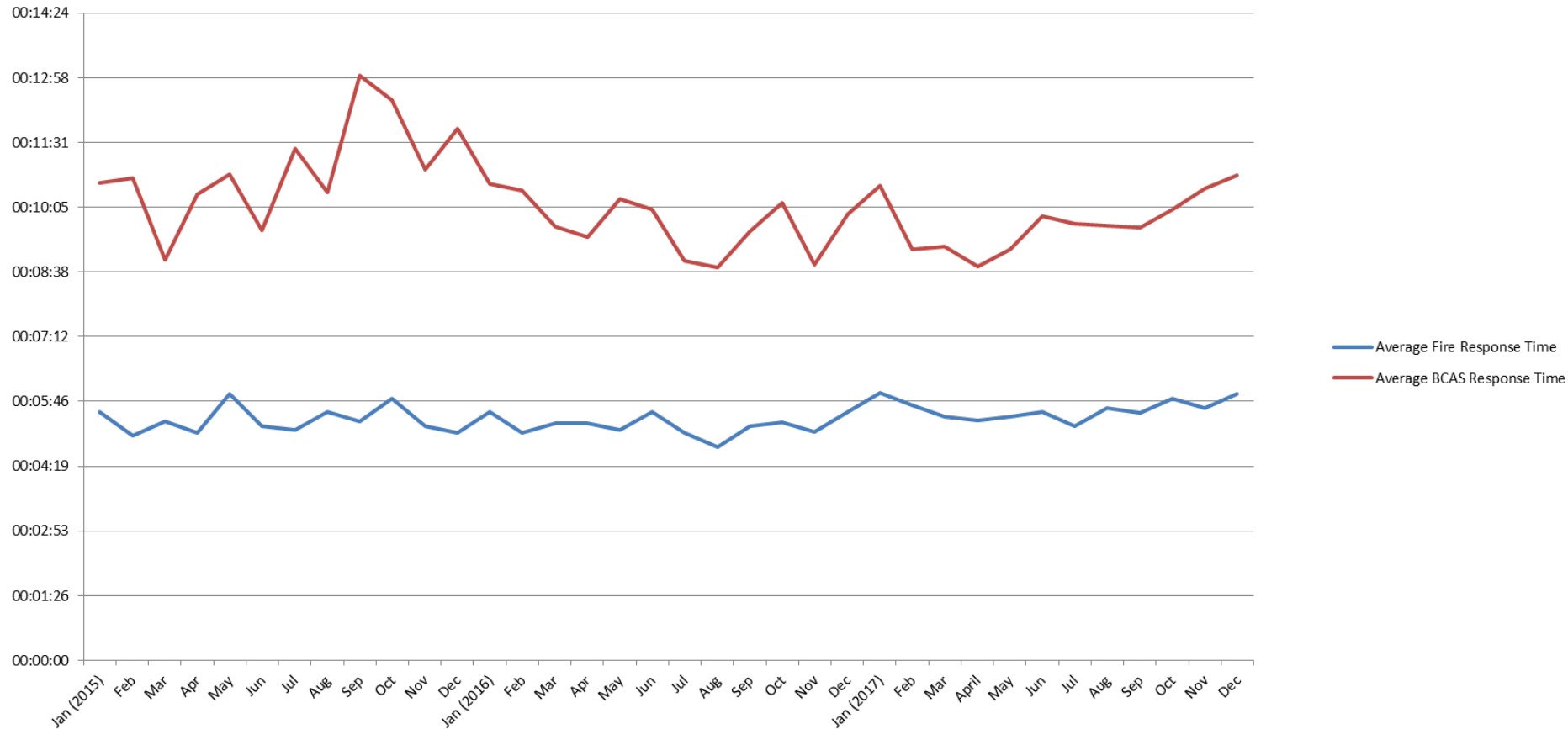
Downtown Eastside, Vancouver



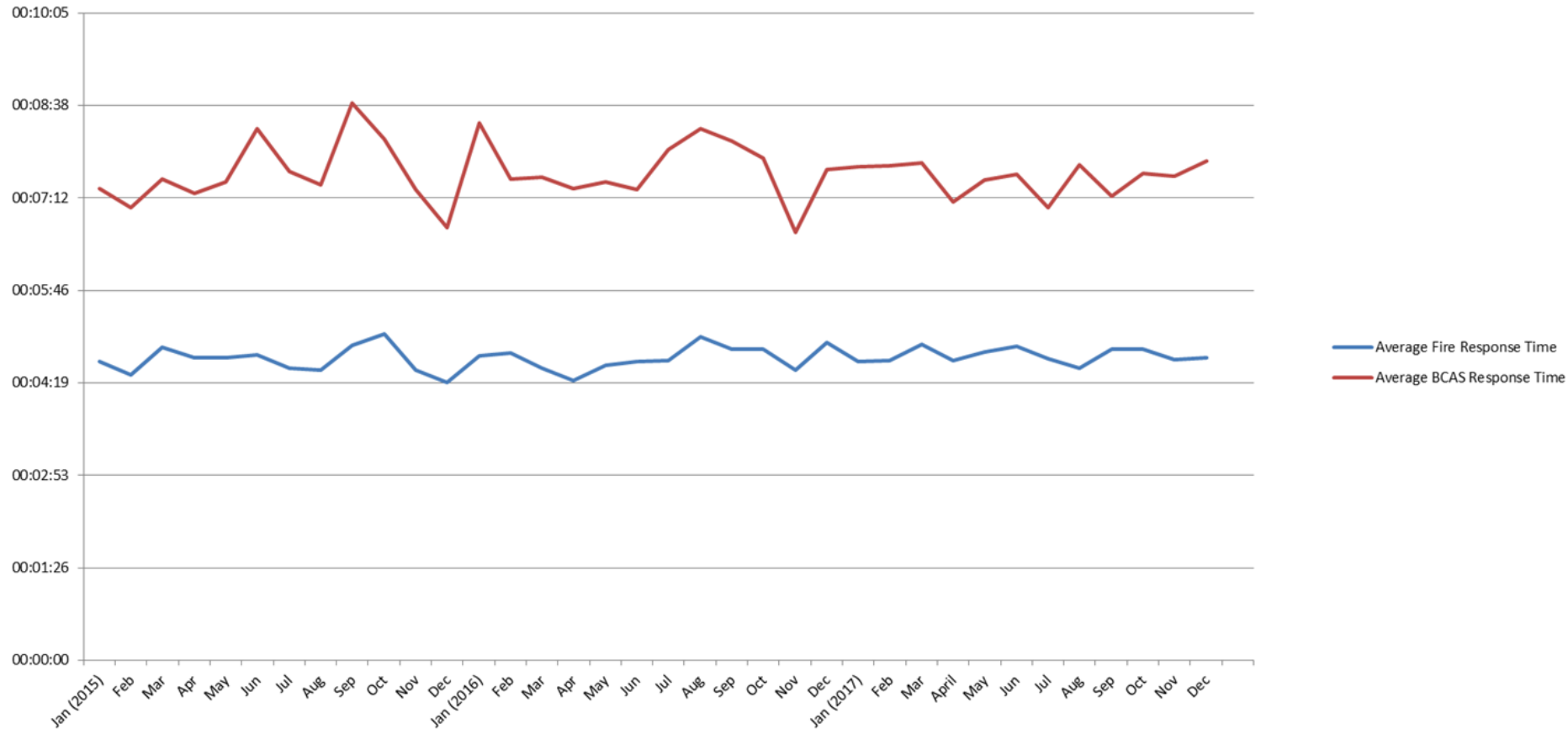
Average Overdoses per day Vancouver / Surrey 2015, 2016 & 2017



Average Response Times Comparison between Surrey Fire Service and Ambulance Services: 2015, 2016 & 2017



Average Response Times Comparison between Vancouver Fire & Rescue Services and Ambulance Services: 2015, 2016 & 2017



Overdose Awareness and Harm Reduction

- If you are an opioid user, or know someone who might be at risk, *get a naloxone kit*
- Find out about fentanyl and naloxone
- Know what to do to prevent an overdose
- Learn how to respond to an overdose



Overdose Awareness and Harm Reduction

HOW TO TALK TO KIDS ABOUT DRUGS



Overdose: A Public Health Emergency

There is a public health emergency in B.C. People are overdosing on illicit substances in high numbers. Drugs like cocaine, crack, ecstasy, meth, and heroin can contain fentanyl or other lethal substances.

Keeping communication open and staying informed can help build resiliency and help when your kids or other youth in your life face important decisions about drugs.

HOW TO HAVE AN OPEN CONVERSATION

- **Stay Calm:** Be less critical. Be a good listener, be positive and problem solve as a team. Give room to ask questions. Respect their opinions. Ask what they are seeing, hearing and feeling. When asking, be open and respectful.
- **Conversation starters:** Talk about what you've seen in social media, the news and in movies. Talk in the car, while making dinner or while walking.
- **Ask open ended questions,** such as "What do you think about this?" or "Tell me what you've heard about this." Look for the answers together. If they won't talk, find another trusted adult they would feel comfortable with: relative, teacher, counsellor or neighbour.
- While talking to kids about drugs can be tricky, there is expert help available. Find out more on how speak to youth about drugs and building resiliency at bc.gov.ca/overdose

Learn More:
Call 8-1-1



Visit gov.bc.ca/overdose and join the conversation online [#stopoverdose](https://twitter.com/stopoverdose)



Overdose Awareness and Harm Reduction

RECOVERY IS POSSIBLE. HELP IS AVAILABLE.

Call 8-1-1

to speak with a nurse about opioid treatment and support services in your area any time of the day or night

Learn more at gov.bc.ca/overdose



OVERDOSES ARE HAPPENING IN YOUR COMMUNITY



*Photos courtesy of Moms Stop the Harm
These are individuals who have died from an overdose.

Overdose: A Public Health Emergency

There is a public health emergency in B.C. People are overdosing on illicit substances in high numbers. Drugs like cocaine, crack, ecstasy, meth, and heroin can contain fentanyl or other lethal substances.

If you know anyone who might be at risk find out how you can get involved. Find out what resources are available for people in need.

Your knowledge and action can save a life and support the response to this crisis in your community.

IF YOU SEE SOMEONE HAVING AN OVERDOSE

Call 9-1-1

to get help on the way.



CARRY A NALOXONE KIT



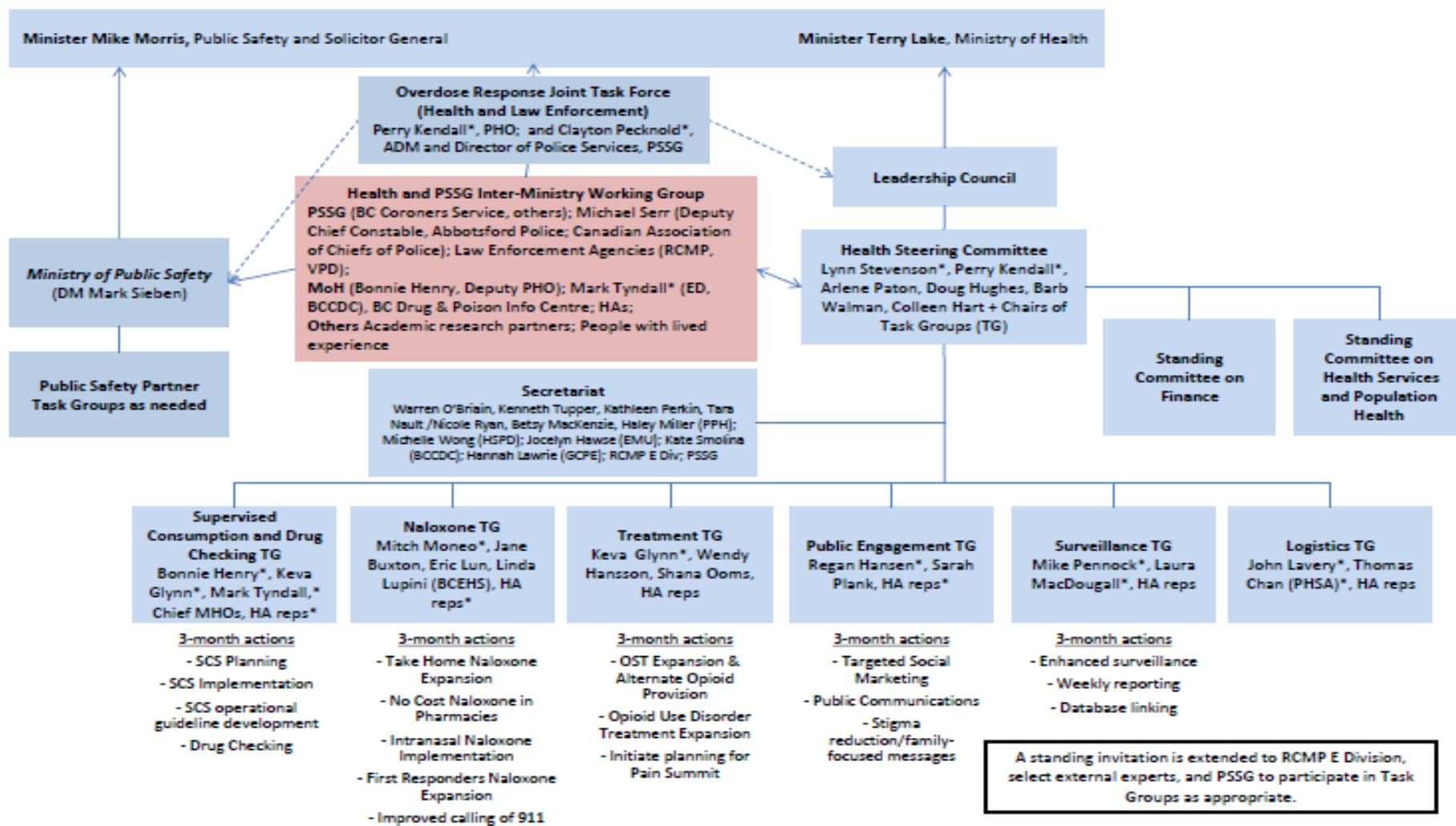
CALL 9-1-1



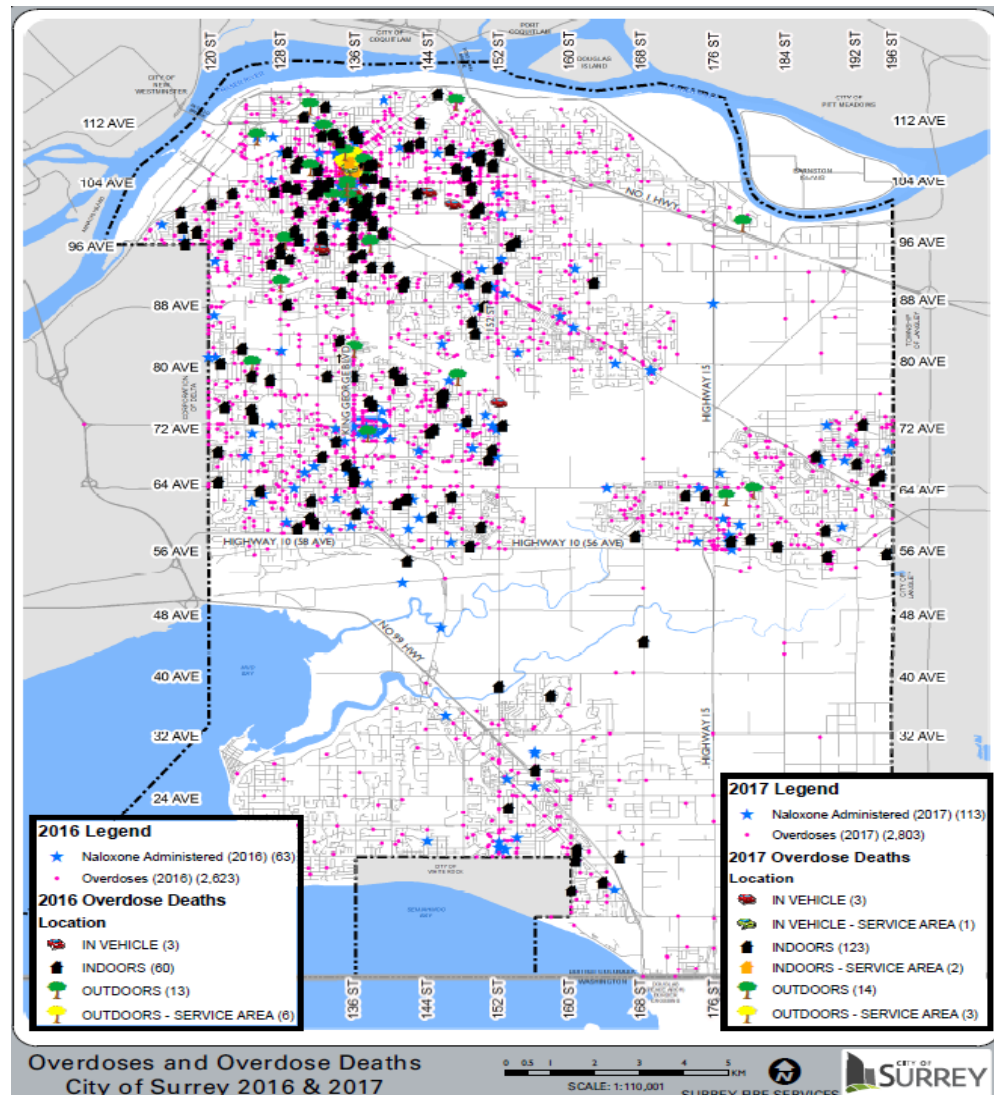
GIVE BREATHS

Overdose Awareness and Harm Reduction

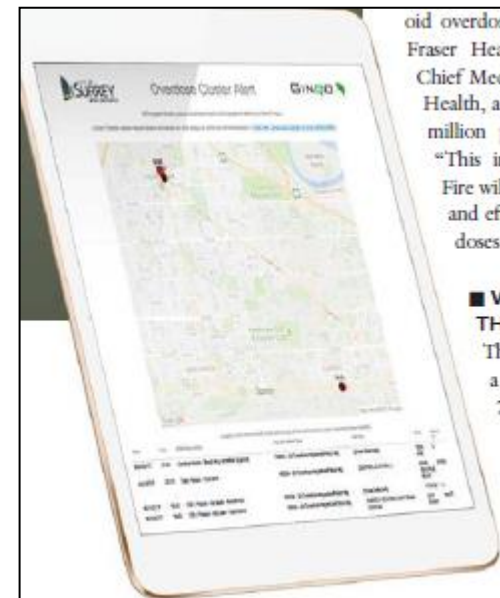
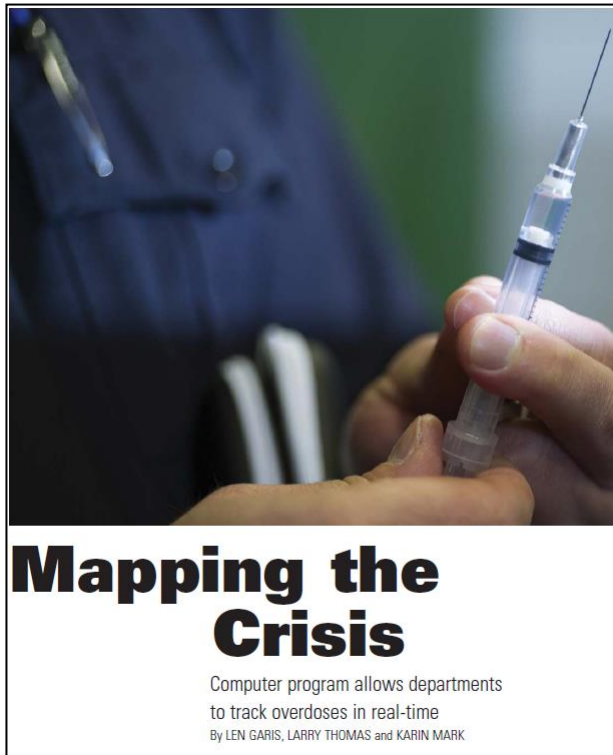
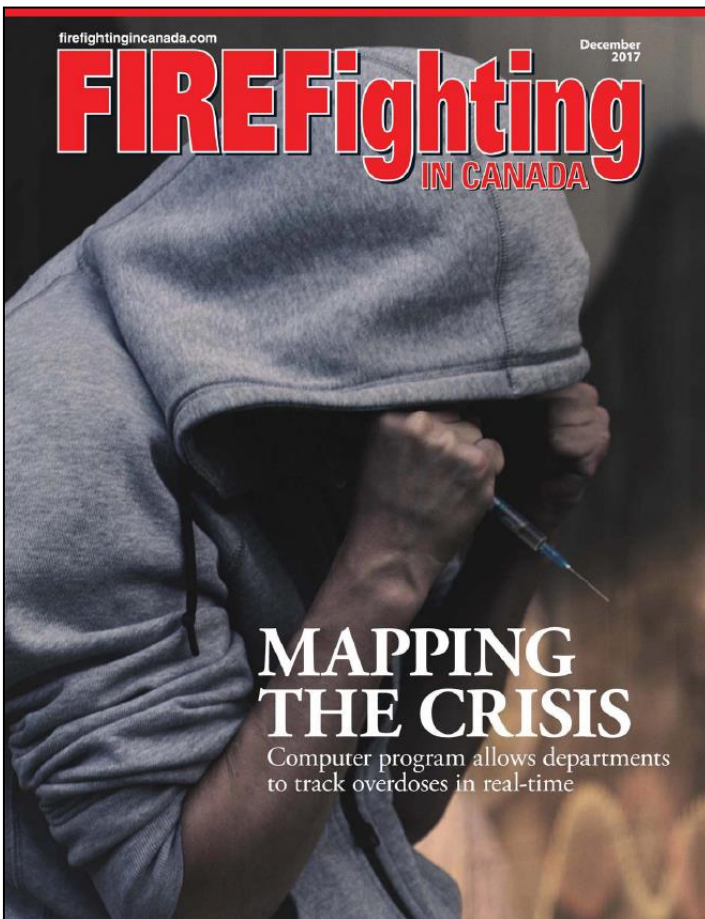
Governance Structure - Overdose Response Joint Task Force July 28, 2016



Two years (2016 – 2017), 5,426 overdoses / 228 deaths in Surrey



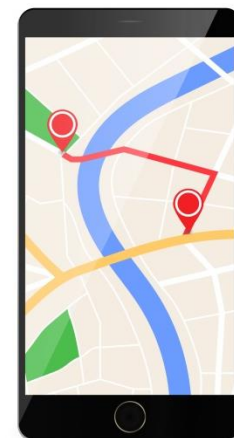
Technology: Mapping the Epidemic / Crisis



The Drug Overdose Situation

Surrey Fire Service developed a business intelligence crowdsourcing tool to identify the time, location, and details of overdose incidents happening in clusters within close proximity of each other.

The Overdose Cluster Analysis Application is based on fire incident data and has potential as a real-time, data-driven response to addressing the opioid crisis in the City.



Overdose Cluster Analysis Application

The application can identify clusters of 4 incidents occurring within a 1 kilometre distance over a 4 hour period.

It calculates a rate of overdoses X2 4 hours expressed at the 75th percentile over 2 years.



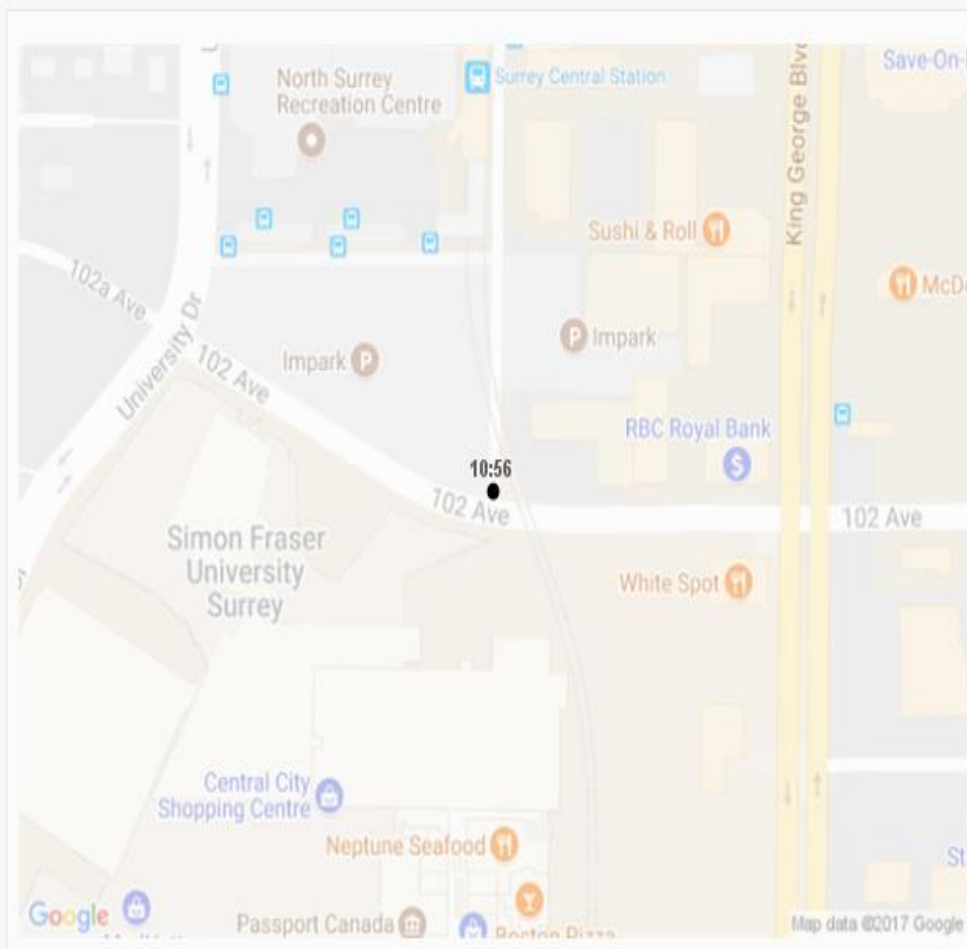


As Of Date 06/30/2017 11:00:00

#Matching Incidents in 4 hour window

As Of Date	# Incidents	Cluster Level	High City Wide
06/30/2017 11:00	1	1	-

Below Threshold (1 Incidents)



Incidents

1

Select Last Event

Last incident(s)

Jun 30, 10:56
0:07 hrs ago

Last (3+) cluster event detected

Jun 25, 03:00
128:20 hrs ago

Last (4+) cluster event detected

May 28, 00:00
804:11 hrs ago

Last city-wide 2x rate

May 30, 23:00
732:03 hrs ago

Incident ID	Inc Timestamp	Time	Colour	Min Ago	BCAS Description	Actual Incident Type	Building	Location	Street No	Street	# Incidents	Subsequent # Incidents
455619620	06/30/2017 10:56:11	10:56			03 OD / Poison - Unconscious - Intentional	[None selected]	[None Selected]	No	0	102 AVE	1	0



Level >=4
 Status eor
 As Of Date 05/28/2017 00:00:00

4+ Cluster Alert (4 Incidents)



Incidents

4

Select Last Event:

Last incident(s)

Jun 30, 10:56
0:17 hrs ago

Last (3+) cluster event detected

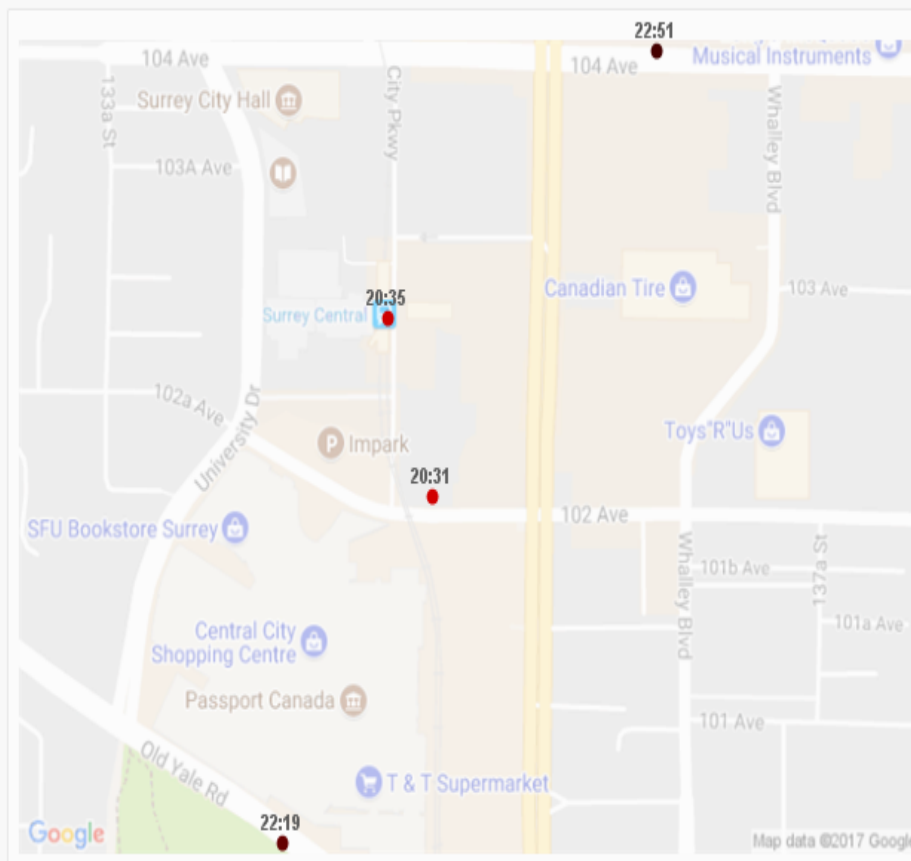
Jun 25, 03:00
128:30 hrs ago

Last (4+) cluster event detected

May 28, 00:00
804:21 hrs ago

Last city-wide 2x rate

May 30, 23:00
732:13 hrs ago



Incident ID	Inc Timestamp	Time	Color	Min Ago	BCAS Description	Actual Incident Type	Building	Location	Street No	Street	# Incidents	Subsequent # Incidents
											4	4
454738034	05/28/2017 02:49:12	02:49	-		OD / Poison - Unconscious - Intentional	[None selected]	MCDONALD'S	No	12930 96 AVE		0	1
454737237	05/28/2017 01:42:03	01:42	-		UC / Fainting - Unconscious - AGONAL/...	MESA - 23 Overdose/Ingestion/Poisoning		No	8956 151 ST		0	1
454736970	05/28/2017 01:27:28	01:27	-		OD / Poison - Not alert - Intentional	MESA - 23 Overdose/Ingestion/Poisoning	THE FRONT ROOM	No	10667 135A ST		0	1
454736587	05/28/2017 00:15:21	00:15	-		UC / Fainting - Unconscious - Effective b...	MESA - 23 Overdose/Ingestion/Poisoning		No	18303 56A AVE		0	1
454735030	05/27/2017 22:51:56	22:51	-	68	OD / Poison - Unknown status - Violent	MESA - 23 Overdose/Ingestion/Poisoning	PLAZA CITY CENTRE AP...	No	13655 104 AVE		1	0
454734358	05/27/2017 22:19:00	22:19	-	101	OD / Poison - Not alert - Intentional	MESA - 23 Overdose/Ingestion/Poisoning	HOLLAND PARK	No	13428 OLD YALE RD		1	0
454732025	05/27/2017 20:35:21	20:35	-	204	Breathing Probs - Abnormal breathing	MESA - 23 Overdose/Ingestion/Poisoning	NORTH SURREY RECRE...	No	10275 CITY PKWY		1	0
454731937	05/27/2017 20:31:13	20:31	-	208	Heart Problems/A.I.C.D - Clammy	MESA - 23 Overdose/Ingestion/Poisoning		No	13525 102 AVE		1	0



>2x City-wide Rate Alert (7 Incidents)



Incidents

7

Select Last Event:

Last incident(s)

Jun 30, 10:56
0:20 hrs ago

Last (3+) cluster event detected

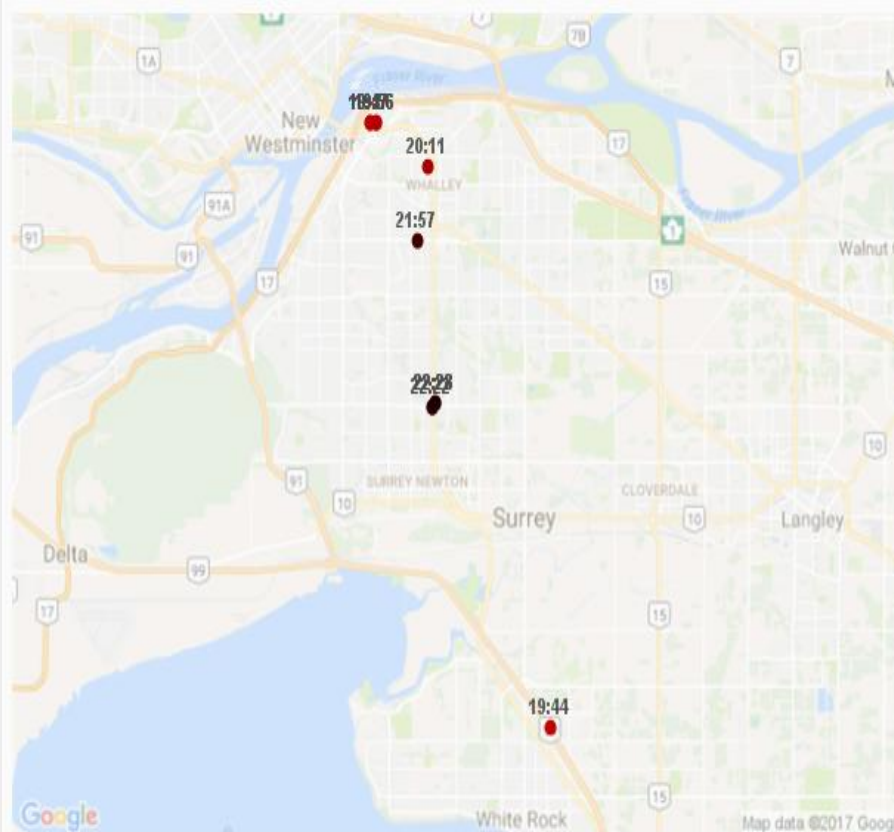
Jun 25, 03:00
128:34 hrs ago

Last (4+) cluster event detected

May 28, 00:00
804:25 hrs ago

Last city-wide 2x rate

May 30, 23:00
732:17 hrs ago



#Matching Incidents in 4 hour window

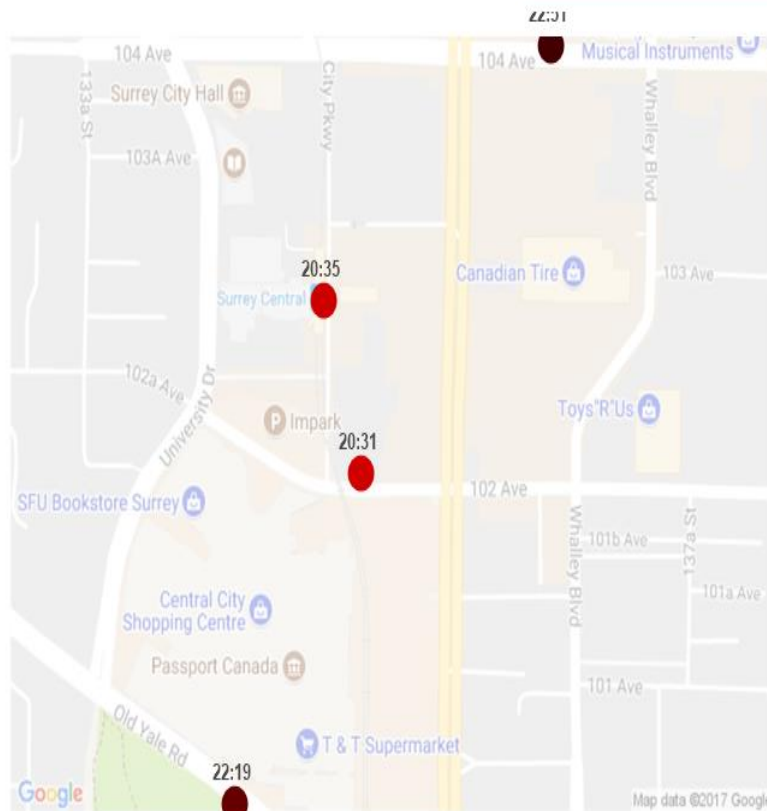
As of Date	Incidents	Cluster Level	High City Wide
05/30/2017 23:00	7	2	-1

Incident ID	Inc Timestamp	Time	Color	Min Ago	BCAS Description	Actual Incident Type	Building	Location	Street No	Street	Incidents	Subsequent # Incidents
454824528	05/30/2017 22:28:30	22:28		31	Convulsions/Seizures - Not seizing now /...	MESA - 23 Overdose/Ingestion/Poisoning	TIM HORTONS	No	7288 KING GEORGE ...		7	0
454824381	05/30/2017 22:22:51	22:22		37	OD / Poison - Not alert - Intentional	[None selected]	MCDONALD'S	No	13565 72 AVE		1	0
454823939	05/30/2017 21:57:08	21:57		62		MESA - 23 Overdose/Ingestion/Poisoning		No	13300 96 AVE		1	0
454821344	05/30/2017 20:11:34	20:11		168	OD / Poison - Not alert - Accidental	MESA - 23 Overdose/Ingestion/Poisoning		No	10660 CITY PKWY		1	0
454820686	05/30/2017 19:56:07	19:56		183	OD / Poison - Unconscious - Intentional	Unfounded Incident		No	0 113 AVE		1	0
454820188	05/30/2017 19:47:07	19:47		192	OD / Poison - Not alert - Accidental	MESA - 23 Overdose/Ingestion/Poisoning		No	12471 113 AVE		1	0
454820039	05/30/2017 19:44:04	19:44		195	Sick Person - ALTERED LEVEL OF CO...	MESA - 23 Overdose/Ingestion/Poisoning	CROYDON BUSINESS C...	No	2630 CROYDON DR		1	0

Overdose Cluster Alert

This report shows you an overdose event that happened within the last 4 hours.

Action: Please review results below to decide on next steps or continue review/analysis in [OlikView Overdose Cluster Analysis Application](#).



Locations are colour coded based on the age of the event (darker points happened more recently).

Date	Time	BCAS Description	Actual Incident Type	Building	Street	Street No
5/27/2017	22:51	OD / Poison - Unknown status - Violent	MESA - 23 Overdose/Ingestion/Poisoning	PLAZA CITY CENTRE APARTMENTS	104 AVE	13655
5/27/2017	22:19	OD / Poison - Not alert - Intentional	MESA - 23 Overdose/Ingestion/Poisoning	HOLLAND PARK	OLD YALE RD	13428
5/27/2017	20:35	Breathing Probs - Abnormal breathing	MESA - 23 Overdose/Ingestion/Poisoning	NORTH SURREY RECREATION CENTER	CITY PKWY	10275
5/27/2017	20:31	Heart Problems/A.I.C.D - Clammy	MESA - 23 Overdose/Ingestion/Poisoning		102 AVE	13525

Overdose Cluster Analysis Application

The use and application of this public health surveillance and response tool are many.

It can help to deploy first responders and or public health officials to better control the spread of a new overdose outbreak based on real-time operational data.



Overdose Cluster Analysis Application

With such foresight, emergency responses are faster and public health workers can reach people in distress with the appropriate resources based on the emergent need.

Potential victims can be provided with support and educational material to prevent and or mitigate harm from a surge of “bad drugs” flooding into specific areas of the City.

Overdose Cluster Analysis Application

The application can be used in the deployment of fire first responders, police, and public health officials to control an overdose outbreak in emerging new hotspots based on real-time operational data.



Overdose Cluster Analysis Application

The benefits are:

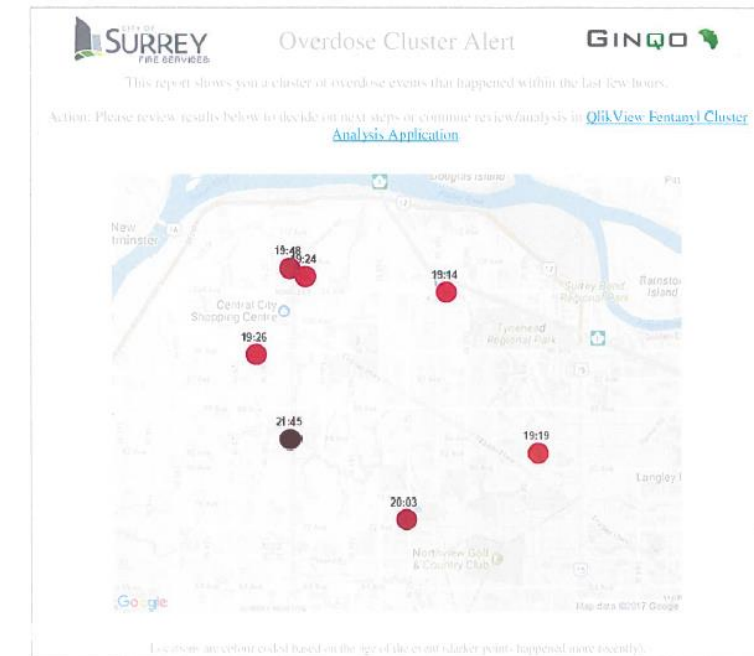
Emergency responses are faster and more effectively targeted.

Public health workers can reach persons in medical distress with the appropriate assistance.

Police can actively respond to drug trafficking.

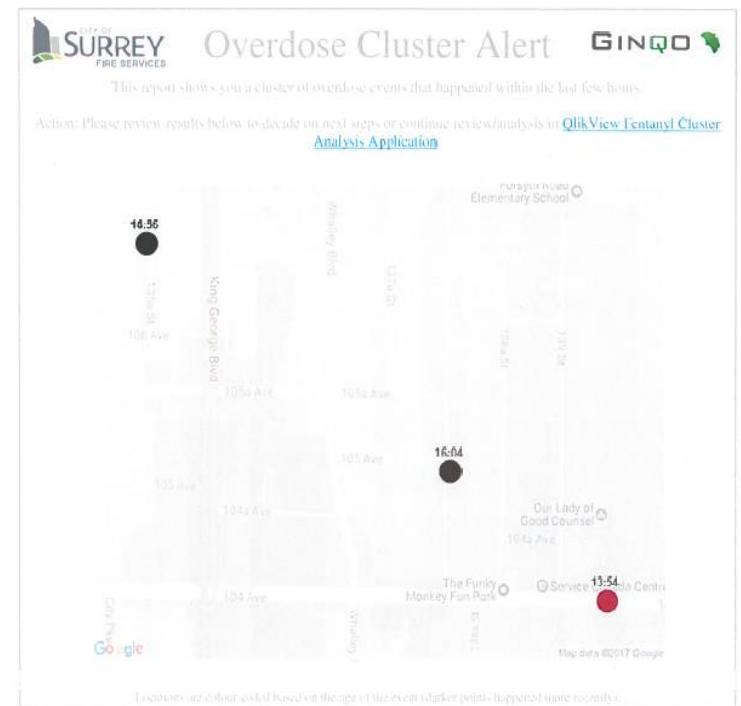
Mapping Real Time

Subject: Overdose Cluster Alert - City Wide 2x Rate [7 Incidents]



Incident	Time	BCAS Description	Actual Incident Type	Building	Street	Street No.
454234002	21:45	Cardiac Arrest - OBVIOUS / EXPECTED DEATH questionable	MESA - 09 Cardiac/Respiratory		84 AVE	13573
454232019	20:03	OD / Poison - Unconscious - Intentional	MESA - 23 Overdose/Ingestion/Poisoning		151A ST	7372
454231552	19:48	OD / Poison - Unconscious - Intentional	MESA - 23 Overdose/Ingestion/Poisoning	MULTI TENANT	135A ST	10715
454231191	19:26	OD / Poison - Not alert - Accidental	[None selected]		OBAN PL	9580
454231142	19:24	Cardiac Arrest - Not breathing at all	MESA - 23 Overdose/Ingestion/Poisoning		137A ST	10601
454230979	19:19	Cardiac Arrest - Breathing uncertain (agonal)	MESA - 32 Unknown Problem		170 ST	8218

Subject: Overdose Cluster Alert - 4+ Events Detected [4 Incidents]



Incident	Time	BCAS Description	Actual Incident Type	Building	Street	Street No.
454186541	16:36	OD / Poison - Not alert - Intentional	[None selected]	THE FRONT ROOM	135A ST	10667
454185714	16:04	OD / Poison - Cocaine methamphetamine (or derivatives) - Accidental	MESA - 23 Overdose/Ingestion/Poisoning		138 ST	10496
454184364	14:55	OD / Poison - Not alert - Intentional	[None selected]	THE FRONT ROOM	135A ST	10667
454182772	13:54	OD / Poison - Unconscious - Intentional	MESA - 23 Overdose/Ingestion/Poisoning	SURREY CENTRAL INN	104 AVE	13939

Report Schedule: This report is scheduled to run hourly.

This report was generated using [QlikView](#) and [NPrinting](#)

Report generated by [GINQO Support](#) or [GINQO Consulting](#) 878-449-2011

Recovery Houses

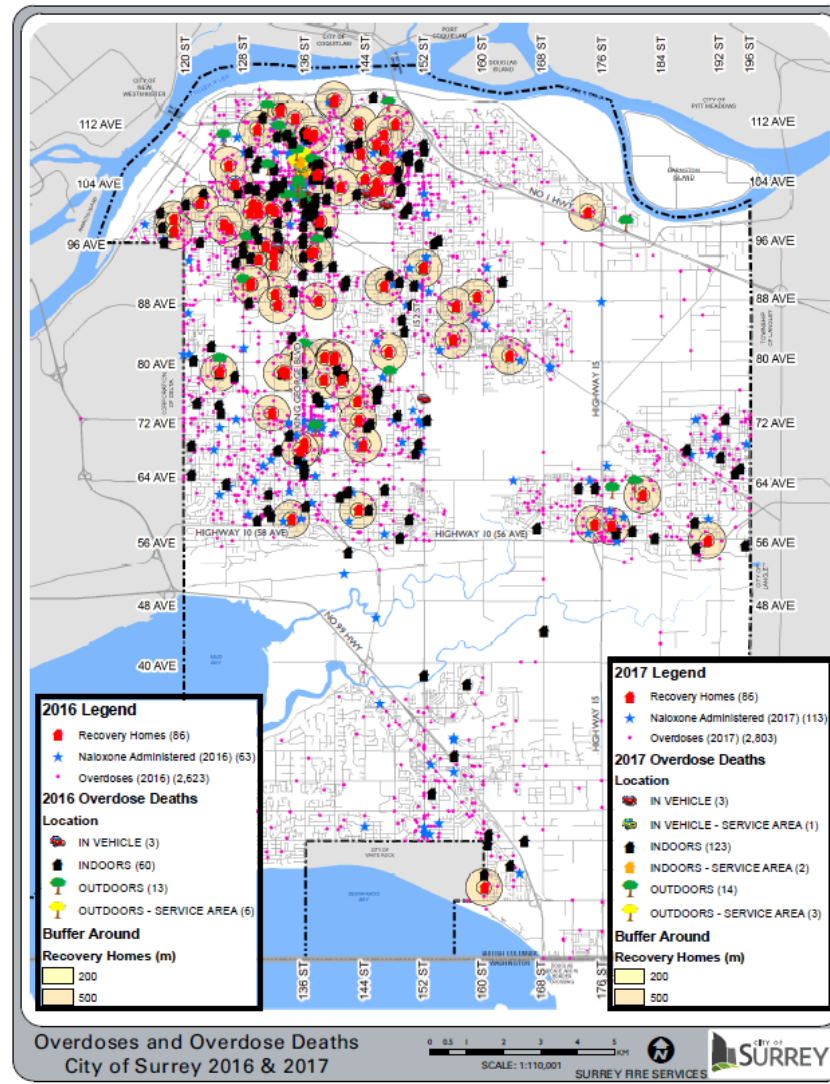
When registered and properly-managed, drug recovery houses can play a crucial role in supporting recovering addicts and their re-integration back into society after dealing with addiction issues.

Some privately-run, unregistered recovery houses operate with few internal controls and owners keep overhead costs at a bare minimum.

Understanding the Person: Overdoses, Drug Overdose Deaths, Naloxone Deliveries, and Recovery Houses

Overdoses and Overdose Deaths are clustering within a 200 to 500 metre radius of recovery houses

Research is underway to look at how property crime is correlated



Overdose Rates at Recovery Houses: 2016 - 2017

Increase of 33.7% in the OD rate from 2016 to 2017 / within 200 meters of a recovery home.

Increase of 52.3% in the OD rate from 2016 to 2017 / within 500 meters of a recovery home.



Overdose Death Rates at Recovery Houses: 2016 - 2017

Increase of 17.4% in the OD death rate from 2016 to 2017 / within 200 meters of a recovery home.

Increase of 45.3% in the OD death rate from 2016 to 2017 / within 500 meters of a recovery home.



Recovery Houses

This results in cutting corners and taking risks in order to fill the house with clients and maximize profits.

Clients are often left to run the recovery houses on their own with little, if any, direct care, supervision, and treatment.

Clients use illicit drugs at the recovery house, on the street, or in the area. Drug overdoses and drug-related fatalities cluster at or near these places.

Recovery Houses

Knowing the spatial distribution of overdoses and overdose deaths relative to problem recovery houses we intend to treat these locations in the following manner:

Applied Research
Prevention
Enforcement
Policy & Regulation



Sewage Epidemiology & Municipal Wastewater Testing

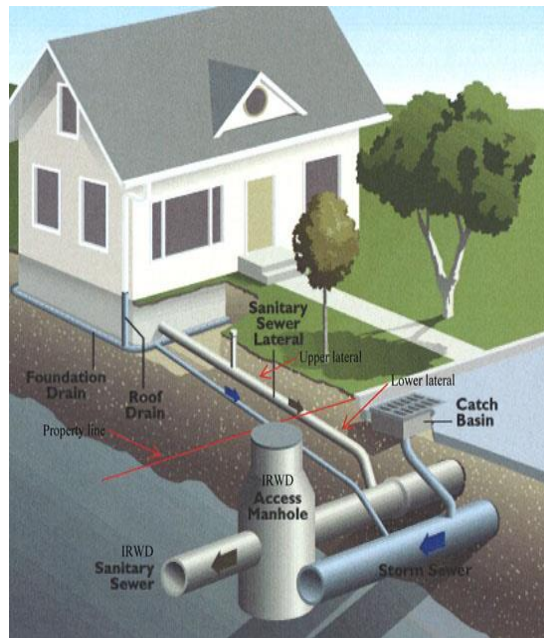
Municipal wastewater testing provides an opportunity to rapidly assess trends in opioid use and other illicit drug use, and to evaluate initiatives to curb drug consumption in communities.

Wastewater testing offers more comprehensive, objective, timely, and cost-effective measures of “illicit drug use” than are available from overdose statistics and drug-related crime data.



Sewage Epidemiology & Municipal Wastewater Testing

Wastewater testing provides an efficient means to identify areas with the greatest need for intervention and programs.

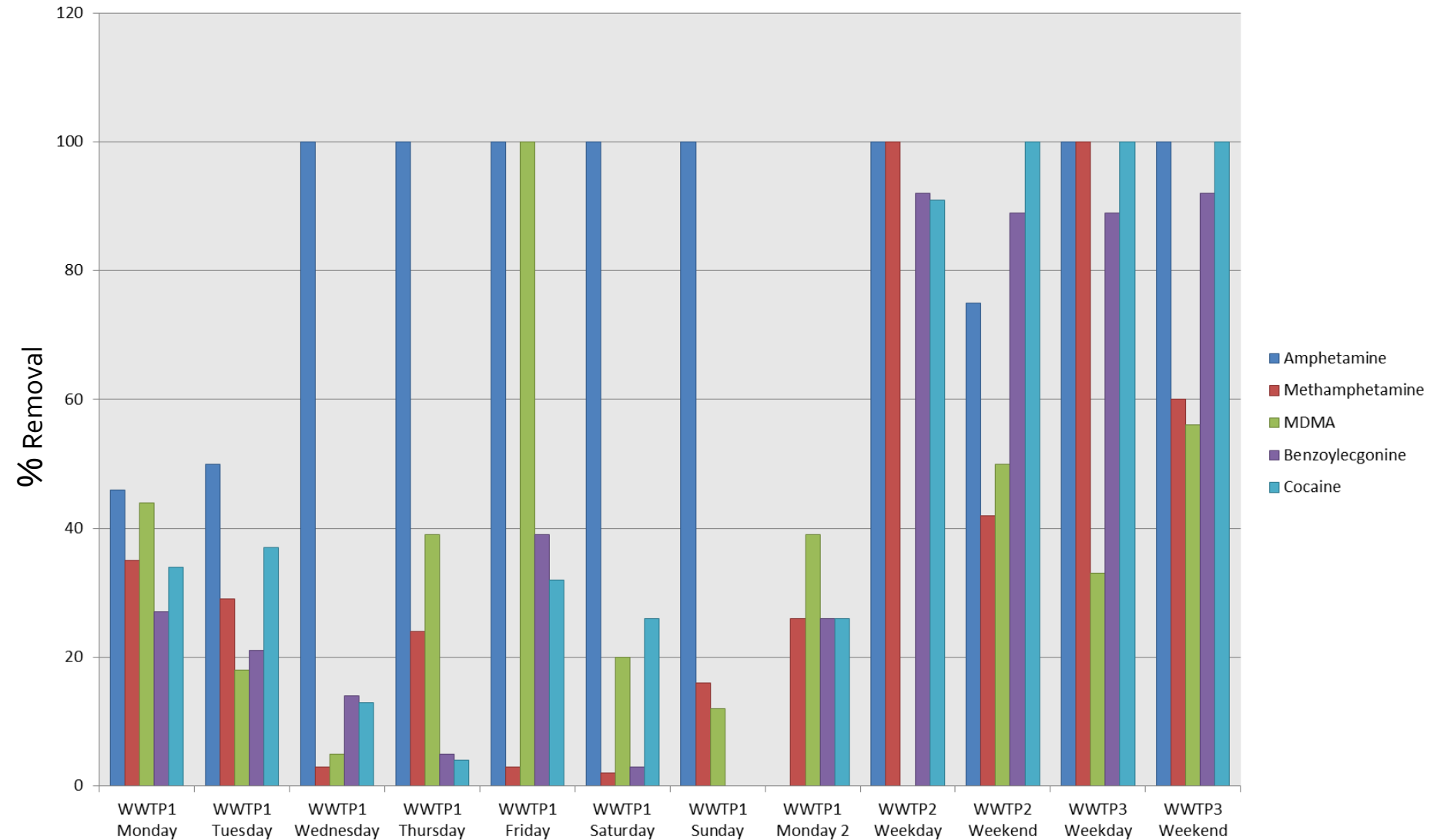


Sewage Epidemiology & Municipal Wastewater Testing

Wastewater analytics focus on quantifying levels of drug metabolites (compounds excreted in urine after the body breaks down a drug during metabolic processing).

This process measures concentrations of drugs actually ingested, rather than those flushed down the toilet, and replicated in a study of wastewater treatment plants (WWTP) in three Canadian cities.

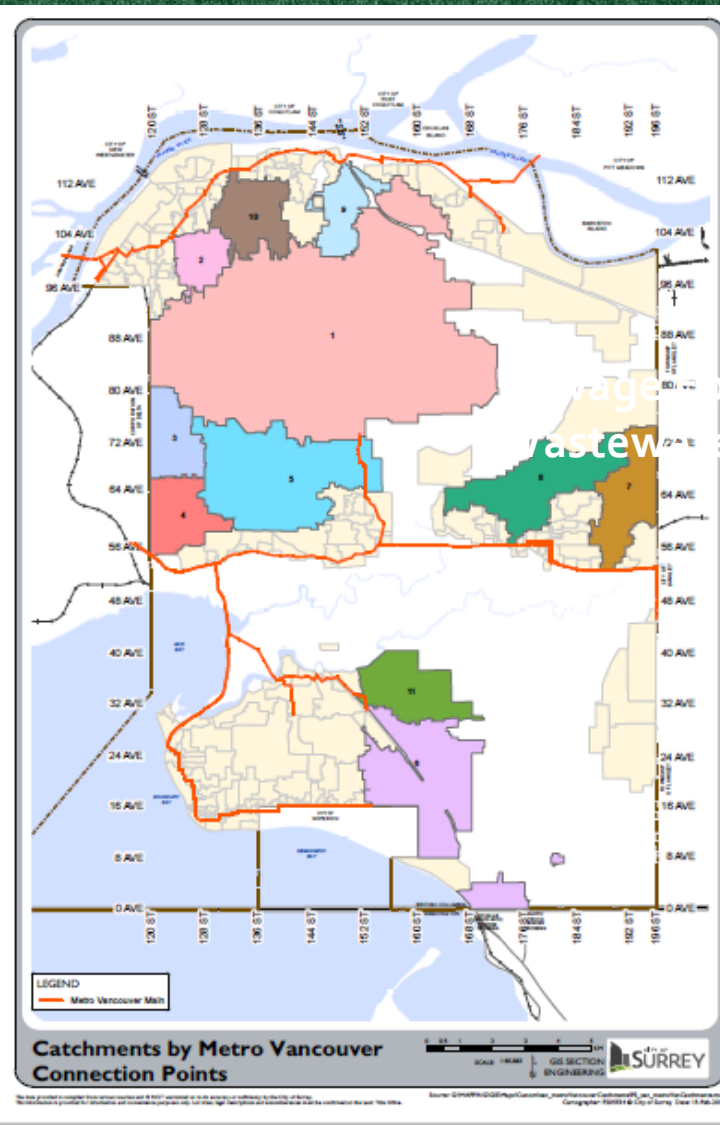
Sewage Epidemiology & Municipal Wastewater Testing



Map 1: The Region in Perspective



Sewage Epidemiology & Municipal Wastewater Testing





Understanding the person: Retrospective, profile who is overdosing / dying: Statistics Canada and City of Surrey

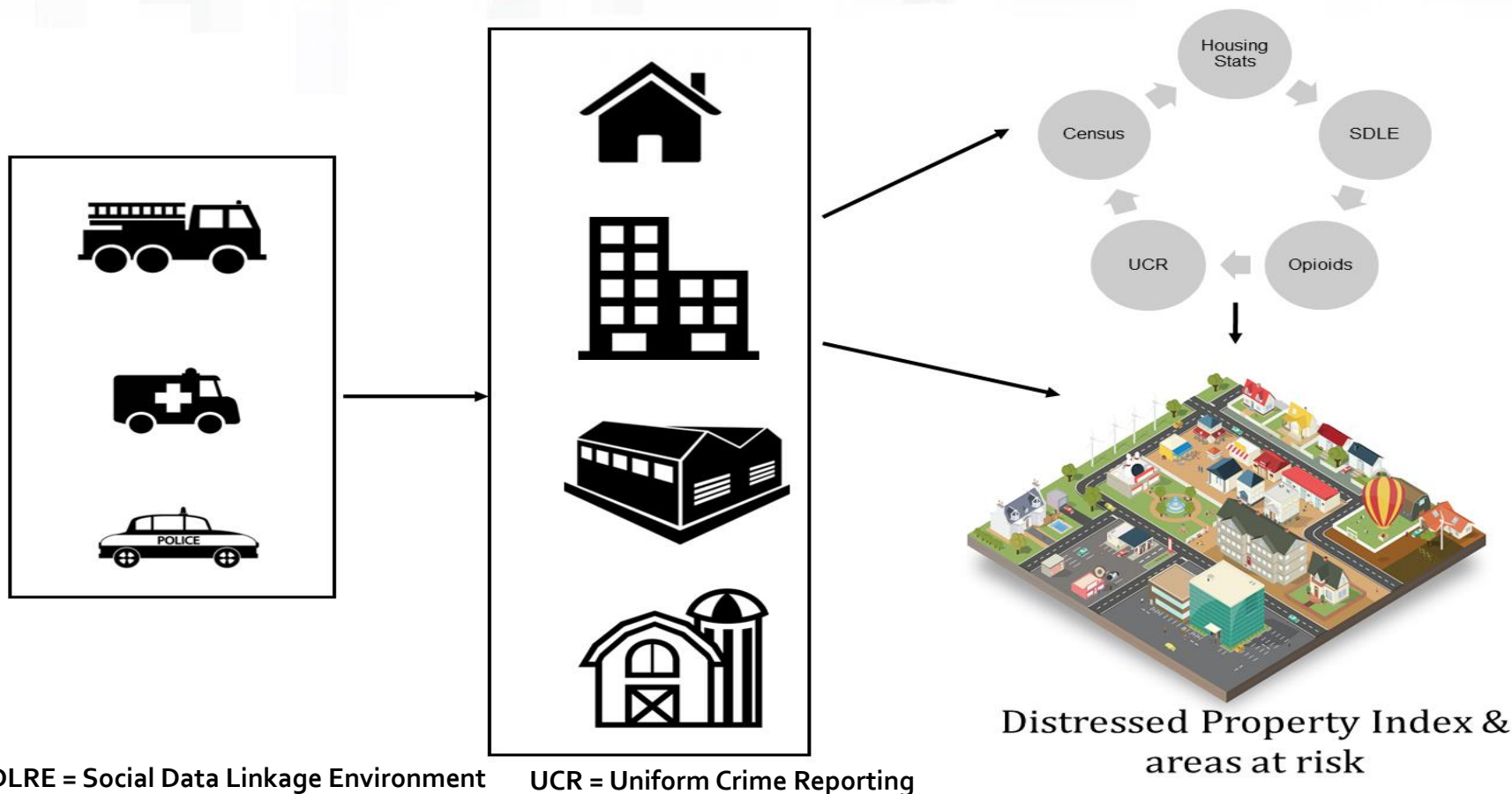


Statistics
Canada

Statistique
Canada

Canada

Local Mapping of Incidents: What's Possible



Understanding the person: Retrospective, profile who is overdosing / dying

Partnerships:

RCMP - Police – History – Contacts

Surrey Fire Service / Ambulance – Multiple Overdoes

Fraser Heath + Hospital + Physician + Pharmacy + Mental

BC Corner + Deaths

= Precision Policy and Programs specific to the “**Typology**” of the
overdoes victims

SDLE = Social Data Linkage Environment

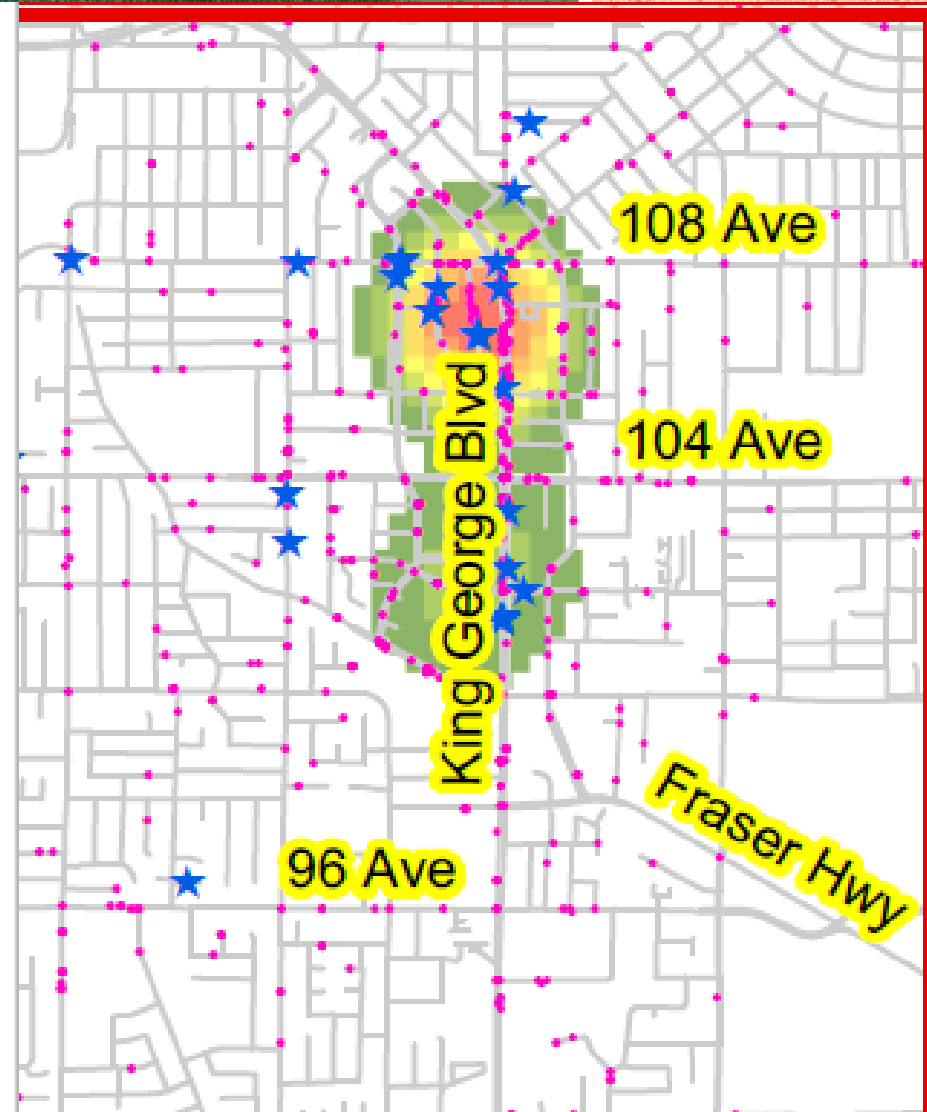
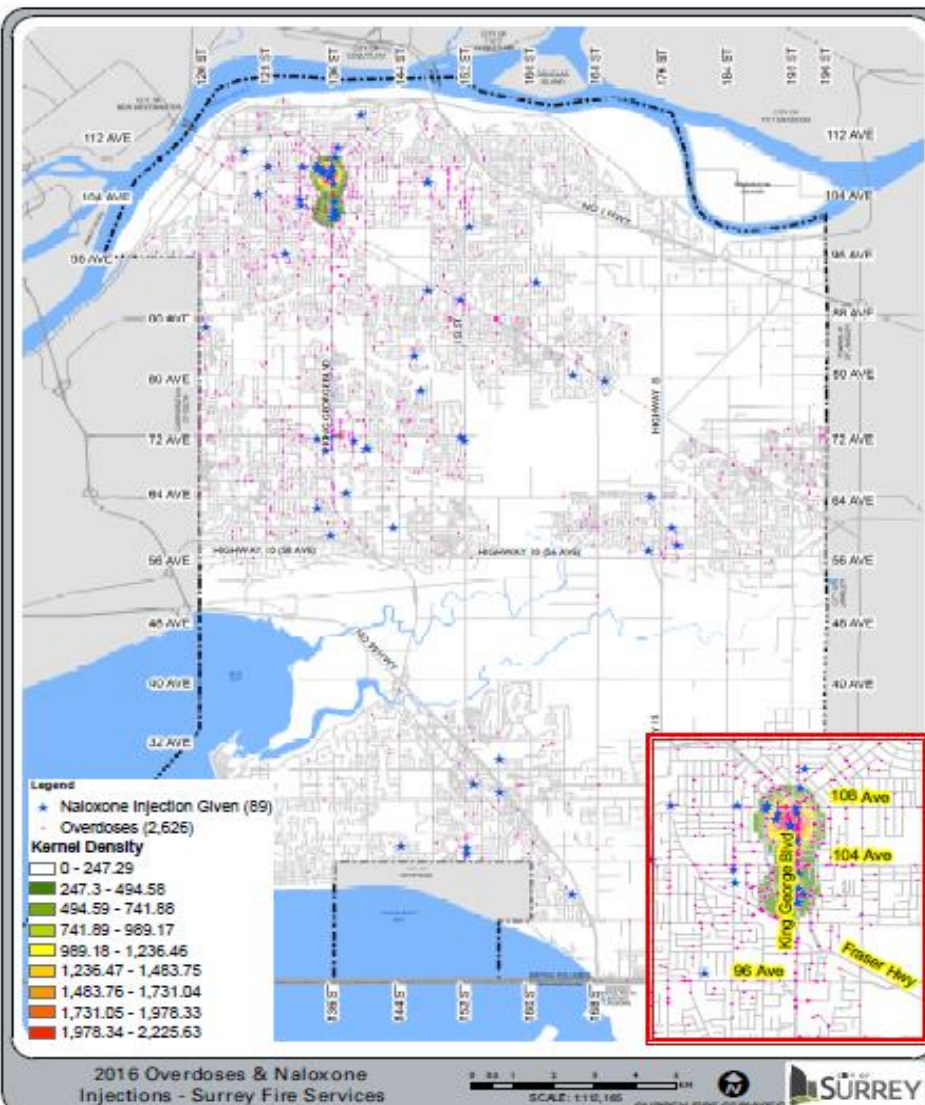
Supervised Consumption Sites & Illicit Drug Overdoses

SafePoint on 135A Street opened on June 8, 2017 and is operated in partnership with the Lookout Emergency Aid Society.

Quibble Creek Sobering and Assessment Centre on 94A Avenue began providing supervised consumption services to clients of the centre on June 20.



Supervised Consumption Sites & Illicit Drug Overdoses

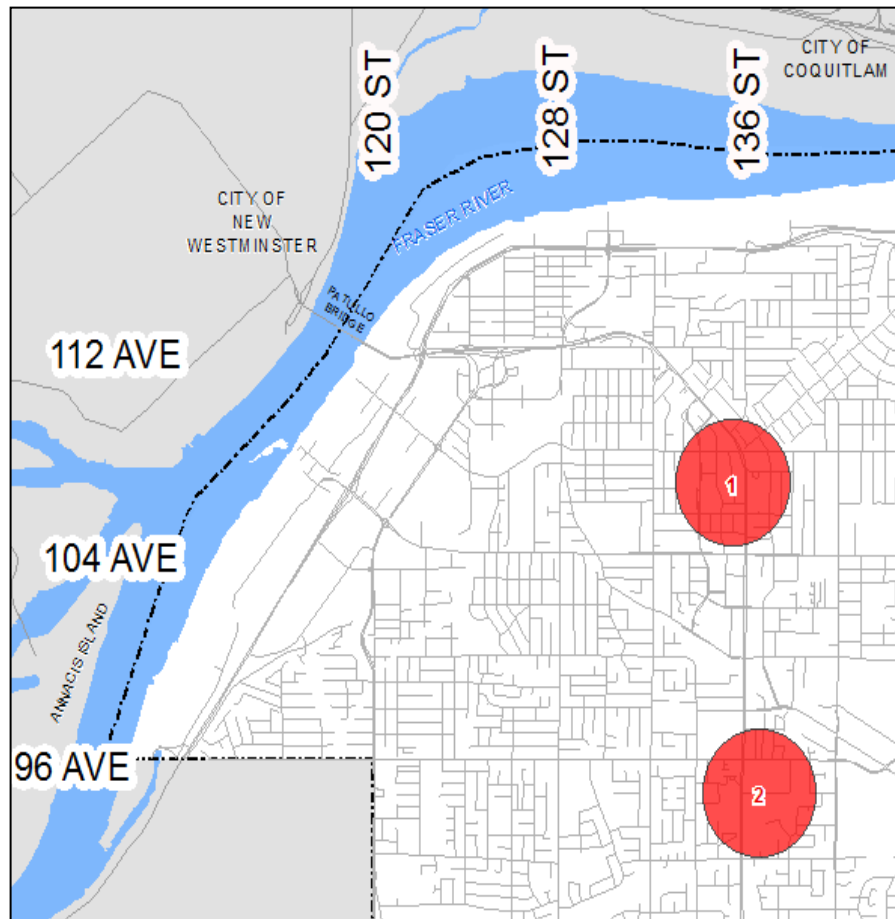


Supervised Consumption Sites & Illicit Drug Overdoses

The following images show a 6-month pre-period of illicit drug overdoses and drug-related fatalities occurring within a 500m buffer around the SafePoint and Quibble Creek facilities.

It also reveals a 6-month post-period of drug overdoses and drug-related fatalities occurring within the same defined area.

Supervised Consumption Sites & Illicit Drug Overdoses



SafePoint experienced a 42% reduction in drug overdoses occurring within the 500m buffer six-months after opening its doors. Drug-related fatalities have decreased in the area during this time.

Quibble Creek saw a 17% reduction in overdoses within the same defined area.

Supervised Consumption Sites & Illicit Drug Overdoses

	SafePoint	Quibble Creek
Map ID	1	2
# Overdoses Pre-Period	517	23
# Overdoses Post-Period	301	19
# Deaths Pre-Period	8	4
# Deaths Post-Period	3	1

The Building Trades Worker

WorkSafeBC, an agency responsible for insuring workers, are seeing a greater number of injured workers struggling with opioid dependency.

In Fraser Health, men aged 19-59 who work in the building trades have disproportionately been the victims of the opioid overdose epidemic.



The Building Trades Worker

There are increased risk factors for building tradespersons, such as greater exposure to injury, the transient nature of the work, financial pressures, and the demographics of the population.



The Building Trades Worker

Fraser Health analyzed 45,000 visits for 5,000 people who were treated for an overdose in its emergency departments.

They conducted a chart review of 90 men admitted to hospital after a serious, non-fatal overdose.



The Building Trades Worker

Men with Serious Non-Fatal Drug Overdoses: Common Themes



They live with others and require support



Higher rates of mental health issues compared to the general population



Found by a household member after overdosing



Physical trauma or pain was the common stressor



Nearly 75% had a diagnosed alcohol or substance use disorder



The most common industry they worked in was the building trades

The Building Trades Worker

- A hypothesis: Reverse engineer an injured worker's path into opioid abuse, looking at work history, clinical records, and prescription medications to create a profile.
- Once harms are understood, it is possible to target workers with anti-opioid interventions.



Questions?



<http://cjr.ufv.ca/>

