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BC Harm Reduction Strategies and Services

POLICY INDICATORS REPORT

REVIEW OF DATA TO DECEMBER 2019

Provincial Health Services Authority
Province-wide solutions. Better health.

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BCCDC HARM REDUCTION SERVICES

Acknowledgements

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Data Providers

BC CORONERS SERVICE

BC EMERGENCY HEALTH SERVICES

BC HEPATITIS TESTERS COHORT TEAM

BC PHARMANET

BCCDC HIV SURVEILLANCE TEAM

COMPASSION, INCLUSION, AND ENGAGEMENT PROJECT

OVERDOSE EMERGENCY RESPONSE CENTRE

PEER ENGAGEMENT AND EVALUATION PROJECT

PEER2PEER PROJECT

PROFESSIONALS FOR ETHICAL ENGAGEMENT OF PEERS

PROVINCIAL OVERDOSE COHORT TEAM

REGIONAL HARM REDUCTION COORDINATORS

REGIONAL HEALTH AUTHORITIES

Contents

List of Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
BC	British Columbia
BC-HTC	BC Hepatitis Testers Cohort
BCCDC	British Columbia Centre for Disease Control
BCCSU	British Columbia Centre on Substance Use
CIE	Compassion, Inclusion, and Engagement Project
DAA	Direct-Acting Antiviral
FNHA	First Nations Health Authority
FORB	Facility Overdose Response Box
gbMSM	gay, bisexul, and other Men who have Sex with Men
HA	Health Authority
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HRSS	Harm Reduction Strategies and Services
HSDA	Health Service Delivery Area
iOAT	Injectable Opioid Agonist Treatment (Injectable Hydromorphone)
OAT	Opioid Agonist Treatment
ODC	Provincial Overdose Cohort
OPS	Overdose Prevention Services
P2P	Peer2Peer Project
PEEP	Peer Engagement and Evaluation Project/Professionals for Ethical Engagement of Peers
PWID	People Who Inject Drugs
THN	Take Home Naloxone
WHO	World Health Organization

List of Figures

List of Tables

List of Text Boxes: 2018 Harm Reduction Client Survey

Executive Summary

Harm reduction is an approach to practice, policy-making, and programming that aims to minimize adverse health and socioeconomic consequences associated with substance use. Harm reduction services in British Columbia (BC) have evolved to include a variety of services and have expanded considerably in response to the sudden increase in fatal and non-fatal drug overdose events in 2016. Key measures to address harms associated with substance use have included distribution of sterile substance use equipment to prevent transmission of bloodborne pathogens; distribution of naloxone, operation of observed consumption spaces, and provision of opioid agonist treatment to prevent drug overdose; and engagement of people with lived and living experience (PWLLE) of substance use to ensure that harm reduction programming is accessible, acceptable, and equitable.

The BC Harm Reduction Strategies and Services (HRSS) Committee has had a central role in guiding harm reduction planning and policy in BC. The HRSS Committee continually works with partners and stakeholders to facilitate conversations and improve access to harm reduction initiatives throughout the province. The goals of the HRSS Committee are to: (1) reduce incidence of substance-related health and social harms, including transmission of bloodborne pathogens; (2) promote and facilitate referral to primary health care, addiction and/or mental health services, and social services; (3) reduce barriers to health and social services and raise public awareness of harm reduction principles, policies, and programs; and (4) ensure full and equitable reach of harm reduction programs to all British Columbians who use substances, providing education to inform decision-making. The aim of this report is to review key harm reduction indicators derived from the goals and guidelines of the HRSS Committee in order to assess progress and identify areas for improvement in provincial harm reduction programming and policy.

People who inject drugs are disproportionately affected by bloodborne illnesses, including hepatitis C (HCV) and HIV, due to risk of transmission associated with sharing substance use equipment. Despite increased HCV testing in BC, rates of newly identified HCV infections have decreased considerably since 2002. Similarly, new HIV diagnoses among people who inject drugs steadily decreased until 2015 and remained low until 2018. New HIV diagnoses among people who inject drugs were half that of people who acquired HIV through heterosexual contact and a quarter that of people who identified as men who have sex with men. While increasing testing among hard to reach populations continues to be imperative, the decrease in new HCV and HIV diagnoses reflects effective harm reduction and HCV/HIV prevention initiatives. Distribution of most substance use equipment increased each year since 2006, including distribution of over 18 million sterile needles and syringes in 2019. However, despite increased availability, gaps remain in needle and syringe distribution in many health regions. Improvements in reach of harm reduction supply distribution are necessary to ensure equitable access and prevention of HCV and HIV transmission.

Efforts to decrease rates of overdose events and deaths have increased significantly since declaration of a public health emergency in 2016 related to increased drug overdose fatalities. The Take Home Naloxone program has grown dramatically since its inception in 2012, corresponding with the opioid overdose emergency. In 2019, over 200,000 kits were shipped to 1,694 distribution sites across BC, including more than 700 community pharmacies. Additionally, 21,182 kits were reported as used to reverse an overdose in 2018 and 18,874 in 2019. The Facility Overdose Response Box program was also introduced in 2016 to allow overdose response by staff at not-for-profit community sites. Similarly, Overdose Prevention Services (OPS) were introduced in response to the opioid overdose emergency, and together with Supervised Consumption Sites (SCS) provide spaces in which people who use drugs can be observed and naloxone is available to reverse an overdose if it occurs. Access to observed consumption sites has steadily increased; at the end of 2019 there were 32 sites in BC with an average of 71,135 visits per month in 2019. Continued expansion of observed consumption spaces will be necessary to improve access in communities experiencing high rates of overdose in BC. Finally, opioid agonist treatment (OAT) has also become more widely available, largely as a result of guidelines recommending prescription of buprenorphine/naloxone for opioid use disorder. While overdose prevention measures have had a significant impact on reducing overdose deaths, further efforts are required to address the ongoing overdose crisis and the highly toxic illicit drug supply.

The HRSS Committee continues to support projects and initiatives that provide capacity building and engagement opportunities for PWLLE and peer-led organizations. Evolution of the Peer Engagement and Evaluation Project (PEEP) into the PEEP Consultation and Advisory Board, as well as introduction of a peer prioritization process for the Provincial Overdose Cohort will ensure that research, programming, and policy around substance use is relevant and addresses the needs of PWLLE. Additionally, ongoing projects and initiatives continue to address stigma and build capacity for people who use substances.

Introduction

Background

Harm reduction refers to a range of policies, programs, and practices that seek to prevent and reduce undue health, social, cultural, and economic harms from activities that may carry certain risks, including harms of substance use. These policies and practices are based on pragmatic and evidence-informed foundations and are guided by the core principle of harm reduction – every person should be treated with dignity, respect, and compassion, regardless of their circumstance. Harm reduction also aims to empower people who use substances, as well as families and communities to be safer and healthier. Respect of an individual's rights to self-determination is imperative; therefore, harm reduction efforts are applied objectively with the goal of decreasing adverse effects of activities that have risk through safer practices and providing equal access to services and resources. Access to harm reduction services and resources also creates an opportunity for people who use substances to engage with health services, support networks, and community programs.

Since 2003, the BC Centre for Disease Control (BCCDC) has been committed to moving forward harm reduction policies and practices through BCCDC Harm Reduction Services (1). BCCDC Harm Reduction Services oversees provincial strategies and supply distribution services in collaboration with people with lived and living experience of drug use (PWLLE), regional health authorities (HA's), the BC Ministry of Health, the BC Ministry of Mental Health and Addictions, and other provincial, regional, and community partners. BCCDC Harm Reduction Services actively engages with PWLLE to ensure that services offered are relevant, acceptable, and effective (2,3).

The two primary services delivered provincially through BCCDC Harm Reduction Services are the harm reduction supply distribution program, and the naloxone programs, including the Take Home Naloxone (THN) and Facility Overdose Response Box (FORB) programs (Figure 1). The harm reduction supply distribution program aims to reduce transmission of bloodborne pathogens through provision of supplies, resources, and education for safer drug use and safer sex. The THN and FORB programs aim to prevent and reduce the incidence of opioid overdose events and deaths through training individuals in overdose prevention, recognition and response, and distribution of naloxone.

Harm Reduction Services also leads evaluation and research that supports the development and improvement of evidence-based harm reduction best practice guidelines and policies in collaboration with PWLLE and other partners. Research conducted by Harm Reduction Services addresses service quality improvement, substance use patterns, stigma and discrimination towards people who use substances, and engagement of PWLLE or peers (people with lived and living experience who use that experience in their work). An overview of the programs, research, an online site finder, and resources are available on BCCDC Harm Reduction Services' website, Toward the Heart (4).

In the past four years, harm reduction services in BC have undergone significant transformation and scale up in response to the unprecedented increase in opioid overdose deaths in the province. In April 2016, BC's provincial health officer declared a public health emergency as the rate of opioid overdose events and deaths increased dramatically, largely due to the introduction of the potent synthetic opioid fentanyl in the illicit drug supply (5). From 2016 to the end of 2019 more than 5,000 individuals died due to an unintentional illicit drug overdose in BC (6). Initiatives to reduce overdose deaths have included the scale up of naloxone distribution (7); introduction of more observed consumption sites (including Overdose Prevention Services (OPS) and Supervised Consumption Sites (SCS)); increased availability of opioid agonist treatment (OAT) (8); and expansion of capacity building and engagement opportunities for PWLLE and peer-led organizations. Overdose deaths and paramedic attended overdose events in BC remain unacceptably high (6,9,10). The unpredictable illicit drug supply continues to present significant risk to people who use substances and requires a sustained availability of harm reduction programs, services, and support.

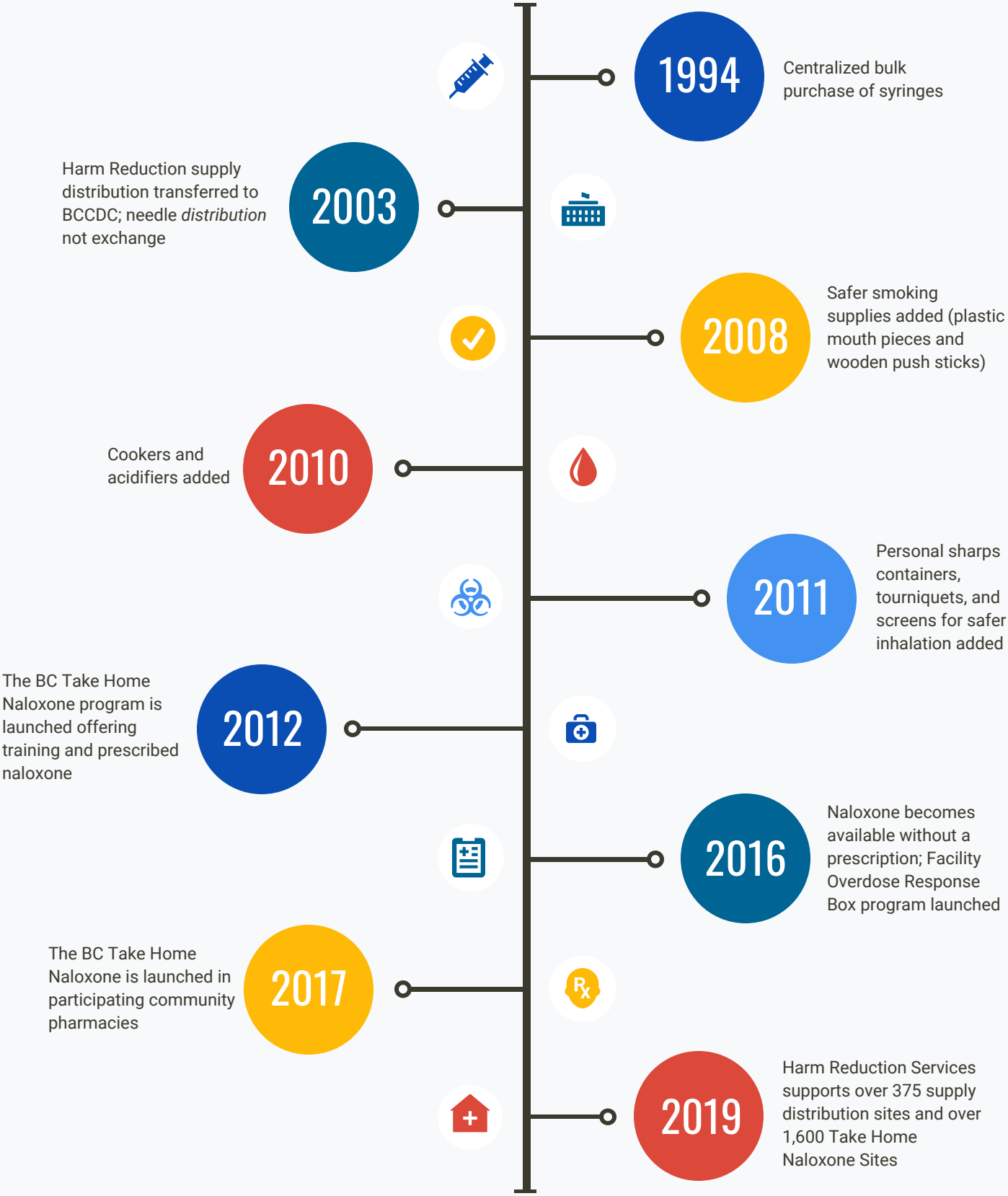


Figure 1 – A timeline of BCCDC Harm Reduction Services programs. Detailed harm reduction supply distribution, naloxone, and harm reduction perspectives timelines can be found on the Toward the Heart website (4).

The BC Harm Reduction Strategies and Services Committee

The BC Harm Reduction Strategies and Services (HRSS) Committee facilitates coordination and conversation around harm reduction work in BC by bringing together relevant key stakeholders, highlighted in Figure 2. The HRSS Committee guides the design and delivery of the provincial Harm Reduction Services program, making recommendations with respect to best practices and supply distribution, and supporting development of provincial guidelines disseminated by BCCDC. It also facilitates community capacity building by supporting harm reduction education across the province.

The HRSS Committee is committed to meaningful and authentic engagement of PWLLE and peers in decision-making with respect to developing and delivering harm reduction interventions related to substance use. Meetings with stakeholders, including PWLLE and peers, are held biannually to identify and address gaps, as well as highlight successes in harm reduction work taking place in BC. Throughout these discussions, the HRSS Committee develops and recommends policy to the Ministry of Health, the Ministry of Mental Health and Addictions, and the regional HA's that aims to bring about positive change in communities across the province. The vision of the HRSS Committee is to ensure British Columbians have access to evidence-based harm reduction strategies and services. Its four main goals are listed in Table 1. Further information about the HRSS Committee is available in the HRSS Policy and Guidelines (11).

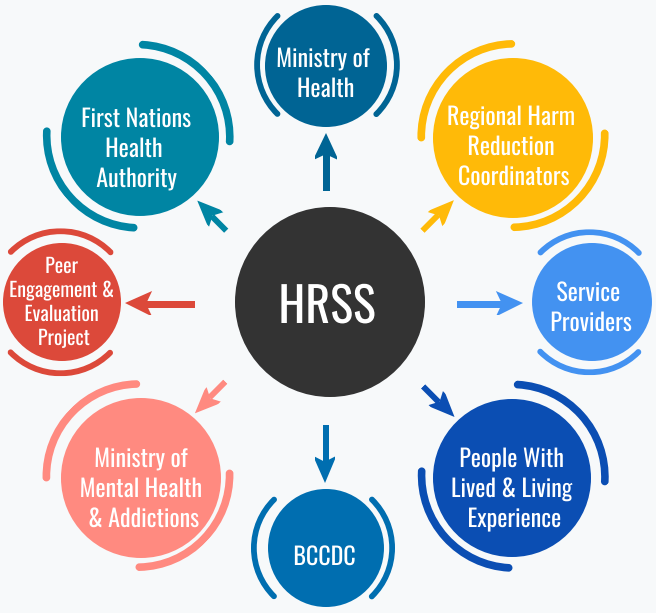


Figure 2 - Members of the BC Harm Reduction Strategies and Services Committee.

Table 1 - Goals of the BC Harm Reduction Strategies and Services Committee.

Goals
1. Reduce incidence of substance-related health and social harms, including transmission of bloodborne pathogens
2. Promote and facilitate referral to primary health care, addiction and/or mental health services, and social services
3. Reduce barriers to health and social services, including activities to reduce stigma and discrimination and raise public awareness of harm reduction principles, policies, and programs among those in the health systems, municipalities, and the public
4. Ensure full and equitable reach of harm reduction programs to all British Columbians who use substances, to provide education about health promotion and illness prevention to inform decision making

Report Objectives

The HRSS Committee previously published a Policy Indicators Report in 2017 (12). The current report aims to update data to the end of 2019 on available harm reduction policy indicators identified in the existing HRSS Policy and Guidelines (11) (currently under revision). This report has three specific aims:

1. Describe trends in the incidence of harms associated with substance use;

2. Describe trends in distribution of harm reduction supplies and other harm reduction measures;

3. Highlight new and ongoing peer engagement initiatives of the HRSS Committee that aim to reduce stigma and barriers to care for people who use substances.

BOX 1.1 | 2018 Harm Reduction Client Survey

Overview

Since 2012 BCCDC Harm Reduction Services has surveyed clients at harm reduction supply distribution sites across BC. The Harm Reduction Client Survey was introduced to obtain more comprehensive and province-wide information about drug use, related harms, stigma, and access to harm reduction services. Data from the survey is used to inform harm reduction planning, confirm emerging issues, and to evaluate and improve quality of harm reduction services. Findings relevant to harm reduction indicators are highlighted throughout this report. More information on the Harm Reduction Client Survey can be found on the BCCDC website (13).

Harms Associated with Substance Use

Transmission of Bloodborne Pathogens

Sharing of injection drug use equipment (such as needles/syringes, cookers, filters or water) and to lesser degree sharing smoking equipment (pipes, mouthpieces) can increase the risk of acquisition or transmission of bloodborne pathogens, including hepatitis C virus (HCV) and human immunodeficiency virus (HIV). Thus, people who inject drugs (PWID) are disproportionately affected by HCV and HIV which can contribute to advanced morbidity and mortality if uncared for.

Hepatitis C Virus (HCV)

Hepatitis C virus (HCV) is primarily transmitted through parenteral exposure to HCV-infected blood. HCV cases are determined through detection of antibodies against HCV (anti-HCV). HCV infection at diagnosis may be acute (transition from a negative to positive HCV antibody (anti-HCV) test result within 12 months) or chronic infection. The majority of newly acquired or acute HCV infections are due to sharing injection equipment; thus, PWID represent 80% of new HCV infections in BC (14–16). While 25% of HCV infections clear spontaneously, 75% become chronic (17). Chronic HCV infection is often asymptomatic making timely diagnosis and treatment difficult (18). Without appropriate care and treatment, HCV infection is associated with increased morbidity, including increased risk of cirrhosis and hepatocellular carcinoma, and increased mortality (15,19–24).

Early diagnosis and treatment of HCV infection can prevent HCV-related morbidity and mortality. The new direct-acting antiviral (DAA) drugs for HCV infection are well-tolerated, have short course of treatment, and are highly effective, with HCV cure rates approaching 95% (25–29). HCV infections are identified through laboratory testing of individuals with past or current risk factors for HCV (including injection drug use), to investigate symptoms of liver disease, or as a component of medical insurance testing (30).

Most HCV diagnostic testing (more than 95%) is performed at the centralized BCCDC Public Health Laboratory. HCV RNA can determine if the HCV is an active infection and is needed before treatment can be initiated. In January 2020, the BCCDC Public Health Laboratory introduced reflex HCV RNA testing for new anti-HCV positive cases to reduce delays in diagnosing active HCV diagnosis and treatment (31). For more information on HCV indicators reported, see Appendix A.1. Since 2002, the number of people that tested positive for anti-HCV for the first time has decreased in BC (Figure 3). The rate of first-time anti-HCV positive testers decreased from 86.2 per 100,000 population in 2002 (3,536 people) to 42.5 per 100,000 population in 2018 (2,123 people). The absolute number of first-time anti-HCV positive testers in BC remained stable since 2010.

The total number of people tested for presence of anti-HCV consistently increased between 2010 and 2018, with 268,807 people tested in 2018 (Figure 4). The increase in HCV testing is likely due to recommendations and goal-setting by the World Health Organization (WHO) to achieve global hepatitis elimination through increased prevention, diagnosis, and treatment following the introduction of highly effective DAA's (25,32,33). As HCV testing has increased, anti-HCV positivity rate has decreased to less than 1% since 2016 (Figure 4). However, despite increased testing, the absolute number of first-time anti-HCV positive testers has remained stable (Figure 3), potentially indicating effective HCV prevention initiatives.

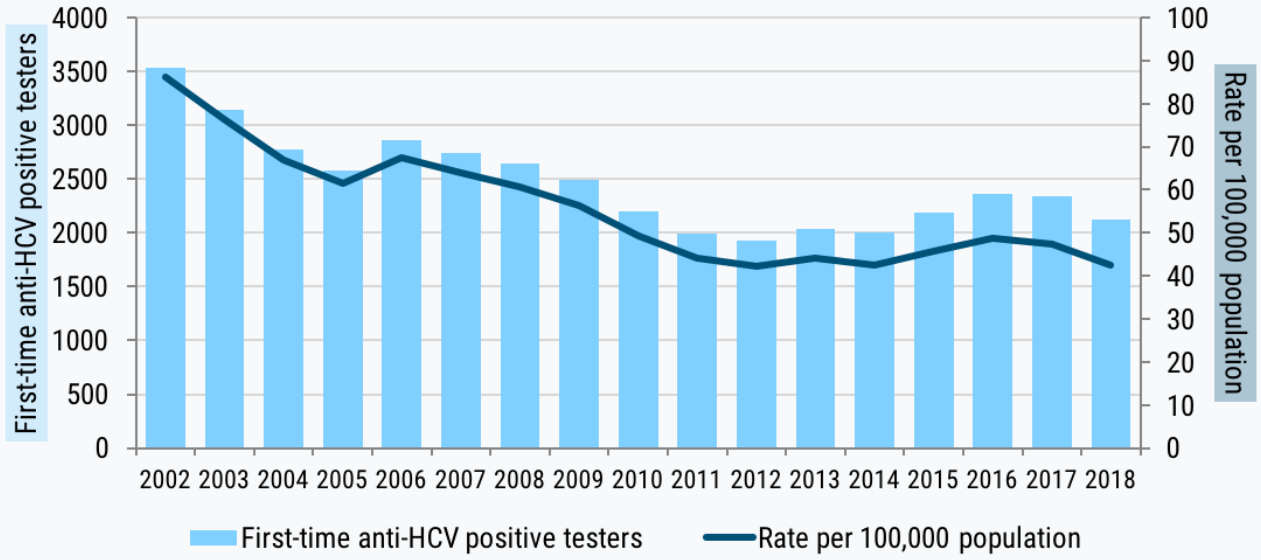


Figure 3 – Number of first-time positive HCV antibody (anti-HCV) testers and population rate per 100,000 in BC, 2002–2018.

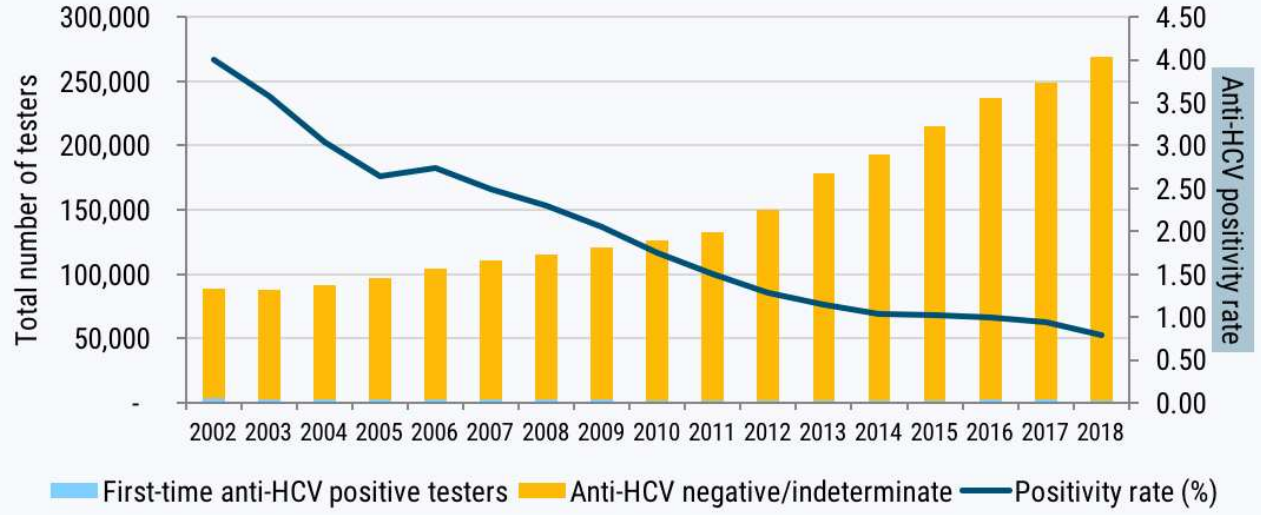


Figure 4 - Number of first-time positive and negative/indeterminate HCV antibody (anti-HCV) testers and HCV positivity rate in BC, 2002–2018.

Monitoring the rate of seroconversion from testing anti-HCV negative to testing anti-HCV positive provides another measure of incident HCV infection, often associated with activities that increase risk of HCV acquisition. The 24-month HCV seroconversion rate represents the number of individuals with a positive anti-HCV test result within 24 months of a prior negative test result as a proportion of all individuals who have previously had a negative or indeterminate anti-HCV test result within 24 months. Despite the increase in testing, the HCV seroconversion rate in BC has remained stable since 2010 at approximately 500 anti-HCV positive individuals within 24 months of a prior negative test per 100,000 repeat testers (Figure 5). The seroconversion rate decreased to 386 anti-HCV positive individuals per 100,000 repeat testers within 24 months in 2018. The number of first time anti-HCV positive testers, number of anti-HCV negative and indeterminate testers, anti-HCV tester positivity rate, and 24-month HCV seroconversion rate between 2002 and 2018 in BC is summarized in Table 2.

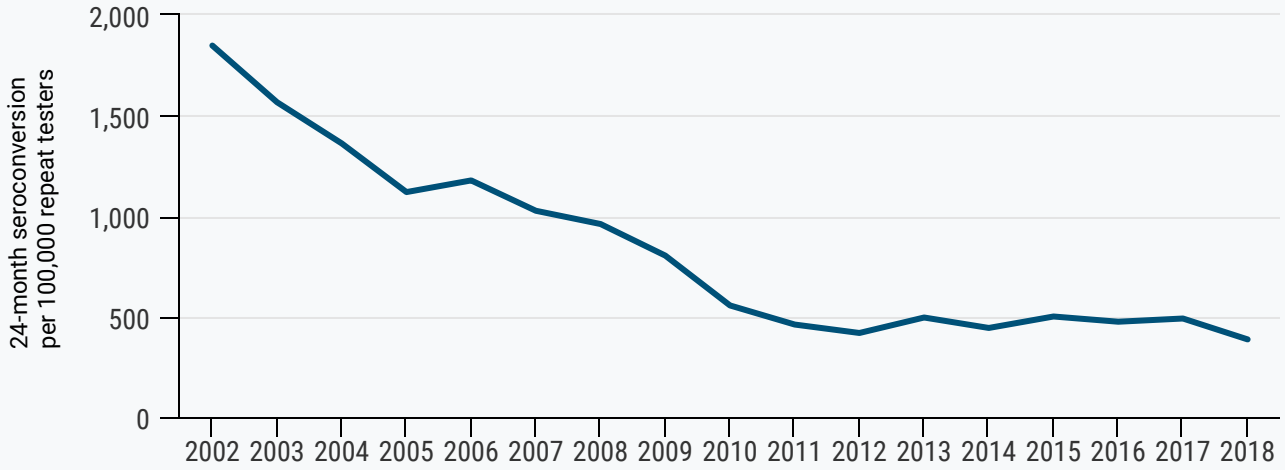


Figure 5 – 24-month HCV seroconversion rate per 100,000 repeat testers in BC, 2002–2018.

Table 2 – Number of first-time positive and number of negative and indeterminate HCV antibody (anti-HCV) testers, anti-HCV positivity rate, and 24-month seroconversion rate per 100,000 repeat testers in BC, 2002–2018.

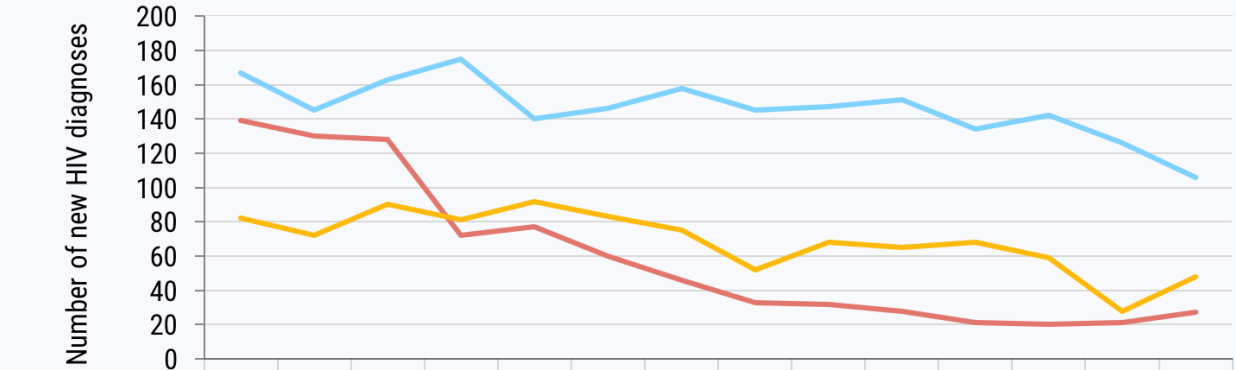
Year	First-time positive anti-HCV testers	Anti-HCV negative/ indeterminate testers	Anti-HCV tester positivity rate	24-month HCV seroconversion rate per 100,000 repeat testers
2002	3,536	84,737	4.01	1,848
2003	3,148	84,847	3.58	1,566
2004	2,778	88,750	3.04	1,361
2005	2,578	94,787	2.65	1,119
2006	2,856	101,464	2.74	1,177
2007	2,745	107,773	2.48	1,026
2008	2,644	112,500	2.30	960
2009	2,487	118,533	2.06	803
2010	2,201	123,655	1.75	555
2011	1,989	130,198	1.50	460
2012	1,931	148,397	1.28	418
2013	2,039	176,194	1.14	495
2014	2,004	190,647	1.04	443
2015	2,191	212,934	1.02	500
2016	2,364	234,315	1.00	474
2017	2,339	246,750	0.94	490
2018	2,123	266,684	0.79	386

Human Immunodeficiency Virus (HIV)

Transmission of HIV can occur through exchange of blood from sharing drug use equipment or through exchange of bodily fluids from sexual contact. Some people that acquire HIV infection may develop flu-like symptoms within the first two to six weeks; others may be asymptomatic for many years. While there is no cure for HIV, antiretroviral therapy (ART) can reduce the viral load to an undetectable level, reducing the risk of transmission, delaying onset of Acquired Immunodeficiency Syndrome (AIDS), and enabling people living with HIV to have longer, healthier lives.

The decrease in new HIV diagnoses in BC over the past decade has been largely attributed to the decrease in new HIV diagnoses among PWID (34,35). Figure 6 shows the number of new HIV diagnoses between 2005 and 2018 for three exposure groups: PWID; gay, bisexual, and other men who have sex with men (gbMSM); and people who have acquired HIV through heterosexual contact. Note that men who have sex with men who also use drugs are counted in the PWID group. While the number of new HIV diagnoses declined in all exposure groups, the decrease was greatest for PWID, starting in 2007 and stabilizing between 2013 and 2018. The proportion of new HIV diagnoses that were among PWID decreased from approximately 35% in 2005 to 14% (27 cases) in 2018. However, the number of new HIV diagnoses among PWID in 2018 reflects an increase compared to 2017 when there were 21 new diagnoses of HIV among PWID. For more information on HIV indicators reported here, see Appendix A.2.

The decrease in incidence of HIV among PWID has resulted from a combination of factors acting simultaneously to prevent and treat HIV (35). This includes: increased uptake and expansion of ART; increased availability of a variety of harm reduction services (needle/syringe distributions, opioid agonist treatment, supervised consumption services); and changes in drug use patterns (type of drug and route of administration).



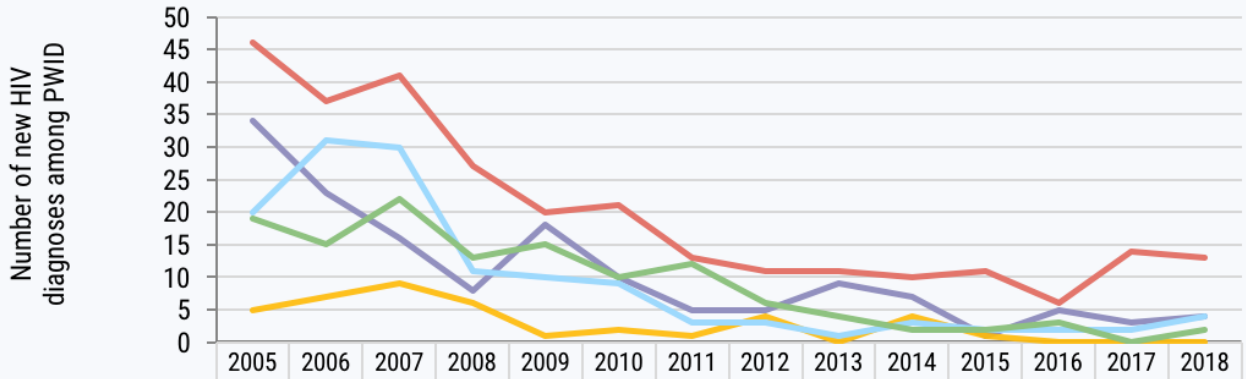
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PWID	139	130	128	72	77	60	46	33	32	28	21	20	21	27
gbMSM	167	145	163	175	140	146	158	145	147	151	134	142	126	106
Heterosexual	82	72	90	81	92	83	75	52	68	65	68	59	28	48
BC	400	361	391	347	337	300	288	237	265	261	240	241	183	198

Figure 6 – Number of new HIV diagnoses in BC by exposure group, 2005–2018.[1,2]

1. Diagnoses with no identified risk, unknown exposure, or exposures other than those indicated are not shown here but are included in the BC total.
2. Men who have sex with men who also use drugs are counted in the PWID exposure group.

New HIV diagnoses among PWID in each health authority are shown in Figure 7. Since 2015, there were five or less new HIV diagnoses among PWID in each health authority, with the exception of Vancouver Coastal. Vancouver Coastal Health reached a low of 6 new cases in 2016, after which there was an increase with 14 and 13 new HIV diagnoses among PWID in 2017 and 2018, respectively.

New HIV diagnoses among PWID are shown by age group in Figure 8 and by gender in Figure 9. Most new HIV diagnoses among PWID in 2017 and 2018 were among people aged 40-59, with the least number of cases among those less than 25 years old. The number of new HIV diagnoses among PWID that identified as male and those that identified as female was the same in 2016. However, in 2017 and 2018 the number of new HIV diagnoses among PWID were approximately double in people that identified as male compared to people that identified as female.



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fraser	34	23	16	8	18	10	5	5	9	7	1	5	3	4
Interior	5	7	9	6	1	2	1	4	0	4	1	0	0	0
Island	20	31	30	11	10	9	3	3	1	3	2	2	2	4
Northern	19	15	22	13	15	10	12	6	4	2	2	3	0	2
Vancouver Coastal	46	37	41	27	20	21	13	11	11	10	11	6	14	13
BC	125	115	118	66	64	53	34	29	25	26	17	16	19	23

Figure 7 – Number of new HIV diagnoses among people who inject drugs in BC by regional health authority, 2005–2018.[1]

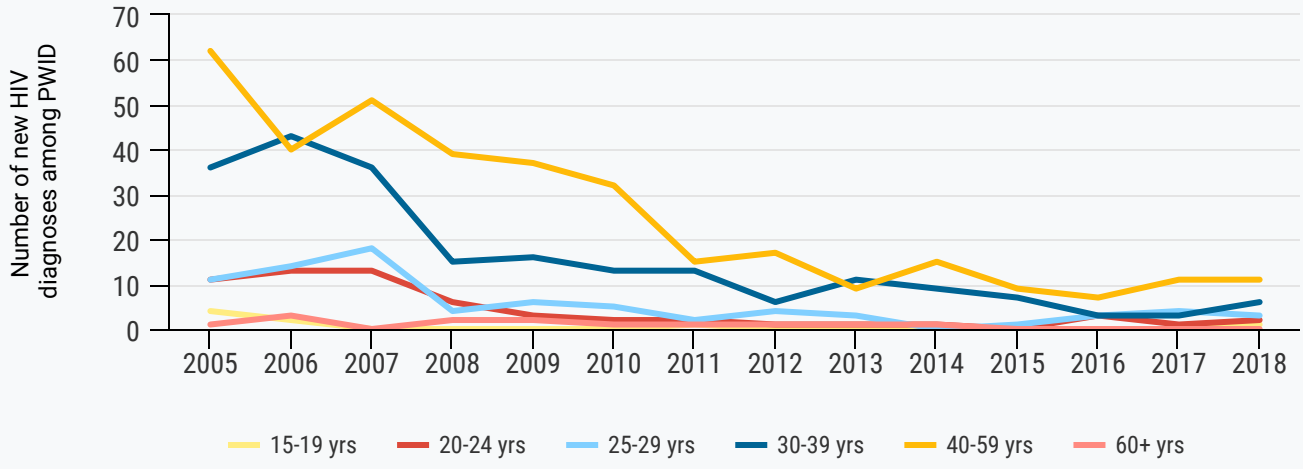


Figure 8 – Number of new HIV diagnoses among people who inject drugs in BC by age group, 2005–2018.

1. Cases where health authority was unknown or from outside of BC are not shown here but are included in the BC total.

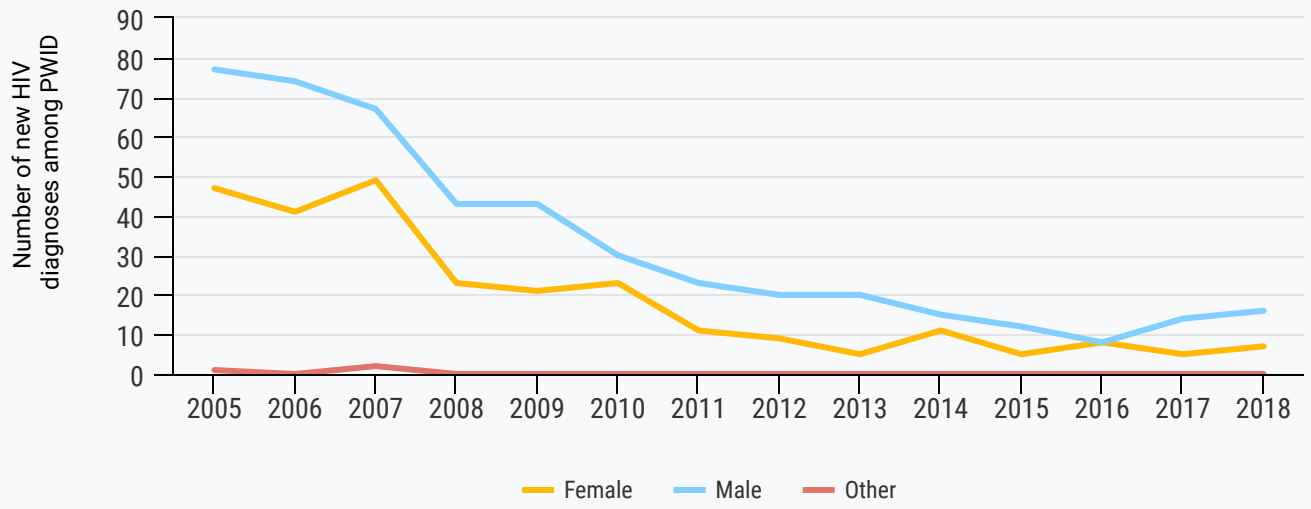


Figure 9 – Number of new HIV diagnoses among people who inject drugs in BC by gender, 2005–2018.

Overdose

BC has been in a state of public health emergency since April 2016 when there was a surge in opioid overdose events and overdose deaths, largely attributed to the introduction of synthetic opioids, namely fentanyl and its analogues, in the illicit drug supply (5, 6). Two primary indicators are used to monitor overdose in BC: paramedic-attended overdose events and illicit drug overdose deaths. Paramedic-attended overdoses are representative of overdose activity and acuity of overdose in BC, and are largely non-fatal events where there was a call to 911. In the case of overdose deaths, use of substances alone plays a role and most often 911 was not called (6).

Prior to 2015, there were less than 400 paramedic-attended overdose events each month (Figure 10), and less than 40 illicit drug overdose deaths each month (Figure 11). Over the next three years the number of paramedic-attended overdose events and illicit drug overdose events increased by as much as four times the amount prior to 2015. From late 2016 to present, paramedic attended overdose events have remained extremely high. The highest number of overdose events in a month was recorded in March 2019, with 1,539 paramedic-attended overdose events. 2019 was noted to have lower mortality than 2017 and 2018; however, as toxicity of the illicit drug supply is unpredictable this is unlikely to be a sustained trend, particularly as 911 call volumes continue to show high activity and severity. Thus, sustained support is necessary for people who use substances through provision of harm reduction services, treatment options, and a safer supply of drugs to prevent further harm from an unpredictable and quickly-changing drug supply.

The rate of overdose events and overdose deaths is higher among men than among women across all regions and all age groups. Males aged 19-59 represent nearly 65% of all paramedic attended overdose events, with the majority being among males aged 19-39. However, rates in women are still unacceptably high and there is some variation in the gap between men and women by region and age group. Additionally, First Nations people are affected disproportionately by overdose in BC. First Nations people represent 3.3% of the BC population but accounted for 9.9% of overdose deaths in 2019 (January to May) (36). Furthermore, First Nations women experienced overdose events and overdose deaths at 8.7 times the rate of non-First Nations women.

For more information on overdose indicators reported here, see Appendix A.3 and A.4, or refer to BC Overdose Response Indicators page found here (9).

Figure 10 – Number of paramedic-attended overdose events in BC, by month 2014–2019.

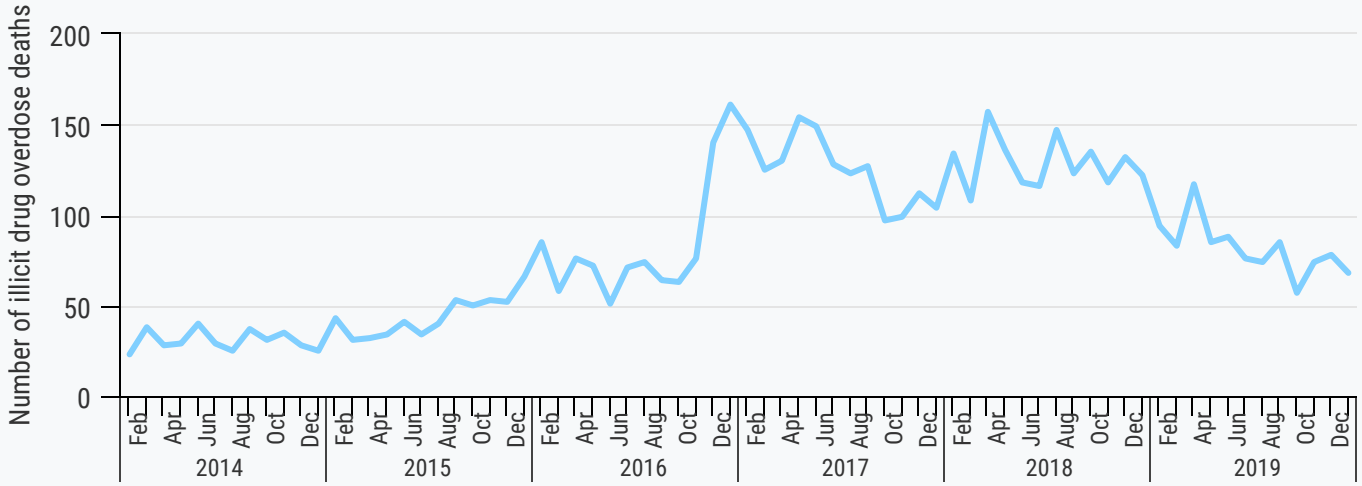


Figure 11 – Number of illicit drug overdose deaths in BC, by month 2014–2019.

Harm Reduction Measures

Harm Reduction Supply Distribution

Distribution of supplies for safer drug use and safer sex is integral in reducing the risk of transmission of bloodborne pathogens as well as providing an opportunity for people who use substances to access health and other services and be engaged in community supports. Sites registered through BCCDC Harm Reduction Services order and distribute a variety of harm reduction supplies including: needles/syringes, disposable cookers, sterile water ampoules, ascorbic acid, tourniquets, alcohol swabs, personal sharps containers, screens, push sticks, vinyl tubing, and condoms and lubricant.

BCCDC Harm Reduction Services and regional HA's work together to identify and support harm reduction supply distribution sites in a range of settings, including but not limited to: public health units; community organizations; Overdose Prevention and Supervised Consumption Sites; housing sites; hospitals; and First Nations sites (urban and on-reserve). As of December 31st, 2019 there were 393 registered harm reduction supply distribution sites across the province (Table 3). While this represents the number of registered sites that order and receive supplies, there are additional 'satellite' sites that access supplies from registered sites for further distribution, including mobile distribution sites that may distribute in areas outside of where orders are sent. Information on 'satellite' sites is not currently tracked by BCCDC Harm Reduction Services (see Appendix A.5 for data notes).

Table 3 – Number of registered harm reduction supply distribution sites in BC by regional health authority as of Dec. 31st, 2019.

Health Authority	Harm Reduction Supply Distribution Sites
Fraser	60
Interior	74
Island	80
Northern	29
Vancouver Coastal	150
Total	393

More information about harm reduction supply distribution in BC is available in the 2014 HRSS Policy and Guidelines (11) and on the Safer Sex and Safer Drug Use section of the Toward the Heart website (4). Canadian best practice recommendations regarding harm reduction supply distribution developed by partners across Canada are available on the CATIE website (37,38).

Safer Injection Supplies

Sterile Needles and Syringes

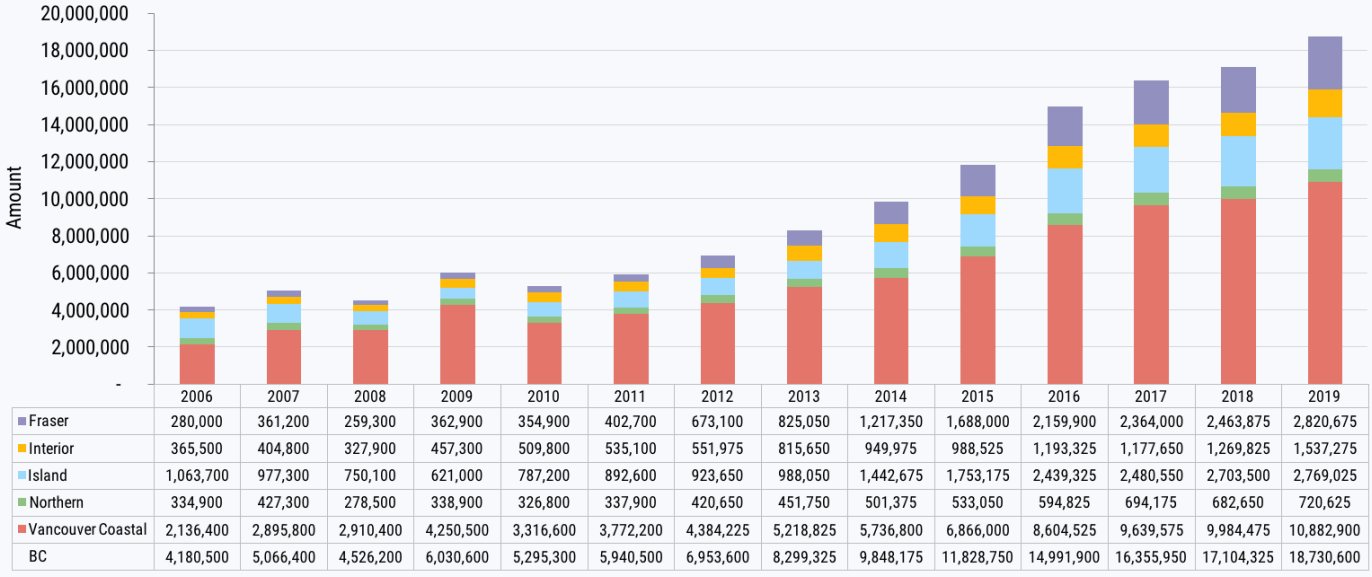
Sterile needles and syringes are distributed so that people who inject drugs may use a sterile needle/syringe for each injection thus, preventing sharing of needles or syringes and transmission of bloodborne pathogens. The number of needles/syringes ordered primarily refers to needle/syringe combinations, and to avoid double counting include syringes without needles attached but not needles alone. Syringes without needles make up a small proportion of total needle/syringe orders (1% in 2019).

The number of needles/syringes ordered in BC has increased each year. In 2018, a total of 17,104,325 needle/syringes were ordered, and in 2019, 18,730,600 needles/syringes were ordered – twice the amount ordered 5 years prior (Figure 12). While there was an increase in the number of needles/syringes ordered every year, the rate of increase slowed from a 20-30% annual increase between 2012 and 2016, to a 5-10% increase annually 2017 to 2019.

The increase in needle/syringe orders varied between the health authorities (HA's). In 2019, sites in the Interior Health area ordered more than twice the

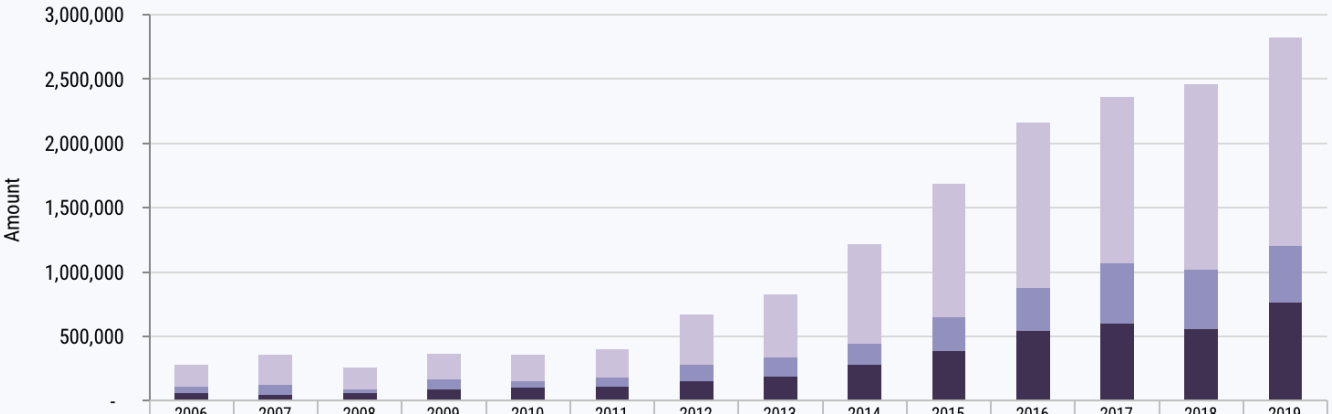
number of needles/syringes compared to 2014, while in other HA's the increase was 1.4-1.9 times. The increase in needle/syringe orders also varied within HA's. Needles/syringes ordered each year between 2006 and 2019 by each Health Service Delivery Area (HSDA) are shown in Figure 12 through Figure 16. Please note the vertical axis varies for each HA. A map of BC HSDA's is available in Appendix 2.

Needle/syringe orders by sites in the Vancouver Coastal Health geographic area continued to represent the largest proportion of needle/syringe orders in the province. In 2019, 58% of the needles/syringes ordered were ordered by sites in the Vancouver Coastal Health area, 15% by sites in Fraser Health area, 15% by sites in Island Health area, 8% by sites in Interior Health area, and 4% by sites in Northern Health area.



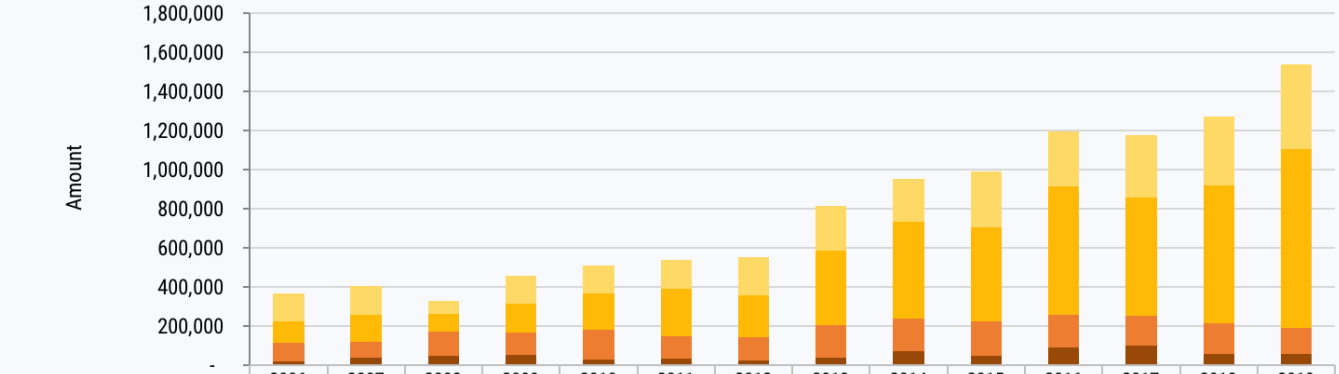
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	280,000	361,200	259,300	362,900	354,900	402,700	673,100	825,050	1,217,350	1,688,000	2,159,900	2,364,000	2,463,875	2,820,675
Interior	365,500	404,800	327,900	457,300	509,800	535,100	551,975	815,650	949,975	988,525	1,193,325	1,177,650	1,269,825	1,537,275
Island	1,063,700	977,300	750,100	621,000	787,200	892,600	923,650	988,050	1,442,675	1,753,175	2,439,325	2,480,550	2,703,500	2,769,025
Northern	334,900	427,300	278,500	338,900	326,800	337,900	420,650	451,750	501,375	533,050	594,825	694,175	682,650	720,625
Vancouver Coastal	2,136,400	2,895,800	2,910,400	4,250,500	3,316,600	3,772,200	4,384,225	5,218,825	5,736,800	6,866,000	8,604,525	9,639,575	9,984,475	10,882,900
BC	4,180,500	5,066,400	4,526,200	6,030,600	5,295,300	5,940,500	6,953,600	8,299,325	9,848,175	11,828,750	14,991,900	16,355,950	17,104,325	18,730,600

Figure 12 – Number of needles/syringes ordered in BC by regional health authority, 2006–2019.



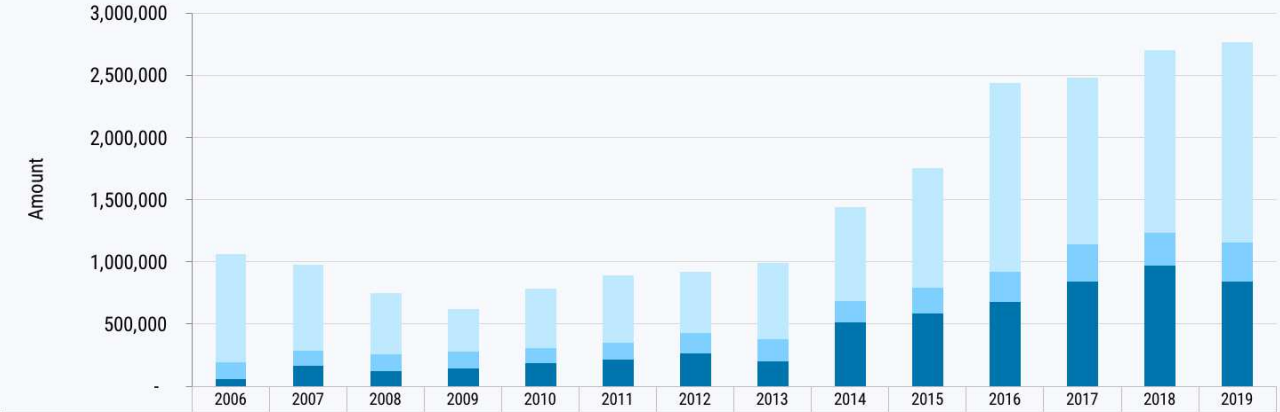
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser South	170,600	237,100	172,100	193,400	200,100	219,600	394,900	485,850	773,700	1,036,52	1,280,40	1,295,90	1,446,60	1,614,17
Fraser North	50,600	81,100	28,700	82,400	54,700	76,200	125,000	152,300	164,650	268,150	336,625	468,200	457,825	445,225
Fraser East	58,800	43,000	58,500	87,100	100,100	106,900	153,200	186,900	279,000	383,325	542,875	599,900	559,450	761,275

Figure 13 – Number of needles/syringes ordered by sites in Fraser Health by Health Service Delivery Area, 2006–2019.



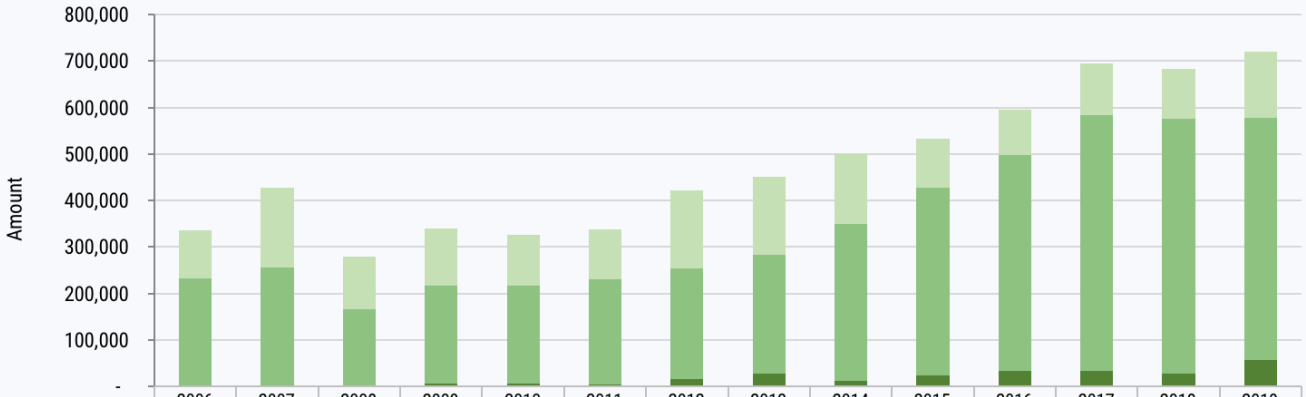
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Thompson Cariboo Shuswap	145,400	149,400	66,200	144,700	144,200	146,800	198,500	229,550	217,550	286,125	278,950	322,900	349,150	434,175
Okanagan	108,100	137,200	92,900	145,700	187,500	243,700	209,975	383,050	494,000	482,025	659,800	601,450	705,750	915,275
Kootenay Boundary	94,000	81,300	120,700	117,100	153,500	113,600	120,000	164,650	168,100	174,275	166,700	157,000	158,000	134,525
East Kootenay	18,000	36,900	48,100	49,800	24,600	31,000	23,500	38,400	70,325	46,100	87,875	96,300	56,925	53,300

Figure 14 – Number of needles/syringes ordered by sites in Interior Health by Health Service Delivery Area, 2006–2019.



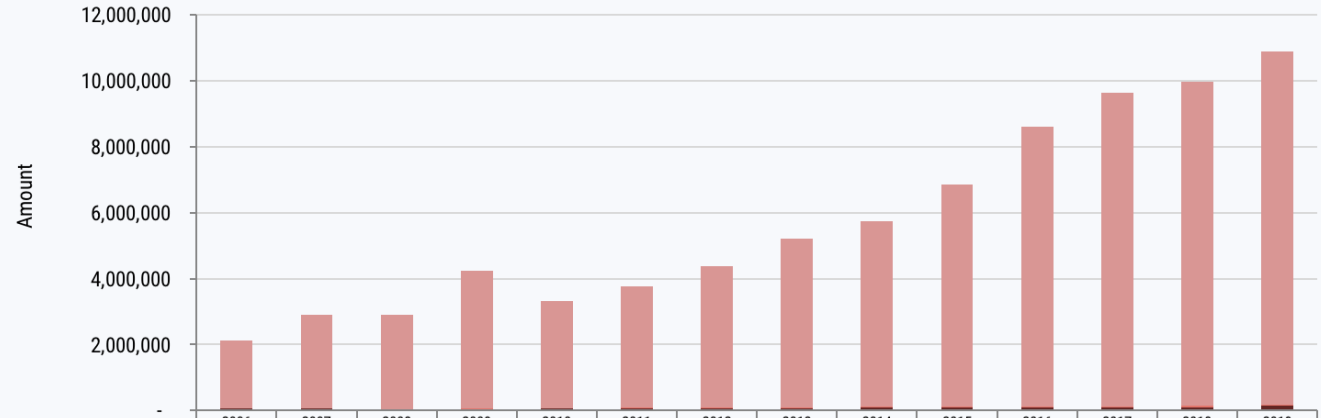
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
South Vancouver Island	871,500	689,700	490,900	341,700	476,600	545,100	495,525	610,000	755,275	962,475	1,515,80	1,341,62	1,466,75	1,614,62
North Vancouver Island	135,200	124,600	138,100	136,700	126,100	133,700	163,425	180,050	171,300	204,300	242,675	297,350	265,700	310,800
Central Vancouver Island	57,000	163,000	121,100	142,600	184,500	213,800	264,700	198,000	516,100	586,400	680,850	841,575	971,050	843,600

Figure 15 – Number of needles/syringes ordered by sites in Island Health by Health Service Delivery Area, 2006–2019.



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Northwest	101,600	170,700	112,300	122,900	109,500	107,500	167,500	168,200	151,800	106,550	97,750	110,350	106,900	142,500
Northern Interior	230,500	253,600	165,200	211,000	212,300	227,200	237,350	256,850	338,175	403,200	463,900	550,525	547,450	521,800
Northeast	2,800	3,000	1,000	5,000	5,000	3,200	15,800	26,700	11,400	23,300	33,175	33,300	28,300	56,325

Figure 16 – Number of needles/syringes ordered by sites in Northern Health by Health Service Delivery Area, 2006–2019.



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Vancouver	2,067,100	2,837,300	2,870,200	4,182,500	3,238,800	3,673,600	4,291,425	5,133,525	5,618,200	6,733,900	8,480,500	9,513,625	9,848,675	10,702,375
Richmond	11,000	7,000	10,500	19,500	23,000	30,000	16,500	17,400	21,900	31,300	30,325	22,600	30,400	21,400
North Shore/Coast Garibaldi	58,300	51,500	29,700	48,500	54,800	68,600	76,300	67,900	96,700	100,800	93,700	103,350	105,400	159,125

Figure 17 – Number of needles/syringes ordered by sites in Vancouver Coastal Health by Health Service Delivery Area, 2006–2019.

Reach of Needles/Syringes

Distribution of needles/syringes must be done in a way that is equitable and accessible, and reaches people who inject drugs (PWID) in all communities across BC. Based on linked administrative health data generated from the BC Hepatitis Testers Cohort (BC-HTC) (39), it is estimated that there were approximately 55,768 PWID in BC that had recent (past 3 years) injection drug use by the end of 2015 (Table 4). See Appendix A.6 for more information on the BC-HTC and PWID estimates derived from the BC-HTC.

Table 4 shows the estimated number of people with recent injection drug use by HA and gender. Among PWID in BC, 59% were male and 41% female based on administrative health records. Fraser Health is the HA that serves the largest population in BC; it is also estimated to have the largest population of PWID with 20,371 PWID with recent injection drug use. Conversely, the Vancouver Health Service Delivery Area (HSDA) has the largest number of PWID (11,761), making up 77% of the population of PWID in Vancouver Coastal Health and 21% of the overall population of PWID in BC (Table 5). The three HSDA's in Fraser Health make up the next largest numbers of PWID in the province after Vancouver HSDA.

BOX 1.2 | 2018 Harm Reduction Client Survey

Barriers in accessing safer injection supplies

Among 214 people that reported injecting drugs in the past month:

- 24% reported trouble finding unused needles
- 13% reported using with a needle used by someone else

Table 4 – Estimated number of people with recent injection drug use in BC by sex and regional health authority.

Health Authority	Female	Male	Total
Fraser	7,801	12,570	20,371
Interior	3,549	4,183	7,732
Island	4,166	4,983	9,149
Northern	1,513	1,606	3,119
Vancouver Coastal	5,568	9,632	15,200
Total	22,641	33,127	55,768

The number of needles/syringes distributed should reflect injection drug use practices to meet the need for sterile injection equipment for PWID. The World Health Organization (WHO) set targets for needle and syringe distribution programs to prevent transmission of bloodborne pathogens through sharing of injection equipment; 200 needles/syringes distributed per year per person who injects drugs by 2020, and 300 by 2030 (40). However, these estimates are designed to assess and monitor global development of needle and syringe programs, primarily in regions without comprehensive harm reduction programs. Thus, while BC met the WHO target for needle/syringe distribution with 336 needles/syringes ordered in 2019 per person who injects drugs (Table 5), this target may underestimate actual need in BC. Additionally, there were regional differences in needle/syringe distribution as in 2019, 9 of the 16 HSDA's in BC ordered less than 200 needle/syringes per person who injects drugs, and 14 of 16 HSDA's ordered less than 300 needle/syringes per person who injects drugs.

BC Harm Reduction Services recommends that clients receive sufficient needles/syringes to be able to use a

Table 5 – Estimated number of people who inject drugs (PWID) and needles/syringes ordered by sites in 2019 by Health Service Delivery Area.

Health Authority	Health Service Delivery Area	PWID with recent injection drug use (2015 estimate)	Needle/syringes ordered (2019)	Needle/syringes ordered/person who injects drugs (2019)
Fraser	Fraser East	4,587	761,275	166
	Fraser North	6,267	445,225	71
	Fraser South	9,517	1,614,175	170
Interior	East Kootenay	498	53,300	107
	Kootenay Boundary	767	134,525	175
	Okanagan	3,856	915,275	237
	Thompson Cariboo Shuswap	2,611	434,175	166
Island	Central Vancouver Island	3,660	843,600	230
	North Vancouver Island	1,416	310,800	219
	South Vancouver Island	4,073	1,614,625	396
Northern	Northeast	514	56,325	110
	Northern Interior	2,044	521,800	255
	Northwest	561	142,500	254
Vancouver Coastal	North Shore/Coast Garibaldi	2,343	159,125	68
	Richmond	1,096	21,400	20
	Vancouver	11,761	10,702,375	910
BC		55,768	18,730,500	336

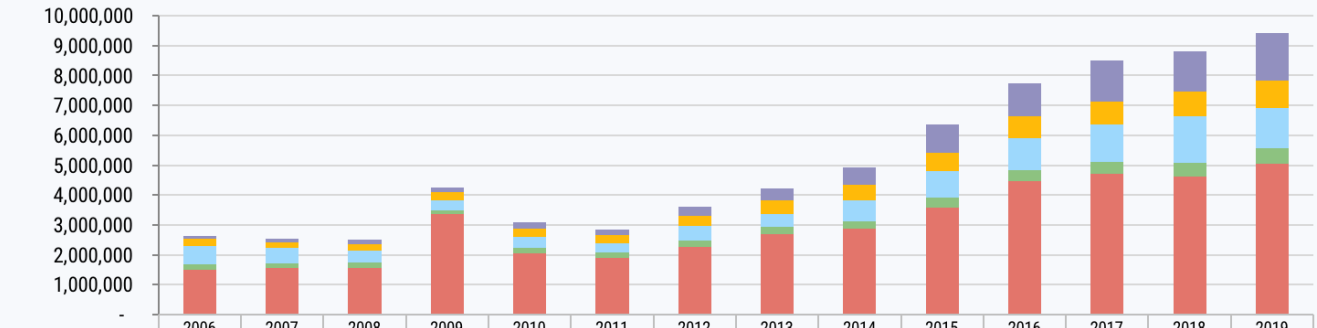
new one for each injection, and encourages agencies to provide supplies for peer-to-peer distribution to reach people who may not be able to use harm reduction supply distribution sites for any reason. In a Canadian context, a study of drug use practices in Québec found that PWID reported a median of 50 injections in the previous month (range 12-120) (41). This frequency of injection drug use translates to 1.7 needles/syringes per day per person who injects drugs, or approximately 620 needles/syringes per year per person who injects drugs to ensure that each injection is done with a sterile needle/syringe. Using this number as a baseline informed from a Canadian context, needle/syringe distribution in 2019 in BC was below the target distribution level. Vancouver HSDA was the only HSDA to distribute above the target of 620 needles/syringes per person who injects drugs in 2019 (Table 5). This may reflect the fact that PWID from other HSDA's in the lower mainland may access harm reduction supply distribution sites in Vancouver due to proximity to the large concentration of services and supports in Vancouver.

The level of needle/syringe distribution coverage is based on estimates of number of PWID from administrative health care data. Some individuals may not be captured through administrative health data if they have had no recent contact with the health care system and so the number of PWID may be underestimated. Additionally, the estimate of PWID is based on the most recent data available which is from 2015 and may not reflect the number of PWID with recent injection drug use in 2019.

Sterile Water

Illicit substances used by injection may be available as powder, crystals (rocks), or tablets but are dissolved in water to create a solution that can be injected. In order to reduce the risk of vein damage and development of infections, drugs should be fully dissolved in sterile water when injected. The use of sterile water over non-sterilized water avoids harm from potential contaminants, including preventing bacterial infections and formation of abscesses (37). In BC, water is available in low volume plastic ampoules with a snap off top to encourage single use and prevent sharing of water that may also be used to rinse injection equipment.

The number of sterile water ampoules ordered each year has been increasing with a total of 8,807,000 ordered in 2018 and 9,423,000 in 2019 (Figure 18). The use of a sterile water ampoule should be encouraged for every injection (37) Thus the ideal ratio of needles/syringes to water ampoules ordered would be 1:1. In 2019 the ratio of needles/syringes ordered (18,730,500) to water ampoules ordered (9,423,000) remains around 2:1.



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	90,000	112,000	141,000	156,000	195,000	188,000	301,000	414,000	600,000	946,000	1,098,000	1,365,000	1,340,000	1,602,000
Interior	233,300	203,500	214,000	276,000	278,000	279,000	347,000	453,000	498,000	609,000	740,000	758,000	840,000	893,000
Island	629,200	503,400	418,500	354,000	387,000	315,000	477,000	421,000	698,000	896,000	1,056,000	1,261,000	1,555,000	1,347,000
Northern	187,140	162,000	170,000	120,000	171,000	169,000	222,000	247,000	268,000	330,000	358,000	399,000	439,000	531,000
Vancouver Coastal	1,488,015	1,564,801	1,563,300	3,357,000	2,055,000	1,911,000	2,269,000	2,703,000	2,867,000	3,574,030	4,480,000	4,717,000	4,633,000	5,050,000
BC	2,627,655	2,545,701	2,506,800	4,263,000	3,086,000	2,862,000	3,616,000	4,238,000	4,931,000	6,355,030	7,732,000	8,500,000	8,807,000	9,423,000

Figure 18 – Number of water ampoules ordered in BC by regional health authority, 2006–2019.

Cookers

Cookers are used for mixing and heating a drug for injection. Drugs sold as powder, crystals (rocks), or tablets should be fully dissolved in sterile water, and cooking the drug facilitates this process. Non-sterile cookers or spoons may be contaminated by bacteria, which can lead to infections. Cookers are also one of the most commonly shared items used when injecting drugs, which can further lead to transmission of bloodborne infections between individuals (37).

In BC, sterile, disposable cookers are provided. Each package also includes a sterile filter to remove large particles from a solution and a cotton swab to apply pressure at the injection site to stop the bleeding. All items are designed to be used only once (single use), becoming fragile after being heated once. The number of cookers ordered in BC each year is shown in Figure 19. Harm Reduction Services began distribution of cookers in 2010, after which the amount ordered each year has increased steadily. Sites across BC ordered 5,813,000 cookers in 2018 and 6,346,000 cookers in 2019.

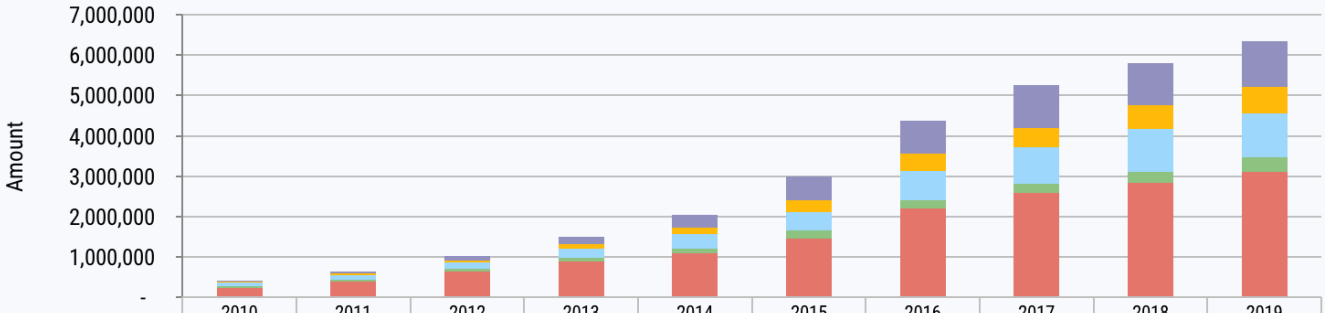
Ascorbic Acid

Ascorbic acid (vitamin C) is an acidifier, which forms a mild acidic solution in water and helps some drugs dissolve. Crack cocaine and 'black tar' (or 'brown') heroin are usually sold as crystals (rock) or solid and are dissolved in an acidic solution in order to be injected.

Small amounts of ascorbic acid are added to the drug combined with sterile water in a cooker until the drug is fully dissolved.

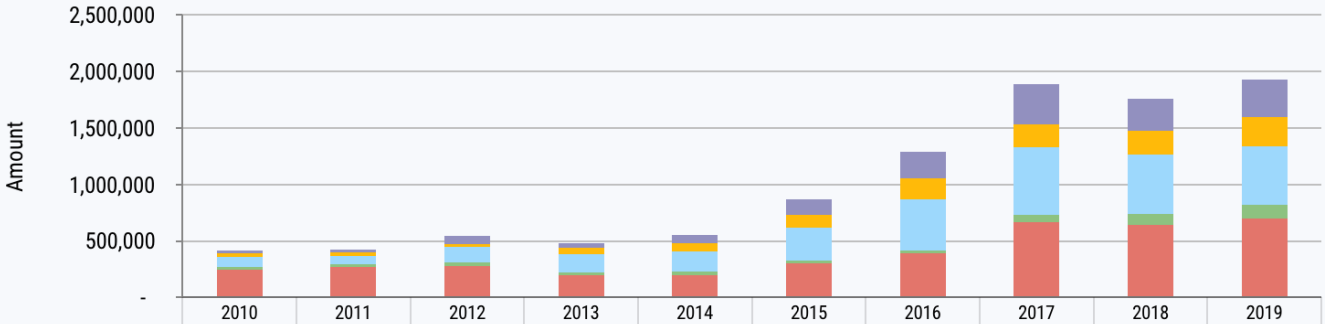
Lemon juice and vinegar are often used as acidifiers due to their availability, but these harsher acids can cause more pain, irritation, and damage to the veins. Repeated damage causes veins to collapse, and so an individual may use veins closer to major arteries, such as in the groin or neck. If the artery is accidentally hit, it may lead to life-threatening blood loss. Furthermore, vinegar and lemon juice may be contaminated with bacteria or fungus, which may lead to infection (37).

Harm Reduction Services provides waterproof packets of medical-grade ascorbic acid, which is nontoxic and sterile. It is encouraged to use the smallest dose which enables the drug to dissolve. Harm Reduction Services began distribution of ascorbic acid 300mg in 2010 and changed to smaller 100mg dose in 2014. The number of ascorbic acid packets ordered in BC each year is shown in Figure 20, with nearly 2 million packets ordered across BC in 2019. In 2019, Island Health and Vancouver Coastal Health had the largest orders of ascorbic acid.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	35,000	44,000	103,000	176,000	325,000	590,000	813,000	1,058,000	1,047,000	1,127,000
Interior	23,000	36,000	50,000	124,000	160,000	303,000	431,000	466,000	591,000	660,000
Island	85,000	123,000	155,000	228,000	364,000	457,000	723,000	904,000	1,067,000	1,083,000
Northern	36,000	25,000	72,000	87,000	111,000	187,000	201,000	228,000	279,000	355,000
Vancouver Coastal	245,000	404,000	647,000	893,000	1,095,000	1,469,000	2,208,000	2,598,000	2,829,000	3,121,000
BC	424,000	632,000	1,027,000	1,508,000	2,055,000	3,006,000	4,376,000	5,254,000	5,813,000	6,346,000

Figure 19 – Number of cookers ordered in BC by regional health authority, 2010–2019.



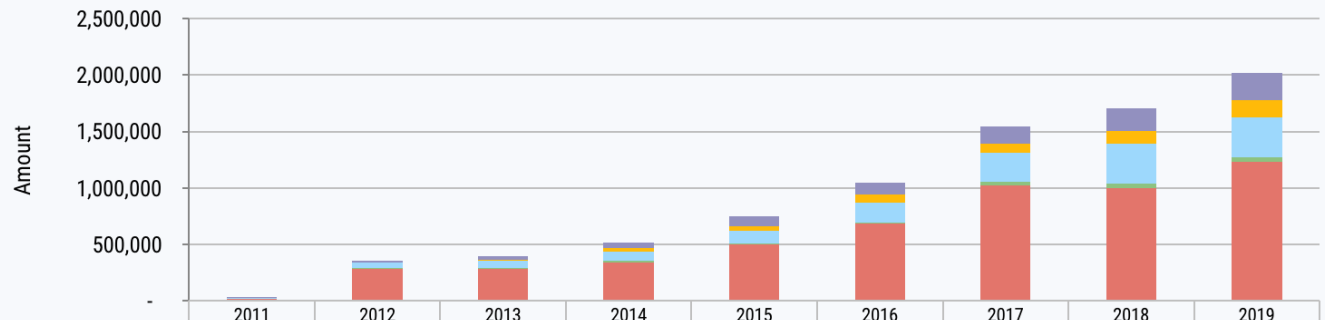
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	28,500	29,000	70,000	47,000	71,000	133,000	227,000	356,000	279,000	329,000
Interior	28,100	31,000	24,000	54,000	75,000	120,000	186,000	198,000	214,000	258,000
Island	92,800	74,000	139,000	158,000	178,000	286,000	454,000	599,000	525,000	519,000
Northern	23,700	20,000	33,000	23,000	33,000	28,000	30,000	66,000	100,000	116,000
Vancouver Coastal	242,800	273,000	276,000	201,000	194,000	300,000	388,000	664,000	638,000	701,000
BC	415,900	427,000	542,000	483,000	551,000	867,000	1,285,000	1,883,000	1,756,000	1,923,000

Figure 20 – Number of ascorbic acid packets ordered in BC by regional health authority, 2010–2019.

Tourniquets

Tourniquets, or ties, are wrapped around the arm and secured to help make veins more prominent for easier injection. Some people may use makeshift products such as belts, shoelaces, ropes, or wire which may be harder to release and can potentially cause vein damage or other injury and be difficult to clean. Distribution of tourniquets for injection prevents contamination of bacteria that may cause infection or formation of abscesses (37).

Tourniquets have been provided in BC since 2011. They are blue, pliable, easy-to-release, non-latex tourniquets with non-porous surfaces, which when tied appropriately, offer quick release. It is recommended that tourniquets are replaced if there is visible blood and/or dirt; if it has been used by someone else; or if there is a loss of elasticity (37). At OPS and SCS sites a new tourniquet is offered to each client before they inject. The number of tourniquets ordered in BC each year is shown in Figure 21, with a total of 2,020,500 tourniquets ordered in 2019. Some of the increase in tourniquet orders from 2017 onwards may be accounted for by increased OPS/SCS sites and attendance at these sites.



	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	300	13,200	27,800	49,300	86,600	107,500	146,900	198,100	243,900
Interior	2,100	6,700	15,600	31,000	38,600	70,800	81,100	114,300	155,000
Island	7,100	48,400	60,800	82,700	110,100	174,200	261,300	354,700	351,700
Northern	1,000	5,600	6,800	12,600	13,400	11,500	27,500	32,800	37,600
Vancouver Coastal	16,700	283,200	284,800	341,300	498,900	685,500	1,025,500	1,002,500	1,232,300
BC	27,200	357,100	395,800	516,900	747,600	1,049,500	1,542,300	1,702,400	2,020,500

Figure 21 – Number of tourniquets ordered in BC by regional health authority, 2011–2019.

Alcohol Swabs

Sterile alcohol swabs can be used for a variety of purposes including cleaning hands and the injection site before injecting drugs, as well as cleaning pipes and mouthpieces used for smoking drugs. Using alcohol swabs can help prevent bacterial infection. Additionally, distribution of adequate single use swabs reduces the risk of people sharing or reusing swabs. In 2019, over 24 million alcohol swabs were ordered in BC.

Sharps Containers

Sharps containers provide a safe place to dispose of used injection and inhalation materials. They are made of hard plastic that needles and broken glass cannot penetrate. Personal sharps containers fit several needles and/or crack pipe stems while being convenient to carry in a purse or backpack. Appropriate disposal of needles/syringes and stems reduces the risk of accidental needlestick injuries and reuse of injection or inhalation equipment, which in turn reduces the risk of transmission of bloodborne pathogens (37). Therefore, it is important to have a place to safely dispose of used injection and inhalation paraphernalia readily available and close to where injection occurs.

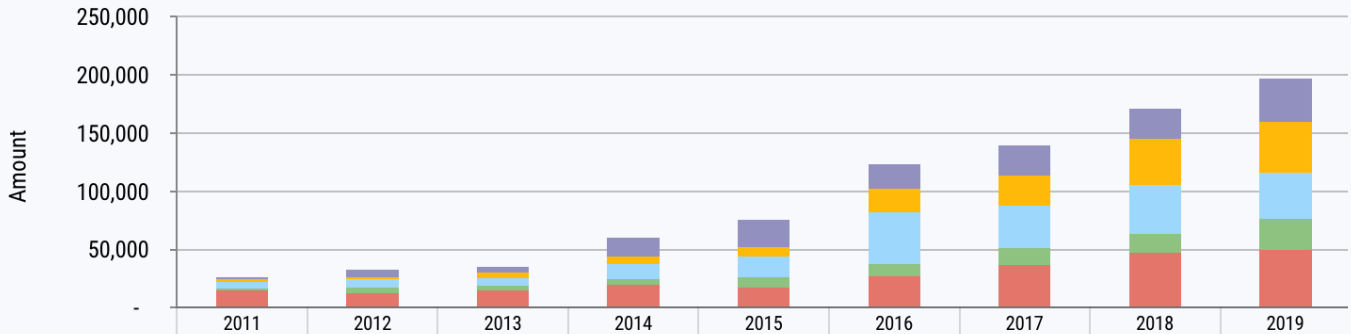
Harm Reduction Services has supported safe disposal of injection and inhalation equipment through the distribution of personal sharps containers since 2011. This includes portable sharps containers that can carry up to 10 needles/syringes (500ml) and larger 1 L containers. Sharps containers can be returned to distribution sites when full, or they can be sealed tightly and placed in the garbage for disposal, if municipal bylaws permit. Combined numbers of personal sharps containers ordered in BC each year are shown in Figure 22. The number of personal sharps containers ordered increased in all health authorities except for Island Health between 2018 and 2019.

BOX 1.3 | 2018 Harm Reduction Client Survey

Barriers in safe disposal of supplies in the community

Most survey respondents (68%) reported no barriers in safely disposing supplies in their community. Among people that reported facing barriers in supply disposal (n=86):

- 51% reported having an insufficient number of disposal locations nearby
- 28% reported being worried about being stigmatized at the disposal location



	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	1,020	5,980	5,100	16,480	23,400	21,180	26,360	25,740	37,220
Interior	2,920	1,900	4,560	6,280	7,780	19,760	25,900	40,060	44,080
Island	5,800	7,200	6,880	13,060	18,200	44,480	35,760	41,660	39,080
Northern	1,600	4,560	3,740	4,700	8,980	10,600	14,780	16,540	26,520
Vancouver Coastal	14,600	12,840	14,880	19,700	17,200	27,080	36,820	46,920	49,920
BC	25,940	32,480	35,160	60,220	75,560	123,100	139,620	170,920	196,820

Figure 22 – Number of personal and small sharps containers ordered in BC by regional health authority, 2011–2019.

Needles/Syringe Collection

Distribution of sharps containers through Harm Reduction Services represents a subset of initiatives that are in place across the province for collection and safe disposal of injection and inhalation equipment. Each regional health authority, in collaboration with local municipalities, community organizations, and Harm Reduction Services, is tasked to develop their own used harm reduction supply disposal programs. Safe disposal of injection and inhalation supplies includes: the distribution of small sharps containers for personal use through Harm Reduction Services; providing large disposal containers in public spaces, health centres, and other clinics and agencies accepting used supplies for disposal; needle recovery programs and needle sweeps by health authorities as well as community and peer-led organizations; and education for safe injection and inhalation supply disposal (42,43). The majority of injection and inhalation equipment is appropriately disposed of; equipment that is improperly discarded in the community is collected through needle sweeps and needle recovery programs. An overview of some safe disposal initiatives and resources implemented by health authorities, partners, and community organizations in each region in BC are outlined in Table 6.

Table 6 – Sharps disposal initiatives and protocols implemented by health authorities, partners, and community organizations in each region in BC.

Region	Sharps Disposal Initiatives and Protocols
Fraser	Fraser Health implemented the *Regional Community Sharps Management Strategy* in partnership with municipalities, community pharmacies and harm reduction service providers. Under the strategy, Fraser Health has: • Collection of sharps at all public health units and harm reduction service providers in the region • Installed 23 large Sharps Disposal Units in 10 communities • Developed Safe Sharps Disposal webpage and Site Finder (interactive map listing 292 safe sharps disposal sites across the region) (44) • Developed safe sharps handling and disposal fact sheet (45) • Funded regular sweeps of key locations • Implemented regional data collection framework for inappropriately discarded sharps • Worked with municipalities to ensure municipal websites include information on sharps disposal options alongside garbage and recycling information
Interior	• Collection of sharps at all public health, Mental Health & Substance Use Services, primary care sites and contracted harm reduction agencies for safe disposal • Purchasing large outdoor disposal bins for municipalities and First Nations communities with sharps disposal concerns as identified through a needs assessment • Providing safe needle disposal education to people who use substances and other community members through resources like the Safe Sharps Disposal Toolkit: A Community Response to a Community Issue (46) and through development of proactive communications materials and social media campaign to launch Spring 2020 • Providing resources and consultation to municipalities, community agencies, and community sharps committees on implementing peer sharps retrieval programs (see Community Clean Up Tool Kit (47)) and covering the costs of harm reduction sharps disposal
Island	• Collection of sharps at all public health units and some BC Mental Health & Substance Use Services locations on Vancouver Island • Collaborated with 10 Vancouver Island communities to provide 29 large community sharps disposal bins, paid for by Island Health and installed by municipalities • Added a needle collection site map for Vancouver Island and Victoria (48) • Created two safe sharps disposal videos (48) (How to dispose of a needle safely outdoors & How to dispose of a needle safely indoors) • Developed a safe sharps disposal guide (49) and rack card (50) • Fund SOLID Outreach in Victoria to deliver peer based needle sweep services
Northern	• Collection of sharps at primary care clinics and other sites that distribute harm reduction supplies, as well as some community pharmacies • Mobile pick up and distribution of harm reduction supplies through outreach teams in Prince George and Terrace • Safe sharps disposal guides developed by the cities of Terrace (51) and Prince George (52) • Establishment of the Clean Team, which is run by peers and provides needle sweep services in Quesnel (supported by Quesnel Shelter & Support Society) and Terrace • Data collection implemented in 2019 for harm reduction distribution sites to capture numbers of supplies distributed and those returned
Vancouver Coastal	• Collection of sharps for disposal throughout harm reduction supply distribution sites, eight community health centres, housing providers, pharmacies, and other safe disposal sites • Approximately 40 outdoor needle disposal boxes across Vancouver in lanes and parks in partnership with the City of Vancouver, PHS Community Services, and Spikes on Bikes, as well as in the communities of Sechelt and Gibson • Needle Recovery Hotline and regular community needle sweeps in collaboration with its partners to ensure that inappropriately discarded syringes are recovered • Funds 32 community sweeps per week (approximately 1,700 per year), along with the needle exchange and recovery van, which operates 20 hours a day, 365 days a year; Needle Recovery program saw 235,778 improperly discarded needles/syringes retrieved in 2017 • Procedures available in the Neighbourhood Needle Recovery Guide (53) and information on hotlines and needle recovery locations available on the needle exchange website (54)

Safer Smoking Supplies

BOX 1.4 | 2018 Harm Reduction Client Survey

Increased preference for smoking and crystal meth use

Among all respondents, more than half (52%) reported smoking as their preferred method of drug use and 69% reported using crystal meth in the past week, while 26% reported crack use.

Screens

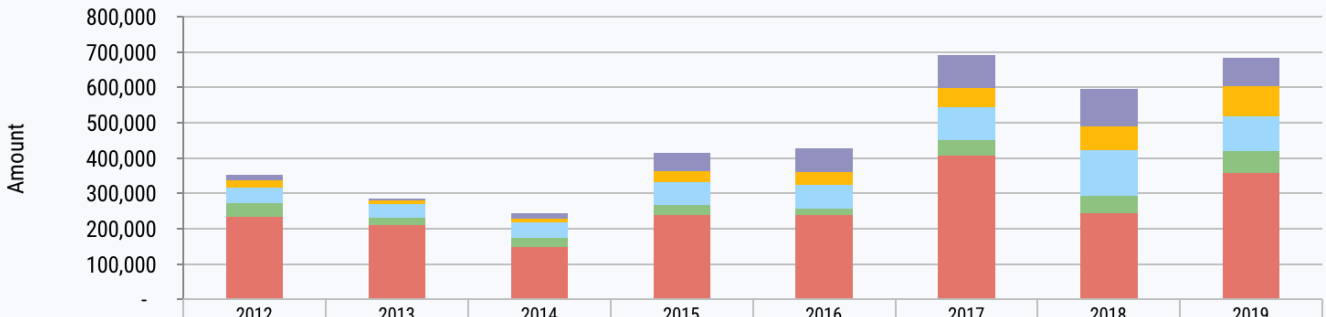
When smoking crack cocaine, a screen is used to hold the rock of crack cocaine in place near the end of the glass stem (also known as a crack pipe or straight shooter). Screens are made from a small piece of metal with holes which fit within the stem to allow for inhalation of crack vapour. People who smoke crack often use wire wool (frequently referred to by the brand name Brillo®) as screens. This practice has been associated with injury, as small pieces of steel wool may break off, which can cause burns on the lips or mouth. The hot metal can cause further damage if inhaled or ingested (37).

In BC, brass screens are provided in packets of 10 to prevent the use of other materials that may be harmful. Brass screens may be folded together or wrapped around steel wool and used together. Harm Reduction Services began distribution of brass screens in 2012. The number of screen packets ordered in BC each year is shown in Figure 23. The total number of brass screen packets ordered throughout the province decreased between 2017 and 2018, and increased again in 2019 with a total of 684,000 brass screens ordered.

Push Sticks

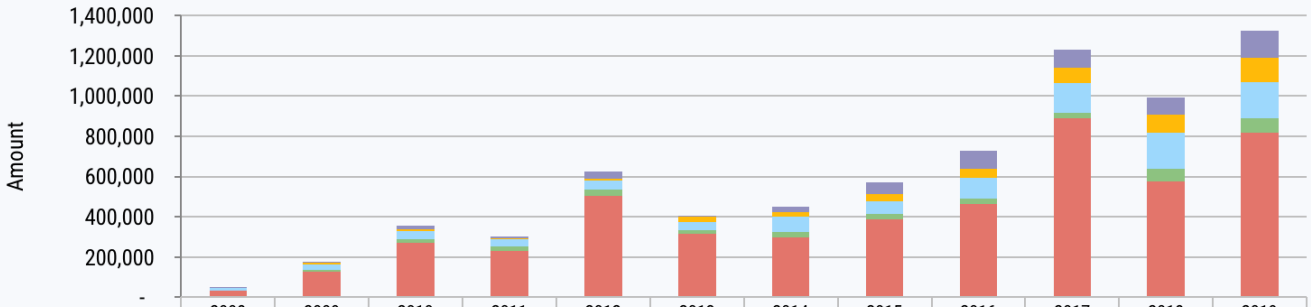
Push sticks are used to pack and position the screen inside the crack pipe. Once the crack has been smoked, the push stick is used to partially recover the residual crack that has hardened on the inside wall of the pipe as the pipe cools.

In BC, wooden push sticks are provided to prevent the use of alternatives such as coat hangers, car aerials, or syringe plungers as push sticks. Using metal can chip the glass inside of the pipe and cause the ends of the pipe to break. Using pipes that are damaged may increase the risk of cuts to the lips or hands and infection (37). When syringe plungers are used, the rest of the syringe is discarded, including the attached needle; furthermore, the plastic may melt inside of the pipe. Wooden push sticks are also less expensive than syringes. Harm Reduction Services began distribution of push sticks in 2008. The number of wooden push sticks ordered in BC each year is shown in Figure 24.



	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	17,400	4,800	15,200	53,400	65,200	93,800	105,600	79,600
Interior	20,800	12,200	12,400	30,800	36,200	52,600	68,400	86,400
Island	43,800	38,200	44,200	64,400	68,600	93,800	129,200	98,600
Northern	37,600	19,200	24,600	27,800	18,800	44,600	48,200	61,400
Vancouver Coastal	234,400	211,600	148,600	239,600	238,200	406,800	244,400	358,000
BC	354,000	286,000	245,000	416,000	427,000	691,600	595,800	684,000

Figure 23 – Number of brass screen packets ordered in BC by regional health authority, 2012–2019.



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	400	4,800	16,600	7,500	35,464	5,616	25,632	59,760	86,544	89,568	83,664	135,936
Interior	800	9,000	9,900	5,300	10,068	26,064	25,920	35,856	46,656	75,456	90,720	119,664
Island	11,200	24,500	41,500	37,300	42,004	39,456	73,728	65,376	102,096	145,584	177,552	178,992
Northern	3,300	10,700	19,700	20,000	33,780	20,880	26,064	22,752	29,376	28,512	62,352	70,272
Vancouver Coastal	31,600	127,000	268,800	231,300	503,420	314,208	299,088	389,520	461,664	889,776	577,584	818,640
Grand Total	47,300	176,000	356,500	301,400	624,736	406,224	450,432	573,264	726,336	1,228,896	991,872	1,323,504

Figure 24 – Number of push sticks ordered in BC by regional health authority, 2008–2019.

Crack Pipe Mouthpieces

A crack pipe mouthpiece is a length of vinyl tubing that is attached to the pipe in which rocks of crack are heated. The vinyl tubing comes in three different diameters to fit different size crack pipes. The tubing is sent to sites in 100 foot lengths which are then cut, using cutters also provided to sites by harm reduction services. The length of the plastic tubing cut varies according to site and individual's preferences. The mouthpiece can be taken off of the pipe as necessary and used by an individual to avoid sharing.

Mouthpieces are placed at one end of a crack pipe in order to prevent direct contact of the mouth with the hot pipe or broken glass stems to reduce the incidence of oral lesions due to burns or cuts from chipped and broken pipes (37). Providing mouthpieces protects against the transmission of communicable diseases that may occur when pipes are shared, including HCV, hepatitis B, and HIV.

Harm Reduction Services began distribution of mouthpieces in 2008. The amount of vinyl tubing ordered by sites has consistently increased over the years. In 2019, 3,656 100 foot lengths of vinyl tubing were distributed in BC, with approximately half ordered by Vancouver Coastal Health.

Distribution of Pipes and Foils for Smoking Substances

Best Practice Recommendations for Canadian Harm Reduction Programs recommend that heat-resistant pipes are distributed for safer crack smoking (37). Evaluation of meth pipe and foil distribution is also recommended given the limited research evaluating distribution of heat-resistant pipes or foils for safer meth smoking (38). Distribution of the full breadth of safer smoking supplies, including heat-resistant pipes and foils, can reduce harms that may result if people who use substances do not have equipment required for safer smoking, including: (1) transitioning to injecting instead of smoking, increasing the risk of transmission of bloodborne pathogens and other infections; (2) using other materials for smoking that are not heat-resistant, potentially causing burns or injuries that increase the risk of HCV transmission (37); and (3) sharing of supplies, which increases the risk of infections including pneumococcal disease (55).

BOX 1.5 | 2018 Harm Reduction Client Survey

Accessing safer smoking supplies

When people that had used a pipe to smoke drugs in the past month (n=318) could not find an unused pipe:

- 27% used a second-hand pipe
- 20% injected instead

Heat-resistant pipes and foils for safer smoking are currently not provided through the provincial harm reduction supply program in BC. However, health authorities purchase small numbers of pipes and/or foils for distribution by sites. In 2019, 968,520 crack pipes and 144,288 meth pipes were ordered from the current BCCDC harm reduction supply distributor by health authorities (Table 7). These figures represent a subset of pipes ordered as health authorities may order from other distributors not captured here.

Table 7 – Number of crack and meth pipes ordered from the primary supply distributor by health authorities in BC in 2019.

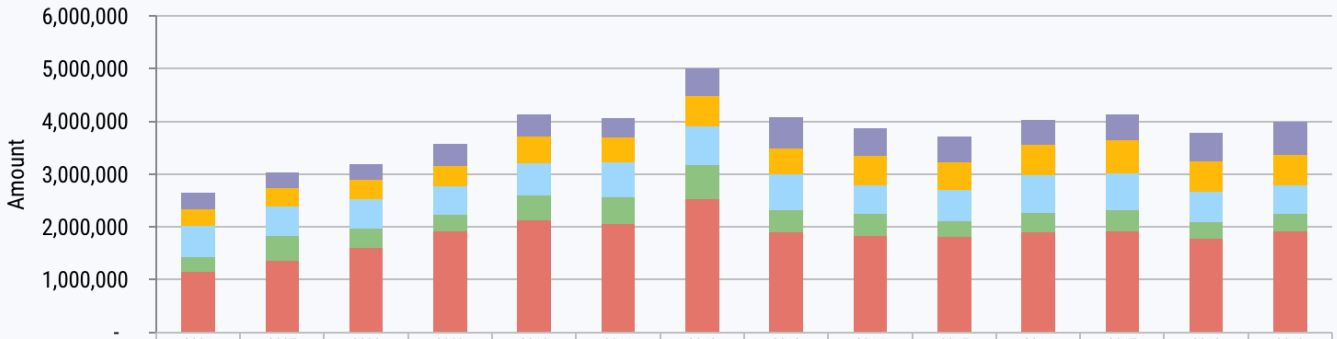
Health Authority	Crack pipes	Meth pipes
Fraser	226,060	24,624
Interior	112,000	26,352
Island	273,600	14,688
Northern	85,080	44,928
Vancouver Coastal	271,780	33,696
Total	968,520	144,288

Safer Sex Supplies

Condoms

Condoms are important in preventing the spread of sexually transmitted infections and unwanted pregnancy. Harm Reduction Services aims to make supplies available to anyone that needs them, particularly people who use substances and people involved in sex work. A variety of supplies for safer sex are available through the provincial program, including male condoms, female (insertive) condoms, and lubricant. Insertive (internal or female) condoms are as effective as non-insertive (male) condoms at preventing pregnancy and preventing the spread of sexually transmitted infections. Insertive condoms have several advantages (56), including that: they do not reduce a male partner's stimulation; they provide females with control and choice about their sexual health; they are available without a prescription and have no hormonal side effects; they can be used by people with latex sensitivities; they are pre-lubricated and can be used with oil-based and water-based lubricants; they can be inserted before sex; erection is not necessary to keep the condom in place; and they do not affect future fertility.

The number of condoms ordered in BC has remained relatively stable for the past 7 years. In 2018, 3,775,600 condoms were ordered by sites across BC and in 2019, 4,000,100 (Figure 25). Of the total condoms ordered in 2019, 3,090,240 (77.3%) were lubricated; 574,272 (14.4%) were flavoured condoms; 252,288 (6.3%) were unlubricated; and 83,300 (2.1%) were insertive (female) condoms.Condoms are important in preventing the spread of sexually transmitted infections and unwanted



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fraser	318,261	289,555	302,622	421,852	415,840	374,704	524,436	587,156	526,888	495,876	470,448	497,656	528,432	633,712
Interior	314,573	349,668	353,462	397,388	506,880	467,164	586,888	486,892	549,992	513,372	582,864	634,912	586,808	578,532
Island	587,491	567,731	563,693	531,682	605,704	663,224	731,660	695,080	540,692	592,584	702,548	701,260	568,272	534,192
Northern	291,175	464,840	361,063	311,528	482,648	512,456	649,428	413,276	424,020	301,916	368,120	388,928	319,920	345,772
Vancouver Coastal	1,141,605	1,353,945	1,605,892	1,918,400	2,114,920	2,044,744	2,520,088	1,894,376	1,830,180	1,811,332	1,900,464	1,918,040	1,772,168	1,906,496
BC	2,653,105	3,025,739	3,186,732	3,580,850	4,125,992	4,062,292	5,012,500	4,076,780	3,871,772	3,715,080	4,024,444	4,140,796	3,775,600	4,000,100

Figure 25 – Number of condoms ordered in BC by regional health authority, 2006–2019.

Naloxone Distribution

The Take Home Naloxone (THN) program in BC provides training in overdose prevention, recognition and response and distributes kits containing injectable naloxone to individuals who are at risk of experiencing an overdose or at risk of witnessing an overdose at no cost to the recipient. Naloxone is an opioid antagonist (antidote) that temporarily reverses the effects of an opioid (e.g. heroin, methadone, fentanyl, morphine) overdose. The effect of naloxone begins to wear off after about 20 minutes and another dose of naloxone may be required if the overdose returns. Kits distributed to individuals contain: three 0.4 mg/mL naloxone ampoules (each with an ampoule breaker), a carrying case, non-latex gloves, alcohol swabs, a one-way rescue breathing mask, three safety syringes with retractable needles), a naloxone overdose response information or 'administration form', and an instructional overdose response infographic.

The THN program in BC started in August of 2012 and has expanded significantly since inception, particularly following the increase in opioid overdose deaths in 2016 (7). As of December 31st, 2019, there were 1,694 THN sites across the province, including 717 community pharmacies. Other sites that participate in naloxone distribution through the THN program include community based sites, such as peer-led and non-governmental organizations, treatment centres, housing sites, hospitals and health centres, and provincial correctional facilities. A breakdown of sites by health authority is provided in Table 8. Latest numbers of Take Home Naloxone sites and distribution in BC are available in the Infographics section of the Towards the Heart website (4).

Table 8 – Number of registered Take Home Naloxone (THN) sites in BC by regional health authority as of Dec. 31st, 2019.

Health Authority	THN sites (excluding pharmacies)	THN pharmacy sites	Total
Fraser	188	265	453
Interior	243	119	362
Island	189	112	301
Northern	117	44	161
Vancouver Coastal	231	172	403
Total	977	717	1,694

The THN program aims to ensure that naloxone is in the hands of those that need it most in order to reduce opioid overdose deaths in BC. In 2018, 71% of clients of harm reduction supply distribution sites across BC reported having a naloxone kit compared to 17% in 2015 (57). Additionally, a study which assessed the combined impact of overdose prevention interventions including naloxone distribution, Overdose Prevention Services, and opioid agonist treatment, found that approximately 1,580 overdose death events were averted in BC as a result of naloxone distribution over 20 months between April 2016 and December 2017 (8).

An evaluation of the provincial THN program (58) as well as an evaluation of THN distribution in pharmacies (59) have been published. Key findings from the THN evaluation reports included: THN kits are going into the hands of those that need it most; pharmacy sites more often distribute to people at risk of witnessing an overdose whereas community sites more often distribute to those at risk of experiencing an overdose; the majority of individuals report calling 911 in overdose situations; and most individuals do not experience adverse effects from naloxone administration.

A brief description of naloxone distribution in BC is provided here, with more information available in the THN evaluation report (58) and regularly updated in the BC Overdose Response Indicators page (9). Information on data sources and definitions are available in Appendix A.7. The number of THN kits ordered and shipped to sites across BC increased sharply in 2017 and more gradually between 2017 and 2019 (Figure 26). In 2019, 232,312 kits were shipped to sites for distribution to clients.

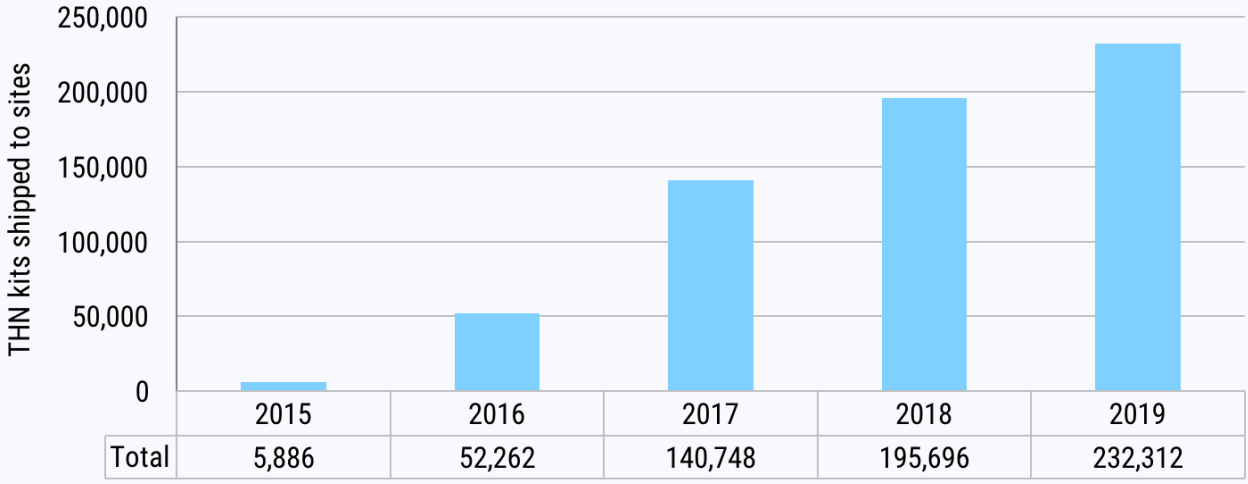


Figure 26 – Number of Take Home Naloxone (THN) kits shipped to naloxone distribution sites in BC, 2015-2019.

Figure 27 shows the number of THN kits reported distributed clients as of June 2020, including the reason for obtaining a new kit - first kit, replacing a kit used to reverse an overdose, and replacing a kit for other reasons. The number of kits reported by sites to be distributed to individuals also increased considerably between 2016 and 2017, remained stable in 2018, and decreased slightly in 2019. This decrease is likely due to a decrease in reporting by sites rather than a true decrease in naloxone distribution. While the number of kits reported distributed between 2017 and 2019 was similar, the proportion of kits that were distributed because a previous kit was used to reverse an overdose increased to approximately 39% of all kits reported distributed in 2019. In addition, in 2017 and 2018, around 90% of kits collected to replace a kit used to reverse an overdose were by individuals who reported being at risk of overdose (58).

Kit distribution data relies on completion and return of distribution forms to BCCDC Harm Reduction Services. Lack of forms being returned and delays in receiving forms contributes to the discrepancy between the number of kits distributed and the number of kits shipped to sites. The true count of naloxone kits distributed to the public likely far exceeds the reported kits distributed. Distribution data is subject to change as more records are received. Further information about the Take Home Naloxone program is available on the Toward the Heart website (4).

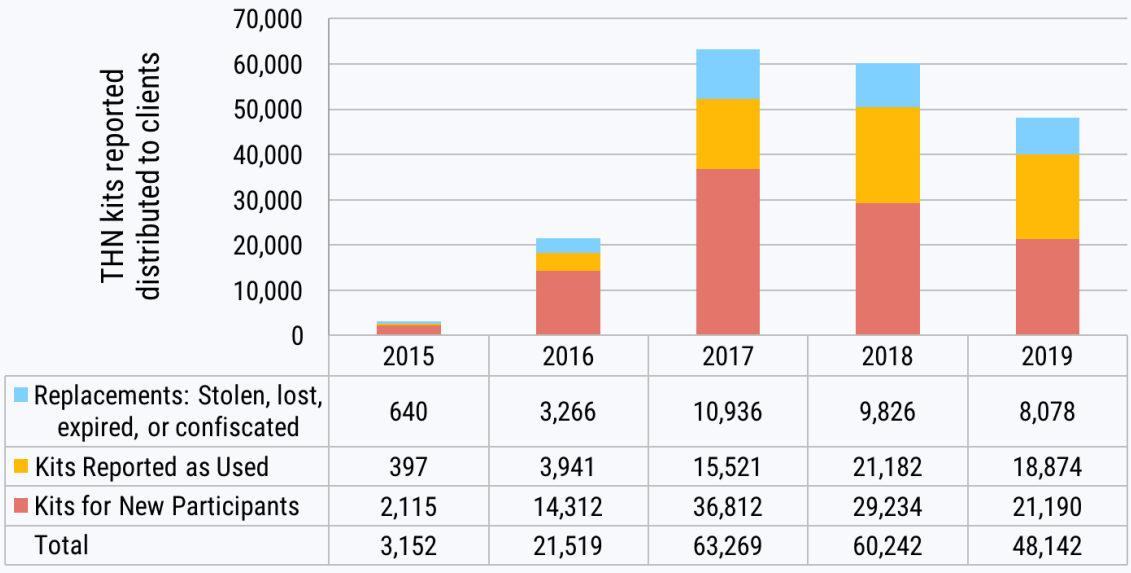


Figure 27 – Number of Take Home Naloxone (THN) kits reported distributed to clients by naloxone distribution sites in BC including reason why a kit was being distributed, 2015–2019.

Facility Overdose Response Box Program

The Facility Overdose Response Box (FORB) program was launched in December 2016. The program provides boxes containing several doses of naloxone to eligible community non-profit organisations to allow staff to respond to overdose events that may happen on site. Eligible sites include shelters, supportive housing, friendship centres, and non-profit community care facilities. To receive response boxes, approved sites must complete planning exercises, develop an overdose response policy and protocol for the organization, and provide training and support for staff responding to overdose situations. Sites are also expected to regularly report naloxone administration events to BCCDC Harm Reduction Services and reorder naloxone as needed. Response boxes include 5, 10, or 20 doses of 1-mL ampoules of naloxone for injection with a plastic ampoule breaker, safety syringes, breathing masks, and gloves. Services offered at FORB sites include: THN kit distribution, harm reduction supply distribution, outreach, counselling, and supervised consumption. An evaluation of the FORB program has been published (60).

As of the end of 2019, there were 614 FORB sites across BC. Table 9 shows the number of sites in each health authority. The majority of FORB sites are in the Fraser and Vancouver Coastal regions. From program inception in December 2016 to end of December 2019, there were 1,517 successful overdose reversals reported from FORB sites (Figure 28). However, this number is provisional as of June 2020 as there may be a delay in receiving reports at BCCDC Harm Reduction Services (see Appendix A.8).

Table 9 – Number of registered Facility Overdose Response Box (FORB) sites in BC by regional health authority as of Dec. 31st, 2019.

Health Authority	FORB Sites
Fraser	208
Interior	92
Island	72
Northern	21
Vancouver Coastal	221
Total	614

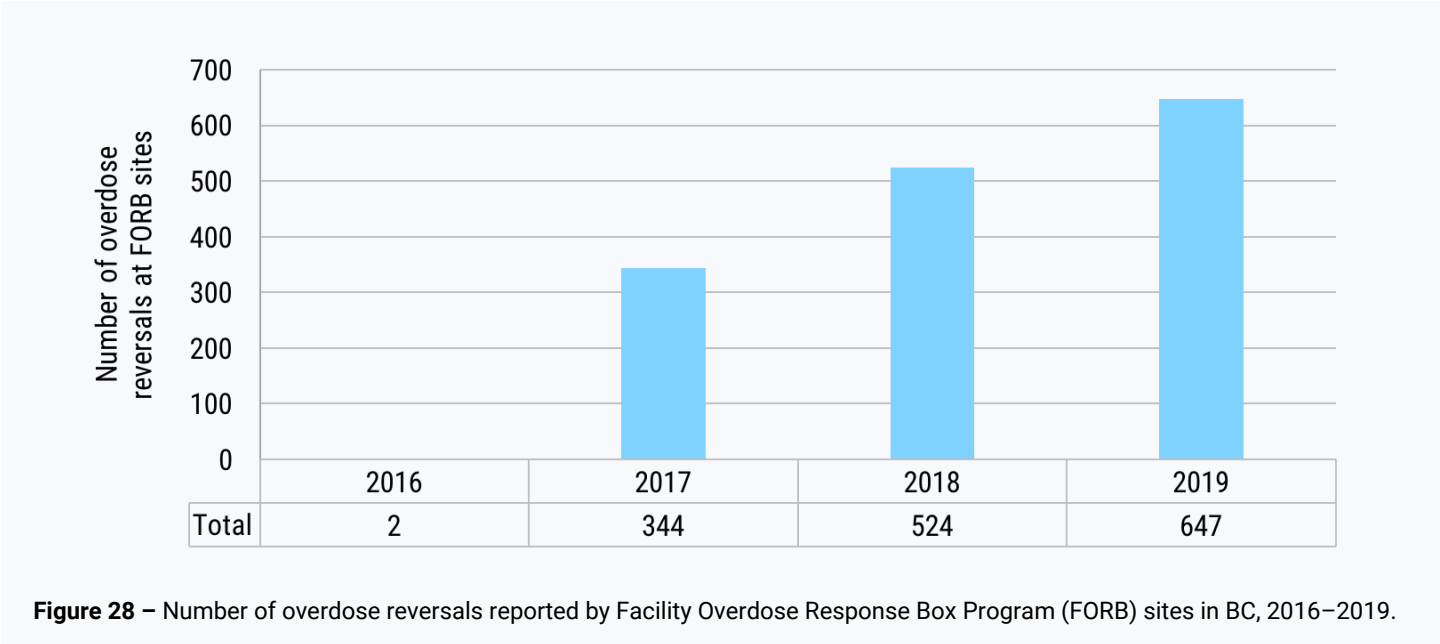


Figure 28 – Number of overdose reversals reported by Facility Overdose Response Box Program (FORB) sites in BC, 2016–2019.

Overdose Prevention Services and Supervised Consumption Sites

Overdose Prevention Services (OPS) and Supervised Consumption Sites (SCS) provide a space for people to use drugs in an observed environment where staff can intervene in a timely manner in the event of an overdose (61). While SCS operate under a section 56.1 federal exemption of the Controlled Drugs and Substances Act, OPS in BC operate under a Ministerial Order issued by the BC Minister of Health in December of 2016 as a necessary provincial response to the opioid overdose emergency (62,63). OPS staff intervene rapidly to prevent brain injury and death in the event of an overdose, staff may include peers, lay staff, and occasionally nurses or paramedics. Best practice guidelines for provision of OPS have been published (64). SCS responders are usually trained health care professionals such as nurses.

OPS and SCS may provide other services including distribution of harm reduction supplies for use outside the site, naloxone distribution, drug checking services, and connection to health and social services. The integration of peer staff at OPS and SCS helps create a safe environment for people who use substances and enables opportunities for connection with community and with people with similar lived experiences (65). Research has demonstrated that OPS and SCS have been effective in reducing overdose deaths, unsafe injection and transmission of infectious diseases, and drug use in public/outdoor spaces, as well as increasing connection to health and social services for people who use substances (8,65,66).

There are OPS sites in every regional health authority. As of May 2020, there were 22 OPS and 10 SCS locations across BC (Table 10). Some regions, such as Vancouver Coastal and Fraser, also operate OPS sites in other settings for example in housing sites.

Table 10 – Number of Overdose Prevention Service (OPS) and Supervised Consumption Site (SCS) locations in BC by regional health authority as of May 2020.

Health Authority	OPS Sites	SCS Sites	Total
Fraser	5	2	7
Interior	3	3	6
Island	6	2	8
Northern	1	0	1
Vancouver Coastal	7	3	10
Total	22	10	32

Of the 32 SCS and OPS locations in BC, 30 are able to provide statistics for indicators related to number of visits and number of overdose reversals.The number of monthly visits to OPS and SCS at 30 of 32 reporting sites steadily increased between January 2018 and December 2019, reaching nearly 80,000 visits in October 2019 (Figure 29). The number of overdose events responded to by staff and survived were between 300 and 400 per month since January 2018, and increased in 2019 with more than 500 events in March 2019 (Figure 30). More information on data sources and definitions are available in Appendix A.9.

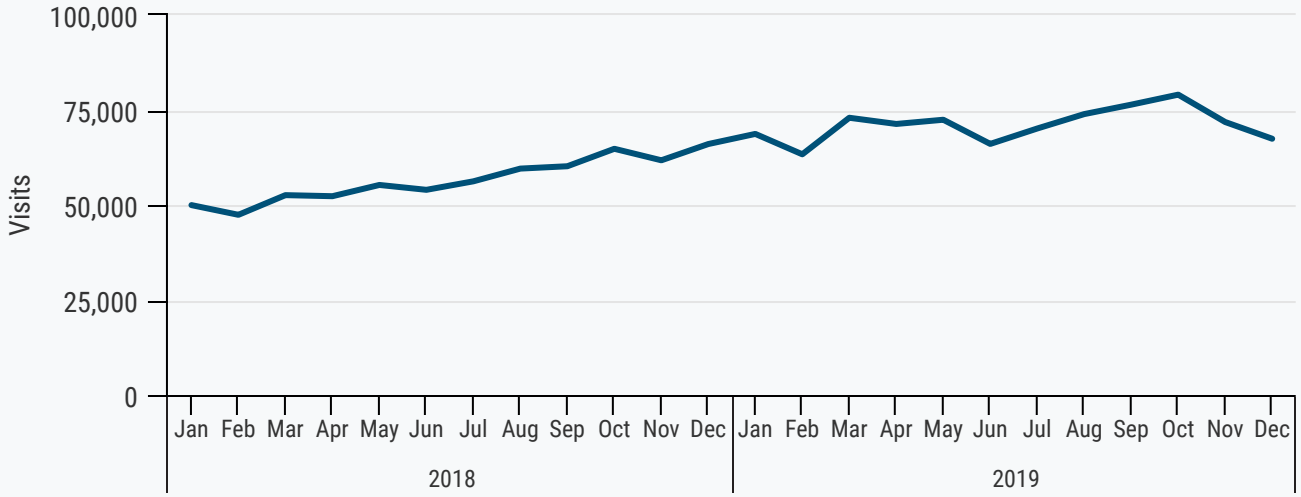


Figure 29 – Number of visits to Overdose Prevention Service (OPS) sites and Supervised Consumption Sites (SCS) in BC, by month 2018–2019.[1]

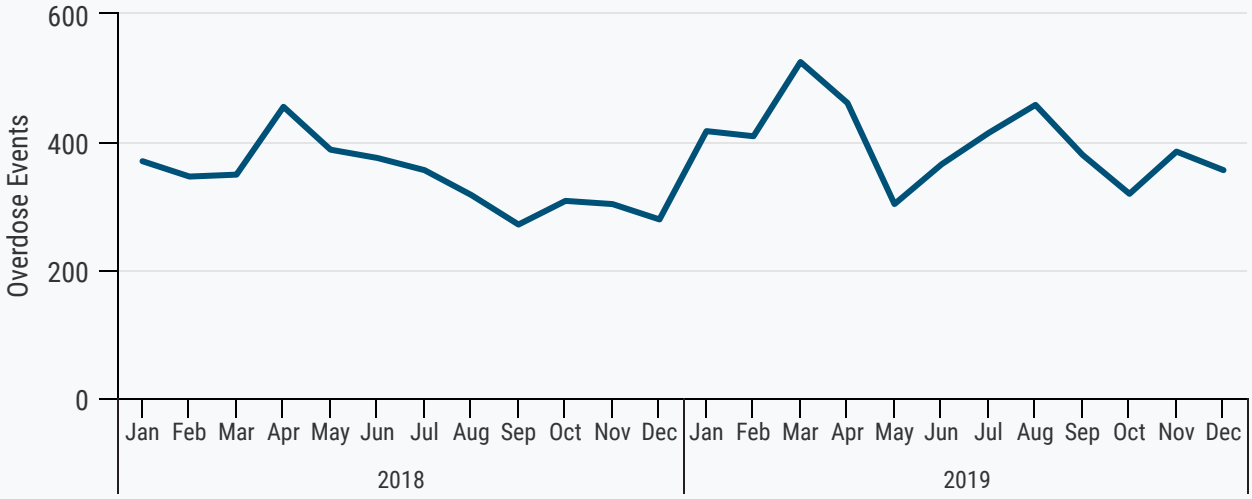


Figure 30 – Number of overdose events responded to by staff and survived at Overdose Prevention Service (OPS) sites and Supervised Consumption Sites (SCS) in BC, by month 2018–2019.[1]

1. Of 32 OPS and SCS locations in BC, 30 are able to provide statistical reporting.

Opioid Agonist Treatment

Opioid agonist treatment (OAT) refers to a range of drug treatment options that are available to people with opioid use disorder. People with opioid use disorder may be at different points in their substance use journey, and thus, OAT may not be the appropriate or desired route for everyone, at all times, particularly considering the poor outcomes that result from forced entry into treatment (67–69). However, OAT is an effective, evidence-based intervention for those seeking treatment options for opioid use disorder.

Prescribed OAT substitutes illicit opioids with long-acting opioids that manage symptoms of opioid withdrawal and reduce cravings, and can support long-term recovery. The most commonly used OAT medication are methadone (Methadose®) and buprenorphine/naloxone (Suboxone®), and less commonly slow-release oral morphine, injectable hydromorphone (iOAT), and prescribed injectable diacetylmorphine (heroin). Use of OAT, recommended in combination with harm reduction services and psychosocial supports (70–74), has been shown to reduce illicit opioid use and risk of overdose (72,75–83), prevent transmission of bloodborne pathogens such as HIV and HCV (84–87), and increasing engagement with health care (72,88–91).

Access to OAT has been an integral part of the provincial response to the opioid overdose crisis. Provision of OAT in BC underwent significant scale-up and expansion across BC since 2016. This included: (1) release of guidelines for primary health care providers by the BC Center on Substance Use and Addiction (BCCSU) recommending buprenorphine/naloxone as first-line treatment for the management of opioid use disorder (72); (2) release of guidelines for provision of iOAT (92); (3) increased primary care practitioner and pharmacist training programs for OAT provision (93,94); and (4) removal of prescribing restrictions for methadone by Health Canada as of May 2018 (95).

Figures 31 through 34 describe trends in OAT prescribers and OAT clients based on prescription drug data available from the provincial database, PharmaNet. More on these indicators can be found on the BC Overdose Response Indicators found here (9) and in Appendix A.10. The number of OAT prescribers in BC refers to the number of clinicians that prescribed OAT based on prescriptions filled at community pharmacies. The number of OAT prescribers in the province increased sharply after June 2016, and continued to increase thereafter (Figure 31). This increase was largely driven by an increase in buprenorphine/naloxone prescribing. Prescription of methadone and slow release oral morphine also increased between mid-2017 and mid-2019. Over 2019, an average of 90 prescribers each month were prescribing OAT for the first time (Figure 32). Physicians prescribing OAT for the first time were most likely to prescribe buprenorphine/naloxone.

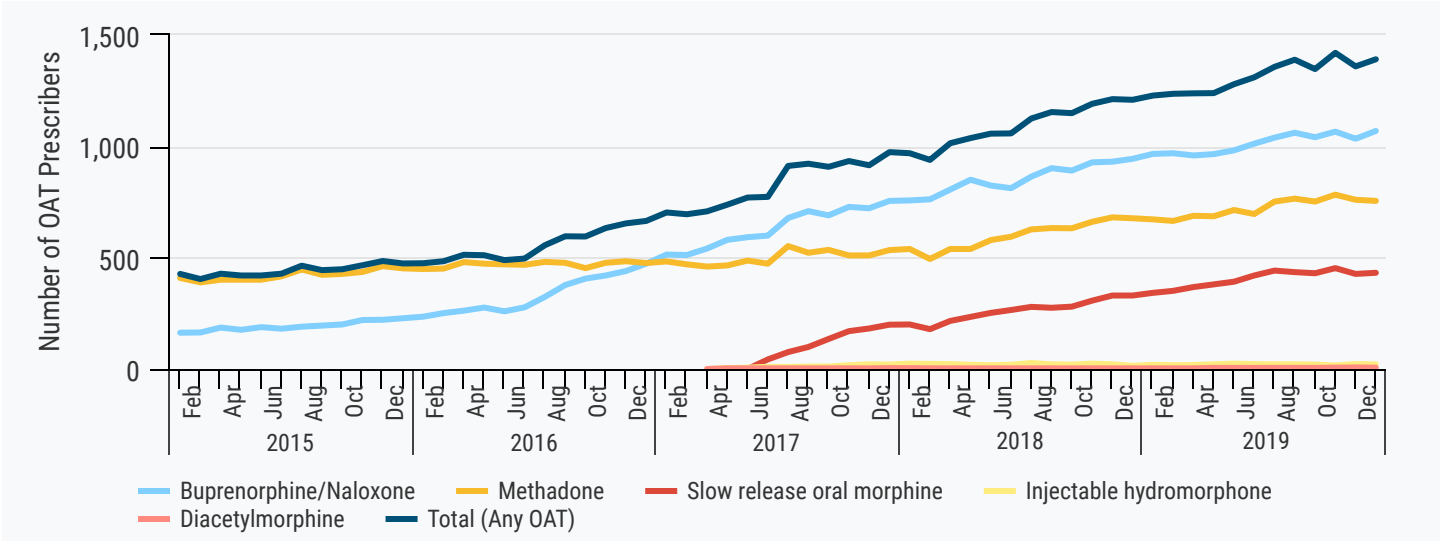


Figure 31 – Number of opioid agonist treatment (OAT) prescribers in BC, by month 2015–2019.

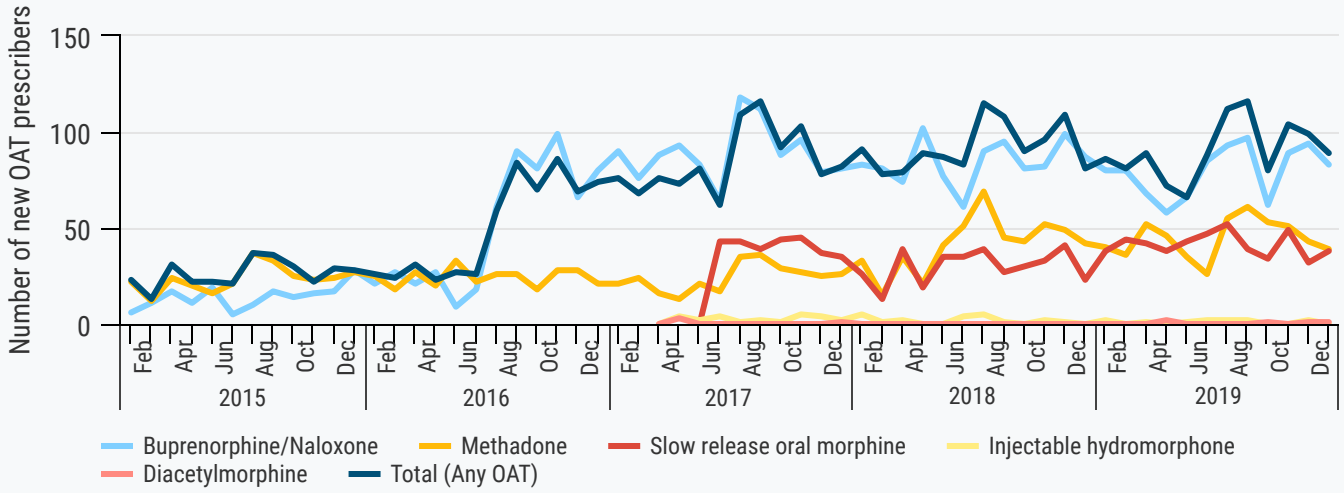


Figure 32 – Number of new opioid agonist treatment (OAT) prescribers in BC, by month 2015–2019.

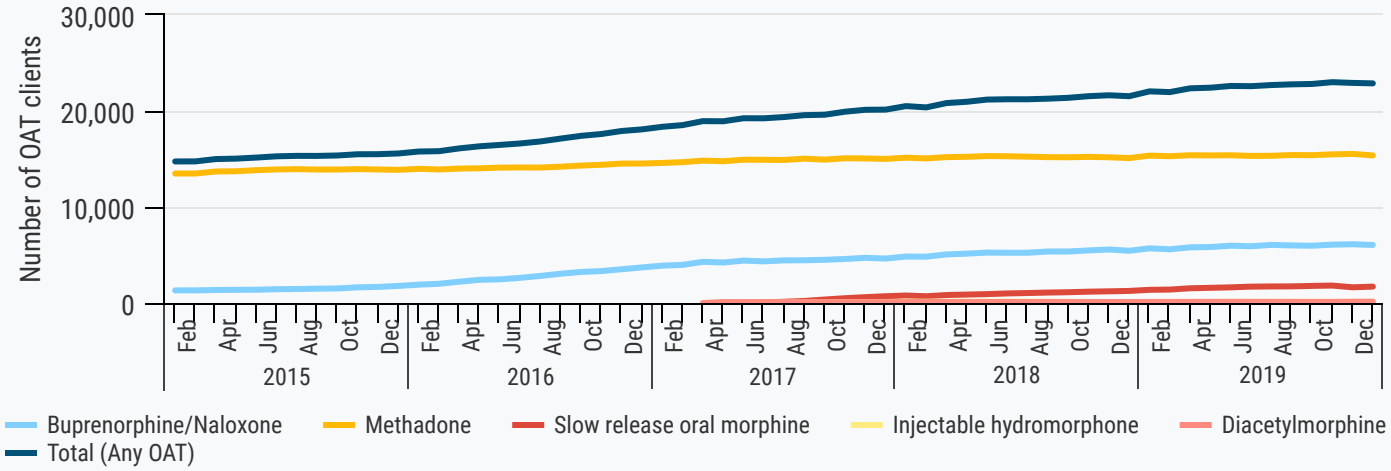


Figure 33 – Number of clients who filled an opioid agonist treatment (OAT) prescription in BC, by month 2015–2019.

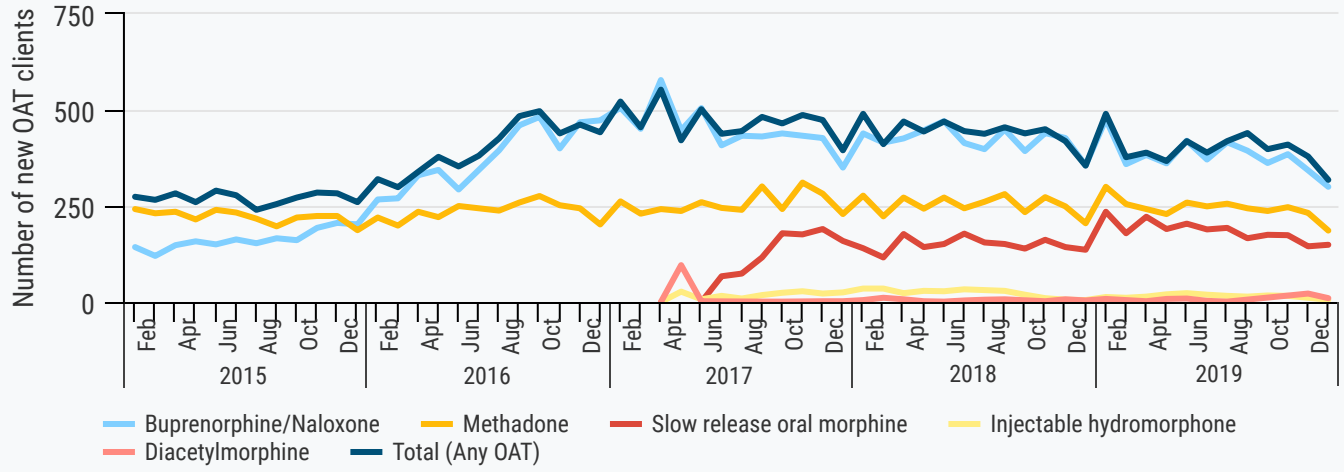


Figure 34 – Number of new clients who filled an opioid agonist treatment (OAT) prescription in BC, by month 2015–2019.

Similarly, the number of clients that filled a prescription for OAT in BC also increased in the same time period. The number of unique clients increased in 2016 as a result of increased prescribing of buprenorphine/naloxone, while the number of clients filling a methadone prescription at a community pharmacy remained stable (Figure 33). The number of clients prescribed OAT for the first time also increased due to increased prescribing of buprenorphine/naloxone, along with an increase in new clients being prescribed slow release oral morphine in 2017 (Figure 34).

While trends in monthly OAT clients and prescribers show increased access to OAT since 2016, long-term retention in OAT is not captured by these indicators. Previous studies have shown varying rates of retention in treatment for different types of OAT. The retention rate for methadone in BC was reported as 42% at six months post initiation of OAT and 32% at one year in 2014/2015 (96). Additionally, retention rates at six months for buprenorphine/naloxone ranged from 30-60% (92,97,98). Higher retention rates have been reported for iOAT, including a 77% retention rate for hydromorphone at six months (92,99), and 67-88% retention rate for diacetylmorphine at one year post initiation (100–102). Addressing barriers that clients may face in both accessing OAT and continuing OAT remains imperative in accomplishing client treatment goals.

OAT provides a margin of safety for many. However, as not all people who overdose have opioid use disorder, OAT alone may not fully address the range of substance use disorders. For those who do not want OAT or for whom OAT is not effective, safer alternatives are necessary to mitigate substance use harms that are a product of the current unpredictable illicit drug market. In recent years, provision of phamaceutical alternatives to the toxic drug supply has been identified as a necessary measure for responding to the overdose crisis in BC. A variety of models have been identified including: providing low-barrier access to hydromorphone pills; scale up and reframing of iOAT as a pharmaceutical alternative rather than as an option only available to those that have not been able to adhere to other OAT options; and legal provision of pharmaceutical grade heroin or fentanyl (103,104). Implementation and evaluation of future strategies to provide phamaceutical alternatives to the toxic drug supply will be essential in expanding options available to people who use substances that enable them to be safer and healthier.

BOX 1.6 | 2018 Harm Reduction Client Survey

Discontinuation of opioid agonist treatment (OAT)

Among 96 participants that reported discontinuing OAT in the past six months, the most common reasons reported for discontinuing were:

- Challenges meeting OAT program requirements (missed appointments or doses)
- Concerns with treatment (ineffective doses, pain not controlled)
- Challenges with accessing OAT (transportation, non-continuity of care, simpler to use street drugs)

Peer Engagement

As a program dedicated to improving the health and wellbeing of people who use substances, the BCCDC and BC HRSS Committee are committed to engaging peers and PWLLE throughout service delivery and research to ensure that harm reduction services are accessible and acceptable for people who use substances in BC. Peer engagement can be mutually beneficial in promoting health equity in programs and policies while building capacity for peers and health authority (HA) representatives. In addition to engagement with peers to inform effective health service programming and delivery through HRSS, there are also several ongoing peer engagement projects coordinated through BCCDC that aim to expand capacity building and engagement opportunities for PWLLE as well as peer-led organizations.

Peer Engagement and Evaluation Project (PEEP)

The Peer Engagement and Evaluation Project (PEEP) initiative began in 2015 from an identified need of the HRSS Committee to enhance peer engagement and address a lack of understanding of peer engagement principles and practices among HA's and other providers. The goals of the project were to develop provincial best practice guidelines for peer engagement; encourage peer leadership and expand peer networks for meaningful representation of peers in harm reduction policy and programming; and identify gaps in peer engagement through the research project (105). PEEP received three years of funding through the Peter Wall Institute for Advanced Studies Solutions Initiative.

Through the PEEP initiative a peer advisory team was formed with representation from each HA in BC. Peers were trained in research, data collection, and data analysis skills to facilitate engagement of peers in all aspects of the project. The PEEP team collaboratively developed and contributed to several peer engagement guidelines including: Peer Engagement Principles and Best Practices: A Guide for BC Health Authorities and Other Providers (2); Peer Payment Standards for Short Term Engagements (106); and Paying Peers in Community Based Work: An Overview of Considerations for Equitable Compensation (107).

In addition to development of guidelines, PEEP also shared findings of the peer-led research and focus groups, highlighting a need for improved access to harm reduction throughout BC, addressing stigma and discrimination as a barrier to receiving care, recognizing the importance of peer communities, and government support and resources (105,108). The Compassionate Engagement Modules (109) as well as a guide for non-stigmatizing language related to people who use substances (110,111) were developed to address stigma faced by people who use substances and increase compassion in health care and harm reduction settings . PEEP also participated in many trainings, presentations, and peer-reviewed publications to share findings and encourage support for peer engagement in a variety of settings (3,112–114).

As the PEEP research project ended, there was an identified need to continue the important work carried out by the PEEP team. The PEEP research team evolved into Professionals for Ethical Engagement of Peers to continue their work as provincial consultants to inform and advise on harm reduction services, policies, and peer initiatives. More information on PEEP can be found in the Peer Engagement section of the Toward the Heart website (4).

Compassion, Inclusion and Engagement (CIE) Project

The Compassion, Inclusion and Engagement initiative (CIE) is a provincial partnership between FNHA and BCCDC that supports communities in developing innovative, inclusive, and culturally safe harm reduction services that are sustainable long term. CIE arose in 2015 from an identified need to address stigma and discrimination experienced by people who use substances, and particularly Indigenous people who use substances. Through facilitating dialogue and engaging people who use harm reduction services, service providers, and community, HA, and provincial

leadership, CIE has built supportive intersectional networks for harm reduction service planning and delivery that is equitable and culturally safe.

From inception, CIE has engaged over 357 people, including 144 peers, 201 service providers, and 12 senior leaders throughout BC (115). Over the course of 2018 and 2019, CIE restructured their curriculum to reflect community-identified needs and supported emerging peer organizations throughout the province through distribution of over $287K in grants in response to the constantly changing landscape of the overdose crisis. Additionally, in 2019 CIE joined the Harm Reduction Educators Network to support development of a standardized harm reduction education curriculum and advocate for harm reduction policy and practice change collectively. Semi-annual CIE reports and more information about ongoing CIE activities and future directions can be found in the Peer Engagement section of the Toward the Heart website (4).

Peer to Peer (P2P) Project

The Peer to Peer (P2P) project began in 2018 to identify, implement, and evaluate peer-led interventions that can support and build capacity for Experiential Workers (peer workers with lived/living experience of substance use) who are working in overdose response environments(116). The project aimed to address the challenges that Experiential Workers face as they do not have the same access to institutional and occupational support that is available to healthcare workers and first responders, despite working in similar environments (117). P2P is funded by Health Canada Substance Use and Addictions Program and partners include the University of Victoria, SOLID Outreach in Victoria, RainCity Housing in Vancouver, Maple Ridge and Coquitlam, and the BCCDC.

Through peer-led focus groups between November 2018 and March 2019 in the lower mainland and Vancouver Island, the P2P project identified three major needs of Experiential Workers: recognition of peer work, workplace resources, and skill development. Based on the needs identified, an intervention model called the ROSE Initiative was designed to recognize peer work, develop skills, and provide organizational support to peers. The P2P project is ongoing with implementation of the ROSE Initiative at pilot sites, sharing of knowledge materials, and evaluation of the interventions planned (116,117). More information from the P2P project can be found in the Peer Engagement section of the Toward the Heart website (4).

Peer Prioritization with the Provincial Overdose Cohort

The Provincial Overdose Cohort (ODC) is comprised of de-identified linked administrative health data on people who have experienced a drug overdose in BC (118). The ODC is used to better understand factors associated with fatal and non-fatal overdose, and identify areas in need of public health programming that aims to address overdose and support people who use substances. More information on the ODC can be found on the Provincial Overdose Cohort page of the BCCDC website (119).

In 2019, PWLLE were involved in the process of identifying and prioritizing future analyses for the ODC. The peer prioritization process was undertaken to ensure that analyses addressed the needs of the people most impacted by the overdose crisis. This process began in September 2019 and culminated in March 2020. Direct input from PWLLE led to the formation of two new working groups within the ODC: 1) impacts of the toxic drug supply, and 2) identifying sub-populations and populations at risk. PWLLE also led the priority setting exercise within existing working groups, such as the prescribing patterns working group. Funding was secured to resource peer engagement for the ODC working groups and to ensure that involvement of PWLLE is ongoing.

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Appendix

Appendix A - Data sources and definitions

A.1 Hepatitis C Virus (HCV)

Data source	BC Sexually Transmitted Blood Borne Infections (STBBI) Data Mart
Definitions	Most diagnostic testing for HCV antibodies (anti-HCV) (>95%) is done at the BCCDC Public Health Laboratory (PHL) and recorded in the STBBI Data Mart. All patients in the STIBBI Data Mart, except those with previous positive anti-HCV test results, are included in HCV estimates shown in this report. **First-time positive anti-HCV testers** HCV testers in given period that tested positive for anti-HCV for the first time. **Negative and indeterminate anti-HCV testers** HCV testers in given period that tested negative for anti-HCV or had an indeterminate test result. **24-month HCV seroconversion rate** The number of individuals with a positive anti-HCV test result within 24 months of a prior negative test result as a proportion of all individuals who have previously had a negative or indeterminate anti-HCV test result within 24 months.
Notes	Estimates for a particular period can change over time due to updates in STIBBI Data Mart and in methodology.

A.2 Human Immunodeficiency Virus (HIV)

Data source	Provincial HIV/AIDS Database (HAISYS)
Definitions	All confirmatory laboratory testing for HIV antibodies is done at the BCCDC Public Health Laboratory (PHL). Further patient information for public health surveillance including age, gender, health authority, and exposure group is collected by regional public health officials then forwarded to the BCCDC and entered into the provincial HIV/AIDS database (HAISYS). **New HIV diagnoses** HIV testers testing newly positive for HIV in BC for the the first time EVER in their lifetime
Notes	The number of new HIV diagnoses does not reflect incidence of HIV as year of diagnosis may not be the same as year of initial HIV infection. For more information please see the HIV Annual Report (34).

A.3 Paramedic-attended overdose events

Data source	BC Emergency Health Services
Definitions	Paramedic-attended drug overdose events refer to ambulance-attended events where either: 1. naloxone was administered by paramedics or 2. paramedic impression codes indicate drug overdose and the corresponding Medical Priority Dispatch System (MPDS) code is 9 (cardiac or respiratory arrest), 23 (overdose/ingestion poisoning), 26 (sick person), 31 (unconscious/fainting) or 3. paramedic impression codes indicate cardiac arrest and the corresponding MPDS code is 23 (overdose/ingestion poisoning) or 4. paramedic impression codes indicated the event was “opioid-related” or “opioid-related / overdose”.
Notes	This measure does not provide an exact count but rather an estimate of drug overdose events.

A.4 Illicit drug overdose deaths

Data source	BC Coroners Service
Definitions	Illicit drug overdose deaths refer to overdose deaths involving either [1] street drugs (heroin, cocaine, MDMA, methamphetamine, etc.) or [2] medications that were not prescribed to the decedent or [3] combinations of the above with prescribed medications or [4] overdoses where the origin of drug is not known. Both open and closed cases are included.
Notes	The BCCS operates in a live database environment. Data for recent years is based on preliminary circumstances and is subject to change as investigations are concluded. For more information please see the regularly updated BC Coroners Service report on Illicit Drug Toxicity Deaths in BC (6).

A.5 Harm reduction supply distribution

Data source	BC Harm Reduction Services Program Database
Definitions	**Number of harm reduction (HR) supply distribution sites** A site is considered active if registered in and approved by Harm Reduction Services. Sites are excluded from the count if designated as inactive by the program or if the site closes permanently for other reasons (e.g. loss of funding; move to amalgamate with another organization). **Number of harm reduction supplies shipped to HR sites** Registered HR sites are able to order specific quantities of different HR supplies for distribution from Harm Reduction Services. Orders are captured in the program database.
Notes	Orders shipped to satellite sites by parent sites are not tracked. Therefore, orders in geographic areas without a parent site but with satellite sites would not be captured.

A.6 Estimated number of people who inject drugs

Data source	BC Hepatits Testers Cohort
Definitions	The BC-HTC includes information on individuals tested for HCV or HIV at the BCCDC PHL, or reported to public health as a confirmed case of HCV, hepatitis B virus (HBV), HIV/AIDS, or active tuberculosis (TB) between 1990 and 2015. The cohort is linked with data on medical visits, hospitalizations, prescription drugs, cancers, and deaths. More information on the BCHTC can be found on the cohort's webpage: https://bchtc.med.ubc.ca/. **Estimated number of people who inject drugs (PWID)** The estimate of PWID is based on individuals in the BC-HTC that were alive as of December 31, 2015. PWID with recent injection drug use (in past 3 years, current year inclusive) were defined as having records of: 1. Two physician diagnostic and billing (MSP) codes for potentially injectable drugs or 2. One discharge abstract database (DAD) code for potentially injectable drugs or 3. One national ambulatory care reporting system (NACRS) code for potentially injectable drugs or 4. PharmaNet record for opioid substitution therapy. Each person was counted once and attributed to one HSDA or HA based on their assigned Postal Code of residence. More information on these indicators can be found here (39).
Notes	Due to reliance on administrative health data vulnerable groups that are not engaged with healthcare may not be captured in these estimates. Estimates for a particular period can change over time due to updates in the data sources and in methodology.

A.7 Take Home Naloxone (THN) distribution

Data source	BC Harm Reduction Services Program Database
Definitions	**Number of Take Home Naloxone (THN) distribution sites** A site is considered active if registered in and approved by Harm Reduction Services. Sites are excluded from the count if designated as inactive by the program or if the site closes permanently for other reasons (e.g. loss of funding; move to amalgamate with another organization). **Number of THN kits shipped to HR sites** Registered THN sites are able to order specific quantities of THN kits for distribution from Harm Reduction Services. Orders may include the following supplies: pre-filled take home naloxone kits and replacement naloxone. Orders are captured in the program database. **Number of THN kits distributed** When a client picks up a THN kit sites are expected record client information (age, gender, overdose risk, whether first kit, replacing a used kit, or replacing a lost kit) and return distribution records to Harm Reduction Services on a regular basis. Distribution numbers represent the number of kits distributed to clients according to records returned by THN sites. Since the overdose emergency, the ability for sites to complete the reporting forms has been reduced. This indicator is subject to both lag and under reporting. **Number of THN kits reported as used to reverse an overdose** Clients receiving a THN kit at a THN distribution site who report that a previous kit was used to reverse an overdose.
Notes	Orders shipped to satellite sites by parent sites are not tracked. Therefore, orders in geographic areas without a parent site but with satellite sites would not be captured. Orders data often shows a higher number of kits than distribution data as not all sites have 100% record return for all THN distributed (i.e. missing records). Since the overdose emergency, the ability for sites to complete distribution reporting forms has been reduced. This indicator is subject to both lag and under reporting. Some ordered kits are retained on site as stock to manage demand fluctuations. More information on THN sites, orders, and distribution records can be found in the 2018 THN Evaluation Report (58).

A.8 Facility Overdose Response Box (FORB) program

Data source	BC Harm Reduction Services Program Database
Definitions	**Number of Facility Overdose Response Box (FORB) distribution sites** A site is considered active if registered in and approved by Harm Reduction Services. Sites are excluded from the count if designated as inactive by the program or if the site closes permanently for other reasons (e.g. loss of funding; move to amalgamate with another organization). **Number overdose reversals reported at FORB sites** FORB sites regularly track and report overdose events to Harm Reduction Services. Overdose reversals refer to overdose events responded to by FORB site staff where naloxone was administered and the overdose was reversed.
Notes	FORB sites may not record every overdose event that occurs on site and may not have 100% record return for all overdose events.

A.9 Observed consumption site indicators

Data source	BC Regional Health Authorities in partnership with Overdose Prevention Services (OPS) and Supervised Consumption Sites (SCS)
Definitions	**Number of OPS and SCS sites** OPS and SCS sites are sites where individuals can use substances in the presence of trained staff that can respond in the event of an overdose. Many OPS sites operate under a Provincial Order from the Chief Medical Health Officer whereas SCS sites have received a federal exemption under section 56.1 of the Controlled Drugs and Substances Act. **Number of OPS/SCS visits** The number of OPS/SCS visits reflects the number of visits recorded by site staff related to substance use. **Number of overdose events attended by OPS/SCS staff** The number of overdose events attended OPS/SCS staff reflects on-site events where staff administered naloxone, or events where staff assessed breathing and/or applied a sternal rub to assess level of consciousness.
Notes	Data are derived from a live environment and are subject to change. Data is available for most but not all OPS/SCS sites. Some regions may have additional housing based OPS sites that are not captured here.

A.10 Opioid agonist treatment (OAT) Indicators

Data source	BC PharmaNet Data is provided by Pharmaceutical Analytics, Integrated Analytics: Community & Cross Sector Branch, Health Sector Information, Analysis, & Reporting Division
Definitions	Opioid agonist treatment (OAT) outlined here refers to methadone, buprenorphine/naloxone, sustained release oral morphine, hydromorphone, and diacetylmorphine. More information on these indicators can be found in the Overdose Response Indicators page (9). **Number of OAT prescribers** Refers to number of prescribers that have prescribed any OAT to at least one client in a given month. Prescribers may be prescribe multiple types of OAT in a month and can appear in multiple drug categories. The category ANY OAT counts unique prescribers who dispensed any OAT drug type in that month, only once. **Number of new OAT prescribers** Refers to the prescribers outlined in the OAT prescriber indicator if they have never prescribed a specific OAT or any OAT previously. Prescribers can be new to a specific OAT if they have never prescribed that specific type of OAT before. **Number of clients who filled an OAT prescription** Refers to number of unique clients that have been dispensed each OAT at least once in a given month. Clients may be dispensed multiple types of OAT in a month and can appear in multiple drug categories. The category ANY OAT counts unique individuals, dispensed any OAT drug type in that month, only once. **Number of new clients who filled an OAT prescription** Refers to the clients outlined in the OAT client indicator if they have never been dispensed a specific OAT or any OAT previously. Clients can be new to a specific OAT if they have never been dispensed that specific type of OAT before.
Notes	Data represents clients who filled prescriptions, not all clients who were written prescriptions. Data does not cover OAT dispensed in inpatient settings. More information on these indicators can be found in the Overdose Response Indicators page (9).

Appendix

Appendix B - Map of BC Health Service Delivery Areas