



2019

SYRINGE EXCHANGE PROGRAM ANNUAL REPORT



HAWAII HEALTH
& HARM REDUCTION CENTER

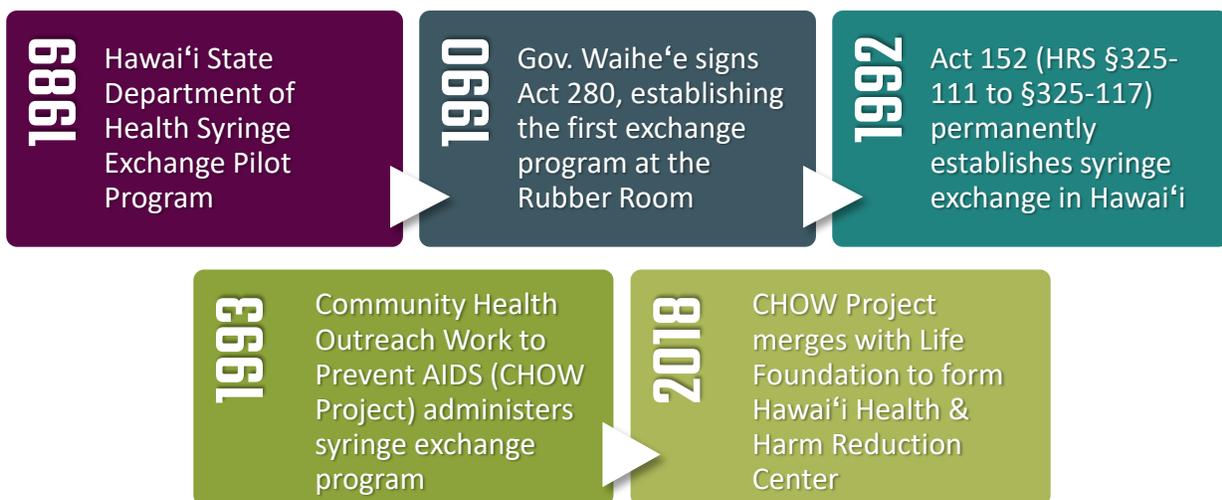
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A BRIEF OVERVIEW OF SYRINGE EXCHANGE IN HAWAI‘I

The Hawai‘i State Department of Health (HDOH) started a pilot syringe exchange program in 1989 as part of its response to the growing Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome (HIV/AIDS) crisis in the state. The goal of the project was to reduce the acquisition and/or transmission of HIV among persons who inject drugs (PWID) through peer educators who were former PWID and were knowledgeable of PWID in the state.

Another pilot program was established in 1990 when former Hawai‘i Governor John Waihe‘e signed Act 280 into law, which led to Hawai‘i’s first syringe exchange program (SEP). Located at the Rubber Room in Downtown Honolulu, SEP was operated by members of the Life Foundation, previously the largest and oldest AIDS organization in the Pacific. After the two-year pilot period demonstrating safety and efficacy of the program, the state legislature passed Act 152 in 1992. Act 152, codified as Chapter 325, Part VII of Hawai‘i Revised Statutes (HRS §325-111 through §325-117), enabled HDOH to implement a statewide SEP to prevent transmission of HIV, hepatitis B (HBV), hepatitis C (HCV), and other blood-borne pathogens, and to refer PWID to appropriate health and social services. HRS §325-115 requires HDOH to appoint an oversight committee to monitor the progress and effectiveness of SEP and to examine available data compiled by the program. HRS §325-116 requires HDOH to report annually to the oversight committee, including the number and demographics of participants, the impact of the program on HIV infection, an assessment of the cost-effectiveness of the program, the strengths and weaknesses of the program, the advisability of its continuation, and ways to improve SEP. This evaluation fulfills the syringe exchange program’s obligations under these two statutes.



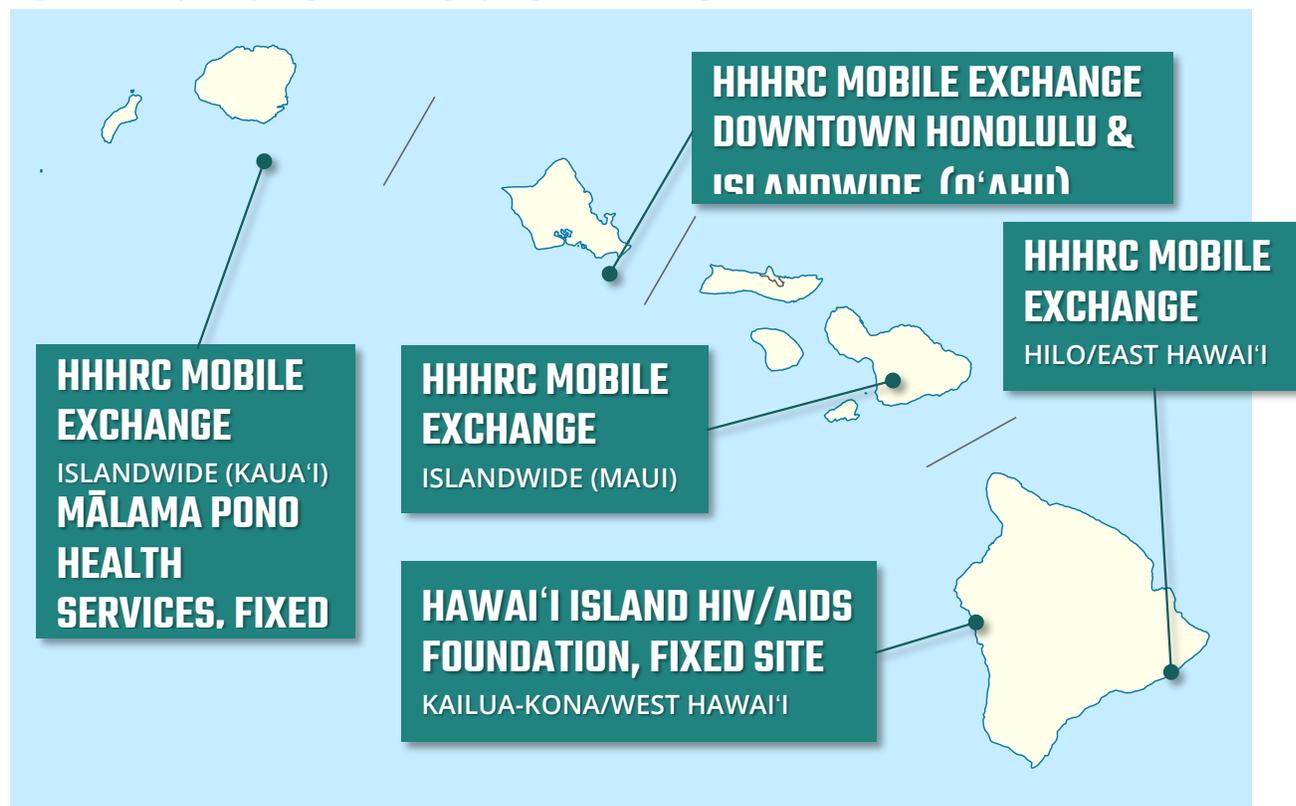
The legislature named Community Health Outreach Work to Prevent AIDS (CHOW Project) as the coordinating agency for the statewide SEP in 1993. The CHOW Project extended SEP services beyond O'ahu to the counties of Kaua'i, Maui, and Hawai'i in 1994. In 2018, the CHOW Project merged with the Life Foundation and continues to operate SEP under its new organizational name, Hawai'i Health & Harm Reduction Center (HHHRC). Today, HHHRC operates five mobile vans which cover each of Hawai'i's four counties and provides a variety of services beyond syringe exchange. Outreach workers establish contact and trust with PWID who access SEP to encourage safer injection and sexual behaviors. Outreach workers provide health education, HIV and HCV testing and counseling, linkages to housing navigation and other services, wound care, overdose prevention education (including naloxone training and distribution), and harm reduction supplies, such as condoms, hygiene kits, health education materials, fentanyl test strips, and pipe covers, which are used to prevent cuts and burns from smoking substances with a glass pipe.

In 2019, HHHRC exchanged 1,180,158 syringes statewide, a 3,237% increase since 1993 when it exchanged 35,365 syringes. Currently, the Hawai'i statewide SEP is one of the largest programs in the United States and is the first program in the U.S. to be fully state-funded to offer coordinated services statewide. As of August 2020, there were 435 SEPs operating in 45 states and territories, including the District of Columbia, US Virgin Islands, and Puerto Rico.¹

ABOUT SEP OPERATIONS

Hawai'i's SEP began in a fixed location which provided the opportunity to offer comprehensive services to participants accessing SEP. Currently, HHHRC operates its SEP through mobile sites and Syringe Exchange Appointments (SEA) where outreach workers meet participants at locations convenient for the participant. While this model provides flexibility, it limits the services that may be provided, such as HIV and HCV outreach, testing, and linkage activities, wound care, or other activities, although SEP continues to find innovative ways to provide these services in the field. The downtown Honolulu mobile exchange has a regular schedule with the van parked in the same location five days a week, and a second van that visits other parts of the island to see participants who cannot make it into downtown Honolulu. The Neighbor Islands have a mix of fixed sites (where vans are parked at a regular location) and SEA visits.

Figure 1. Map of syringe exchange program coverage and subcontractors



In 2016, SEP began a collaborative relationship with the Hawai'i Island HIV/AIDS Foundation (HIHAF) in Kailua-Kona. HIHAF conducts syringe exchange out of their office on Palani Road. The HIHAF outreach workers do not exchange outside of their office, so the Hawaiian Ocean View Estates (HOVE) area continues to be served by SEP outreach workers from Hilo. In 2017, SEP also partnered with Mālama Pono Health Services to provide additional syringe exchange services for PWID who may not normally have contact with SEP on Kaua'i (see Figure 1).

INJECTION DRUG USE, RISK BEHAVIORS AND OVERDOSE IN HAWAI'I

PREVALENCE OF INJECTION DRUG USE AND OTHER RISK BEHAVIORS AMONG YOUTH

New data from the Youth Risk Behavior Survey shows that 1.6% of youth in high school had ever injected illegal drugs in 2019,² up from 1.5% in 2017.³ Differences between cisgender (a person whose gender identity corresponds with their sex assigned at birth) male and female students were found (2.1% for males versus 1.1% for females),² up from 2017 (2.0%

for males and 0.8% for females).³ Gender differences were also found in Hawai'i, with 1.0% of cisgender female and 3.7% of cisgender male high schoolers reporting injecting illegal drugs in 2019.³ Data by county and race ethnicity in the state for 2019 were unavailable at the time of this report. In 2017, Black students (7.9%), other Pacific Islander students (5.3%), and Native Hawaiian students (3.5%) were most likely to have reported injecting between 2013-2017. Over time, the percentage of female students injecting has gone down from 2.7% in 2013 to 1.2% in 2017. Hawai'i County high school students were most likely to report ever injecting drugs between 2013-2017 (3.7%), followed by Maui County (3.5%), Kaua'i County (3.4%), and Honolulu County (2.6%).⁴

Nationally in 2019, those students identifying as gay, lesbian, or bisexual were more likely to report having ever injected illegal drugs (3.5%)⁵ compared to their heterosexual counterparts (1.1%).⁶ Again, gender differences were found between young cisgender lesbian and bisexual women (2.5%) and young cisgender gay and bisexual males (7.0%).⁵ Older data on lesbian, gay, and bisexual youth from Hawai'i disproportionately reported having ever injected an illegal drug (8.9%) compared to their heterosexual counterparts (1.8%).⁷

Additionally, 12.2% of high school youth and 6.8% of middle school students in Hawai'i in 2017 reported misusing prescription pain medication,⁷ which has been associated with future injection drug use among younger people.⁸⁻¹⁰ Significantly more transgender youth reported ever having injected drugs compared to their cisgender counterparts (25% vs. 1%, respectively).¹¹ These statistics show that youth in Hawai'i, especially LGBTQ youth, are at risk for injection drug use.

PREVALENCE OF DRUG USE AND OTHER RISK BEHAVIORS AMONG ADULTS

Data on injection drug use is less available for adults than youth. However, the Substance Abuse and Mental Health Services Administration (SAMHSA) conducts the National Survey on Drug Use and Health annually from which state- and national-level estimates of drug use are available. Although this provides a snapshot about which drugs were used, it does not provide information on how they were used (i.e., injected). Nationally, use of heroin in the past year among those 18 and older increased from 2013-2014 (0.32%) to 2016-2017 (0.37%), then decreasing 2017-2018 (0.34%).¹² Methamphetamine (known as *meth* or *ice* colloquially, and referred to as *meth* hereafter) use for the same age group increased national from 0.62% in 2015-2016 to 0.69% in 2017-2018, while pain reliever misuse fell from 4.54% in 2015-2016 to 3.94% in 2017-2018.¹²

Among Hawai'i adults, SAMHSA reports an upward trend in self-reported heroin use, more than doubling from 0.13% in 2013-2014 to 0.29% in 2017-2018.¹² Meth use was nearly flat between 2015-2018 in the state, decreasing to 1.0% from 1.03% in 2017-2018, but still higher than the US overall.¹² As with the national data, fewer Hawai'i adults reported misusing pain relievers in the past year (3.93% in 2015-2016 vs. 3.21% in 2017-2018).¹² Nationally and in Hawai'i, the prevalence of those using cocaine in 2017-2018 was the same at 2.1%.¹² Continued monitoring and data collection by HHHRC helps to fill gaps in our understanding of PWID in the state, their needs, and how best to develop and implement interventions related to harm reduction and/or prevention.

OVERDOSES NATIONALLY AND IN HAWAI'I

The National Institute on Drug Abuse reports on drug overdose trends (as reported by the Centers for Disease Control and Prevention). Nationally, opioid deaths in 1999 were 8,048, and then increased to 46,802 deaths in 2018, slightly down from 47,600 deaths in 2017. Meanwhile, the number of deaths involving prescription opioids had increased from 3,443 in 1999 to 17,029 in 2017, dropping in 2018 to 14,975. Figure 2 shows two slides from CDC highlighting national trends over time.¹³

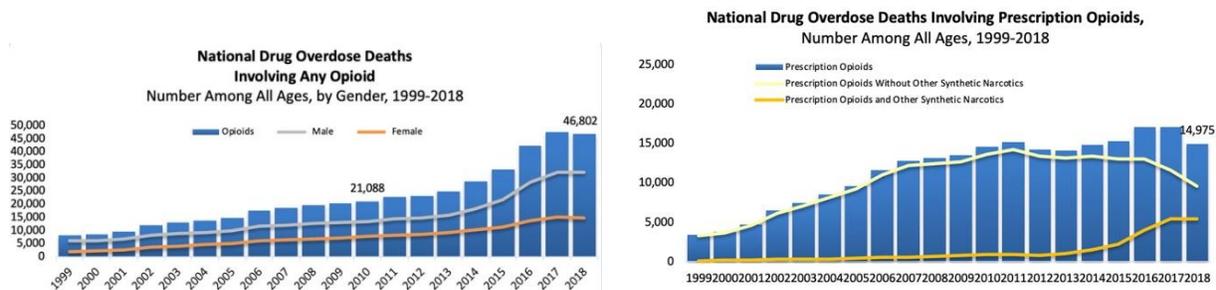


Figure 2. National opioid death and prescription opioid death data, 1999-2018. Slides via the National Institute on Drug Abuse, Data from CDC Wonder Database.¹³

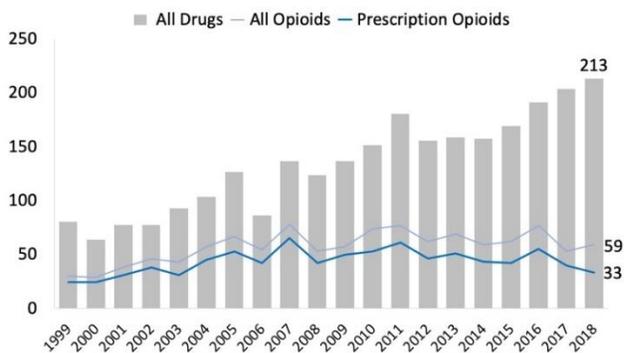


Figure 3. Number of drug overdose deaths involving opioids in Hawai'i, 1999-2018. Source: National Institute on Drug Abuses/CDC WONDER.¹⁴

In Hawai'i from 2010-2014, 91% of poisoning deaths in Hawai'i were caused by drugs or medications, surpassing deaths from motor vehicle traffic-related incidents. Pain relievers, such as oxycodone, contributed to 35% of drug related deaths.¹⁴ CDC's WONDER database shows unintentional drug overdoses from opioids were 59 in Hawai'i in 2018 while overall deaths from any drug has steadily increased (see Figure 3).¹⁵ In 2018, the state had one of the lowest rates of prescriptions for opioids, with providers writing 33.4 prescriptions per 100 people compared to the national average of 51.4 prescriptions.¹⁵ Between August 2017 and August 2018, 384 non-fatal overdoses were reported; additionally, 1,332 persons were treated with naloxone to reverse an overdose by EMS.¹⁶ HHHRC began offering trainings and education on overdose prevention/reversal in 2016. More information on this program is included in the section on Naloxone and Naloxone Refill Databases (pg. 18).

NATIONAL AND LOCAL HIV/STAGE 3 (AIDS) SURVEILLANCE AND HEPATITIS C OVERVIEW: PROGRAM EFFECTIVENESS

As in previous years, to estimate the effectiveness of the HHHRC syringe exchange program, we compared HIV and AIDS cases among PWID in Hawai'i to national surveillance data. Early on, only AIDS data was available as HIV was not a reportable condition during the first 20 years of the epidemic. This limits comparison of historical data as some people may never progress to Stage 3 (AIDS) given advances in pharmaceutical therapy. Therefore, examining Stage 3 (AIDS) cases likely does not reflect current trends. In addition, data on Stage 3 (AIDS) cases is no longer presented in national HIV surveillance reports,¹⁷ but on CDC's AtlasPlus system.¹⁸ However, this data can help in understanding the epidemiology of HIV, especially risk factors for transmission and acquisition.

An estimated 1.2 million people are living with HIV in the US, with 1 in 7 living with an undiagnosed infection.¹⁹ Updated data from the US Centers for Disease Control and Prevention show that 37,968 were diagnosed with HIV in 2018 in the US plus all dependent areas, and 1,040,352 adults and adolescents were living with diagnosed HIV nationally at year-end 2018.¹⁷ Between 2014 and 2018, the number of new HIV diagnoses among gay and bisexual men decreased by 7% overall, diagnoses among gay/bisexual multiracial males were fell 44% while among Native Hawaiians and other Pacific Islander gay/bisexual men, diagnoses increased 71%.¹⁷ CDC AtlasPlus data show that a total of 12,146 people 13 and older had died from Stage 3 HIV in 2018, of which 2,677 were PWID and 1,163 were MSM/PWID.¹⁸

In Hawai'i, there were 4,774 cumulatively diagnosed HIV cases, including 3,529 stage 3 HIV cases, at the end of 2018. In 2018, 65 persons were diagnosed with HIV and the incidence

rate of Stage 3 HIV was 1.3 per 100,000 persons. Of the 19 cases with an AIDS diagnosis, four cases were related to IDU: two were attributable to IDU and two were attributable to IDU/MSM. Since reporting began in 1983, 16% of all incident Stage 3 HIV/AIDS cases in Hawai'i were attributable to IDU or MSM/IDU.²⁰ Since the start of the epidemic, 8% of HIV cases were attributed to IDU while 7% were attributed MSM/IDU; in 2018, 7% of HIV diagnoses in the US were attributable to injection drug use.²⁰

Hawai'i's lower incidence of HIV infection among PWID could be attributable to the state's proactive efforts to implement a SEP starting in 1989. Starting SEP can limit the transmission of HIV,²¹ particularly in areas with low seroprevalence of HIV.²² Results from previous HHHRC HIV seroprevalence studies found a HIV+ seroprevalence between 0.0% and 5.8% among study cohorts. This year, we found no new HIV infections among seroprevalence study participants. One participant had been previously diagnosed with HIV and knew about their status. Low HIV transmission in the state among PWID suggests that the provision of sterile syringes, injection equipment, and other services through SEP project assists in reducing HIV prevalence among PWID and transmission to sexual partners and children. Not only has the HIV prevalence among PWID accessing SEP continued to be low, having lower numbers of active PWID living with HIV decreases the infection risk for other PWID (and their partners). Access to sterile syringes and other equipment decreases HIV-related risk behaviors, such as sharing used needles.^{21,23-24} In addition, provision of new, sterile injection equipment lowers the risk of HIV transmission as SEP participants are less likely to share previously used injection equipment.²⁵ Exchanging syringes for others, also known as secondary exchange or colloquially as "gatekeeping," is another way to reduce risk related to sharing equipment. For example, others have found those participating in gatekeeping had lower odds of syringe reuse or receptive needle sharing compared to PWID who did not participate in a SEP.²⁶ In addition, HHHRC SEP provides additional services that may help keep HIV rates low among PWID, such as the distribution of condoms.

The transmission of hepatitis C, another blood-borne pathogen, can also be decreased through the provision of SEP.²⁷⁻²⁸ Nationally, the CDC estimates that in 2018 there were 3,621 reported acute HCV infections, with an estimated 50,300 cases that have gone unreported. Of those cases with IDU risk data collected, 72% reported IDU (1,102 of 1,535). CDC also estimates 2.4 million people had a chronic HCV infection between 2013-2016.²⁹ Updated local data on the prevalence of HCV are not available, but one figure from 2016 indicates an estimated 23,000 people living in Hawai'i were living with chronic HCV.³⁰ Results from previous seroprevalence evaluations found 65% to 89% of clients screened

positive for HCV since testing began in 2007. We present results from our latest seroprevalence survey below (page 23).

As discussed in last year's report, the efficacy of needle exchange is best demonstrated by the lack of such programs across the country. Notable HIV outbreaks in Indiana in late 2014,³¹ and increased HCV acquisition between 2006 and 2012 in Appalachia³² were related specifically to IDU. Findings from Indiana showed 84% of those testing positive for HIV were coinfecting with HCV and also showed drug use was multigenerational and involved crushing/cooking pills not meant for injection.³³ In Kentucky, Tennessee, Virginia, and West Virginia, 73% of new HCV cases among people 30 years and under between 2006 and 2016 were attributable to IDU.³⁴ In West Virginia, the suspension of SEP in the state led to self-reports of increased risk-taking regarding IDU.³⁵ These states provide valuable lessons for why SEP programs should be maintained to prevent **both HIV and HCV**.

2019 SYRINGE EXCHANGE PROGRAM EVALUATION

DATA SOURCES AND METHODS

The timeframe for the annual report is January 1, 2019 through December 31, 2019. During 2019, HHHRC Syringe Exchange Program staff collected data which was entered into different databases, and these databases comprise the data used in this report. In 2019, we also conducted a seroprevalence survey of participants, which included both HIV and HCV testing. Below, we discuss the databases used for this evaluation plus a discussion of the statistical analyses conducted.

HHHRC maintains the following databases as part of its day-to-day SEP work. These databases were used in this evaluation:

- **Daily Logs:** Daily logs are used to capture information about number of syringes exchanged daily; supplies for harm reduction, including pipe covers, hygiene kits, first aid supplies, and condoms; and, types of outreach contacts related to youth and gay men. Additional data, including participant card number and participant demographics are also collected. Lastly, information about secondary exchange, or "gatekeeping," is collected to better measure the reach of the program.
- **Participant Card Registry:** Starting in 2012, HHHRC began to distribute participant cards with a unique alphanumeric identifier ("participant ID"). Registering a card is optional, but even with a card, participants remain anonymous. Registrants provide basic demographic data and report on their injection drug practices. The card bears

information related to Hawai'i Revised Statutes §325-114 which legalized syringe exchange in the state and allow for amnesty for syringes if participants are stopped by the police. For more information, see Figure 4. Participant IDs are also captured in the Daily Logs, which when linked together provides a snapshot of who exchanged during the program year. In 2016, 1,085 participants exchanged using a card, which increased to 1,274 in 2017. In 2018, 1,350 participants exchanged using a card, while in 2019, 1,458 participants used their cards.

- **Naloxone and Naloxone Refill Databases:** In September 2016, HHHRC began its naloxone program, first providing group and individual trainings with PWID on injectable naloxone during outreach or syringe exchange. Trainings were expanded to include social service providers, law enforcement, friends and family of PWID, and other community members. Data collected during trainings include demographics, overdose risk factors and history. In a naloxone refill event, information about use and circumstances, loss, or dosage expiration are collected.
- **SEP Risk and Seroprevalence Survey:** As part of this year's evaluation, we surveyed 105 SEP participants about their injection drug use, injecting behaviors, and provided both HCV and HIV tests. Of the 105 interviewees, only 101 were currently injecting. Results below discuss only these 101 participants for whom we have injection data.
- **Outreach, Testing, and Linkage (APHIRM Databases):** HHHRC provides HIV and HCV outreach, testing, and linkage (OTL) as part of its portfolio of services. These services are offered through the main office on O'ahu. HHHRC also hosts health fairs around Honolulu where HIV/HCV screening is provided along with a host of other services. On neighbor islands, participants who wish to get tested are referred to HDOH testing sites. During testing, demographic, risk factors, screening results and referrals are reported to HDOH's APHIRM (formerly called EvaluationWeb) database. As APHIRM does not collect referral information, it is not possible to report on neighbor island testing activity driven by HHHRC SEP workers. Thus, information provided in this evaluation reflect OTL on O'ahu only. However, any person tests as part of the serosurveillance survey was entered into the APHIRM database.

Participant Identification Card

Card # _____

Identification Code: _____
(first two letters of father's first name, first two letters of mother's first name, day of birth, month of birth)

Date: _____

 Signature of HHHRC Staff



**HAWAII HEALTH
& HARM REDUCTION CENTER**
The New Chapter for Life Foundation and The CHOW Project

Please contact HHHRC with any questions at 808-521-2437



The person bearing this card has registered with the Hawai'i Health & Harm Reduction Center's syringe exchange program, a project funded by the Hawai'i Department of Health. This participant is carrying syringes to and from the exchange because it has been proven to prevent transmission of HIV, hepatitis, and other blood-borne pathogens. Hawai'i Revised Statute 325-114 states exchanges under this program shall not constitute an offense for the participant.

Figure 4. HHHRC SEP Participant Identification Card. The identification card summarizes the Hawai'i Revised Statute that allows participants to carry syringes to and from the exchange: *"The person bearing this card has registered with the Hawai'i Health & Harm Reduction Center, a statewide syringe exchange program funded by the Hawai'i Department of Health. This participant is carrying syringes to and from the exchange because it has been proven to prevent the transmission of HIV, hepatitis, and other blood-borne pathogens. Hawai'i Revised Statutes §325-114 provides that exchanges under this program shall not constitute an offense for the participant."* The participant card has been reported to offer participants limited amnesty when they are stopped by police and allows them to keep syringes they have in their possession.

Analysis Plan & Statistical Analyses

To understand syringe exchange program participation and differences between 2018 and 2019 program access, data from the Daily Logs and Participant Card Registries were used and treated as unbalanced panel data. Descriptive statistics and frequencies are presented below. Bivariate random effects regressions were used to examine demographic differences in the number of times the program was accessed across the two service years. Descriptive statistics from the naloxone registry and refill databases, and HIV and HCV screening data from the EvaluationWeb system are reported for 2019 only. All analyses were run in Stata 15.1 (StataCorp, College Station, TX). Statistical significance was set at $\alpha = 0.05$ for this section of the report.

Race and Ethnicity Reporting in Hawai'i

This report uses HDOH's methods to report Native Hawaiians, wherein any person reporting Native Hawaiian ancestry is reported as Native Hawaiian.³⁶ Participants who indicated being of two or more racial groups (other than Native Hawaiian) were coded as multiracial. In 2018, participants were provided with a multiracial category to report under if so desired.

SYRINGE EXCHANGE ACTIVITY IN 2018

A record 1,180,158 syringes were exchanged in 2019, barely up from 1,177,421 syringes exchanged in 2018, less than a 1% increase in exchange volume (Figure 5), but another record year. In terms of visits, June 2019 was the slowest month with 710 visits while September 2019 was the busiest month with 1,212 visits, but November had the heaviest volume of syringes exchanged at 124,527.

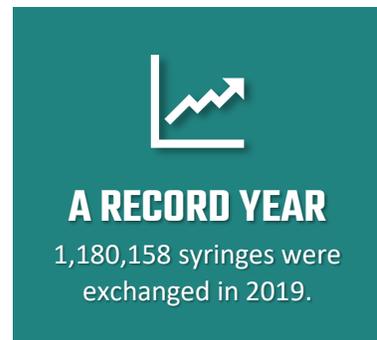
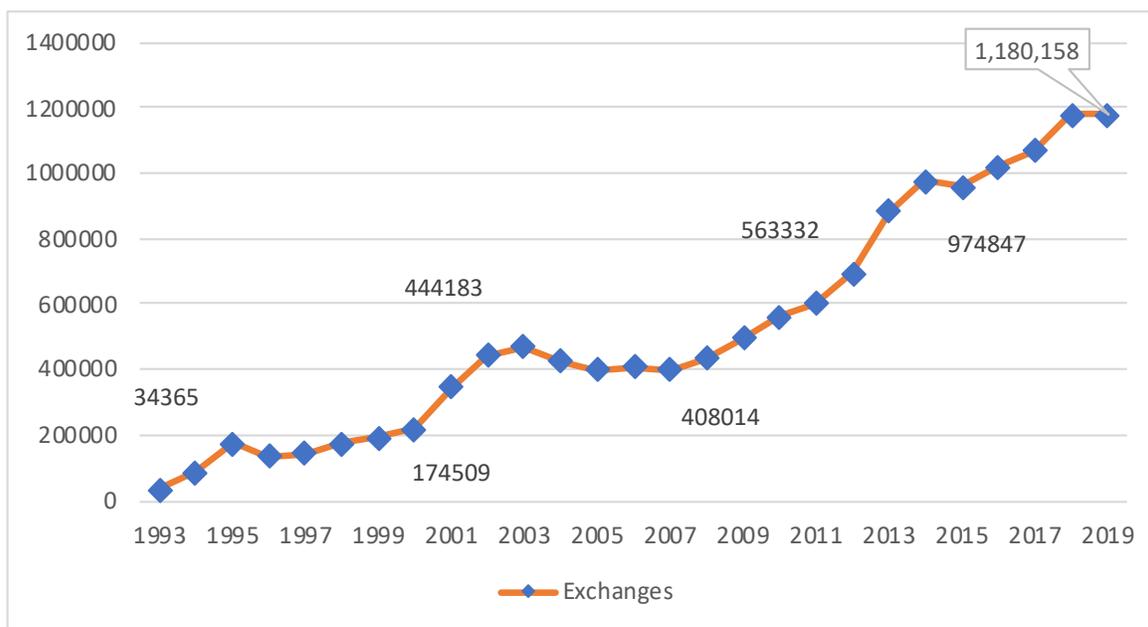


Figure 5. The total number of syringes exchanged statewide from 1993-2019.



Fewer Visits, But More Exchanges

The number of visits decreased in 2019 to 12,337, down just under 8% from the previous year (Table 1). However, participants exchanged an average of 96 syringes per visit, an increase of 9% per visit. Gatekeeping activity was reported only 14.32% of visits, a 41.6% decrease from the year prior, continuing a downward trend in gatekeeping activity noted in last year's evaluation. By volume, a total of 586,058 gatekept syringes were exchanged, down 7.6% from the year before, and continuing the decline in gatekeeping behavior. In 2019, gatekeepers reported exchanging for a possible 6,743 additional people, down 21.4% from 2018; however, those gatekeeping reported exchanging on average for 3.8 additional people per exchange in 2019, up 20.8% from 2018. Continuously providing gatekeeping services can help diminish risk-taking among PWID who are not reached by HHHRC directly.

Among all sites, O‘ahu accounted for 75% of exchange visits (9,283) and handled 45% of syringes exchanged (532,760). The average number of syringes exchanged per visit also ticked up from 50 in the previous year to 57 on O‘ahu. Visit activity remained essentially the same across sites; East Hawai‘i and Kaua‘i saw decreases in the number of syringes exchanged while West Hawai‘i, and Maui had an increase in syringes exchanged. Differences in exchanges on Hawai‘i island may be attributable to intermittent closures due to vehicular issues and new hires.

Table 1. Number of exchange visits, first visits, syringes exchanged, and average number of syringes exchanged from 2016-2018

<i>Exchange Site</i>		Total Visits	Syringes Exchanged	Average Number of Syringes Exchanged Per Visit
	Year	N (%)*	N (%)*	N**
<i>Statewide</i>	2019	12,337	1,180,158	96
	2018	13,366	1,177,421	88
	2017	12,967	1,068,621	83
	2016	11,120	1,020,286	92
<i>O‘ahu</i>	2019	9,283 (75%)	532,760 (45%)	57
	2018	10,367 (78%)	522,870 (44%)	50
	2017	10,401 (80%)	487,041 (46%)	47
	2016	8,591 (77%)	455,022 (45%)	53
<i>East Hawai‘i</i>	2019	608 (5%)	197,738 (17%)	325
	2018	597 (4%)	233,867 (20%)	392
	2017	526 (4%)	188,824 (18%)	339
	2016	636 (6%)	220,220 (22%)	347
<i>West Hawai‘i</i>	2019	1169 (9%)	145,627 (12%)	125
	2018	1,046 (8%)	125,151 (11%)	120
	2017	1,024 (8%)	139,139 (13%)	136
	2016	836 (8%)	113,266 (11%)	136
<i>Maui</i>	2019	710 (6%)	201,762 (17%)	284
	2018	765 (6%)	176,685 (15%)	231
	2017	505 (4%)	170,669 (16%)	338
	2016	690 (6%)	159,114 (16%)	231
<i>Kaua‘i</i>	2019	567 (5%)	102,271 (9%)	180
	2018	591 (4%)	118,548 (10%)	201
	2017	511 (4%)	83,908 (7%)	165
	2016	367 (3%)	72,264 (7%)	197

Additional Harm Reduction Opportunities

In addition to safe injection equipment, outreach workers distribute other risk reducing items. During 2018, condoms were distributed during 1,844 (14.95%) exchange visits, pipe

covers at 1,518 (12.30%) visits, hygiene kits at 2,163 (17.53%) visits, and first aid kits at 5,655 (45.75%) of visits. This year, in response to the growth of fentanyl in the opioid drug supply nationally, HHHRC began offering fentanyl test strips. Although data on the number of strips distributed were collected inconsistently, test strips were distributed for at least 962 visits.

PARTICIPANT DEMOGRAPHICS AND SELECTED RISK FACTORS

In this section, demographic and selected risk factors are presented for those who exchanged in 2018 and 2019. In total, an identifier was presented in 88% of exchanges in 2018 and 86% of exchanges in 2019, from which 10924 exchanges in 2018 and 9701 exchanges in 2019 could be matched to an ID in the Participant ID Card database. In sum, 1350 unique individuals accessed the exchange in 2018, and 1458 unique individuals accessed the exchange in 2019; over the course of 2018-2019, a total of 2013 participants accessed SEP.

Table 2. Demographics and Risk Factors Among HHHRC Syringe Exchange Program Participants, 2018-2019			
	Exchanged in 2018 N (%)	Exchanged in 2019 N (%)	Total N (%)
Number of Participants	1350 (100)	1458 (100)	2013 (100)
Mean (SD) Number of Syringes Exchanged Per Participant	771.20 (2039.44)	699.53 (1677.44)	733.98 (1860.3)
Mean (SD) Number of Visits per Participant**	8.09 (14.27)	6.65 (11.85)	7.35 (13.09)
Gender			
<i>Male</i>	868 (64.30)	941 (64.54)	1297 (64.43)
<i>Female</i>	446 (33.04)	477 (32.72)	658 (32.69)
<i>Transgender</i>	17 (1.26)	21 (1.44)	28 (1.39)
<i>Missing</i>	19 (1.41)	19 (1.30)	30 (1.49)
Age** Mean (Std. Dev)	43.03 (12.49)	44.27 (12.69)	43.62 (12.28)
Race/Ethnicity			
<i>Non-Hispanic White</i>	610 (45.19)	617 (42.32)	878 (43.62)
<i>Native Hawaiian</i>	330 (24.44)	374 (25.65)	505 (25.09)
<i>Asian</i>	81 (6.00)	93 (6.38)	121 (6.01)
<i>American Indian/Alaska Native</i>	15 (1.11)	16 (1.10)	23 (1.14)
<i>Other Pacific Islander</i>	26 (1.93)	21 (1.44)	33 (1.64)
<i>Black</i>	19 (1.41)	14 (0.96)	24 (1.19)
<i>Multiracial</i>	148 (10.96)	187 (12.83)	239 (11.87)
<i>Other Race/Ethnicity</i>	9 (0.67)	11 (0.75)	14 (.70)
<i>Missing</i>	43 (3.19)	45 (3.09)	65 (3.23)
<i>Hispanic/Latino</i>	69 (5.11)	80 (5.49)	111 (5.51)
Location Born			
<i>Hawai'i</i>	554 (41.04)	638 (43.76)	851 (42.28)
<i>Continental US</i>	650 (48.15)	679 (46.57)	960 (47.69)
<i>Pacific Islands</i>	9 (0.67)	5 (0.34)	11 (.55)

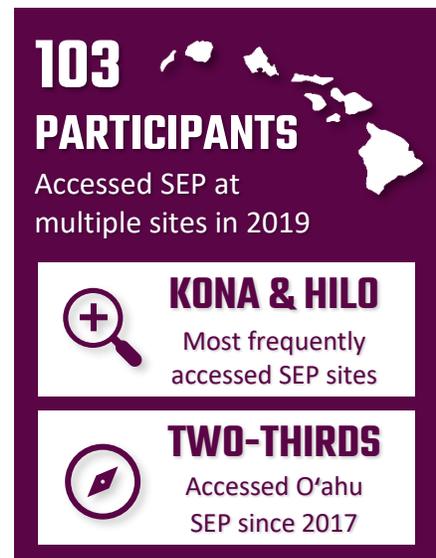
<i>Foreign Born</i>	78 (5.78)	69 (4.73)	100 (4.97)
<i>Missing</i>	59 (4.37)	67 (4.60)	91 (4.52)
Housing***			
<i>Homeless</i>	496 (36.74)	531 (36.42)	731 (36.31)
<i>Temporary/Unstable</i>	286 (21.19)	295 (20.23)	406 (20.17)
<i>Permanently Housed</i>	565 (41.85)	606 (41.56)	848 (42.13)
<i>Missing</i>	3 (0.22)	26 (1.78)	28 (1.39)
Marital Status			
<i>Married/Partnered</i>	455 (33.70)	483 (33.13)	671 (33.33)
<i>Single</i>	890 (65.93)	949 (65.09)	1312 (65.18)
<i>Missing</i>	5 (0.37)	26 (1.78)	30 (1.49)
Insurance			
<i>Not Insured</i>	45 (3.33)	35 (2.40)	58 (2.88)
<i>Insured</i>	1294 (95.85)	1386 (95.06)	1915 (95.13)
<i>Missing</i>	11 (.81)	37 (2.54)	40 (1.99)
Employment			
<i>Not employed/Retired/Disabled</i>	864 (64.00)	929 (63.72)	1278 (63.49)
<i>Employed</i>	470 (34.81)	490 (33.61)	688 (34.18)
<i>Missing</i>	16 (1.19)	39 (2.67)	47 (2.33)
Occupation Type (n=681)**	457 (100)	504 (100)	681 (100)
<i>Labor</i>	85 (18.60)	80 (15.87)	119 (17.47)
<i>Service</i>	41 (8.97)	58 (11.51)	75 (11.01)
<i>Professional</i>	63 (13.79)	84 (16.67)	104 (15.27)
<i>Social Services</i>	13 (2.85)	30 (5.95)	41 (6.02)
<i>Other</i>	255 (55.80)	252 (50.00)	342 (50.22)
Preferred Injection Drug(s) at Intake***			
<i>Heroin</i>	595 (44.07)	645 (44.24)	871 (43.27)
<i>Opioids/Pills</i>	207 (15.33)	196 (13.44)	288 (14.31)
<i>Meth</i>	424 (31.41)	462 (31.69)	630 (31.30)
<i>Cocaine</i>	9 (0.67)	9 (0.62)	10 (0.50)
<i>Speedball/Polysubstance</i>	9 (0.67)	9 (0.62)	12 (0.60)
<i>Other</i>	45 (3.33)	59 (4.05)	89 (4.42)
<i>Non-Injecting (Gatekeeper/Narcan)</i>	48 (3.56)	43 (2.95)	71 (3.53)
<i>Ref/Miss</i>	13 (0.96)	35 (2.40)	42 (2.09)
Preferred Injection Drug(s) at Intake (Drugs Only)** (n=1900)	1289 (100)	1380 (100)	1900 (100)
<i>Heroin</i>	595 (46.16)	645 (46.74)	871 (45.84)
<i>Opioids/Pills</i>	207 (16.06)	196 (14.20)	288 (15.16)
<i>Meth</i>	424 (32.89)	462 (33.48)	630 (33.16)
<i>Cocaine</i>	9 (0.70)	9 (0.65)	10 (0.53)
<i>Speedball/Polysubstance</i>	9 (0.70)	9 (0.65)	12 (0.63)
<i>Other</i>	45 (3.49)	59 (4.28)	89 (4.68)
Gatekeeping Activity			
<i>No/Missing</i>	936 (69.33)	992 (68.04)	1401 (69.60)
<i>Yes</i>	414 (30.67)	466 (31.96)	612 (30.40)

p<.01; *p<.001. p-values only refer to significant differences SEP access and not volume of syringes exchanged.

In 2018, the number of visits by participants who exchanged using an ID Card ranged from one to 215 visits, with an average of 8.09 visits exchanging a total of 1,041,115 syringes over the year. In 2019, the number of visits ranged from one to 157 with an average number of 6.65 visits for a total of 1,019,908 syringes exchanged. While the volume of syringes between the two years did not significantly differ, the number of visits by participants did differ ($p < .01$). The average number of syringes exchanged per participant per visit was 95.31 in 2018 and 105.13 in 2019 while the average number of syringes exchanged per year by participants was 771.20 in 2018 and 699.53 in 2019. Of those who exchanged during the two-year period, 334 had signed up for a participant card in 2018 (16.60%) while 288 (14.32%) signed up for a card in 2019. We chose not to present data on new clients or first visits to SEP this year as data was not consistently or systematically collected in the field.

Multi-Site Utilization

Notably, a total of 103 participants accessed SEP services at multiple sites. In 2018, 87 participants used multiple locations while 88 utilized multiple locations in 2019. Overall, the most frequently accessed sites were Kona and Hilo. Over two-thirds of these multisite participants had accessed the O'ahu site at least once in the last two years, 45% of multisite participants accessed Hilo at least once in the past two year, and 43% accessed Maui at least once during the same time period.



Few Shifts in Demographics

Among those for whom we have demographic data, use of the program did not significantly change between the two years. Overall, the mean age of participants was 43.62, but average age in 2018 was 43.03 while the group slightly aged in 2019, with a mean age of 44.27 years. Older age was also related significantly with number of visits to the exchange ($p < .05$) and volume of syringes exchanged ($p < .001$). The proportion of non-Hispanic white clients fell slightly from 45.19% in 2018 to 42.32% in 2019, while the proportion of multiracial clients increased from 10.96% to 12.83%. However, race and ethnicity were not significantly related to program access or syringes exchanged. The proportion of clients from the continental US fell slightly from 48.15% in 2018 to 46.57% in

2019 while the proportion from Hawai'i increased slightly from 41.04% to 43.76%. Region of origin was not significantly related to program access or syringes exchanged.

Housing is Related to Usage

The proportion of those accessing the program by housing status was relatively unchanged year over year. Housing status was significantly related to both syringes exchanged and program access (both $p < .001$), with those who were houseless accessing the program more often on average, while those who were permanently housed exchanged more syringes on average than other groups. Since 2014, HHHRC has continuously partnered with social service organizations that outreach to those who are homeless or marginally housed to get them into housing. Most participants each year were single, and this was not significantly related to number of visits or syringes exchanged.

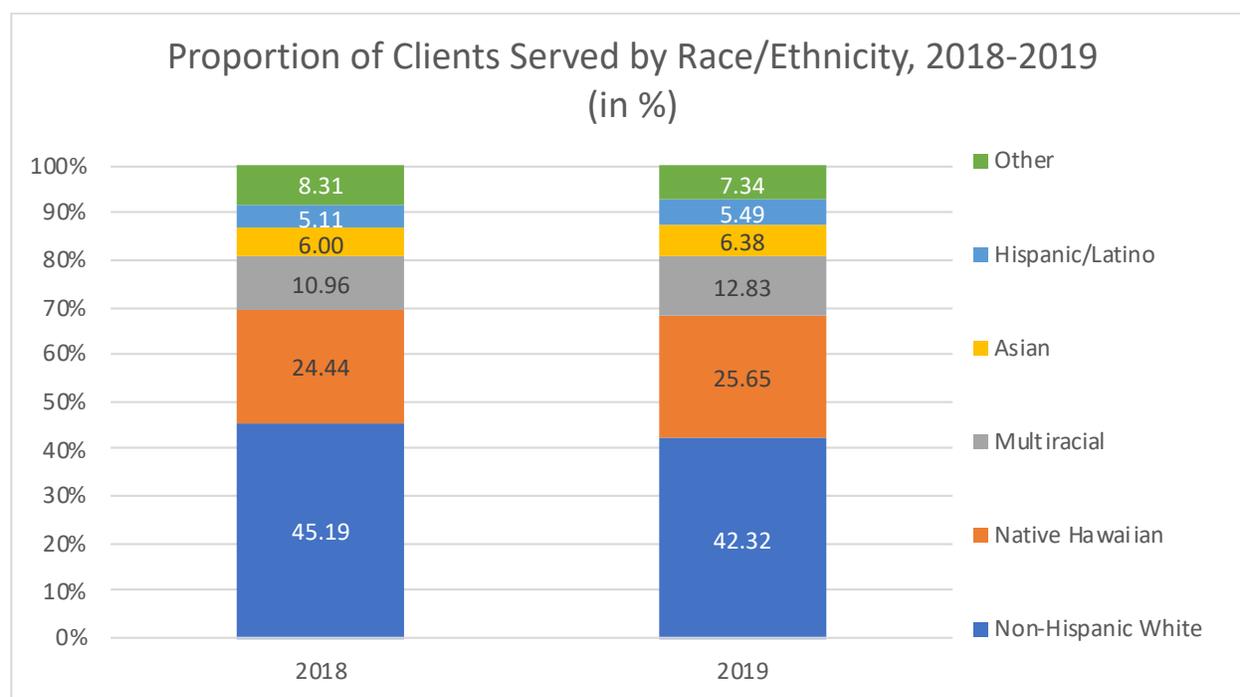


Figure 6. Race/ethnicity breakdown for participants who were in contact with SEP in 2018 and 2019. (Note: “Other” includes African Americans/Blacks, American Indians/Alaska Natives, Other Pacific Islanders, and those who indicated an “other” race, in addition to missing. See Table 2 for the breakdown of these groups.)

Employment and Insurance

Mainly, those who accessed the program in both years were not employed (unemployed, retired, or disabled), while nearly a third of participants were employed. Employment

status was significantly related to syringes exchanged ($p < .01$) but not number of times the program was accessed. Among those who were employed, those employed in labor exchanged significantly more syringes on average ($p < .05$) while those who were employed in "other" fields visited the exchange more often ($p < .01$).

Hawai'i's population is largely insured, and this is reflected in that over 95% of participants both years had indicated they were insured. Insurance status was not related to frequency of program access or number of syringes exchange. Previous HHHRC SEP evaluations indicated program participants had high emergency room utilization and low preventive and regular health checkups,³⁷ which led to the HHHRC Wound Care Program. Open wounds are a major issue for SEP participants. Earlier evaluation findings from the Wound Care Program demonstrate that for each nickel spent on Wound Care at HHHRC was equal to a dollar spent in emergency room care.³⁸ We discuss more about wound care with the results of the 2019 Seroprevalence Survey on page 23.

Drugs of Preference: Heroin and Meth

As in previous evaluations, the most preferred injection drugs were heroin followed by methamphetamines. The proportion of those who were exclusively gatekeeping or obtaining naloxone fell slightly between 2018 and 2019 while those who reported injecting something else or not reporting a preferred drug increased slightly. In looking just at those who inject drugs, those using heroin accessed services more frequently on average ($p < .01$) while those who injected other opioids/pills exchanged more syringes on average ($p < .001$). The proportion visiting the exchange who were gatekeepers increased slightly and was significant in terms of average number of syringes exchanged ($p < .001$) but not in terms of average number of visits.

NALOXONE TRAINING AND REFILLS

Naloxone Trainings: Participant Demographics and Risk Factors

Table 3. Demographic and Substance Use Behavior of 2019 Naloxone Training Program Participants

<i>Total</i>	350
Demographics	
<i>Male</i>	39.14%
<i>Female</i>	58.29%
<i>Transgender</i>	0.29%
<i>Missing</i>	2.29%
Race/Ethnicity	
<i>White</i>	38.57%
<i>Native Hawaiian</i>	22.29%
<i>Other/Multiracial</i>	17.14%
<i>Asian</i>	15.14%
<i>Hispanic/Latino</i>	4.00%
<i>Pacific Islander</i>	1.43%
<i>African American</i>	1.14%
<i>American Indian/Alaska Native</i>	0.29%
Any substance use in the past 30 days	
<i>Yes</i>	44.86%
<i>No</i>	55.14%
Current Substance Use (Past 30 days) n = 157	
<i>Heroin</i>	66.88%
<i>Meth</i>	31.21%
<i>Benzodiazepines</i>	22.93%
<i>Other Opiates (e.g. Pills)</i>	21.66%
<i>Methadone</i>	18.47%
<i>Suboxone</i>	12.74%
<i>Alcohol</i>	12.10%
<i>Crack/Cocaine</i>	0.64%
<i>Polydrug User (2 or more substances)</i>	62.42%
Injection Location (n=154)	
<i>Both Private & Public</i>	65.58%
<i>Always inject in Private Location</i>	30.52%
<i>Always inject in Public Location</i>	3.90%
Use Alone (n=153)	
<i>Never</i>	20.92%
<i>Sometimes</i>	61.44%
<i>Always</i>	17.65%
Time off from using substances (past year) - Yes (n=147)	53.06%



Since the start of the naloxone training program in September 2016 through the end of 2019, HHHRC has trained 1067 individuals on overdose prevention, including rescue breathing and naloxone administration; 350 people were trained in 2019 (Table 3). Below, we discuss those who were trained in 2019.

Nearly six-in-ten trainees in 2019 identified as women, with the remainder identifying as male (39.14%) or transgender (0.29%). Most participants were White (38.57%), followed by Native Hawaiian (22.29%) and Other or Multiracial (17.14%).

Substance Use Among Naloxone Trainees

Trainees also provide information on substance use in the past 30 days. Over half (55.14%) indicated no substance use while the remainder had indicated one or more substances used. Of the 157 trainees for whom we have data, the most frequently cited substance use was heroin (66.88%), followed by meth (31.21%) and

Table 4. Participants who experienced one or more overdoses, and participants who witnessed one or more overdoses, by select demographics, risk factors, and protective actions.

	Previously witnessed overdose ONLY	Previously overdosed OR previously overdosed and witnessed overdose	Total
	80 (52.98)	71 (47.02)	151 (100)
Demographics (n=146)			
<i>Female</i>	53.16%	52.24%	52.74%
<i>Male</i>	45.57%	47.76%	46.58%
<i>Transgender</i>	1.27%	0.00%	0.68%
Race/Ethnicity (n=151)			
<i>White</i>	45.00%	39.44%	42.38%
<i>Hawaiian (incl. Part Hawaiian)</i>	25.00%	22.54%	23.84%
<i>Other/Multiracial</i>	15.00%	23.94%	19.21%
<i>Asian</i>	7.50%	7.04%	7.28%
<i>Hispanic/Latino</i>	6.25%	2.82%	4.64%
<i>African American</i>	0.00%	4.23%	1.99%
<i>American Indian/Alaska Native</i>	1.25%	0.00%	0.66%
Drug(s) Used (Alone or With Another Substance)			
<i>Heroin</i>	55.00%	83.10%	59.87%
<i>Meth</i>	7.50%	19.72%	13.25%
<i>Fentanyl</i>	7.50%	18.31%	12.58%
<i>Benzodiazepines</i>	3.75%	11.27%	7.28%
<i>Other Opioids or Prescription Drugs</i>	8.75%	4.23%	6.62%
<i>Multiple (n=121)</i>	13.79%	47.62%	31.40%
Naloxone Use			
<i>Seen/Used During Overdose</i>	41.25%	53.52%	47.02%
<i>Ever Administered Naloxone (n=148)</i>	25.97%	26.76%	26.35%
Other Actions			
<i>CPR/Rescue Breathing</i>	25.00%	29.58%	27.15%
<i>Physically Slap/Hit</i>	18.75%	28.17%	23.17%
<i>Water/Shower/Ice Cubes</i>	10.00%	23.94%	16.56%
<i>911 or Medically Revived</i>	13.75%	16.90%	15.23%
<i>Did Nothing</i>	8.75%	8.45%	8.61%
<i>Used Other Drugs (e.g., Meth)</i>	1.25%	5.68%	3.31%

benzodiazepines (22.93%). Over 62% of trainees indicated using more than one of the substances, also known as polydrug use, listed in Table 3. Polydrug use has been associated with an increased risk for overdose³⁹ and associated with increased risk for HIV⁴⁰ and HCV.⁴¹

Of the 154 trainees who provided us with information on their injection behavior, nearly two-thirds reported use in both public and private locations (65.58%), while 30.52% used only in private, and 3.90% reported only using in public. Public locations include places like parks, public restrooms, cars, or on the streets. We also asked participants (n=153) if they use alone, of whom 20.92% indicated they never use alone; 61.44% said sometimes; and

17.65% indicated using alone “always.” We also asked participants (n=147) who used substances in the past 30 days if they had taken time off from using substances in the past 12 months, of whom 53.06% said they had. Cutting down or taking time off from opioid use can be dangerous since tolerance decreases during the time off, leading to an increase in one’s risk for overdose.⁴²⁻⁴³

Table 5. Demographic, risk factors, location, and results of naloxone administration by HHHRC overdose prevention-trained participants requesting a refill, 2019.

Refill Requests Due to Use	
Total	n = 127
Gender	
Male	66.93%
Female	26.77%
Multiple Persons, any gender	3.94%
Relationship	
Friend	70.87%
Other	9.45%
Stranger	6.30%
Self	3.94%
Partner	3.15%
Age	
Under 40	61.42%
40 and Over	36.22%
Drug used before overdose	
Heroin	92.91%
Benzodiazapines	17.32%
Meth	14.17%
Opioids (other)	6.30%
Other	6.30%
Methadone	3.94%
Alcohol	3.94%
Cocaine/Crack	1.57%
Overdose location	
Private residence	63.78%
Other setting	18.11%
Public Park/Restroom	12.59%
SRO/Hotel Room	0.79%
Other Actions Taken	
Other	11.81%
Rescue breathing	2.36%
Sternum rub	2.36%
Doses Administered (mean; n=117)	1.53
Duration of Naloxone Use (n=118)	
1 minute	25.98%
1 to 3 minutes	23.62%
3 to 5 minutes	21.26%
>5 minutes	22.05%
Outcome of Overdose	
Woke up because of trainee	77.17% (98)
Woke up because of health professional	2.36%
Died	1.57%

Naloxone Trainee Overdose History

During training sessions, HHHRC also collected data on overdose history, either personal overdose or witnessing an overdose. In 2019, 151 participants (or 43% of the 350 people trained in 2019) indicated ever witnessing and/or ever experiencing an overdose. Among this group, 80 (53%) had witnessed an overdose while 71 (47%) had previously experienced an overdose (and may have also witnessed an overdose; Table 4).

Among those who had witnessed an overdose, 41% reported that naloxone was administered, and 26% had reported previously administering naloxone. Among those who had previously overdosed, 54% had seen or used naloxone during an overdose while 27% had previously administered

naloxone during an overdose event.

Among trainees who had previously overdosed, all reported experiencing between one and 100 overdoses, with a median number of 2 overdoses and an average of 4 overdoses. Among trainees who knew why they overdosed, 27% reported the drugs were too strong, while 24% said they had overindulged. The remainder said mixing drugs (18%) was the reason they overdosed; 15% attributed it to fentanyl in the drug supply; 11% had reported lower tolerance due to sobriety; and 5% reported a suicide attempt.

Among those participants who had previously overdosed, nearly two-thirds (83%) reported having used heroin during their last overdose, while nearly 20% reported having used meth. Another 18% reported fentanyl, while 11% reported benzodiazepines and 4% reported using other opioids or prescriptions. Among those who had previously overdosed, just under half (48%) reported having used multiple substances during their previous overdose. Far less overdose witnesses reported heroin (55%) or multiple drugs (14%) were used. Less than 9% reported any other drug during the overdose event they witnessed.

For those who overdosed, 30% reported having CPR performed on them, followed by being physically hit or slapped (28%). Among those who witnessed an overdose, 25% reported using CPR or rescue breathing, while 19% reported physically slapping or hitting the person who was experiencing the overdose. In just under 9% of overdoses, nothing was done, indicating naloxone training could help to remediate this inaction. Among those who reported a previous overdose with known location, 42% reported an overdose in a public venue, such as the beach, hospital, shopping center, or on the street while the remaining participants reported an overdose in a private venue, such as their own home or a friend's home.

Participants are also asked if they knew anybody at risk of overdose. Over half (56%) reported a client or SEP participant were at risk, while (37.8%) reported that a friend was at risk for overdose, followed by a family member (14.9%), or a partner (4.7%).

Naloxone Refills

Upon completing the naloxone training, participants are provided two units of 4ml nasal naloxone. Regardless of whether the naloxone was used, given away, lost, stolen, or expired, participants are encouraged to access refills through SEP. In 2019, 2,120 doses were distributed, of which 960 were distributed at the initial training, and the remaining 1,160 were distributed via refill across approximately 360 refill events for which we have data. Due to previous discrepancies in how data were recorded during refill events, SEP staff

started to record both the lot number of each dose plus the number of doses distributed, beginning in February 2020. The remainder of this section represents our best estimates related to naloxone refill.

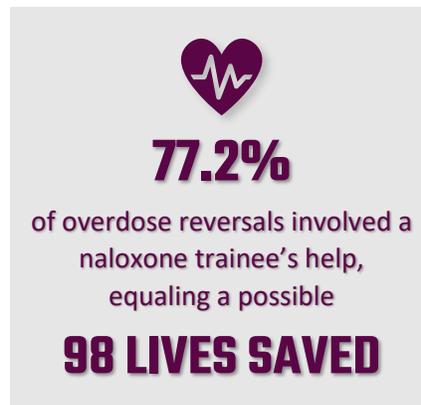
Among the 360 refill requests across 200 participants; 64.7% of these requests due to the naloxone being lost, stolen, given away, or distributed by gatekeepers. The remainder of refill requests (n=127) were due to use by 90 participants.

Since participants are provided multiple doses and could have used one or both doses of naloxone or reversed multiple overdoses, it is more difficult to tease out how many actual overdose incidents occurred. Table 5 shows the demographic information of people whose overdose was reversed using a naloxone dose provided by HHHRC (based on the 127 refill requests processed across the 90 participants). Two-thirds of those who received a naloxone dose were men, 26.7% were women, and the remainder of the doses were used on multiple people. Most people reported using their naloxone on a friend (70.8%), some other person (9.5%) like a SEP client or family member, stranger (6.3%), or partner (3.2%). Nearly 4% of participants reported using the dose on themselves. Most people who received a dose were under 40 (61.4%).

Context of Overdose Reversals

In nearly all cases of naloxone use (92.9%), participants reported heroin was the drug used before the overdose event. Benzodiazepine use was reported in 17.3% of overdoses, while meth was reported in 14.17% of incidents. Naloxone was mainly used in homes or other residences (63.8%), followed by some other setting (18.1%) and public park or public restroom (12.6%). In addition to using naloxone during the overdose event, 11.8% of participants reported using other means to revive the person (e.g., shaking), while in 2.6% of the time, participants reported sternum rubs or rescue breathing/CPR. The average number of naloxone doses used per event was 1.53. Most people awoke less than a minute after application of naloxone (26.0%).

Three-quarters of overdose reversals (77.2%), were due to the naloxone trainee's help, **representing a possible 98 lives saved**, up from 62 potential lives saved in 2018. Two participants reported difficulties related to application of naloxone: one to switch from injectable to nasal naloxone during application, while the other participant reported having to slap the person in order to wake them after administering the naloxone. In just over a



quarter of reversals, participants reported the person whose overdose was reversed awoke dopesick and/or angry. Consistent with the findings of the 2018 evaluation, no participants were harassed by police or EMT staff, nor were arrested after overdosing in 2019.

INJECTION DRUG USE SEROPREVALENCE SURVEY

Survey Methods

In 2019, SEP restarted its annual seroprevalence survey to monitor HIV, HBV, and HCV among its client population, in addition to collecting more information from participants on risk factors related to injecting drugs. Surveys were conducted at all SEP sites across the state and the proportion of participants selected at each site reflected visit volume in 2018. Surveys were conducted between October and December 2019. Participants were provided information about the purpose of the survey and sponsorship (Hawai'i Department of Health) and consented to receive HIV, HBV, and HCV antibody screening, which took approximately 60 minutes, but could last longer depending on the participant. Participants were each given \$20 cash as a mahalo for their time. We surveyed 105 SEP participants about their injection drug use, injecting behaviors, and provided both HCV and HIV tests. Of the 105 interviewees, only 101 were currently injecting. Results below discuss only these 101 participants for whom we have injection data.

Surveys were collected via paper and data were entered at HHHRC's office; testing data were entered into the state's APHIRM system. These datasets were merged for analysis. We present the overall descriptive statistics from the 101 participants who inject drugs. We also present specific analyses regarding demographics, risk behaviors, and houselessness and HCV infection which both acutely affect HHHRC SEP clients. We looked for statistically significant differences using chi-square or Fisher's exact tests (due to <5 observations per cell) for categorical variables where appropriate, and t-tests for continuous variable. Statistical significance was set at $\alpha = 0.10$ for this section of the report due to small sample size.

Table 6. Demographic, Health Care Utilization, Drug Use and Drug Use Behaviors, Syringe Access, and Health Indicators of 2019 Survey Participants

Total: 101 %/SD: 100

	Total	%/SD
Gender		
Male	61	60.40
Female	34	33.66
Transgender	6	5.94
Age (Mean)	41.73	11.99
Race/Ethnicity		
Hawaiian/Part Hawaiian	25	24.75
White Only	30	29.70
Asian Only	7	6.93
Multiracial	31	30.69
Other	8	7.92
Education Level (n=100)		
Less than High School	20	20.00
High School Grad	40	40.00
Some College/College Grad	40	40.00
Currently Houseless (Yes)	63	62.38
Employment Status		
Full/Part Time Employed	9	8.91
Unemployed	51	50.50
Disabled	36	35.64
Other	5	4.95
Medical Insurance Status		
Insured	80	79.21
Not insured	16	15.84
Status Unknown	5	4.95
Usual Source of Health Care		
None/Unknown	19	18.81
Has a usual source of care	21	20.79
ER	61	60.40
Number of ER Visits in Past Year (Mean)	2.82	3.39
Number of Wounds That Did Not Heal in Past Year (Mean)	4.11	8.39
Number of ER Visits Due to Wounds (Mean)	1.08	2.05
Number of Hospitalizations Due to Wounds (Mean)	0.37	1.21

	Total	%/SD
Injecting <5 Years (Yes)	26	25.74
First Drug Injected		
Heroin	37	36.63
Cocaine	15	14.85
Meth	23	22.77
Oxy/RX	10	9.90
Other/DK	16	15.84
Location of First Injection		
Hawai'i	65	64.36
California	10	9.90
Other US state	24	23.76
Outside of US	2	1.98
Reuse and distributive behaviors		
Gave Used Syringes (Yes)	26	25.74
Gave Used Cottons (Yes) N=100	32	32.00
Gave Used Cookers (Yes) N=100	41	41.00
Reused Syringe (Yes)	79	78.22
Reused Cottons (Yes)	32	31.68
Reused Cookers (Yes)	43	42.57
Overdoses in the Past Year		
No	78	77.23
Once	13	12.87
Twice	4	3.96
Three or More Times	6	5.94
Injection Drug Used Last 30 Days		
Heroin	82	81.19
Cocaine	13	12.87
Methadone	11	10.89
Speedballs	16	15.84
Downers	12	11.88
Uppers	72	71.29
Uppers Combo	15	14.85
Opioids	22	21.78
Multiple Injection Drugs Used	43	42.57

	Total	%/SD
Other Substances Used in Last 30 Days		
Alcohol	44	43.56
Marijuana	64	63.37
Crack/Rock Cocaine	17	16.83
Powdered Cocaine	10	9.90
Downers	40	39.60
Uppers	68	67.33
Heroin	44	43.56
Hallucinogens	10	9.90
Opioids	29	28.71
Denied Syringe Purchase at Pharmacy (N=100)	28	28.00
Gatekeeper (Yes)	47	46.53
Avg Number of Gatekept Persons per Gatekeeper (N=47)	3.74	5.13
Sum of People Reached through Gatekeeping (N=47)	176	n/a
Physical and Mental Health		
Diabetes (Yes)	6	5.94
Chronic Pain (Yes)	46	45.54
Arthritis (Yes)	22	21.78
One or more mental health diagnosis (from list below)	63	62.38
Anxiety/Panic Disorder (Yes)	56	55.45
Bipolar Disorder (Yes)	25	24.75
Schizophrenia (Yes)	6	5.94
PTSD (Yes)	44	44.00
Sexual Risk Behaviors		
Has a primary sex partner	46	45.54
Has casual sex partners	22	21.78
Commercial sex worker	9	8.91

Survey Results

Results are presented in Table 6. A majority of respondents were male (60.4%) and average age was 41.7 years old. A majority of participants were multiracial (31.0%), followed by White (29.7%) and Native Hawaiian (24.8%). Most participants had graduated from high school (40.0%) or at least had some college experience (40.0%). Over half of respondents were unemployed (50.5%) while another third were disabled (35.6%). Nearly two-thirds of participants reported being houseless during the survey (62.4%).

Hospital Utilization

While 79.2% of participants reported being insured, 60.4% of participants reported the emergency room as their primary source of care. On average, participants reported going to the emergency room 2.82 times in the past 12 months, and on average, 1.08 emergency room visits were due to wounds that did not heal. Participants reported an average of 4.11 wounds that did not heal in the past year. The average number of hospitalizations due to wounds was 0.37.

Injection History and Preferences

Regarding injection behavior, just over a quarter of survey participants (25.7%) reported injecting for less than five years. The most frequently reported first drug injected by participants was heroin (36.6%) followed by meth (22.8%). Over three-quarters of survey respondents reported no overdose in the past year, while the remainder reported at least one overdose; six respondents (5.9%) reported overdosing three or more times in the past 12 months. Regarding distribution of used injection equipment, 25.7% of participants gave away used syringes, 32% gave away used cottons (n=100); and 41% gave away used cookers (n=100). Regarding reuse of equipment, 78.2% reported reusing a syringe; 31.7% reported reusing cottons; and 42.6% reported reusing cookers.

A vast majority of respondents (81.2%) reported using heroin in the past 30 days, followed by uppers (71.3%) including meth. Other opioids, such as pills, were reported among 21.8% of participants. Overall, 42.6% of respondents reported injecting two or more drugs in the past 30 days. Regarding non-injection drug use in the last 30 days, the most popular were uppers (67.3%) including meth, marijuana (63.37%), alcohol (43.6%), and heroin (43.6%). In the past 30 days, participants reported using an average of 9 different drugs.

SEP Access

Regarding syringe access, a majority of participants (54.5%) got all of their syringes from HHHRC, while 15% reported none. The law in Hawai'i allows purchase of syringes at pharmacies, but 28% of participants reported being denied purchasing at pharmacies across the state. Forty-seven participants reported gatekeeping activity reaching an additional 176 people, or 3.74 individuals on average per gatekeeper.

Additional Risk Factors and Co-Morbidities

Over half of participants (55.5%) reported being diagnosed with anxiety/panic disorder, while 45.5% were diagnosed with chronic pain; 44.0% were diagnosed with PTSD; and 24.8% were diagnosed with bipolar disorder. On average, participants reported 4.51 adverse childhood experiences. Nearly eight-in-ten participants were ever incarcerated, while 55.5% had been jailed in Hawai'i in the past five years. Regarding sexual risk factors, 45.54% reported having a primary sex partner, while 21.78% had casual partners; only nine participants reported commercial sex work.

Survey Results: Focus on Hepatitis C Virus (HCV)

A Public Health Priority for PWID

Hepatitis is an important and ongoing health risk for SEP participants in the U.S. and Hawai'i. In 2020, the Centers for Disease Control and Prevention (CDC) reported that new HCV infections increased by 65% between 2014 and 2018, primarily driven by opioid and other drug injections.⁴⁴ Shortly afterward, the CDC recommended HCV testing for all adults over 18 years old, regardless of known or stated risk,⁴⁵ which was mirrored by the U.S. Preventive Services Task Force (USPSTF).⁴⁶ To further increase action in 2020, the CDC also designated viral hepatitis as a “Winnable Battle”, designated as a “public health priorit[y] where CDC and its partners can make significant progress ending epidemics and eliminating diseases...in a relatively short timeframe.”⁴⁷ In its Hep Free 2030 strategy, [Hep Free Hawai'i](#)—the statewide coalition that includes the Hawaii Department of Health— included hepatitis C virus (HCV) elimination among people who use drugs as an important priority for Hawai'i.⁴⁸

A Continuing Burden Among Hawai'i SEP Participants

Fifty-six percent (56%) of survey participants tested positive for HCV antibodies (HCV Ab), which indicates current or past exposure to HCV. Compared to the sixty-eight percent

(68%) positivity found in the 2016 seroprevalence survey, the lower proportion of positive HCV Ab tests could be accounted for by changes in participant circumstances such as reduced utilization of SEP; reduced injection drug use; obtaining curative HCV treatment; death due to HCV-related or other health issues; or, increased HCV prevention, especially among newer PWIDs.

Among the 57 participants who tested HCV Ab positive, 58% reported never having tested positive for HCV, possibly indicating new exposure or infection, more than double the 20% of newly HCV positive in 2016, demonstrating possible increases in HCV transmission among SEP participants in the intervening three years. Demographics and risk profiles for HCV Ab positive respondents for the past 4 surveys are in Table 7.

Table 7. Demographics and Behaviors of SEP Survey Participants with HCV Ab Positive Tests, Known and New (2014-2019)

	2014		2015		2016		2019	
	Known HCV+ (n=65)	New HCV+ (n=18)	Known HCV+ (n=65)	New HCV+ (n=7)	Known HCV+ (n=68)	New HCV+ (n=14)	Known HCV+ (n=36)	New HCV+ (n=21)
Gender								
<i>Male</i>	52.3%	50.0%	44.6%	42.9%	58.8%	71.4%	58.3%	66.7%
<i>Female</i>	47.7%	22.2%	49.2%	42.9%	39.7%	28.6%	38.9%	23.8%
<i>Transgender/GNC^a</i>	0.0%	0.0%	6.2%	14.3%	1.5%	0.0%	2.8%	9.5%
Age								
<i>≤30 years old (youth)</i>	10.8%	11.1%	6.2%	14.3%	13.2%	28.6%	11.1%	23.8%
<i>>30 years old</i>	89.2%	61.1%	93.8%	100.0%	86.8%	71.4%	88.9%	76.2%
Housing Status								
<i>Permanently housed</i>	32.3%	16.7%	40.0%	42.9%	35.3%	42.9%	25.0%	14.3%
<i>Marginally housed</i>	13.8%	5.6%	10.8%	14.3%	19.1%	n/a	16.7%	19.0%
<i>Houseless</i>	53.8%	50.0%	47.7%	42.9%	45.6%	42.9%	58.3%	66.7%
HCV Testing								
<i>Previously Test</i>								
<i>Yes</i>	96.9%	72.2%	96.9%	100.0%	98.5%	92.9%	97.2%	66.7%
<i>No/Don't know</i>	3.1%	N/A	3.1%	0.0%	1.5%	7.1%	0.0%	33.3%
<i>Previously Tested Positive</i>	40.0%	N/A	50.8%	N/A	50.0%	N/A	100.0%	N/A
Injection Average Across Groups								
<i>Length of time injecting (years)</i>	22.4	13.3	18.3	13.3	22	10.8	24.6	19.7
<i>Days a week injecting</i>	5.8	5.9	5.9	5.8	5.6	6	5.6	5.3

	2014		2015		2016		2019	
	Known HCV+ (n=65)	New HCV+ (n=18)	Known HCV+ (n=65)	New HCV+ (n=7)	Known HCV+ (n=68)	New HCV+ (n=14)	Known HCV+ (n=36)	New HCV+ (n=21)
<i>Number of injections a day</i>	2.9	3.3	3.4	3.1	2.9	2.7	4.3	4
<i>Time accessing SEP (years)</i>	10	4.2	6.9	6	9.1	4.5	n/a	n/a
Behavior								
<i>Receptive sharing syringe</i>	9.2%	5.6%	15.4%	42.9%	22.1%	14.3%	16.7%	14.3%
<i>Receptive sharing cookers</i>	6.2%	5.6%	16.9%	0.0%	25.0%	7.1%	30.6%	57.1%
<i>Receptive sharing cottons</i>	3.1%	0.0%	15.4%	42.9%	17.6%	0.0%	33.3%	23.8%
<i>Distributive sharing syringes</i>	15.4%	16.7%	15.4%	28.6%	26.5%	21.4%	19.4%	33.3%
<i>Distributive sharing cookers</i>	6.2%	5.6%	10.8%	0.0%	26.5%	14.3%	44.4%	47.6%
<i>Distributive sharing cottons</i>	6.2%	5.6%	7.7%	14.3%	25.0%	14.3%	33.3%	38.1%
^a Gender non-conforming								

Many Factors for Risk

In 2018, the CDC found 72% of new HCV infections in the U.S. were associated with injection drug use.⁴⁹ HCV Ab positivity among survey respondents in Hawai'i has decreased from 68% in 2016 to 56% in 2019, but the proportion of new HCV Ab positive tests has almost tripled (20% to 58%, respectively). Further analysis found statistically significant factors (p-values <0.1) for HCV Ab exposure, as described in Table 8.

We did not find statistically significant differences for HCV by current gender identity; education level; current health insurance coverage; number of emergency room visits in the past year; current wounds or wounds that caused emergency room visits or hospitalizations; overdose (recent or ever); and, sharing needles, cottons, or cookers (distributive or receptive). Incarceration has been associated with HCV infection in other studies,⁵⁰⁻⁵¹ but there was no significant association found for either historical or recent incarceration among survey participants. Although current houselessness and adverse childhood events (ACEs) were not significant factors for HCV Ab positive tests in this survey, we discuss these more below.

Table 8. Significant factors for HCV Ab Positive Tests among SEP Survey Participants (2019)

	HCV Ab Negative n (%) or mean (SD)	HCV Ab Positive n (%) or mean (SD)	Total n (%) or mean (SD)
Total	44 (43.56)	57 (56.44)	101 (100)
Age (Mean, SD)***	37.32 (9.03)	45.14 (12.93)	41.73 (11.99)
Race*			
<i>Hawaiian/Part Hawaiian</i>	15 (34.09)	10 (17.54)	25 (24.75)
<i>White Only</i>	6 (13.64)	24 (42.11)	30 (29.70)
<i>Asian Only</i>	3 (6.82)	4 (7.02)	7 (6.93)
<i>Multiracial</i>	16 (36.36)	15 (26.32)	31 (30.69)
<i>Other</i>	4 (9.09)	4 (7.02)	8 (7.92)
Employment status*			
<i>Full/Part Time</i>	3 (6.82)	6 (10.53)	9 (8.91)
<i>Unemployed</i>	30 (68.18)	21 (36.84)	51 (50.50)
<i>Disabled</i>	9 (20.45)	27 (47.37)	36 (35.64)
<i>Other</i>	2 (4.55)	3 (5.26)	5 (4.95)
Injecting less than 5 years**			
<i>No</i>	26 (59.09)	49 (85.96)	75 (74.26)
<i>Yes</i>	18 (40.91)	8 (14.04)	26 (25.74)
Age of first injection (mean, SD)**	27.75 (9.57)	22.33 (8.57)	24.69 (9.37)
Injected Heroin in Last Month**			
<i>No</i>	15 (34.09)	4 (7.02)	19 (18.81)
<i>Yes</i>	29 (65.91)	53 (92.98)	82 (81.19)
Injected Meth in Last Month*			
<i>No</i>	8 (18.18)	21 (36.84)	29 (28.71)
<i>Yes</i>	36 (81.82)	36 (63.16)	72 (71.29)
Any Heroin or Meth Use in Last Month**			
<i>Heroin Only</i>	7 (15.91)	20 (35.09)	27 (26.73)
<i>Meth Only</i>	14 (31.82)	3 (5.26)	17 (16.83)
<i>Both</i>	22 (50.00)	33 (57.89)	55 (54.46)
<i>Neither</i>	1 (2.27)	1 (1.75)	2 (1.98)

*p-value < 0.1; **p-value < 0.01; ***p-value < 0.001

HCV and Injection Drug Use

We found age of injection, length of injection, and injection of heroin and/or meth were all significant factors for HCV Ab positivity among surveyed SEP participants. Across the U.S., new HCV infections have mirrored increases in substance treatment admissions for heroin and/or prescription opioid injection use.⁵² Increasing the number of drugs ("poly drug use") used in addition to injecting opioids also increases the risk for HCV.⁴¹ Injection drug use of

both meth and heroin (as compared to sole use of heroin or meth for injection) can dramatically increase HCV infection risks,⁵³ due to more injections per day; increased likelihood of syringe reuse or sharing syringes; increased likelihood of overdose; and, higher likelihood due to housing status. However, poly injection drug use of heroin and meth also increases the likelihood of someone using syringe exchange programs.⁵³

HCV and Age (Youth)

Age is a significant factor ($p < 0.001$) for HCV Ab positivity among surveyed SEP participants, with approximate mean ages of 37 and 45 for HCV Ab negative and positive tests, respectively. According to the CDC, new HCV infections increased between 2014 and 2018, especially among 30-39 year-olds, aligning with age groups most affected by the ongoing opioid epidemic.⁴⁹ Notably, about half of PWID have been exposed to HCV, and a quarter of those exposed are younger than 25 years of age.⁵⁴ PWID under 30 years of age are "more likely to acquire HCV from their similarly-aged peers, than older injecting partners."⁵⁵

HCV and Adverse Childhood Experiences (ACEs)

Adverse Childhood Experiences (ACEs) are associated with substance use disorders and related behaviors, including injection drug use and earlier age of initiating opioid use.⁵⁶ Presumably then, higher ACEs scores (> 4) would be associated with HCV Ab positivity. In Table 9 below, although SEP2016 showed significant association (p -value < 0.05) between higher ACEs scores and HCV Ab positivity, no association was found in the current survey. However, syringe-sharing behavior (both receptive and distributive) were significantly associated with higher ACEs scores.

Table 9. Significant factors for ACEs among SEP Survey Participants (2016, 2019)

	2016		2019	
	ACEs <4 (%) (n=35)	ACEs ≥4 (%) (n=61)	ACEs <4 (%) (n=47)	ACEs ≥4 (%) (n=54)
Total	36.5	63.5%	46.5%	53.5%
<i>Female</i>	22.9	45.9	23.4	42.6
<i>HCV Positive</i>	57.1	73.8	49.0	58.9
<i>Diagnosed Depression</i>	42.9	63.9	<i>Not asked in 2019</i>	<i>Not asked in 2019</i>
<i>Receptive Syringe Behaviors</i>	5.7	21.3	8.5	33.3
<i>Distributive Syringe Behaviors</i>	14.3	31.2	10.9	37.0
<i>Experienced Overdose in Last Year*</i>	17.1	39.3	17.0	27.8
<i>Injecting < 5 Years</i>	34.3	25	27.7	24.1

*Bold values significant ($p < .05$); * Question was also asked in three previous surveys

HCV and Houselessness

Although current houselessness was not a statistically significant factor for HCV Ab positivity among SEP survey participants, it can reasonably be presumed to influence HCV risk, especially with less access to prevention, testing, care, and treatment. Homelessness has been associated with HCV infection due to increase in behaviors such as injecting in public spaces, which are typically more frequent and “hasty.”⁵⁷ Notably, opioid substitution therapy (OST) for homeless PWID can thus be protective against HCV infection by reducing public injection drug use.

In Table 10 below, further analysis was conducted to understand intersecting factors with HCV and houselessness. SEP participants who were both HCV Ab positive and houseless made up the highest proportion of survey respondents (37%). Many of the same risk factors were significant as in Table 10, with the additional risk of any previous overdose ($p < 0.1$). This can be attributed to risks of overdosing when continuing to actively inject drugs in unstable housing situations. However, recent injection of meth (in the past month) was no longer significant.

Table 10. Significant factors for HCV and Houselessness among SEP Survey Participants (2019)

	HCV+ Houseless n (%) or mean (SD)	HCV+ Housed n (%) or mean (SD)	HCV- Houseless n (%) or mean (SD)	HCV- Housed n (%) or mean (SD)	Total n (%) or mean (SD)
Total	37 (36.63)	20 (19.80)	26 (25.74)	18 (17.82)	101 (100)
Age (Mean, SD)**	44.51 (13.40)	46.3 (12.25)	39.15 (8.32)	34.67 (9.57)	41.73 (11.99)
Age Groups*					
30 and under	7 (18.92)	2 (10.00)	3 (11.54)	8 (44.44)	20 (19.80)
Over 30	30 (81.08)	18 (90.00)	23 (88.46)	10 (55.56)	81 (80.20)
Race*					
Hawaiian/Part Hawaiian	7 (18.92)	3 (15.00)	9 (34.62)	6 (33.33)	25 (24.75)
White Only	15 (40.54)	9 (45.00)	3 (11.54)	3 (16.67)	30 (29.70)
Asian Only	1 (2.70)	3 (15.00)	3 (11.54)	0	7 (6.93)
Multiracial	12 (32.43)	3 (15.00)	11 (42.31)	5 (27.78)	31 (30.69)
Other	2 (5.41)	2 (10.00)	0	4 (22.22)	8 (7.92)
Employment status*					
Full/Part Time	2 (5.41)	4 (20.00)	1 (3.85)	2 (11.11)	9 (8.91)
Unemployed	16 (43.24)	5 (25.00)	18 (69.23)	12 (66.67)	51 (50.50)
Disabled	17 (45.95)	10 (50.00)	6 (23.08)	3 (16.67)	36 (35.64)

	HCV+ Houseless n (%) or mean (SD)	HCV+ Housed n (%) or mean (SD)	HCV- Houseless n (%) or mean (SD)	HCV- Housed n (%) or mean (SD)	Total n (%) or mean (SD)
<i>Other</i>	2 (5.41)	1 (5.00)	1 (3.85)	1 (5.56)	5 (4.95)
<i>Injecting less than 5 years*</i>					
<i>No</i>	31 (83.78)	18 (90.00)	16 (61.54)	10 (55.56)	75 (74.26)
<i>Yes</i>	6 (16.22)	2 (10.00)	10 (38.46)	8 (44.44)	26 (25.74)
<i>Any overdose*</i>					
<i>No OD</i>	24 (64.86)	18 (90.00)	20 (76.92)	16 (88.89)	78 (77.23)
<i>One or more OD</i>	13 (35.14)	2 (10.00)	6 (23.08)	2 (11.11)	23 (22.77)
<i>Age of first injection (mean, SD)**</i>	20.59 (7.66)	25.55 (9.42)	29 (10.39)	25.94 (8.19)	24.69 (9.37)
<i>Injected Heroin in Last Month***</i>					
<i>No</i>	4 (10.81)	0 (0)	11 (42.31)	4 (22.22)	19 (18.81)
<i>Yes</i>	33 (89.19)	20 (100)	15 (57.69)	14 (77.78)	82 (81.19)
<i>Any Heroin or Meth Use in Last Month**</i>					
<i>Heroin Only</i>	12 (32.43)	8 (40.00)	6 (23.08)	1 (5.56)	27 (26.73)
<i>Meth Only</i>	3 (8.11)	0 (0)	11 (42.31)	3 (16.67)	17 (16.83)
<i>Both</i>	21 (56.76)	12 (60.00)	9 (34.62)	13 (72.22)	55 (54.46)
<i>Neither</i>	1 (2.70)	0 (0)	0 (0)	1 (5.56)	2 (1.98)

*p-value < 0.1; **p-value < 0.01; ***p-value < 0.001

HIV AND HCV OUTREACH, TESTING, AND LINKAGE SERVICES

In 2019, 152 people were screened for HIV and/or HCV by SEP: 139 for both HIV and HCV, 10 for HIV only and 3 for HCV only. This includes the testing described above as part of the seroprevalence survey.

HIV Outreach, Testing, and Linkage

In 2019; 28.2% of those tested for HIV by SEP were between 30 and 39 years old. The second largest group were 40 to 49-year-olds (26.9%) followed by 20 to 29-year-olds (18.8%), 50 to 59-year-olds (16.1%) and those aged 60 and over (10.1%). Most of those who tested for HIV were Native Hawaiian (30.5%) closely followed by Whites (29.8%) and multiracial (20.6%). As in 2018, a majority of those who tested for HIV identified as male (55.7%) followed by female (39.6%) with the remainder identifying as transgender or another gender. A slightly higher proportion of those tested in 2019 had a previous HIV test compared to 2018 (71.6% vs 69.5%, respectively). One person reporting a previous positive

test was part of SEP seroprevalence study. Two people declined to provide their status, three did not remember, and the remaining 100 testers reported a previous negative test. When asked about pre-exposure prophylaxis, also known as PrEP, 92.6% had never heard of it. Just over 8% of testers were MSM; 75.7% reported injection drug use in the previous five years. Additional variables such as shared injection equipment are no longer available in EvaluationWeb. With the exception of the one client whose HIV-positive status was already known, all other tests performed by SEP were negative.

HCV Outreach, Testing, and Linkage

Of the 142 persons tested for HCV, 19.1% were between 20 and 29 years old; 27.6% were between 30 and 39 years old; 26.3% were 40 and 49 years old; 27.0% were over 50. Nearly one-third of participants identified as Native Hawaiian (30.6%), while 29.2% were White, and one-fifth were multiracial (20.1%). More than half of those tested identified as male (55.3%), followed by female (40.1%) and less than 5% were transgender or some other gender. Two-thirds of those tested reported a previous HCV screening, of whom 40.0% reported receiving positive result and 54.8% reported a negative result. Four previously tested individuals did not know their results. Among the remainder who did not report a previous HCV test, 10.6% didn't know if they had been tested previously, 12.7% did not have a test, while 9.9% were not asked about a previous test. Only 11 people (7.8%) identified as MSM but nearly three-quarters of testers (74.5%) reported injecting drugs in the past five years.

Overall, 36.6% of those tests for HCV had a positive result, up sharply from 28.3% in 2018. Note, however, this also includes the participants from the seroprevalence study. All with positive results were referred to medical care and confirmatory HCV testing. Of those who did test positive and had a previous HCV screening, 78.7% already knew they were positive; 14.9% had previously tested negative; 2.1% had a previous indeterminate result; and 4.3% didn't know their previous results.

COST/BENEFIT ANALYSIS OF HAWAI'I SEP

The average lifetime cost of HIV treatment was \$367,134 in 2009,⁵⁸ or \$437,675 in 2019 dollars when using the consumer price index calculator.⁵⁹ CDC estimated that Hawai'i spent \$26,000,000 annually on HIV-related healthcare costs in 2009.⁶⁰ There have been no updated studies at the federal level to update the lifetime cost of HIV treatment, which is important as medical costs increase faster than the rate of inflation. Studies in other localities demonstrate that SEP services are both cost and *lifesaving*. One conducted in Washington, DC found its SEP program averted 120 new HIV infections in two years⁶¹ while

another study estimated Philadelphia's SEP program averted 10,592 new HIV cases and Baltimore's SEP program averted 1891 new HIV cases over ten years for a combined one-year return on investment of \$305.8 million.⁶² Previous Hawai'i SEP evaluations posit that if SEP were to avert as few as two new HIV infections per year, that would provide cost savings to the state.⁶³

CONCLUSIONS

Continued Success in Hawai'i

As over the last three decades, PWID remain at higher risk of HIV/AIDS both in the United States and abroad. In last year's evaluation, we cited CDC data that showed through 2017, the number of Stage 3 HIV infection (AIDS) attributable to injection drug use was 30.2%,⁶⁴ but as of 2018's report, CDC no longer reports Stage 3 HIV infections in its national surveillance reports.⁶⁵ In 2018, a total of 2,492 individuals across the country were diagnosed with HIV attributable to injection drug use. Hawai'i's early decision to establish a syringe exchange program and continued support of the program has likely kept new diagnoses low among PWID. The HHHRC HIV testing studies conducted between 2007 and 2016 found both a low prevalence and a low incidence (likely to be less than 1% per year) among PWID participating in SEP.⁶⁶ This year's seroprevalence study found no new HIV infections and the one participant with HIV was already engaged in care.

Increasing Burden of Hepatitis C

In this year's evaluation, we found 56.4% of participants who inject drugs were HCV positive. This was lower than the last seroprevalence study conducted in 2016 (68%), and less than the all-time high of 88.7% in 2007.⁶³ This is somewhat lower than the worldwide range of 60-80% among PWID.⁶⁷ Prevalence of HCV has fluctuated over the course of HHHRC SEP. Past HHHRC evaluations reflect this, with a high prevalence of 88.7% in 2007 and 68% in 2016. These findings fall within the worldwide range of 60% to 80% among PWID.⁶⁷ When combined with all other HCV tests conducted by SEP in 2019, the overall positivity rate was over 36%. However, more troubling was that nearly three-quarters of those who were tested by SEP already knew their current HCV status. More needs to be done to address the issue of untreated HCV among SEP participants, further discussed below in the recommendations. However, the availability of sterile injection equipment minimizes the risks of HCV transmission.

Gatekeepers and Secondary Exchange

This year, we found through the seroprevalence study that 47 participants were key gatekeepers reaching a total of 176 additional participants, although it is not possible for us to know whether these 176 individuals already access the exchange. We did not see a significant increase in overall gatekeeping activity among SEP participants as a whole from 2018 to 2019, but 32% of registrants reported gatekeeping activity. The number based on ID registrants should be interpreted with caution as this information is not updated after registration, so those who gatekeep may have changed since the issuance of an ID. Gatekeeping and secondary exchange provide an important way to avert HIV and HCV infection based on studies from Indiana^{31,33} and Appalachia^{32,34-35} which demonstrate the utility of harm reduction principles.

Heroin and Meth Use

A third of those who exchanged in 2018 (33%) and 2019 (33%) reported their favored drug was meth. As mentioned previously, state data shows 4.8% of public high school students currently use meth.⁴ Data from the 2017-2018 National Survey on Drug Use and Health show that meth use among Hawai'i has remained flat,¹⁴ but deaths caused by meth overdose in the state are thought to outpace those related to opioids.⁶⁸ More recently, high profile local meth busts have gained national attention⁶⁹ while meth use is gaining more attention nationally with spotlights on the rural continental US⁷⁰ and in the gay male community.⁷¹ Meth use has been linked to lack of personal care,⁷² violence,⁷²⁻⁷⁵ and houselessness among both youth⁷⁶ and adults.⁷⁷ It is important to note that meth use is only one of multiple factors related to houselessness⁷⁸ and/or violence. For example, another risk factor for both meth use and houselessness includes adverse childhood events,⁷³ although we did not find a significant relationship between ACEs and meth use among this year's survey participants. As discussed more thoroughly in last year's evaluation, the intersection between houselessness and meth use in Hawai'i is reflected among HHHRC SEP participants and requires continued work to address the issues facing those who use meth.

Non-Heroin Overdoses

As was found last year, overdose was primarily among those who were using heroin at the time, although 17% of overdoses involved benzodiazepines, and 14% involved meth. Among naloxone trainees this year, 83% who had experienced an overdose had used heroin while 20% reported having used meth, and 18% reported having taken fentanyl, either intentionally or unintentionally. While this group represented a relatively small

number of participants (n=71), it does demonstrate the need for continued naloxone training and distribution. We estimated that participants who receive naloxone from the program potentially reversed 98 overdoses during 2019, demonstrating the importance of this activity. Additionally, during 962 visits in 2019 fentanyl test strips were distributed. We lack data for how many times batches of drugs were tested or how many times fentanyl was detected. This is another powerful overdose prevention measure that should be continued. Data on statewide opioid overdoses from the Hawai'i Opioid Initiative have yet to be updated, but in 2017, emergency medical services personnel treated 1,332 patients with naloxone.⁷⁹ Although estimates from the National Survey on Drug Use and Health show the proportion of state residents aged 12 and over who misused prescription pain medications fell to 3.13% in 2017-2018,¹² continuing to provide naloxone trainings and refills remains an important priority, especially reaching service providers and family members persons using prescription opioids.

Increases in Syringes Exchanged

Lastly, this year's evaluation saw an increase of syringes exchanged compared to 2018, but not significantly so. Whether or not this indicates syringes exchange volume has plateaued remains to be seen. Whether the number of syringes exchanged in 2020 changes, the COVID-19 pandemic will likely play a role in fluctuations in both injection drug use and exchange behaviors. However, given all these factors, HHHRC's SEP program continues to reduce the risk of HIV and HCV transmission among PWID.

Evaluation Limitations

There are limitations to the approach used in this evaluation. As with previous evaluations, ID card registrations limit our ability to say exactly how many people are part of SEP. Some participants may lose cards or re-register; there may be more cards than actual registrants; participants may provide the wrong card number; or cards with the same ID number were distributed, meaning there may be fewer cards than actual participants. This year, the approach of this evaluation was to compare two years of data against one another rather than comparing accessing participants to non-accessing participants. This evaluation presents the most accurate information HHHRC has on SEP based on the data available. Some of these factors may limit the generalizability of our evaluation findings to all who access SEP. That is, this evaluation may better describe those who were willing to share their demographic data and other information with HHHRC. In addition, due to time and logistical constraints, we were unable to truly create a randomized sample for the

seroprevalence study, but we did attempt to approximately match the overall demographics of the 2018 evaluation findings across all sites.

Recommendations

Based on the findings above, the HHHRC SEP and policymakers should consider the following recommendations. Due to the recent crisis and budget constraints related to the coronavirus pandemic, the following recommendations relate to program maintenance and upstream factors related to preventing injection drug use.

- **At minimum, maintenance of current HHHRC SEP program components/portfolio should be continued.** Since 1993, the states SEP has continuously demonstrated itself as successful in averting HIV infections among the state's PWID. Continuing to maintain the portfolio of services is required to continue this successful track record. This includes the provision of clean, sterile syringes and distribution of injection equipment, condoms, first aid and hygiene kits. Continuing programmatic activities such as naloxone training and distribution demonstrate the ability to also save lives beyond disease prevention. At minimum, policymakers and funders should continue to support the syringe exchange program.
- **Now is the time to start an investment in HCV services for PWID, through funding for low-threshold, accessible, and client-centered prevention, testing (including RNA blood tests); care coordination, and curative treatment.** Our seroprevalence survey found HCV continues to be a health burden for PWID living in Hawai'i. More than 1 out of 2 survey participants tested positive for HCV antibodies, which indicates current or past exposure to HCV. Of those, 58% did not know they had been exposed and therefore did not seek follow-up care and treatment. As the lifetime cost of an HCV infection has been estimated at \$64,490 (in 2011),⁸⁰ a considerable cost savings for Hawai'i's healthcare system could be realized through increased HCV screening and treatment combined with continued prevention efforts among PWID. HHHRC's SEP is an ideal setting for providing HCV services—prevention/education, outreach, screening, linkage, and treatment—to reduce community viral load and lower the chances of transmission among this at-risk community. SEP-based interventions for HCV have been found to be effective and if they include co-location with medication-assisted treatment.⁸¹ This could be further supplemented with HHHRC's current wound care plus patient navigation, supervised medication dispensing, and linking clients to stabilizing programs such as housing and social services. Although widespread testing for HCV should be conducted for all adults 18 and over, as recommended by the US Preventative

Services Task Force,⁴⁶ the state should prioritize support for high-impact settings, especially SEPs, to identify and treat PWIDs living with HCV.

- **Overdose prevention, including naloxone training, should be continued, but additional measures to prevent overdose should be examined.** We found in this evaluation that naloxone distribution potentially saved 98 lives in 2019. In addition, fentanyl test strips were distributed at over 900 exchange visits in 2019. This demonstrates the potential of SEP participants to prevent overdose within their community. Hawai'i has been progressive in its overdose prevention work compared to other areas of the nation. Additional recommended methods to prevent overdose not yet instituted in the state include safe consumption spaces, destigmatizing drug treatment programs, and redefining "recovery" to not mean "abstinence."⁸² Policymakers should also consider expanding the naloxone program at HHHRC to overcome provider and patient stigma related to naloxone use, an issue well documented in the literature.⁸³⁻⁸⁴ However, these methods only prevent overdose among those using opioids, and not meth which can be fatal. Meth use in the state is higher than the national average; policymakers should endeavor to research meth overdose prevention measures.
- **Housing is health care: recycling last year's recommendation for housing, including Housing First programs.** Houselessness is related to injection drug use. One study found for those who have stopped injecting, houselessness was related to relapse in injection, while houselessness over one month in length was related to injection drug use.⁸⁵ A different study found recent houselessness was significantly associated with dropping out of treatment.⁸⁶ Housing interventions, such as Housing First, are differentiated from "treatment first" programs which may require sobriety and detoxification prior to housing. Supportive housing programs are related to reduction in emergency room usage among those experiencing houselessness⁸⁷ and is related to reduced use of substances among those who are also diagnosed with severe mental illness.⁸⁸ The evidence is mixed on whether Housing First interventions can increase adherence to addiction treatment, with one article finding no difference in treatment adherence,⁸⁹ although another study found that enrollment in addiction treatment was associated with not being able to obtain stable housing which may imply instability.⁹⁰ However, Housing First definitions vary and may not include harm reduction principles.⁹¹ Conflict between harm reduction and abstinence principles may lead to confusion about organizational policies for both staff and residents, leading to conflict.⁹² Providing differentiated services to meet the needs of clients with complex, intersecting issues

is called for in the literature⁹³ and would be appropriate in Hawai'i's diverse environment.

- **Again, a call for media and policymaker education to reduce stigmatization of PWID and people who are houseless in Hawai'i is needed.** Last year, one of the recommendations was related to media and policymaker training to destigmatize PWID, especially those who are PWID and houseless, as media frames can often stigmatize PWID⁹⁴ and/or houseless people.⁹⁵ In addition, the COVID-19 pandemic further compounds these issues with the need allow those who are houseless to maintain social distance in order to prevent coronavirus infection. How the media frames and presents issues related to PWID and/or houselessness may cause readers or viewers to miscategorize structural/societal issues as ones related to individual responsibility.⁹⁶ Previous SEP reports show that enforcement actions or “sweeps” of people who are houseless led to loss of naloxone doses,⁶³ which could potentially result in unnecessary overdose deaths. Language around houselessness and use of words like “sweep”—a term synonymous with “cleaning”—can negatively inform the discourse on those who are houseless.^{94,97} Although studies are lacking on media framing of these issues in Hawai'i, building the capacity of news media to understand how these two issues are intertwined can help the public better understand these issues, potentially reducing stigma against these two population groups. Policymakers or foundation funders should provide funds to increase capacity building efforts on these two fronts.
- **Drug use is related to adverse childhood events (ACEs), however, complex trauma, including historical and intergenerational trauma can compound and perpetuate ACEs. In addition, environmental contexts that cause trauma for youth, specifically LGBTQ youth, should be addressed.** This is another recycled recommendation from the 2018 evaluation. Researchers argue historical trauma such as adverse childhood experiences, poverty, and discrimination can be transmitted epigenetically, which can lead to negative parental care, including a furtherance of adverse childhood experiences.⁹⁸ A variety of ACEs are associated with heroin and substance use in adulthood, though the type and severity of events differ by gender, and males were more likely to have post-traumatic stress disorder.⁹⁹ Age and access to prescriptions, plus physical and sexual abuse were related to earlier drug use.¹⁰⁰ Another study found childhood sexual abuse significantly increased the odds of injection drug use among youth.¹⁰¹ Research suggests that social stress, such as bullying or being threatened, can increase the likelihood that sexual minority youth inject drugs.¹⁰² Other studies find LGBT youth

misuse prescriptions at a younger age compared to their heterosexual identified counterparts, though this was not true for opioids or tranquilizers specifically.¹⁰⁰ Data also indicates more LGBTQ youth in Hawai'i inject compared to their heterosexual and/or cisgender counterparts.²⁻¹¹ This year, we found in our seroprevalence survey that 54% of respondents had experienced four or more ACEs, and that of this group, nearly 60% were HCV positive, and that HCV infection costs approximately \$64,000 in lifetime treatment.⁸⁰ Policymakers should consider both upstream and downstream interventions to prevent and ameliorate the consequences of ACEs. For example, requiring trauma-informed care standards for health practitioners, including cultural humility¹⁰³ would be a sensible downstream choice to address ACEs. Upstream considerations include childhood abuse prevention programs and school-level interventions to prevent bullying in order to stave off drug use among youth, particularly LGBTQ youth.

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