



2014 Syringe Exchange Program Evaluation Report

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Over Twenty Years of Syringe Exchange in Hawai‘i

The Hawai‘i State Department of Health started a pilot syringe exchange project in 1989 in response to the growing AIDS crisis. The project involved training ex-drug users and other persons knowledgeable about the drug-using population to serve as peer educators for persons who injected drugs and thus were at high risk for acquiring and/or transmitting HIV. In 1990, former Hawai‘i Governor John Waihee signed into law Act 280, enabling the Department of Health (DOH) to establish a two-year pilot Syringe Exchange Program (SEP). The first Hawai‘i SEP site was operated out of the Rubber Room in Honolulu by members of the Life Foundation; the largest and oldest AIDS organization in the Pacific. Following the two-year pilot period, during which the SEP’s safety and efficacy were assessed, the State Legislature created the Needle Exchange Program in Act 152 (1992), which was codified in chapter 325, Part VII, Hawai‘i Revised Statutes (HRS). (See, Needle Exchange Program, section 325-111 through 325-117, HRS). This legislation enabled the DOH to operate the SEP as long as necessary to accomplish its intended purposes: preventing the transmission of Human Immunodeficiency Virus (HIV), hepatitis B, hepatitis C (HCV), and other blood-borne pathogens; and providing people who inject drugs (PWID) with referrals to appropriate health and social services. Section 325-115, HRS, requires the DOH to appoint an oversight committee to monitor the progress and effectiveness of the SEP and to examine available data compiled by the program. Section 325-116, HRS, requires the DOH to report annually to the oversight committee, including on 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 the SEP.

In 1993, the legislature named the Community Health Outreach Work Project (The CHOW Project) as the coordinating agency for the statewide SEP. By 1994, the CHOW Project extended the SEP services beyond O‘ahu to the islands of Kaua‘i, Maui, and Hawai‘i Island. The CHOW Project continues to operate the SEP and has expanded services to meet the growing needs of persons who inject drugs in Hawai‘i. In 1993, CHOW exchanged 35,365 syringes during its SEP year (January 1 – December 31) and 974,847 syringes were exchanged during SEP2014.

The CHOW Project operates five mobile vans which cover each of Hawaii’s counties and provides a variety of services beyond syringe exchange. Outreach workers attempt to establish contact and trust with the target population in an effort to encourage safer behaviors among PWID. Activities include conducting health education, offering HIV and HCV counseling, HIV and other testing, linkages to housing navigation and other services, as well as handing out harm reduction supplies including condoms, hygiene kits, health education materials, and pipe covers (used to prevent cuts and burns from smoking substances with a glass pipe). Currently, the Hawai‘i statewide SEP is one of the larger programs in the United States and was the first program in the U.S. to be fully state-funded to offer coordinated services statewide, and to provide payment for drug treatment services for participants.

Methods and Data Sources

The timeframe for the evaluation report (the SEP year) is January 1, 2014 through December 31, 2014, which from here forward will be referred to as SEP2014.

The CHOW Project collects data through a variety of sources and maintains four databases: the Daily Log database which captures CHOW services and participant demographics; the Survey database which compiles data from the annual survey results; the Participant Card database which collects basic demographic data about participants who have received a participant card; and the Seroprevalence

databases which include HIV and hepatitis C counseling and testing data. Data from these four sources are combined to create a picture of CHOW's services and the participants that access them.

Daily Logs

Data from the Daily Logs includes operational and demographic information collected by CHOW staff each time a participant exchanges syringes or accesses harm reduction supplies. This includes the number and type of syringes exchanged, the gender and ethnicity of the participant, and outreach activities such as giving out condoms. In order to protect participant confidentiality, the daily log information is based on visits to the SEP rather than individual participants. Thus, it is not possible to provide an exact count of the number of individual participants using the SEP. This database is the foundation for the data reported in the section on Syringe Exchange Program activity for the SEP year.

Participant Card Log

Every person who exchanges syringes with the SEP is offered a participant card that identifies that person as a participant with the program. Participants remain anonymous. A member of the outreach team creates a unique identifier for the participant and collects basic demographic data about the participant. The card has been well received as it also summarizes the law allowing participants to carry syringes to and from the exchange printed on the back. ("The person bearing this card has registered with the CHOW Project, 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 that they have in their possession.

A 2014 Masters in Public Health student used the participant card database to create an epidemiological profile of an average SEP participant. With permission, portions of that data are presented below to create a comparison between the average SEP participant and the average Research Evaluation participant. This data represents all CHOW participants who received a participant card from July 2012 –February 2015 and is representative of SEP participants during that time period.

Evaluation

Given the limitations of this data, and in order to obtain more detailed information regarding participants using the SEP, 100 research interviews were conducted in SEP2014 with a randomly selected group of participants. These interviews included specific demographic, drug use, sexual behaviors and HIV/HCV risk data. The participants were paid a modest incentive for participating in these interviews which were conducted in all four counties. While names were not collected, code numbers were generated so that initial and follow-up interviews from the same participant can be linked. The data on demographic characteristics, drug use, and HIV/HCV risk behaviors in this 2014 report are based on survey interviews conducted during this SEP year.

In order to obtain a better estimate of HIV and HCV prevalence among PWID accessing the SEP, CHOW included HIV and hepatitis C antibody testing as a part of the annual evaluation. The HIV/HCV seroprevalence component of this study was incorporated and included in the SEP2014 survey.

In SEP2014 the same 100 participants who were randomly selected to complete the survey were included in the HIV/HCV study. Participants were asked to contribute a small blood sample for the Clearview Complete HIV ½ Rapid HIV Antibody Test to test for HIV antibodies and the Oraquick HCV Rapid Antibody Test to test for HCV antibodies. Participants were given the option to obtain their HIV/HCV status. To ensure confidentiality, results were coded with the same client ID used on the interview, and no names were linked with the result. Test results were recorded and stored with no identifying information. Participation was voluntary and participants were free to decline learning their HIV/HCV status at the time of testing. One participant of the 100 surveyed declined to learn their test results. Participants were also free to decline HIV/HCV testing as part of the research. No participants declined to participate in research testing.

Program Effectiveness

The Community Health Outreach Work (CHOW) Project is dedicated to serving individuals, families, and communities adversely affected by drug use, especially people who inject drugs, through a participant-centered harm reduction approach. CHOW works to reduce drug-related harms such as, but not limited to HIV, hepatitis B/C, and overdose. CHOW supports the optimal health and well-being of people affected by drug use throughout the State of Hawai'i.

To ascertain the effectiveness of the SEP, it is important to look at cases of HIV and AIDS among PWID in Hawai'i and to compare this data with national HIV/AIDS surveillance. Historically, both national and local data has been available for AIDS cases but not HIV cases because HIV was not a reportable condition for the first two decades of the epidemic. This creates limitations because some persons with HIV may take many years to progress to an AIDS diagnosis (if at all) – especially in the age of combination anti-retroviral therapy, and thus the picture created by looking at AIDS cases may not reflect the current trends in HIV infection. Despite these limitations, AIDS data can help determine the epidemiology of HIV/AIDS – especially when it comes to risk factors linked to acquisition of the disease.

As of December 31, 2012, there have been 1,201,100 reported cases in the United States that met the criteria established by the Centers for Disease Control and Prevention (CDC) for the diagnosis of AIDSⁱ. Since the identification of AIDS, 658,507 deaths have been attributed to this disease in the United States. These deaths represent fifty-five percent (55%) of all cases of AIDS. Approximately one third of all U.S. cases have been associated with injection drug use, either occurring among people who inject drugs (PWID), the sexual partners of PWID, or the children of PWID. In Hawai'i, only thirteen point nine percent (13.9%) of AIDS casesⁱⁱ are related to injection drug use. This relatively low percentage, less than half the national average, can presumably be credited to the proactive efforts to implement early intervention HIV prevention programs, including the SEP, for PWID in Hawai'i.

In alignment with the nationwide mandate, Hawai'i began reporting HIV cases by name in 2008, resulting in more accurate HIV data (including AIDS cases) and providing a more precise picture of those living with HIV in Hawai'i. Additionally, the data demonstrates CHOW's effectiveness in finding new infections (incidence) of HIV among PWID. According to the Hawai'i Department of Health, the percentage of new HIV/AIDS diagnoses related to injection drug users is lower than the cumulative average mentioned above with three cases (9%) of AIDS in 2012 and two cases (3%) in 2013 related to injection drug use. New HIV diagnoses in PWID are also low. In 2012, there were no new cases of HIV diagnosed in persons who inject drugs, and there were two (2%) new HIV cases identified in this group in 2013. Men who have sex with men and inject drugs (MSMIDU) added to these numbers, with one new AIDS case and no new AIDS cases in 2012 and 2013 respectively. New HIV cases in the

MSMIDU population numbered three in 2012 and three in 2013. This indicates a continual decrease in the number of new HIV infections in Hawai'i related to injection drug use.

Another indication of the SEP's effectiveness in preventing HIV infection among PWID is detailed later in the report. Results of CHOW's HIV seroprevalence study found a prevalence between 0.0% and 5.8% of HIV among CHOW's study cohort. These low numbers, coupled with the HIV/AIDS data above, is evidence that access to sterile syringes and other injection-related equipment is keeping the HIV prevalence low among PWID which also decreases the risk of HIV in their sexual partners and children. Not only has the HIV prevalence among PWID accessing the SEP continued to be low, having lower numbers of active PWID living with HIV decreases the risk for other PWID (and their partners) to become infected. Access to sterile syringes and other equipment decreases HIV-related risk behaviors, such as sharing used needles, but does not erase injection-related risk completely. Maintaining a low prevalence of HIV among PWID means if PWID engage in HIV risks such as sharing equipment, the risk for becoming infected with HIV is decreasedⁱⁱⁱ.

An unfortunate truth is that the effectiveness of syringe exchange services is often highlighted by the seroprevalence of populations who do not have access to clean syringes. In the spring of 2015, news sources reported an outbreak of HIV in a rural southeastern town in Indiana, with many cases being linked to injection drug use and the sharing of injection drug equipment. As of July 2015, the Indiana State Department of Health has reported 174 confirmed HIV positives linked to this outbreak^{xiii}

National and local data on the prevalence of hepatitis C was not available for comparison but CHOW's hepatitis C seroprevalence data will be detailed later in this report.

SEP Operations

Hawai'i's SEP began in a fixed location which provided the opportunity for the CHOW Project to offer comprehensive services to participants accessing the SEP. After the building was sold, CHOW relocated offices to a building that did not allow participants to access services onsite. The SEP is currently entirely run through mobile sites and Syringe Exchange Appointments (SEA) where outreach workers meet participants at locations convenient for the PWID. While this model provides flexibility, it limits the amount of services that may be provided on-site, including HIV and HCV counseling, testing and referral (CTR), wound care, and other activities. The CHOW Project continues to seek a fixed site that would be appropriate for participants in Honolulu in order to provide more comprehensive services; Neighbor Island sites will continue to be run through the mobile vans. The downtown Honolulu mobile exchange has a regular schedule with the van parking in the same location five days a week, and most of the Neighbor Islands have a fixed schedule where the vans are parked at a location regularly in addition to SEA visits.

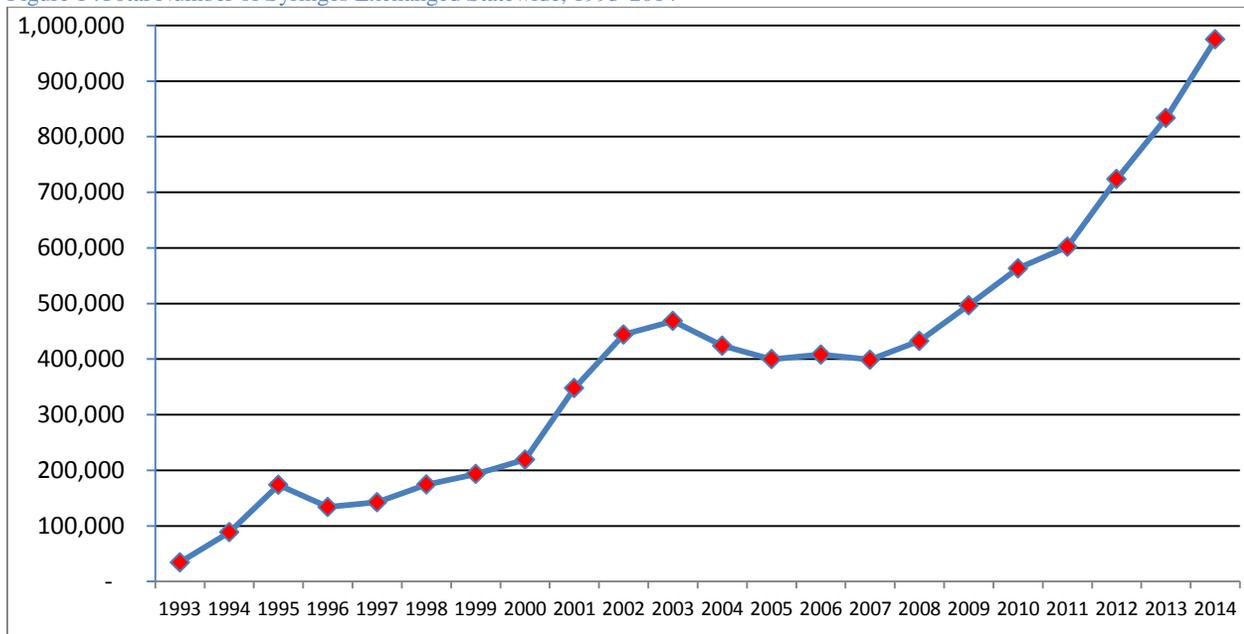
From January 2014 to December 2014, the SEP operated from the following regular sites in addition to SEA:

Island	Exchange Site	Area of Operation
O'ahu	CHOW O'ahu Mobile Exchange	Island-wide
	CHOW Downtown Mobile Exchange	Downtown Honolulu
Hawai'i	CHOW Hawai'i Mobile Exchange	Island-wide

Maui	CHOW Maui Mobile Exchange	Island-wide
Kaua'i	CHOW Kaua'i Mobile Exchange	Island-wide

As of 2012, there were a total of 203 known SEPs operating in 34 states, the District of Columbia and Puerto Rico^{iv}. SEP sizes range from small (<10,000 syringes exchanged a year) to very large (>500,000 syringes exchanged per year) with only 18% falling in the category of very large. The number of syringes exchanged statewide by the Hawai'i SEP in SEP2014 exceeded its program high by exchanging a total of 974,847 syringes, moving it for the fifth year in a row into the very large category.

Figure 1 .Total Number of Syringes Exchanged Statewide, 1993-2014



During SEP2014 there were a total of 7,846 participant visits; a twenty-one point eight percent (21.8%) increase from the 6,441 visits observed in SEP2013. This increase is in contrast to the decrease in visits that had been observed in the two previous years. This increase is seen almost exclusively on Oahu, which saw visits increase from 3,802 visits in 2013 to 5,438 visits in 2014, a forty-three percent (43%) increase. It is of note that the average number of syringes exchanged per visit decreased significantly from 112.6 syringes per visit in 2013 to 85.8 syringes per visit in 2014. This may, in part, explain the increase in visits to the Oahu exchange.

Secondary syringe exchange, also known as “gatekeeping”, is the practice of a participant exchanging syringes for someone other than themselves. In the SEP2014, seventy-one out of the one hundred participants interviewed reported gatekeeping.

Comparatively, 2,057 of the 7,846 participants who visited the SEP in 2014 reported participating in secondary syringe exchange. These participants exchanged 542,700 syringes in 2014 and provided clean syringes and injection drug equipment to an additional 7,331 people.

Table 1. Number of participant exchange visits, first exchange visits, syringes exchanged, and average number of syringes exchanged by site during SEP2013 and SEP2014.

Exchange Site	Visits/percent of total visits	First visits/ percent of total visits	Syringes exchanged	Average # of syringes exchanged per visit
Oahu	3,802 (59%) 5,438 (69%)	51 (1%) 52(1%)	428,043 (51%) 466,382 (51%)	112.6 85.8
East Hawai'i	1,062 (16%) 932 (12%)	18 (2%) 14 (2%)	146,942 (18%) 171,432 (18%)	138.4 183.9
West Hawai'i	107 (2%) 105 (1%)	4 (4%) 8 (7%)	43,843 (5%) 76,786 (5%)	409.8 731.3
Maui	853 (13%) 850 (11%)	55 (7%) 49 (6%)	114,858 (14%) 159,364 (14%)	134.7 187.5
Kaua'i	617 (10%) 521 (7%)	35 (6%) 28 (5%)	99,991 (12%) 100,883 (12%)	162.1 193.6
Statewide	6441 7,846	163 (2.5%) 151 (1.9%)	833,677 974,847	129.4 124.2

The number of new participants utilizing SEP services during the SEP2014 is above the trend observed over the last decade, typically falling between zero point seven percent (0.7%) and one point seven percent (1.7%) of total visits. One hundred and fifty one (151) new participants were tracked statewide in SEP2014, representing one point nine percent (1.9%) of the 7,846 total visits.

Participant Demographics

In 2014, the average age of the participants was 42.06 years, a decrease from SEP2013 where the average participant age was 44.27 years. In SEP2014, roughly two thirds of the participants (58%) were male, which remains consistent with previous years. While the last two years have seen an increase in transgendered participants, no transgender participants were interviewed in SEP2014.

SEP2014 participants come from diverse racial and ethnic backgrounds with the majority of participants identifying as Caucasian (52%) and almost a quarter (21%) identifying as Hawaiian/part Hawaiian. Participants who identified as Native Hawaiian/Part Native Hawaiians and Native Americans/Part Native American were categorized as Native Hawaiian or Native American regardless of other ethnic identification. This is in line with participant card data where the majority of participants identified as Caucasian (60.77%) and Hawaiian (21.3%).

Figure 2 - SEP2014 Ethnicity

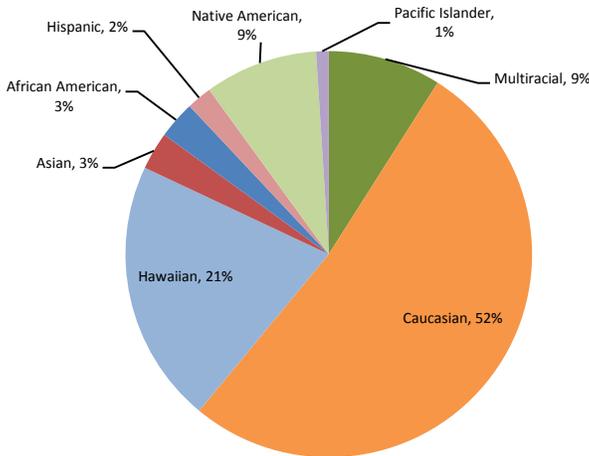
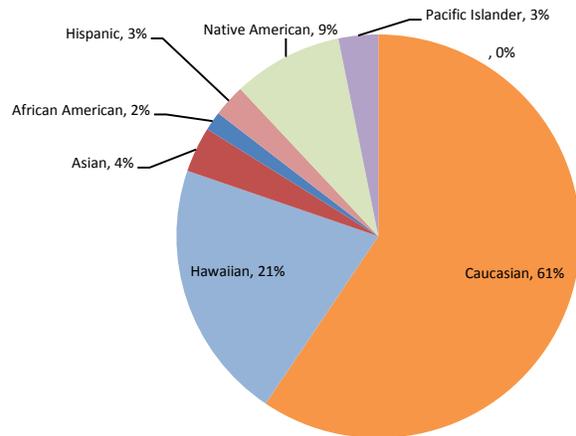


Figure 3 – Participant Card Ethnicity



Housing continues to be problematic for many SEP participants. In SEP2014, there was a decrease in the number of participants living in houses or apartments that they rent or own; forty-two percent (42%) in SEP 2013, to thirty-eight percent (38%). Of the remaining SEP participants, fifteen percent (15%) reported being temporarily/unstably housed, meaning they were staying in shelters or in another person’s home. While forty-seven percent of respondents reported being homeless, fifty-one percent of respondents reported living “on the streets.” Anecdotally, these respondents reported being “houseless” but not “homeless” as Hawai’i is their home.

Figures four and five illustrate that research participants are in line with the participants of the SEP overall. Anecdotally, homeless participants are less likely to decline participation in the research due in part to the monetary incentive, which appears to be less of a draw to housed participants.

Figure 4 – SEP2014 Housing

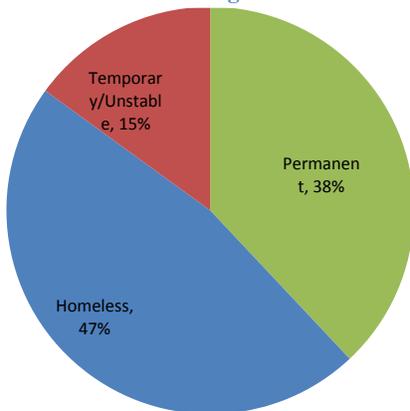
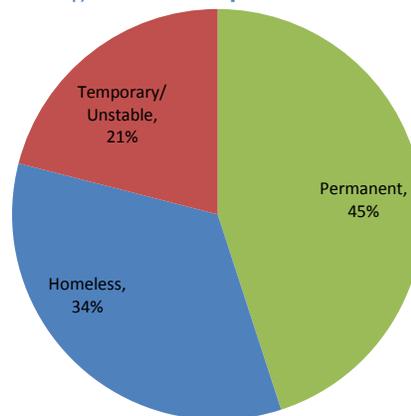


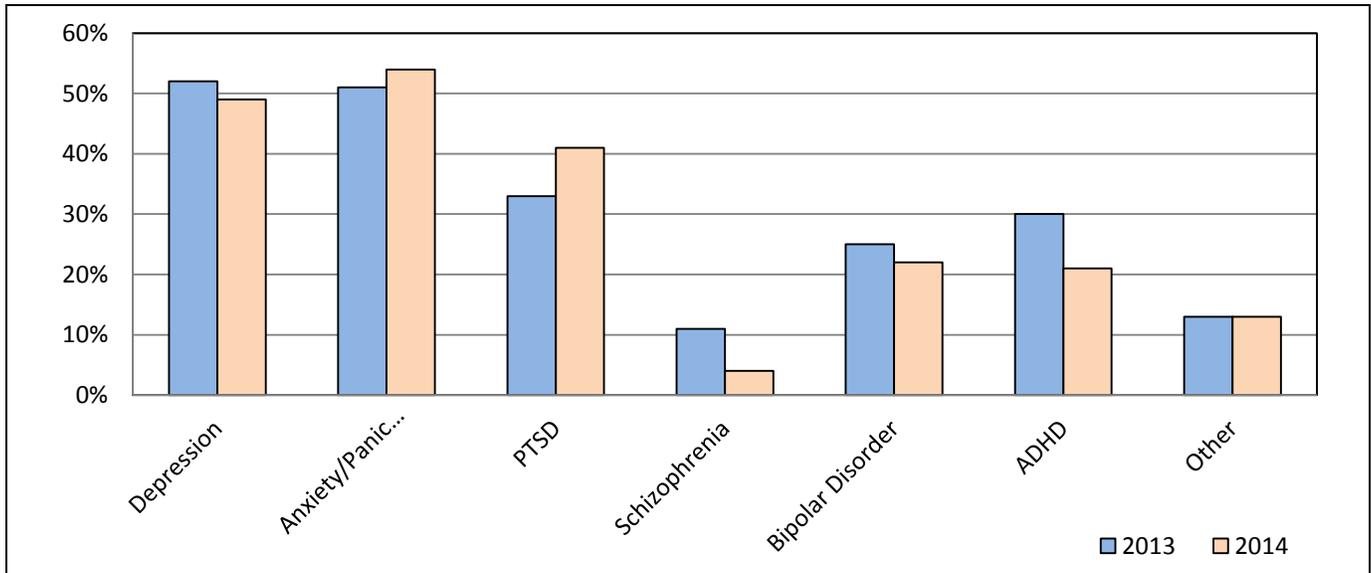
Figure 5 – Participant Card Housing



Going hand in hand with an increase in homeless participants is the number of participants who report being out of work or disabled and not able to work. In SEP2014, thirty eight percent (38%) of participants reported being “out of work”, a significant increase from twenty nine percent (29%) in SEP2013. An additional forty-three percent (43%) of respondents reported being disabled in SEP2014.

Another challenge that many SEP participants face is mental illness. In SEP2014 three-fourths (75%) of participants reported having at least one psychological diagnosis in their life time. However, only thirty-six percent (36%) of these respondents were engaged in mental health treatment.

Figure 6. Psychological conditions of SEP2013/2014 Participants



Participant Use of Emergency Services

Eighty-two percent (82%) of SEP participants reported having some kind of health insurance. Despite this, SEP participants utilize emergency services at much higher rates than the general public. According to a report put out by the CDC, roughly 1 in 5 (or 19.5%) adults between the ages of 18-64 will visit an emergency room in a given year^{xvii}. Among SEP participants, 3 out of 4 participants (77%) will visit the emergency room in a given year. Moreover they will average 3.79 visits over a two year period. Seven participants reported visiting the emergency room more than ten times in the last two years. Of the seventy-seven participants who reported accessing emergency room services in the two years prior to interview, only five of those participants reported visiting the ER for dope sickness/med seeking.

Infections, open wounds, and severe trauma (broken bones and vehicular accidents) were the most common reason for visiting the emergency room. Ninety-six percent (96%) of participants reported that their situation was an emergency which is why they sought treatment at an emergency room instead of with their primary care provider.

Participant Drug Use

Over the last few years the SEP has seen a steady decline in the length of time participants have been injecting. In SEP2014 participants reported engaging in injection drug use for an average of 14.35 years and reported an average age of 27.7 years for their first injection of drugs, this is down from SEP2013 in which participants reporting injecting for an average of years 17.3. This is indicative of younger participants accessing services. The SEP had previously had an “aging” cohort, with the average age of participants rising each evaluation year; however, as the oldest members of our

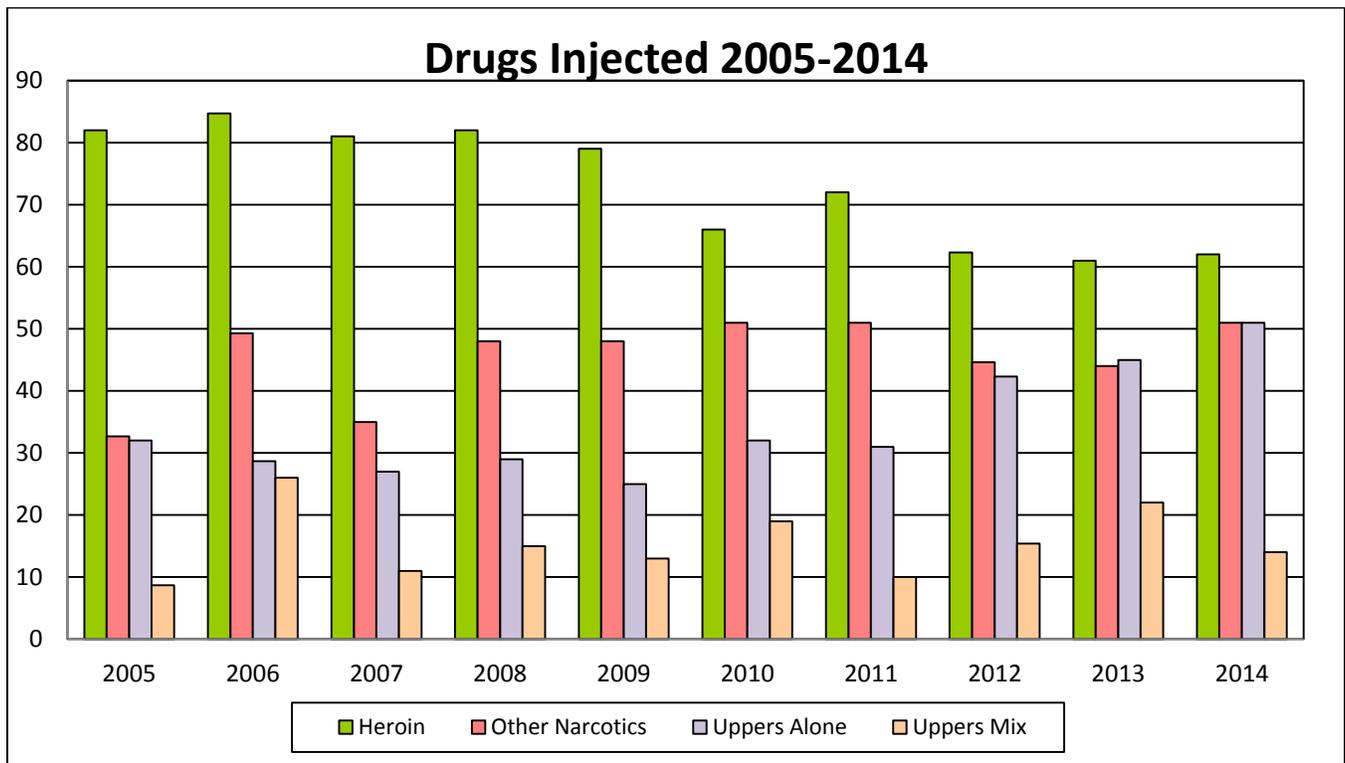
community phase out (passing away or going to prison), younger participants are taking their place, lowering the overall age of the SEP population.

The SEP participants inject drugs very frequently. In SEP2014 they reported injecting on an average of 5.7 days per week. While the number of days per week has remained consistent, SEP participants reported an increase in number of injections per day. In SEP2014 participants reported an average of 3.4 injections a day, up from an average of 2.8 injections a day in SEP2013.

The SEP participants would be at high risk for HIV infection if they did not have good access to sterile injection equipment given the frequency of their reported HIV risk behaviors.

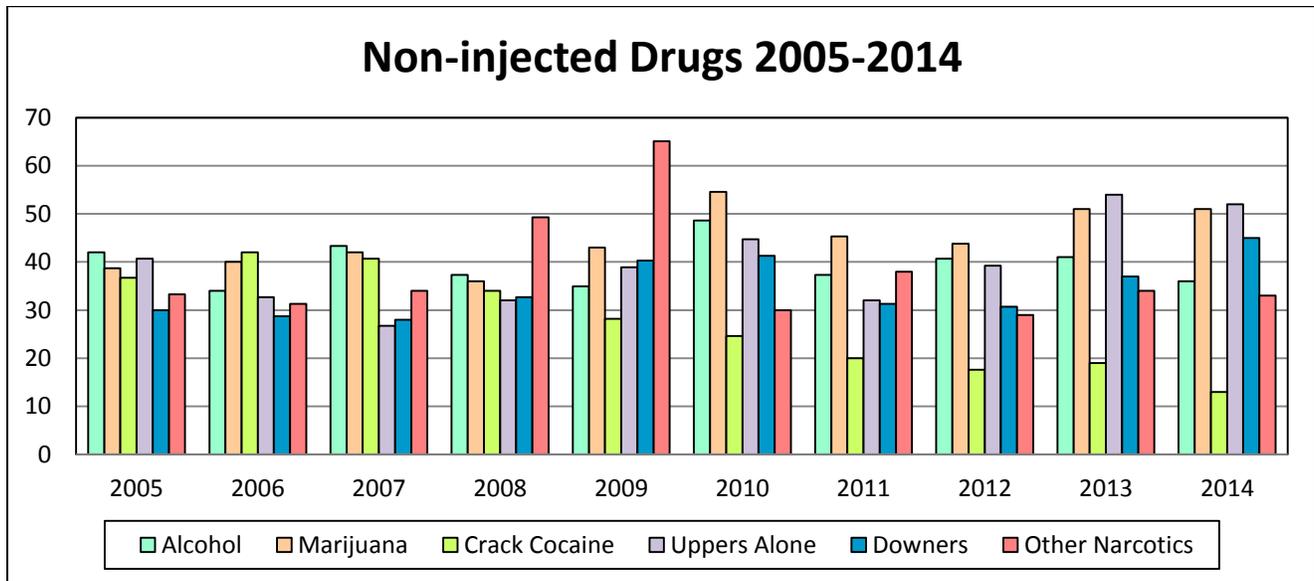
SEP2014 saw the continued decrease in heroin use, while maintaining the increase in “narcotics other than heroin” and “uppers alone” (see Figure 7). This is consistent with the decrease in heroin use that the SEP has witnessed over the last several years. Anecdotal information from SEP participants suggests that there has been an increase of availability of pharmaceutical analgesics and a decreased supply of heroin throughout 2014.

Figure 7. SEP Participants Injection Drug Use 2005-2014



SEP2014 participants reported being engaged in drug use outside of injection use at high rates. The most common non-injection drugs used were “downers”, “narcotics other than heroin”, and “uppers alone”. Method of administration was not asked. For many years SEP participants were what is known as mono-drug users, meaning they typically only used a single type of drug, rarely using anything else. More recent trends find more than half (54%) of SEP participants are poly-drug users, meaning that participants are more likely to use any type of drug available. And, more importantly, SEP participants are using contraindicated drug combinations, which has led to an increase in overdoses in our community. (See page 12 for section on Overdose)

Figure 8. SEP Participants Non-Injection Drug Use 2005-2014



Drug-related Risk Behaviors of SEP Participants

SEP 2014 saw a marked number of participants who reported receptive and distributive sharing of injection drug equipment in the one month prior to the interview. “Receptive sharing” is defined as having injected with a syringe or other injection equipment that had been used by someone else. “Distributive sharing” is defined as passing on used syringes or other injection equipment to other drug injectors.

The sharing of “cookers” (used to heat and dissolve the drug before injecting) and “cottons” (used to filter the drug solution before injecting), is similar to the direct sharing of syringes. Sharing of cookers and cottons has not been proven to be an efficient method of transmitting HIV, but studies suggest that sharing cookers and cottons may be important in transmitting HCV.^v

Table 2. Receptive and Distributive Sharing of Injection Drug Equipment

	Receptive Syringe	Receptive Cooker	Receptive Cotton	Distributive Syringe	Distributive Cooker	Distributive Cotton
Total	13	12	10	16	11	8
Female	6	5	5	6	4	2
Under 30 (youth)	4	3	2	4	3	2
HCV Positive	*3	*0	*3	10	7	5

*New HCV Positive at time of research test

In SEP2014 eighty six percent (86%) of participants who reported “sharing” syringes, indicated that this had occurred due to a lack of access to clean equipment. This has serious implications when considered against the state’s law dictating that CHOW have a “one for one” syringe exchange policy. Many participants come to the project seeking syringes but do not have one to turn in or do not have enough syringes to last while the syringe exchange is closed (evenings and weekends). This potentially puts these participants at risk for infection.

Among the survey respondents who reported, “receptive sharing” of needles and syringes in SEP2014, eighty-four point six percent (84.6%) reported that they “always” cleaned the used syringes. There are many variables that may influence any protective effect of cleaning, including whether full

strength bleach is used as a cleaning agent and whether there is the recommended 30-second contact time of the bleach in the syringe.

Given the relatively low prevalence of HIV among the SEP participants, this moderate to low rate of “distributive sharing” is not likely to lead to new HIV infections. However, this “distributive sharing” is likely to generate new HCV infections among SEP participants (see Table 3 for HCV infections and risk factors). Current available data suggest that a relatively high percentage of participants are infected with and capable of transmitting hepatitis C.

Overdose

SEP2014 is the fourth year to incorporate questions about drug overdose, with overdose being defined as “loss of consciousness”. Recent research by the Hawai’i Department of Health^{vi} states that accidental drug overdose is the leading cause of accidental death in Hawai’i and the leading cause of accidental death nationally.

Figure 9. SEP2014 Experienced Overdoses in the 2 years prior to interview

Experienced an Overdose (n=21)

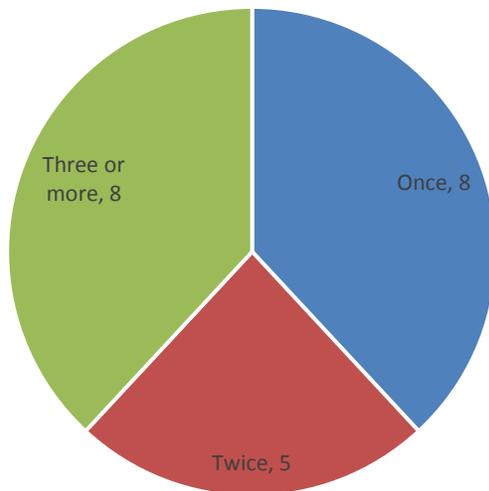
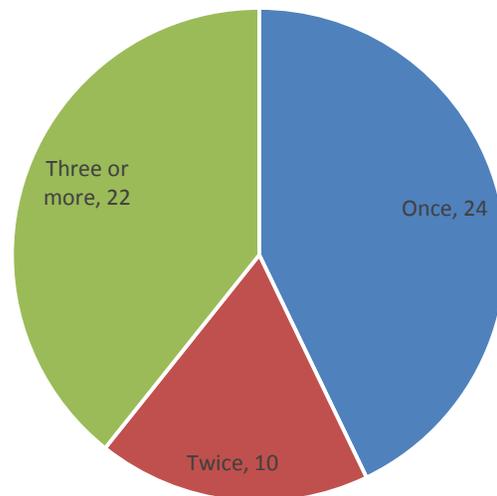


Figure 10. SEP2014 Witnessed Overdoses in the 2 years prior to interview

Witnessed an Overdose (n=56)



It is of interest that seventy-three point nine percent (73.9%) of respondents in SEP2014 who had reported having overdosed also reported having spent some time in prison in the last five years. Spending time in prison, and presumably being drug free, is a known risk factor for future overdose as a person’s tolerance for their drug of choice may be greatly reduced. Additionally, fifty-one percent (51%) of Eval2014 participants reported injecting alone. Injecting alone does not increase the likelihood of overdose, however, it increases the likelihood that an overdose may be fatal because there is no one to provide assistance.

Calling 911, doing rescue breathing, and “walking a person around”, were the most common responses to witnessing an overdose. Fifty percent (50%) of participants who reported witnessing an overdose did not contact emergency services, most commonly because they were able to revive the

person who had overdosed. It is of note that twenty-five percent (25%) of participants who did not contact emergency services, did not do so out of fear of police involvement and fear of arrest.

Eight point nine percent (8.9%) of participants who reported witnessing an overdose in SEP2014 reported that the person who had overdosed died due to the overdose.

Sexual Risk Behaviors of SEP Participants

The survey respondents reported moderate levels of sexual risk behaviors. In SEP2014, forty-eight percent (48%) of respondents reported having a sexual relationship with a “primary partner.” Of these respondents, ninety-eight percent (98%) reported not always using a condom with their primary partner.

In SEP2014 twenty-one percent (21%) of participants reported having a sexual relationship with a “casual” partner. Of these respondents, seventy-one point four percent (71.4%) reported not always using a condom with their “casual” partners.

Participants also reported engaging in trading sex for money or drugs. In SEP2014 seven percent (7%) of participants surveyed reported this behavior; and twenty-eight point six percent (28.6%) of these did not always use a condom when trading sex for money or drugs. Participants who reported not using protection cited “trusting the person” as the reason that they did use protection. It is of note that three of the seven participants who sold sex in the 30 days prior to interview had twenty or more sex partners. All three of these participants reported using a condom every time they engaged in sex.

While the HIV prevalence among PWID is low, this high level of sexual risk-taking is worrisome because of the risk of sexually-acquired HIV as well as the risk for other sexually transmitted diseases. CHOW will continue to distribute condoms and provide safer sex education to participants to address sexual risk-taking among SEP participants. CHOW distributed 44,052 condoms to at-risk individuals in SEP2014.

HIV Infection

Two participants tested positive for HIV in SEP2014. Both participants were already aware of their status and engaged in medical care and case management services. Neither participant reported any distributive sharing of injection drug equipment, nor any sexual risks. Both participants reported having tested positive while incarcerated, before ever accessing the SEP.

Overall number of known HIV positive participants in the SEP population remains low. The data from the HIV testing study is consistent with all other HIV testing data in the State^{vii}. The HIV testing component of the study provides direct evidence that both prevalence and incidence of HIV infection are quite low among PWID participating in the SEP. CHOW offers HIV testing for participants as an on-going service and encourages participants to know their HIV status and to link HIV positive persons to medical care.

HCV Infection

In SEP2014 sixty-five percent (65%) of respondents tested positive for HCV antibodies. Twenty-seven point seven percent (27.7%) of these participants reported never having tested positive for HCV.

Table 3. Demographics and Risk Profile of SEP HCV Positives

		HCV + 2013 (n=67)	HCV+ 2013 NEW* (n=10)	HCV + 2014 (n=65)	HCV + 2014 NEW*(n=18)
SEX	Male	46	8	34	9
	Female	18	2	31	4
	Transgendered	3	0	0	0
AGE	30 and under (Youth)	7	3	7	2
	Over 30	60	7	58	11
HOUSING	Permanently Housed	34	3	21	3
	Marginally Housed	10	2	9	1
	Homeless	23	5	35	9
HCV Testing	Previous Test				
	Yes	65	10	63	13
	No	2	n/a	2	n/a
	Known positive - RNA test	26	n/a	33	n/a
INJECTION	Length of Time Injecting	22.4 years	13.3 years	18.3 years	13.3 years
	Days a week Inject	5.8	5.9	5.9	5.8
	Number of Shots a day	2.9	3.3	3.4	3.1
	Length of time Accessing SEP	10 years	4.2 years	6.9 years	6 years
RISK BEHAVIOR	Receptive Sharing Syringes	6/14**	1	10/13**	3
	Receptive Sharing Cookers	4/6**	1	11/12**	0
	Receptive Sharing Cottons	2/4**	0	10/10**	3
	Distributive Sharing Syringes	10/17**	3	10/16**	2
	Distributive Sharing Cookers	4/5**	1	7/11**	0
	Distributive Sharing Cottons	4/5**	1	5/8**	1

*These participants reported having previously tested negative for HCV antibodies

** The denominator indicates total number of participants who reported this activity

While the overall prevalence of HCV has slowly, but steadily, decreased amongst SEP participants since the HCV antibody test was added to the Evaluation in 2008, 2014 saw a significant increase in the number of new HCV antibody positive participants interviewed. This increase has many corollaries. Of significant importance is the number of participants who tested positive for HCV antibodies who also reported distributive and receptive sharing of injection drug equipment. Additionally, among HCV antibody positive participants, there was an increase in the number of injections per day from 2.9 in Eval2013 to 3.4 in Eval2014. This increase in number of injections puts participants at significantly higher risk if they are receptively sharing injection drug equipment, especially as HCV is approximately 10 times more infectious than HIV and can live outside the body (unlike HIV) for up to four days^{viii}.

Also of note is the steady increase in methamphetamine use in the SEP community (see figure 7 and 8). It is widely acknowledged that the use of methamphetamine, alone or in conjunction with other substances, significantly interferes with activities of daily living. Unsurprisingly, the rise in the use of methamphetamine also coincides with the increase in homelessness in the SEP community with

significantly more participants reporting being homeless in Eval2014 than in previous years. This is especially true for participants who tested positive for HCV antibodies (see table 2). This decrease in stability may have strongly influenced the increase in new HCV antibody tests in Eval2014.

Sexual/Physical Abuse

One of the issues that many SEP participants face is dealing with past, and ongoing, physical and sexual abuse. SEP2014 is the fourth year participants were asked about physical and sexual abuse, in childhood (before the age of 18) and in adulthood (after the age of 18).

Physical abuse is defined as any act resulting in a non-accidental physical injury. Sexual abuse is defined as any unwanted sexual contact, including being molested, sodomized, or raped.

Table 4. SEP2014 Physical and Sexual Abuse

		Childhood Sexual Abuse	Adult Sexual Abuse	Childhood Physical Abuse	Adult Physical Abuse
	Total	28	26	38	33
SEX	Male	9	2	18	7
	Female	19	24	20	26
	Transgendered	0	0	0	0
AGE	Under 30 (Youth)	2	4	3	6
	Over 30	26	22	35	27
HOUSING	Permanently Housed	10	11	15	11
	Marginally Housed	5	13	3	2
	Homeless	13	2	20	20
MENTAL HEALTH	Psych Diagnosis				
	PTSD	19	16	18	17
	ADHD	7	4	6	2
	Treatment	9	5	10	20

In SEP2014 a vast majority of all respondents who reported being physically and/or sexually abused in adulthood were female. These respondents were disproportionately abused by primary partners.

According to national statistics, 1 in 5 women will experience sexual assault in her lifetime^{xiv}. Women who have experienced sexual assault are diagnosed with PTSD at higher rates than any other group of people in the United States, including combat veterans^{v, xvi}. Moreover, physical and sexual abuse in childhood often leads to re-victimization in adulthood, which can be illustrated in our own community. In Eval2014, fifty percent (50%) of all respondents who reported being sexually abused in childhood also reported experiencing sexual abuse in adulthood. Additionally, forty-seven point three percent (47.3%) of participants who reported experiencing childhood physical abuse also reported experiencing physical abuse as adults.

Cost/Benefit Analysis of Hawai'i SEP

While there are many difficulties in conducting a benefit/cost analysis of any HIV prevention program, it is clear that it is very expensive to treat HIV infection, and the cost has increased with the advent of highly active anti-retroviral treatment (HAART). According to a 2010 analysis^{ix} the average lifetime cost of treating someone living with HIV is \$379,668. Additionally, a very close linkage exists between HIV infection among PWID and heterosexual transmission of HIV in the United States^x. Based on the national data, preventing an average of 3 HIV infections per year among PWID would then prevent an average of 1.2 additional HIV infections among non-drug injecting heterosexual partners of PWID for a total of slightly more than 4 infections prevented per year. The combined SEP/CHOW Project would provide a cost savings to the State of Hawai'i if it prevented as few as two (2) HIV infections per year.

Conclusions

The annual survey has a modest sample size (100 subjects) and there is frequently year-to-year variation in many operational characteristics of the program. Consequently, the evaluation should be viewed as a snapshot of the PWID in Hawai'i and the epidemiological value of the study is found both in the annual survey as well as in the trends in the data over time. In addition, the survey offers the opportunity for CHOW participants to give feedback about the services they are receiving. The CHOW participants who participated in the survey rated the SEP at a 9.8 on a 10-point scale when asked how satisfied they were with CHOW services. These comments and the survey results will direct any programmatic changes that are necessary to ensure services reflect the study's outcomes and recommendations.

HIV/AIDS among PWID is a major public health problem in many countries throughout the world. It is a particular problem in the United States, where approximately one third of all reported AIDS cases have been related to injection drug use. Hawai'i acted early to establish HIV prevention programs for PWID which has kept the AIDS cases related to injection drug use at about half the national average. The CHOW HIV testing study conducted over the past nine years found both a low prevalence (3%) and a low incidence (likely to be less than 1% per year) among PWID participating in the SEP. Given that the program is relatively large, it probably reaches a high percentage of PWID in the state, and it is unlikely that prevalence or incidence are very different among PWID not participating in the SEP. The continuing success in limiting HIV transmission among injecting drug users in Hawai'i is notable given indications of a resurgence of HIV infections among some high-risk populations in Hawai'i and in other parts of the United States^{xi}.

The CHOW HCV testing study conducted for the first time in 2007 showed a high prevalence of eighty-eight point seven percent (88.7%) and the prevalence for SEP2014 at sixty-five percent (65%). These findings fall within the world-wide range of 60% to 80% among PWID^{xviii}. Because the average duration of injecting among the syringe exchange participants is approximately 14.4 years, with a range from less than a month to more than 43 years, many of the participants may have been infected with HCV before the syringe exchange became fully established. With the increase of young injectors being surveyed, the prevalence rate drops significantly, meaning that prevention of hepatitis in this subpopulation may still be possible and youth should be targeted for aggressive HCV prevention activities. As HIV/HCV co-infection creates very serious medical problems, much more than single infections with either virus, Hawai'i is fortunate that the rate of HIV infection has been kept very low in this population.

While the present data systems do not permit an exact count of the number of PWID who use the Hawai'i SEP, the participant card data is able to give a broad estimate. As of July 2015, the SEP had generated 1,202 participant cards for individual SEP participants.

The program is one of the larger programs in the United States based on the annual numbers of syringes exchanged with SEP2014 having the largest number of syringes exchanged since the program's inception. Given the upwards trend in number of syringes exchanged, it seems unlikely that the annual number of syringes exchanged has stabilized and monitoring of the numbers of syringes exchanged should be continued. The increase in "Narcotics other than heroin" (primarily pharmaceutical analgesics) injected over the past few years indicates the need to continue monitoring this trend and adapt the program as appropriate.

Participants in the SEP report low but not negligible rates of injection risk behavior; however based on their drug injection frequencies, participants in the SEP would be at very high risk for HIV infection if they did not have a legal source of sterile injection equipment and other needed educational and support services. Given the considerable costs of medical treatment for HIV infection and the consistent evidence for low rates of HIV infection among PWID in Hawai'i, there is great certainty that the investment in the integrated SEP/CHOW Project produces a substantial cost savings for the State of Hawai'i. The strong linkage of the Hawai'i program to drug abuse treatment is notable among SEPs in the United States.

Recommendations

The Hawai'i SEP has become an effective statewide program and has contributed to the low prevalence of HIV among PWID in Hawai'i. The highest priority must be given to maintaining quality and quantity of the services provided, in particular to preventing transmission of HIV and HCV by exchanging syringes and distributing clean cottons, cookers, and sterile water used for drug injection. As resources allow, the SEP should expand services to include activities identified as best practices among SEPs such as overdose prevention, access to Naloxone and basic wound care. The SEP should continue to seek a fixed site for providing comprehensive services to participants in Honolulu.

While HIV prevalence is quite low in Hawai'i among PWID, the SEP should continue offering HIV prevention interventions beyond syringe access. HIV counseling, testing, and referral services should be available to all participants and the SEP should work to ensure that those PWID who test positive for HIV have sufficient access to a full range of prevention services, including partner notification, sterile syringes, and condoms to avoid transmission behaviors, and access to HIV case management, care and treatment.

HCV prevalence is very high among SEP participants and every effort should be made to increase the availability of sterile injection equipment for PWID at the time of drug injection. The disparity between the HCV prevalence of older and younger injectors (70.7% vs. 38.8% in 2014 and 74.1% vs 38.6% in 2013 respectively) highlights the importance of primary prevention for younger injectors and secondary prevention for older injectors. Extra efforts should be made to support SEP participants who are negative to stay negative and to link participants with hepatitis C to medical care and to engage in liver wellness activities.

While there were a number of young injectors identified in this year's report, PWID in Hawai'i are clearly an aging population. They already have substantial health problems and these will

undoubtedly increase with aging. Efforts need to be continued to assist participants accessing health care and social services, such as housing.

There are several structural barriers to increasing the health of PWID in Hawai'i that need to be addressed. Methadone treatment services should be expanded to West Hawai'i and Kaua'i and access to buprenorphine should be expanded statewide as alternatives to injection drug use. More options for substance use treatment are needed for people when the traditional abstinence model is not effective.

ⁱ Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2013*. Vol. 25. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2013: [18, 37]. Also available at: <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/>.

ⁱⁱ Hawai'i Department of Health. *HIV/AIDS Annual Surveillance Report, 2013*. Available at: <http://health.hawaii.gov/std-aids/files/2013/05/2013-surveillance-report.pdf>

ⁱⁱⁱ Des Jarlais DC, Hagan H et al. (1995). Maintaining Low HIV Seroprevalence in Populations of Injecting Drug Users. *Journal of the American Medical Association*; 274 (15):1226-31.

^{iv} North American Syringe Exchange Network [NASEN], unpublished data, 2011. Also available at: <http://www.nasen.org/>

^v Hagan H., et al. (1999). Syringe Exchange and Risk of Infection with Hepatitis B and Viruses. *American Journal of Epidemiology*, 149(3), 203-213.

^{vi} Hawaii State Department of Health, Injury Prevention and Control Program

^{vii} Hawaii Department of Health. *HIV/AIDS Annual Surveillance Report, 2012*. Available at: http://health.hawaii.gov/std-aids/files/2013/05/2012-HIV_rep.pdf

^{viii} Centers for Disease Control and Prevention. *Frequently Asked Questions about Hepatitis C*. <http://www.cdc.gov/hepatitis/C/cFAQ.htm>

^{ix} Centers for Disease Control and Prevention. HIV Cost Effectiveness. Available at <http://www.cdc.gov/hiv/prevention/ongoing/costeffectiveness/>

^x Shackman BR, Gebo KA, Walensky, R.P. et al. (2006). The Lifetime Costs of Current Human Immunodeficiency Virus Care in the United States. *Medical Care*, 44(11),990-97.

^{xi} Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2011*. Vol. 23. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2011: [18, 37]. Also available at: <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/>.

^{xiii} Indiana State Department of Health. Press Release. "HIV Outbreak in Southeastern Indiana." Available at: <http://www.in.gov/isdh/26649.htm>

^{xiv} Rabin, R. (2011, December 14). Nearly 1 in 5 Women in U.S. Survey Say They Have Been Sexually Assaulted. *The New York Times*. Retrieved May 24, 2015, Also available at: www.nytimes.com/2011/12/15/health/nearly-1-in-5-women-in-us-survey-report-sexual-assault.html?_r=1

^{xv} Gradus, J. (2014, January 30). PTSD: National Center for PTSD. Retrieved June 20, 2015, Also available at: <http://www.ptsd.va.gov/professional/PTSD-overview/epidemiological-facts-ptsd.asp>

^{xvi} Chivers-Wilson, K. (2006, July 1). Sexual assault and posttraumatic stress disorder: A review of the biological, psychological and sociological factors and treatments. Retrieved June 20, 2015, Also available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2323517/>

^{xvii} Gindi, R., Cohen, R., & Kirzinger, W. (2012, May 1). Emergency Room Use among Adults Aged 18/64: Early Release of Estimates from the National Health Interview Survey, January-June 2011. Retrieved July 20, 2015, Also available at: http://www.cdc.gov/nchs/data/nhis/earlyrelease/emergency_room_use_january-june_2011.pdf

^{xviii} Nelson, P., Mathers, B., et al. (2011 Aug 13). The epidemiology of viral hepatitis among people who inject drugs: Results of global systematic reviews. *Lancet*. 378(9791): 571–583. Also available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3285467/>