Serving South Seattle Drug Users through the Hepatitis Education Project Syringe Services Program: A Formative Program Evaluation and Needs Assessment

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Abstract

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Abstract: In July of 2017, the Hepatitis Education Project (HEP) opened a syringe service program (SSP) in South Seattle, providing sterile syringes, injection equipment, safe disposal of syringes, and the overdose reversal drug naloxone for people who inject drugs (PWID) and community members. The SSP aims to serve PWID in South Seattle, with an additional focus on people experiencing homelessness and the Black/African American community. To understand the needs of the population being served and to inform the development of the SSP, a formative evaluation was conducted. The evaluation used a cross-sectional design, employing mixed methods using a quantitative questionnaire and qualitative interviews. A convenience sample (n=50) of self-identified drug users was recruited from the larger pool of program participants between December 2017 and April 2018. The questionnaire focused on drug use patterns, equipment preferences, barriers to access and service needs. Additionally, twelve qualitative interviews were conducted, focusing on secondary exchange, barriers to access, and naloxone access, knowledge and use. Results reveal that respondents most commonly use methamphetamine and heroin and most reported injection drug use. Barriers to SSP participation include distance to SSP, SSP hours, mental health challenges, stigma, and misconceptions about SSPs. Interviews indicated that secondary exchange practices, particularly among participants living in homeless encampments, were highly common. Lastly, many participants reported carrying naloxone and feeling comfortable administering the drug; though many expressed a need for more training, and misconceptions about its use, effects and safety were reported. The results of the evaluation will be used to direct and inform the program activities and future development, enabling HEP to serve the South Seattle community most effectively.

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Chapter 1: Introduction

Program and Background

Background

People who inject drugs (PWID) are one of the populations at highest risk for viral hepatitis C (HCV) infection due to the high transmission probability of HCV via syringe sharing.[1] Although the exact transmission probability is difficult to quantify, HCV has a significantly higher transmission probability via syringe sharing and needle stick injury than HIV.[2] As a result, HCV incidence rates among PWID are as high as 40 cases per 100 person-years in some parts of U.S.A.[3] Given the high incidence of HCV among PWID and the fact that HCV establishes chronic infection in 80% of acutely infected people, it is unsurprising that PWID also face a high prevalence of HCV.[4] Globally, it is estimated that ten million PWID are living with HCV infection.[2] In Washington, the prevalence of those testing positive for the HCV antibody among PWID is 66%.[5] This prevalence soars to 85% for PWID over the age of 50, who have the triple risk factors of being a PWID, being part of the "Baby Boomer" birth cohort, and having longer lifetime exposures to HCV.[5]

Syringe Service Programs (SSP) aim to mitigate the risks associated with injecting drugs and reduce the spread of diseases such as HIV and HCV by providing clients with sterile syringes and equipment at no cost, and by providing safe disposal of used syringes.[6] In addition, many programs provide education and information about safe injection practices and overdose prevention, along with services including hepatitis A and B vaccinations, HIV and HCV testing, naloxone, wound care and other social and medical service referrals.[6]

Program

The Hepatitis Education Project (HEP) is a local nonprofit organization that aims to provide advocacy, education and direct services to people affected by HCV, medical providers and the general public. The organization currently provides HCV medical case management, rapid HCV testing, HCV confirmatory testing, hepatitis A and B vaccines, and hepatitis B screenings. HEP also provides educational programs to the community through outreach in schools, shelters, prisons and clinics in the King County area. In July 2017, HEP opened a new SSP, which provides sterile syringes, injection equipment and the overdose reversal drug naloxone at no charge for PWID. HEP's SSP operates under a modified needs-based model of exchange, providing clients with up to 200 sterile syringes per encounter, regardless of the number of syringes brought in. Similarly, HEP provides participants with one naloxone kit, per participant, per encounter.

The new SSP at HEP aims to serve PWID in South Seattle, with an additional focus on people experiencing homelessness and the Black/African American community. Additionally, the SSP aims to provide enough equipment to meet a participants' needs for one full week at a time. The program also aims to provide enough equipment to allow participants to engage in secondary exchange practices, which refers to practices, both formally and informally, where sterile syringes and other equipment are redistributed by SSP clients to peers in their community.

Theory of Cause and Effect

Research supports the use of SSPs and the free provision of injection drug equipment as an effective harm reduction strategy, in conjunction with HCV treatment and medically-assisted treatment, to reduce the sharing of injection drug equipment, and thereby prevent the spread of HIV, HCV and other blood-borne pathogens among PWID.[7-9] These programs are *most* effective in their primary goal of reducing disease transmission when they provide the greatest syringe coverage and availability.[10] Put another

way, SSPs are most effective when they have the least restrictive policies regarding syringe access, are decentralized with multiple geographic locations and varying types of locations (physical location, van delivery, bike delivery, etc.), and are open multiple hours of the day.[10]

SSPs can operate on a spectrum from needs-based (least restrictive) to strict one-for-one model of distribution (most restrictive). Needs-based models of syringe exchange mean that PWID can receive as many new syringes as they need, regardless of how many used syringes they return.[10] Sometimes, SSPs operate under a modified needs-based model wherein PWID can receive as many new syringes as they need up to a quota per period of time. Needs-based models of SSPs are also supported by the United Nations.[10] Strict one-for-one models of syringe exchange mean that PWID can only receive the exact number of new syringes as they brought in.[10] Currently, all of the SSPs operated by Public Health—Seattle and King County operate under a strict one-for-one model of distribution, while the SSPs run by the People's Harm Reduction Alliance operate under a modified needs-based model of distribution. Similarly, the new SSP at HEP is operating under a modified needs-based model, providing up to 200 syringes per participant, per encounter.

The research indicates that it is plausible that needs-based models of SSPs are most effective at preventing the spread of HCV. HCV is so virulent that reductions to *very low* levels of syringe sharing are required to have any significant impact on the spread of HCV among PWID.[2] One-for-one models of SSPs erect significant barriers to syringe access by making access to clean injection equipment conditional on one's ability to return used needles and syringes, thereby increasing sharing of injection drug equipment and risk of HCV.[10] It can be difficult for PWID to return used needles and syringes, especially when many shelters do not allow drug paraphernalia on site, and Washington State law makes it a misdemeanor to carry used needles and syringes.[11] However, research shows that having one clean needle per injection and being on Medication-Assisted Therapy (MAT) can substantially reduce the risk of acquiring HCV by as much as 79%.[2]

Based on the above summarized evidence, HEP assumes that the implementation of a new SSP, operating under a modified needs-based model, in the South Seattle area will make services more accessible to PWID in the neighborhood and surrounding area; which in turn will result in increased utilization of syringe exchange, increase access to clean equipment, and reduce the sharing and reusing of equipment, resulting in a reduction of the spread of HCV.

The conceptual model below illustrates this theory of cause and effect, and also includes the implementation strategies being used by HEP in reaching target populations with their program. The left side of the diagram shows the program located in South Seattle and illustrates the implementation strategies used by the program which include: providing a more convenient location for people in South Seattle, utilizing a needs-based model of operation, and utilizing outreach efforts to engage clients. The implementation strategies all lead to increased access to clean equipment. Additionally, the main causal pathway is illustrated below in red, with the opening of the program in South Seattle leading to increased access to equipment and reductions in sharing and reuse of equipment, resulting in a reduction in HIV/HCV transmission.

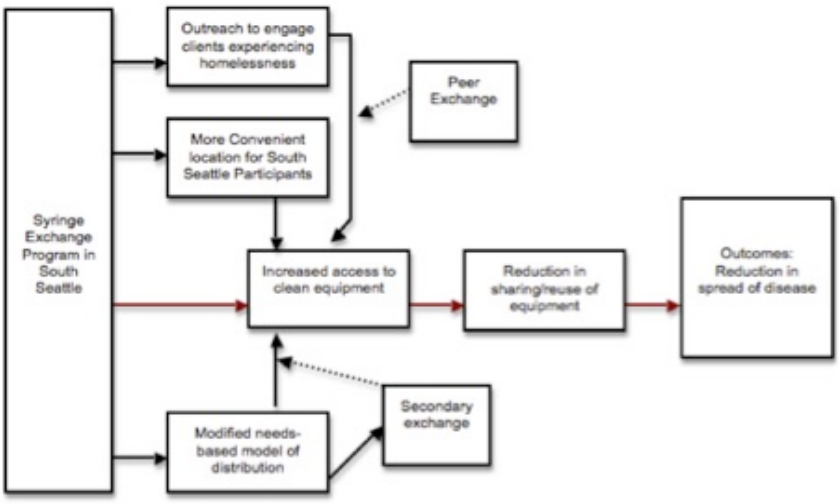

Figure 1: HEP Syringe Service Program Conceptual Model

The pathway between “outreach to individuals experiencing homelessness” to “increased access to equipment” is modified by peer exchange efforts, illustrated by a dashed line, because HEP currently has two members of the homeless/drug using community working with the organization to distribute syringes to community members in their social networks. Similarly, the pathway between the “modified needs-based model of distribution” and “increased access to equipment” is modified by secondary exchange that takes place when participants exchange for people other than themselves and distribute equipment among their using networks.

Literature Review

Evaluations of syringe exchange programs found in the literature focus primarily on the utilization of SSPs by participants, services offered by programs, number of syringes distributed and returned, and injection behaviors among participants.[11-15] Most studies focus on specific programs and their operation, given their social, geographical and economic context, making the results difficult to generalize beyond the specific program, context and model of operation.[12,13] One study that looked at the effects of SSPs on the reuse of syringes across programs and contexts was done across four cities in the US.[14] Though the study found that participation in SSPs was associated with reduction in number of injections per syringe in all four cities, each of the participating programs used different methods of data collection and analysis and much of the data was collected retrospectively, presenting challenges in comparability.[14]

An evaluation conducted in Vancouver, B.C., in 2001 examined the effectiveness of a program conducting syringe exchange during nighttime hours as opposed to typical daytime hours. The study was conducted using cross-sectional methods and compared the injection patterns and risk behaviors of those who utilized the after-hours exchange to those who acquired syringes from other sources.[13] The study found that the after-hours exchange was more effective in reaching the individuals at highest risk of disease transmission based on their risk behaviors than other delivery methods.[13] The study also found that the individuals who accessed the after-hours exchange had higher rates of safe disposal than the comparison group.[13]

As discussed by Ksobiech and colleagues in their meta-analysis of existing syringe service program evaluations in the literature, most of the evaluations of SSPs are descriptive studies, often presented as "an annual report to stakeholders" wherein the report details information regarding demographics of participants, number of syringes distributed and returned, and number of participants served, but fail to provide data or information on the effectiveness of programs through measurable outcomes, such as reduction of risky injection behaviors.[15] Similarly, Ksobiech and colleagues note that comparable data from year-to-year and program-to-program are scarce, because there is a lack of clear operational definitions being used between studies.[15]

Additionally, Ksobiech and colleagues argue there has been little effort to link studies for comparability between programs operating in different settings and with differing models by using the same metrics and methods.[15] In an effort to ensure this study is sustainable, portions of the study can be repeated annually to assess trends in program effectiveness long term. To ensure that the results of this study can be understood in the context of King County at large, this study's questionnaire has been designed, informed and in some cases replicated from the 2017 Washington State Syringe Exchange Health Survey, which is used by Public Health-Seattle & King County to learn about PWID, their use of SSPs and their health. These features allow for comparability of results and will also allow for questionnaire results to be examined in the larger context of drug use patterns, SSP participation and barriers to access across the city and the state.

Evaluation Questions

The evaluation aims to answer the following questions about the Syringe Service Program at HEP:

1. **Who does the program reach?**
    - **a.** To assess program's reach:
        - **i.** Does the program reach individuals who did not previously access SSP?
        - **ii.** Does the program reach individuals living in South Seattle?
        - **iii.** Does the program reach individuals experiencing homelessness?
        - **iv.** Does the program reach Black/African American individuals?

2. **What are the barriers to accessing clean syringes/equipment?**
    - **a.** To identify barriers to SSP participation to inform future development of program:
        - **i.** Is location of the fixed SSP a barrier to access?
        - **ii.** Are hours of operation a barrier to access?
        - **iii.** Is the inability to carry or store syringes a barrier to access?

3. **What drugs are being used by the participants and how are they being used?**
    - **a.** To determine the equipment the program should provide to meet the needs of participants:
        - **i.** What drugs are being used by participants?
        - **ii.** Are participants injecting drugs?
        - **iii.** What brand/length/gauge of syringes is preferred by participants?
        - **iv.** Are participants smoking/inhaling or snorting drugs?

4. **What do participants want to see out of a syringe service program?**
    - **a.** To identify needs beyond syringe services and to determine which services would be utilized by participants if offered:

i. Would participants access hepatitis vaccinations via exchange?

ii. Would participants access medical case management at exchange?

iii. Would participants access HCV testing?

iv. Would participants access treatment via exchange?

v. Would participants access wound care at exchange?

vi. Would participants access Suboxone at exchange?

vii. Would participants utilize vein care or injection education at exchange?

viii. What days of the week and time of day do participants want to access exchange?

ix. Do participants need access to: snorting kits, meth bubbles, crack pipes, foil, wound care kits (to go), citric acid?

x. What else would participants like to see?

5. Do participants know about naloxone and do they have access to it?

a. To determine the need for naloxone and assess whether or not the amount of naloxone currently provided by HEP is sufficient:

i. Do participants know about naloxone?

ii. Do participants currently have naloxone?

iii. How do they usually access naloxone?

iv. Have they overdosed

v. Have they witnessed an overdose?

vi. Have they administered naloxone in the past?

vii. Do they feel comfortable using naloxone?

viii. Do they have a preference in type of naloxone (injectable, nasal, auto-injector, etc.)?

6. **Is the quantity of syringes and equipment sufficient?**
    - **a.** To determine if HEP's current modified-needs based model of exchange is sufficient for participants:
        - **i.** Do participants have enough equipment to last one week (between exchange days)?
        - **ii.** Is storing/carrying supplies a barrier in accessing sufficient equipment?

7. **Do people participate in secondary exchange?**
    - **a.** To better understand and measure the reach of the program and to determine the effectiveness of secondary exchange as a means to reach participants not served directly:
        - **i.** Are participants receiving equipment for people other than themselves?
            1. How many others?
        - **ii.** Are participants being reached by peer exchange efforts?

The evaluation questions consist of both descriptive and explanatory questions at a point in time. The seven questions are all descriptive in that they describe activities and behaviors of participants regarding their substance use and service access at a point in time.[16] The questions also take on an explanatory nature, because respondents from the fixed site and outreach settings are compared.[16] Similarly, questions aim to provide information about the program's reach and the activities and behaviors of participants overall.

Chapter 2: Methods

Study Design

A process evaluation of the SSP was conducted to inform the development and management of the program, and to determine whether the program was meeting the needs of the community that it served. The evaluation was conducted using a cross-sectional design and examined program participation, participant drug use patterns, naloxone knowledge and use, barriers to access and desired equipment and services. The evaluation was conducted using a concurrent triangulation mixed methods design; data were collected through participant surveys and qualitative interviews.[17] A mixed method design was used to obtain the most holistic picture of participants and their barriers to accessing services and program needs. The qualitative interview questions were intended to provide context, explanation and complementary information to the quantitative questionnaire. This study was reviewed by the University of Washington Institutional Review Board and was granted an exemption.

In attempts to cross-check the validity of results, feedback on results was requested from members of HEP's peer exchange team, which currently consists of two individuals who live and use in the communities that HEP serves. The individuals partner with HEP to distribute equipment throughout their communities. Additionally, a multiple method approach allows for triangulation and comparison of results from the different pieces of the survey and interviews.

Sampling and Recruitment

A typical case, convenience sample (n=50) of self-identified drug users in the South Seattle area was drawn from the larger pool of program participants and completed the questionnaire between December 2017 and April 2018. Program participation was defined as either attending open SSP hours at the fixed site on Thursdays from 1pm-5pm, or receiving prepared kits ("hit-kits"), consisting of ten syringes,

cookers, cottons, alcohol prep-pads, tourniquets and bandages, from HEP SSP staff during outreach. Inclusion criteria for participation in the questionnaire or interviews required that participants be self-identified drug users over the age of 18, and that they provide verbal informed consent. Due to the sampling method and limited sample size, some portions of the target population may not be included in the sample population; for example, those who may not be able to access exchange during regular business hours, or those who reside in camps inaccessible or unknown to HEPs outreach team.

Respondents were recruited from both the fixed SSP site at HEP's offices located at 1621 South Jackson Street, and via street outreach and hit-kit distribution in South Seattle locations, including the Rainier Pop-up Kitchen, the Downtown Urban Rest Stop, and various tent/RV encampments. Additionally, a snowball method of recruitment was employed in outreach settings by asking individuals if anyone else in their household/group was interested in kits and/or participation.

Non-probability (purposive) sampling for informational qualitative interviews was performed using a combination of typical case sampling and maximum variation sampling.[17] Interview participants were selected based on demographics and substance use patterns such as types of drugs being used, method of consumption and frequency of use, as a way to gather information from subjects that is representative of the full sample population. The goal was to ensure that respondents were representative based on their age, race/ethnicity and substance abuse patterns.

Procedures

Questionnaire

Questionnaires were administered one-on-one to participants in semi-private locations at both outreach sites and the fixed exchange site. Questionnaires were administered to participants by trained HEP staff; none of the questionnaires were self-administered as a quality control measure to ensure that respondents understood questions and did not respond to portions of the questionnaire that did not apply

to them. Participants had the opportunity to opt out of participation. Verbal consent for participation was obtained from individuals prior to administering the questionnaire. No identifying information was collected from participants. Some portions of the questionnaire covered sensitive topics, such as substance use and overdose history (described in more detail below). Respondents were not required to answer any questions if they did not want to. All questionnaire participants were provided with two bus passes as a token of appreciation for their time at the end of each questionnaire.

Informational Interview

Participants were invited to participate in an interview if they had completed the questionnaire, and if they had participated in HEP's program more than once, and/or indicated participation in secondary exchange and/or indicated previous naloxone use. Participants selected for the informational interviews were invited to HEP's offices to complete the interview in a private and quiet office space. Verbal informed consent was obtained from participants prior to start of the interview. Interviews lasted between 20 and 40 minutes. Interviews were conducted one-on-one and were audio recorded with the consent of the participant. A $20 cash incentive was provided to participants at completion of interview. The protocol and guidelines for administering the questionnaire and interviews is presented in Appendix C.

Quantitative Measures

Questionnaire

The questionnaire had nine sections (see questionnaire and protocol in Appendix A). Section 1 contained informed consent. Sections 2-4 collected quantitative demographic data about race/ethnicity, gender, and housing status. Measures about SSP participation and barriers to access were collected in Sections 5 and 7. Information about substance use and methods of consumption were collected in Section 6. Equipment preferences and desired services were collected in Sections 7 and 9. Lastly, Section 8 of the questionnaire collected information on overdose, naloxone access and naloxone use. The study's dependent and independent variables are listed below.

Dependent Variables:

- SSP participation
- Barriers to access
- Drug use patterns
- Naloxone knowledge, use and access
- Overdose history
- Equipment preferences
- Interest in additional services

Independent Variables:

- Race/ethnicity
- Gender
- Age
- Housing status

Qualitative Information

Informational Interview

The goal of the qualitative interviews was to collect in-depth information to clarify and expand on questionnaire data. Quantitative demographic information and substance use patterns were also collected to provide context for interpreting results. Interviews focused on SSP participation, barriers to access, secondary exchange practices, and naloxone knowledge, access and use. Interview participants were drawn from the larger pool of questionnaire participants. Individuals working with HEP as peer-exchange volunteers- individuals living and using in the communities being served- were also invited to participate in interviews. Appendix B presents the interview guide and protocol.

Data Analysis

Descriptive statistics of personal characteristics were performed to understand the background and context of the sample. Next, frequency distributions, graphs and descriptive statistics were computed for substance use patterns, equipment preferences, naloxone access and use, and additional program needs and interests.

Interview data were transcribed and sorted by the three major topics covered in the interview: participation and barriers to SSPs, secondary exchange practices, and naloxone knowledge, access and use. Next, interview data were coded and analyzed for key emergent themes that were identified from participants during interviews.

Chapter 3: Results

Sample Description

From December 2017 to April 2018, a sample of (n=50) HEP SSP participants completed the questionnaire. Respondents were recruited from both the fixed SSP site (n=22) located at HEP's office on South Jackson Street, and via outreach settings (n=28). Of the twenty-two questionnaires that were completed at HEP's fixed site, half reported that they were first time participants at the fixed site. Table 1 describes the personal characteristics of participants who completed the questionnaire. Participants have an average age of 40 (SD=10.35) years, with a range between 22 and 66. A slight majority of participants are male. The sample is predominantly white (n=36), though other racial/ethnic groups are represented, including Black/African American, American Indian/Alaska Native and Hispanic/Latinx. The majority of respondents describe their housing status as homeless, and an additional 24% describe their housing as temporary or unstable. Only two respondents describe their housing as permanent.

Table 1: Demographics of Questionnaire Participants (n=50)

Personal Characteristics	**Percentage (n)**
Gender	
Male	**56 (28)**
Female	**42 (21)**
Non-binary	**2 (1)**
Age	
20-35	**8 (4)**
36-45	**26 (13)**
46-55	**39 (19)**
56+	**27 (14)**
Race/Ethnicity	
American Indian/ Alaska Native	**20 (10)**
Black/African American	**20 (10)**
Hispanic/Latinx	**8 (4)**
White	**72 (36)**

Housing Status Permanent Temporary/Unstable Homeless Prefer not to answer	**4 (2)** **24 (12)** **68 (34)** **4 (2)**

Figures 2 and 3 indicate the ZIP Codes in which participants slept the previous night. Respondents resided across South Seattle, from the Rainier Valley to the Central District, and across the International District and Downtown, with the majority of respondents residing in the 98144 and 98104 zip codes. Two respondents reported zip codes (98105 & 98125) outside of South Seattle, but all questionnaires were conducted with individuals accessing services in South Seattle.

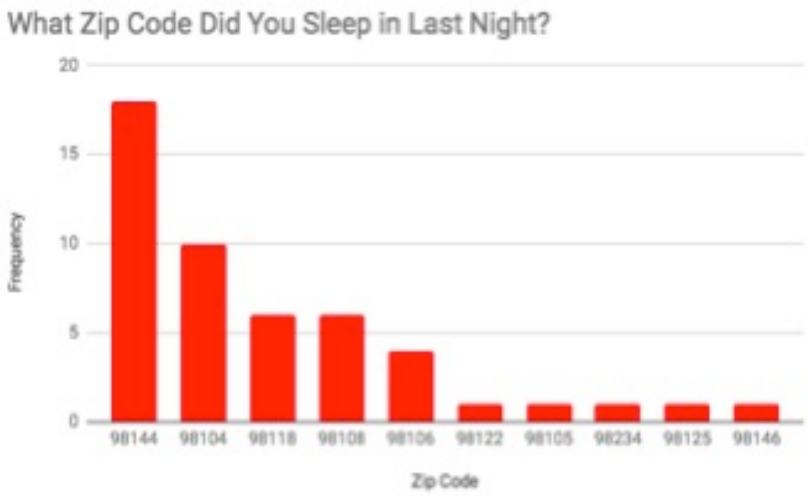

Figure 2: Frequency of ZIP Codes where participants report having slept the previous night

Figure 3: Map of ZIP Codes where participants report having slept in the previous night

In addition to the questionnaire, qualitative semi-structured interviews were conducted with 12 participants between January and April of 2018. A summary of interview participant demographics and substance use patterns is in Table 2.

Table 2: Qualitative interview participant demographics including age, race/ethnicity, gender, housing status, and self-reported drug use and method of consumption in the last 30 days

Interview Number	Age	Race/Ethnicity	Gender	Housing Status	Drugs Used and Method of Consumption
1	26	White	F	Homeless	Methamphetamine (IV); Heroin (IV)
2	30	White	M	Homeless	Heroin (IV); Methamphetamine (IV) Goofball (IV) Fentanyl (IV)
3	29	White	M	Homeless	Heroin (IV) Methamphetamine (IV-SM) Goofball (IV) Crack Cocaine (SM) Speedball (SM) Alcohol and opiates (heroin) together (IV)
4	52	White	M	Homeless	Heroin (IV) Methamphetamine (IV, SM, SN) Goofball (IV) Unintentional Fentanyl (IV)
5	45	White	M	Homeless	Heroin (IV); Methamphetamine (IV);Goofball (IV)
6	48	White	F	Homeless	Heroin (IV) Methamphetamine (IV)
7*	66	Black/African American	M	Homeless	Decline
8	34	White	F	Homeless	Methamphetamine (IV-SM)
9*	27	White	M	Homeless	Methamphetamine (IV-SM) Goofball (IV)
10	38	White	F	Homeless	Heroin (SM-IV) Methamphetamine (SM-IV)
11	43	White	M	Homeless	Methamphetamine (IV) Goofball (IV)
12	38	Latino	M	Homeless	Heroin (IV) Methamphetamine (IV) Goofball (IV) Unintentional Fentanyl (IV)

IV, Intravenous; SM, Smoking; SN, Snorting; Goofball; Heroin and Methamphetamine mixture
*Peer-exchange volunteers

Substance Use Patterns

Participants were asked about their substance use in the past 30 days. Substances reported most frequently were methamphetamine (meth) and heroin, with 80% of respondents reporting meth use and 60% of respondents reporting heroin use. Tables 4 and 5 present substance use by race/ethnicity and gender.

When asked about *usual* method of drug consumption, a slight majority (62%) of participants report their usual method of consumption as injection, with an additional 32% reporting that inhalation/smoking as their usual method of consumption. When asked about *preferred* method of consumption, about 60% report injection as their preferred method and about 34% report their preferred method as inhalation/smoking.

Table 6 presents a breakdown of reported consumption methods in the last 30 days of the two most used drugs (heroin and methamphetamine). It is important to note that many participants stated their usual/preferred consumption methods varied depending on the substance being used. Respondents were asked to report their usual/preferred method based on their most frequently used substance.

Table 4: Self-reported substances used in the past 30 days by race/ethnicity (n=50)

Substances Used by Race/Ethnicity	**Percentage (n)**
Alaska Native/American Indian (n=10)	
Heroin	**70 (7)**
Methamphetamine	**80 (8)**
Goofball (methamphetamine and heroin together)	**30 (3)**
Powder Cocaine	**10 (1)**
Crack Cocaine	**30 (3)**
Speedball (heroin and cocaine together)	
Prescription Opiates to get high	**10 (1)**
Benzos to get high	
Fentanyl	**40 (4)**

Black/African American (n=10)	
Heroin	**60 (6)**
Methamphetamine	**70 (7)**
Goofball (methamphetamine and heroin together)	
Powder Cocaine	**10 (1)**
Crack Cocaine	**20 (2)**
Speedball (heroin and cocaine together)	
Prescription Opiates to get high	
Benzos to get high	
Fentanyl	
Hispanic/ Latinx (n=4)	
Heroin	**50 (2)**
Methamphetamine	**50 (2)**
Goofball (methamphetamine and heroin together)	**25 (1)**
Powder Cocaine	
Crack Cocaine	
Speedball (heroin and cocaine together)	
Prescription Opiates to get high	**25 (1)**
Benzos to get high	
Fentanyl	**25 (1)**
White (n=36)	
Heroin	**61 (22)**
Methamphetamine	**86 (31)**
Goofball (methamphetamine and heroin together)	**39 (14)**
Powder Cocaine	**5 (2)**
Crack Cocaine	**14 (5)**
Speedball (heroin and cocaine together)	**3 (1)**
Prescription Opiates to get high	**8 (3)**
Benzos to get high	**5 (2)**
Fentanyl	**19 (7)**
Multiple Races/Ethnicities (n=10)	
Heroin	**60 (6)**
Methamphetamine	**80 (8)**
Goofball (methamphetamine and heroin together)	**10 (1)**
Powder Cocaine	**20 (2)**
Crack Cocaine	**20 (2)**
Speedball (heroin and cocaine together)	
Prescription Opiates to get high	**20 (2)**
Benzos to get high	
Fentanyl	**20 (2)**

Total (n=50)	
Heroin	**60 (30)**
Methamphetamine	**80 (40)**
Goofball (methamphetamine and heroin together)	**34 (17)**
Powder Cocaine	**4 (2)**
Crack Cocaine	**16 (8)**
Speedball (heroin and cocaine together)	**2 (1)**
Prescription Opiates to get high	**6 (3)**
Benzos to get high	**4 (2)**
Fentanyl	**20 (10)**

Table 5: Self-reported substances used in the past 30 days by gender (n=50)

Substances Used By Gender	**Percentage (n)**
Female (n=21)	
Heroin	**71 (15)**
Methamphetamine	**95 (20)**
Goofball (methamphetamine and heroin together)	**28 (6)**
Powder Cocaine	**4 (1)**
Crack Cocaine	**9 (2)**
Speedball (heroin and cocaine together)	
Prescription Opiates to get high	
Benzos to get high	**9 (2)**
Fentanyl	**9 (2)**
Male (n=28)	
Heroin	**53 (15)**
Methamphetamine	**68 (19)**
Goofball (methamphetamine and heroin together)	**39 (11)**
Powder Cocaine	**3 (1)**
Crack Cocaine	**18 (5)**
Speedball (heroin and cocaine together)	**3 (1)**
Prescription Opiates to get high	**10 (3)**
Benzos to get high	
Fentanyl	**28 (8)**
Non-Binary (n=1)	
Heroin	
Methamphetamine	**100 (1)**
Goofball (methamphetamine and heroin together)	
Powder Cocaine	
Crack Cocaine	**100 (1)**
Speedball (heroin and cocaine together)	
Prescription Opiates to get high	
Benzos to get high	
Fentanyl	

Table 6: Self-reported consumption methods of most frequently used substances in the last 30 days

Substances Used By Consumption Method	Percentage (n)
Heroin (n=30)	
Smoked Only	**17 (5)**
Injected Only	**63 (19)**
Smoked and Injected	**17 (5)**
Smoked and Snorted	**3 (1)**
Injected and Snorted	
Injected, Smoked and Snorted	
Methamphetamine (n=40)	
Smoked Only	**20 (8)**
Injected Only	**22 (9)**
Smoked and Injected	**42 (17)**
Smoked and Snorted	**3 (1)**
Injected and Snorted	**3 (1)**
Injected, Smoked and Snorted	**10 (4)**

When asked about the frequency of their substance use, half of the respondents report using about 3-4 times per day on average. About 28% report substance use of less than twice per day. Additionally, about 13% of participants report substance use 9 or more times per day.

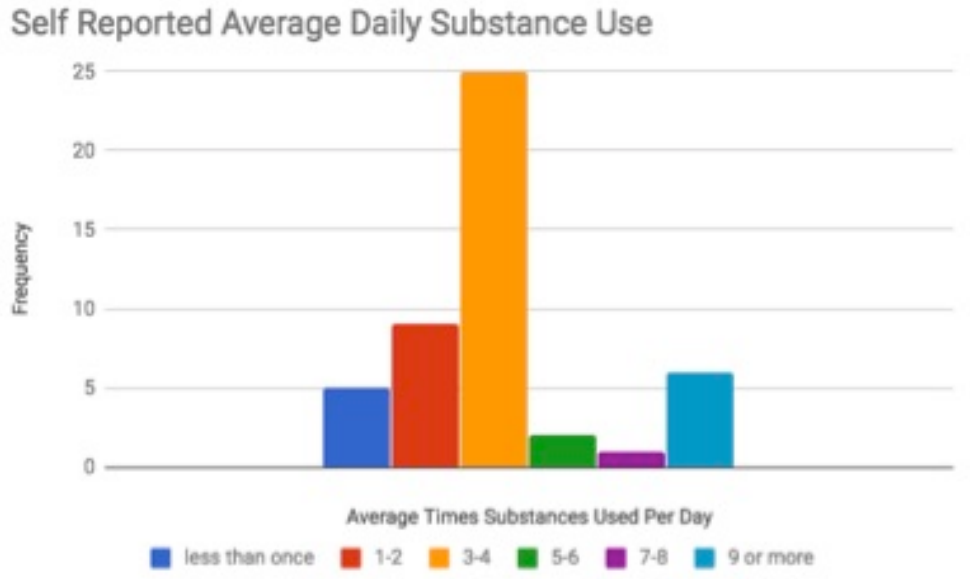

Figure 4: Self-reported average daily substance use

Syringe Access and SSP Participation

Both the questionnaire and informational interview reviewed syringe access and past and current SSP participation. Twenty- two questionnaires were completed at HEPs fixed exchange site and of those, half were first time participants at the fixed site. When asked if they have ever participated in a SSP before, about 52% of participants report accessing a program within the past 30 days. An additional 28% report participation, but not within the last 30 days, and about 20% report having never accessed a SSP.

When asked if they have access to clean syringes, 86% of participants responded "yes." Of those who responded yes, 86% reported access to clean syringes through SSP, 38% reported access through friends, and about 7% reported access through their drug dealer. About 60% identified HEP as the SSP where they currently access equipment. Additionally, 42% reported access through The People's Harm Reduction Alliance in the University District, and about 39% reported access through the Downtown Public Health SSP.

Informational interviews explored SSP access and participation in more depth. When asked about previous SSP participation, eight interview participants report participating in other programs in the past. Of those eight, five report they now choose HEP's SSP because of its location and closer proximity to where they stay. One participant states *"It's way more convenient now...it's two bus rides to get from our spot to the U-District needle exchange, so that's difficult"*. Additionally, four participants report that the friendly and welcoming staff, along with the comfortable atmosphere at the SSP contribute to their decision to participate in the program at HEP. For example, one participant stated, *"It's more homey and cozy here and you guys treat us like family,"* and another said that he likes *"having somewhere where you can stop by and see a friendly face."* He went on to say *"I come in and you all are always polite and nice, and that helps me a lot."*

Equipment Preferences

Over 60% (n=31) of participants reported injection as their usual method of drug consumption, followed by 32% reporting inhalation/smoking as their usual method of consumption, suggesting that the majority of participants are using syringes. When asked about brand and size preferences in syringes, a slight majority of participants report EasyTouch as their preferred brand of syringe, though 46% of participants report no preference in brand. In terms of syringe barrel, the majority of participants (72%) report no preference, but about 26% or participants do report a preference of 1cc. The two most preferred syringe lengths were 1 inch and ½ inch, though almost half of participants report no preference. Lastly, most participants who reported a preference in syringe gauge identified 28 gauge syringes as their preferred size.

When asked what other types of equipment they would like to see at the program, 77% said they would like to see meth bubbles (glass pipes used to smoke methamphetamines). This was also reflected in interviews, in which 7 of the 12 participants identified meth bubbles as equipment they would like to see at the SSP. One participant stated *"everyone is always trying to use broken glass and stuff like that and sharing broken glass...I think it's really cool and smart to be giving out glass."* Another stated *"I would like to have everything that everybody needs so we're all using like clean utensils and stuff like that, and I've seen people cut their lip on crack pipes (be)cause they're broken."* Along with meth bubbles, about 40% of participants would like to see foil (used for inhaling substances) available, about 37% would like to see crack pipes, and about 30% would like to see snorting kits.

In addition to equipment for drug use, participants reported a high demand for health-related services. Wound care kits were the next most requested item following meth bubbles, with 74% of participants identifying wound care kits as something they would like to see distributed at the SSP. This finding was reflected in the interviews as well, with 66% (n=8) of the interview participants identifying a need for wound care, including medical equipment like antibiotic ointment, bandages and gauze.

On-Site Services

Questionnaire participants were read a list of services, including a wound care clinic, HCV related services, and vaccines, and were asked if they would be interested in seeing these services at the fixed SSP site. Respondents most frequently expressed interest in a wound care clinic (88%), vein care and safe injection tips (70%), Suboxone/ Methadone (67%) and medical case management and linkage to HCV treatment (63%).

Interviews also explored participant interest in additional services. Most frequently requested services include health-related services like wound care and mental health services. One participant noted a need for wound care on site, stating *"most people I know are really clean IV drug users and we all still get abscesses, you know, it's so dirty out here."* Another participant stated that onsite wound care would *"be excellent, because it's not a hospital, and a lot of people don't want to go to hospitals with their abscesses or anything because now it's documented."* Another expressed interest in mental health services, stating *"a cool thing to have onsite would be like some kind of mental health like, either like a psychologist or just a therapist, I mean, you can always get a referral but sometimes it's actually being able to see someone right then [that can] make all the difference for somebody."*

Barriers to Access

When asked about barriers to accessing an SSP, 48% (n=24) of participants reported at least one barrier. Interestingly, those who participated in the questionnaire at the fixed SSP site were more likely to report barriers to access than those who participated in the questionnaire via outreach, with about 64% (n=14) of fixed site participants reporting one or more barriers and only about 35% (n=10) of outreach participants reporting a barrier to access. The most common barrier was the hours of SSP with 12 participants (50%) reporting it as a barrier, followed by distance to SSP, with 6 participants (25%) identifying this as a barrier. This result was reflected through interviews as well, with eight interview participants reporting distance and proximity as key factors that bring them to HEP over other exchanges.

While limited information about barriers to equipment access were found in the questionnaire, the qualitative interviews provided more on this topic. When asked about what keeps people (themselves or others) from participating in exchange, interview participants report a variety of barriers, including mental health issues, stigma and shame, misconceptions about/fear of services including SSPs, substance use and "dope sickness," distance and hours, and a general lack of motivation. Table 7 indicates how frequently the barriers were mentioned by the interview participants.

Table 7: Barriers to syringe service program participation identified by qualitative interview participants

Barrier	Frequency (n=12)
Hours/Distance to Exchange	7
Lack of Motivation	5
Stigma and Shame	3
Mental Health	3
Substance Use ("dope sickness"/withdrawals)	3
Misconceptions about SSPs	3
Bus fare/Transportation	3

One of the most frequently noted barriers to SSP participation among interview participants was distance to and hours of SSPs, with six interview participants identifying this as a barrier. Additionally, three participants identified lack of bus fare as a barrier to making it to exchange. Respondents stated that more open SSP hours would be useful, because respondents reported difficulty keeping track of the limited open hours and going to the SSP during that time slot. One respondent suggested more SSP days and hours, stating that it *" draw(s) more people in, (be)cause you know whenever you think about it "oh I need some cleans", well it's there, right there and we can go. Not like, "okay well is it what day is it? Is it between these hours?"* Another respondent who identified a need for more SSP hours stated that the lack

of hours limits his access and stated *" it's a big contributing factor to whether or not I'm doing damage to my arms for sure."*

Another respondent highlighted distance as a barrier, stating that *"the biggest obstacle to try to overcome.. it's getting somewhere."* He went on to state that before HEP's SSP opened, the nearest exchange was a couple of bus rides away making it hard to participate, and as a result his access to equipment was limited; now that HEP's SSP is open, he feels he has more access.

While lack of motivation was another frequently mentioned barrier by participants, most also noted that there is no way to overcome that beyond self-motivating. For example, when asked about what challenges they face in accessing SSPs and discussing motivation, one participant stated that "*there's nothing that anybody on the outside could do, other than maybe fund my addiction."* Additionally, three participants report that "dope-sickness" and withdrawals make it challenging to participate in SSPs, one stating that *"when you're a heroin addict... You can't…some days you can't get up and do that."*

Other notable barriers discussed during interviews include misconceptions about SSPs, mental health, and stigma and shame.

Three interview participants identify misconceptions about SSPs as a barrier to participation. One participant who was visiting the fixed site for the first time stated that *"people have been trying to get me to go to an exchange for a long time, at least a year, and I had always pictured some whole different thing… this is a lot more comfortable."* One participant stated that people may think of SSPs as an "authority or police" and may be concerned about privacy. Another participant relayed similar information and stressed the importance of making sure clients know that names and other identifying information are not collected.

Three participants identified mental health struggles as a barrier to SSP participation. One participant stated that she supplies for others who are unable to come to a program because *"a good portion of them are not 'all there' and some of them are unstable, there's some of them that are anxiety people."* Another participant also discussed the ways that misconceptions about SSPs in conjunction with mental health issues can act as a barrier to participation, stating that *"some people are chronically paranoid, they think it might be a set up, it needs to be made really clear that you guys don't work with law enforcement."*

Lastly, stigma and shame were discussed by three interview participants. One stated that she believes people do not participate in SSPs due to embarrassment and because they do not want people to know about their drug use. Another expressed similar beliefs, stating *"Some people, they just aren't comfortable with going… it's like admitting that they're a drug addict if they are going to get supplies."*

Secondary Exchange

Questionnaire participants were asked if they were exchanging/picking up equipment for anyone besides themselves. The majority of participants (68%) stated "yes." Of those, 68% (n=23) of participants reported exchanging/picking up for less than 5 other people. About 20% (n=7) reported exchanging/picking up supplies for about 5-10 other people, and 9% (n=4) reported exchanging/picking up for more than 10 people.

The secondary exchange practices were explored in more detail through the informational interviews. All interview participants reported that they were providing equipment to others. Interview participants reported supplying for others that they live with or near. For example, one participant stated *"I stay in a homeless area with a bunch of other people, and they're always stopping by my tent to get cleans."*

When asked if HEP provides enough equipment for participants to supply for themselves and others for one week, most interview participants report that they have enough for themselves, but have a hard time

supplying a sufficient amount to others. For example, one participant stated that he picks up 200 syringes a week, which is usually sufficient for himself but is sometimes too little depending on how many others he is trying to supply. He went on to state that *"it's the difference between somebody asking for a clean and me giving them one or two, or, you know, giving people a bag, I can always stretch it, but in that sense, it could be more."* Another participant echoed this, stating that he recently picked up extra equipment and *"people will ask me 'do you have cleans, do you have cleans?' almost on a daily basis and instead of giving them two or three, I give them a bag, but I would just give everyone a bag if I had… you know, more."*

One participant noted the importance of being able to supply for others in their camp, stating *"People are using them over and over and over again and anytime someone comes up and says " do you got cleans?' and you don't, I feel like that's potential for… you know, disease."* Another recounted times that he had benefited from secondary exchange while living in a camp, stating *" I used to know a guy, and he would come by the exchange once a week and just load up. And he would stop at all the tents in the area, and say 'look, I got cleans, you need cleans?' and I remember... every single occasion that he came, I was in need."*

When it comes to the amount provided in the hit-kits, many participants state that hit-kits do not have a sufficient amount of syringes for secondary exchange, or even themselves. Six of the twelve interview respondents expressed a need for more syringes in hit-kits. One of these participants being served through outreach, stated that he has health concerns when it comes to reusing even his own syringes. He said *"I worry about like, you knows there's blood in my rig from the other day, this ones been here five days instead of two days, and I worry, like on a microscopic level, what that's doing to my body and obviously it's doing something, I have all kinds of issues."*

Overdose History

The questionnaire asked participants about history of overdose, and defined overdose for each participant as an event from heroin or opiate pills when someone's breathing slows down or stops and they cannot wake up. When asked about history of personal overdose, 38% (n=19) of the respondents reported having overdosed in the past. Additionally, a staggering 80% (n=40) of respondents reported having witnessed an overdose. When asked if they had witnessed an overdose and not had naloxone on hand within the last 3 months, 11 respondents (23%) stated yes.

Naloxone Access, Knowledge and Use

About 96% (n=48) respondents reported hearing about naloxone, and about 72% reported carrying naloxone in the last 30 days. The majority (85%) of those who carried naloxone reported receiving their naloxone through an SSP. About 85% of respondents reported that they feel comfortable using naloxone.

Naloxone preferences, knowledge and comfort with administering naloxone was explored in more detail through informational interviews. While 85% of participants report that they feel comfortable administering naloxone, interview participants report a number of misconceptions about naloxone, including its safety and efficacy, when to use it and how it works.

Naloxone Knowledge

A number of participants note gaps in knowledge around naloxone in their communities. One participant stated that he would like to see more awareness for naloxone in his community. He stated that he feels comfortable administering naloxone and has administered the drug about ten times, but has noticed a lack of knowledge, particularly in a space that often serves drug users - the community day shelter. He recounted stories of overdose at the day shelter, in which the staff members did not know how to respond to an overdose and did not have naloxone on hand. He reported providing and administering naloxone on

two separate occasions at the day shelter over the last 6 months. He went on to state *"I think a lot of people don't realize how easy it is. You know, the antidote is simple, it's simple and its available. I don't think anybody is going to like, lose, from having too much Narcan out in the streets."* Another participant noted a lack of knowledge among his peers as well, stating *"I give my friends Narcan, but Narcan isn't a really popular item, you know? I mean, people like to have it but they don't really know how to use it."*

Additional Naloxone Education

A number of interview participants express interest in educational sessions on overdose prevention including rescue breathing, administering naloxone and the Good Samaritan Law, for both themselves and for the wider community. One participant suggested *"A little class, one day a month or something that's like an in depth on how to administer Narcan. Maybe they can teach CPR and rescue breathing like how to tell if someone is overdosing like all in one."*

Naloxone Safety and When to Administer

Some participants noted lack of knowledge on identifying an overdose and when to administer naloxone. One participant stated *"I think it would be important for people to know how to use Narcan correctly, and the dangers of doing and not doing it."* Another stated that she had been worried about side effects or risks of administering naloxone if a person was not truly overdosing, stating *"there have been times I would have hit him a lot quicker but im like 'oh my god, am I gonna fuck him up if I do it and it's not time?' You know what I mean? I don't want to kill him because he didn't need it."* She went on to state that after receiving naloxone and more education from HEP, she knows that *"if someone appears to be overdosing it's okay, and that's comforting to know, that it's okay (to administer)."*

Naloxone Legality and the Good Samaritan Law

Along with misconceptions and concerns about administering naloxone, three participants highlighted concerns about the legality of naloxone and the Good Samaritan Law. The Good Samaritan Law provides protection from prosecution for drug possession charges to victims of overdose and bystanders who

assist and seek help during an overdose.[20] One participant stated *"people are afraid that they are gonna get like arrested or something for narcaning someone or…. carrying it, also."* Another stated that he would not call 911 in the event an overdose, unless naloxone was unable to revive the individual overdosing, due to fear of law enforcement and arrest. Another participant expressed a need to educate individuals on the Good Samaritan Law, to ensure that individuals know what is protected (i.e. those with active warrants are not protected from arrest) and how to communicate with emergency dispatch to reduce risk of arrest.

Comfort Administering Naloxone and Naloxone Preferences

While the majority of the questionnaire participants report feeling comfortable using naloxone, a number of respondents clarified their comfort level varied by type of naloxone (nasal, injection, auto-injector). When participants were asked about the type of naloxone they prefer, there were mixed responses and explanations. Participant preferences in naloxone type can be found in Table 8 below.

Table 8: Naloxone type (nasal, injectable automatic injectable) preferences among interview participants (n=12)

Naloxone Type	Percentage (n)
Nasal	50 (6)
Injectable	25 (3)
Auto-Inject	8% (1)
No preference	17% (2)

Most participants report a preference for nasal naloxone. Reasons for this preference include its perceived effectiveness and its ease to administer. For example, one participant stated that he had administered naloxone 7 times, and though he had never used nasal naloxone himself, he stated that he believes it is important that people have access to it because he perceives it as less complicated to administer and states that *"people tend to freak out and the less complicated you make what you have to*

accomplish in that time, the better." Similarly, another participant reports that she prefers nasal naloxone because it is easier to administer, but she also believes the injectable likely works most quickly. She stated *"I'm like really really uneasy stabbing somebody, I can stab myself fine but when it comes to stabbing somebody else I get really really like sketchy and scared so I think the nasal would be better...you can just squirt it up their nose and I don't mind squirting something up their nose, but like the needle is what seems to work the best as far as like as quickest and fastest."*

Though the majority (n=6) of interview participants report a preference for nasal naloxone, two of those five state that they do *not* prefer the type that needs to be put together in order to administer, and only prefer nasal naloxone if it does not require assembly. Figures 5 and 6 below show each type of nasal naloxone referred to by participants. One participant stated "*The answer is I would prefer the nasal. However its current incarnation (Figure 5), it's complicated. It's… under those circumstances, when you're givin the instructions, you know it sounds very simple and you're like 'yeah no brainer!', but when you're in that critical stress situation… you can't, its gotta be child proof. I mean it's life or death."* This participant went on to recount an experience in which he had received one-on-one naloxone training from a medical provider and from a training video upon release from jail. On that same day he came across an overdose and recalls having trouble assembling and administering nasal naloxone despite having received training earlier in the day. Another participant who states that he used to prefer the injectable, now prefers the new nasal naloxone (Figure 6) because each unit contains four milligrams of naloxone, eliminating need to administer multiple doses. He also says that he likes the new nasal narcan because of the ease of administration, stating "*they are super easy to use, they are like fail proof, they are better than those auto inject things that like talk to you."*

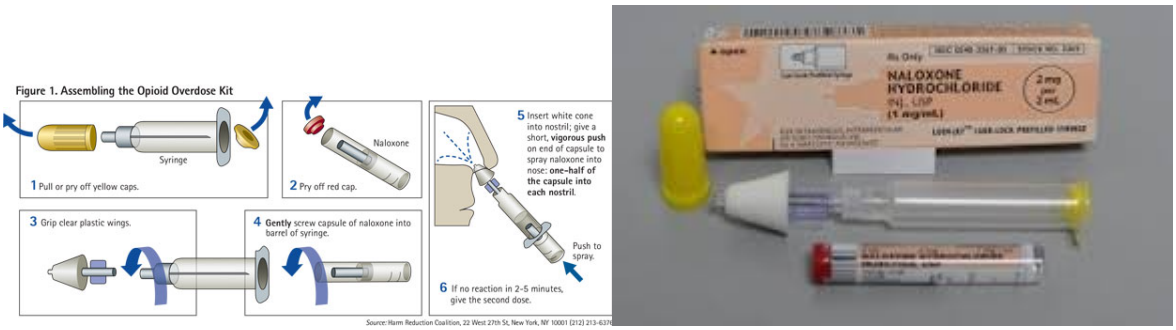

Figure 5: Nasal naloxone (2mg) manufactured by Adapt Pharma and requires 6-step assembly to administer

Figure 6: Nasal naloxone (4mg) manufactured by Adapt Pharma, requires no assembly to administer

One of the participants who reported a preference for injectable naloxone stated that he prefers it because he understands how it is effective. He said "*[I prefer] the injectable one, I don't really like the nasal one, just because I don't understand how it works, because they're not breathing, so when you squirt it up their nose I don't really get how it ingests as well, but that's just my personal opinion."* Another participant expressed similar concerns about the effectiveness of nasal naloxone, stating *"I mean honestly the nasal one I feel like it's kinda half-assed, and if I was dying I hope that they inject me cause the nasal one I mean, I don't think it's gonna get there."*

One participant who states a preference for the automatic- injectable naloxone reports concerns about non-automatic injectable naloxone stating *"a lot of people you know, who have never prepared a shot that comes out of a vial, a lot of people, they've never maybe shot into a muscle, they might waste time trying to find veins or whatever."* Another participant echoed this, stating *"There's not a whole lot of people that know how to use it, especially the people that smoke it, cause you know, they're not doing it the way that we do."*

A peer-exchange volunteer who reports administering naloxone many times and states no preference in type of naloxone stated *"people [are] asking me for the one that is *sniffs* [nasal] whatever, or the one [that] comes with the recording [automatic-injectable] and the whole 9 yards, but guess what, if you're OD'ing, you don't care about that too much about that, do ya?"*

Chapter 4 Discussion

Drug Use Patterns and Equipment Needs

Participants most frequently reported using heroin and methamphetamine via injection drug use. Although the majority report injection drug use, many participants also report inhalation and smoking. Among questionnaire participants, meth pipes were the most frequently identified equipment need. Similarly, a number of interview participants reported the sharing of meth bubbles/glass pipes, the use of broken meth bubbles/glass pipes and expressed a need for meth bubbles/ glass pipes. Sharing of meth bubbles/glass pipes has been found to be associated with an increased risk in HCV transmission through residual blood on shared meth bubble/glass pipes and the result of heated pipes creating cuts or sores on the the mouth.[21] Providing meth bubbles/ glass pipes at SSPs can help to reduce this risk among drug users, by decreasing sharing of this equipment. Additionally, research suggests that providing meth bubbles/ glass pipes through SSPs can be a useful harm reduction strategy that encourages and enables participants to smoke substances rather than inject, therefore mitigating risks associated with injection drug use. For example, one study presented at the Ontario Harm Reduction Conference in 2017 found that 55% of SSP participants reported that having access to a glass pipe would encourage them to smoke rather than inject. [22] By providing meth bubbles/glass pipes at their SSP, HEP can encourage and enable clients to choose less risky consumption methods. Based on these results, it is recommended that HEP consider the distribution of meth bubbles/glass pipes through their program as a multifaceted harm reduction method.

Service Needs

In addition to the above mentioned equipment needs, a large number of participants from both the questionnaire and informational interviews expressed a need for wound care supplies and on-site wound and vein care. Abscess type wounds from injection drug use are common among PWID, and have been found to be one of the leading causes of hospitalization among PWID.[23] Skin abscesses pose a

significant risk when left untreated, as they can result in sepsis, MRSA and blood clots. [24] By providing vein care and safe injection information; wound care items such as antibiotic ointment, bandages, gauze and alcohol wipes; and/or on-site wound care by medical staff, HEPs SSP can help reduce the risk of abscess and related infections in the community being served. Additionally, participants expressed an interest and need for other onsite medical services like mental health services and medication assisted treatment. As HEP does not currently have the staffing for these services, it is recommended that HEP consider partnerships with other local organizations to provide these services on a monthly schedule, as they currently do with HIV testing, out of the fixed site.

Barriers to Program Participation

Although the majority of program participants report having participated in exchange in the past, about one fifth of current participants report being first time SSP participants at HEP. Additionally, a number of interview participants report an increased access and a reduction in barriers, like distance to exchange, since the opening of HEP's SSP. While the majority of questionnaire respondents report having access to clean syringes through an SSP or friends, barriers and challenges to access remain. Most frequently identified barriers include distance to and hours of exchange, mental health struggles, misconceptions and unknowns of exchange programs, and stigma and shame. HEP has recently expanded SSP hours, and now opens their fixed SSP site twice per week. It is recommended that HEP continue to monitor hours as a barrier and assess the impact of the additional hours.

Outreach and Peer Exchange

Participants reached via outreach were less likely to report a barrier to equipment access, suggesting outreach is an effective means of reaching individuals and overcoming barriers. Similarly, interview participants endorsed both outreach and peer exchange practices as tools to overcome barriers. A number of interview participants identified misconceptions about SSPs as a barrier to participation in exchange, and also noted that outreach in both homeless encampments and during the community pop-up kitchen allowed them an opportunity meet SSP staff, and better understand the program. These

findings suggest that continued outreach can help to address misconceptions as a barrier, by continuing to build trust and rapport with the community being served.

Secondary Exchange

Almost all participants report engaging in secondary exchange by picking up equipment and/or hit-kits and distributing to others in their community. Participants report that the amount of equipment they are able to access per week through HEP is sufficient for themselves, but can make it challenging to provide enough equipment for others in their community in need. Participants identify a need for increased SSP hours and more open days per week as a way to address this challenge. Along with increasing exchange hours, it is recommended that HEP increase both outreach and peer exchange efforts, which can be useful in providing participants with more equipment throughout the week, and providing those who are not accessing the fixed exchange site with equipment directly, rather than through friends and community members via secondary exchange practices.

Naloxone Knowledge and Use

Though the majority of participants report knowing about and feeling comfortable administering naloxone, a number of misconceptions about naloxone use, its effectiveness and its safety were identified. Respondents expressed concerns about administering naloxone unnecessarily and its potential side effects, along with concerns about administering naloxone correctly. Many interview participants expressed a desire for more education on overdose prevention and naloxone use. These results suggest that more naloxone education would be beneficial to the population being served, particularly education regarding how naloxone works in the body, the safety of naloxone, and the legal protections under the Good Samaritan Law. Based on these findings, it is recommended that HEP host a monthly educational session for both participants and community members on overdose prevention, and naloxone use. Additionally, HEP should continue to provide brief naloxone trainings to every person who receives a kit from the program. Lastly, overall, participants expressed a preference for nasal naloxone devices that do not require assembly. As HEP currently only provides injectable naloxone, it is recommended that HEP

explore ways to provide additional types of naloxone, including nasal naloxone, to support clients preferences and comfort with administering naloxone. These findings and recommendations are consistent with the recommendations made by the King County Heroin and Prescription Opiate Addiction Task Force, published in 2016, which identifies naloxone distribution and education as a key component in addressing the increase in heroin related overdose deaths in the County. [25] Providing and disseminating naloxone education and information further in the community being served can potentially help to ensure that naloxone is administered at the first sign of an overdose.

Limitations

This evaluation had limitations. One threat to its validity is the small sample size. The SSP is fairly new and participation at the fixed site has been limited, thus recruiting enough participants to achieve a representative sample in the study was a challenge. Additionally, participants were asked to identify and speak about their own barriers to SSP participation and access, and also to speak about their perception of others' barriers to participation. While information regarding both their own and others' barriers offered insight, the voice of those who are not currently accessing services and who are not being reached by the program are not represented in this study. Future research should aim to reach those individuals disconnected from services in order to understand barriers to access and services and needs unique to that population.

Conclusions

While the sample size of this evaluation is modest, the results reflect the voices of a variety of participants; including both first time participants and SSP regulars, and those accessing services at the fixed site and those utilizing services via outreach. Overall, participants report an increase in access to equipment and services through HEPs new program based on its proximity to where they stay, the comfortable, judgement free and welcoming environment, and the extensive outreach and peer exchange efforts. The participant voices, opinions and stated needs reflected in this evaluation will be used to

continue to shape and build the SSP program at HEP, enabling HEP to create a program that truly meets the needs of the individuals it aims to serve.

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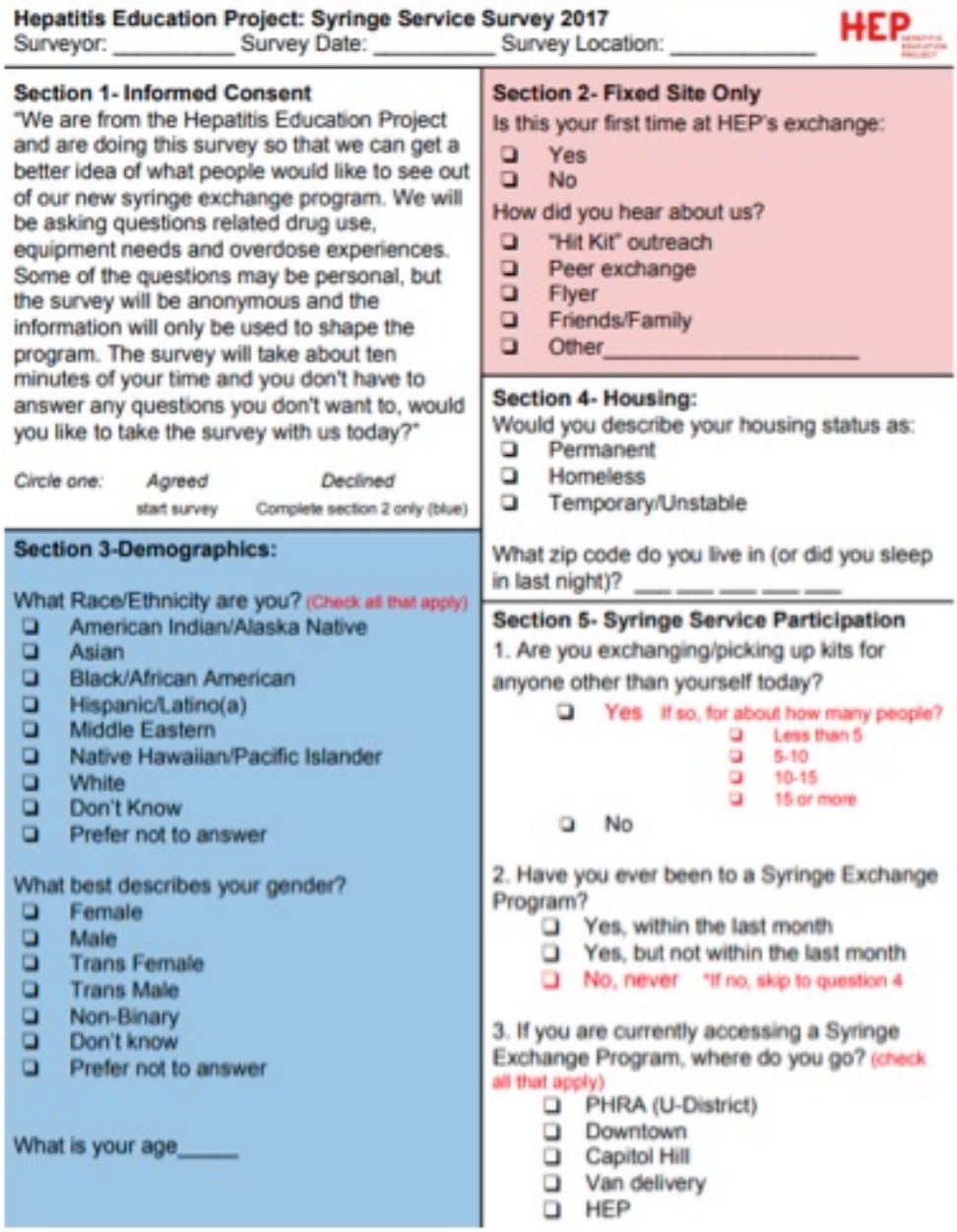
Appendix

Appendix A: Questionnaire and Protocol



Hepatitis Education Project: Syringe Service Survey 2017
Surveyor: _____ Survey Date: _____ Survey Location: _____

Section 1- Informed Consent
"We are from the Hepatitis Education Project and are doing this survey so that we can get a better idea of what people would like to see out of our new syringe exchange program. We will be asking questions related drug use, equipment needs and overdose experiences. Some of the questions may be personal, but the survey will be anonymous and the information will only be used to shape the program. The survey will take about ten minutes of your time and you don't have to answer any questions you don't want to, would you like to take the survey with us today?"

Circle one: *Agreed* start survey — *Declined* Complete section 2 only (blue)

Section 2- Fixed Site Only
Is this your first time at HEP's exchange:
- ❑ Yes
- ❑ No

How did you hear about us?
- ❑ "Hit Kit" outreach
- ❑ Peer exchange
- ❑ Flyer
- ❑ Friends/Family
- ❑ Other_____

Section 3-Demographics:

What Race/Ethnicity are you? (Check all that apply)
- ❑ American Indian/Alaska Native
- ❑ Asian
- ❑ Black/African American
- ❑ Hispanic/Latino(a)
- ❑ Middle Eastern
- ❑ Native Hawaiian/Pacific Islander
- ❑ White
- ❑ Don't Know
- ❑ Prefer not to answer

What best describes your gender?
- ❑ Female
- ❑ Male
- ❑ Trans Female
- ❑ Trans Male
- ❑ Non-Binary
- ❑ Don't know
- ❑ Prefer not to answer

What is your age_____

Section 4- Housing:
Would you describe your housing status as:
- ❑ Permanent
- ❑ Homeless
- ❑ Temporary/Unstable

What zip code do you live in (or did you sleep in last night)? ___ ___ ___ ___ ___

Section 5- Syringe Service Participation
1. Are you exchanging/picking up kits for anyone other than yourself today?
   - ❑ Yes If so, for about how many people?
     - ❑ Less than 5
     - ❑ 5-10
     - ❑ 10-15
     - ❑ 15 or more
   - ❑ No

2. Have you ever been to a Syringe Exchange Program?
   - ❑ Yes, within the last month
   - ❑ Yes, but not within the last month
   - ❑ No, never *If no, skip to question 4

3. If you are currently accessing a Syringe Exchange Program, where do you go? (check all that apply)
   - ❑ PHRA (U-District)
   - ❑ Downtown
   - ❑ Capitol Hill
   - ❑ Van delivery
   - ❑ HEP

Hepatitis Education Project: Syringe Service Survey 2017

HEP

Section 6- Substance Use

4. In the past 30 days, which of these drugs have you used?

Read each drug, circle y or n. For each drug used, ask if they smoked, injected, and/or snorted

	N/A	Used	Smoked	Injected	Snorted
Heroin by itself		y n	y n	y n	y n
Meth by itself		y n	y n	y n	y n
Goofball- meth and heroin together		y n	y n	y n	y n
Powder cocaine		y n		y n	y n
Crack cocaine		y n	y n	y n	
Speedball- heroin and cocaine		y n	y n	y n	y n
Prescription opiates (to get high) Oxycontin, Vicodin etc.		y n	y n	y n	y n
Benzos (downers) Valium, Xanax etc.		y n		y n	y n
Alcohol and prescription opiates (to get high) together		y n	y n	y n	y n
Alcohol and benzos together		y n		y n	y n
Heroin and benzos together		y n	y n	y n	y n
Fentanyl		y n	y n	y n	y n

5. What is your *usual* method of drug consumption?

- ❑ Injection
- ❑ Inhalation/smoking
- ❑ Snorting
- ❑ Swallowing/eating
- ❑ Plugging/booty bumping

6. What is your *preferred* method of drug consumption?

- ❑ Injection
- ❑ Inhalation/smoking
- ❑ Snorting
- ❑ Swallowing/eating
- ❑ Plugging/booty bumping

7. On average, how many times do you use drugs per day?_____

8. How many times did you use your last syringe?_____

9. Have you shared a needle in the last 30 days?

- ❑ Yes If yes, about how many times?_____
- ❑ No

10. Have you shared any works other than syringes in the last 30 days?

- ❑ Yes If yes, about how many times?_____
- ❑ No

Hepatitis Education Project: Syringe Service Survey 2017

11. In the last 30 days, which types of equipment have you shared?(check all that apply)
- ❑ Cottons
- ❑ Cookers
- ❑ Water
- ❑ Meth Bubbles
- ❑ Crack Pipes
- ❑ Snorting Equipment
- ❑ Tourniquets/Ties

Section 7- Equipment Access and Preferences

12. Do you have access to clean syringes?
- ❑ Yes
- ❑ No *If no, skip to question 14

13. How do you usually access clean syringes?
- ❑ Syringe service programs *circle program identified
  - PHRA Downtown
  - Capitol Hill HEP
- ❑ Friends
- ❑ Pharmacy
- ❑ Dealer
- ❑ Peer exchange
- ❑ Other _____

14. Do you have any barriers to accessing clean syringes? (check all that apply)
- ❑ Cost
- ❑ Distance to syringe exchange
- ❑ Quantity isn't enough
- ❑ Hours of syringe exchange
- ❑ I'm afraid to be caught carrying them on me
- ❑ Can't have them where I stay
- ❑ Can't' store them
- ❑ Other _____

15. What brands or types of syringes do you prefer? (check all that apply)
- ❑ No preference
- ❑ Terumo
- ❑ BD
- ❑ Easy Touch
- ❑ Other _____

16. What volume of syringe barrel do you prefer? (check all that apply)
- ❑ No preference
- ❑ ½ CC
- ❑ 1 CC
- ❑ 3 CC

17. What syringe length do you prefer? (check all that apply)
- ❑ No preference
- ❑ 5/16 inch
- ❑ ½ inch
- ❑ 5/8 inch
- ❑ 1 inch (for hormones/muscling)

18. What gauge of needle do you prefer? (check all that apply)
- ❑ No preference
- ❑ 27 gauge
- ❑ 28 gauge
- ❑ 29 gauge
- ❑ 30 gauge
- ❑ Other _____

19. How do you usually dispose of syringes?
- ❑ Exchange
- ❑ Street
- ❑ Provider's office
- ❑ Garbage
- ❑ Public Sharps container
- ❑ Other _____

20. Other than injection equipment, what other types of equipment would you like to see at HEP? (check all that apply)
- ❑ Snorting kits
- ❑ Meth bubbles
- ❑ Crack pipes
- ❑ Foil
- ❑ Wound care kits (to go)
- ❑ Citric acid
- ❑ Other _____

Section 8- Overdose

Next we'd like to ask you about overdose from heroin or opiate pills. This is when someone's breathing slows down or stops, and they can't wake up.

Hepatitis Education Project: Syringe Service Survey 2017

21. Have you ever overdosed?
- ❑ Yes
- ❑ No

22. Have you ever seen someone overdose?
- ❑ Yes
- ❑ No

23. Have you heard about Narcan/Naloxone?
- ❑ Yes
- ❑ No If no, skip to question 29

24. In the past 30 days, have you had Naloxone/Narcan?(Before receiving it from us today)
- ❑ Yes If yes, skip to question 26
- ❑ No

25. What is the main reason you haven't had Naloxone/Narcan in the last 30 days?
- ❑ I don't need it
- ❑ Didn't know I could get it
- ❑ Used what I had
- ❑ SEP didnt have any/ran out
- ❑ Cost
- ❑ Other_____

SKIP TO QUESTION 27

26. Where did you get your Naloxone/Narcan?
- ❑ Syringe service program: * circle program identified
  - PHRA
  - Capitol Hill
  - Downtown
  - HEP
- ❑ Pharmacy
- ❑ Friend
- ❑ Family member

27. How many times in the last 3 months have you used Narcan/Naloxone on someone?

_____

28. Do you feel comfortable using Narcan?
- ❑ Yes
- ❑ No

29. In the past 3 months did you witness an overdose and need Narcan, but not have Narcan on hand?
- ❑ Yes
- ❑ No

Section 9- Additional Services

30. What other services would you use if they were offered at HEPs syringe program? (check all that apply)
- ❑ Hepatitis A and B vaccines
- ❑ Hepatitis C testing
- ❑ Hepatitis C medical case management and linkage to treatment
- ❑ On site Hepatitis C treatment
- ❑ Wound care clinic
- ❑ Suboxone or methadone
- ❑ Vein care and safer injection tips
- ❑ Other_____

31. Do you prefer mornings or afternoons for exchange?
- ❑ Mornings
- ❑ Afternoons
- ❑ No preference

32. Is there a day of the week that works best for you to come to exchange?(check all that apply)
- ❑ Monday
- ❑ Tuesday
- ❑ Wednesday
- ❑ Thursday
- ❑ Friday
- ❑ Saturday
- ❑ Sunday
- ❑ No preference

Do you have any additional feedback or suggestions for HEP's new syringe service program?

_____

_____

_____

_____

Data Entry:
Survey Number: _____ Record ID: _____
(Date complete/Survey #)
Date Entered: _____

Hepatitis Education Project Syringe Service Questionnaire
Methods and Protocol

Sampling: Participants will be recruited from both fixed exchange site (Thursdays 1pm-5pm, located at 1621 South Jackson Street) and outreach settings, including but not limited to encampments in South Seattle and Rainier pop-up Kitchen. May include:

-Peters place- drop in center
-Urban Rest Stop

*All fixed site SEP clients will be asked to participate

Eligibility:

- Self-identified substance users
- Aged 18 and over

Questionnaire:

Protocol

- **Complete information on the top of page 1 - Administrator name, questionnaire date and location**
- **Informed consent required for participation- Complete Section 1 before starting questionnaire**
- **For all questions that note "check all that apply"- Read out *all* options to participant**
- **Write in specifications for "Other" responses when possible**
- **Be sure to check option for "prefer not to answer" if no answer is given, *do not leave sections blank*.**
  *****PAPER COPY NOTE: If a question does not have "prefer not to answer" section and participant declined, please cross out question*****
- **If client declines to answer a question that is a fill in the blank, *do not leave blank*, write in -1**

Section notes:

1. **Section 1: Informed Consent**
   a. Statement outlining project, its goals and survey participation should be read out loud to each potential participant
   b. Verbal consent required to participate
   c. Individuals who decline survey will be asked to complete section 3 and provide demographic information
2. **Section 2: Fixed Site Only**
   a. Information to be completed at fixed site only
3. **Section 3: Demographics**
   a. Individuals who decline questionnaire will be asked to complete section 3 and provide demographic information
4. **Section 4: Housing**
5. **Section 5: Syring Service Use**
6. **Section 6: Drug Use**
7. **Section 7: Equipment Access and Preferences**
8. **Section 8: Overdose**
   a. Read definition of overdose at top of section out loud to participants before starting this section
9. **Section 9: Additional Services**

Appendix B: Interview Guide

Informed Consent

We are from the Hepatitis Education Project and are doing this Interview so that we can get a better idea of what people would like to see out of our new syringe service program. We will be asking questions related drug use, equipment needs and overdose experiences. Some of the questions may be personal, but the survey will be anonymous and confidential, and the information will only be used to shape the program. The Interview will take between 45 and 60 minutes of your time. You are not required to answer any questions that you don't want to and can stop the interview at anytime. For your time and participation we are offering you $20 (gift card/cash TBD). Would you like to participate in the interview today?

Participant Initials_____

Demographics:

What Race/Ethnicity are you? (Check all that apply)

- ❑ American Indian/Alaska Native
- ❑ Asian
- ❑ Black/African American
- ❑ Hispanic/Latino
- ❑ Middle Eastern
- ❑ Native Hawaiian/Pacific Islander
- ❑ White
- ❑ Don't Know
- ❑ Prefer not to answer

What best describes your gender?

- ❑ Female
- ❑ Male
- ❑ Trans Female
- ❑ Trans Male
- ❑ Non-Binary
- ❑ Don't Know
- ❑ Prefer not to answer

What is your age_____

What zip code do you live in (or did you sleep in last night)

___ ___ ___ ___ ___

Receipt of $20 _____

In the past 30 days, which of these drugs have you used?

	Used	Smoked	Injected	Snorting
Heroin by itself	y n	y n	y n	y n
Meth by itself	y n	y n	y n	y n
Goofball- meth and heroin together	y n	y n	y n	y n
Powder cocaine	y n		y n	y n
Crack cocaine	y n	y n	y n	
Speedball- heroin and cocaine	y n	y n	y n	y n
Prescription opiates (to get high) Oxycontin, Vicodin etc.	y n	y n	y n	y n
Benzos (downers) Valium, Xanax etc.	y n		y n	y n
Alcohol and prescription opiates (to get high) together	y n	y n	y n	y n
Alcohol and benzos together	y n		y n	y n
Heroin and benzos together	y n	y n	y n	y n
Fentanyl	y n	y n	y n	y n

Fixed Site Interview Guide

1. How often are you coming to HEP's exchange?
    a. How long does it take you to get here?
    b. How do you usually get here?
    c. Do you feel comfortable coming to this space for exchange?

2. Before coming to HEP's exchange, did you participate in exchange somewhere else/ are you currently participating in other exchanges?
    a. If so, what makes you choose to come to HEP?
    b. How do you decide where to go?
        i. Location?
        ii. Hours/ day of the week?
        iii. Equipment?
        iv. Exchange type? (one for one vs what you need)

3. Are you exchanging for anyone besides yourself?
    a. If so, for about how many people on average?
    b. What keeps these others from participating?
    c. Does HEP provide enough equipment to last for a full week?
        i. What about when equipment is shared with others through secondary exchange?

4. Do you know about Narcan?
    a. Do you currently have Narcan?
    b. Do you know how to use Narcan?
        i. Are you comfortable using Narcan?
    c. Where do you get your narcan?
        i. If friends/family- do you know where they get their narcan?
    d. Have you ever used narcan on someone?
    e. Have you ever seen someone overdose and been unable to administer Narcan?
        i. Didn't have any?
        ii. Didn't know how?
    f. Do you have a preference in type of Narcan?
        i. Nasal v.s. injectable
        ii. If so why?

Outreach Interview Guide

1. Do you ever go to HEP's exchange at their offices?
    a. Are there barriers that keep you from going to exchange site?
    b. What is the best way for you to access exchange?

2. How do you usually access clean syringes/equipment?
    a. Do you exchange at other exchange locations in the city?
    b. Friends/family? If so, do you know where they access syringes?
    c. Dealer?
    d. HEP Outreach / Hit-kit?
    e. Peer exchange?

3. Do you ever receive our hit-kits? Are hit-kits useful?
    a. Feedback on items in the kit- likes/dislikes
    b. Too much/ too little?

4. Is there anything not provided in our hit-kits that you need?

5. Are you sharing hit- kits/ picking up kits to pass along to others?

6. When you get equipment from us, do you receive enough equipment to last you one week?
    a. Why or why not?
    b. Storage?
7. Do you know about Narcan?
    a. Do you currently have Narcan?
    b. Do you know how to use Narcan?
        i. Are you comfortable using Narcan?
    c. Where do you get your narcan?
        i. If friends/family- do you know where they get their narcan?
    d. Have you ever used narcan on someone?
    e. Have you ever seen someone overdose and been unable to administer Narcan?
        i. Didn't have any?
        ii. Didn't know how?
    f. Do you have a preference in type of narcan?
        i. Nasal v.s. injectable
        ii. If so why?