

University of Nevada, Reno

**Creating a Profile for Injection Drug Users Utilizing Data from the Change Point Syringe  
Exchange Program in Reno, Nevada**

A thesis submitted in partial fulfillment  
of the requirements for the degree of

Bachelor of Science in Molecular Microbiology and Immunology and the Honors Program

by

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We recommend that the thesis  
prepared under our supervision by

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**BACHELOR OF SCIENCE IN MOLECULAR MICROBIOLOGY AND IMMUNOLOGY**

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## Abstract

Understanding the unique characteristics of injection drug users can enhance the reduction and transmission of Hepatitis C Virus (HCV). Syringe exchange programs provide resources to reduce the behavioral harms of infectious disease among injection drug users. This paper describes a descriptive study performed at the Nevada HOPES Change Point Syringe Exchange Program utilizing interviews of injection drug users regarding their drug use behaviors, HIV and HCV status, and attitudes regarding the program's impact on their behaviors. Of total clients that participated (n=31), most used the program primarily for sterile syringe and drug equipment but were aware of testing and referral resources. 22 clients (66%) reported current methamphetamine use, 29 (90%) reported prior HIV testing, 27 (84%) reported prior HCV testing, 0 reported HIV positive status and 10 clients (28%) reported HCV positive status. The findings of this study overall suggests the program reduces reuse or sharing of drug equipment as well as a modest effect on thoughts regarding cessation of drug use. This study provides insight for ongoing allocation of resources and future considerations by public health authorities in the state of Nevada regarding the impact of syringe exchange programs on risks like Hepatitis C exposure related to injection drug use behavior.

Key words: Hepatitis C Virus (HCV) Human Immunodeficiency Virus (HIV) Syringe Exchange Program (SEP) Injection Drug User (IDU)

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## **Introduction**

The injection drug user population is of special concern for public health authorities, law enforcement, policy makers, and the community at large. Infectious disease among injection drug users (IDU) is concerning as most cases are unreported and left untreated as injection drug users represent a marginalized group that do not have easy access to care or treatment options (World Health Organization, 2017). Injection drug user behavior can facilitate the spread of major infectious diseases including Human Immunodeficiency Virus (HIV), Hepatitis C Virus (HCV), and Hepatitis B Virus (HBV) (Centers for Disease Control, 2016b).

Of highest concern is Hepatitis C Virus as it is estimated to be increasing in prevalence in the injection drug user community (CDC, 2016a). This paper focuses primarily on the epidemiology, pathogenesis, and treatment options available for HCV as well as the difficulties and barriers to stopping the growing prevalence of HCV. Continual increase in prevalence of HCV is not only due to limited access to care in the injection drug user population, but also lack of knowledge of infection as the virus remains insidious until it leads to chronic infection with detrimental health effects like hepatic cancer and death (Preciado et al., 2014). Chronic infection of HCV is attributed to the pathology of the virus as structural and functional components of HCV can avoid immune response (Liang et al., 2007). HCV is treatable with medication, but there are barriers to treatment due to high costs and insufficient access to medication options, specifically in the injection drug user population (WHO, 2007). As such challenges exist, preventative care like syringe exchange programs are of crucial importance.

One solution to prevent HCV among injection drug user populations globally is the use of syringe exchange programs. Syringe exchange programs provide a comprehensive harm reduction intervention that addresses infectious disease among injection drug users by providing

information and resources to protect users from infection (Harm Reduction Coalition). These programs provide sterile syringes and drug supplies, as well as HIV and HCV testing and counseling and health care referrals for the injection drug user population (Harm Reduction Coalition).

In the United States, there is still limited federal funding of syringe exchange programs as the purpose of the programs is deemed controversial (Vlahov et al., 2001). The program's purpose is to reduce the harms associated with using drugs and is a unique approach, as it does not entail the cessation or treatment of drug use like with drug addiction facilities. (Vlahov et al., 2001; National Institute on Drug Abuse (NIDA), 2012). Syringe exchange programs' "harm reduction" technique does show a decrease in risk behaviors associated with transmission of infectious disease as well as decrease in HIV and HCV in injection drug user communities (Abdu et al., 2007). To continually support the harm reduction that syringe exchange programs provide, there needs to be more awareness and understanding of syringe exchange programs and the injection drug community it serves.

In Nevada, the Nevada HOPES Change Point Syringe Program is the only available syringe program in the state and started in 2013. There has been no formal monitoring available on injection drug users that utilize this program regarding their drug use, injection behaviors, infectious disease status, or thoughts about this program to date. Creating and analyzing a profile of the injection drug users that use the Change Point Syringe Program will provide insight on the harm reduction this program provides as well as considerations for sufficient care and resources for the local injection drug user community.

### **Injection Drug Users**

Monitoring and understanding the injection drug user community is highly limited as

injection drug users are a most-at-risk population and are socially vulnerable and marginalized for their behaviors (UNAIDS, 2008). Additional barriers to monitoring this population include the mobility of this population, which makes it difficult to acquire assessment and follow up (UNAIDS, 2008). Therefore, trying to sample this population through telephone, mailing, or computer surveying is not an effective way to reach this population (EMCDAA, 2002).

Sampling techniques with this hidden population in past studies included; venue based sampling, like at syringe exchange programs, street outreach for respondent driven sampling and target sampling at specific identified locations within a city or town (Lanksy et al., 2007).

Injection drug users (IDU) are identified as individuals who use illicit drugs “with or without prescription” such as opioids (heroin) and stimulants (methamphetamines, powder cocaine, and crack) (CDC, 2012). Injection drug users have a high risk of blood borne infectious disease like HCV as well as HIV and HBV due to drug use behaviors (Wejnert et al., 2016). Major behavioral factors that contribute to infectious disease include the reuse of syringes, sharing syringes, the sharing of drug preparation equipment like cotton swabs and cookers, and having unprotected sex (Suyraprasad et al., 2014). Infected needles are estimated to result in 3,000 to 5,000 new cases of HIV and approximately 10,000 new cases of HCV in the United States every year (Tula, 2015). Furthermore, co-infection of HIV with HCV triples the risk of liver disease, liver failure, and liver related death in the U.S. These complications are the leading causes of death in HIV patients co-infected with HCV who are effectively treated with antiretroviral medications (CDC, 2016a; Messina et al., 2015). Failure to access care within the injection drug user community can be due to stigma and criminalization of drug use as well as discrimination (WHO, 2012). Injection drug users typically are in unstable living conditions and lack social or community support (WHO, 2012). Without support, this community is unaware

and ill equipped to prevent the transmission of HIV and of rising urgency, HCV (CDC, 2012).

Several studies on injection drug user populations have been completed in the United States and globally. They have involved analysis of quantitative biological data such as serologic testing for HIV and HCV, in combination with qualitative behavioral data or interviewing behaviors regarding demographics, frequency of sharing needles and drug equipment, reuse of needles, frequency of injecting, sexual behavior, and usage of syringe exchange programs (Abdul-Quader et al., 2013).

The CDC in collaboration with the National HIV Behavioral Surveillance System conduct surveys annually since 2005 with new injection drug user populations to gain information on monitoring of their drug use behaviors in association with prevalence of HIV as well as HCV diagnoses (Wejnert et al., 2016). From the total number of new injection drug users sampled between 2010-2015 from 19 cities, 61% reported 'heroin and other drug use', 27.2% reported 'only heroin use', and 11.9% reported 'not heroin use' out of 1,858 total (Wejnert et al., 2016). The highest reported users were White/Non Hispanic (54%) and were 30 years of age or older (28.9%) (Wejnert et al., 2016). The White/Non Hispanic population prevalence was consistently high and also more likely to share syringes as well as use syringe exchange programs in comparison to Hispanic and African American populations based on trends starting in 2005 (Wejnert et al., 2016). Among those infected in this population, 19.1% reported HCV and 3.7% reported HIV (Wejnert et al., 2016).

In regards to HCV prevalence in this population, acute HCV cases reported to the CDC from 2006-2012 showed 68% prevalence of history of injection drug use and an increase in non-urban settings, especially in the Midwest, more so than in urban settings (CDC, 2015; Suyraprasad et al., 2014). The CDC also stated that surveillance is limited as reporting injected

drug use was not consistent among all state health departments that provided acute HCV cases to the CDC (CDC, 2016b). This again displays the limitations with surveillance of the injection drug user population in the United States.

Overall, there are many barriers to access to care in the injection drug user population and there is limited surveillance which is concerning as there is a notable prevalence of HCV in this community. More viable options for care in the injection drug user population is of crucial importance.

### **Hepatitis C Virus Overview**

Access to care among injection drug users is important as Hepatitis C Virus is of rising concern. Hepatitis C virus is a highly complex virus and understanding its growing prevalence, health complications, and limitations to treatment make preventative measures crucial to stop the transmission of HCV. Acute cases of HCV have doubled since 2010 in the U.S. and are now estimated to be at 30,000 new cases per year (CDC, 2016a). Surveillance is limited for HCV as it is highly underreported and also reporting injected drug use was not consistent among all state health departments that provided acute HCV cases to the CDC (CDC, 2016b).

HCV is a significantly increasing global crisis. As of 2014, it is estimated that 180 million people are infected with HCV (deLemos & Chung, 2014). Of that total, three to four million people with HCV reside in the United States (deLemos & Chung, 2014). The annual mortality due to HCV in 2013 was higher than the number of deaths of 60 other infectious diseases like HIV, pneumococcal disease, and tuberculosis combined (CDC, 2016a). Mortality due to liver disease secondary to HCV infection reached an all time high in 2014 at 19,659 in the United States and is expected to continue to rise over the next 20 years (CDC, 2016a; Messina et al., 2015).

Hepatitis C virus is a part of the viral hepatitis family Hepatitis A-E (WHO, 2012). Each viral hepatitis varies in transmission, structure, pathology, and treatment, but all contribute to the majority of acute and chronic liver infections globally (Park & Rehermann, 2014). Overall, viral hepatitis is considered an expensive and silent global burden as it is the leading cause of liver transplants and end stage liver treatments (WHO, 2012). Those infected experience benign symptoms with decade long delays between infection and serious complications (CDC, 2016a). HCV is the most significant hepatitis virus as it is the only hepatitis virus without an effective vaccination and access to HCV treatment options is highly limited. (Park & Rehermann, 2014; WHO, 2012).

### **Epidemiology**

Hepatitis C is transmitted by blood not only through intravenous drug use, but also in blood transfusions, organ transplants, and infrequently transmitted maternally or through sexual intercourse (WHO, 2012; Alter et al., 1975; Thomas, 2000). Egypt is noted to have the highest prevalence of HCV in approximately 10% of its population (Mohd et al., 2013). This high prevalence has been attributed to non-sterile blood transfusions and needle reuse practices during treatment of schistosomiasis (a parasite that infects the liver), which caused major transmission of HCV in the 1950's- 1980's (Lavanchy, 2011; Ansaldi et al., 2014). Even in the United States, 75% of HCV is seen in those born between the years of 1945-1965 due to similar practices of unsafe medical procedures or contaminated blood transfusions during blood and organ donations (Ansaldi et al., 2014; Mohd et al., 2013).

The original spread of HCV was due to the fact that HCV was not officially screened and classified until 1989 in patients diagnosed with “non-A, non-B Hepatitis” (Choo et al., 1989). After these findings and the development of testing, blood transfusions and organ transplants

became screened for HCV in the early 1990s as recommended by the CDC (Simmonds, 2013; CDC, June 2014). Screening, which includes IgG assay for HCV antibodies and nucleic acid amplification testing for HCV RNA in blood samples, has led to a dramatic decrease in transmission of HCV in the medical setting in the United States (CDC, 2016b; CDC; 2014). Even with the decrease of HCV from medical transmission, HCV is still increasing due to the infection of the injection drug user population. This problem is addressed by syringe exchange programs that provide sterile syringe resources and screening directly to this population.

### **Pathogenesis**

The infectious cycle of HCV gives a clearer understanding of why there are continual complications and challenges in treatment options and therefore why preventative measures like syringe exchange programs are highly important. HCV is an enveloped, positive single-stranded RNA genome (Liang et al., 2000). The components of HCV genome contribute to infection and immune resistance as it has high mutation rate components for continual variation and avoidance of the immune response (Liang et al., 2000). The virus is transported in the bloodstream and infects hepatocyte cells in the liver mediated by the host cell components (Dubuisson & Cosset, 2014). HCV envelope proteins attach and enter the target cell and the viral genome is uncoated upon entry (Liang et al., 2000). Once the virus replicates and makes new virions, it buds off the cell in combination with host lipoproteins to form a lipoviral particle for continual infection in the host (Dubuisson & Cosset, 2014). This provides epitope shielding as the host lipoproteins embedded in envelope structure can blockade innate immunity signaling and leads to chronic infection (Dapeng, Zhong, & Jin, 2015).

The immune cells that help attack this virus include CD8<sup>+</sup> T cells and CD4<sup>+</sup> T helper cells that recognize HCV peptides in infected hepatocytes. Cytokines like interferon-gamma and

tumor necrosis factor- alpha help inhibit replication and gene expression of the virus as well (Liang, 2000). Acute HCV infection can be self-cleared in twenty to twenty-five percent of all those infected with HCV and those who self clear the virus have shown broad and enhanced CD4+ T cell and CD8+ T cell proliferation (deLemos & Chung, 2014; Park et al., 2014). Acute HCV symptoms occur two to six months after HCV enters the bloodstream (Blackard et al., 2008). Symptoms include fatigue, nausea, generalized weakness, jaundice (yellow discoloration of the skin and eyes), white colored stool, dark urine, and upper abdominal pain that last for two to twelve weeks (Blackard et al., 2008). Sixty to eighty percent of those infected with HCV go on to have chronic infection and have shown impaired CD4+ T cells and CD8+ T cell proliferation and exhaustion leading to eventual hepatocellular injury (Park et al., 2014). Chronic symptoms can include hepatic encephalopathy (confusion, drowsiness, slurred speech) and nonspecific symptoms of nausea, anorexia, and fatigue (Huffman & Mounsey, 2013). These symptoms, however, are not commonly exhibited among the majority of infected persons (CDC, 2016b). Therefore, HCV is highly untreated and underreported due to lack of knowledge of HCV status which makes screening important especially in the injection drug user community for awareness of HCV status (Preciado et al., 2014).

Though HCV is mainly asymptomatic in early infection, it has a variety of complications due to chronic infection. There are seven different known genotypes, 1-7, and over 67 subtypes of HCV that are known to have different effects on the liver (Ansaldi et al., 2014). Genotype 1 is the most prevalent globally and is associated with end-stage cirrhosis (liver damage and failure) and hepatocellular carcinoma (liver cancer) (CDC, 2016b). Genotype 3, the second most common genotype, is associated with hepatic steatosis (infiltration of fat in the liver) and hepatic fibrosis (liver scarring) (CDC, 2016b; Preciado et al., 2014). These very serious complications

lead to death without treatment.

### **Prevention and Treatment**

An important preventative measure for HCV should include vaccination for the virus; however, there is not a vaccine to date. Several HCV vaccine candidates for targeting HCV antigens and delivery systems have been researched and are currently being tested (Park et al., 2013). A desirable vaccine would elicit a strong T-cell immunity response, like in those with self-cleared HCV, as well as a thorough antibody response against various genotypes (Park et al., 2013; Dapeng, Zhong, & Jin, 2015). Major challenges have been noted for successful vaccine development due to the virus's mutagenic capabilities and adaptations to immune response (Preciado et al., 2014).

Several treatment options are available for the successful treatment of HCV. Efficacy of treatment is measured by a sustained virologic response (SVR), which is defined as undetectable viral RNA for 6 months post treatment (Ansaldi et al., 2014). In the past 3 decades, HCV treatment was traditionally pegylated interferon-alfa medication in combination with ribavirin (Te et al., 2007). This treatment had poor reliability as the efficacy ranged among different ethnicities, age, and genotypes and has suboptimal SVR for HCV Genotype 1 (Te et al., 2007, Ansaldi et al., 2014; Banerjee & Reddy, 2016). Currently the FDA has approved seventeen different direct acting antiviral (DAA) medications for HCV that are generally well tolerated with minimal risk and major coverage across several HCV genotypes, ages, and severity of infection (2017). These medications have shown to clear HCV virus and leads to improved liver function despite liver damage caused by the virus (Banerjee & Reddy, 2016).

The medication targets various component proteins in the HCV cycle and is used in different combinations with and without pegylated interferon and ribavirin treatments that have

resulted in higher rates of clearing HCV, shorter treatment duration, and fewer side effects (Banerjee & Reddy, 2016). Side effects of the medications includes nausea, headache, and fatigue (Banerjee & Reddy, 2016). Each medication is variable in its targets, its duration of use (ranging from 8-24 weeks), and dosages. Each one specifically targets different genotypes (FDA, 2017).

Although treatment to clear HCV is now highly successful, there are barriers to treatment including high cost and lack of availability of treatment in the United States. Average treatment cost for brand name medications ranges from \$70,000 to \$90,000 for a 12-week oral regimen in the U.S. (Jensen, Sebhatu, & Reau, 2016). For example, Sofosbuvir, a DAA that can be used for genotype 1-6, has an estimated cost of \$84,000 in the U.S. (Jensen et al., 2016). There are generic brands available for Sofosbuvir at approximately \$300 to \$400 per bottle. However, there are no generic brand medications in the United States at this time (Jensen et al., 2016).

Additionally, there is much variation in accessing treatment by state and insurance plans. Insurance plans have been known to deny treatment for those with advanced fibrosis (Rosenthal & Graham, 2016). Insurance plans may also require abstinence from drugs and alcohol, as well as treatment from a specialist of infectious disease or gastroenterology for eligibility (Rosenthal & Graham, 2016). All of these components are not supported by the FDA or treatment guidelines but insurance companies continue to require them (Rosenthal & Graham, 2016). For the injection drug user population, these are serious barriers as they currently are using drugs and may not have adequate access to health care to see a specialist. With such limitations in treatment options for the IDU population, prevention is a key measure to stop the transmission of HCV.

### **Syringe Exchange Programs**

One solution in the reduction of HCV acute cases is to stop the transmission of disease by

using sterile equipment. Recall that sharing syringes as well as reusing syringes leads to the transmission of HCV (Suyraprasad et al., 2014). Providing sterile equipment serves as a preventive measure to stop transmission of infectious disease among injection drug users. To address the need for sterile drug equipment, syringe exchange programs were implemented.

Amsterdam was the first documented city that started providing sterile syringes to injection drug users to combat an AIDs epidemic in 1988 (Vlahov et al., 2001). Global expansion of syringe exchange programs occurred in Australia, Switzerland, Nepal, and Vietnam (Vlahov et al., 2001). The first publicly announced syringe exchange program in the United States was in Tacoma, Washington in 1988 (Vlahov et al., 2001). Closely following this first endeavor, New York, Portland, and San Francisco opened programs (Vlahov et al., 2001). Syringe exchange programs initially entailed simply exchanging used needles for sterile needles (Vlahov et al., 2001). Syringe exchange programs since have expanded in their resources and utilization. They are now considered “harm reduction centers” in that they reduce harms associated with infectious disease as they provide sterile equipment as well as testing for HIV/HCV, counseling for drug use, referrals to care, support groups for HCV/HIV or drug use status, and resources (WHO, 2012). These programs have been strongly supported by many organizations including the Institute of Medicine, the World Health Organization, and the American Public Health Association and deemed crucial for the reduction of the transmission of infectious disease among the injection drug user population (amfAR, 2010; CDC 2012; WHO, 2012).

Since initiation of syringe exchange programs, the government has discouraged programs in the U.S. Beginning in the 1980’s, there were federal bans on the possession or selling of syringes (Vlahov et al., 2001). These bans were based on a zero tolerance for drug use and a belief that syringe exchange programs encourage drug use and increase HIV prevalence (Vlahov

et al, 2001). Unlike drug treatment therapy, syringe exchange programs goal is not cessation of drug use, but prevention of HIV and HCV infection in the community to address those that are not engaged in drug treatment therapy (Harm Reduction Coalition). Several studies have shown that syringe exchange programs do show reduction in sharing and reusing syringes and drug equipment as well as evidence of decreased HCV and HIV prevalence in the injection drug user community (Abdul-Quader et al., 2013, Huo & Ouellet, 2007; Hagan et al. 1993). To date, The Consolidated Appropriations Act of 2016 permits federal funding for components of syringe exchange programs but excludes funds to distribute needles or syringes (2015). Even without substantial federal funding for sterile syringes and equipment, there currently are 228 syringe exchange programs in 35 US states, in the District of Columbia, Puerto Rico, and the Indian Nations (North American Syringe Exchange Network, 2015).

### **Syringe Exchange Programs in Nevada**

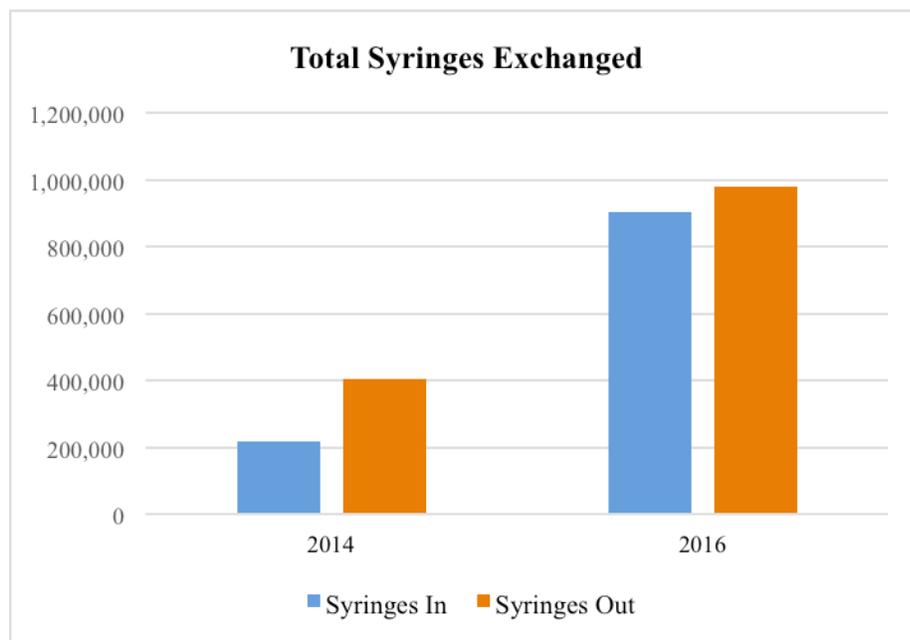
To address infectious disease among the injection drug user population in Nevada, the state implemented its own syringe exchange program. From available data on HCV prevalence in Nevada, in 2009-2013 there was a reported 50% increase of viral Hepatitis C in the state (CDC, 2015). In Washoe County, there were a total of 4,188 cases of confirmed HCV infection with 31.1% reporting injection drug use from a report conducted from May 2002-December 2012 (2015 Annual Communicable Disease Summary). Since the release of this report, there has not been subsequent analysis of the epidemiological profiles or risk factors associated with HCV infection in Washoe County as personnel resources were restricted (2015 Annual Communicable Disease Summary). In 2011, the Public Health Alliance for Syringe Access was formed in the state that included Northern Nevada HOPES, Nevada Public Health Association, the Northern Nevada Outreach Team, the Southern Nevada Health District, the Southern Nevada HIV/AIDS

Planning Council and the Washoe County Health District to address infectious disease in high risk populations like injection drug users (Flores, 2012). These organizations sought support for a bill to legalize possession and sale of syringes in the state of Nevada.

In 2013, Nevada Senate Bill 410 legalized the sale, possession, and use of sterile syringes (S. 410, 2013). The bill addressed increasing access to sterile syringes as “necessary to control the spread of life-threatening infectious diseases” (2013). The bill authorized establishment of programs for safe distribution and disposal of syringes, to provide sterile devices and related material for safe injection drug use, information on controlled substances, treatments, support services, and methods for infectious disease prevention, as well as legal aid services (SB. 410, 2013). After the bill was passed, Nevada HOPES outreach clinic opened their “Change Point Syringe Service Program” in January 2014 under operational guidelines of the bill.

The Change Point Syringe Program works directly with injection drug users as a harm reduction center in the Washoe County area. The program provides injection drug users with sterile syringes and equipment like cookers, cottons, alcohol wipes, rinse water, saline, Band-Aids, and male and female condoms. The Change Point program also provides HCV and HIV testing and provides clients with health care referrals, food and clothing access, and support groups for those with HIV and HCV. The program has continually expanded since its initiation. In 2016 alone, the program gave out 979,792 clean syringes in exchange for 902,665 used ones as compared to 2014 in which 402,167 clean syringes were given out and 217,178 were returned (see figure 1.1) (Harding, 2017b). For the Change Point program, syringes are exchanged based on the amount of used syringes a person brings in. A person will bring in a certain number of syringes and the program will provide an equal amount of sterile syringes in return. For example, if someone brought in 100 used syringes, the program will give them 100 sterile syringes. If

someone does not bring any used syringes, the program will provide a maximum of 30 sterile syringes (Harding, 2017b). All participants are given a small biohazard box to portably dispose of the used syringes that they return to the program (Harding, 2017b).



**Figure 1.1 Total number of sterile syringes given out and used syringes dropped off at the Nevada HOPES Change Point Syringe Exchange Program 2014 and 2016 (Harding, 2017b).**

Since the program's opening, approximately 5,858 new clients have been seen with an overall total of 31,778 encounters (Harding, 2017a). As the program expands, it is important to evaluate and monitor how the program is meeting the diverse needs of the community it serves. No formal analysis has been completed to assess client demographics, their drug usage and the client's attitudes regarding their drug use and risk behavior since using the Change Point program. Such analysis can provide a clearer depiction of how this program impacts the local injection drug users community and would help create a better profile of the clientele at the Change Point program. Creating such a profile benefits the program moving forward.

### **Methods for Analyzing Syringe Exchange Programs**

Several organizations including WHO, CDC, United Nations Programme on HIV/AIDS

(UNAIDS), and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) have released guidelines and assessment tools for monitoring and evaluating existing syringe exchange programs. The defined purpose for continual monitoring and evaluation of syringe exchange programs is to assess the extent the program is meeting the needs of those it serves, provide future direction for improving services, as well as communicate information for policy makers and continual public support (EMCDDA, 2002; UNAIDS, 2008; WHO, 2007).

Evaluation can determine overall effects the program has on injection drug users in a specific community. This is important as injection drug users among different regions are unique and require different resources (WHO, 2007). A suggested method for evaluating syringe exchange programs has been qualitative data collection on injection drug user behaviors including interviewing clients with questions regarding their drug use history, risk behaviors, as well as their experience, perceptions, and satisfaction of the service they receive (UNAIDS, 2008).

Many organizations have created standardized evaluations of injection drug user behavior in syringe exchange program settings both nationally in the United States and globally for universal monitoring and assessment (Lansky et al., 2007; EMCDDA, 2013). In 2013, the EMCDDA created an exemplary questionnaire for behavioral surveillance and attitudes of program usage among drug users intended to harmonize surveillance of drug use at a global level. The questionnaire is in a flexible format to be used for differing objectives and is intended for use of individual questions or set of questions. The questionnaire was created from guidelines of other organizations including CDC, UNAIDS, and WHO (EMCDDA, 2013). Questions are for a recall period of the last 4 weeks and 12 months and the population of study is specifically anyone who has injected drugs. This study utilized a version of this questionnaire because of its universal approach to specifically addressing the injection drug user community. Considerations

include self-reported data bias in that clients would under report or over report behaviors to surveyors as well as improved behaviors due to HIV and HCV testing and acquired knowledge of risk behaviors and resources as provided during the research process (Lanksy et al., 2007; Holtzman et al., 2009; Huo & Ouellet, 2007).

### **Methodology**

For this study, sampling was venue based, at the Nevada HOPES Change Point Syringe Exchange Program. Data collection was based solely on interviewing clients of the program regarding their behaviors. Demographics collected on the injection drug users at the Program included ethnicity, race, age, drugs used, risk behaviors, HIV/HCV statuses, and attitudes about the program. Interviews were conducted with clients on either Monday, Wednesday, or Friday mornings from 9:00am-12pm March to February 2017. Every interview was personally conducted by the author. Each client that came to the program for the syringe exchange service was asked if they would be interested in completing a questionnaire resulting in a completely random sample. If the client agreed, the survey was conducted in the room where they exchanged syringes and only the author and the client were present in the room. Verbal consent was asked (see Appendix A) and if they consented, eligibility questions regarding if they ever injected drugs was asked.

Those that were eligible had the questionnaire read out loud to them and the author recorded responses manually on a paper form of the questionnaire. Survey questions were based on the EMCDDA 2013 questionnaire for injection drug user risk behaviors (See Appendix B). Completed surveys were then computed on Survey Monkey by the author for data analysis. No incentives were given to participants.

This research was reviewed and exempted by the Institutional Review Board at the

University of Nevada, Reno. The summary report from Nevada HOPES Change Point was provided in a de-identified format and the survey kept all client information de-identified. After the survey was conducted, the paper questionnaires were destroyed.

## Results and Discussion

A total of 36 people were asked to participate in this study, three people declined, and two people were not eligible. Of the 31 people interviewed, 71% were Non-Hispanic Caucasian/White, 55% were male, and the largest group was between 21 and 29 (29%) (see Table 1). All results for the survey are in Appendix C.

In comparison to the data from the Change Point Program client intake database, the sample studied was a fair representation of the clientele (see table 2 A and B). The higher prevalence of young, Non-Hispanic whites is also similar to national demographics on injection drug users (Wejnert et al, 2006).

n= 3673		n=31	
Non-Hispanic White	65.88%	Non-Hispanic White	70.97%
Male	53.70%	Male	54.84%
> 30 years old	42%	> 30 years old	29.03%
Methamphetamine	60.50%	Methamphetamine	64.52%
Heroin	46.40%	Heroin	29.03%

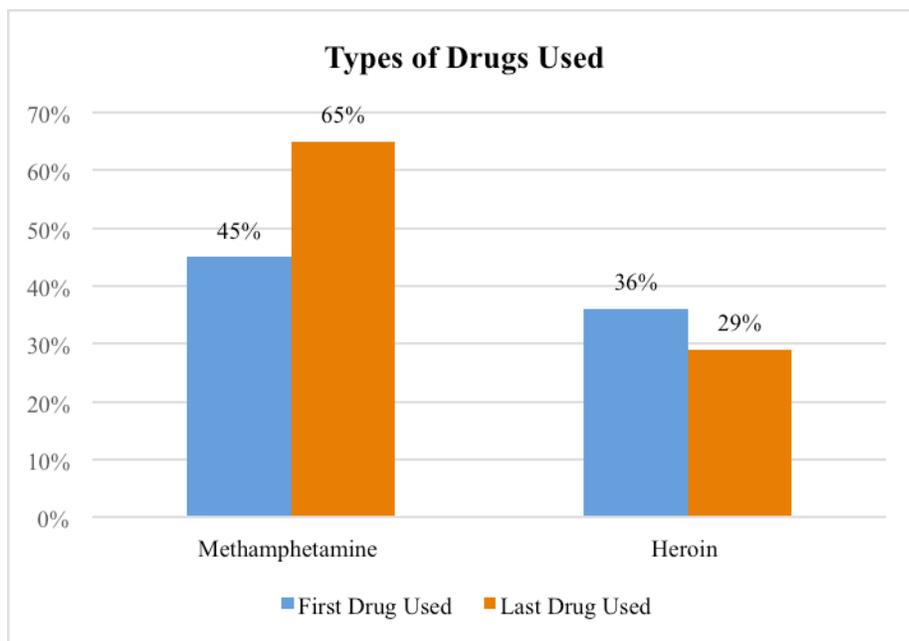
**Table 1.1 Demographics of clients at the Nevada HOPES Change Point Syringe Exchange Program.**

A) The Change Point Syringe Exchange Program coordinators provided data from January 1, 2014 through December 31, 2016 from 3,673 correctly inputted clients. Recurrent clients reported different types of drugs used or more than one drug used throughout their time as a client that affected unduplicated data records. The highest reported drug used was methamphetamine in 2016 (Harding, 2017b).

B) Demographics and drug use collected from interviews from the 31 clients at the Change Point Syringe Exchange Program

In regards to drug use, 65% reported the last drug they injected was methamphetamines and 29% reported heroin use as compared to the first drug they used in which 45% reported methamphetamine and 35.48% reported heroin (see figure 1.2). The increase in

methamphetamine use from first injected drug to the most recent injection suggests that methamphetamine use is predominant in this population in Washoe County. This is unique in comparison to drug use nationally where most cohorts reported heroin use in combination with methamphetamine and cocaine (Wejnert et al., 2006).



**Figure 1.2 Types of Drugs reported by clients at the Nevada HOPES Change Point Syringe Exchange Program**

In response to questions about infectious disease and associated risk behaviors questions on sharing equipment, a high number of respondents were aware of their infectious disease status and the importance of sterile equipment as to not transmit infectious disease. From questions regarding infectious disease testing and status, 87% reported prior HIV testing, 84% reported prior HCV testing, and 32% stated they were HCV positive, and no one was HIV positive. The prevalence of HCV in this sample is similar to national trends (Wejnert et al, 2006). 68% reported they never shared drug equipment in their life and 61% reported they did not reuse the last needle they injected with (Appendix C). One interviewee that reported HCV positive status

stated they only shared a syringe once with another person and never shared a syringe or drug equipment with others since. This could indicate that testing and awareness of HCV/HIV status has some effect on injection behaviors of current injection drug users that use this program.

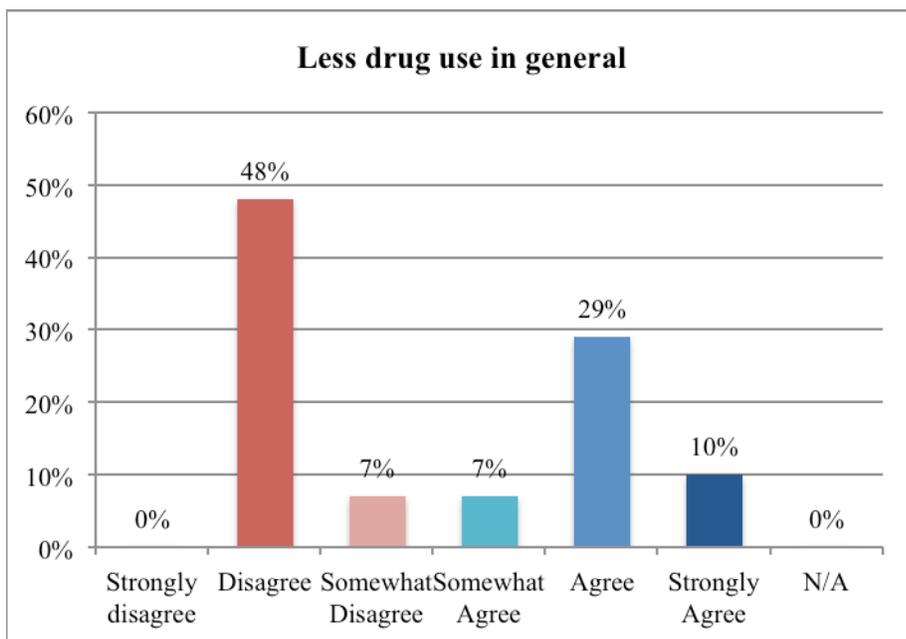
Responses to questions regarding usage and feedback on the program identified that 52% reported they heard about the program from a family member or friend that was not specified as an injection drug user and 23% heard about through advertisement or another injection drug users. Most reported use of the program for syringe exchange and sterile equipment (97% and 74%) and they knew HIV/HCV tests (42%) as well as referrals and support groups (32%) were available. 39% reported they use the program once per month and 29% reported once per week. As syringes are exchanged based on the amount of syringes a person brings in, monthly use suggests that clients maybe able to get enough syringes and supplies to last for a month and may not need to come in multiple times a month for their needs. Overall, most participates reported they used this program over a year, 36% reported they have been using the program for a year, 23% reported four years. The continual use of the program portrays this program is meeting their needs and provides desired resources and services. These questions were open-ended responses. More specific questions on utilization of these resources would have been desirable to evaluate how many injection drug users at this program not only know about but utilize testing and health care resources that are provided at the program. This would provide the program coordinators with more insight into how much current clients utilize all resources provided.

Questions on their opinion of the program were Likert-type scaled, from “strongly disagree to strongly agree or not applicable” (see Figure 1.3). Questions were formatted as “Since starting this program have you changed any of the following behaviors”. The responses to behavior questions show that this program did not decrease drug use. Respondents disagreed that

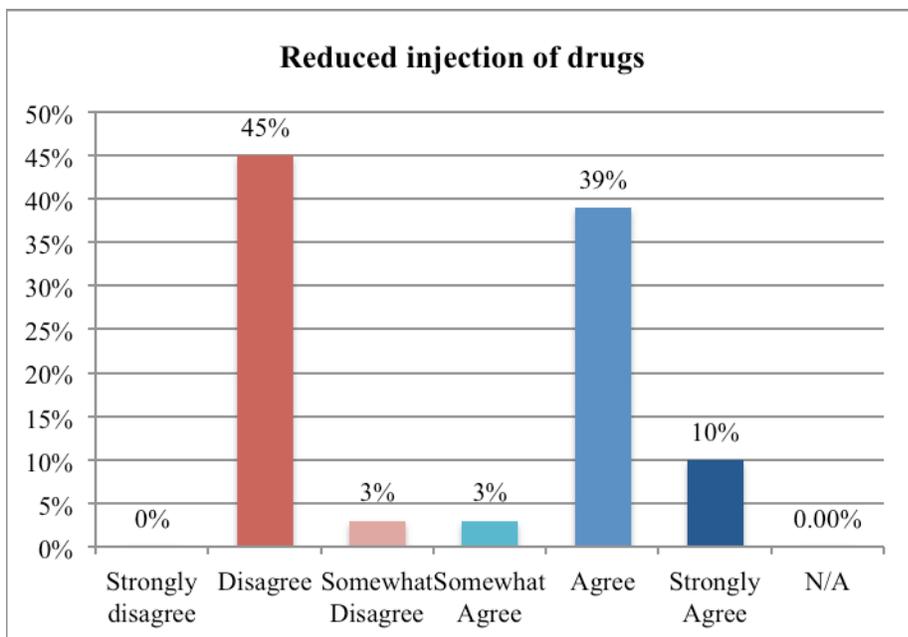
since using the program they have used less drugs in general (48%) (Figure 1.3A) and reduced injection of drugs (45%) (Fig 1.3B). As discussed, the purpose of syringe exchange programs is harm reduction and not drug cessation. As meth use is highly reported in this population, it should be noted that unlike heroin use, there are no substitution drug therapy treatments for meth, which can make meth use difficult to stop in general (WHO, 2007). However, respondents did agree that since using this program they have not necessarily stopped but thought about stopping drug use. Respondents more frequently agreed that since using the program they have thought about stopping injection of drugs (52% agreed, 13% strongly agreed) (Fig 1.3C). They stated that since using this program they thought about stopping “more frequently”. This suggests that the program does have an effect, although not substantial, on thoughts regarding cessation of drug use. 32% agreed and 29% strongly agreed that they reduced sharing equipment (Fig 1.3D) and 32% agreed they stopped sharing equipment since using the program (Fig 1.3E). Most reported it was “N/A” that since using the program they have reduced or stopped sharing equipment as they felt they stopped sharing drug use equipment prior to the program. However, those that reported “agreed or strongly agreed” suggests this program does affect risk behaviors in some clients. This program provides continual use of sterile syringes in those that already did not reuse or share equipment and improved usage of sterile syringes and equipment for those that did reuse or share equipment previously.

Similar to previous studies on injection drug users, most interviewees did not feel that this program affected their sexual behaviors (Huo & Ouellet, 2007). Most respondents disagreed they now use condoms every intercourse (36%) and 42% disagreed they started or increased condom use since using this program (Fig 1.3F, 1.3G). 74% reported they have been sexually active in the past 12 months and 55% of those who are sexually active reported one partner,

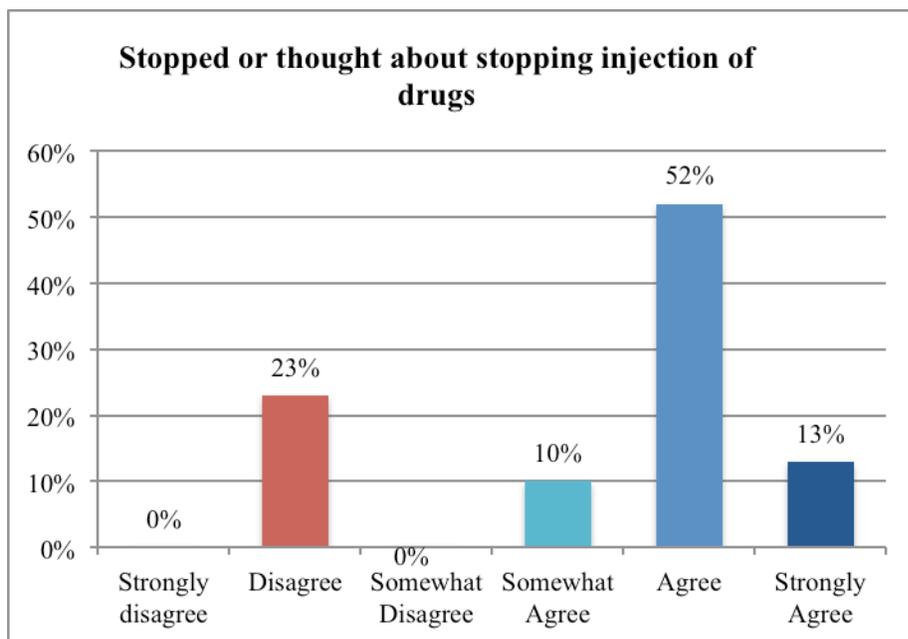
additionally 52% reported they never use a condom (see Appendix C). Those that did not agree or responded N/A stated their reasoning was having only one partner. Those who reported 20 partners or more in the past 12 months (6.25%) and always used a condom during every intercourse reported the condoms provided at the program were beneficial. Therefore, those that are at greater risk of transmission of infectious disease through sexual activity were utilizing the resources of this program.



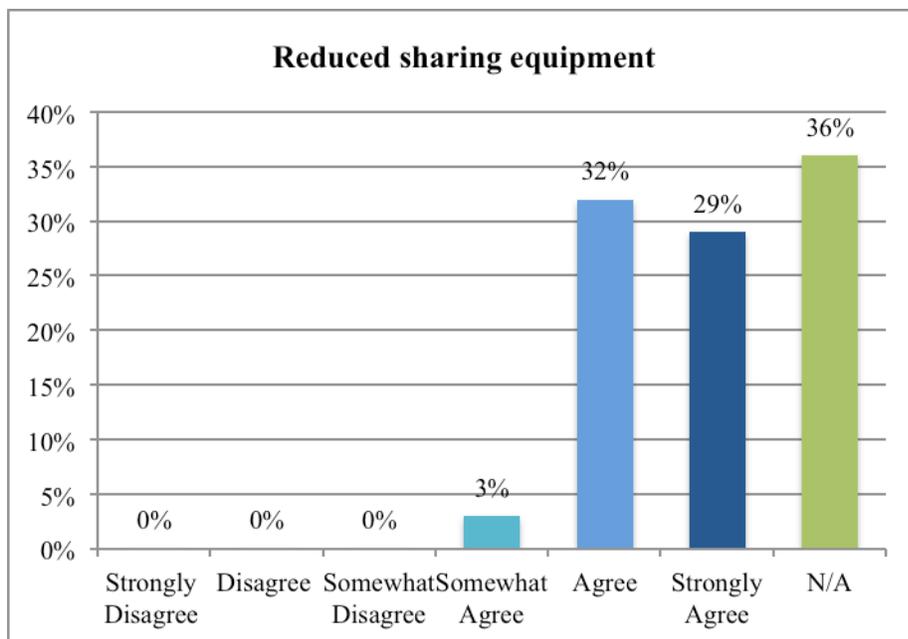
**Figure 1.3 Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you used less drug use in general”.** Responses were on a scale of Strongly disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A



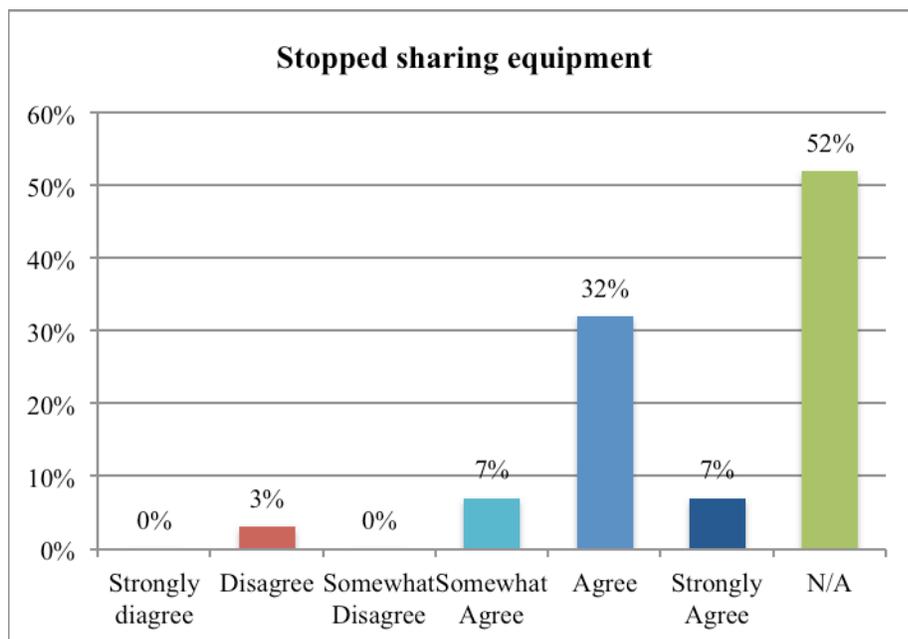
**Figure 1.4** Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you reduced injection of drugs?”. Responses were on a scale of Strongly disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A



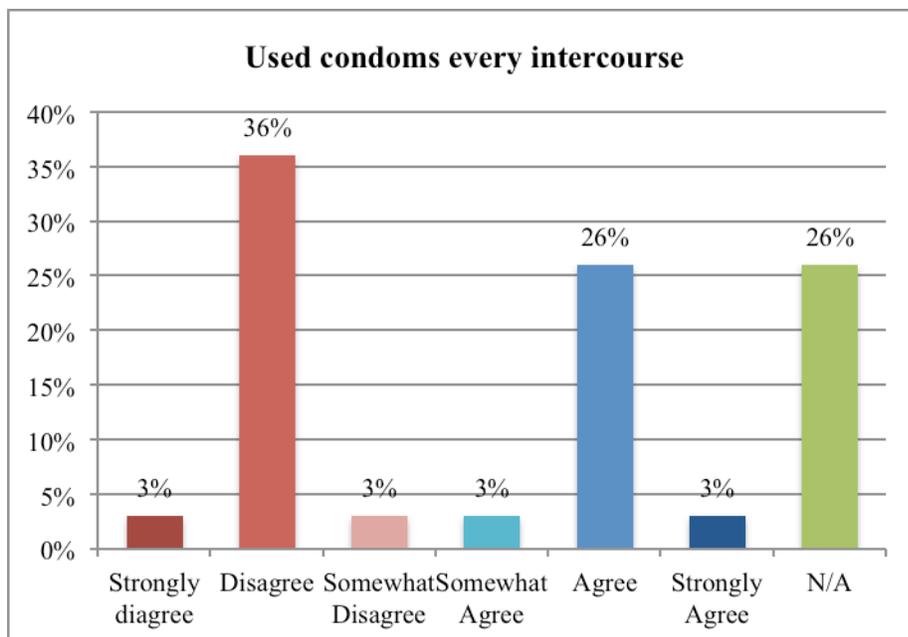
**Figure 1.5** Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you stopped or thought about stopping injection of drugs?”. Responses were on a scale of Strongly disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A



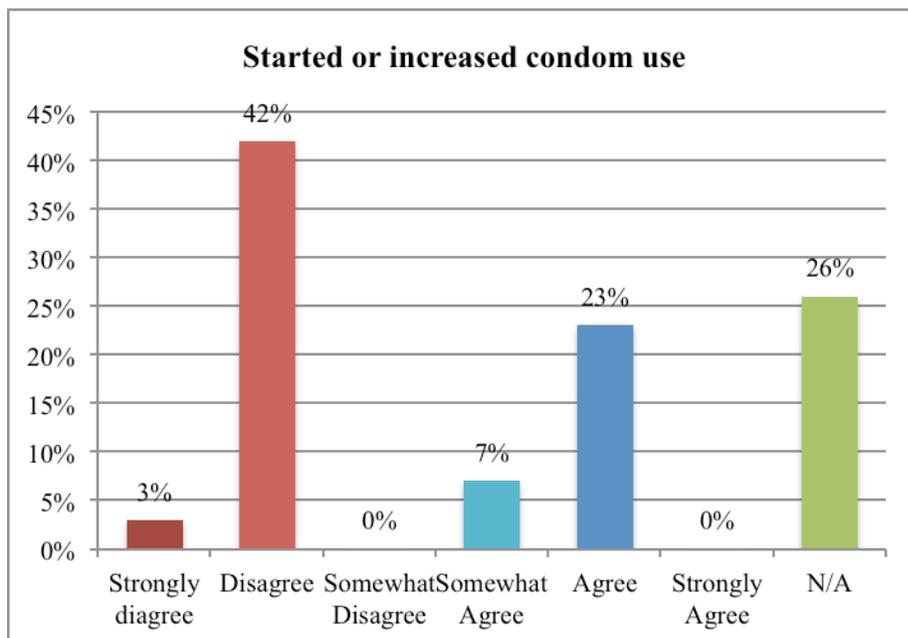
**Figure 1.6 Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you reduced sharing equipment?”. Responses were on a scale of Strongly Disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A**



**Figure 1.7 Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you stopped sharing equipment?”. Responses were on a scale of Strongly disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A**



**Figure 1.8 Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you used condoms every intercourse”.** Responses were on a scale of Strongly disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A



**Figure 1.9 Responses from clients at the Nevada HOPES Change Point Syringe Exchange Program on “Since using this program have you started or increased condom use”.** Responses were on a scale of Strongly disagree, Disagree, Somewhat disagree, Somewhat agree, Agree, Strongly agree, N/A

## Limitations

Due to time constraints and limitations to one surveyor conducting the interviews, the

sample size was small and a larger sample size would have been desired. Additional question sets would have been useful including if they ever received or wanted to receive medical treatment if they were HIV or HCV positive or drug treatment for injection drug use. These questions would have provided a clearer picture of difficulties with access to care associated with injection drug use behaviors in this community.

Other limitations that were considered was self reported bias as those that were interviewed also exchanged needles with interviewer prior to answering the questionnaire. Not only could the respondent provide answers that were socially acceptable, but perhaps more favorable to the interviewer who provided drug equipment. Also, survey input error must be considered as answer choices were read to the respondent and filled in by the interviewer. Questionnaires in the future should be more streamlined to allow the respondent to fill out the questionnaire and if they had difficulties, to be assisted. This would reflect less bias in input interpretation by the surveyor as well as less bias in the responses given by the interviewer.

### **Further Considerations and Applications**

Injection drug users face many problems in treatment and care. Of crucial concern is the threat of infection and then living with chronic HCV. Hepatitis C virus is a complex infectious disease. People are often unaware of their infection and once they are aware, they are left without an easy or efficient treatment plan. Treatment of HCV is available, but remains unattainable for the majority of the population infected due to limited access to care or awareness of infectious disease status (WHO, 2007).

In order to decrease the prevalence of HCV globally and locally in injection drug using populations, the biggest solution is in preventative care. Such preventative care includes providing sterile equipment, HCV and HIV testing, and counseling as provided by syringe

exchange programs. Syringe exchange programs are considered necessary for the prevention of transmitting major infectious disease like HIV and HCV (CDC, 2014). Creating a profile for the injection drug users, like those that utilize the Change Point program in Reno, Nevada, provides the state of Nevada with a more comprehensive understanding of the effects of this program on injection drug users in the area. This profile shows the Reno population is predominantly white, non-Hispanic and methamphetamine users. Most injection drug users of the program have been tested for HIV and HCV, know their HIV/HCV status, and use this program primarily for sterile syringe and drug equipment but are aware of testing and referral resources. This study overall suggests the program helps to reduce risk behaviors including reduced reuse or sharing of drug equipment as well as a modest effect on thoughts regarding cessation of drug use. The findings support that syringe exchange programs are an effective tool to prevent transmission of HCV and other infectious disease in the injection drug user community. These findings could help encourage other cities in Nevada to open similar syringe exchange programs in order to continue to help decrease risks and transmission of HCV among injection drug users in the state of Nevada.

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## Appendix A

### Consent Information Script Template

We are conducting a research study to learn the behaviors of injection drug users of this Change Point Clinic.

If you volunteer to be in this study, you will be asked to complete a questionnaire on your injection drug use, sexual behavior, HIV/HCV testing & result history, and change point usage

Your participation should take about 15 to 30 minutes.

This study is considered to be minimal risk of harm. This means the risks of your participation in the research are similar in type or intensity to what you encounter during your daily activities. You may experience discomfort with the sensitivity of the topics asked in this questionnaire.

Benefits of doing research are not definite; but we hope to learn the effectiveness or lack of effectiveness for the needs and risks of IDUs at the Change Point Program There are no direct benefits to you in this study activity.

The researchers and the University of Nevada, Reno will treat your identity and the information collected about you with professional standards of confidentiality and protects it to the extent allowed by law. You will not be personally identified in any reports or publications that may result from this study. The US Department of Health and Human Services, the University of Nevada, Reno Research Integrity Office, and the Institutional Review Board may look at your study records.

You may ask questions of the researcher at any time by calling Trudy Larson (775) 786-4673 or by sending an email to [lwozniak@nevada.unr.edu](mailto:lwozniak@nevada.unr.edu)

Your participation in this study is completely voluntary. You may stop at any time. Declining to participate or stopping your participation will not have any negative effects on your participation as a client of this program.

University/Affiliate investigators, include the following paragraph: You may ask about your rights as a research participant. If you have questions, concerns, or complaints about this research, you may report them (anonymously if you so choose) by calling the University of Nevada, Reno Research Integrity Office at 775.327.2368.

Optional: Thank you for your participation in this study!

## Appendix B

## Questionnaire for Injection Drug Users

Date and Time administered:

## Eligibility

1. Have you ever-injected drugs for a non-medical purpose, even once?
  - Yes
  - No
2. Have you used heroin, methadone, or other opioids and/or cocaine, amphetamines or any other illegal drug in the last 12 months?
  - Yes
  - No

## Section 1: demographics

3. How old are you?
  - 18-20
  - 21-29
  - 30-39
  - 40-49
  - 50-59
  - 60 or older
4. What is your sex?
  - Male
  - Female
  - Refused
  - Other
5. To which ethnic group do you belong?
  - Caucasian/white
  - Hispanic/Latino
  - African American
  - Native American/American Indian
  - Asian/pacific islander
  - Other
  - Refused

## Section 2: drug use/sexual activity

6. What age did you start injecting drugs?
  - Years old [    ]
  - Refused
  - Don't know/remember
7. What drug did you inject that first time?
8. When did you last inject a drug?
  - Date [d/m/y]

9. What drug did you inject that last time?

10. How often did you inject drugs during the past month?

- Number of times [ \_/\_ ]
- Refused
- Don't know/remember

11. For the last needle/syringe that you used and that had not been used by anyone else, how many times did you inject it before disposing of it?

- Number of times [ \_/\_ ]
- Refused
- Don't know/remember

12. Have you ever in your life, when you prepared to inject, used a syringe, spoon, cooker, filter/cotton, acid/lemon juice or rinse water already used by someone else?

- No
- Yes
- Refused
- Don't know/remember

13. have you had sexual intercourse in the last 12 months?

- Yes
- No
- Refused
- Don't know/remember

14. If you had more than one steady or regular sex partner in the last 12 months, how many of them did you have?

- Number of regular partners / \_\_/ \_\_/
- Refused
- Don't know/remember

15. How often did you and all of your steady/regular partner(s) use a condom during vaginal or anal sex in the last 12 months?

- Never
- Fewer than half of the occasions
- More than half of the occasions
- Always, on every occasion
- Refused
- Don't know/remember

Section 3: HIV/HCV testing/knowledge

16. Have you ever had an HIV test?

- No
- Yes
- Refused
- Don't know/remember

17. What was the result of your last HIV test?

- Negative
- Positive
- Indeterminate
- Refused
- Don't know/remember

18. Have you ever had a Hepatitis c test?

- No
- Yes
- Refused
- Don't know/remember

19. What was the result of your last Hepatitis C test?

- Negative
- Positive
- Indeterminate
- Refused
- Don't know/remember

Section 4: new and clean needles and the syringe exchange program

20. How long have you been using this program?

- Last four weeks
- ...months
- ...years

21. how often do you use this program?

- Daily
- [ ] times a week
- [ ] times a month
- Refused
- Don't know

22. How did you initially hear about this program?

- A friend (not specified idu) and/or family
- Other injector
- Advertisement
- Health care setting
- Other, specify

23. What do you primarily use this program for?

- Syringe exchange
- Sterile equipment
- Safe sex kit
- Hcv/hiv testing
- Support groups

- Other, specify

24. What resources do you know are available at this program?

- Syringe exchange
- Sterile equipment
- Safe sex skit
- Hcv/hiv testing
- Support groups
- Other, specify

25. Since being in this program, have you changed any of the follow behaviors?

- Less drug use in general: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree
- Reduced injection of drugs: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree
- Stopped/thought of stopping injection of drugs: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree
- Reduced sharing equipment or drug solution: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree
- Stopped sharing equipment or drug solution: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree
- Using condom during every intercourse: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree
- Started/increased condom use: strongly disagree/disagree/somewhat disagree/somewhat agree/agree/strongly agree

## Appendix C

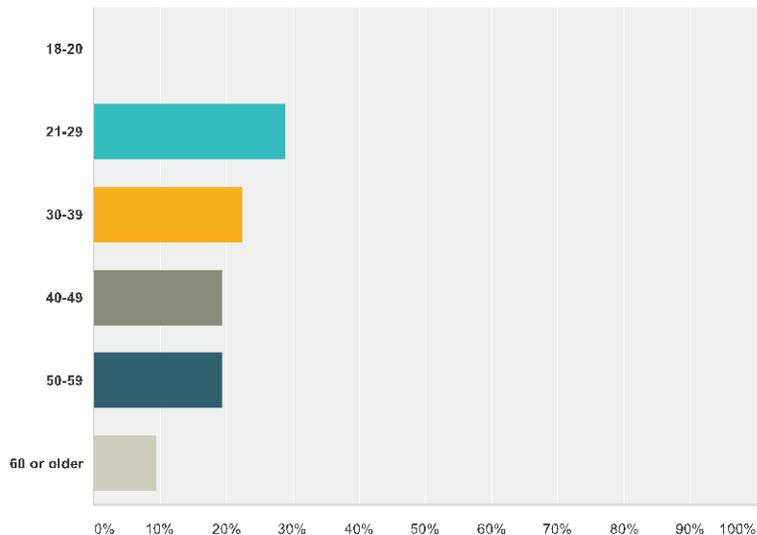
### Responses to Questionnaire using SurveyMonkey Format

Copy of Thesis Change Point

SurveyMonkey

#### Q1 How old are you?

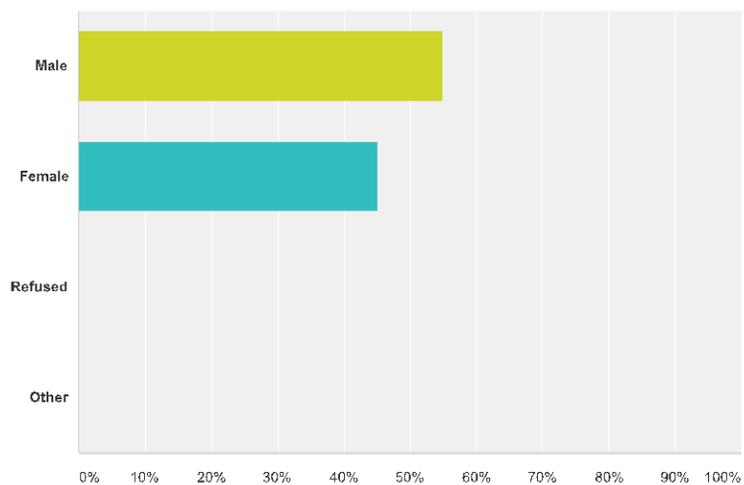
Answered: 31 Skipped: 0



Answer Choices	Responses	Count
18-20	0.00%	0
21-29	29.03%	9
30-39	22.58%	7
40-49	19.35%	6
50-59	19.35%	6
60 or older	9.68%	3
<b>Total</b>		<b>31</b>

**Q2 What is your sex?**

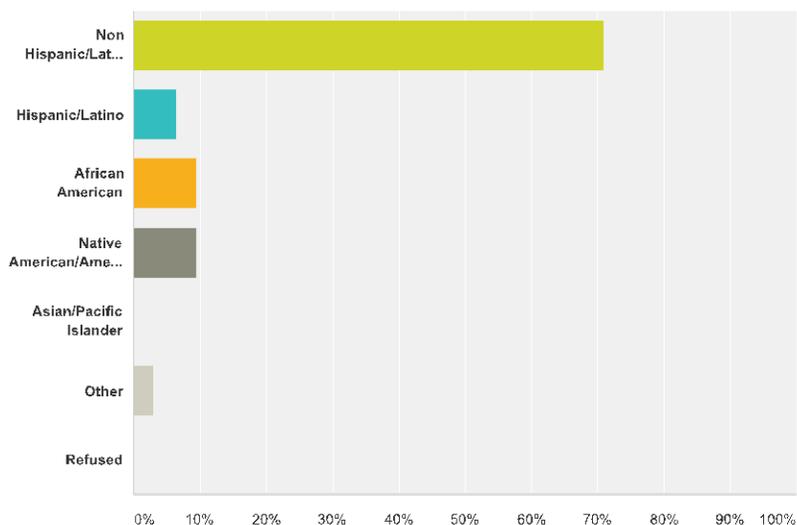
Answered: 31 Skipped: 0



Answer Choices	Responses
Male	54.84% 17
Female	45.16% 14
Refused	0.00% 0
Other	0.00% 0
<b>Total</b>	<b>31</b>

### Q3 To which ethnic group do you belong?

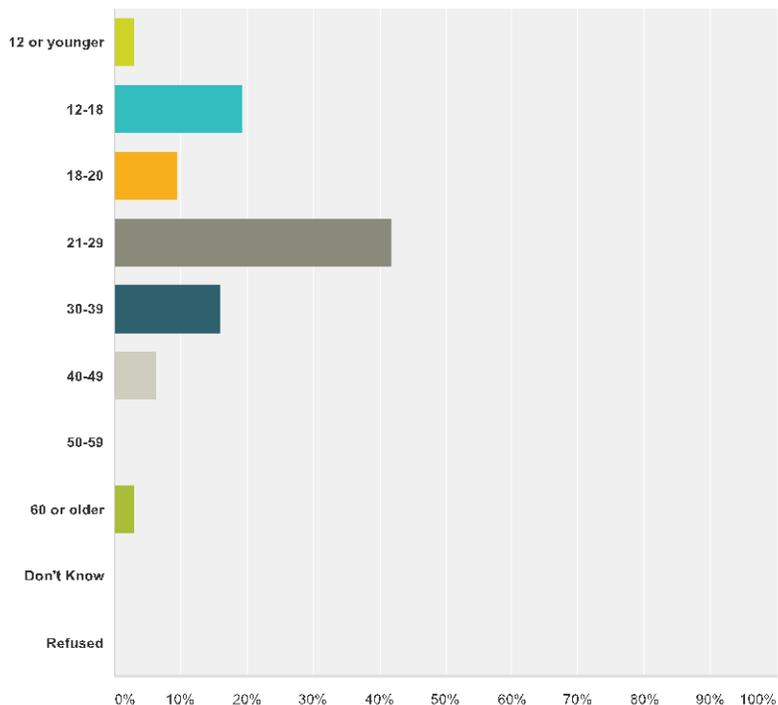
Answered: 31 Skipped: 0



Answer Choices	Responses	Count
Non Hispanic/Latino, Caucasian/White	70.97%	22
Hispanic/Latino	6.45%	2
African American	9.68%	3
Native American/American Indian	9.68%	3
Asian/Pacific Islander	0.00%	0
Other	3.23%	1
Refused	0.00%	0
<b>Total</b>		<b>31</b>

### Q4 What age did you start injecting

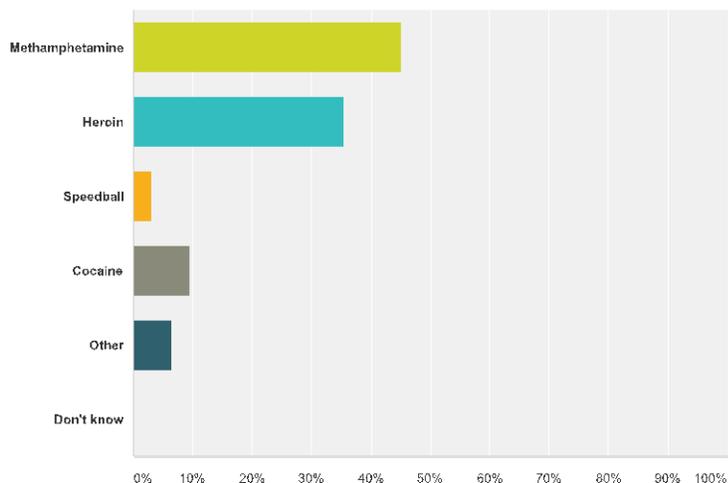
Answered: 31 Skipped: 0



Answer Choices	Responses	
12 or younger	3.23%	1
12-18	19.35%	6
18-20	9.68%	3
21-29	41.94%	13
30-39	16.13%	5
40-49	6.45%	2
50-59	0.00%	0
60 or older	3.23%	1
Don't Know	0.00%	0
Refused	0.00%	0
<b>Total</b>		<b>31</b>

### Q5 What drug did you inject that first time?

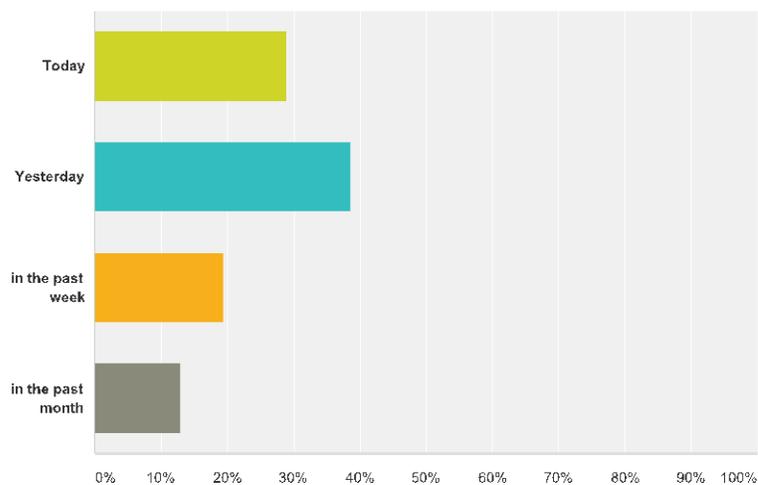
Answered: 31 Skipped: 0



Answer Choices	Responses	Count
Methamphetamine	45.16%	14
Heroin	35.48%	11
Speedball	3.23%	1
Cocaine	9.68%	3
Other	6.45%	2
Don't know	0.00%	0
<b>Total</b>		<b>31</b>

### Q6 When did you last inject a drug?

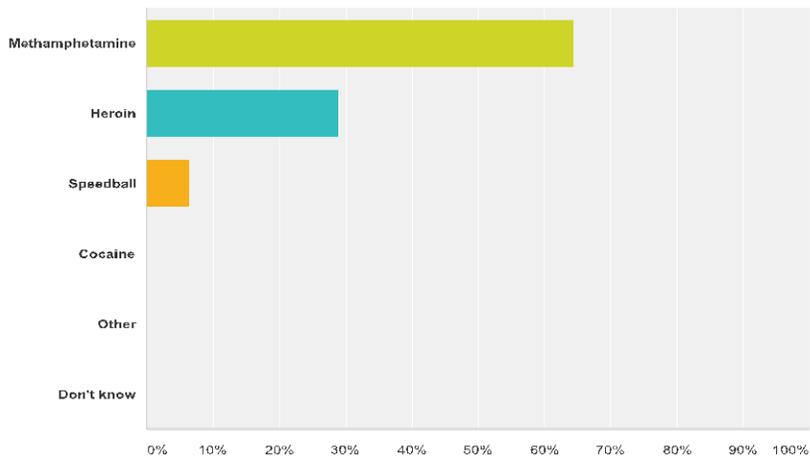
Answered: 31 Skipped: 0



Answer Choices	Responses	Count
Today	29.03%	9
Yesterday	38.71%	12
in the past week	19.35%	6
in the past month	12.90%	4
<b>Total</b>		<b>31</b>

### Q7 What drug did you inject that time?

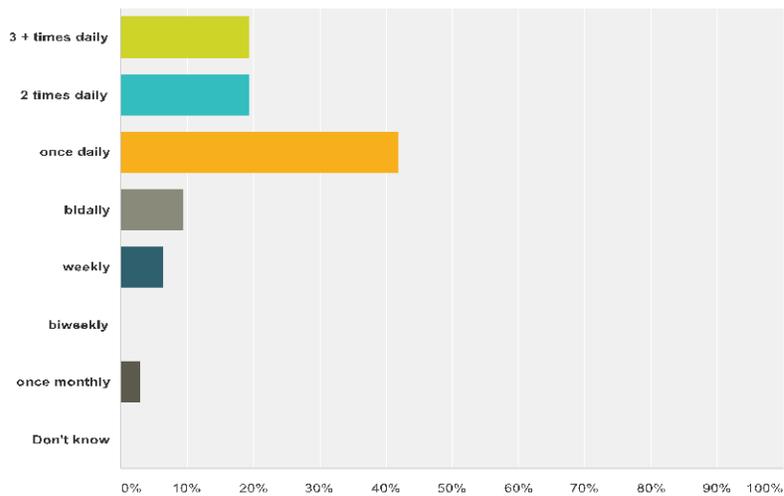
Answered: 31 Skipped: 0



Answer Choices	Responses
Methamphetamine	64.52% 20
Heroin	29.03% 9
Speedball	6.45% 2
Cocaine	0.00% 0
Other	0.00% 0
Don't know	0.00% 0
<b>Total</b>	<b>31</b>

### Q8 How often did you inject in the past month?

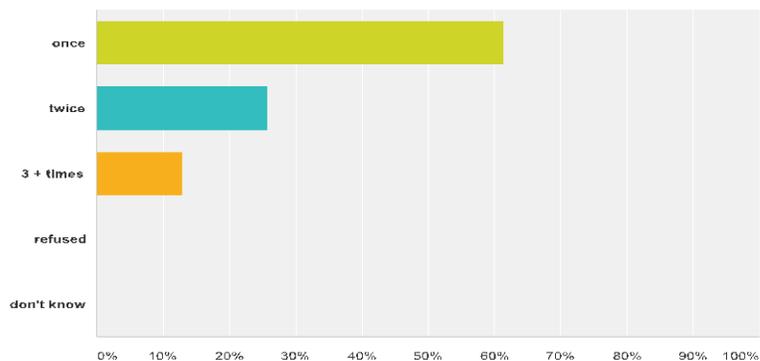
Answered: 31 Skipped: 0



Answer Choices	Responses	Count
3 + times daily	19.35%	6
2 times daily	19.35%	6
once daily	41.94%	13
bidaily	9.68%	3
weekly	6.45%	2
biweekly	0.00%	0
once monthly	3.23%	1
Don't know	0.00%	0
<b>Total</b>		<b>31</b>

**Q9 For the last needle that you used how many times did you inject with it before disposing of it?**

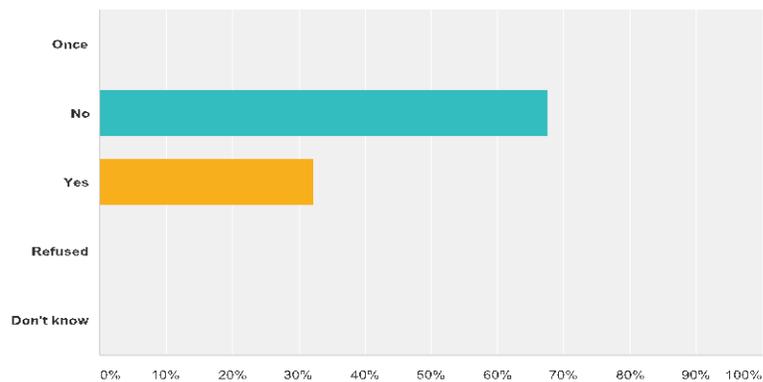
Answered: 31 Skipped: 0



Answer Choices	Responses	
once	61.29%	19
twice	25.81%	8
3 + times	12.90%	4
refused	0.00%	0
don't know	0.00%	0
<b>Total</b>		<b>31</b>

**Q10 Have you ever in you life shared syringe/cooker/cotton/rinse water already used by someone else?**

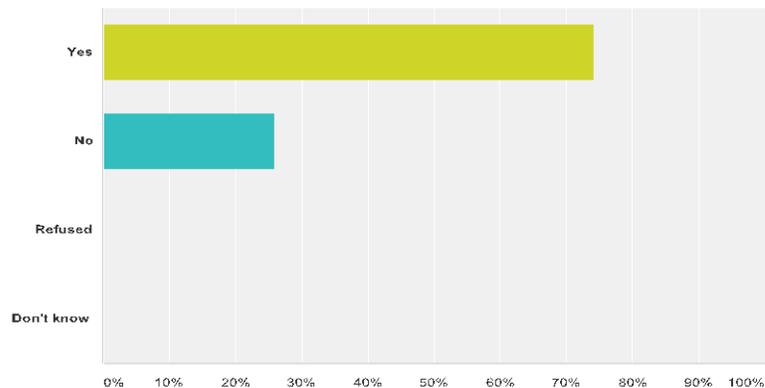
Answered: 31 Skipped: 0



Answer Choices	Responses	
Once	0.00%	0
No	67.74%	21
Yes	32.26%	10
Refused	0.00%	0
Don't know	0.00%	0
<b>Total</b>		<b>31</b>

### Q11 Have you had sexual intercourse in the past 12 month?

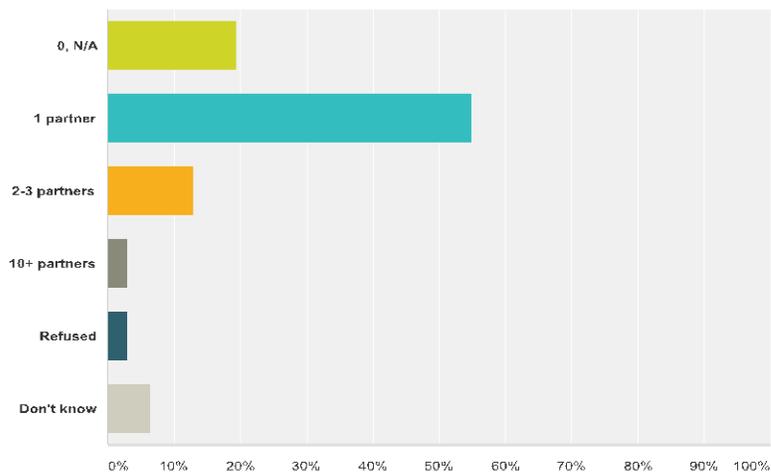
Answered: 31 Skipped: 0



Answer Choices	Responses	
Yes	74.19%	23
No	25.81%	8
Refused	0.00%	0
Don't know	0.00%	0
<b>Total</b>		<b>31</b>

**Q12 If you had more than one steady or regular partner, how many of them have you had in the past month?**

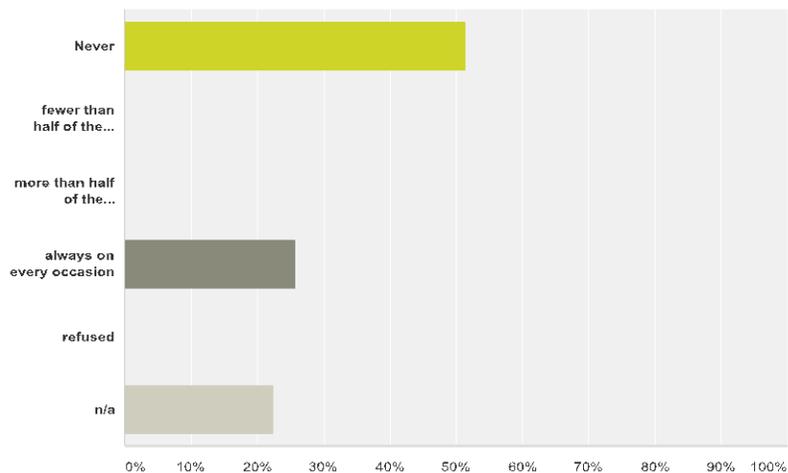
Answered: 31 Skipped: 0



Answer Choices	Responses
0, N/A	19.35% 6
1 partner	54.84% 17
2-3 partners	12.90% 4
10+ partners	3.23% 1
Refused	3.23% 1
Don't know	6.45% 2
<b>Total</b>	<b>31</b>

### Q13 How often have you used protection in the last 12 months?

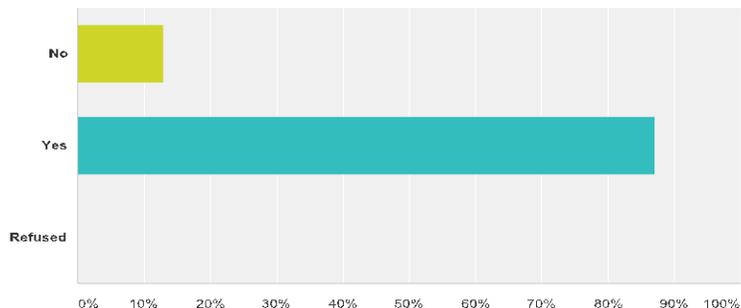
Answered: 31 Skipped: 0



Answer Choices	Responses	
Never	51.61%	16
fewer than half of the occasions	0.00%	0
more than half of the occasions	0.00%	0
always on every occasion	25.81%	8
refused	0.00%	0
n/a	22.58%	7
<b>Total</b>		<b>31</b>

### Q14 Have you ever been tested for HIV?

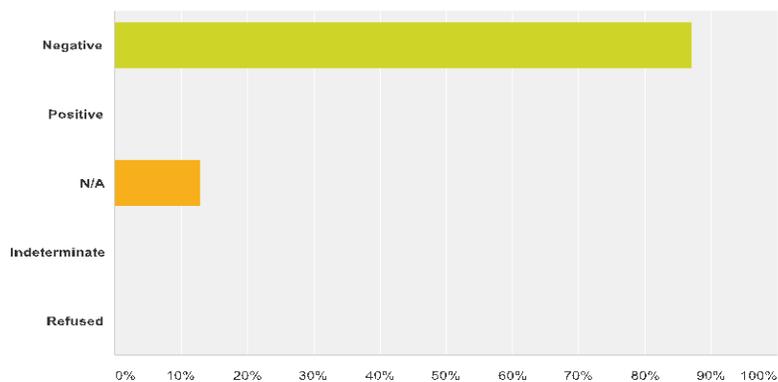
Answered: 31 Skipped: 0



Answer Choices	Responses
No	12.90% 4
Yes	87.10% 27
Refused	0.00% 0
<b>Total</b>	<b>31</b>

### Q15 What was the result of your last HIV test?

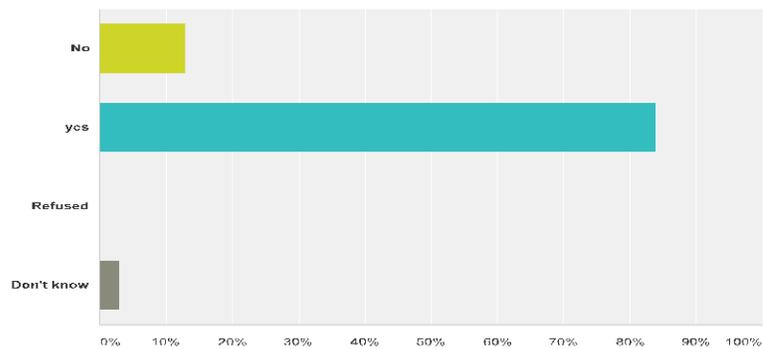
Answered: 31 Skipped: 0



Answer Choices	Responses
Negative	87.10% 27
Positive	0.00% 0
N/A	12.90% 4
Indeterminate	0.00% 0
Refused	0.00% 0
<b>Total</b>	<b>31</b>

**Q16 Have you ever had a Hepatitis C test?**

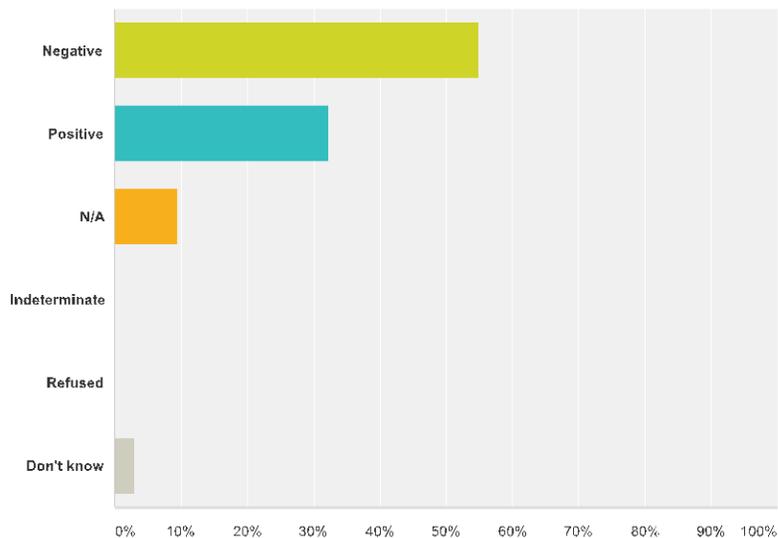
Answered: 31 Skipped: 0



Answer Choices	Responses	Count
No	12.90%	4
yes	83.87%	26
Refused	0.00%	0
Don't know	3.23%	1
<b>Total</b>		<b>31</b>

### Q17 What was the result of your last Hepatitis C test?

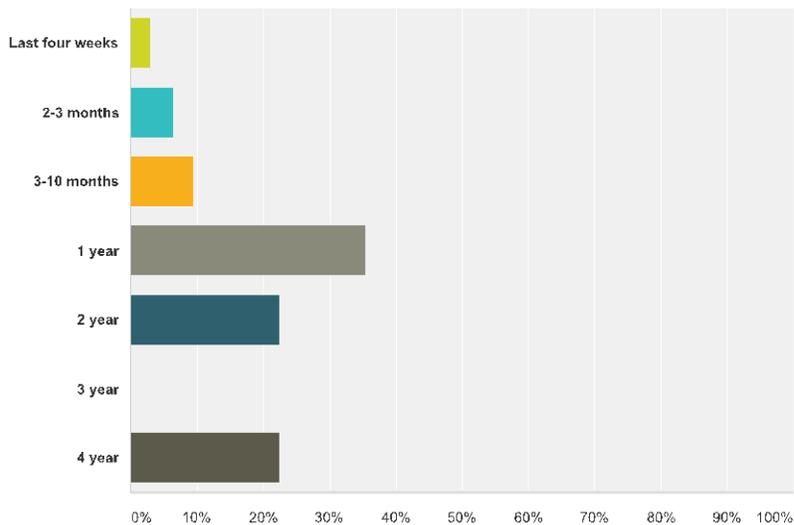
Answered: 31 Skipped: 0



Answer Choices	Responses	
Negative	54.84%	17
Positive	32.26%	10
N/A	9.68%	3
Indeterminate	0.00%	0
Refused	0.00%	0
Don't know	3.23%	1
<b>Total</b>		<b>31</b>

### Q18 How long have you been using this program?

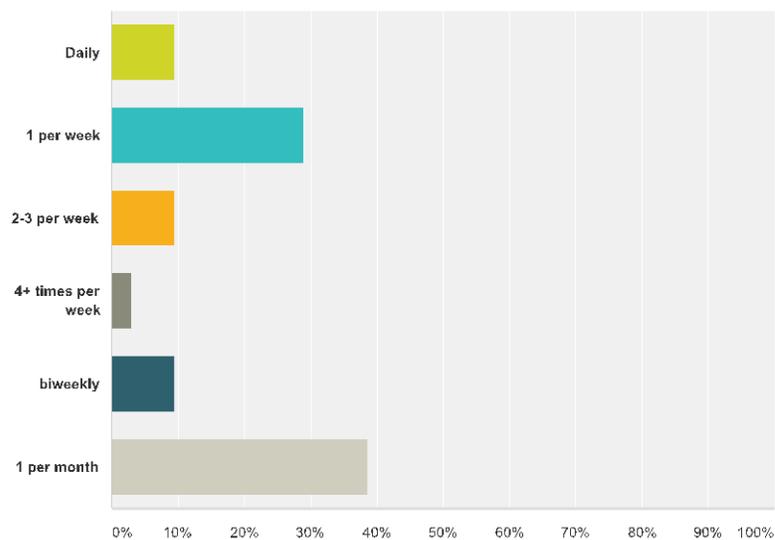
Answered: 31 Skipped: 0



Answer Choices	Responses
Last four weeks	3.23% 1
2-3 months	6.45% 2
3-10 months	9.68% 3
1 year	35.48% 11
2 year	22.58% 7
3 year	0.00% 0
4 year	22.58% 7
<b>Total</b>	<b>31</b>

### Q19 How often do you use this program?

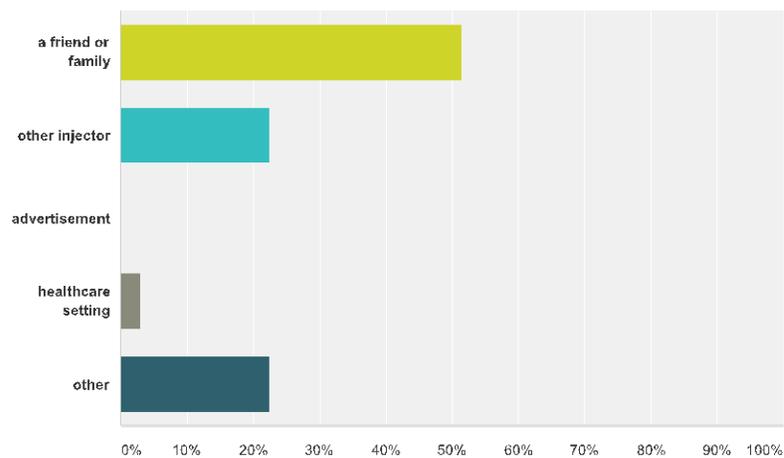
Answered: 31 Skipped: 0



Answer Choices	Responses
Daily	9.68% 3
1 per week	29.03% 9
2-3 per week	9.68% 3
4+ times per week	3.23% 1
biweekly	9.68% 3
1 per month	38.71% 12
<b>Total</b>	<b>31</b>

### Q20 How did you initially hear about this program?

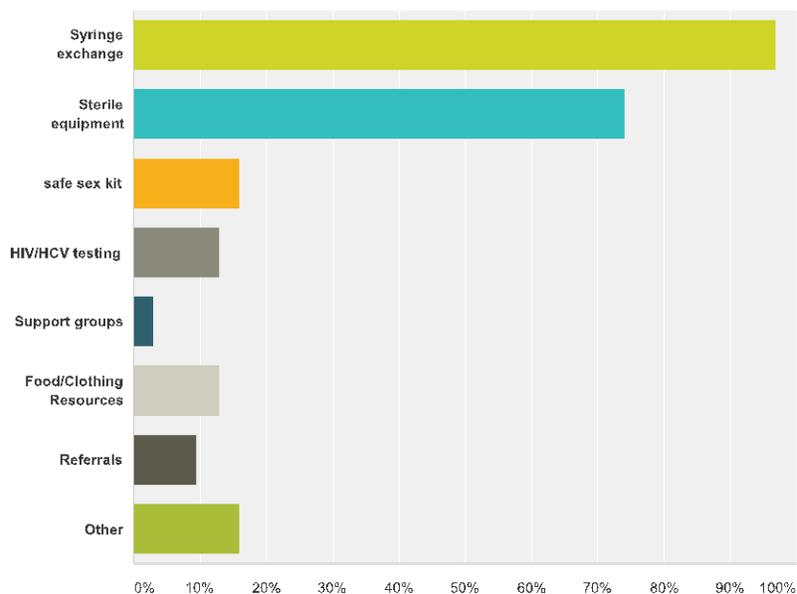
Answered: 31 Skipped: 0



Answer Choices	Responses
a friend or family	51.61% 16
other injector	22.58% 7
advertisement	0.00% 0
healthcare setting	3.23% 1
other	22.58% 7
<b>Total</b>	<b>31</b>

### Q21 What do you primarily use this program for?

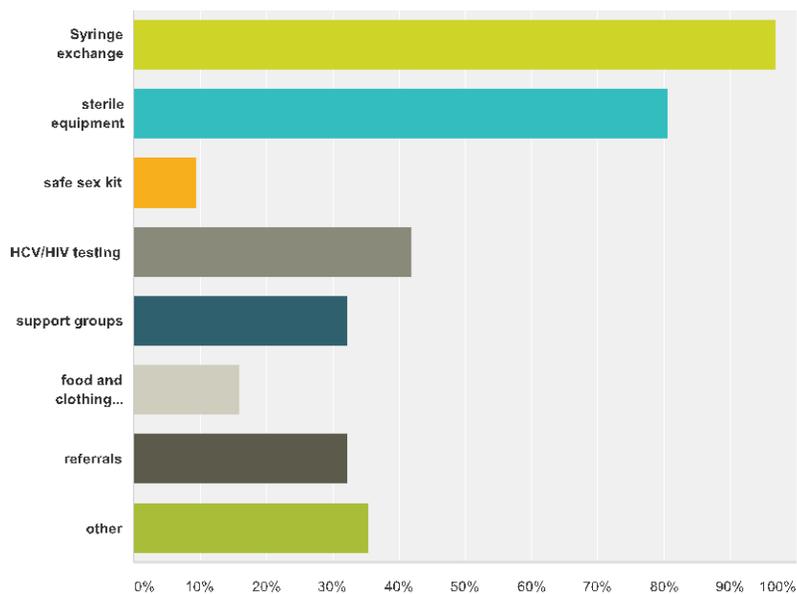
Answered: 31 Skipped: 0



Answer Choices	Responses
Syringe exchange	96.77% 30
Sterile equipment	74.19% 23
safe sex kit	16.13% 5
HIV/HCV testing	12.90% 4
Support groups	3.23% 1
Food/Clothing Resources	12.90% 4
Referrals	9.68% 3
Other	16.13% 5
<b>Total Respondents: 31</b>	

### Q22 What resources do you know are available at this program?

Answered: 31 Skipped: 0



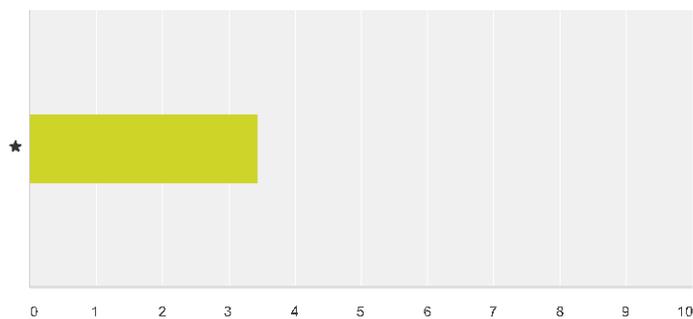
Answer Choices	Responses
Syringe exchange	96.77% 30
sterile equipment	80.65% 25
safe sex kit	9.68% 3
HCV/HIV testing	41.94% 13
support groups	32.26% 10
food and clothing resources	16.13% 5
referrals	32.26% 10
other	35.48% 11
<b>Total Respondents: 31</b>	

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SurveyMonkey

**Q23 Since using this program, have you changes the follow behaviors: Less drug use in general**

Answered: 31 Skipped: 0



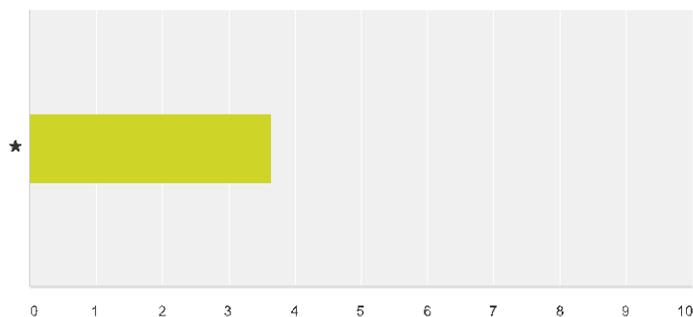
	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	0.00%	48.39%	6.45%	6.45%	29.03%	9.68%	0.00%	31	3.45
	0	15	2	2	9	3	0		

Copy of Thesis Change Point

SurveyMonkey

**Q24 Since using this program, have you changes the follow behaviors: Reduced injection of drugs**

Answered: 31 Skipped: 0



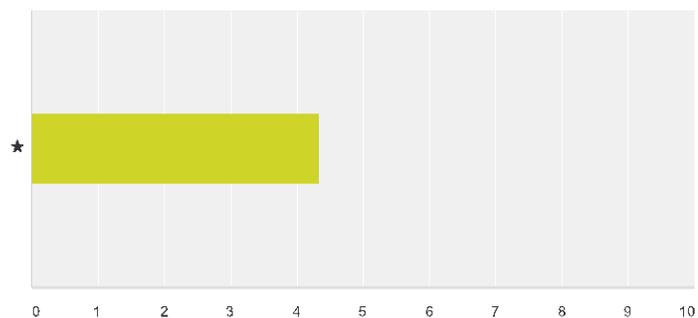
	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	0.00%	45.16%	3.23%	3.23%	38.71%	9.68%	0.00%	31	3.65
	0	14	1	1	12	3	0		

Copy of Thesis Change Point

SurveyMonkey

**Q25 Since using this program, have you changes the follow behaviors: Stopped or thought about stopping injection of drugs**

Answered: 31 Skipped: 0



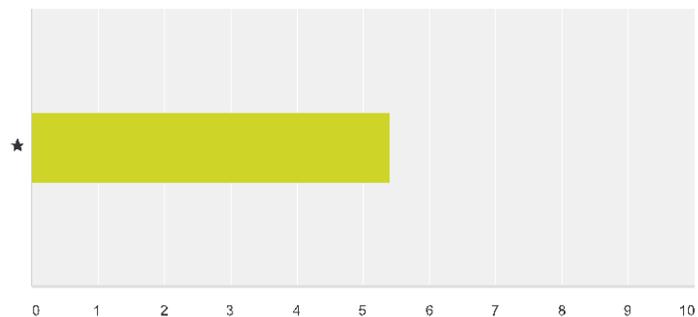
	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	0.00%	22.58%	0.00%	9.68%	54.84%	12.90%	0.00%	31	4.35
	0	7	0	3	17	4	0		

Copy of Thesis Change Point

SurveyMonkey

**Q26 Since using this program, have you changes the follow behaviors: reduced sharing equipment**

Answered: 31 Skipped: 0



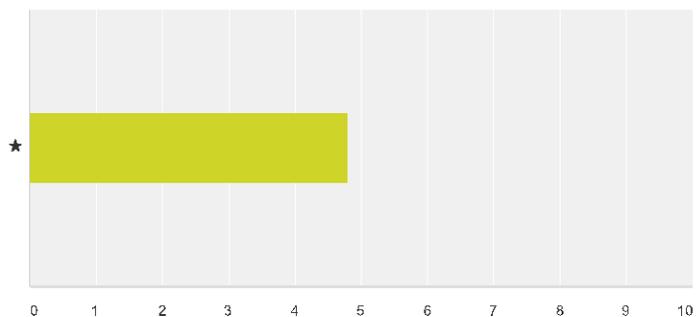
	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	0.00%	0.00%	0.00%	3.23%	32.26%	29.03%	35.48%	31	5.40
	0	0	0	1	10	9	11		

Copy of Thesis Change Point

SurveyMonkey

**Q27 Since using this program, have you changes the follow behaviors: stopped sharing equipment**

Answered: 31 Skipped: 0



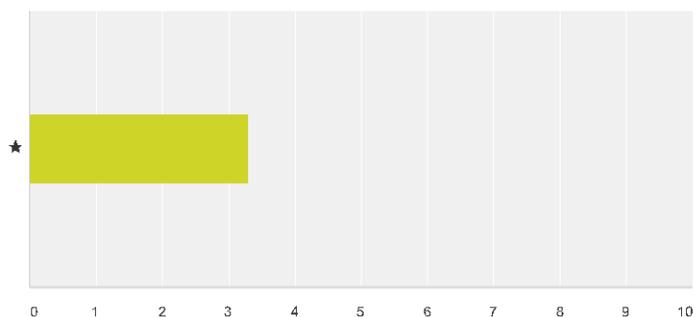
	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	0.00%	3.23%	0.00%	6.45%	32.26%	6.45%	51.61%	31	4.80
	0	1	0	2	10	2	16		

Copy of Thesis Change Point

SurveyMonkey

**Q28 Since using this program, have you changes the follow behaviors: used condoms every intercourse**

Answered: 31 Skipped: 0



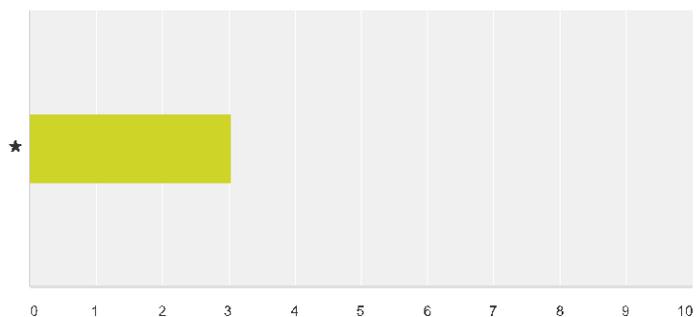
	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	3.23%	35.48%	3.23%	3.23%	25.81%	3.23%	25.81%	31	3.30
	1	11	1	1	8	1	8		

Copy of Thesis Change Point

SurveyMonkey

**Q29 Since using this program, have you changes the follow behaviors: started or increased condom use**

Answered: 31 Skipped: 0



	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	agree	strongly agree	N/A	Total	Weighted Average
★	3.23%	41.94%	0.00%	6.45%	22.58%	0.00%	25.81%	31	3.04
	1	13	0	2	7	0	8		