

# Young Adults with Hepatitis C Virus Summary Report

January 30, 2013

## Overview:

In August 2011, the Michigan Department of Community Health (MDCH) received funding from the Centers for Disease Control and Prevention (CDC). The purpose of this funding was to conduct enhanced surveillance for Viral Hepatitis. The following summary details successes and findings from the CDC funding for the Young Adults with Hepatitis C Virus enhanced surveillance survey.

Beginning in February 2012, the MDCH Hepatitis C Study Coordinator recruited and conducted interviews of cases of Hepatitis C among 18-25 year olds reported between July 1, 2011 and April 31, 2012. The Hepatitis C Study Coordinator attempted to contact 632 cases. Two hundred and sixty-eight cases were successfully contacted by phone.

## Summary:

The case interview process ended August 2012 with a total of 68 interviews. The data provided below represents the information gathered through these interviews.

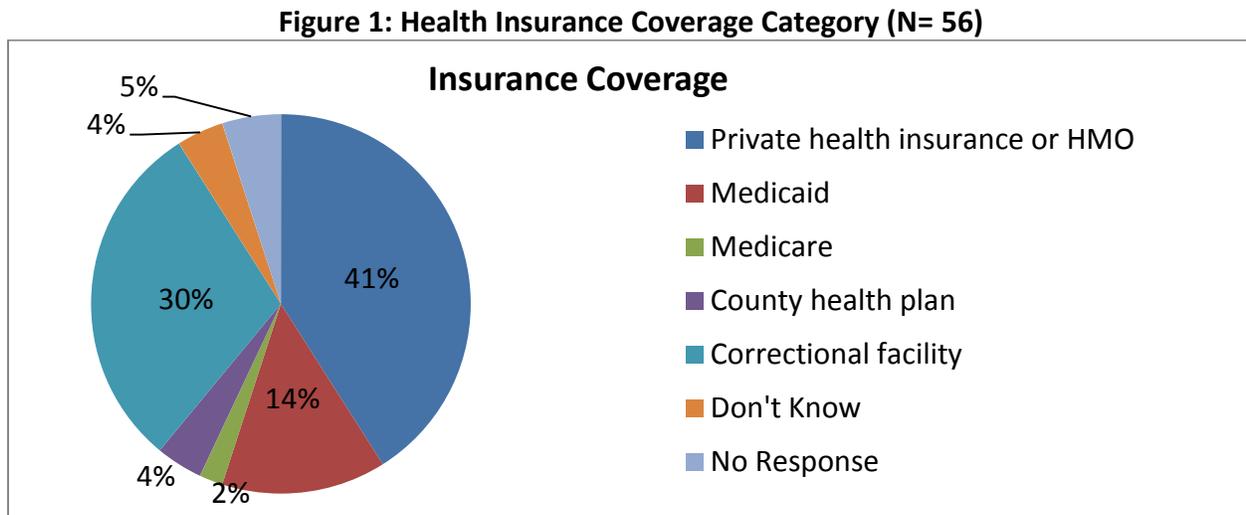
**Demographics.** Individuals interviewed ranged in age from 18 to 26 with an average age of 23 years. The majority of participants were male accounting for 63 percent and the remaining 36 percent were female. Ninety-five percent of the individuals interviewed identified themselves as white, 3 percent were black, 1 percent was American Indian/Alaska Native and 3 percent were other races. Ethnicity data was collected, and 6 percent of those interviewed were Hispanic and 1 percent was Arab/Chaldean. Sexual orientation data was also collected, with 91 percent of those interviewed identifying themselves as heterosexual or straight, 7 percent as bisexual and 2 percent as homosexual, gay or lesbian. These demographics are fairly representative of the entire population of reported viral hepatitis C cases among 18 to 25 year olds in Michigan (see table 2).

Participants were asked where they had been living most of the time during the six months prior to their interview. Forty-four percent were living in a correctional facility at the time of their interview, 24 percent were living with their parents, 12 percent were living at a substance use disorder treatment facility or halfway house, 10 percent lived on their own, 9 percent were living in someone else's house, and 1 percent were living in a shelter or public assistance residence. See table 1 for a map illustrating the county of residence for study participants.

Thirty-one of the sixty-eight individuals who completed an interview were in the Michigan Department of Corrections at the time of their interview. Participants were asked about any contact they may have had with the correctional system. Eighty-seven percent of study participants had been in jail, prison or a juvenile detention center in their lifetime. Sixty-four percent of those individuals had been in jail, prison or a juvenile detention center 4 or more times. Twenty-four percent had been incarcerated two to three times, and 10 percent incarcerated only once.

**Access to Health Care.** A number of questions in the interview focused on participants' access to health care, including insurance coverage, testing, and treatment information. Seventy-five percent of study participants had health insurance coverage at the time of their interview. This includes Medicaid or Medicare (See figure 1). Sixty-eight percent had a regular source of health care, physician or other health care provider.

Figure 1 shows the type of insurance participants had at the time of their interview.



In an effort to assess viral hepatitis C awareness, participants were asked if they had heard of Hepatitis C Virus (HCV) prior to our contacting them to participate in this project. Sixty-five (96 percent) participants had heard of HCV. The majority (33 percent) of participants stated they had received most of their information about hepatitis C from a physician or other health care provider. Additionally, 20 percent had received most of their information from a correctional facility and 18 percent from a substance use disorder treatment program. The remaining 29 percent had received most of their information from friends, family, media or school.

**Testing.** The data from the sixty-eight interviews indicates that the majority of cases were aware they had hepatitis C, with 59 (87 percent) cases stating they knew their HCV status prior to our contacting them. Individuals who knew their status had known their HCV status for an average of twelve months. Participants had first learned that they were infected with hepatitis C with a range of one month to four years. Sixty-five (96 percent) remember where they received their HCV test (See Figure 2). Few cases identified hepatitis C related symptomology, with eleven (17 percent) individuals stating they were tested because they had symptoms of acute hepatitis or had elevated liver enzymes (See Figure 3). Ten (15 percent) individuals interviewed stated that they had yellowing of the skin or eyes in the twelve months prior to their interview. Existing data suggest that 20 to 30 percent of individuals with HCV experience symptoms of acute HCV infection. Therefore, 17 percent reporting acute symptomology is representative and expected within this sample.

Figure 2 shows the percentage of participants tested for viral hepatitis at various types of facilities.

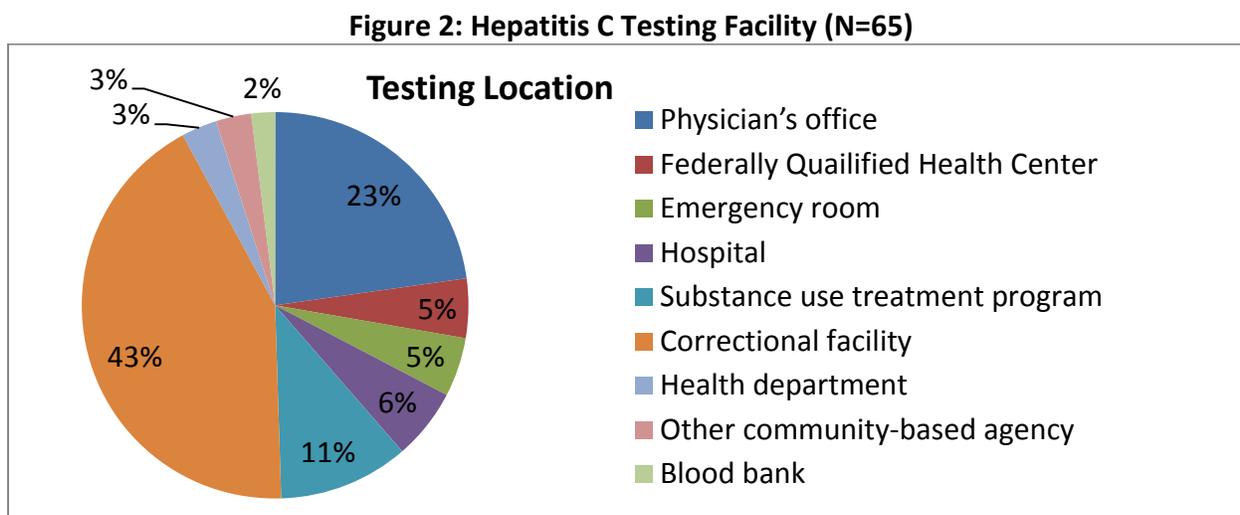
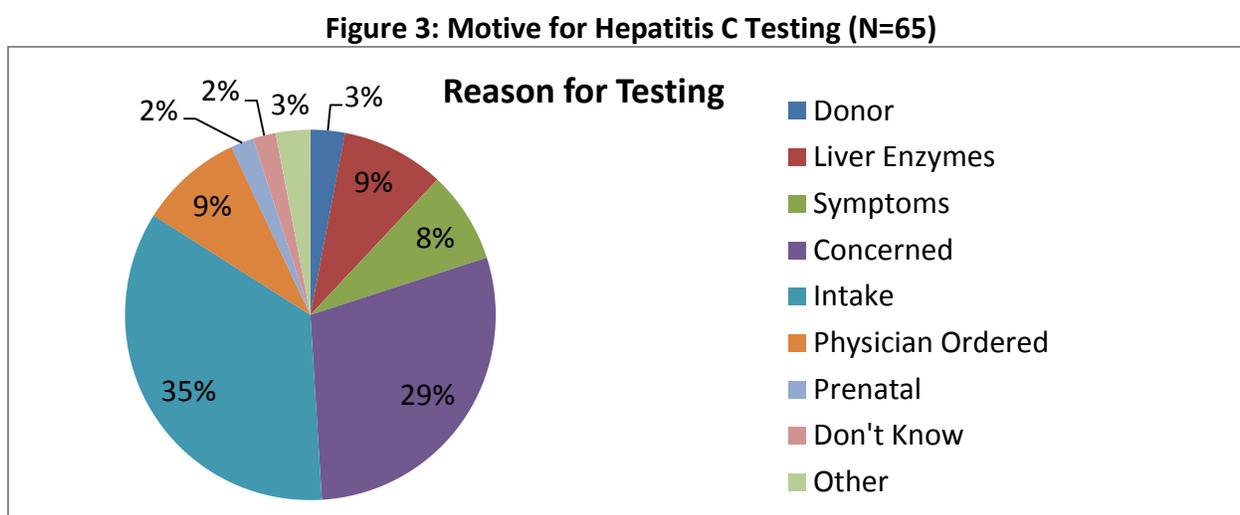


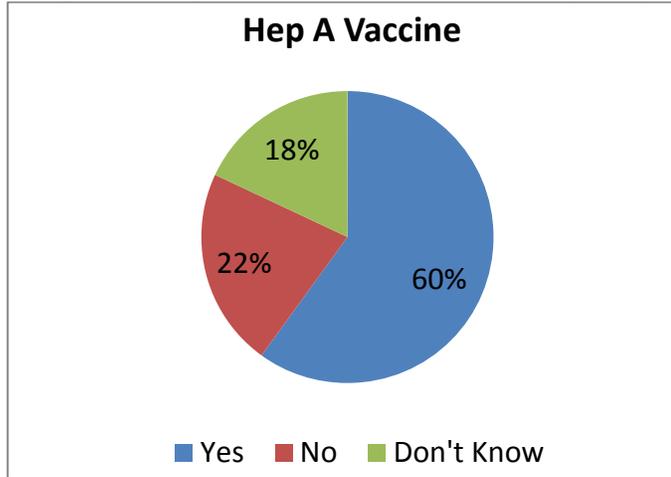
Figure 3 shows the various reasons participants were tested for viral hepatitis C.



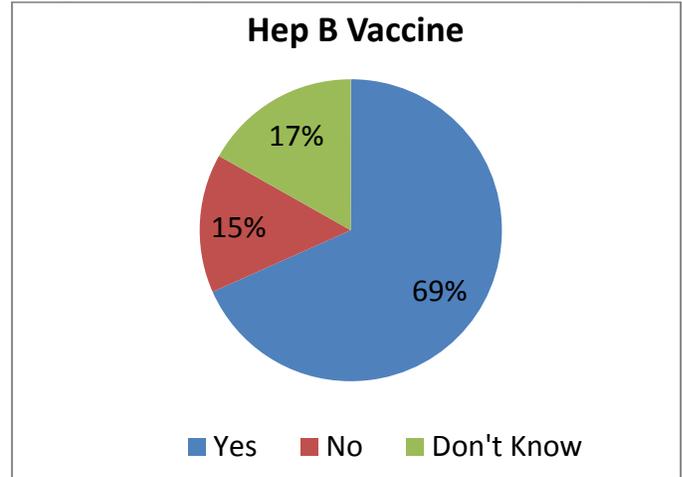
**Viral Hepatitis C Treatment.** The interview included questions on hepatitis A and hepatitis B vaccinations (See Figure 4 & 5). The interview also included questions regarding HCV treatment. A little over half, 51 percent of participants, were seeing a physician or other health care provider specifically because of their hepatitis C infection. Although more than half were seeing a HCV specific physician, 95 percent of participants had not been and were not being treated for hepatitis C at the time of their interview.

Figures 4 and 5 show the status of participants' hepatitis A and B vaccinations.

**Figure 4: Hepatitis A Vaccination Status (N=67)**



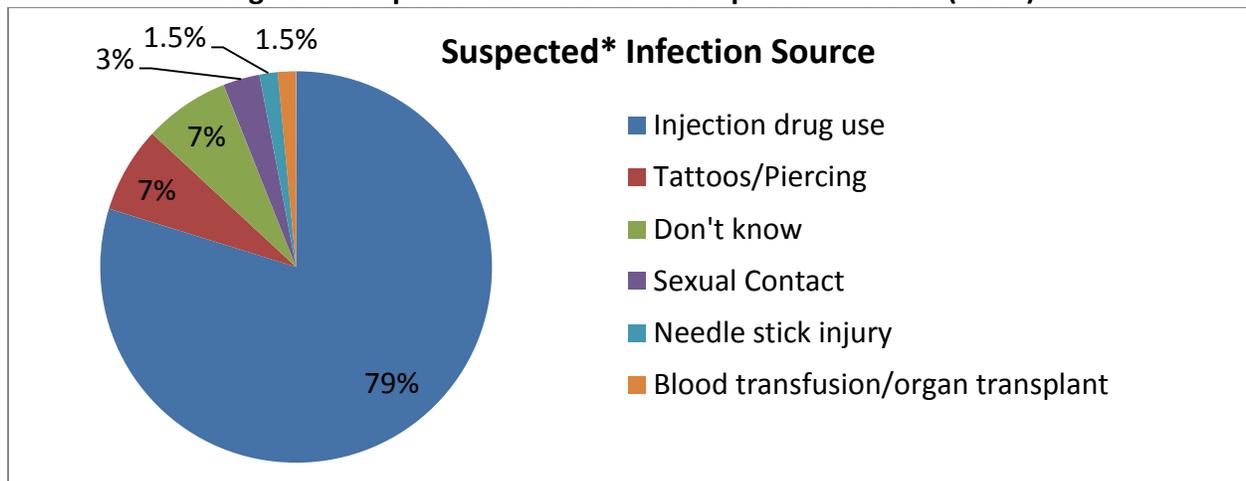
**Figure 5: Hepatitis B Vaccinations Status (N=67)**



**Risk Factors.** Many of the cases interviewed identified various risk factors. The majority, 79 percent, believed they had been infected with hepatitis C through injection drug use (see figure 6).

Figure 6 shows the source or activity participants believe to be responsible for their exposure to HCV.

**Figure 6: Suspected\* Cause of Viral Hepatitis Infection (N=67)**



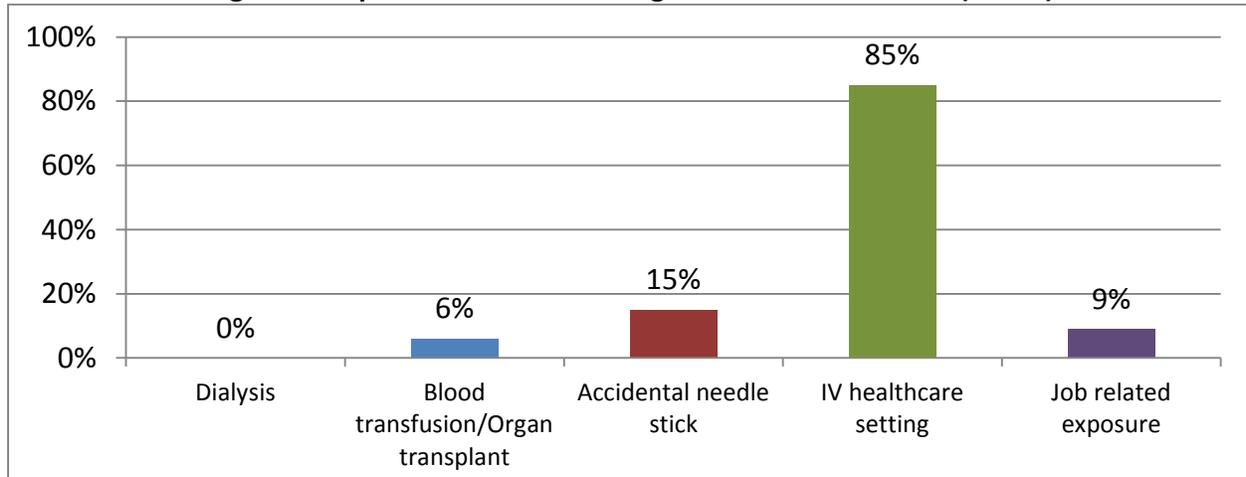
\* Though this question asks about the individuals' perceived route of exposure it does not necessarily reflect the true route of exposure. As such, some proportions in figure 6 may be over- or under-estimates of the true route of exposure. For instance, we do not have evidence to definitively prove that 7 percent of HCV cases among young adults are due to tattooing or piercing. The actual percentage is likely lower.

**Medical Procedures.** The enhanced interviews included questions regarding medical procedure as another possible risk factor for HCV infection. Although the spread of HCV has in the past been associated with some medical procedure such as dialysis, we do not have evidence to believe that medical procedures are the cause for the increase seen in viral hepatitis C cases among young adults in Michigan. It is unclear what role

healthcare facilities play in the transmission of HCV in the young adult population and is an area requiring further studies and more in-depth investigation.

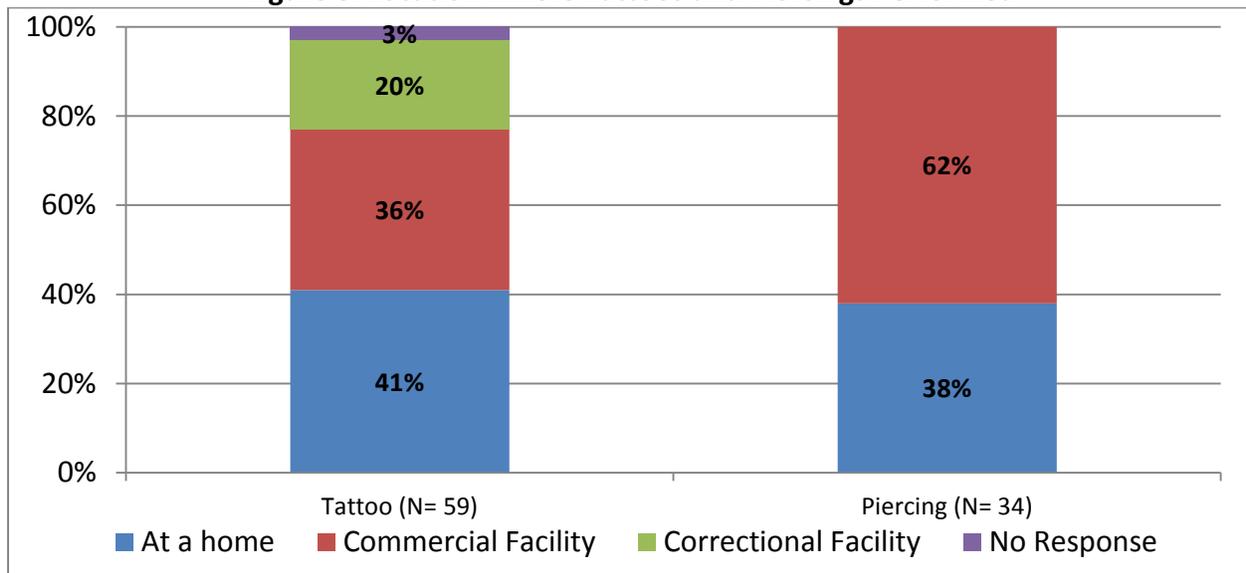
Figure 7 shows the percentage of participants' exposure to blood through a variety of medical procedures. Each column represents an individual question within the interview.

**Figure 7: Exposure to Blood through Medical Procedures (N= 67)**



Fifty-nine (88 percent) individuals had tattoos, with twenty-four (41 percent) of them reporting they had their tattoo done at home or someone else's home. Twelve (20 percent) had their tattoo done in a correctional facility and twenty-one (37 percent) had their tattoo done at a commercial facility. Thirty-four (51 percent) had body piercing and thirteen (38 percent) of them had been done at their home or someone else's home.

**Figure 8: Location Where Tattoos and Piercings Performed**

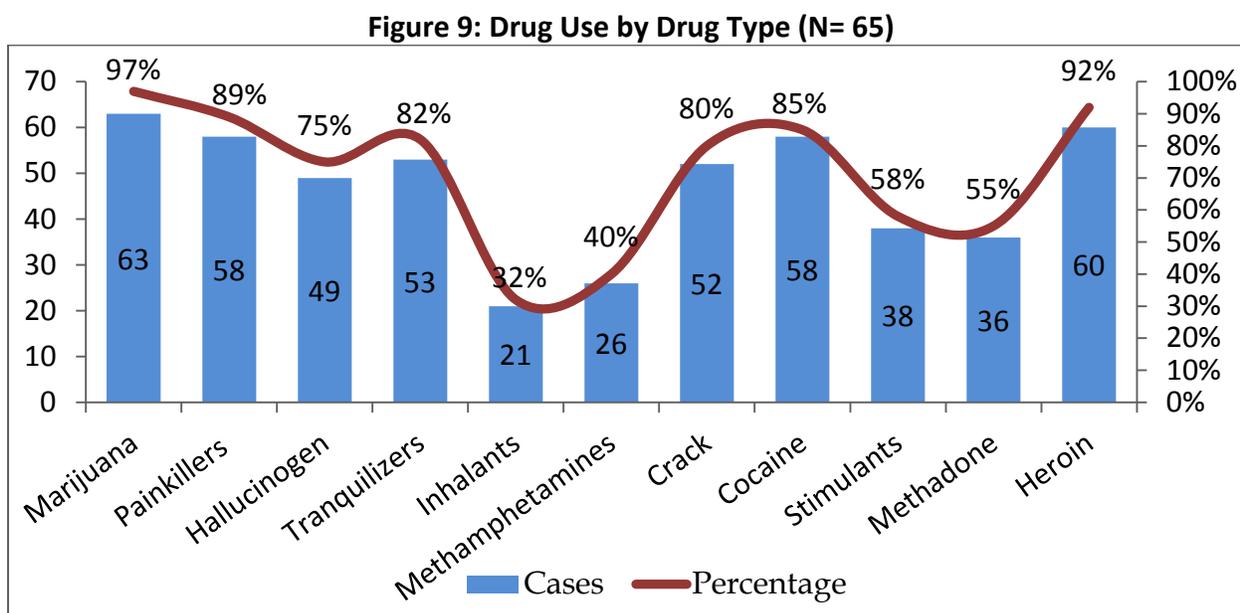


The state of Michigan has a body art licensing program that issues licenses to tattoo and piercing facilities. Individuals who choose to get a tattoo or piercing should be encouraged to have them performed at a licensed body art facility. For more information on body art facility licensing please visit [Body Art Facilities](#).

**Substance Use.** All (100 percent) participants (excluding the individual with a partial interview) had consumed alcohol in their lifetime. The average age at first drink was fourteen with a range from seven to eighteen years. In the thirty days prior to their interview, 76 percent of participants did not drink alcohol and 86 percent had not consumed five or more drinks on one occasion.

Street drug use appeared to be prevalent among the cases interviewed. Sixty-five (97 percent) of the cases interviewed reported that they had used street drugs in their lifetime. The average age at first street drugs use was fourteen years old. Twelve (18 percent) participants indicated that they were using street drugs at the time of their interview. Fifty-five (82 percent) cases stated they had used prescriptions drugs that were not prescribed for them or in a way that was not intended by the prescribing physician, in order to get high. The average age at first prescription drug use was sixteen years old. Six (11 percent) indicated that they were using prescription drugs at the time of their interview.

Figure 9 illustrates the number and percentage of participants that identified using the listed drug types.



Sixty (94 percent) of the individuals interviewed reported having used drugs intravenously in their lifetime. The average age at first injection was 19 years old with a range from thirteen to twenty-four years of age. Thirty-seven (63 percent) of those who had injected drugs indicated that heroin was the first drug they injected (see figure 10). In the six months prior to their interview, 67 percent had not injected (see figure 11).

Table 1 shows the type of drug participants reported using the first time they injected drugs.

**Table 1: Drug Type Injected on First Intravenous Drug Use (N=59)**

First Drug Injected:	Number Reported (Percentage):
Heroin	37 (63%)
Oxycontin	8 (13%)
Morphine	4 (7%)
Cocaine	2 (3%)
Other	2 (3%)
Crack	1 (1.7%)
Heroin/Cocaine	1 (1.7%)
Heroin/Oxycontin	1 (1.7%)
Methadone	1 (1.7%)
Methamphetamine	1 (1.7%)
Oxymorphone	1 (1.7%)

Figure 10 illustrates how often participants injected in the six months prior to their interview.

**Figure 10: Frequency of Intravenous Drug Use (N= 60).**

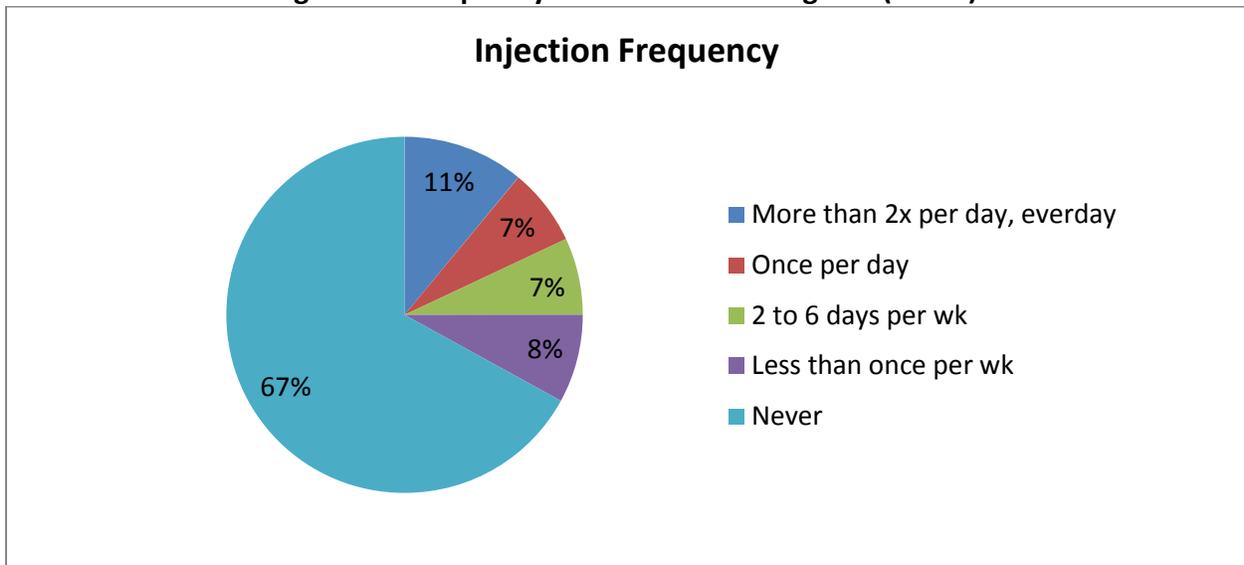
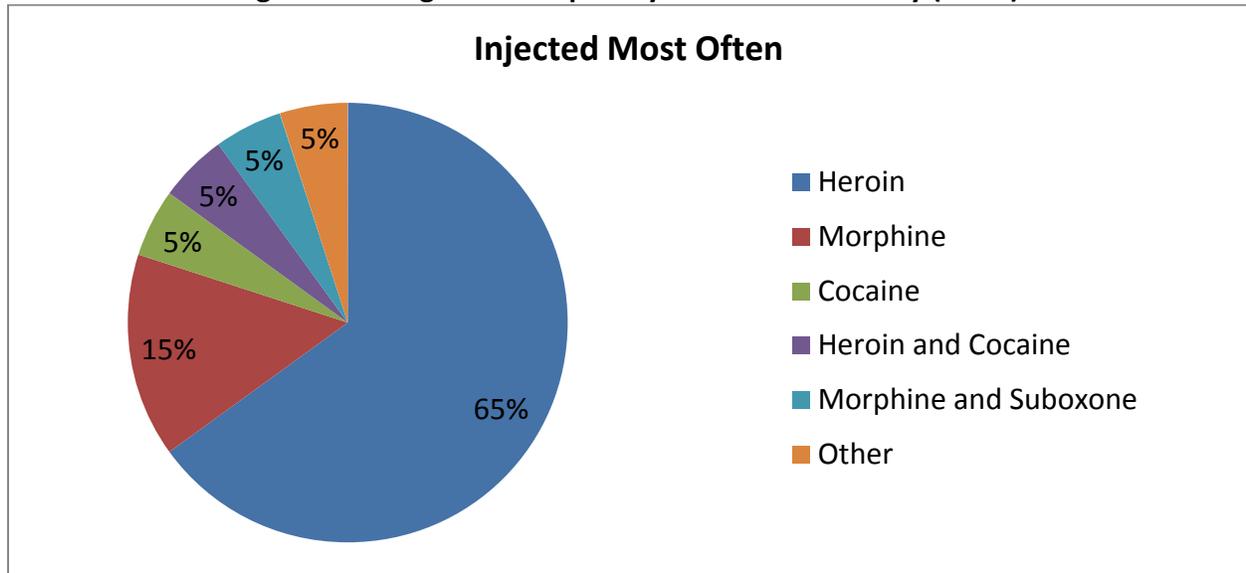


Figure 11 illustrates the drug type study participants injected most often in the six months prior to their interview.

**Figure 11: Drug Most Frequently Used Intravenously (N=20).**



Peer relationships appeared to have an influence on participants' injection behavior. More than half, 57 percent had been introduced to injection drug use by their friends (see figure 12). Thirty percent injected at a shooting partner or friend's residence (see figure 13). Eleven (58 percent) of participants reported injecting with a shooting partner or friend most often in the six months prior to their interview (see figure 14).

Figure 12 shows who introduced study participants to intravenous drug use.

**Figure 12: Introduction to Injection Use. (N=60)**

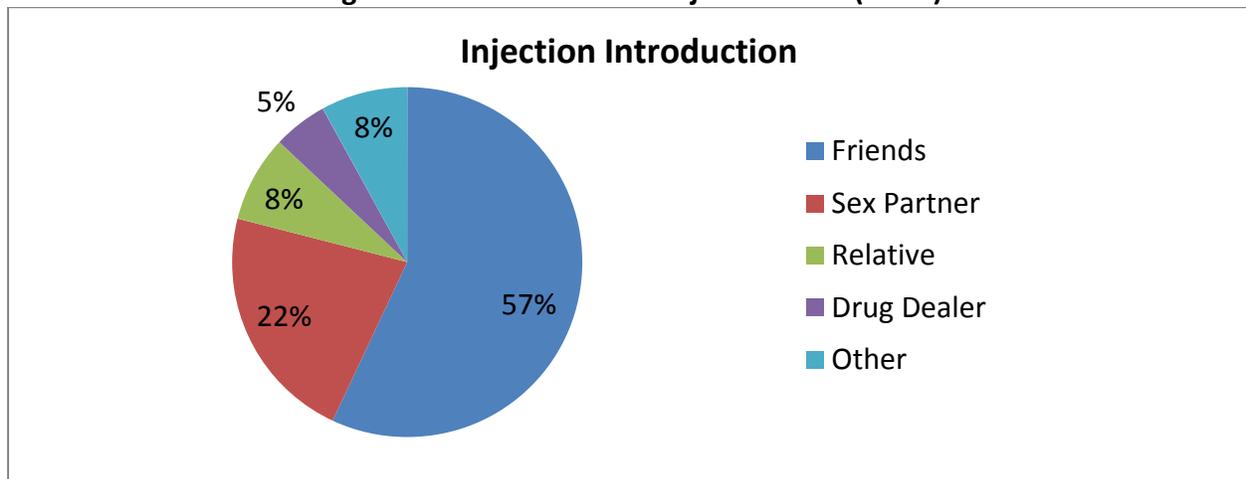


Figure 13 illustrates the location participants reported using drugs intravenously most often in the six months prior to their interview.

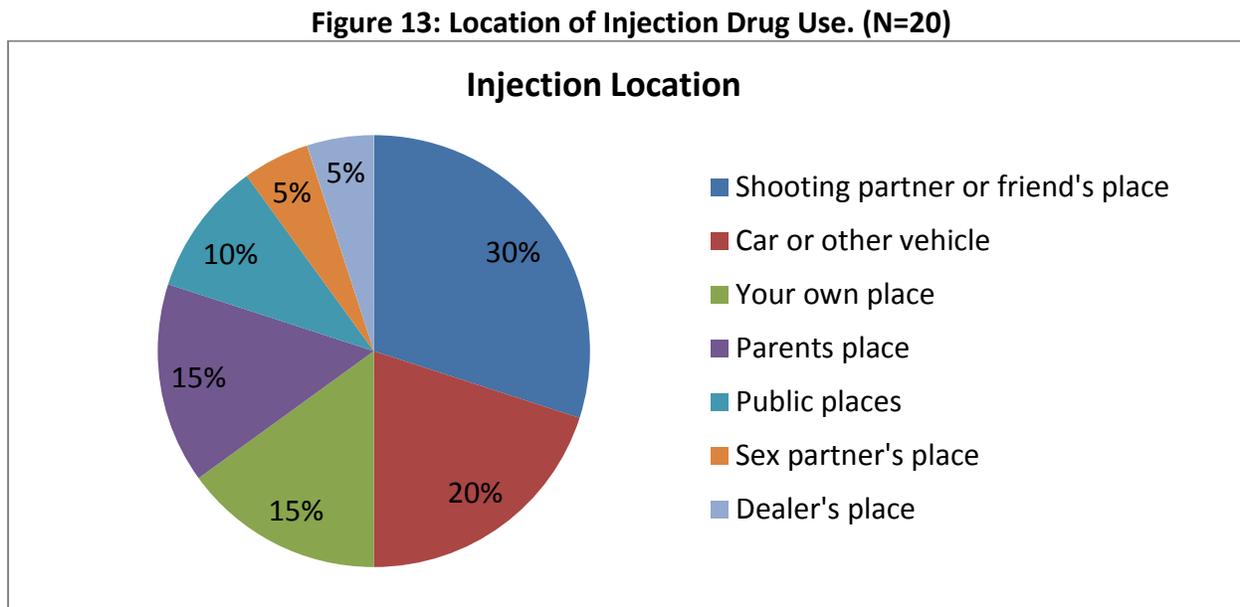
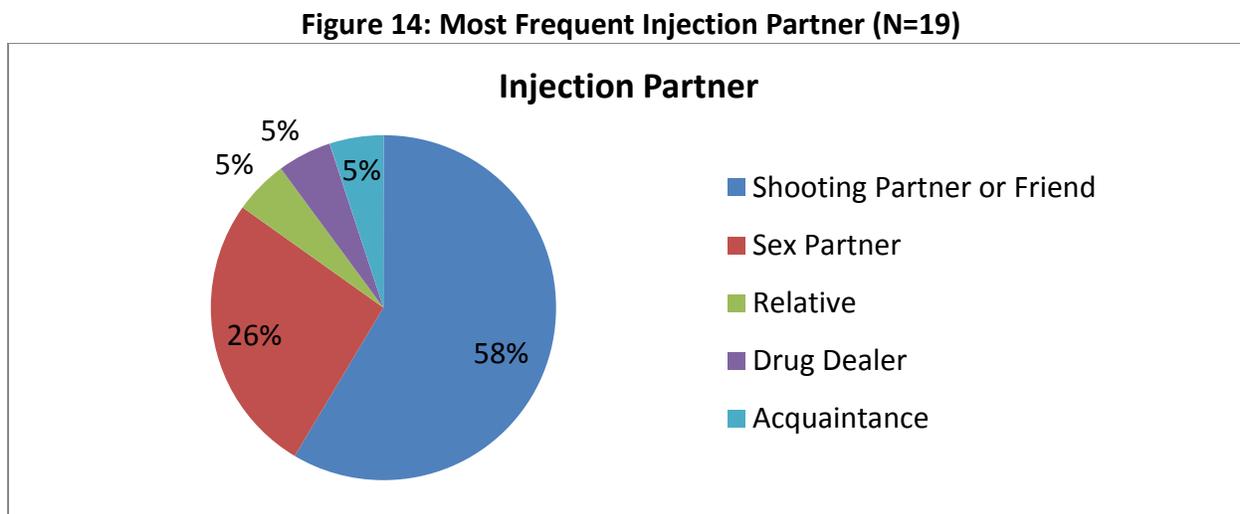


Figure 14 shows the partner participants reported injecting with most often in the six months prior to their interview.



There were a series of questions regarding intravenous drug paraphernalia use for participants who stated they had used drugs intravenously. In the data collected through these questions, we see an increased percentage of participants sharing water, cottons, and cookers “more than half the time to always” compared to needles. This implies that there is some level of understanding that sharing needles is harmful and may lead to the spread of infection. However, there appears to be less knowledge that sharing other drug works or paraphernalia such as cottons can also contribute to the spread of infection (see figures 15 through 20).

Figure 15 illustrates the frequency at which participants injected with a syringe previously used by another injector in the six months prior to their interview.

**Figure 15: Frequency of Injection with Previously Used Needle (N=19)**

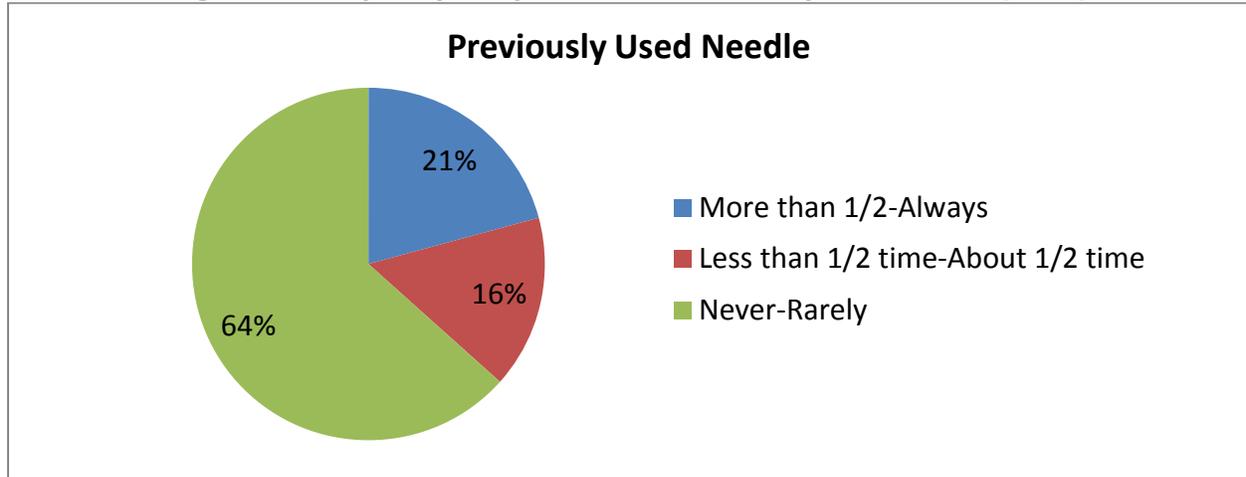


Figure 16 illustrates the frequency at which participants divided up drugs with somebody else by using a needle in the six months prior to their interview.

**Figure 16: Frequency of Drug Splitting with Needle (N= 19)**

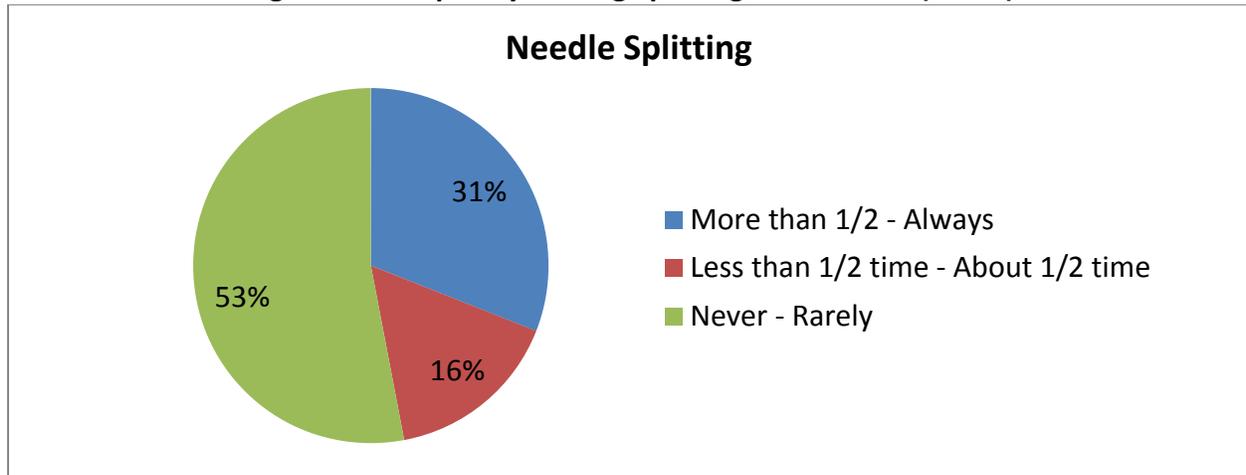


Figure 17 illustrates the frequency at which participants who divided up drugs with somebody else by using a needle had divided those drugs with a needle that had been previously used by someone to inject drugs.

**Figure 17: Frequency of Drug Splitting with Used Needled (N= 12)**

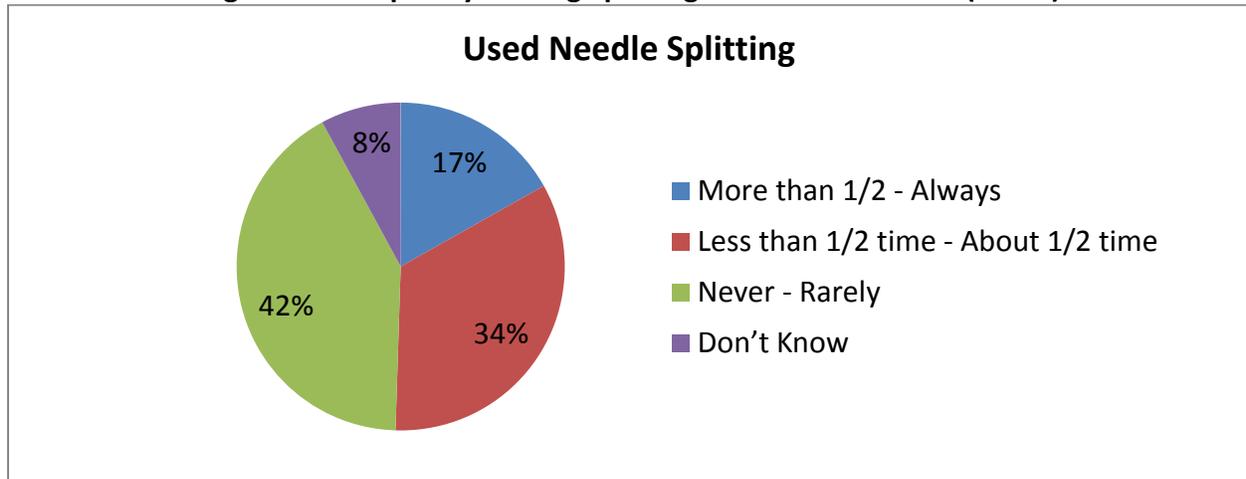


Figure 18 illustrates the frequency at which participants used a cooker with someone or after someone else in the six months prior to their interview.

**Figure 18: Frequency of Shared Cooker Use (N= 19)**

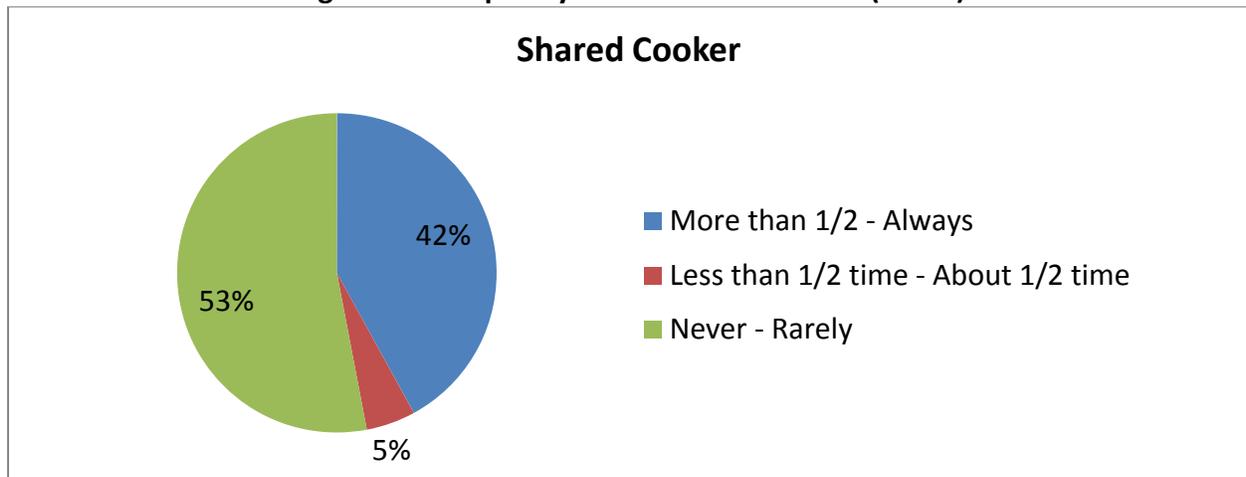


Figure 19 illustrates the frequency participants used a cotton at the same time or after another person in the six months prior to their interview.

**Figure 19: Frequency of Shared Cotton Use (N= 19)**

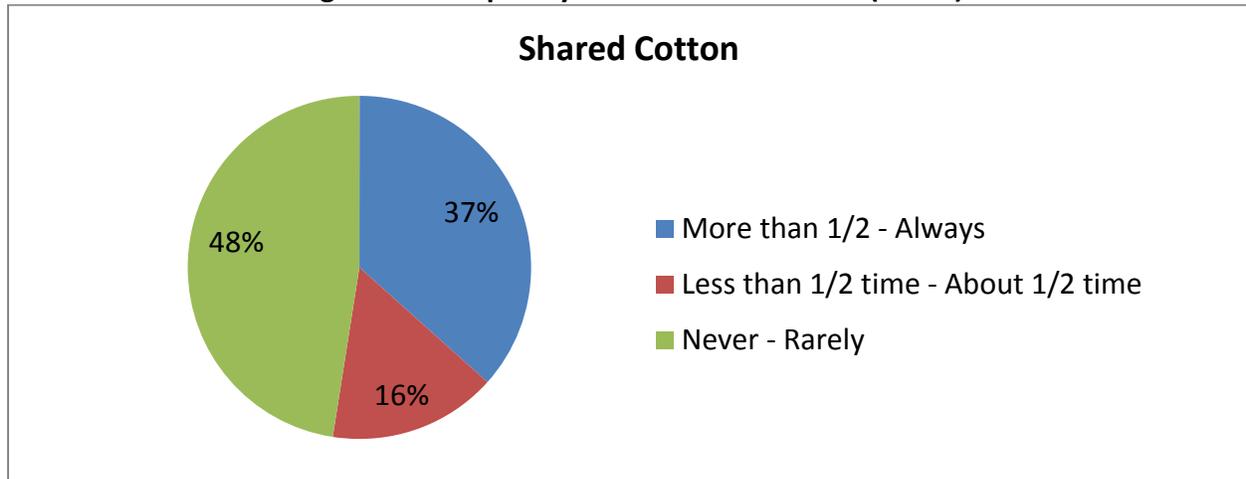
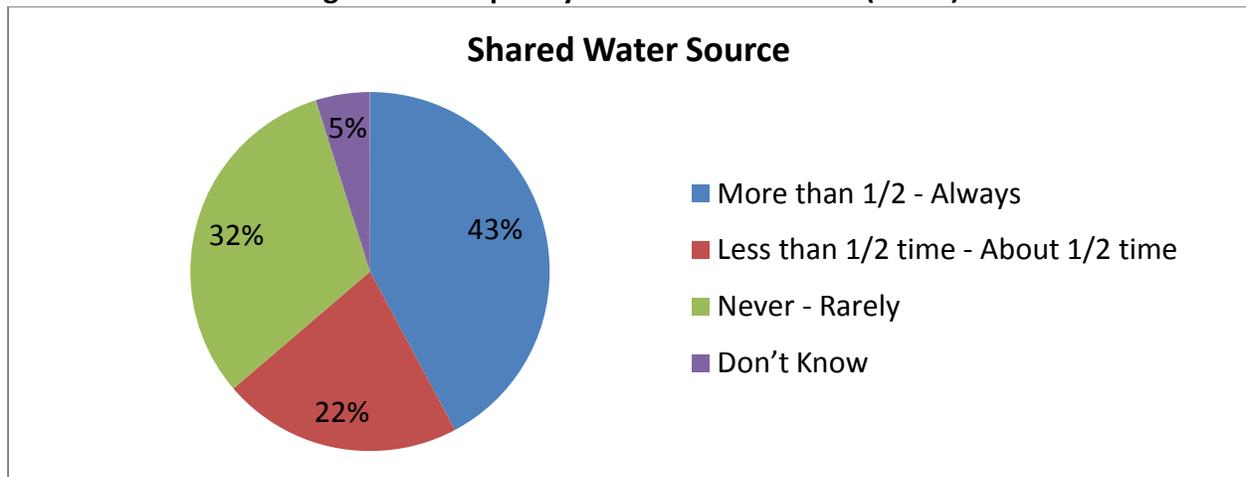


Figure 20 illustrates the frequency participants used rinse water with another person or after another person drew up water or rinsed their needle in it, within the six months prior to their interview.

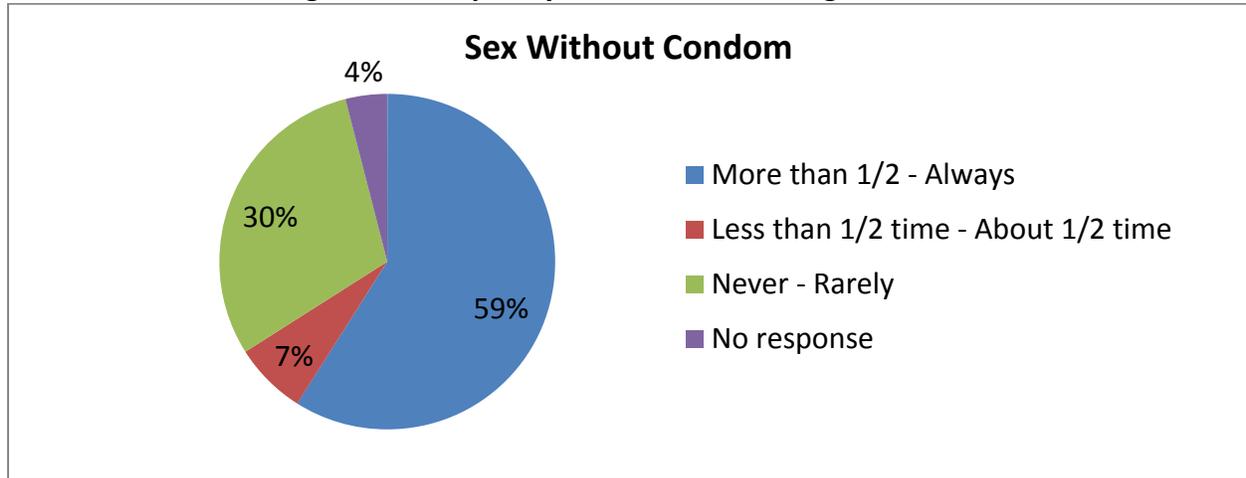
**Figure 20: Frequency of Shared Water Use (N= 19)**



**Sexual Behavior.** HCV can be passed during sex, though it is believed to be uncommon. Studies have shown having multiple sex partners, or HIV, or engaging in rough sex can increase the risk of spreading the virus during sex (CDC FAQ: <http://www.cdc.gov/hepatitis/HCV/PDFs/HepCGeneralFactSheet.pdf>). In the six months prior to their interview, participants had an average of one sex partner, with a range from zero to twenty sex partners. Three participants indicated that they had exchanged sex for money, drugs, or a place to stay. In the six months prior to their interview, 33 percent of participants had sex with someone who injects drugs. Similarly, 22 percent had sex with a person or persons infected with hepatitis C. The majority of participants, 59 percent, indicated they had sex without using a condom “more than half the time or greater” (see figure 21). Thirty-eight percent of participants had been treated for a sexually transmitted disease or infection in their lifetime.

Figure 21 shows the frequency at which participants had sex without using a condom in the six months prior to their interview.

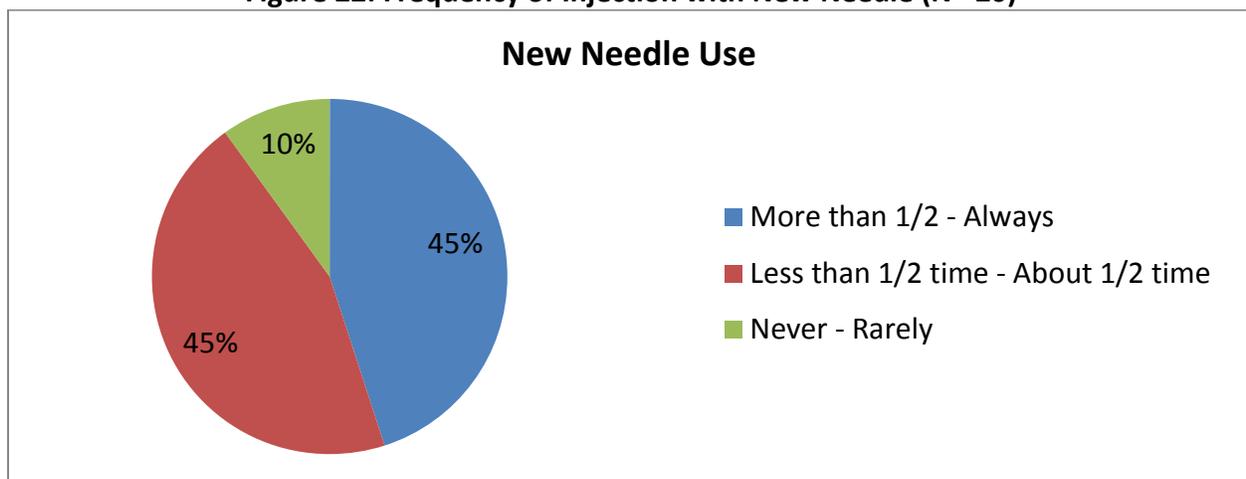
**Figure 21: Frequency of Sex without Using a Condom**



**Risk Reduction.** In the six months prior to their interview, 45 percent of participants injected using a new, sterile needle “more than half the time or greater” (see figure 22). Seventy-nine percent of participants reported getting most or more than half of their new needles and syringes from a pharmacy or drug store. The remaining 21 percent had gotten their new needles from a friend, family member or sex partner. Twenty-three percent of participants reported that there is a needle or syringe exchange program in their community. Thirty-three percent of the participants with a needle or syringe exchange program in their community knew where the exchange program was located.

Figure 22 illustrates the frequency at which participants injected using a new sterile needle in the six months prior to their interview.

**Figure 22: Frequency of Injection with New Needle (N= 20)**



Ninety-two percent of participants had gone through substance use disorder or drug treatment in their lifetime. Participants had been in substance use disorder or drug treatment an average of three times with a

range from one to fourteen times in treatment. Forty-two percent of participants were in drug treatment at the time of their interview. Those currently in drug treatment had been in the substance use disorder or drug treatment program for an average of sixteen and a half weeks, with a range from one day to forty weeks (ten months) in treatment.

Limitations:

The sample population often has a significant impact on the outcome of enhanced surveillance. One limitation for this project was the small sample size. The number of participants in this study only accounted for 11 percent (68 participants out of 632 total cases) of the total population of new viral hepatitis C cases among eighteen to twenty-five year olds reported in Michigan between July 1, 2011 and April 30, 2012. Study participants were recruited on a voluntary basis and were not provided any incentive to join in the project. Funds were not available to provide incentives to promote a higher number of participants.

The sample population appears to display a demographically representative distribution of the population. However, with such a small percentage of the population in the study there is a possibility of survey bias; with those completing the interview being significantly different than those who choose not to participate. Therefore, we cannot be sure that the experiences or behaviors of the sample populations are representative of the entire population. Furthermore, though we were able to find relationships and correlations within the data, we cannot be sure that they are statistically significant. The small sample size limits our ability to generalize our findings to the entire population of young adults diagnosed with HCV in Michigan. For future research projects with this population, providing incentives would be beneficial as a way to increase the number of participants.

An additional sample limitation for this project was the large number of individuals residing in a correctional facility. Nearly half, 46 percent (31 participants) of the individuals interviewed were living in the Michigan Department of Corrections (MDOC) at the time of their interview. 112 of the 632 (18 percent) cases were individuals residing in a correctional facility. In an effort to include that proportion of the population, the decision was made to collaborate with MDOC and conduct in-person interviews. The MDOC nurses were willing and able to conduct in person interviews on our behalf. The response rate for the in person interviews were greater than anticipated and more than a quarter of the cases residing in correctional facilities were interviewed.

The large number of MDOC residents in the sample has an impact on the demographic representation of the population. Given the demographic make-up of the MDOC population and large number of MDOC residents in this study, some demographic data for this study may not be representative of the young adult HCV population. For example, MDOC has a larger percentage of male residents, and in the sample demography, we see a larger percentage of males than in the population at large. Additionally, MDOC residences are unemployed, which likely accounts for the high percentage of unemployment described in the sample population.

The interview questionnaire included questions on activities that are both illegal in the State of Michigan and prohibited in the MDOC. Therefore, much of the data could underestimate those behaviors among study participants residing in the MDOC. To reduce the impact of this limitation, future research should utilize supplementary recruitment measures to increase the number of non-corrections residents in the sample size.

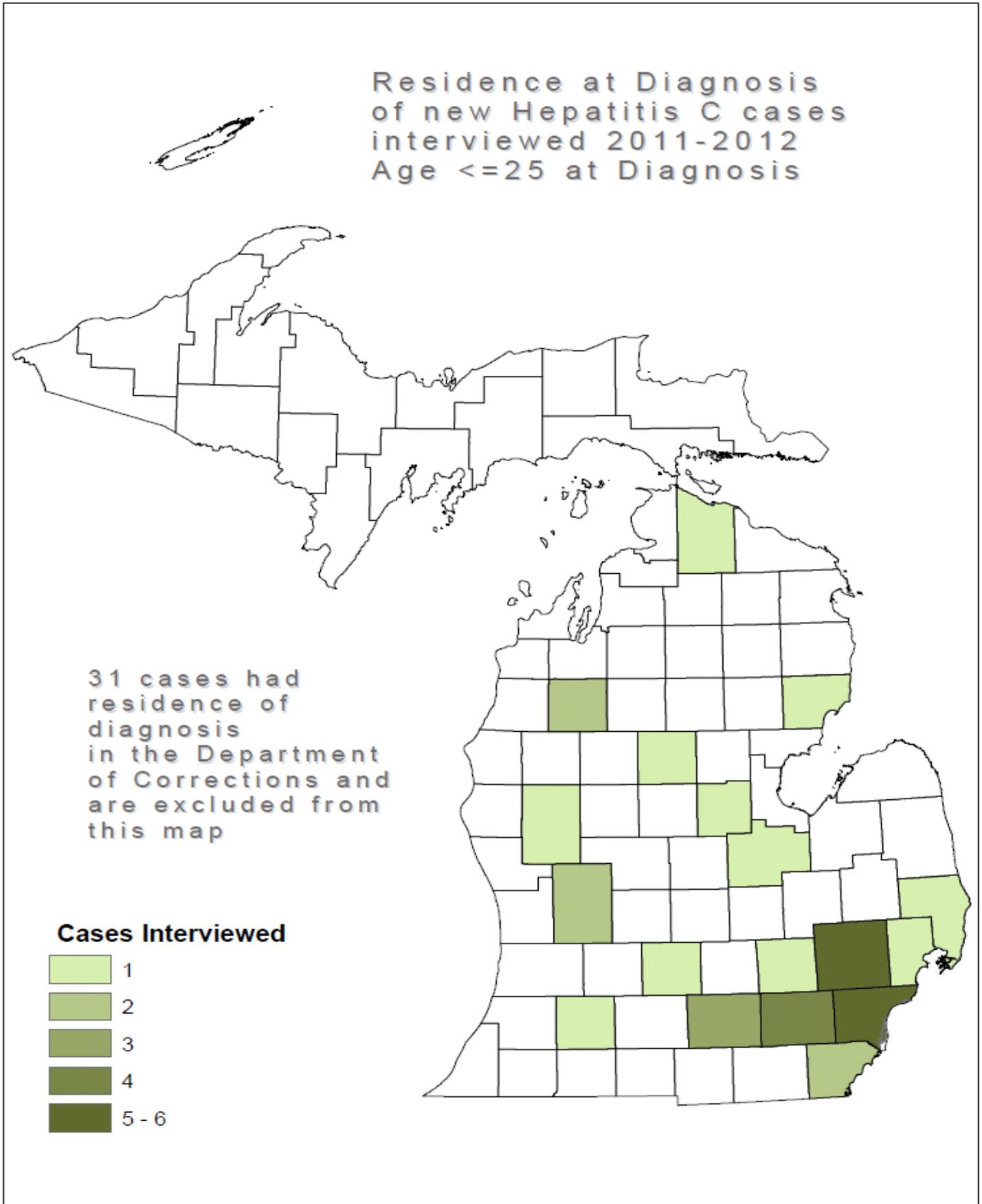
The specific method used for gathering data was also a limitation for this project. All data for this project was self-reported and collected through phone interviews. The use of self-reported data limited our ability to independently verify the information provided by study participants. Much of the interview requires participants to recall specific experiences, events, and activities within certain time frames. Any participant memory difficulties or inability to remember activities has the potential to introduce recall bias and adversely impact the accuracy of the data. The study included a variety of questions on sensitive subjects such as drug use and sexual behavior. Questions of this nature may have limited the extent to which participants disclosed their personal information. In an effort to address and reduce the impact of this specific limitation, participants were informed in the study explanation prior to their interview that some questions had the potential to make them uncomfortable.

If you have any further questions about this study, please contact the Michigan Department of Community Health, HIV/STD/VH/TB Epidemiology Section at 517-335-8165.

More information on HCV can be found at [http://www.michigan.gov/mdch/0,1607,7-132-2940\\_2955\\_2982\\_45996---,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_2982_45996---,00.html) and <http://www.cdc.gov/hepatitis/hcv/>

For more information on Licensed Body Art Facilities please visit, [http://www.michigan.gov/mdch/0,1607,7-132-44560\\_58283\\_58285\\_58287---,00.html](http://www.michigan.gov/mdch/0,1607,7-132-44560_58283_58285_58287---,00.html)

**Table 2: Map of Residence at Diagnosis of New Hepatitis C Cases Interviewed.**



**Table 3 Demographics Comparison  
Study Participants vs. Michigan Young Adult Viral Hepatitis C Population (July 1, 2011- April 31, 2012)**

	Study Participants	Michigan Population
<b>Age:</b>		
18-20	16 %	27 % *
21-23	37 %	47 % *
24-26	47 %	26 % *
<b>Sex:</b>		
Male	63 %	54 %
Female	36 %	46 %
<b>Race</b>		
White	95 %	94% **
Black	3 %	3 % **
American Indian/Alaska native	1 %	1 %**
Other	3 %	.3 % **
<b>Ethnicity:</b>		
Hispanic	6 %	5 % ***
Arab/ Chaldean	1 %	****

\* Percentage representative of cases in statewide reporting system.

\*\* Percentage representative of cases in statewide reporting system with race information provided.

\*\*\*Percentage represents cases in statewide reporting system with ethnicity information.

\*\*\*\* Arab/Chaldean ethnicity information not available.