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SNOHOMISH HEALTH DISTRICT VIRAL HEPATITIS PREVENTION AND OUTREACH

Program Report
January 2016 –
December 2016

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Snohomish Health District
Viral Hepatitis Outreach Program

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Mission Statement:
To improve the health of individuals, families, and communities through disease prevention, health promotion, and protection from environmental threats.

Introduction:
The Viral Hepatitis Outreach (VHO) program provides services to persons who are at high risk for contracting viral hepatitis. These include: people who inject drugs (PWID); all persons born between 1945 and 1965 ("Baby Boomers"); people born to mothers who are hepatitis C positive; people who have received an unsterile tattoo or piercing; people living with HIV; recipients of blood transfusions, and/or solid organ transplants before July 1992; clotting factor concentrates made before 1987, or persons who have ever received long-term hemodialysis, who do not have access to screening through other means. Services include hepatitis C testing, education and vaccinations for hepatitis A and B and tetanus, diphtheria, and pertussis (Tdap).

A total of 220 clients, with 228 service encounters, were served by the VHO program January through December 2016. Data were collected via personal interview for all clients seen by the program. All data were inputted into Excel for cleaning and analysis.

Demographics:
Tables 1 and 2 show the demographic and social characteristics for the VHO clients seen in 2016. They include age, gender, race, type of medical insurance, medical care received, employment, and housing.

Clients served through the VHO program, January – December 2016 tended to be younger adults with a mean age of 33 years with the majority being under 40 years old (table 1). More men than women participated in the VHO program, especially in the older age groups (graph 1). Clients were predominantly Caucasian (92%) with a few Native American (2%), African American (2%) and other races.

The majority of VHO clients in 2016 had public medical insurance (62%), and have been seen by a medical provider in the past year (tables 1, 2 and graph 2). The VHO program has assisted in having the Affordable Care Act (ACA) enrollment at PWID outreach sites. Through the implementation of ACA more VHO clients in 2016 had insurance than in 2015 and 2014 (62%, 53% and 40% respectively).

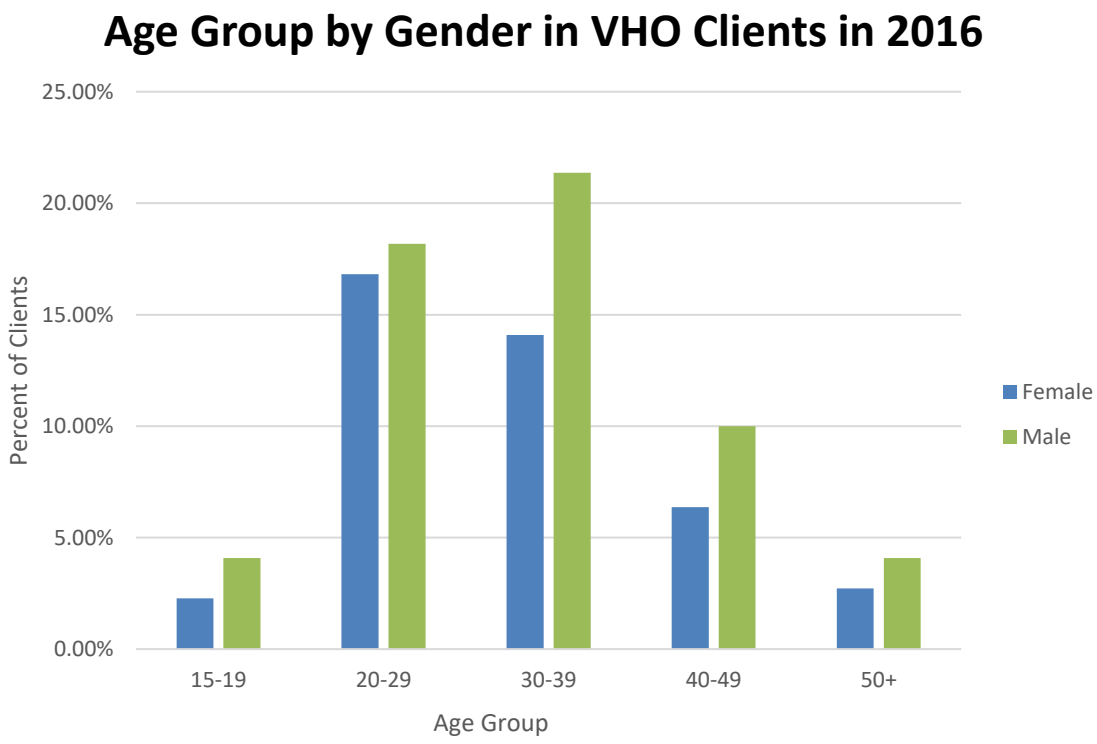
Most 2016 VHO clients were unemployed (89%), and did not own a home (96%) (table 1 and graph 3). A large number of VHO clients were homeless (n=90), which can make screening and follow-up difficult. Homeless clients tended to be younger (graph 4). Homelessness is defined as someone who is staying in shelters, staying at multiple locations, and living on the streets.

In 2016 the vast majority of clients were screened and provided services by the VHO program because they were PWIDs. A small number of persons were seen for other reasons. Other reason's clients were seen included: being a "Baby Boomer" (n=2) and having had unsterile tattoo or piercing (n=6).

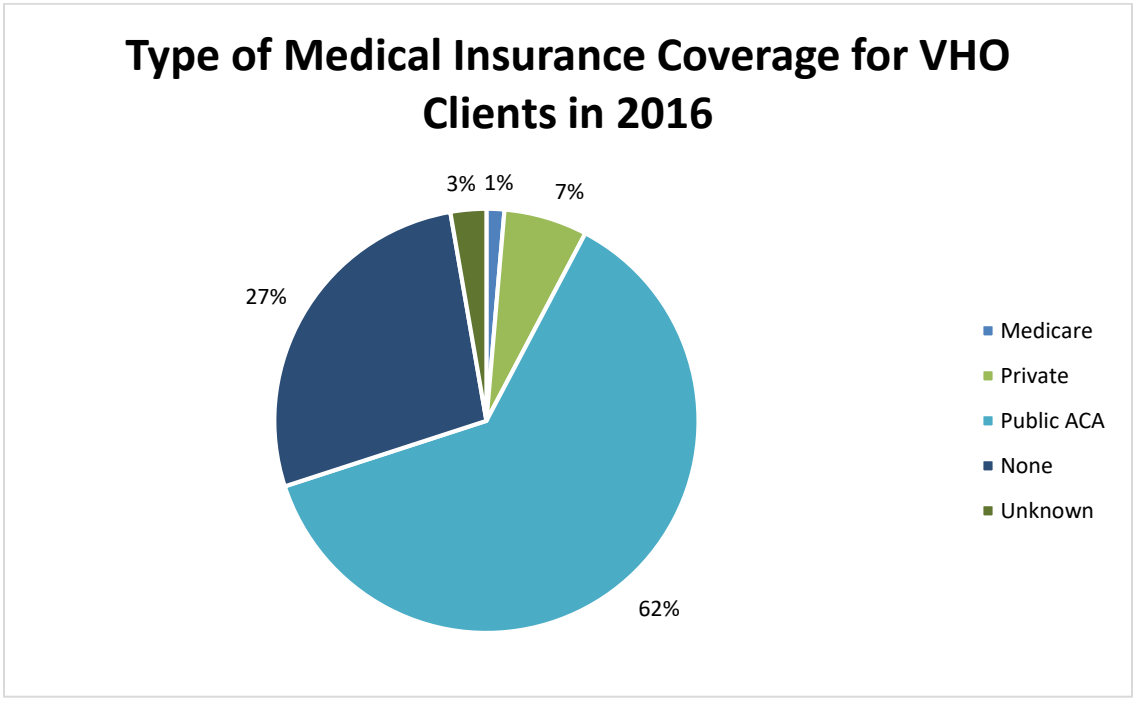
Table 1: Demographic characteristics for 220 VHO clients seen January through December 2016

Characteristic	Frequency or Mean	Percent or Range
Age in years	32.77	15-59
Age group in years		
15-19	14	6.36
20-29	77	35.00
30-39	78	35.45
40-49	36	16.36
50+	15	6.82
Gender		
Female	93	42.27
Male	127	57.73
Race		
Caucasian	203	92.27
African American	5	2.27
Latino	5	2.27
Native American	5	2.27
Other	2	0.91
Asian	0	0.0
Type		
Public ACA	137	62.27
Uninsured	60	27.27
Private	14	6.36
Medicare	3	1.36
Unknown	6	2.73
Employment status		
Unemployed	172	78.18
Employed	36	16.36
Unknown	12	5.45
Type of housing		
Homeless	90	40.91
Rent	87	39.55
Live with family	35	15.91
Own	5	2.27
Unknown	3	1.36

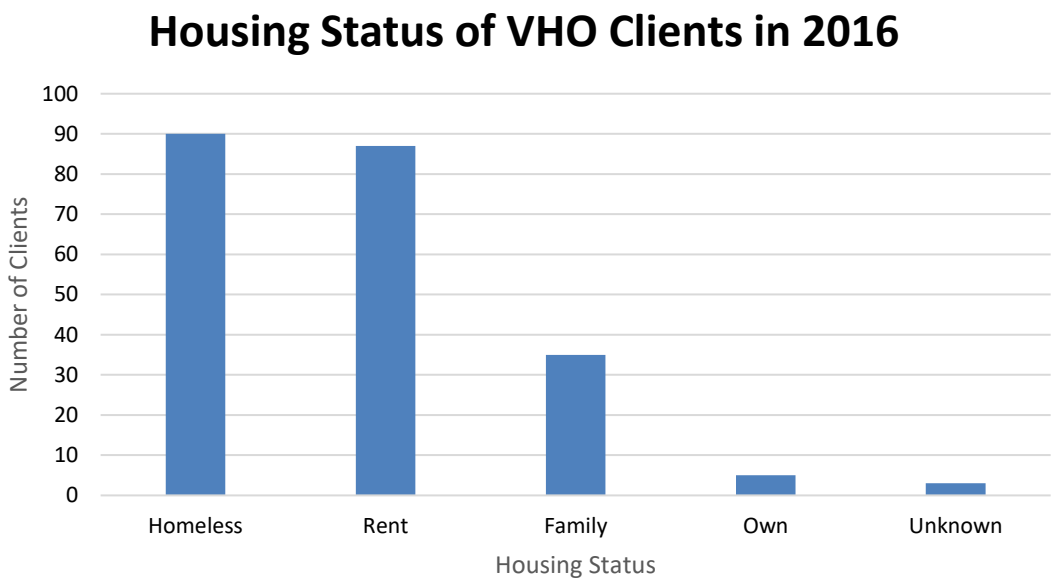
Graph 1: Age Group by gender in VHO clients seen in 2016



Graph 2: Type of medical insurance coverage for VHO clients seen January through December 2016



Graph 3: Housing status of VHO clients seen January through December 2016



Graph 4: Housing status by age group among VHO clients seen in 2016

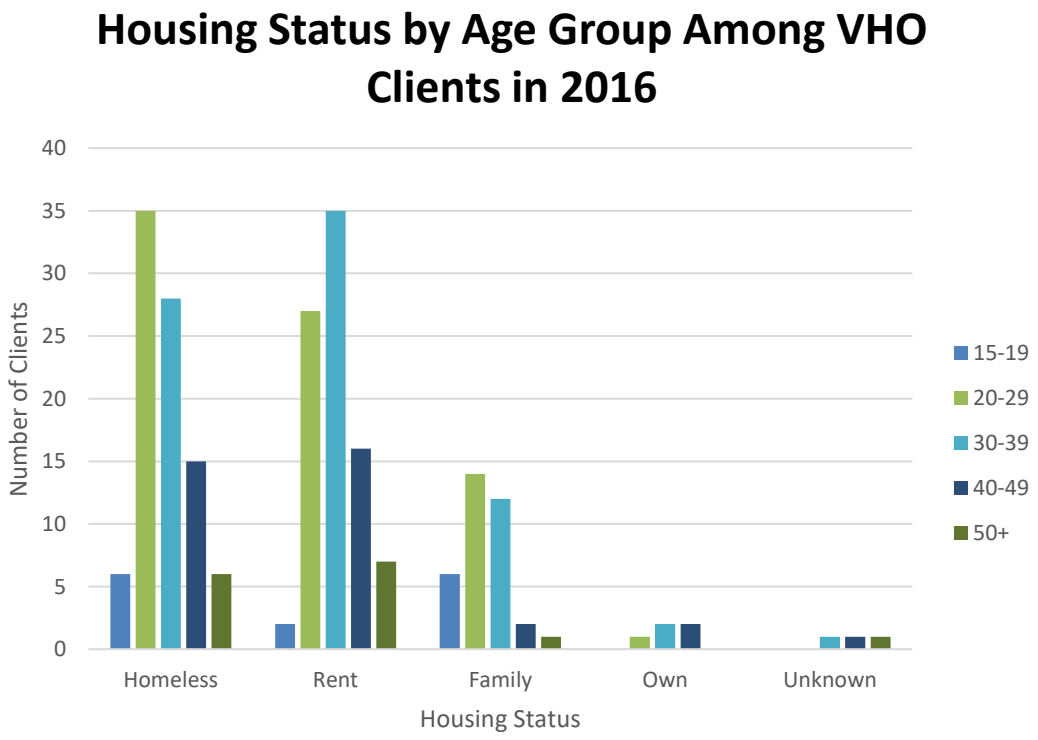


Table 2: Frequency VHO clients who sought medical care and type of facility where medical care was received in the past year (N=220)

	Frequency	Percent
Sought medical care in past year		
Yes	125	56.82
No	60	27.27
Unknown	35	15.91
Where received care		
Emergency/Urgent care	54	24.55
Primary care	51	23.18
Treatment center	8	3.64
Other	11	5.00
Unknown/Not answered	36	16.36
No medical care	60	27.27

Drug usage in VHO population (January through December 2016):
Tables 3-5 describe the types of drugs and practices used by PWID VHO clients (n=212). Please note that the 8 non-PWID clients that participated in the VHO program were taken out of the dataset where appropriate.

The majority of VHO clients served in 2016 were current PWIDs (83.96%) who had used injection drugs in the prior 12 months (table 3). The average duration of injection drug use was 45 months with a median of 36 months with over 100 clients having used injection drugs for over 3 years. Almost one-third of clients reported injecting 4 or more times per day. This trend reflects the need for easy access to sterile syringes.

Most VHO clients seen in 2016 were under the age of 30 when they first started injecting drugs (table 3). The average age clients initiated injection drug use was 24.66 years old, with a median of 23 years of age. National trends support our findings. Younger persons should be targeted for prevention outreach and education.

Over 94% of VHO clients seen in 2016 injected either heroin or methamphetamines (table 3). Almost eighty percent had shared drug paraphernalia (works), 77% had used secondary exchange of syringes and over 88% had reused drug works (tables 4). Secondary exchange refers to clients obtaining drug works from other persons on the street.

The number of VHO clients who used the Snohomish County syringe exchange to obtain drug works has steadily increased over the last few years (2016 – 64%, 2015 – 53%, 2014 - 43%, 2013 - 32%) (table 4). However, secondary exchangers (persons who give/sell works on the street) may be obtaining the works from the syringe exchange.

Over half of the clients (66%) had used pharmacies as a way to obtain syringes (table 4). Pharmacies should be an easy way for persons to obtain sterile syringes. Due to one-third of VHO clients not using pharmacies the program started to collect data on possible reasons. Most clients (55%) reported the reason they did not use a pharmacy was because they obtained syringes elsewhere.

Nationally, there has been an increase of prescription drug misuse*. Prescription drug misuse includes opioids and amphetamines prescribed by a healthcare provider, but used for non-prescribed purposes by either the person to whom they were prescribed or someone else. Prescription opioids are perceived as being a gateway to injection drug use, particularly with heroin. Data in table 5 show how many VHO clients may have started with prescription drugs before initiating injection drug use and how prevalent prescription drug use is among VHO clients. Almost sixty percent of VHO clients had misused prescription drugs. Of the 122 clients who had misused prescription drugs, 94% had done so before injecting drugs. VHO clients in 2016 obtained prescription drugs in a variety of ways, including with his/her own prescription (34%), from family and friends (28%) and buying prescription drugs from street dealers (23%).

* https://www.cdc.gov/drugoverdose/index.html

Table 3: Drug use characteristics for 212 VHO clients seen January through December 2016

Characteristic	Frequency or Mean (Median)	Percent (Cumulative %) or Range
Use in the last 12 months		
Yes	178	83.96
No	33	15.57
Unknown	1	0.47
Average duration of injection drug use	**Mean number of months (median)**	**Range (in months)**
209	45.25 (36)	1-300
Duration of injection drug use in months		
<6	24	11.32 (11.32)
6-11	13	6.13 (17.45)
12-23	47	22.17 (39.62)
24-35	20	9.43 (49.05)
36-47	33	15.57 (64.62)
48+	72	33.96 (98.58)
Unknown	3	1.42 (100.00)
Frequency of drug use		
1 to 3 times per day	69	31.36
4 to 6 times per day	46	20.91

6+ times per day	23	10.45
1 to 3 times per week	13	5.91
Unknown	61	27.73
Age initiated injection drug use		
<15	15	7.08
15-19	41	19.34
20-29	87	41.04
30-39	42	19.81
40-49	8	3.77
50+	2	0.94
Unknown	17	8.02
Average age initiated injection drug use in years (n=195)	24.66 (23)	8-52
Type of injection drug		
Heroin	124	58.49
Methamphetamines	54	25.47
Goofball (heroin and meth)	23	10.85
Cocaine	3	1.42
Other	5	2.36
Unknown	3	1.42

Table 4: Syringe and injection drug paraphernalia use characteristics among 212 VHO clients seen between January and December 2016

Characteristic	Frequency	Percent
Shared drug paraphernalia		
Yes	167	78.77
No	42	19.81
Unknown	3	1.42
Used secondary exchange		
Yes	164	77.36
No	46	21.70
Unknown	2	0.94
Reuse works		
Yes	187	88.21
No	22	10.38
Unknown	3	1.42
Used syringe exchange		
Yes	135	63.68
No	76	35.85

Unknown	1	0.47
Used pharmacy to obtain syringes		
Yes	140	66.04
No	69	32.55
Unknown	3	1.42
Reason pharmacy not used to obtain syringes (n=69)		
Age (youth)	8	11.59
Cost	10	14.49
Obtain syringes elsewhere	38	55.07
Stigma	5	7.25
Unknown	8	11.59

Table 5: Prescription drug use characteristics among 212 VHO clients seen January through December 2016

Characteristic	Frequency	Percent
Used prescription drugs for non-prescribed purpose		
Yes	122	57.55
No	80	37.74
Unknown	10	4.72
Used prescription drugs before injection drug use (n=122)		
Yes	115	94.26
No	7	5.74
How prescription drugs obtained (n=122)		
Own prescription	41	33.61
Street	28	22.95
Friends	25	20.49
Multiple	17	13.93
Family	9	7.38
Unknown	2	1.64

Drug overdose and naloxone use among VHO clients seen January through December 2016:

Since 2015, the Viral Hepatitis Outreach program has been collecting data on drug overdoses and the use of naloxone during overdose events (table 6). Naloxone is a medication that works as an opioid antagonist. It counteracts the effects of opioids on the central nervous system. This is an important medication

for the treatment of opioid overdoses and can save lives. The VHO program educates clients on the use of naloxone and how to obtain this vital medication.

Sixty-seven VHO clients seen in 2016 said they had experienced a drug overdose (table 6). Over one-third of those clients have experienced more than one drug overdose event in his or her lifetime. Sixty percent of clients who had experienced a drug overdose were given naloxone during the event. The majority of clients received naloxone by emergency services personnel.

In addition to asking clients if they personally had experienced an overdose, clients were also asked if they had witnessed a drug overdose event. Over 50% of VHO clients had witnessed a drug overdose (table 6). Naloxone use was observed in 63% of witnessed overdoses. Almost one-third of VHO clients gave naloxone to someone experiencing a drug overdose. This accentuates the need for education and easy access to naloxone. VHO clients can save lives through the use of this powerful opioid antagonist.

Table 6: Opioid drug overdose and naloxone use among 220 VHO clients, seen January through December 2016

	Frequency	Percent
Experienced an opioid overdose		
Yes	67	30.45
No	149	67.73
Unknown	4	1.82
Number of times client overdosed (n=67)		
1	37	55.22
2-4	17	25.37
5+	8	11.94
Unknown	5	7.46
Client received naloxone (n=67)		
Yes	40	59.70
No	25	37.31
Unknown	2	2.99
Who administered naloxone to client (n=40)		
Emergency services	29	72.50
Friend	5	12.50
Multiple	1	2.50
Unknown	5	12.50

Witnessed an opioid overdose		
Yes	132	60.00
No	84	38.18
Unknown	4	1.82
Naloxone used during witnessed overdose (n=132)		
Yes	83	62.88
No	47	35.61
Unknown	2	1.52
Who administered naloxone during witnessed overdose (n=83)		
Emergency services	47	56.63
VHO client	27	32.53
Friend	5	6.02
Family	1	1.20
Unknown	3	3.61

Drug treatment among VHO clients seen January through December 2016: Over 80% of VHO clients seen in 2016 had participated in drug treatment at least once (table 7). Almost 30% of VHO clients had been through drug treatment less than 1 year prior to being seen by the VHO program. One third of VHO clients had received multiple types of drug treatment including medication assisted treatment.

In 2016 the VHO program started to collect data on the use of Suboxone (table 7). Suboxone is an important medication assisted treatment for opioid use disorder. Unlike methadone, Suboxone can be diverted and available on the streets for self-detoxification and treatment of opioid withdrawal.

Almost half of all VHO clients seen in 2016 had used Suboxone (table 7). Suboxone was primarily obtained on the streets (70%). The main reason VHO clients took Suboxone was for self-detoxification and withdrawal. Very few (6%) of VHO clients reported that they took Suboxone to get high.

Table 7: Drug treatment and suboxone use characteristics among 220 VHO clients seen January through December 2016

Characteristic	Frequency	Percent
Number of times in drug treatment		
0	38	17.27
1-4	153	69.55
5+	26	11.82
Unknown	3	1.36
Length of time since received drug treatment in years		
Never received treatment	38	17.27
<1	64	29.09
1	26	11.82
2-4	27	12.27
5+	13	5.91
Unknown	52	23.64
Type of drug treatment		
Multiple types	72	32.73
Medication Assisted Treatment (MAT)	34	15.45
Inpatient (non-MAT)	30	13.64
Outpatient (non-MAT)	19	8.64
No treatment	38	17.27
Unknown	27	12.27
Used suboxone		
Yes	105	47.73
No	78	35.45
Unknown	37	16.82
How client obtained suboxone (n=105)		
Street	73	69.52
Treatment	21	20.00
Both (treatment and street)	11	10.48
Reason used suboxone (n=105)		
Self-detox/withdrawal	67	63.81
Treatment center	20	19.05
Both treatment and self-detox	12	11.43
To get high	6	5.71

VHO screening services for clients seen January through December 2016:
Tables 8-10 describe VHO services from January through December 2016. These include the number of visits provided to individual clients, where service encounters occurred, screening services for viral hepatitis C, and vaccinations.

The majority of clients served in 2016 were new to the program (n=135). A total of 228 service visits completed in 2016. Almost all clients had only one service encounter between January and December 2016 (table 8). Common sites where VHO services were provided included: correctional institutions, Snohomish County syringe exchange and medically assisted treatment (MAT) clinics (table 8 and graph 5). Over the last 5 years the VHO program has increasingly seen clients at Snohomish County Corrections and the syringe exchange, while decreasing the number of clients seen at the Snohomish Health District clinic and the men's mission (graph 6). The men's mission outreach was suspended in 2016 due to the lack of facility space for confidential testing and education.

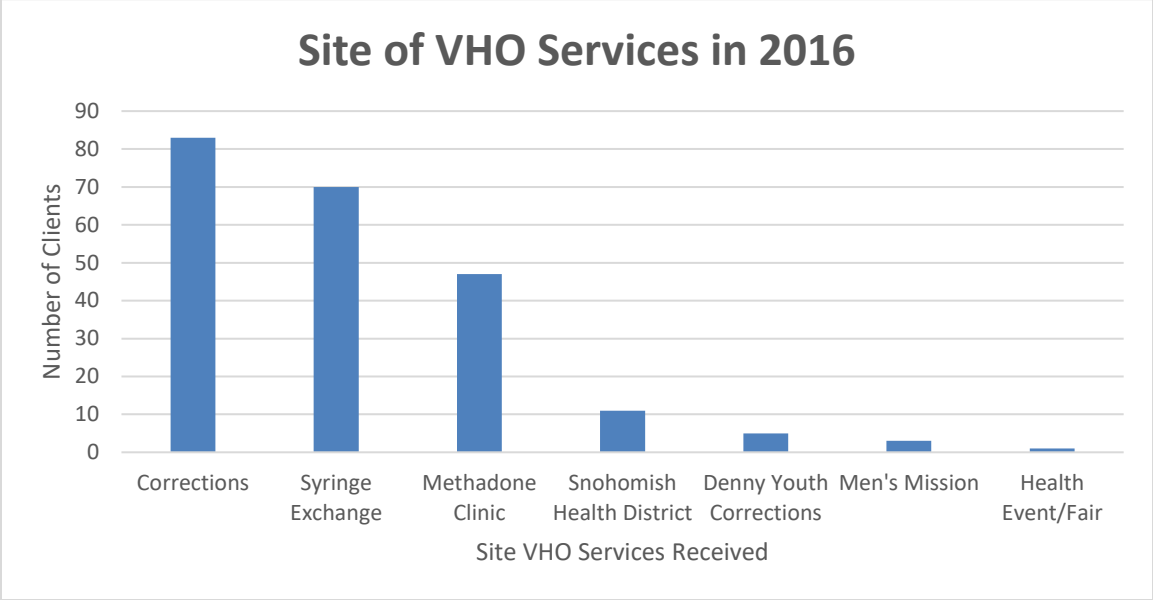
Only testing for hepatitis C antibody was performed on VHO clients in 2016. Ninety VHO clients tested positive for hepatitis C in 2016 (table 9). VHO clients that test negative for hepatitis C are retested every 6 months. (Note: not all clients can be located for rescreening). In 2016, 40% of rescreened clients seroconverted from hepatitis C antibody negative to antibody positive. The high rate of seroconversion demonstrates the need for increased access to sterile syringes and paraphernalia.

The VHO program provided 216 hepatitis A, B and Twinrix vaccines combined to clients seen January through December 2016 (table 10). The VHO program also provided 22 tetanus, diphtheria and acellular pertussis (Tdap) vaccines. Unfortunately, no vaccine is currently available for hepatitis C.

Table 8: Viral Hepatitis Outreach program services among 220 clients seen during January through December 2016

	Frequency	Percent
Number of service visits		
1	212	96.36
2	8	3.64
A total of 228 service visits were completed for 220 clients		
Site		
Corrections	83	37.73
Denny Youth	5	2.27
Health Fairs	1	0.45
Men's Mission	3	1.36
MAT (methadone clinic)	47	21.36
Syringe Exchange	70	31.82
SHD Clinic	11	5.00

Graph 5: Site of VHO services January through December 2016



Graph 6: Site of VHO services 2012-2016

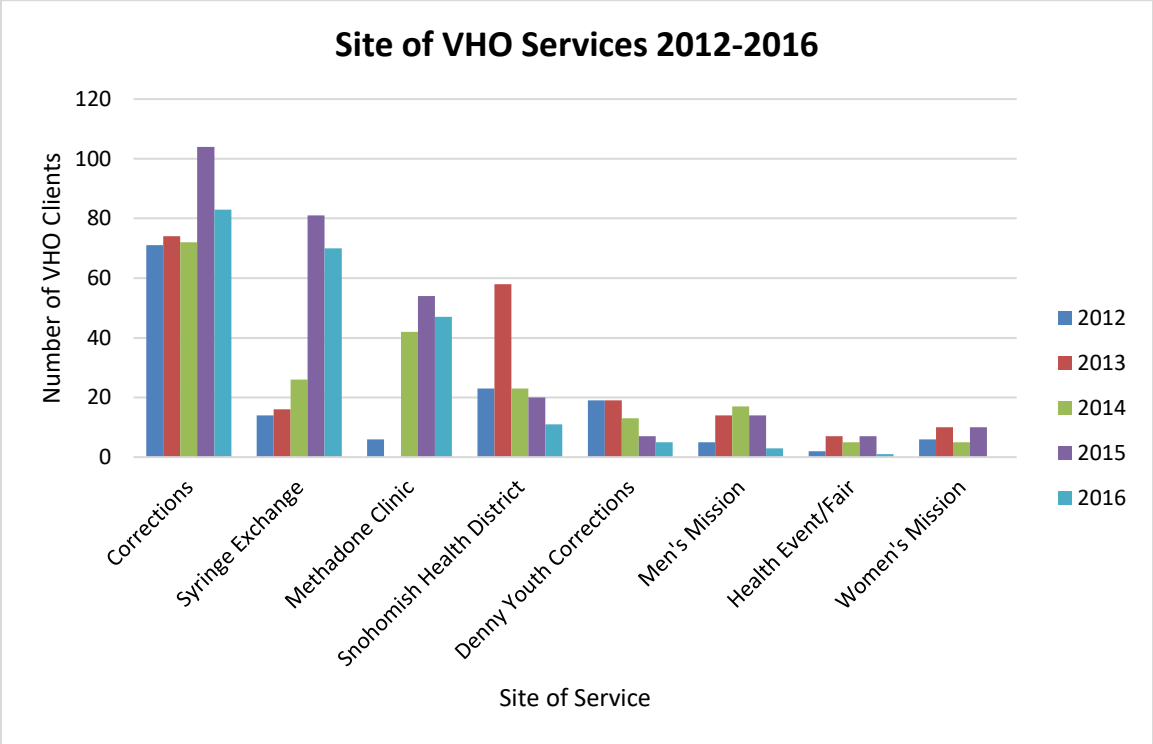


Table 9: Prevalence and seroconversion of HCV among 220 VHO clients seen January through December 2016

Lab test	Positive (%)	Negative (%)
Anti-HCV antibody	90 (40.91)	130 (59.09)
Seroconverted to HCV positive (n=65)	**Frequency**	**Percent**
Yes	26	40.00
No	39	60.00

Table 10: Vaccination status of VHO clients, seen January through December 2016, for HAV, HBV, and Tetanus, Diphtheria, and Pertussis (Tdap)

Vaccination	Dose 1 total** (# VHO provided)	Dose 2 total** (# VHO provided)	Dose 3 total** (# VHO provided)	Total vaccine provided by VHO program
Hepatitis A	50 (16)	39 (13)	NA	29
Hepatitis B	85 (4)	76 (7)	71 (10)	21
Twinrix*	57 (35)	56 (47)	43 (40)	144
Tdap	22 (VHO only)	NA	NA	22
TOTAL				216

*Twinrix Vaccine: combination of hepatitis A and hepatitis B vaccine. Dose totals are vaccine provided by all sources. **Dose totals are vaccines given by all providers.

Hepatitis C Positive Client Treatment:

Table 11 describes the type of treatment and non-VHO medical follow-up that hepatitis C positive clients received (n=90).

Hepatitis C is a curable 'chronic' disease and annual mortality rates surpass those of HIV (5.0 deaths per 100,000 and 2.1 deaths per 100,000, respectively based on U.S. mortality rates in 2014). Primary medical care and treatment for Hepatitis C is rare among VHO clients. Only six out of 90 hepatitis C positive clients were being followed by a primary care provider (table 11). Only two clients were receiving treatment for hepatitis C infection. The VHO program provides medical screening and education to a population that is not likely to receive services elsewhere.

Table 11: Medical follow-up and treatment among the 90 HCV positive* clients seen January through December 2016

	Frequency	Percent
PCP follow-up		
Yes	6	6.67
No	80	88.89
Unknown	4	4.44
Received treatment for HCV		
Yes	2	2.22
No	84	93.33
Unknown	4	4.44

*Note: Not all HCV antibody positive clients have confirmed disease or are chronic carriers.

Conclusions and Future Recommendations:
The VHO program primarily serves people who inject drugs. PWIDs typically do not receive medical services or health education. This program reaches out to those most at risk of contracting viral hepatitis. The medical and educational services provided are vital to helping reduce the transmission of viral hepatitis in Snohomish County.

Currently the program uses the following strategies to address the health of people who inject drugs:

- Retests all eligible VHO clients for hepatitis C every 6 months to determine seroconversion rates
- Re-educates on HCV transmission and prevention at each client visit.
- Provides overdose prevention education at each client visit
- Identifies and collaborates with community partners to address issues surrounding those at high risk for contracting viral hepatitis
- Supports the Snohomish County syringe exchange program

Future recommendations and strategies for Viral Hepatitis Outreach within Snohomish County include:

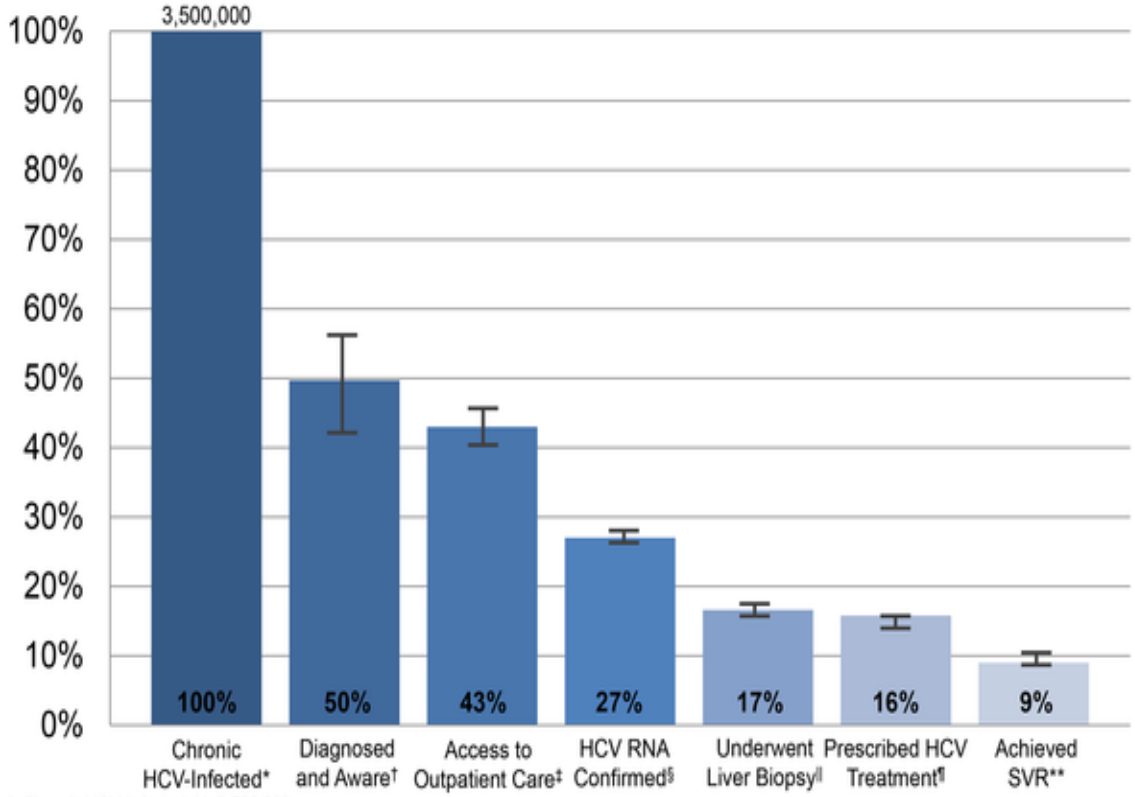
- Expand and evaluate opioid overdose prevention education
- Increase access to syringe exchange services and pharmacies
- Increase PWID access to naloxone
- Target younger populations
- Identify strategies to improve the continuum of care for those living with hepatitis C infection (see appendix A, graph 1)
- Assure adequate staffing to accomplish future recommendations

Appendix A: HCV Continuum of Care and Other Resources

The graph below shows the estimated number of persons in the United States living with hepatitis C (3.5 million). According to the graph it is estimated that only 9% of HCV infected people will receive treatment and have a sustained viral response (cure).

The graph demonstrates the poor linkage to care which may be a reflection of the lower socio-economic status of hepatitis C positive people.

Graph 1: Stages of the HCV Continuum of Care in the United States*



* Chronic HCV-Infected; N=3,500,000.
† Calculated as estimated number chronic HCV-infected (3,500,000) x estimated percentage diagnosed and aware of their infection (49.8%); n=1,743,000.
‡ Calculated as estimated number diagnosed and aware (1,743,000) x estimated percentage with access to outpatient care (86.9%); n=1,514,667.
§ Calculated as estimated number with access to outpatient care (1,514,667) x estimated percentage HCV RNA confirmed (62.9%); n=952,726.
‖ Calculated as estimated number with access to outpatient care (1,514,667) x estimated percentage who underwent liver biopsy (38.4%); n=581,632.
¶ Calculated as estimated number with access to outpatient care (1,514,667) x estimated percentage prescribed HCV treatment (36.7%); n=555,883.
** Calculated as estimated number prescribed HCV treatment (555,883) x estimated percentage who achieved SVR (58.8%); n=326,859.
Note: Only non-VA studies are included in the above HCV treatment cascade.

*Graph from Strategies to Improve the HCV Continuum of Care: Best Practices in Testing, Linkage to Care & Treatment; Ronald O. Valdiserri, M.D, M.P.H., June 5, 2015, U.S. Department of Health & Human Services.

Other Resources:

US Health and Human Services: Action Plan for the Prevention, Care and Treatment of Viral Hepatitis, updated 2014-2016
http://www.hhs.gov/sites/default/files/viral-hepatitis-action-plan.pdf