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A Program Evaluation Of A Mobile Clinic In New Haven, Connecticut

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A Program Evaluation of a Mobile Clinic in New Haven, Connecticut

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Abstract

Background: Barriers to health care typically exist amongst poor and marginalized communities that are burdened by a number of factors, such as unemployment, lack of insurance, and homeless. These groups also hold a disproportionate disease burden due to increased risk of exposure. Thus, they are likely to go without care for treatable conditions because they are unable to access traditional health care settings. One way of overcoming these barriers to care is through the use of mobile clinics. These clinics are able to offer a variety of services within disadvantaged communities to both prevent the spread of disease and alleviate its burden. An example of one of these clinics is the Community Health Care Van (CHCV) in New Haven, Connecticut.

Purpose: While the CHCV has been operating in New Haven since 1993, it is important to evaluate this system to provide insight into service provision and the success of the program. This evaluation was conducted to provide information on who was coming to the van, what services were being provided, and patient and provider opinions of the services and system. The overarching goal is to determine if the van is operating reaching the clients most in need of its services in New Haven.

Methods: A mixed methods approach was used to evaluate the van, including quantitative, qualitative, and spatial analysis. The qualitative data provides information on client demographics, frequency in visits, and trends by stop and by year of service. Interviews were conducted with both clients and providers to gather qualitative data on regular sources of health care, barriers to care, satisfaction with the CHCV, the strengths and weaknesses of the CHCV, and suggestions for improvements. A spatial analysis was done using US census data to map median household income in New Haven and its surrounding area. This information was compared to information at the zip code level regarding service utilization, HIV client residence, and HIV testing client residence.

Conclusion: The CHCV provides care to a number of high-risk groups within New Haven and many of the clients are low income, uninsured, unemployed, homeless, sex workers, injection drug users (IDU), and/or recently incarcerated. Overall, the van seems to be operating in the areas of greatest need but there is concern that the working poor may be missed due to the CHCV's limited schedule. Clients were very satisfied with the care they received at the CHCV and suggestions by both clients and providers were mainly for expanding access to van services.

Acknowledgements

Thank you to Dr. Denise Stevens and Dr. Debbie Humphries for serving as my first and second readers, respectively, and all the help that went into this project. To Dr. Brenda Fenton, for helping with the statistical analysis components. Also, to Ruthanne Marcus, Jamie Morano, and Liz Roessler for help with getting the project going and insight on the work done. To Dr. Rick Altice, thank you for allowing me access to the van data and to conduct this project. And to all the van staff, thank you for your participation and your help in recruiting clients.

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1 Introduction

The Community Health Care Van (CHCV) is a mobile primary care clinic that serves the primary health care needs of underserved communities in New Haven, Connecticut. The van provides a consistent presence in four different locations of New Haven and offers screening, treatment, adult primary care, harm reduction and support services for disadvantaged populations. As a mobile clinic, the CHCV is able to reach communities that typically face several barriers to care for their medical needs. It has strategically placed its stops in areas within proximity to high-risk communities to provide care for the homeless, impoverished, injection drug users, sex workers, and undocumented migrants living in the New Haven area. This allows it to bring free walk-in medical care to the "doorstep" of these communities in order to help alleviate the barriers that these populations typically face, such as cost, lack of insurance, and stigma. These services help in the prevention, diagnosis, and treatment of HIV, STDs, and chronic illnesses and operate as a means for improving the health of disadvantaged populations

The CHCV was started by Dr. Frederick Altice in January 1993 and was the first mobile health care program of its kind in the United States. The original mission was to provide HIV prevention and medical services to marginalized populations but it has since been expanded to meet the primary health care needs of communities that are disproportionately affected by poverty, HIV/AIDS, and substance abuse. The program has its own database of patient information and the current database (used in this evaluation) began in 2003. Since then, the van has seen more than 23,500 visits for over 7,000 clients. The intentions of this evaluation are to assess how well the CHCV meets its mission of providing free community primary health care in underserved communities in New Haven

such as the poor, uninsured, those without access to health care, homeless, HIV/AIDS clients, those with mental health issues, and active drug users or those with a history of drug use.

2 Review of Literature

Access to health care is a pressing issue, specifically for those who are socially or geographically marginalized [1-10]. This contributes to a disproportionate burden of health concerns placed on these communities and the inability to receive the appropriate level of care. A lack of access can be due to the mobility of the population [1, 3, 8], isolation from services in rural areas [7, 9, 11, 12], or a general mistrust of the health care system [10, 13, 14]. For vulnerable populations, this lack of access is both caused by and creates additional barriers to receiving adequate health care services.

Barriers to care come in a variety of forms and are variable and unique to situations. In general, the literature seems to present barriers to care into three different categories: structural/environmental, behavioral and societal stigma. While this provides a framework to analyze these barriers, it is important to note that these matters are not necessarily mutually exclusive. The interaction between several of these variables often creates and perpetuates an individual's inability to receive adequate health care.

Though access to medical care is certainly an issue in rural areas, barriers to care are often the result of poverty, regardless of location and are often created by a number of structural and environmental factors and a system that maintains them. For instance, homeless populations are considered vulnerable and marginalized that are at high risk for acquiring infectious disease but are typically limited in their ability to access adequate health care [1, 15]. Thus, a lack of housing has become a determinant for health disparities as a factor that contributes to the health concerns of those experiencing homelessness [3]. Situations of poverty are often created and

influenced by other factors that create barriers to health care, such as unemployment, lack of insurance, lack of transportation, lack of money, and poor physical health [4, 7]. Other structural issues that produce disparities arise as the result of the criminal justice system and include the disproportionate jailing of members of marginalized communities and of increased policing in areas where ground-level interventions are being provided for at-risk communities [10, 16]. Immigrants and undocumented migrants are also at risk for compromised access to health care for that fear legal ramifications if their immigration status is discovered [3, 5, 6, 8].

Behavioral risk factors play a major role in an individual's ability to access health care, as they are not only prone to certain health conditions, but also have a tendency to develop an aversion to traditional health care settings. For instance, drug users are at a particularly high risk for certain diseases, such as HIV or Hepatitis C, and yet their drug using behaviors may also deter them from receiving care [4, 16, 17]. Similarly, sex workers may have increased exposure to HIV and other sexually transmitted infections but fear of being stigmatized or of discovery of their occupation may deter them from seeking health care services [16]. So, in addition to the behavioral factors that prevent access to care, these individuals seem to also have a tendency to develop a general distrust or hesitancy towards formalized institutions that lead them to avoid receiving health care [13, 14, 16].

The wariness of marginalized and vulnerable populations towards established health care facilities may also be a result of the societal factors that created positions of marginalization or vulnerability. For instance, several of these individuals have experienced some form of discrimination or stigma that keeps them from feeling accepted [4, 10, 13]. For instance, Thornhill and Klein mention the discrimination of transgender individuals and the disproportionate health burden that they face as a result [10]. Immigrants and undocumented

migrants also may avoid traditional health care settings for fear of facing discrimination, language barriers, and perhaps the discovery of their legal status within the United States [6, 7].

Barriers to care can come in a variety of forms and often target the most marginalized populations. Individuals living in poverty, such as the homeless, hold a higher burden of disease but are less likely to have the money, transportation, and insurance to access medical care. These communities also experience a higher prevalence of violence and disproportionately occupy the criminal justice system. Behaviors, such as sex work and drug use, that place an individual at increased risk for disease also tend to play into barriers to health care and further issues arise when street-level interventions for these populations experience increased policing that deters clients from receiving care. As a result of these structural and behavioral components, a hesitancy of high-risk and marginalized populations to receive care has developed. This hesitancy is perpetuated by the societal stigmas that has created their marginalization and poses yet another barrier for these individuals to receive health care. These barriers then work together to place a disproportionate burden on disadvantaged communities through increased transmission of disease, morbidity and mortality.

To overcome these barriers to health care and improve the health of at-risk populations, it is important to develop interventions that provide both flexibility and a competency in the various cultures of target communities. One method of providing intervention is through the use of mobile clinics. These units provide the benefit of a health care setting without the limitations of permanent locations and formal health care settings [4, 8, 16]. They also are capable of providing free services but in a cost-effective means through active case finding and early detection of conditions [11, 18, 19].

A previous study published on the CHCV in 2002 showed that mobile medical programs help in controlling STD and HIV infections through providing services to a high risk and underserved populations in New Haven [20]. However, mobile clinics have been used as a means of intervention for several other public health issues. For instance, a study by the Stanford University Medical Center showed that the Women's Health Van operating in East Palo Alto, California led to an increase of prenatal care utilization in underserved areas and provided earlier access for pregnant women[21]. Other programs include specific HIV and STD screenings [6, 7, 12, 22, 23], mammography [24], tuberculosis screening [3, 18], mental health [1, 2, 25-28], and other primary health care services and screening intervention [5, 8, 9, 11, 21].

Essentially, the strength of a mobile clinic is that it overcomes the barriers of access to care by providing a consistent presence at the "doorstep" of those in need. It provides the necessary flexibility to meet the needs of its target community where they are, to build trust and rapport with these individuals, and to provide an open door through a non-traditional health care setting [8, 10, 25]. They also are capable of relieving the burden on overwhelmed health care settings and serving as a form of "triage" to screen clients and link them to appropriate care[19]. Overall, the importance and role of a mobile clinic can be summed up in the following quote:

> "*There are problems for which established medical and social institutions do not even begin to provide a solution, either because they are not within an individual's reach or because by their very structures and orientation, they are not receptive to many of the clients who come to the unit…There can be no one prescription for the right way to help people, but the experience of a neighborhood mobile health unit indicates some guidelines for providing help. First, be there. Second, understand the people with whom you will be in contact. Third, when you do not understand, listen until you do. And*

finally, remember that you are working in the interest of the person who has sought your help [25]."

3 Description of New Haven

The city of New Haven has a great deal of disparity, with disadvantaged populations experiencing a disproportionate burden of social and health problems. In the last decade, New Haven has seen a rise in homelessness and homeless shelter utilization doubled from November 2007 to November 2009 [29]. New Haven also experiences an unemployment rate of 12.4% [30]. In addition, 26.7% of the population lives in poverty and 13.5% are uninsured [30]. As a result, 13% of the New Haven population goes without a regular source of health care[31]. In some areas, such as Fair Haven, 30% of the population is uninsured and only 19% have access to regular health care [31].

The HIV epidemic has also had a disproportionate impact on the city of New Haven, which has the highest HIV prevalence of all cities in Connecticut [32]. HIV prevalence in New Haven is currently 446 cases per 100,000 people, the highest rate in Connecticut [32]. Despite the efforts of many organizations, HIV is still a major issue, particularly in communities of low socioeconomic status. Within New Haven, the epidemic is distributed in the following trends: 51.2% by injection drug use, 17.6% through men who have sex with men (MSM), and 19.5% through heterosexual transmission [33]. Nearly 68% of cases are in males and the epidemic disproportionately impacts racial minorities, with 56% of cases in Blacks, 23% in Whites, and 20% in Hispanics [33]. However, incident cases in 2010 showed that new diagnoses were 68.3% male, for race and ethnicity were 63.4% Black and 22% Hispanic, and for transmission mode were 14.6% IDU, 29.3% MSM, and 34.1% heterosexual transmission [34].

Rates of sexually transmitted infection are also amongst the highest in Connecticut with 16.6 infections per 1000 people in 2008-2009. These counts include cases of Chlamydia, Gonorrhea, and Syphilis [35]. Of the 1,957 STD infections reported for New Haven in 2009, 1,505 of these were for Chlamydia [36]. Data regarding sexually transmitted infection trends in Connecticut show that nearly three-quarters of Chlamydia infections and over half of Gonorrhea infections were in females while over 97% of Syphilis cases were in males between 2005 and 2009 [37]. In regards to race and ethnicity, Blacks had a disproportionate burden of infection for Chlamydia (33.7%) and Gonorrhea (50.3%) and though the highest proportion of Syphilis cases were in Whites (46.3%), about 32% of cases were in Blacks [37].

4 Description of Community Health Care Van Program

The Community Health Care Van (CHCV) is a mobile primary care clinic that provides a variety of free health care services within the communities of New Haven, Connecticut. The van was started 1993 by Dr. Frederick Altice of the Yale School of Medicine to address the health concerns of New Haven's poor and marginalized communities, particularly in regards to the prevention, diagnosis, and treatment of HIV. With the mindset that HIV does not just affect individuals, but rather the entire community, the van expanded its services to include a variety of services to address the health needs of the communities it served. Though the program has evolved through the years, it has maintained the goal of meeting the pressing health care needs of those in the communities of New Haven that would otherwise have limited access to these services. While several clients use the van as only part of the comprehensive primary care that they receive, others are left with no options outside of the services that the van provides. Regardless, the van

serves as a source of care in areas of documented disparity for clients that are coming out of necessity or convenience.

The 40-foot CHCV is equipped with an examination room, two consultation rooms, and a patient waiting area. It currently operates Monday through Friday at three different stops within New Haven that have high poverty rates and targets populations, such as the homeless, those infected with HIV/AIDS, substance abusers, sex workers and undocumented migrants. A fourth stop is offered twice a month on Thursdays at a local community-based organization that serves the needs of the homeless. The team of staff members on the CHCV consists of Physician Assistants, nurse practitioners, case managers, HIV counselors, and support staff, such as drivers. Some staff are also involved in community outreach and provide HIV counseling and testing at other sites.

The CHCV staff members perform roles in medical services, HIV counseling and testing, drug treatment advocacy, case management, and general operation and maintenance of the van. The van is sometimes limited in the level of care it is able to provide for its clients by time, resources, and space. Thus, the team of staff members not only focuses on what services can be provided on the van, but also makes referrals and connects their clients with other sources of continuous care and social support.

All patients that come on the van begin their visit with either a long intake form or a short form. Long forms are used for first time visitors or those who have not attended the van within a year period. For patients who visit multiple times, a short form is used that collects only basic information regarding their basic demographics, medications, and chief complaints. These forms allow the staff to determine what services are being sought and who must be seen to meet the health care needs of the patient.

Specific services offered by the van include basic primary care, HIV counseling and testing, tuberculosis screening and treatment, screening and treatment for sexually transmitted diseases, harm reduction services, and directly-observed therapy (DOT) for HIV and tuberculosis patients. Many of the van staff members are bilingual and can provide care in both English and Spanish. As several of the clients of the van are considered to be at a high-risk for certain infectious diseases, such as HIV and hepatitis C, the van seeks to not only offer comprehensive screening options for several conditions but also to provide education and services to help reduce disease transmission.

5 Overview of Evaluation Design

In order to evaluate the role of the CHCV, a series of questions were developed to look at the population served, services provided, perception, and satisfaction. Questions were also developed to look at both the HIV-positive clients and the HIV testing clients on the van. As the number of positive cases detected on the van has declined in recent years, the van staff wanted to look at who makes up their HIV-positive clients, who is coming in to test for HIV at the van, and how this compares to the total HIV-positive population in New Haven. Evaluation Questions can be found in Figure 1.

Figure 1: Evaluation Questions

All Patients and Services

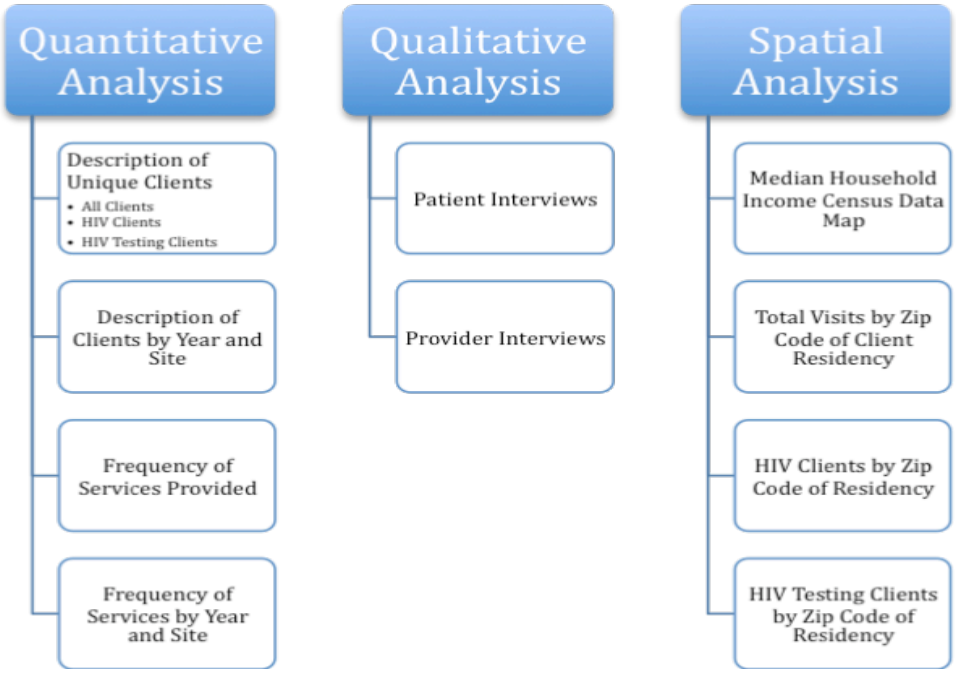
- Who is attending the CHCV?
- What services are provided on the van and how often?
- How do clients perceive the services they receive on the van?
- How do providers perceive the provision of services to the community?
- Are the van locations and scheduled hours reaching those with the greatest need?

HIV-Positive Clients and HIV Testing Clients

- To whom does the CHCV provide HIV care?
- Who is coming to the van for HIV counseling and testing?
- How do the HIV-positive clients of the van compare to the HIV-positive population of New Haven
- Are van testing services targeted to those most at risk for infection?

A mixed methods approach was used to evaluate the CHCV, including quantitative, qualitative, and spatial methods from primary and secondary sources. Quantitative data from patient intake forms was provided by the CHCV and analyzed to provide information on the clients utilizing the van from 2003 until July of 2011. Descriptions of clients are provided based on all clients visiting the van, HIV-positive clients, and HIV testing clients. Descriptions are also provided by site of van visit and by year of visit. Service utilization is described by total van visits, by site, and by year of visit. Qualitative data was collected through patient surveys and key informant interviews with the van staff. These interviews were conducted over a six-week period in February and March of 2012. Quantitative data was also incorporated into Geographic Information System (GIS) mapping to provide a spatial analysis component. An overview of the evaluation design can be seen in Figure 2.

Figure 2: Overview of Evaluation Structure



6 Description of Van Clients and Services

6.1 Quantitative Sample Parameters

Van intake forms are teleforms that are scanned into an electronic database and are coded by a data entry team. The data for this evaluation were received in a coded, electronic form to be analyzed using SPSS (IBM SPSS Statistics, version 20.0, 2011). The original data set included 23,668 visits for 8,311 unique clients. This data set provided a reported patient base with ages ranging from 9 to 104. This range led to the suspicion of issues with some of the data entries, especially since the van only provides services to adults. For this reason, analysis of the data was restricted to visits recorded for patients between the ages of 16 and 80 at the time of their visit. This excluded visits that either did not have an age recorded for the patient or had an age outside of the designated range. As the patient data included data from both the long intake form and the short intake form, some unique patient identification numbers lacked the sufficient data for the evaluation analysis. Thus, data was further restricted to include only clients that had at least one long intake form in the data set. The final data set included 23,556 cases and was made up of 7,447 unique patient identification numbers.

6.2 Total Unique Patient Analysis

6.2.1 Methods for Unique Patient Analysis

A description of the patient population was created by using data from unique patient identification number to describe the population based on a single encounter. The encounter used was dependent upon the variable that was analyzed. For consistent characteristics, such as race/ethnicity and gender, the first long form encounter was used in analysis. Indicators to determine non-Hispanic white, non-Hispanic black, Hispanic white, Hispanic Black, and all other races were created by using race reports and whether

or not the patient was of Hispanic decent. Foreign-born individuals were counted based on the first long form encounter and were determined based on reported country of birth. The mean age, education, marital status, monthly income, insurance type, number of sex partners and condom use (for both vaginal and anal sex) for each patient were analyzed based on the most recent encounter.

Indicators were also created to determine if clients ever reported the following: homelessness (based on reports of living in a hotel/boarding house, a treatment or halfway house, a shelter, public place, a friend or family's place, or were homeless), unemployment, receiving income assistance (includes Food stamps, SAGA, social security, unemployment, state aid, workers compensation, or some other form of entitlements or income assistance), lack of insurance, jailed within 6 months prior to van visit, injection drug use, using needles after someone, specific drug use, and part of drug treatment program (using medically-assisted methadone or buprenorphine). Specific health conditions reported include hypertension, high blood sugar or diabetes, obesity, asthma, HIV/AIDS diagnosis, Hepatitis C, sexually transmitted infection, positive tuberculosis skin test (PPD), active tuberculosis infection and mental health morbidity. The indicator for number of chronic conditions was created using the aforementioned created indicators for a history of reported hypertension, high blood sugar/diabetes, obesity, and asthma.

6.2.2 Results for Unique Patient Analysis

A description of all clients that utilized the CHCV between 2003-2011 was created and is presented in four different categories: demographics characteristics (Table 1), socioeconomic indicators (Table 2), reported risk behaviors (Table 3), and health

indicators (Table 4). These data are based on unique patient identification numbers (n=7,447).

Forty percent of clients seen at the CHCV were Non-Hispanic Black and 31.4% were Hispanic White (Figure 3). One quarter of clients were non-Hispanic White. Over a third of the clients (34.6%) were foreign born. The majority of van clients were males (55.7%). The average age of clients at their last visit to the CHCV was 35 years. Forty-five percent of van clients had a high school education, and 30% have less than a high school education. Around 15% have at least some college education. About 60% of van clients were married at the time of their last visit.

Just under half of the clients reported ever being homeless. The majority of clients (65.7%) reported having a period of unemployment at some point during the time period they utilized the van. According to the Department of Health and Human Services, the 2011 poverty line for a single individual is at an annual income of $11,170, or about $930 dollars per month[38]. While nearly 22% of clients reported having a monthly income of greater than $1000, 42% of clients recorded

Figure 3: Description of CHCV Clients by Race/Ethnicity

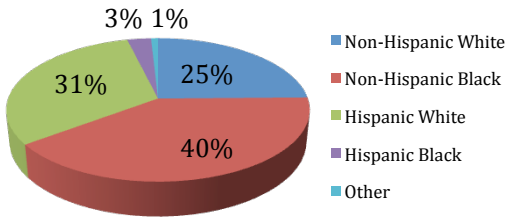
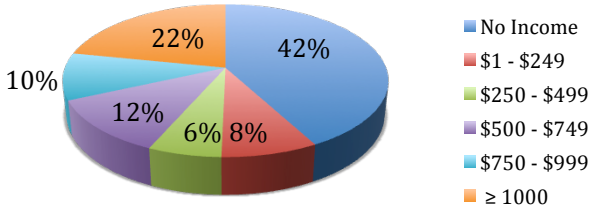


Table 1: Description of All Clients by Demographic

Characteristic	N (%)*
Race/Ethnicity	
Non-Hispanic White	1843 (24.7)
Non-Hispanic Black	2984 (40.1)
Hispanic White	2336 (31.4)
Hispanic Black	220 (3.0)
Other**	64 (0.9)
Foreign-Born	
Yes	2577 (34.6)
No	4868 (65.4)
Age (years), mean ± SD	35.2 ± 11.9
Sex	
Male	4149 (55.7)
Female	3298 (44.3)
Education	
Less than high school	2046 (29.2)
GED	528 (7.1)
High school graduate	3362 (45.1)
At least some college/trade	694 (9.3)
College grad or higher	379 (5.4)
Marital status	
Married	855 (60.1)
Widowed	350 (24.6)
Separated or divorced	150 (10.5)
Single/Never married	68 (4.8)

*Numbers may not sum to 7,447 due to missing data, and percentages may not sum to 100% due to rounding
**Other includes those reporting Asian, Native American/Alaskan Indian or Native Hawaiian/Pacific Islander as their race.

Figure 3: Monthly Income at Most Recent Visit



having no income at all (Figure 4). About 70% of clients were on some income assistance program. Fifty-five percent of clients a history of being uninsured and at the time of their most recent visit, 51.7% of clients did not have health. Another 42% were on some form of government-sponsored insurance program and less than 7 percent had private or employer-based insurance.

The van intake form records information on a number of behaviors that may place an individual at risk for health conditions. From this, it was found that 17.7% of clients had been in jail or prison in the 6 months prior to a visit. Over 16% of clients had a history of injection drug use and 12.8% of clients had used a needle after someone else. Over 66% of clients had a history of some illicit drug use. The most common drugs used by clients were marijuana (62.2%), crack/cocaine (39.2%), and heroin (23.4%) (Figure 5). Over twenty percent of clients reported polysubstance abuse, including

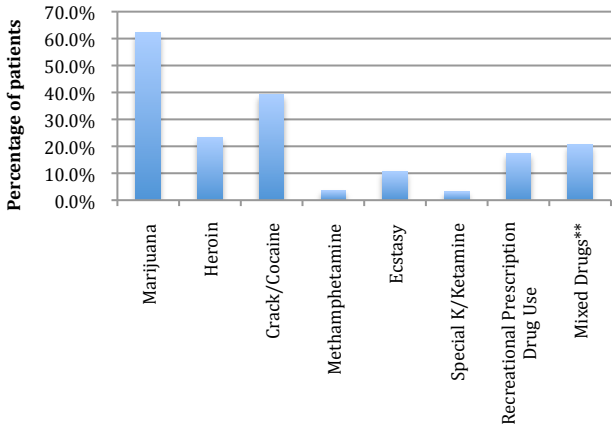
Table 2: Description of All Clients by Socioeconomic Indicators

Characteristic	N (%)*
Ever Homeless?	
Yes	3177 (43.0)
No	4213 (57.0)
Ever Unemployed?	
Yes	4855 (65.7)
No	2538 (34.3)
Monthly Income At Last Visit (US$)	2943 (42.1)
No Income	573 (8.2)
$1 - $249	435 (6.2)
$250 - $499	816 (11.7)
$500 - $749	695 (9.9)
$750 - $999	1523 (21.9)
≥ 1000	
Ever had Income Assistance	
Yes	4001 (69.4)
No	1761 (30.6)
Ever Uninsured?	
Yes	4055 (55.0)
No	3317 (45.0)
Type of Health Insurance At Most Recent Visit	
None	3811 (51.7)
Government-sponsored**	3098 (42.0)
Private	272 (3.7)
Employer	191 (2.6)

*Numbers may not sum to 7,447 due to missing data, and percentages may not sum to 100% due to rounding

**Government-sponsored insurance options refers to both federal and state options, including Medicaid, Medicare, SAGA, and VA insurance.

Figure 5: Clients Drug Use



"speedballing" (mixed heroin, cocaine and/or morphine) or "wooly" (marijuana and crack or PCP). At the time of their most recent visit, 26.6% reported not having sexual intercourse in the last 6 months and 54.7% reported having only one partner. For both vaginal and anal sex, the most common response was "no condom use" (39.9% for vaginal sex and 14.4% for anal sex), with condom use for vaginal sex being more common than use for anal sex.

Reported health problems of van clients include 17.1% of clients with hypertension and 7.8% with diabetes or high blood sugar. About 28% of van clients had one of these chronic condition and 8.1% had at least two chronic conditions. The HIV prevalence in van clients was 4.9% and prevalence of hepatitis C was 9.4%. About 21% of clients had a history of sexually transmitted disease and over 20% of clients had received a diagnosis and/or treatment for mental health morbidity.

Table 3: Description of Patients by Reported Behaviors

Characteristic	N (%)*
Incarcerated within 6 months prior to Visit	
Yes	1262 (17.7)
No	5849 (82.3)
Ever Injected Drugs	
Yes	1228 (16.6)
No	6159 (83.4)
Ever Used Needles After Someone	
Yes	947 (12.8)
No	6443 (87.2)
Drug Use Ever	
Yes	4928 (66.2)
No	2519 (33.8)
Type of Drugs Used Ever	
Marijuana	4630 (62.2)
Heroin	1746 (23.4)
Crack/Cocaine	2921 (39.2)
Methamphetamine	274 (3.7)
Ecstasy	794 (10.7)
Special K/Ketamine	237 (3.2)
Recreational Prescription Drug Use	1302 (17.5)
Mixed Drugs[1]	1534 (20.6)
Ever part of Drug Treatment Program	
Yes	471 (6.3)
No	6976 (93.7)
Number of sexual partners within last 6 months of visit	
None	1870 (26.6)
One	3850 (54.7)
2 to 5	1155 (16.4)
6 to 10	77 (1.1)
>10	81 (1.2)
Ever had sex exchanged for money, rent, drugs, or protection	
Yes	1168 (16.1)
No	6086 (83.9)
Condom use for vaginal sex[2]	
Always	1601 (27.2)
Sometimes	1746 (29.7)
Never	2538 (43.1)
Condom use for anal sex[2]	
Always	447 (21.8)
Sometimes	381 (18.6)
Never	1224 (59.6)

*Numbers may not sum to 7,447 due to missing data, and percentages may not sum to 100% due to rounding

`Mixed drugs refers to use of "woolly/illy" (the use of marijuana and PCP or crack) or speedball (mix of cocaine, heroine, and/or morphine).

[2]Missing values include those who reported having "no vaginal sex" or "no anal sex" in the respective category

Table 4: Description of Clients\s by Health Indicators	
Characteristic	**N (%)***
Documented Hypertension	1275 (17.1)
Documented Diabetes	583 (7.8)
Documented Obesity	68 (0.9)
Documented Asthma	1486 (20.0)
Number of Chronic Conditions[1]	
0	4763 (64.0)
1	2081 (27.9)
2+	603 (8.1)
HIV/AIDS	362 (4.9)
Hepatitis C	701 (9.4)
Positive PPD	512 (8.2)
History of Tuberculosis Infection	79 (1.2)
History of Sexually Transmitted Infection	1559 (20.9)
History of Mental Health Morbidity	1701 (22.8)

*Numbers may not sum to 7,447 due to missing data, and percentages may not sum to 100% due to rounding

[1]Chronic conditions include hypertension, diabetes, asthma, and obesity

[2]Positive PPD cases were determined only out of people who had received a PPD. Those who had never received a PPD were counted as missing

[3]Sexually transmitted infections include Hepatitis B, HPV/genital warts, gonorrhea, Chlamydia, herpes/HSV, syphilis, and trichamonas

[4]Mental health conditions include reports of anxiety, bipolar, depression, psychosis, PTSD, and unspecified reports of mental health treatment

6.3 HIV-Positive Client Analysis

6.3.1 Methods for HIV-Positive Client Analysis

To provide a description of the HIV-Positive client base at the CHCV, an analysis was conducted on data from this sub-population. A sub-dataset was extracted from the entire patient database based on those who reported having received a positive HIV diagnosis. This subpopulation was analyzed for the same variables as the entire patient population. In addition, a variable for men who have sex with men (MSM) and CD4 count ranges was created based on the clients most recent visit and is included in the results for these patients.

6.3.2 Results for HIV-Positive Client Analysis

A description of the HIV-positive clients that utilize the CHCV was created and is presented in four different categories: by demographics (Table 5), by socioeconomic indicators (Table 6), by reported behaviors (Table 7), and by health indicators (Table 8). This data is based on unique patient identification numbers (n=352).

In regards to the race and ethnicity, 52% of HIV-Positive clients were non-Hispanic Black and 24.1% were Hispanic Whites (Figure 5). Approximately 24% of these clients

were foreign-born and 65.3% were male. The largest proportion of clients (41.3%) reported their highest level of education as less than high school. While 7.6% of the HIV-positive clients are married, the majority (72.1%) reported their marital status as single/never married.

Nearly a third of the HIV-positive clients at the CHCV reported being homeless at some point in their history of van use. Over 90% had been unemployed at some point and at the time of their last visit, and 32.3% had no source of monthly income. Most of these clients earned less than $1000 per month and 77.2% had received income assistance at some point. Thirty-one percent of clients had been uninsured at some point in their history of van usage and 23.7% were uninsured at the time of their last visit. The majority of patients were on some form of government sponsored insurance plan (Figure 6).

Table 5: Description of HIV Positive Clients by Demographic

Characteristic	N (%)*
Race/Ethnicity	
Non-Hispanic White	76 (21.6)
Non-Hispanic Black	183 (52.0)
Hispanic White	85 (24.1)
Hispanic Black	8 (2.3)
Foreign-Born	
Yes	67 (23.7)
No	216 (76.3)
Age (years), mean ± SD	44.56 ± 8.6
Sex	
Male	230 (65.3)
Female	122 (34.7)
Education	
Less than high school	134 (41.3)
GED	41 (12.7)
High school graduate	108 (33.3)
At least some college/trade	24 (7.4)
College grad or higher	17 (5.3)
Marital status	
Married	26 (7.6)
Widowed	16 (4.7)
Separated or Divorced	67(19.5)
Single/Never Married	248 (72.1)

*Numbers may not sum to 352 due to missing data, and percentages may not sum to 100% due to rounding

Figure 5: Description of HIV-Positive Clients by Race/Ethnicity

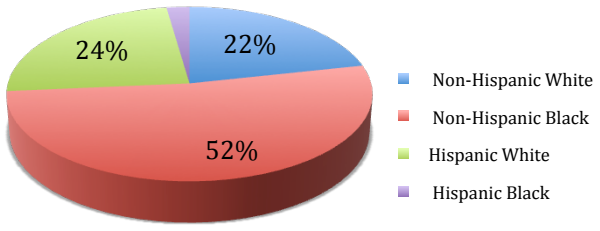


Figure 6: Insurance Type At Most Recent Visit for HIV-Positive Clients

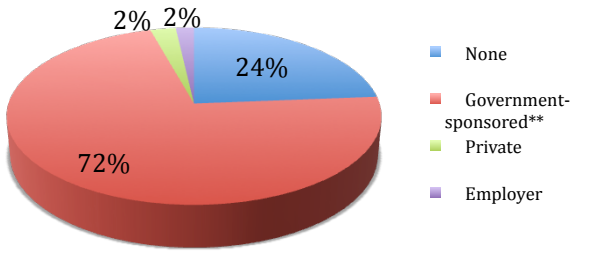


Table 6: Description of HIV-Positive Clients by Socioeconomic Indicators

Characteristic	N (%)*
Ever Homeless?	
Yes	110 (32.1)
No	233 (67.9)
Ever Unemployed?	
Yes	310 (90.4)
No	33 (9.6)
Monthly Income At Last Visit (US$)	
No Income	87 (32.3)
$1 - $249	35 (13.0)
$250 - $499	18 (6.7)
$500 - $749	82 (30.5)
$750 - $999	17 (6.3)
≥ 1000	30 (11.2)
Ever had Income Assistance	
Yes	166 (77.2)
No	49 (22.8)
Ever Uninsured?	
Yes	107 (31.0)
No	238 (69.0)
Type of Health Insurance At Most Recent Visit	
None	66 (23.7)
Government-sponsored**	200 (71.9)
Private	7 (2.5)
Employer	5 (1.8)

*Numbers may not sum to 352 due to missing data, and percentages may not sum to 100% due to rounding
**Government-sponsored insurance options refers to both federal and state options, including Medicaid, Medicare, SAGA, and VA insurance.

Table 7: Description of HIV-Positive Clients by Reported Behaviors

Characteristic	N (%)*
Incarcerated within 6 months prior to Visit	
Yes	103 (31.7)
No	222 (68.3)
Ever Injected Drugs	
Yes	390 (60.1)
No	259 (39.9)
Ever Used Needles After Someone	
Yes	190 (55.1)
No	155 (44.9)
Ever Used Drugs	
Yes	325 (92.3)
No	27 (7.7)
Number of Sexual Partners in 6 Months Prior to Last Visit	126 (47.7)
None	109 (41.3)
One	22 (8.3)
2-5	2 (.8)
6-10	5 (1.9)
>10	
Ever had sex exchanged for money, rent, drugs, or protection	
Yes	138 (41.2)
No	197 (58.8)
MSM	
Yes	38 (21.8)
No	136 (72.4)
Condom use for vaginal sex[1]	
Always	150 (71.8)
Sometimes	33 (15.8)
Never	26 (12.4)
Condom use for anal sex[1]	
Always	48 (61.5)
Sometimes	12 (15.4)
Never	18 (23.1)

*Numbers may not sum to 352 due to missing data, and percentages may not sum to 100% due to rounding
[1]Missing values include those patients that responded "No Vaginal Sex" or "No Anal Sex"

Almost 32% of HIV-positive clients at the CHCV had reported being incarcerated within 6 months of a visit to the van. Sixty percent of these clients had a history of injection drug use and 55.1% had used a needle after someone. A history of drug use was reported for 92.3% of these clients. About 48% and 41% of clients reported having no sexual partners or one sexual partner within 6 months of their last visit to the van, respectively.

Approximately 41% of clients had participated in transactional sex for money, rent, drugs, or protection. Of all the HIV clients, 21.8% were men that have sex with men (MSM). Most recent information on condom usage during vaginal sex found that of those HIV-positive clients engaging in vaginal sex, 71.8% said they always used a condom. For those engaging in anal sex, 61.5% reported always using a condom.

The analysis of health conditions amongst the HIV-positive clients at the CHCV showed that nearly 40% of these clients had at least one chronic condition in addition to their HIV status. Most clients had a CD4 count between 250-499 (32.7%) or 500-749 (32.7%). Almost half of these clients are co-infected with hepatitis C. Eleven percent of clients have a history of a positive PPD result and about 3% have a history of active tuberculosis infection. The most common sexually transmitted disease reported amongst these clients was gonorrhea (18.2%), followed by trichomonas (14.5%) and hepatitis B (14.2%). Fifty-percent of clients also reported a history of mental health morbidity.

Table 8: Description of HIV-Positive Clients by Health Indicators

Characteristic	N (%)*
Documented Hypertension	82 (23.3)
Documented Diabetes	42 (11.9)
Documented Obesity	4 (1.1)
Documented Asthma	93 (26.4)
Number of Chronic Conditions[2]	
0	172 (50.7)
1	127 (37.5)
2+	40 (11.8)
CD4 Count	
>100	6 (5.3)
100-249	3 (2.7)
250-499	37 (32.7)
500-749	37 (32.7)
750-999	18 (15.9)
≥1000	12 (10.6)
Hepatitis C	171 (48.6)
Positive PPD[3]	37 (11.0)
History of Tuberculosis Infection	9 (2.8)
History of Sexually Transmitted Infection	
Hepatitis B	50 (14.2)
HPV/Genital Warts	12 (3.4)
Gonorrhea	64 (18.2)
Chlamydia	34 (9.7)
Herpes	26 (7.4)
Syphilis	27 (7.7)
Trichomonas	16 (14.5)
History of Mental Health Morbidity[4]	169 (49.9)

*Numbers may not sum to 352 due to missing data, and percentages may not sum to 100% due to rounding
[1] Percents reflect number of cases for each condition divided by total number of HIV positive clients.
[2]Chronic conditions include hypertension, diabetes, asthma, and obesity
[3] Positive PPD cases were determined only out of people who had received a PPD. Those who had never received a PPD were counted as missing.
[4]Mental health conditions include reports of anxiety, bipolar, depression, psychosis, PTSD, and unspecified reports of mental health treatment

6.4 HIV Testing Client Analysis

6.4.1 Methods for HIV-Testing Client Analysis

An analysis by unique patient ID was also done to describe those who were tested for HIV on the van. The testing sub-population was determined based on documented HIV

testing procedures for the patient on the van. This subpopulation was described by demographic characteristics, socioeconomic indicators, and risk behaviors.

6.4.2 Results for HIV-Testing Client Analysis

A description of the clients that utilize the CHCV for HIV testing was performed and is presented in three different categories: by demographics (Table 9), by socioeconomic indicators (Table 10), and by reported behaviors (Table 11). This data is based on unique patient identification numbers (n=504).

The majority of clients that receive HIV testing services on the van were non-Hispanic Black (42.7%), followed next by Hispanic Whites (34.3%) (Figure 7). Nearly 40% of these clients were foreign-born and about 60% were male. The average age of clients was about 36 years old. Over half of the clients that received these services reported their highest level of education as a high school graduate and 25.1% had less than a high school education. Most clients were single and have never been married (71.2%).

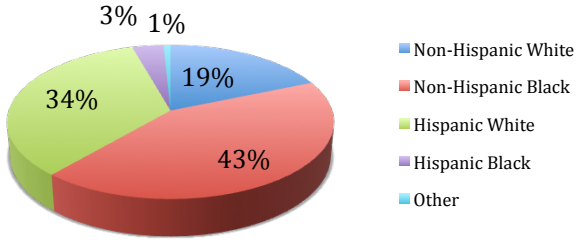
Table 9: Description of HIV Testing Clients by Demographic

Characteristic	N (%)*
Race/Ethnicity	
Non-Hispanic White	94 (18.7)
Non-Hispanic Black	215 (42.7)
Hispanic White	173 (34.3)
Hispanic Black	18 (3.6)
Other**	4 (0.8)
Foreign-Born	
Yes	128 (39.4)
No	197 (60.6)
Age (years), mean ± SD	35.96 ± 10.9
Sex	
Male	299 (59.3)
Female	205 (40.7)
Education	
Less than high school	120 (25.1)
GED	33 (6.9)
High school graduate	247 (51.6)
At least some college/trade	55 (11.5)
College grad or higher	24 (5.0)
Marital status	
Married	53 (15.4)
Widowed	2 (0.6)
Separated or divorced	41 (11.9)
Single/Never married	248 (72.1)

*Numbers may not sum to 504 due to missing data, and percentages may not sum to 100% due to rounding
**Other includes those reporting Asian, Native American/Alaskan Indian or Native Hawaiian/Pacific Islander as their race.

About 17% of clients that had received HIV testing on the van reported being homeless at some point in time. The majority of these clients (56.4%) had a history of unemployment and 27% had no monthly income at the time of their most recent visit. About three-quarters of HIV-testing clients said they had received income assistance at some point. Just

Figure 7: Description of HIV Testing Clients by Race/Ethnicity



over 55% of these clients had a history of being uninsured and 51.9% were uninsured at their latest visit. Approximately 40% were on some form of government-sponsored insurance program.

About 13% of those who received HIV testing services at the van had been incarcerated within six months prior to a van visit. Nearly 17% of HIV-testers on the van had a history of injection drug use and 39.7% had used a needle after someone. Sixty-nine percent of those testing for HIV on the van had a history of drug use and one-fifth had engaged in transactional sex for money, rent, drugs, or protection and 8.9% were men who have sex with men (MSM). In the six months prior to their most recent visit reporting sexual activity, half of the HIV-testing clients reported never using a condom during anal sex and 38.7% reported never using a condom during vaginal sex. A comparison of people living with HIV/AIDS (PLWHA) in New Haven, HIV-positive CHCV clients, and HIV-testing CHCV clients can be found in Figure 9.

Table 10: Description of HIV Testing Clients by Socioeconomic Indicators

Characteristic	N (%)*
Ever Homeless?	
Yes	87 (17.4)
No	413 (82.6)
Ever Unemployed?	
Yes	282 (56.4)
No	218 (43.6)
Monthly Income At Last Visit (US$)	
No Income	84 (27.0)
$1 - $249	39 (12.5)
$250 - $499	13 (4.2)
$500 - $749	47 (15.1)
$750 - $999	29 (9.3)
≥ 1000	99 (31.8)
Ever had Income Assistance	
Yes	179 (74.9)
No	60 (25.1)
Ever Uninsured?	
Yes	278 (55.4)
No	224 (44.4)
Type of Insurance At Most Recent Visit	
None	167 (51.9)
Government-sponsored**	123 (38.2)
Private	13 (4.0)
Employer	19 (5.9)

*Numbers may not sum to 504 due to missing data, and percentages may not sum to 100% due to rounding

**Government-sponsored insurance options refers to both federal and state options, including Medicaid, Medicare, SAGA, and VA insurance.

Figure 8: Insurance Type at Most Recent Visit for HIV Testing Clients

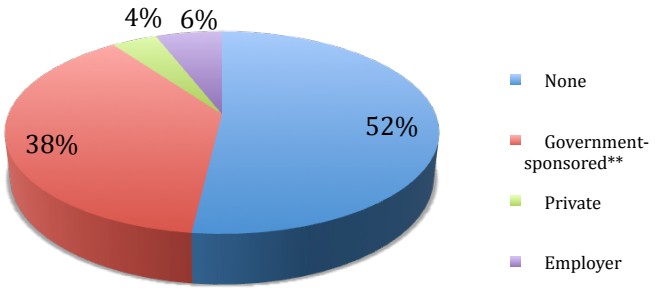
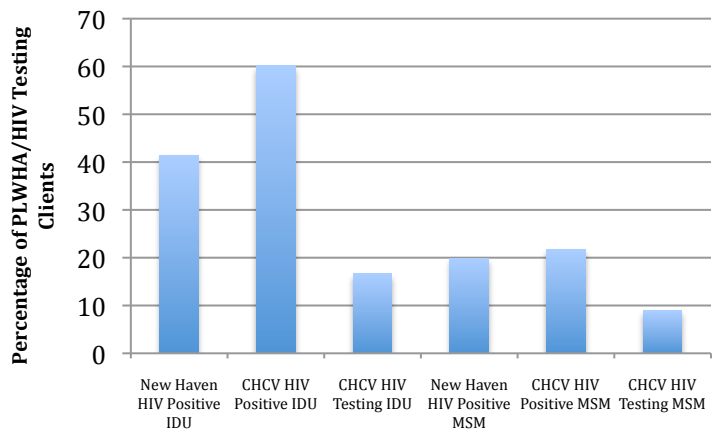


Table 11: Description of HIV Testing Clients by Reported Behaviors	
Characteristic	**N (%)***
Incarcerated within 6 months prior to Visit	
Yes	62 (12.8)
No	423 (87.2)
Ever Injected Drugs	
Yes	83 (16.6)
No	417 (83.4)
Ever Used Needles After Someone	65 (13.0)
Yes	435 (87.0)
No	
Ever Used Drugs	348 (69.0)
Yes	156 (31.0)
No	
Ever had sex exchanged for money, rent, drugs, or protection	
Yes	102 (20.2)
No	395 (78.4)
MSM	
Yes	23 (8.9)
No	236 (91.1)
Condom use for vaginal sex***	
Always	112 (26.7)
Sometimes	145 (34.6)
Never	162 (38.7)
Condom use for anal sex***	
Always	46 (30.1)
Sometimes	30 (19.6)
Never	77 (50.3)

*Numbers may not sum to 504 due to missing data, and percentages may not sum to 100% due to rounding
**Mixed drugs refers to use of "woolly/illy" (the use of marijuana and PCP or crack) or speedball (mix of cocaine, heroine, and/or morphine).
***Missing cases include those that reported "no vaginal sex" or "no anal sex" for their respective categories.

Figure 9: Comparison of IDU and MSM



6.5 Van Service Utilization

6.5.1 Methods for Van Service Utilization Analysis

A description of the services provided by the CHCV was created based on all encounters at the van that were included in the analysis parameters. The total number of encounters was 23,556. The frequencies of service utilization for the service type and for specific services were determined based on records of procedures performed. Blood sugar

screening includes services recorded for both finger stick blood sugar tests and non-fasting blood sugar tests. PPD services reports both those who had their PPD placed on the van and those who had their PPD read on the van. HIV services include clients that receive HIV testing and counseling and blood work for lymphocyte subsets, HIV RNA, HIV genotyping and HIV phenotyping. Hepatitis B screening included those who specifically received Hepatitis B screening and those who received a full panel of STD screening procedures. Hepatitis C procedure frequencies include those who received the Hepatitis C laboratory panel and those who receive blood work for drug treatment programs. The compiled variable recording the number of visits for STD screening include cases reported as receiving a G&C probe, pelvic examination for STD, whiff test (for bacterial vaginosis), and/or the VDRL test for syphilis.

Van data was also analyzed to look at service provision over time and by site. Thus, a cross-tabulation was performed to provide insight into the following areas: demographics by site, service utilization by site, demographics by year, and service utilization by year.

6.5.2 Total Van Visits

Analysis of van by stop and by year was done to look at trends in stop utilization over time.. Both year and stop pose some issues with comparability, as stops have changed over time and the records for 2003 and 2011 are not fully available. A graph showing stops by each year interval was made to show differences in service utilization between stops and by year (Figure 10, Table 12). Van visits peaked at the Congress stop during 2006 but had an overall decrease since then. Visits at sites labeled "other" increased and hit a peak in 2010, as did the Chapel stop. The Kimberly stop seemed to only be active from 2004-2007 and

the Saltonstall site was only active from 2004-2008. The frequency of total service utilization of the CHCV was also analyzed and results are in Table 13.

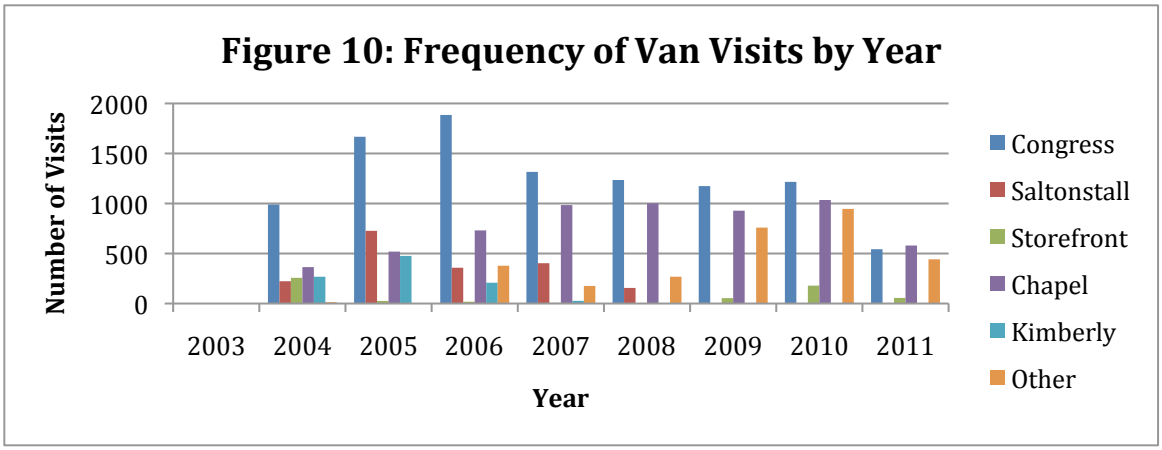
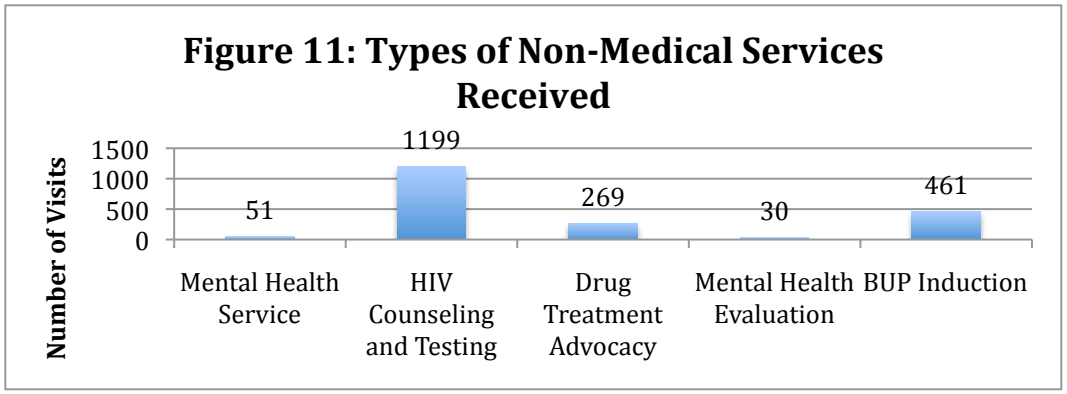


Table 12: Frequency of Van Visits by Site, Year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	**Total**
Congress	1	990	1667	1885	1316	1235	1174	1216	543	**10027**
Saltonstall	0	223	727	358	403	156	0	0	1	**1868**
Storefront	0	257	26	18	7	3	54	179	56	**600**
Chapel	3	364	519	731	984	1001	928	1035	580	**6145**
Kimberly	0	268	476	208	27	0	0	0	0	**979**
Other	1	14	3	378	176	268	759	946	442	**2987**
Total	**5**	**2116**	**3418**	**3578**	**2913**	**2663**	**2915**	**3376**	**1622**	**22606**

While the van provides various types of services, the vast majority of patient visits included care through medical service (97.2%). HIV testing and counseling services was the most utilized non-medical service (Figure 11). Two percent of patient visits were for buprenorphine induction services and 1.1% was for drug treatment advocacy services. Both mental health service and mental health evaluation occurred at 0.2% and 0.1% of all visits, respectively.



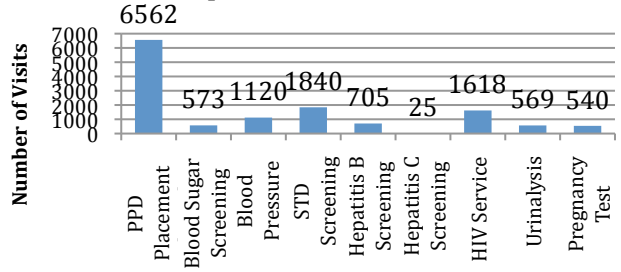
The most common specific procedure provided was PPD placement and reading (Figure 12), with 27.9% of patient visits receiving this service. Other common procedures included STD screening (7.8%), HIV services (6.9%), blood pressure screening (4.8%), Hepatitis B screening (3.0%), blood sugar screening (2.4%), urinalysis (2.4%), and pregnancy testing (2.3%). Only 0.1% of clients received screening for hepatitis C. Specific screening procedures for STDs were most frequently for gonorrhea and chlamydia (6.5%). Just fewer than two percent of van procedures were for syphilis. Pelvic exams and screening for bacterial vaginosis occurred during 0.3% and 0.1% of visits, respectively.

Table 12: Cumulative Frequency of Service Utilization

Characteristic	N (%)*
Type of Service Received	
Medical Service	22906 (97.2)
Mental Health Service	52 (0.2)
HIV Testing and Counseling	1199 (5.1)
Drug Treatment Advocacy	269 (1.1)
Mental Health Evaluation	30 (0.1)
BUP Induction	461 (2.0)
Specific Procedure Utilization	
PPD Placement and Reading	6562 (27.9)
Blood Sugar Screening	573 (2.4)
Blood Pressure Screening	1120 (4.8)
STD Screening	1840 (7.8)
Hepatitis B Screening	705 (3.0)
Hepatitis C Screening	25 (0.1)
HIV Service	1618 (6.9)
Urinalysis	569 (2.4)
Pregnancy Test	540 (2.3)
Specific STD Screening Procedure	
Gonorrhea/Chlamydia Probe	1542 (6.5)
Pelvic Exam	78 (0.3)
Bacterial Vaginosis/Whiff Test	28 (0.1)
Syphilis/VDRL Test	410 (1.7)

*Numbers reflect the number of clients that received the service out of 23,556 patient visits. Percentage reflects the percent of total patient visits that received the service.

Figure 12: Medical Service Utilization by Specific Procedure



6.5.3 Van Visits by Site

A total of 22,607 visits were documented to 5 distinct locations and one category titled 'Other.' The majority of van visits occurred on Congress Avenue, comprising 44.4% of total visits. The stop with the second most frequent visits was Chapel, with 27.2% of all visits occurring at that stop. The Storefront had the smallest number of patient visits (600 visits, 2.7%), followed by the Kimberly Avenue stop (979 visits, 4.3%).

Demographics for CHCV clients at each stop were calculated and are shown in Table 14. These demographics are fairly consistent with the percentages of total clients seen at each stop. The Congress Avenue stop made up 39.3% of total patient visits but had 43.5% of Hispanic Black clients and 25% of clients of other races not listed. The Saltonstall stop made up 10% of patient visits but 14.8% of Hispanic white visits and 6.6% of non-Hispanic Black visits. Despite having only 5.4% of clients, 23.4% of clients of other races not listed attended this stop.

Foreign-born clients also followed similar trends to the total patient visit percentage. At the Saltonstall stop, 13.8% of foreign-born patient visits occurred but only 8% of US born patient visits. Kimberly Avenue saw more foreign-born clients than US born clients, with 8.7% clients being foreign-born and 3.8% clients born in the US. While at most stops the majority of clients were males, Kimberly Avenue saw198 male clients and 197 female clients. Chapel Street also had a higher proportion of female visits than expected. Rates of education by stop seemed to follow similar trends as total van visits. However, the Chapel Street stop saw 36.6% of clients that had a college degree or higher, despite only seeing 28.3% of the total patient volume. The Congress Avenue stop saw very low percentages of clients with some college or a college degree considering they carry 39.3% of the patient volume, but only 30.1% of those with some college and 20.3% of those with at least a college degree.

Percentages of those reporting being homeless at some point were similar to those of the total patient volume. The Congress Street stop and the Chapel Street stop saw higher proportions of uninsured patients than the proportion of total patients they saw. These

stops also had a higher proportion of unemployed patients, while Kimberly Avenue had a much higher number of clients that had never been unemployed.

Table 14: Client Demographics by Site of Visit

	Congress	Saltonstall	Storefront	Chapel	Kimberly	Other	Total
Race							
Non-Hispanic White	710 (39.1)	175 (9.6)	56 (3.1)	577 (31.8)	42 (2.3)	257 (14.1)	**1817**
Non-Hispanic Black	1179 (40.1)	193 (6.6)	57 (1.9)	1010 (34.3)	156 (5.3)	348 (11.8)	**2943**
Hispanic White	886 (38.5)	342 (14.8)	71 (3.1)	397 (17.2)	174 (7.6)	434 (18.8)	**2304**
Hispanic Black	94 (43.5)	22 (10.2)	1 (0.5)	70 (32.4)	8 (3.7)	21 (9.7)	**216**
Other	16 (25.0)	6 (9.4)	0 (0.0)	21 (28.3)	15 (23.4)	6 (9.4)	**64**
Total	**2885 (39.3)**	**738 (10.0)**	**185 (2.5)**	**2075 (28.3)**	**395 (5.4)**	**1066 (14.5)**	**7344**
Foreign Born							
Yes	880 (37.8)	321 (13.8)	82 (3.5)	481 (20.7)	202 (8.7)	363 (15.6)	**2329**
No	1674 (39.1)	341 (8.0)	85 (2.0)	1415 (33.1)	163 (3.8)	598 (14.0)	**4276**
Gender							
Male	1647 (40.2)	414 (10.1)	105 (2.6)	1113 (27.2)	198 (4.8)	615 (15.0)	**4092**
Female	1238 (38.1)	324 (10.0)	80 (2.5)	962 (29.6)	197 (6.1)	451 (13.9)	**3252**
Highest Grade							
Less than High School	848 (42.0)	202 (10.0)	57 (2.8)	534 (26.5)	93 (4.6)	284 (14.1)	**2018**
GED	236 (45.0)	34 (6.5)	16 (3.1)	145 (27.7)	17 (3.2)	76 (14.5)	**524**
High School Graduate	1365 (41.1)	315 (9.5)	69 (2.1)	951 (28.6)	192 (5.8)	429 (12.9)	**3321**
At least some college/trade	205 (30.1)	44 (6.5)	13 (1.9)	238 (34.9)	23 (3.4)	159 (23.3)	**682**
College grad or higher	113 (20.3)	33 (8.9)	15 (4.0)	136 (36.6)	20 (5.4)	149 (14.8)	**372**
Ever Homeless							
Yes	472 (39.1)	117 (9.7)	37 (3.1)	347 (28.7)	51 (4.2)	184 (15.2)	**1208**
No	2402 (39.5)	618 (10.2)	145 (2.4)	1709 (28.1)	340 (5.6)	868 (14.3)	**6082**
Ever Uninsured							
Yes	1478 (37.0)	473 (11.8)	90 (2.3)	1009 (25.2)	277 (6.9)	671 (16.8)	**3998**
No	1391 (42.4)	261 (8.0)	93 (2.8)	1047 (31.9)	114 (3.5)	373 (11.4)	**3279**
Ever Unemployed							
Yes	1994 (41.7)	412 (8.6)	111 (2.3)	1439 (30.1)	178 (3.7)	651 (13.6)	**4785**
No	876 (34.9)	323 (12.9)	72 (2.9)	626 (25.0)	216 (8.6)	395 (15.7)	**2508**
HIV Positive:	138 (40.6)	10 (2.9)	28 (8.2)	138 (40.6)	1 (0.3)	25 (7.4)	**340**
History of STD Infection:	631 (40.9)	105 (6.8)	37 (2.4)	521 (33.8)	61 (4.0)	186 (12.1)	**1541**
Number of Chronic Conditions							
0	1545 (37.5)	431 (10.5)	107 (2.6)	1143 (27.8)	237 (5.8)	654 (15.9)	**4118**
1	680 (39.3)	168 (9.7)	44 (2.5)	520 (30.0)	90 (5.2)	229 (13.2)	**1731**
2	203 (40.5)	42 (8.4)	10 (2.0)	170 (33.9)	24 (4.8)	52 (10.4)	**501**

The Storefront saw 8.2% of HIV positive clients but only 2.5% of total patient volume. Both the Congress stop and the Chapel stop saw 40.6% each of the HIV positive clients that visit the van. Congress had 40.9% of STD screening visits and 40.5% of clients with 2 or more chronic conditions, while Chapel had 33.8% of STD screening visits and 33.9% of clients with 2 or more chronic conditions

A full description of service utilization by stop can be found in Table 15. The most frequently utilized service at all sites was medical service, with the largest proportion of visits for this occurring at Congress (44.3%) and Chapel (27.4%). Mental health services and mental health evaluations were the least frequently utilized but occurred more frequently the Saltonstall, Kimberly Avenue, and at the Storefront. Although the 'other' category only comprised 13.2% of all visits, HIV testing and counseling services at these locations comprised 19.2% of all HIV counseling and testing services. Chapel Street also had a high proportion of HIV counseling and testing services. The Congress stop has very high percentages for buprenorphine induction and drug treatment advocacy, making up 66% and 81.8% of their respective visit types across all stops.

For specific medical procedures provides, PPDs were most frequent and followed similar trends to total visit percentages, with Chapel and Congress having high proportions of these visits. Blood sugar screening was highest at the Congress stop, making up 54.7% of all blood sugar screening procedures. Hepatitis B screening was highest at Kimberly Avenue, with 33.2% of Hepatitis B screenings performed at that location. Hepatitis C screening was also high at Kimberly Avenue, sharing an equivalent rate with the Storefront of 31.8% of Hepatitis C screenings.

STD screening was highest at the Congress stop with 38.4% of all STD screenings occurring there, followed by Chapel, which made up 28.3% of all STD screenings. The most commonly utilized STD screening service was the G/C probe for Gonorrhea and Chlamydia and occurred at percentages that were consistent with the trends in STD screening across all stops. Syphilis screening was the second highest, with most screening procedures occurring between the Congress stop (40.5%) and Chapel (29.0%),

Table 15: Visit Frequency by Site

	Congress	Saltonstall	Storefront	Chapel	Kimberly	Other	Total
Total Visits	10027 (44.4)	1868 (8.3)	600 (2.7)	6145 (27.2)	979 (4.3)	2987 (13.2)	22607

	Congress	Saltonstall	Storefront	Chapel	Kimberly	Other	Total
Medical Service	9747 (44.3)	1847 (8.4)	541 (2.5)	6012 (27.4)	967 (4.4)	2867 (13.0)	**21981**
Mental Health Service	17 (35.4)	4 (8.3)	8 (16.7)	9 (18.8)	2 (4.2)	8 (16.7)	**48**
HIV T&C	491 (41.8)	59 (5.0)	25 (3.0)	352 (30.0)	12 (1.0)	226 (19.2)	**1175**
Drug Tx Advocacy	207 (81.8)	16 (6.3)	5 (2.0)	15 (5.9)	7 (2.8)	3 (1.2)	**253**
Mental Health Eval	13 (43.3)	5 (16.7)	3 (10.0)	3 (10.0)	3 (10.0)	3 (10.0)	**30**
BUP Induction	295 (66.0)	9 (2.0)	77 (17.2)	54 (12.1)	1 (0.2)	11 (2.5)	**447**
Total	**10770 (45.0)**	**1940 (8.1)**	**669 (2.8)**	**6445 (26.9)**	**992 (4.1)**	**3118 (13.0)**	**23934**

	Congress	Saltonstall	Storefront	Chapel	Kimberly	Other	Total
PPD	2899 (47.1)	551 (8.9)	76 (1.2)	1869 (30.3)	183 (3.0)	581 (9.4)	**6159**
Blood Sugar	306 (54.7)	36 (6.4)	19 (3.4)	103 (18.4)	47 (8.4)	48 (8.6)	**559**
Blood Pressure	453 (41.8)	97 (8.9)	21 (1.9)	284 (26.2)	103 (9.5)	127 (11.7)	**1085**
STD	688 (38.4)	198 (11.0)	24 (1.3)	507 (28.3)	75 (4.2)	301 (16.8)	**1793**
Hep B	0 (0.0)	22 (5.7)	62 (16.1)	87 (22.5)	128 (33.2)	87 (22.5)	**386**
Hep C	0 (0.0)	0 (0.0)	7 (31.8)	6 (27.3)	7 (31.8)	2 (9.1)	**22**
HIV Services	696 (44.0)	81 (5.1)	54 (3.4)	462 (29.2)	16 (1.0)	274 (17.3)	**1583**
Urinalysis	232 (41.5)	79 (14.1)	6 (1.1)	147 (26.3)	44 (7.9)	51 (9.1)	**559**
Pregnancy Test	169 (31.8)	55 (10.4)	9 (1.7)	161 (30.3)	42 (7.9)	95 (17.9)	**531**
Total	**5443**	**1119**	**278**	**3626**	**645**	**1566**	**12677**

	Congress	Saltonstall	Storefront	Chapel	Kimberly	Other	Total
GC Probe	570 (38.0)	167 (11.1)	23 (1.5)	427 (28.4)	67 (4.5)	247 (16.5)	**1501**
Pelvic Exam	29 (37.2)	22 (28.2)	1 (1.3)	10 (12.8)	11 (14.1)	5 (6.4)	**78**
BV/Whiff	10 (18.9)	4 (7.5)	0 (0.0)	11 (20.8)	1 (1.9)	27 (50.9)	**53**
Syphilis/VDRL	162 (40.5)	38 (9.5)	1 (0.3)	116 (29.0)	9 (2.3)	74 (18.5)	**400**
Total	**771**	**231**	**25**	**564**	**88**	**353**	**2032**

6.5.4 Van Visits by Year

Results from the analysis of patient demographics by year are displayed in Table 16. Van visitation and service utilization seem to be fairly consistent across the years of 2004 to 2010, outside of a few anomalies. It is difficult to include 2003 and 2011 in this because full-year information is not available for these periods. Most clients who reported their race as something other than White, Black, non-Hispanic White, or non-Hispanic Black

came to the van between 2004 and 2006, making up almost three-fourths of the visits by this race category. Non-Hispanic Black clients also tapered off, with a maximum of 50 visits in 2005. Nearly 50% of the foreign-born patient cases visited the van between 2004 and 2005. The year 2004 actually saw more foreign-born clients than US born clients. Despite a decrease in van utilization by males in 2009, female patient visits increased. However, both genders in general follow similar trends in van utilization. While in 2005, percentages of those who had a high school diploma or less made up between 14% and 16.3% of patient visits for their respective categories, those with at least some college comprised only 10.6% of their categories. However, by 2009, those with a high school diploma or less have 12.8-13.4% in their categories while those with at least some college were at 17.1%.

In 2005 and 2006, the van saw its highest percentages of individuals that had never been homeless. However, a shift in 2007 shows that there was an increase in patients that reported homelessness and a decrease in patients that has never been homeless. Thus, for their respective categories, higher percentages of non-homeless clients were seen before 2007 and higher percentages of ever-homeless clients were seen after 2007. Uninsured clients followed fairly similar trends to the total patient visit trends except it had a smaller proportion of uninsured clients in 2004 and a larger percentage in 2005. Clients with a history of unemployment seemed to be lower in 2004, as well, but rose in 2005.

The van had the largest percentage of HIV-positive client visits in 2004 and saw a decline each year after. Those with a history of STD infection made up a higher percentage of the patient load in 2004-2006 but in 2007, the percentage of clients seen that had a history of STD infection had fallen below the percentage of total clients seen for the year. A similar theme was seen in those with chronic conditions in 2004 and 2005.

Service utilization data was available on a total of 23,556 patient visits over the 9-year period presented in the van data. The full description of van services and procedures by year can be found in Table 17. The number of van visits was highest in 2006, with 3829 patient visits (16.3 of total visits). The numbers for 2011 seem low, with only 1670 visits. However, this only contains data from half the year and so if we were to extrapolate based on this information, van visitation would be similar to years past. Because the current method for data collection and input only began in 2003, information for 2003 is not complete.

Medical services were the most commonly utilized services, with a total of 22,906 visits. Mental health services and mental health evaluation were the least utilized services, with 0.2% visits and 0.1% visits respectively. Percentage of clients seeking HIV testing and counseling services was lower than the percentage of total number by year until 2007, when they were at 17.1% of all HIV testing and counseling visits. Drug treatment advocacy visits were concentrated in 2004 and 2005, comprising over 95% of all drug treatment advocacy visits. Similarly, about two-thirds of visits for mental health evaluation occurred between 2004 and 2005.

While visits in 2004 comprised only 9.7% of total visits, drug treatment advocacy services comprised 54.3% of those visits. Mental health evaluation services were especially high in 2005, comprising 56.7% of all mental health evaluation visits despite 2005 only making up 15% of total visits. Buprenorphine induction was highest in 2006, as it contains 44.5% of all buprenorphine induction visits. HIV testing and counseling peaked in 2009, with 234 visits- 19.5% of all HIV testing visits.

PPD placement remained steady over time but saw some increases higher frequencies of utilization in 2005and 2007 through2009. HIV services were low in 2004 through 2006 but 2007 marked a large increase in their utilization. Both blood sugar and blood pressure screening procedures were frequently utilized in 2005, with 2005 blood sugar visits comprising 25% of all blood sugar visits and blood pressure visits comprising 20.1% of all blood pressure visits. STD screening peaked in 2010, with the van providing these services during 309 visits (16.8% of all STD screening visits). Hepatitis B screening also increased during 2010, with 140 visits for this screening (20.9% of all Hepatitis B screening services).

Utilization of the G&C probe screening compared fairly closely to the proportion of all service utilized by year. Syphilis screening was more variable, with nearly a quarter of visits occurring in 2007. Pelvic exams for screening were concentrated in 2004 and 2005, with 19% of all pelvic exam visits in 2004 and over half occurring in 2005. These visits declined to 8 visits in 2006 and reached a minimum in 2011 with only one visit for this procedure.

Table 16: Demographics of Van Patients by Year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Race										
Non-Hispanic White	1 (0.0)	261 (11.0)	404 (17.0)	351 (14.8)	286 (12.0)	295 (12.4)	297 (12.5)	334 (14.1)	146 (6.1)	**2375**
Non-Hispanic Black	3 (0.1)	596 (14.4)	653 (15.8)	614 (14.9)	529 (12.8)	499 (12.1)	582 (14.1)	466 (11.3)	186 (4.5)	**4128**
Hispanic White	0 (0.0)	541 (17.2)	558 (17.8)	512 (16.3)	405 (12.9)	352 (11.2)	349 (11.1)	304 (9.7)	119 (3.8)	**3140**
Hispanic Black	0 (0.0)	22 (8.1)	50 (18.5)	47 (17.4)	49 (18.1)	31 (11.5)	38 (14.1)	23 (8.5)	10 (3.7)	**270**
Other	0 (0.0)	28 (30.8)	26 (28.6)	11 (12.1)	5 (5.5)	9 (9.9)	5 (5.5)	5 (5.5)	2 (2.2)	**91**
Total	**4 (>0.1)**	**1448 (14.5)**	**1691 (16.9)**	**1535 (15.3)**	**1274 (12.7)**	**1186 (11.9)**	**1271 (12.7)**	**1132 (11.3)**	**463 (4.6)**	**10004**
Foreign Born										
Yes	0 (0.0)	573 (24.6)	579 (24.9)	383 (16.4)	316 (13.6)	310 (13.3)	297 (12.8)	274 (11.8)	106 (4.6)	**2329**
No	2 (>0.1)	497 (11.6)	783 (18.3)	734 (17.3)	643 (15.0)	628 (14.7)	731 (17.1)	695 (16.3)	297 (6.9)	**4276**
Gender										
Male	1 (>0.1)	1139 (8.9)	1884 (14.7)	2209 (17.2)	1771 (13.8)	1668 (13.0)	1616 (12.6)	1749 (13.6)	816 (6.3)	**12853**
Female	3 (>0.1)	1003 (11.0)	1445 (15.8)	1491 (16.3)	1189 (13.0)	980 (10.7)	1186 (13.0)	1255 (13.7)	600 (6.6)	**9152**
Highest Grade										
Less than High School	0 (0.0)	722 (10.5)	975 (14.2)	1284 (18.7)	1040 (15.2)	821 (12.0)	784 (11.4)	878 (12.8)	347 (5.1)	**6851**
GED	1 (.01)	105 (6.4)	232 (14.0)	281 (17.0)	234 (14.2)	261 (15.8)	205 (12.4)	222 (13.4)	111 (6.7)	**1652**
High School Graduate	3 (0.0)	937 (9.9)	1532 (16.3)	1466 (15.6)	1130 (12.0)	1143 (12.0)	1265 (12.1)	1254 (13.4)	695 (7.4)	**9425**
At least some college/trade	0 (0.0)	140 (7.4)	200 (10.6)	299 (15.8)	236 (12.5)	202 (10.7)	324 (17.1)	356 (18.8)	133 (7.0)	**1890**
College grad or higher	0 (0.0)	88 (7.4)	139 (10.6)	143 (15.8)	158 (12.5)	149 (10.7)	124 (17.1)	126 (18.8)	65 (7.0)	**992**
Ever Homeless	1 (>0.1)	451 (11.8)	513 (13.4)	401 (10.5)	514 (13.5)	573 (15.0)	568 (14.9)	563 (14.9)	234 (6.1)	**3818**
Ever Uninsured	0 (0.0)	586 (11.3)	920 (17.8)	723 (14.0)	644 (12.50	646 (12.5)	758 (14.7)	636 (12.3)	259 (5.0)	**5172**
Ever Unemployed	1 (>0.1)	604 (9.7)	953 (15.3)	942 (15.1)	859 (13.8)	817 (13.1)	853 (13.7)	821 (13.1)	394 (6.3)	**6244**
HIV Positive Client Visits	1 (0.2)	147 (22.2)	125 (18.9)	114 (17.2)	102 (15.4)	70 (10.6)	55 (8.3)	32 (4.8)	16 (2.4)	**662**
History of STD Infection: Number of Chronic Conditions	2 (0.1)	318 (16.3)	343 (17.6)	336 (17.2)	227 (11.6)	204 (10.5)	227 (11.6)	225 (11.5)	69 (3.5)	**1951**
0	4 (0.1)	846 (12.9)	1139 (17.3)	1005 (15.3)	821 (12.5)	809 (12.3)	866 (13.2)	772 (11.8)	303 (4.6)	**6565**
1	0 (0.0)	474 (16.8)	531 (18.9)	432 (15.3)	357 (12.7)	302 (10.7)	320 (11.4)	276 (9.8)	123 (4.4)	**2815**
2	0 (0.0)	128 (17.4)	131 (17.8)	98 (13.4)	96 (13.1)	75 (10.2)	85 (11.6)	84 (11.4)	37 (5.0)	**734**

Table 17: Frequency of Service Utilization by Year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Number of Total Visits	5 (>0.1)	2292 (9.7)	3524 (15.0)	3829 (16.3)	3021 (12.8)	2728 (11.6)	2998 (12.7)	3489 (14.8)	1670 (7.1)	**23556**
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**Total**
Medical Service	5 (> 0.1)	2125 (9.3)	3459 (15.1)	3798 (16.6)	2980 (13.0)	2648 (11.6)	2902 (12.7)	3366 (14.7)	1623 (7.1)	**22906**
Mental Health Service	0 (0.0)	5 (9.8)	7 (13.7)	5 (9.8)	3 (5.9)	2 (3.9)	7 (13.7)	10 (19.6)	12 (23.5)	**51**
HIV T&C	1 (0.1)	65 (5.4)	52 (4.3)	162 (13.5)	205 (17.1)	193 (16.1)	234 (19.5)	194 (16.2)	93 (7.8)	**1199**
Drug Tx Advocacy	0 (0.0)	146 (54.3)	111 (41.3)	2 (0.7)	7 (2.6)	0 (0.0)	2 (0.7)	1 (0.4)	0 (0.0)	**269**
Mental Health Eval	0 (0.0)	3 (10.0)	17 (56.7)	0	1 (3.3)	0 (0.0)	5 (16.7)	4 (13.3)	0 (0.0)	**30**
BUP Induction	0 (0.0)	1 (0.2)	14 (3.0)	205 (44.5)	82 (17.8)	58 (12.6)	36 (7.8)	63 (13.7)	2 (0.4)	**461**
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**Total**
PPD	3 (>0.1)	548 (8.4)	1103 (16.8)	1007 (15.3)	896 (13.7)	907 (13.8)	943 (14.4)	705 (10.7)	450 (6.9)	**6562**
Blood Sugar	0 (0.0)	97 (16.9)	143 (25.0)	56 (9.8)	49 (8.6)	71 (12.4)	54 (9.4)	59 (10.3)	44 (7.7)	**573**
Blood Pressure	0 (0.0)	139 (12.4)	225 (20.1)	149 (13.3)	103 (9.2)	122 (10.9)	141 (12.6)	158 (14.1)	83 (7.4)	**1120**
STD	0 (0.0)	173 (9.4)	256 (13.9)	251 (13.6)	272 (14.8)	222 (12.1)	193 (10.5)	309 (16.8)	164 (8.9)	**1840**
Hep B	0 (0.0)	22 (3.2)	62 (8.9)	87 (12.5)	128 (18.4)	87 (12.5)	87 (12.5)	145 (20.9)	77 (11.1)	**695**
Hep C	0 (0.0)	0 (0.0)	7 (28.0)	6 (24.0)	7 (28.0)	2 (8.0)	2 (8.0)	1 (4.0)	0 (0.0)	**25**
HIV Serv	1 (0.1)	110 (6.8)	96 (5.9)	234 (14.5)	301 (18.6)	251 (15.5)	277 (17.1)	237 (14.6)	111 (6.9)	**1618**
Urinalysis	0 (0.0)	60 (10.5)	129 (22.7)	95 (16.7)	84 (14.8)	84 (14.8)	41 (7.2)	45 (7.9)	31 (5.4)	**569**
Pregnancy Test	0 (0.0)	61 (11.3)	86 (15.9)	72 (13.3)	58 (10.7)	45 (8.3)	95 (17.6)	84 (15.6)	39 (7.2)	**540**
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**Total**
GC Probe	0 (0.0)	169 (11.0)	223 (14.5)	204 (13.2)	218 (14.1)	170 (11.0)	161 (10.4)	261 (16.9)	136 (8.8)	**1542**
Pelvic Exam	0 (0.0)	15 (19.2)	41 (52.6)	8 (10.3)	4 (5.1)	4 (5.1)	2 (2.6)	3 (3.8)	1 (1.3)	**78**
BV/Whiff	0 (0.0)	3 (10.7)	6 (21.4)	7 (25.0)	4 (14.3)	5 (17.9)	3 (10.7)	0 (0.0)	0 (0.0)	**28**
Syphilis/VDRL	0 (0.0)	21 (5.1)	42 (10.2)	39 (9.5)	100 (24.4)	50 (12.2)	23 (5.6)	86 (21.0)	49 (12.0)	**410**

7 Qualitative Data from Client and Provider Interviews

Interview scripts for clients were created in order to determine their typical source of care, barriers to health care, utilization patterns of the van, and their general satisfaction with the van's services. Questions regarding satisfaction were adapted from previous research that assessed consistency in results through various survey methods [39]. The provider interview script was developed to provide an overview of the workings of the van and to gain a deeper understanding of the needs of the van's clients, the struggles they face, and how the van works in the community to help overcome these obstacles. Results from the patient data and provider data are presented separately. Coding structures for both the patient interviews and the provider interviews are attached in the appendices, along with a frequency table including number of responses and percent per theme. Interview scripts are also attached.

7.1 Client Interviews

7.1.1 Methods for Client Interviews

Data were collected on patient perspectives through a total of 28 interviews. Interviewees were determined using a convenience sampling method, where interviews were conducted with any patient who was attending the van when the researcher was present and who agreed to be interviewed. However, interviews were conducted over a period of 6 weeks and were done on different days of the week at each stop to try to promote some randomization and decrease selection bias in the interview participants. In most patient interviews, only the researcher and the patient were present during the interview. Bilingual van staff served as translators for monolingual Spanish speaking clients. Patient surveys were conducted verbally and were recorded without any identifying data. These interviews were semi-structured and included both open-ended

questions and true and false questions regarding the patient's usual source of care, barriers to health care, utilization patterns on the CHCV, and perception of the van and its services. Interviews were audio recorded for transcription. Transcripts were uploaded into Atlas.ti (Atlas.ti GmbH, version 6.0) and codes were developed using grounded theory. All interviews were coded and were reviewed a second time to ensure that the final coding structure was applied to each transcript. Comments are presented by frequency of response and while some themes were mentioned only once by each participant, others contain multiple comments from any number of the participants.

7.1.2 Results of Client Interviews

A total of 28 clients were interviewed regarding their health care and utilization of services at the CHCV. Of those interviewed, 12 were non-Hispanic Black, 6 were non-Hispanic Whites, and 10 were Hispanic. Eighteen of the clients interviewed were male and 9 were female. Three interviews were conducted in Spanish and were translated by the van staff. Interviews occurred in the following frequencies: 1 at the Storefront, 9 at Chapel Street, 4 at Ferry Street, 8 at Congress Street, and 6 at Safe Haven. Topics that arose from interview questions were sources of health care, frequency of health care, barriers to health care, utilization of and satisfaction with the van, strengths of the van, and weaknesses of the van. There were also five true/false questions asked. A frequency table of responses can be found in Table 18.

Table 18: Client Interview Responses by Theme

Theme	Number of Responses (%)
Usual Source of Care	
No source, Hospital in Emergency	2 (7.4)
Community Clinic	7 (25.9)
Private	4 (14.8)
CHCV	6 (22.2)
Both Clinic and CHCV	2 (7.4)
Other	1 (3.7)
None	5 (18.5)
Total:	**27**
Satisfaction with Care	
Satisfied	15 (65.2)
Not Satisfied	8 (34.8)
Total	**23**
Frequency of Health	
Last Appointment	
Less than 1 month	12 (42.9)
1-6 Months	10 (35.7)
6 Months-1 year	3 (10.7)
More than 1 year	3 (10.7)
Total	**28**
Appointments per Year	
Once a Year	6 (21.4)
2-3 Times	7 (25.0)
More than 3 times	9 (32.1)
As needed	3 (10.7)
Don't Receive Health Care	3 (10.7
Total	**28**
Barriers to Health Care	
Transportation	5 (10.2)
Money	12 (24.5)
Documentation	7 (14.3)
Insurance	15 (30.6)
Turned Away by Doctor	6 (12.2)
Language Barrier	0 (0.0)
No Attempt to Try to Receive Care	4 (8.2)
Total	**49**
Learned of Van	
Word of Mouth (Friend/Family)	11 (36.7)
Saw Van	5 (16.7)
Community Outreach Staff Member	6 (20.0)
Referred by Facility	5 (16.7)
Research Study Recruit	1 (3.3)
Flyer/Information Hotline	2 (6.7)
Total	**30**

Theme	Number of Responses (%)
Duration of Van Usage	
First Time	4 (15.4)
Less than 6 Months	6 (23.1)
6 Months-1 year	2 (7.7)
1-3 Years	6 (23.1)
3-5 Years	2 (7.7)
More than 5 years	6 (23.1)
Total	**26**
Initial Decision to Visit	
Friend/Family	4 (14.3)
Outreach Worker	3 (10.7)
Part of Study	1 (3.6)
Free Services	5 (17.9)
Facility Referral	3 (10.7)
Personal Health Reason Cited	11 (39.3)
Harm Reduction Services	1 (3.6)
Total	**28**
Continue to Visit	
Staff	10 (27.8)
Convenience	9 (25.0)
Free	3 (11.1)
Quality of Care	7 (19.4)
Follow-up	4 (11.1)
DOT	2 (5.6)
Total	**36**
Satisfaction with Van:	
Very Satisfied	28 (100)
Privacy Respected	
True	27 (96.4)
Somewhat	1 (3.6)
Feelings and Concerns Considered	
True	28 (100)
Explains my Condition and Procedures	
True	28 (100)
Provider Listens to me	
True	28 (100)
Ask Questions, Clear Answers	
True	27 (96.4)
Doesn't apply	1 (3.6)

Table 18 (Continued): Client Interview Responses by Theme			
Themes	**Number of Responses (%)**	**Themes**	**Number of Responses (%)**
Strengths of CHCV		**Suggestions**	
Communication	12 (17.6)	Advertisement	1 (5.9)
Mobility of the Van	3 (4.4)	Open More Days	2 (11.8)
Novel Idea	2 (2.9)	Open for More Hours	5 (29.4)
Services Available	1 (1.5)	Open More Vans	5 (29.4)
Quality of Care		*Issues with Current Van*	
From Outreach Workers	13 (19.1)	Breaks Down A Lot	1 (5.9)
Medical Workers	19 (27.9)	Size	3 (17.6)
Convenience		**Total**	**17**
Van Services	9 (13.2)		
DOT	2 (2.9)		
Short Waiting Time	5 (7.4)		
Cost	2 (2.9)		
Total	**68**		

Sources of Health Care

Clients most frequently cited a community clinic as their regular source of health care. Seven of 28 clients reported having no regular source of care and while 2 of these clients reported using the emergency room, almost 20% said they did not receive care anywhere. Twenty-two percent of clients used the CHCV as their regular source of care and another 74% used the van regularly along with a community health clinic. In response to a question regarding their satisfaction with their current source of care, 65.2% (n=15) of clients reported being satisfied, while 34.8% were not satisfied.

Frequency of Health Care

Over three-quarters of the clients interviewed had seen a health care provider in the 6 months prior to the interview, while 10.7% reported between 6-12 months and 10.7% reported that it had been more than a year since they had seen a health care provider, including one patient who had received health care in 10 years. Most clients received health care at least once a year and 32.1% clients reported receiving health care more than three times a year. Both clients that said that they would only seek health care as needed

and clients that said that they did not receive health care ever accounted for 10.7% of responses each.

Barriers to Health Care

Clients were asked about barriers to health care based on common factors that are documented to prevent clients from receiving health care. These include transportation, money, documentation, insurance, and being turned away from a health care facility. Just over ten percent of clients reported that they were not able to receive health care because of a lack of transportation and 24.5% clients were prevented because of a lack of money. For many, these two factors were linked, with one patient saying *"[Money is] pretty much the same thing as transportation because I have SAGA and that pretty much pays for things*." About 14% of clients expressed the inability to receive health care due to a lack of documentation. For those who elaborated, reasons included forgotten I.D., lost or no I.D. and lack of I.D. due to migration status. Insurance was the major deterrent to health care, with 30.6% of respondents saying that it had kept them from seeing a doctor. Language barrier was not ever mentioned as a problem for any clients, as many said they receive translators at the van and their health care providers work to understand them.

Six individuals out of the 28 interviewed had been turned away from a physician for reasons such as insurance, area of residency, or a clinics unwillingness to see the patient. One patient stated, "*I live one street over [from the clinic] but my mail goes to my mother's house because I've had problems with my mail. So now they won't take me at the clinic because my mailing address is different."* Another mentioned, "*I tried to access health care for different things and I was waiting on the [community clinic] to return my phone call or to contact me and they never did."*

While some clients did not mention experiencing certain barriers to care, four clients said that they had not experienced these barriers because they had not made an attempt to access care. One client said, "*I have been coming to the van and only to the van. If the van is not out, I look for it but I do not go anywhere else because I know I will be turned away.*" Another said, "*I just don't go because I don't want the bill.*"

Van Utilization

The majority of clients interviewed stated that they had heard of the van by word-of-mouth from either family or friends. About 17% of clients mentioned coming on the van because they had seen it around and 20% of clients had been referred to the van by one of the community outreach staff members working on the van. Seventeen clients (16.7%) had been referred to the van and 6.7% had heard of the van through flyers.

For the clients interviewed, ten had been visiting the van for less than 6 months and for 4 clients (15.4%), the time of interview was their first visit. About 8% of clients had been visiting the van for 6 months to a year and 23.1% of clients had been visiting the van for 1-3 years. Over thirty percent of clients had been visiting the van for over 3 years and the majority of those clients had been visiting for over 5 years. The longest period of time cited was 16 years.

The majority of clients said their initial decision to visit the van was for personal health reasons, though others mentioned coming to the van for harm reduction services or referral from either family and friends, outreach workers, facilities, or studies. However, for those who continue to visit the van, 27.8% stated that they return to the van because of the staff. Twenty-five percent of clients said that they continue to seek services at the van

because of its convenience and 19.4% cited that they returned to the van because of the quality of care that they receive there.

Satisfaction with Care

All clients interviewed replied that they were very satisfied with the care that they had received at the CHCV. When asked about several indicators through true and false questions, clients responded concordantly. Over 96% of clients interviewed said that they felt their privacy was respected while receiving care at the CHCV. One individual expressed privacy as somewhat of an issue, saying, "*[it is private] as much they can make it private. Come on, it's a bus. It's a van. If four people come in, you're going to hear something. The doors aren't soundproof but yeah as far as technology allows."*

In regards to interaction with care providers, all clients responded that they felt their feelings and concerns were considered by the van staff. All 28 clients also responded that they felt the staff clearly explained their conditions and procedures and 27 of the 28 clients said that they were able to ask questions and get clear answers from their provider. One patient did not feel that question applied to them because they did not ask questions. All 28 clients also responded that they felt the van staff really listened to them, though one patient commented, "*It depends on who you're talking to…Yeah, well if you're talking to [an outreach worker] its one thing. If you're talking to the doctor or the nurse or the PA, it's a different thing. It depends on who you talk to, who you get... I feel some have better listening skills than others."*

Strengths of the Van

The most commonly cited strength of the van was the staff. In the interviews, 17.6% of comments by 9 different clients mentioned that a strength of the van in its staff's ability

to communicate and 47% comments by 16 different clients mentioned the quality of care provided by the outreach workers and medical personnel. Patient comments included:

"I am very grateful because I have experienced discrimination at other places when I work with other white Americans. Here, it is the opposite. All of the doctors are white Americans but are very kind and compassionate to me being Hispanic and help with diseases."

"Everybody is friendly and they never change. Because some people, once they found out I was HIV-positive, they stopped talking to me. But them, they have been there, they've seen me cry, they've seen me go through a lot, and they're still there. And I just love that."

"When I miss [DOT], I'll call and they'll have it here. I was in school two weeks ago and I couldn't leave. They were really strict about leaving so I called [the case manager] and he brought it to me. That was awesome. He brought my medication to me at school."

"They're pretty compassionate. They don't seem like just a mobile transitional thing. They try to encourage people to come back and stay on top of maintaining their health."

"Besides being professional and providing the procedures and the test results, I have also found friendships with the doctors and [they] are very kind and compassionate in what they do."

Other strengths included the convenience of coming to the van for service. One client said, "*I just feel like its always there sort of. Like it's kind of an easy way. You don't have to call and make an appointment and wait two days for an appointment. Its fast and easy."*

Clients also expressed convenience in short waiting time at the van and its provision of free services. Two clients mentioned that they liked being able to come to the van for DOT. These clients said the following:

> *"I get up in the morning, eat my breakfast and go to my AA meeting and right after my AA meeting, I come get my medication. Its like, that's part of my day. I look forward to it. It simplifies things. I don't have to have a whole bunch of bottles, you know 8 or 9 bottles. I just get this one packet right here. A couple at a time on the weekends but other than that I come in and I just take it."*
>
> *"I just like the convenience and you know really I don't have to be worried, especially being homeless, you know I don't have to worry about carrying 8 or 9 bottles around with me and leaving them places where they could get lost."*

Another strength mentioned 4.4% of comments by 2 different clients was the mobility of the van, with one patient saying "*I like [it] because it moves to other places at certain times. People get in their mind that there is a van right there."* Others said they tried it because it was a novel idea, stating, "*I had never tried anything like it before. This is new to me so yeah, I tried it and I've stuck with it ever since."*

Suggestions for the Van

While most clients did not have any comments for improving the van, the most commonly proposed suggestions were to expand services of the van through either opening a new van or extending the schedule. One patient commented, "*Another van would help at a different location at the same time. There's always people that need medical attention and have needs and stuff. And plus I mean, I know that people need help. Maybe another van would help ease that problem*." Reasons to expand the hours of service were to

accommodate those who were working during the van's hours of operation. These clients said:

"To have a later work schedule because I work until 4. Most people work until 4 or 5 and when they get out of work, we are done so it would be good to stay out longer so we can get care when we get out of work."

"If the van could work later because I am here today because my factory closed. For two, almost three, months I have had a hard time coming and taking my medicine because when I get out of work, the van is done."

"I'm not working but when I'm good to work it will be difficult for me, because I can only come in the morning. So if I'm working in the morning, oh my word, I'll be lost then."

7.2 Provider Interviews

7.2.1 Methods for Provider Interviews

A total of eight provider key-informant interviews were conducted with all van staff members and occurred with only the interviewer and the provider present. Provider interviews were conducted verbally in a semi-structured format and followed a script based on questions that addressed the provider's role on the van, perception of the services provided and the clients served, and the strengths and weaknesses of the CHCV program. Interviews were recorded for transcription.

All interviews for both clients and providers were transcribed. Transcripts were uploaded into Atlas.ti (Atlas.ti GmbH, version 6.0) and codes were developed using grounded theory. All interviews were coded and were reviewed a second time to ensure that the final coding structure was applied to each transcript.

7.2.2 Results for Provider Interviews

The van is staffed by eight employees that work together to provide services to the van's clients. Topics discussed during the provider interviews include the following: a description of the clients seen, health concerns of community and common service utilization, patient barriers to care, challenges the clients face, community knowledge of the van, the important roles the van fills, strengths of the van, limitations of the van, and suggestions for improvement. A frequency table of coding is found in Table 19.

Description of Van Employees

While the roles of some staff members are more defined than others, essentially interviews were conducted with the clinical director, a physician, a physician assistant, a nurse practitioner, two HIV counseling and testing specialists, a case manager, and a staff member that operates the van and assists in general maintenance. Still, the team works together to support one another in order to ensure the van runs properly. This often means that whoever is available will assist in duties, such as filling in patient intake forms and providing harm reduction services. Staff mentioned performing the following tasks: research, HIV counseling and testing, blood drawing, health care provision, vehicle maintenance, cleaning, TB screening, Hepatitis C testing, DOT, translator services, send out specimens to labs, filing, and oversight of van operations and case management. While a couple of staff members have been with the van for only a few months, most have been working with the van for anywhere between three and eleven years.

Table 19: Provider Interview Responses by Theme

Themes	Frequency (%)
Perceived Barriers to Health Care for Clients	
Transportation	1 (1.23)
Difficulty Accessing Care	29 (36.3)
Drug Use	9 (11.3)
Insurance	22 (27.5)
Low Education Level	3 (3.8)
Money	16 (20.0)
Total	**80**
Important Role of Van	
Case Management	14 (26.9)
Preventing ER Visits	8 (15.4)
Link to Care	18 (34.6)
Outreach Work	3 (5.8)
Importance for Community	9 (17.3)
Total	**52**
Perceived Social Challenges for Clients	
Emotional Struggles	1 (4.0)
Lack of Resources	4 (16.0)
Relapse	4 (16.0)
Violence	4 (16.0)
Homelessness	5 (20.0)
Obtaining Steady Housing	4 (16.0)
Legal System	3 (12.0)
Total	**25**
Description of Stops	
Chapel St.	8 (27.6)
Congress St.	8 (27.6)
Ferry St.	12 (41.4)
Storefront	1 (3.5)
Total	**29**
Description of Clients Seen	
Substance User	16 (21.9)
Formerly Jailed	5 (6.9)
HIV-Positive	5 (6.9)
Homeless	10 (13.7)
Immigrants/Undocumented Migrants	14 (19.2)
Low SES	3 (4.1)
Racial and Ethnic Minority	6 (8.2)
Sex Worker	9 (12.3)
Uninsured	5 (6.9)
Total	**73**

Themes	Frequency (%)
Health Concerns of Community/Services Utilized	
Mental Health	12 (14.8)
Acute Conditions	7 (8.6)
Blood Work	1 (1.2)
DOT	3 (3.7)
Education	9 (11.1)
Harm Reduction	11 (13.6)
HIV and STDs	19 (23.5)
Medication	14 (17.3)
Physical	9 (11.1)
PPD	11 (13.6)
Pregnancy Test	1 (1.2)
TB Screening	2 (2.5)
Vaccination	1 (1.2)
Total	**81**
Strengths of Van	
Quick Services	5 (11.7)
Approachable Staff	7 (16.3)
Compassionate Staff	8 (18.6)
Non-Judgmental Staff	3 (7.0)
Dedicated Staff	2 (4.7)
Link to Care	18 (41.9)
Total	**43**
Weaknesses of Program	
Van Limitations	9 (47.4)
Grants/Money/Financial Issues	10 (52.6)
Total	**19**
Other	
Community Knowledge of Van	4 (11.8)
Community Organizations	21 (61.8)
Continued Care on Van	9 (26.5)
Total	**34**
Suggestions for Operation	
More Stops	6 (20.0)
More Time At Each Stop	5 (16.7)
Stay Out Later	2 (6.7)
Advertisement	4 (13.3)
Electronic Records	1 (3.3)
Strengthen Community Partnerships	6 (20.0)
Specialty Vans	2 (6.7)
Access to Patient Records for Providers	4 (13.3)
Total	**30**

Description of Van Stops

The first stop on the van operates at Congress St. and West St. and is located close to homeless shelters, drug treatment clinics, and health care centers. At this stop, providers mentioned seeing immigrants, undocumented migrants, homeless individuals, individuals that are part of drug treatment programs, and referrals from health care centers. According to one staff member, "*This stop on Congress Avenue, we're between the shelters and three methadone clinics. Also on Congress, we're next to Yale Hospital and the Hill Health Center. [The clients] go to the hospital and they say 'you gotta go to the van.' They're two hospitals and they're sending people to us."*

The second stop is on Chapel St. and Day St. and is located near St. Raphael's hospital and between three HIV/AIDS organizations. This stop is described by the staff as more of a mix, but seems to be important in providing HIV services, as well as primary care services. One staff member stated that, "*Chapel [stop] can be a real mix because we're in between [AIDS organizations]. We've also often saw a lot of HIV-positive individuals or their partners. [The van] does a lot of HIV testing at the Chapel Stop."* Others also said "*Chapel is more like a clinic where people walk by and just come in"* or "*Chapel and Day is mostly people who need their meds and they get checked up there."*

The van staff mention the third stop to be "notorious" for prostitution, injection drug use, and sexually transmitted infections. As one interviewee stated, "*There's definitely a lot of activity going on there. Not every day, but you can see the sex workers walking up and down, there are cops everywhere, you see drug dealers, but we're in the heart of that. So we do a lot of condom distribution there, needle exchange, and we do a lot of STD and HIV testing out there."* Several of the clients at this stop are substance abusers, sex workers, and many

monolingual Spanish-speaking working poor. According to a staff member, *"That [stop] tends to be a majority of monolingual Spanish working poor that come to us for primary care. There's also a large IV drug using population and street workers and so we do a lot of harm reduction, hand out syringes, hand out condoms, [and] do a lot of STD screening also out there."*

Description of Clients Seen

Through provider interviews, the van staff most commonly mentioned the use of van services by substance users- mentioned in 21.9% of demographic comments and by 7 different providers. Utilization of services by immigrants and undocumented migrants was mentioned 19.2% of comments about client demographics and by 7 providers. Other descriptions of common clients receiving care at the CHCV are those who are formerly jailed, HIV-positive clients, homeless individuals, those of a low socioeconomic status, racial and ethnic minorities, sex workers, and those who are uninsured. One staff member stated:

> "*[We] definitely see a lot of undocumented people, from all types. From Latin America, Central America, South America, the majority might be from Mexico. We do see a lot of homeless people, that's probably second on the list. But we're on the street level, so we're definitely with African Americans, the Latino race, and, you know, homeless people… drug users, sex workers, and then we also see people that are here working and have families but don't have health insurance. "*

Health Concerns of the Community

Interviews with staff members reported HIV and STDs and services for screening and treatment in 23.5% of comments regarding health concerns by 7 providers. Provision

of medication, especially as a bridge until a patient's next appointment with their next provider, was also frequently cited, with 17.3% of comments about community health and service utilization and was mentioned by 6 providers. This is accompanied by DOT, which was less frequently mentioned (only 3.7% of comments by 3 different providers), but is a service that is provided, specifically for HIV-positive and tuberculosis patients. Provision of harm reduction services was referred to in 13.6% of comments and was mentioned by 4 providers. Four different providers talked about mental health and almost 15% of comments about client health concerns were about mental health morbidity.

Thought the van sees patients with mental health morbidity, it does not generally provide services for screening and treating mental health problems. Van staff responded that many clients come for "*mental care and [the van doesn't] provide specifically for mental health issues.*" Nearly 15% of comments regarding health concerns of the community were about mental health. One provider stated, "*We get a lot of folks who are sent here from [a community clinic]. And you know, that's a pretty specialized area of care and I think there should be a specialist in that area prescribing those medicines.*" Other comments regarding mental health area:

> *"I think 75 to 80% of my visits involve some mental health issues, if you take the time to do the history and you're kind of in tune to that or are interested in it. And I'm sure some people just filter that out and stick to the meat of the physical problem. But yeah, it's a big part of why people end up visiting."*
>
> *"Sometimes [the clients] are getting sent here and if they are on benzos or some of the antipsychotics or some of the more serious psychiatric medications, we won't do it because its just not appropriate."*

Strengths of Van

The most frequently cited strength of the van lies in its staff. The staff members are described as being approachable, non-judgmental, compassionate, and dedicated. They help to provide an environment that is conducive to receiving patients that are typically marginalized. In interviews, staff said, "*I think that our staff is great. I think that everybody is really dedicated and non-judgmental. And we have clients from all walks of life coming in and they feel pretty comfortable coming here because we offer just unbiased, judgment free care. I think the greatest strength is just that we're here, quite honestly. But it takes a team of dedicated people to be here and people who know how to finesse their way with different situations, whether it be aggressive people, or folks with mental health issues, or people who are high on drugs or whatever*."

Another major strength of the van is the ability to link clients to care. Providers mentioned that one of the major strengths of the van is that it does not turn anyone away. One provider commented, "*One thing I love about the van, we don't turn people away and say we don't provide that service. We say hey, come here, here's a place where you can go. We'll always guide you in that right step. I think people look forward to us here every day, for the people that know about us*." Other comments regarding strengths of the van are as follows:

> "*By having the van, we get a lot of homeless people, undocumented people, HIV patients, drug users. Coming to the van, its like getting a hug from a family member, and we link them anywhere they want to go. And the good thing about the van is that if they want to go to a drug program, we could transport them to a drug program. We have a minivan that we could use. So its not that we have to make phone calls to take them there. No, you want to go to a program, I'll do it right now."*

"I think the van provides a sense of safety in the community. People know about us, they know they can come here for pretty much anything and even if we can't immediately help them on the spot, we can get them to where they need to be on the spot. "

Weaknesses of the Program

Nearly 50% of comments regarding weaknesses of the program made by 5 different providers mentioned weaknesses that were caused by the limitations of the van infrastructure. One provider commented, "*It's kind of tough sometimes when you're stuck in a position where you can't help somebody because there's only so much you can do."* Another provider said the greatest weakness of the van was when it is used for primary care instead of a bridge to care.

"It's not designed for that, so its not fair to the clients because they need to see the same person, they need to have a chart, they need to have records that are immediately in front of them… and its not fair to the provider because those…who only work one day a week or one day every couple of weeks are now seeing these people who are treated for long term conditions on the van and have no idea what the previous plan was and the continuity of care is disrupted because its not designed to have continuity of care on the van"

Other common limitations included space and time. According to one provider, *"The space and time limits us. We have to leave a stop at a certain time to be on time for the next stop. There's been times when I've had the opportunity to do an HIV test on someone but literally not had a place to do the test. Because, especially if the weather is bad, we only have*

these few rooms, so if somebody has to wait they say they'll come back and they won't. So sometimes, physical space and time are probably the biggest limitations."

The second major weakness of the program was related to grants and financial issues. Over half of all comments about the weaknesses of the van were regarding money and grants. One comment made was, "*The challenge is finding funding to keep [the van] open and that there's not enough hours in the day."* Another mentioned, *"Challenges sometimes can be knowing that we have to work under federal grants and we have a budget."*

Community Knowledge of the Van

The community's knowledge of the van was an important theme that arose that was distinct because there were mixed opinions on how well known the van was within the community. Some comments made said that in order to improve the impact of the van in the community, more advertisement needed to be done to increase the community's knowledge of the van and its services. However, providers also mentioned that clients know they can come to the van and they will be well received and their needs will be met. One provider stated:

> *"They know when they come to the van, their problems are going to be met. They're not going to have this worry. Like I said, its easy for them to come in. Half an hour, they're done. A lot of people come from different states and the first thing they learn besides the hospital is the van. Come to the van, this is where you get your HIV testing, Hep C, STD, PPD, physical, refill on your medication. You get to see a PA or nurse practitioner. And you get everything met here, it's like a one-stop shop."*

Community Organizations

Several providers mentioned the role of community organizations in the work that the CHCV does. These organizations were mentioned in a total of 21 comments by 6 different individuals and refer to organizations that share clients with the van. Stops are located in the middle of several organizations. For instance, one comment regarding the stop on Congress Avenue stated, "*We got the APT foundation down the street, it's a methadone clinic. We got Legion street clinic, that's a methadone clinic next to the shelter. And this stop is between [two homeless shelters]."* The van also uses its readily accessible services to help clients get into programs, as was discussed in linking clients to care.

A major frustration with some community-based organizations is the issue of the van clients' ability to access services. Clients come to the van to access services in order to be part of certain programs. For instance, one provider stated, *"Sometimes they need a PPD because they want to get into [a homeless shelter] or they want to get into a day program."* However, clients have difficult accessing services because facilities are "overstretched" and thus, seek to utilize van services for more serious conditions. One comment said, "*Because all those clinics are overwhelmed with the number of clients that they have, we see people for episodic or urgent care."*

Continued Care on Van

There was mixed impressions on the use of the van for continued care. Some providers believe that the van should be utilized for continuity of care, others mentioned the issues with follow-up that prevent continued care, and still others believe that the van is not set-up to provide continued care. While continuity of care is important, there are

certainly struggles and limitations to providing it. In support of providing continued care, one provider mentioned,

"I think what people don't utilize with us is really continuity of care. Like you see a new diabetic or new person with high blood pressure and they feel like if they come on more or if we say come back in two weeks and they come back, they feel like their abusing or misusing the service, when we're there and it doesn't matter if they have insurance or no insurance… It's really hard to get that through to people, is that we're here, you can come see us here anytime and when we say to come back in two weeks, we want you to come."

Those who mentioned struggles with the van providing continuity of care mentioned the van's limitations in appropriately monitoring clients. Comments included the following:

"They do also need that continuity of care, they need the ability to be monitored by someone who really understands the medications well…I'm kind of just the gatekeeper and trying to figure out where they need to go.

"Some clients try to use the van as their primary care provider and that's a bit of an uncomfortable situation because I'm seeing them for 10 minutes and I don't have a chart in front of me, I don't know what the person who saw them a month ago, what their plan was and the van isn't designed to do that really."

Suggestions for Operation

When asked for suggestions to improve the van, two areas were most commonly cited- adding more stops to the van and strengthening community partnerships. Both of these areas received twenty percent of comments each and were discussed by 3 different

providers. The importance of strengthening community partnerships would be to improve the ability of the van to "link clients to care". Suggestions included having a place to send clients who are uninsured or underinsured a place to get more advanced service or allowing the van to serve as more of a "liaison with the local care centers" to get clients into care more quickly. Those advocating more stops stated that there are other areas that are in need, who the van could provide services for, that are not being reached. One provider stated:

> *"I think there's a large majority of the population that are the working poor that don't really qualify…. for any type of state aid, as far as insurance but they work 7 AM to 6 PM, Monday through Friday, and we're out Monday through Friday but I think we could better address it by having some evening stops where we can actually allow people to access the care that we can provide when they are out of work. I think we're missing a large portion of the population that work and then can't get into clinics anywhere because they have these 12 hour days, 6 days a week. And so if we were out in the evening one or two days a week, it would probably be able to capture those people."*

Another common type of suggestion was about making services more available; 16.7% of suggestions by 3 different providers referred to the need for more time and 6.7% of comments in this area by 2 different providers stated that the van should stay out later. A major issue is that several clients come to the van for physicals, but many are turned away due to a lack of time. The van only provides physicals for individuals that need to get into drug treatment programs. One staff member stated, *"We could have a van that just does physicals. We turn people away probably every single day that need physical exams for*

work or school. At least once, if not twenty times a day depending on when. Like in August, we get a lot of people that need it for school. But we just can't- we don't have the time or the staff to be able to do it."

The need for access to patient records was mentioned in 13.3% of comments. As was mentioned in the weaknesses of the van and the struggle with continuity of care, providers feel they are not able to provide appropriate care for regular clients without access to patient records. One comment made was, *"Some of the challenges were not having complete access to people's records. So you see them, they say they're on this amount of medication, they'd be unsure of the dosing, unsure of their pharmacy."* As a remedy for this, one provider suggested the use of electronic records for the van. They stated:

> *"Because we do have our regular clients, we have clients that come on the van at least once a week or twice a week. Even within a month's time, we see them for follow ups, for blood work, or PPDs. They just come here on a regular basis, not just because its convenient but because our doctors are their doctors. And there's times when we want to go back to their records and say hey, he was here last month, let me find his record, and its still in the office because its being scanned by the data staff. Which is okay but it's backing us up. But if we have everything electronically, it will be nice and fast."*

Lastly, 13.3% of suggestions made were related to advertisement. Staff mentioned that, while many of their clients find out about the van through word of mouth, it would be great to advertise the van more to reach a larger population. This was suggested to "*reach a broader spectrum of people*" and "*to let people know that we're there*."

8 Spatial Analysis

8.1 Methods for Spatial Analysis

A spatial analysis was performed to look at the areas served by the van and where people who utilize the van are coming from. Maps were created to portray New Haven and the van stops by median household income based on 2010 census data. Information based on patient zip codes were then used to show where clients were coming from for van services in general and HIV testing, specifically. A map was also created to show zip codes where HIV-positive clients are coming from.

Spatial analysis was performed using ArcGIS 10 (ESRI, 2011). Data from the US Census Bureau *American Community Survey* (2010) was obtained from to provide information on the median household income of the New Haven area [40]. A map layer of the zip codes in the United States was also obtained [41]. Patient data from the CHCV was incorporated into the analysis by patient zip code to provide information on service utilization. This patient data includes the zip code of unique HIV-positive clients, zip code of unique HIV-testing clients, and the zip code of all patient visits. Locations of van stops were mapped based on the stops that were current at the time of qualitative interviews.

8.2 Results for Spatial Analysis

Figure 13 shows New Haven and surrounding areas with zip code boundaries. Median household income data is shown by census block. The lightest shading on the map shows the areas with the lowest household incomes. As can be seen from the map, these areas are concentrated in the zip codes of 06519, 06515, 06513, and 06511. Van stops are located in 3 of these 4 zip codes and are located in or directly next to the census blocks with the lowest median income. It should be noted that the Safe Haven location is at a

community-based organization that serves the needs of homeless populations and is visited by the van twice a month.

Frequency of van visits by patient zip code can be seen in Figure 14. This shows that the largest population of clients comes from the 06511 zip code, which is in close proximity to all stops and contains a large proportion of low-income households. As can be seen in Figure 15, the areas with the largest number of HIV positive clients are the 06511 and the 06519 zip codes. Other frequent clients come from the 06515 zip code and the 06513 zip code. Figure 16 shows clients that come specifically for HIV testing and the majority of these clients are found in the 06519 zip code. Other zip codes that have a higher frequency of HIV tests are 06516, 06511, and 06513.

Figure 13:

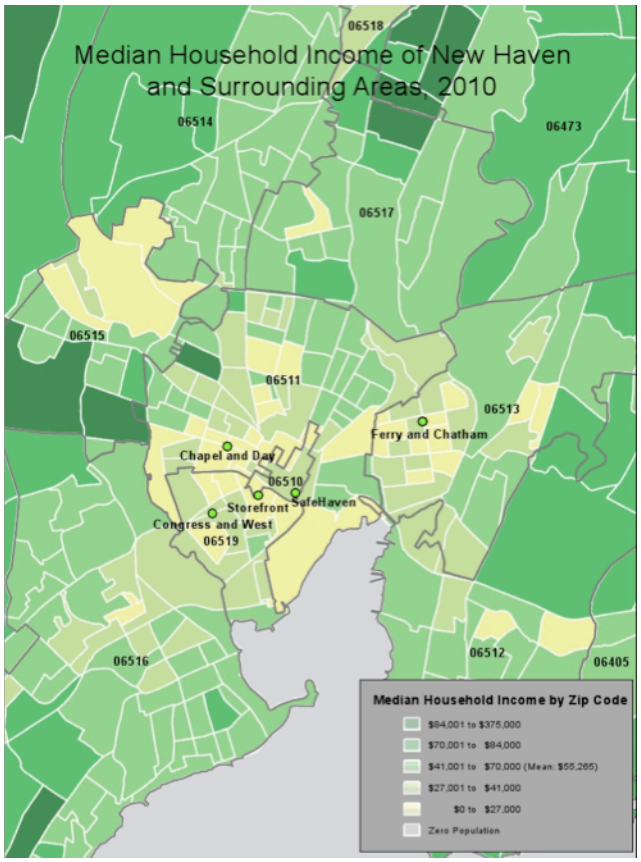


Figure 14:

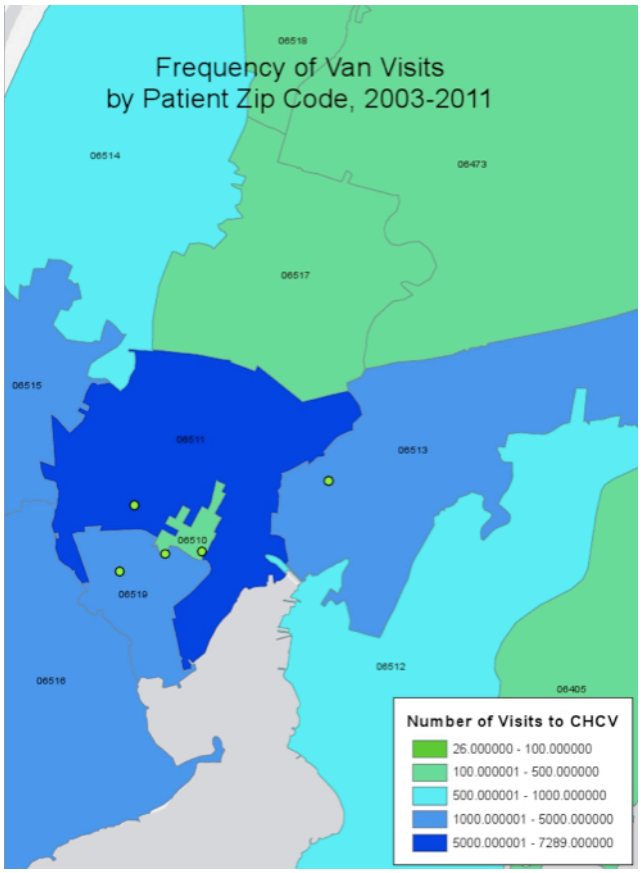


Figure 15:

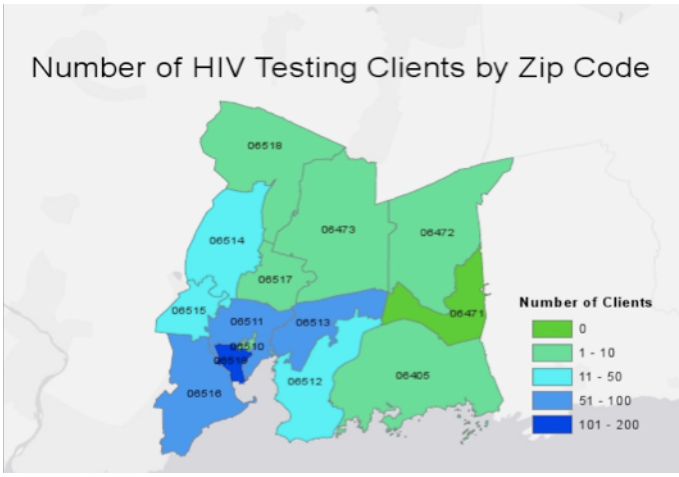
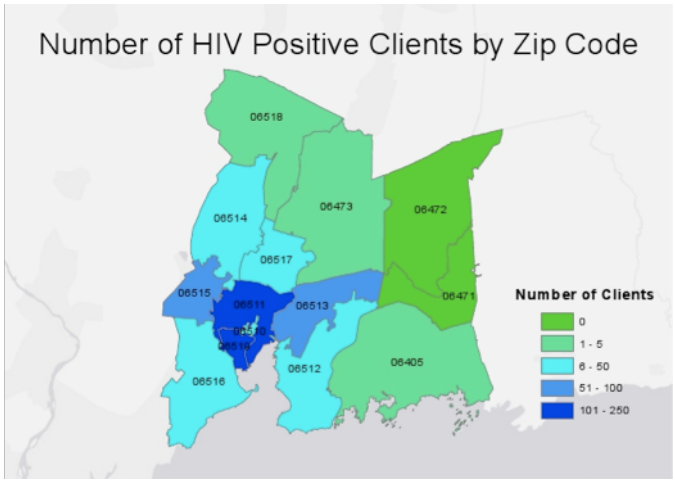


Figure 16:



9 Discussion

The evaluation conducted attempted to answer questions regarding the clients seen at the CHCV and the services provided. This was done to better understand who the van is serving and how the van can better provide services for those most in need within the New Haven area. In providing this insight, the van staff can better understand the needs of their clients and can shape the trajectory of the program to best fit the needs of the target population.

The clients of the CHCV are predominately racial minorities, male and a significant proportion is foreign-born. Most van clients reported being married. There are also relatively low education rates, with almost 30% having less than a high school education. The majority of these clients have experienced periods of homelessness, unemployment, and no health care insurance. Over 40% had no income at the time of their most recent appointment and most had been on some form of income assistance program. These demographics alone show that the van is serving a population that is typically subjected to limited or a complete lack of health care.

Many clients also had been in an environment or engaged in behaviors that place them at risk for communicable diseases, particularly HIV, Hepatitis C, and sexually

transmitted infections. This includes a significant number of individuals who had been incarcerated, who have participated in transactional sex, who have a history of injection drug use, and who have shared needles while injecting drugs. The majority of van clients had engaged in some type of illicit drug use. While over half reported only having one sexual partner, most clients did not regularly use condoms during sexual intercourse.

The health needs of the clients showed a substantial number of individuals with chronic health conditions and a high prevalence of infectious conditions, such as HIV, STDs, and Hepatitis C. Despite a low number of mental health service visits, a substantial number of individuals that visit the van reported receiving a diagnosis or treatment for mental health conditions. Interestingly, nearly 23% of patients have reported mental health morbidity but mental health services make up about 1% of all services provided. Mental health services appeared in both provider interviews and in the van patient data to be a neglected area of care on the van, despite its prevalence amongst van patient.

HIV prevalence on the van is over ten times higher than that of the city of New Haven, which is to be expected as the van targets this population. The HIV-positive clients looked a bit different from the total van clients, with a higher percentage of the HIV-positive clients that are of non-Hispanic Blacks, a higher percentage of males, and a lower percentage of foreign-born clients. However, these demographics are similar to the HIV-positive demographics of New Haven as a whole. The van sees a greater percentage of Hispanic HIV-positive clients than non-Hispanic White HIV-positive clients. The average age is also about 10 years older than the total van population. There were also a higher percentage of HIV-positive clients with less than a high school education and the majority of these clients reported their marital status as single. HIV-positive clients had lower

percentages of homelessness than the total van population but over 90% had been unemployed at some point. These clients had a higher percentage of insurance coverage, with the majority of HIV-positive clients receiving government-sponsored health insurance.

Regarding risk behaviors, the percentage of HIV-clients that had been incarcerated is about double that of the total van population and the majority of these clients had also reported a history of injection drug use. These rates were higher than the total van population but injection drug use rates were similar to the New Haven HIV-positive population. Most clients have a history of some type of illicit drug use. While history of high-risk behaviors was higher amongst this group, the majority of these clients used condoms during sex. HIV-positive clients of the van also had a number of co-morbidities, including chronic conditions, hepatitis C infection, and STDs. Interestingly, HIV-positive clients had a percentage of mental health morbidity that was more than two and a half times larger than the total van population.

For those individuals who received HIV testing on the van, they were predominately racial minorities and male, and a significant number were foreign-born. The average age of the clients was similar to that of the total van population. Interestingly, a higher percentage of male and female testers were closer for HIV testing clients than for the HIV positive clients. This could mean that females are more likely to test for HIV than males, though they may have lower exposure. These individuals had a lower percentage of clients that had less than a high school education compared to both the HIV-positive clients and total van population. However, similar to the HIV-positive clients, the majority of these clients were single. A lower percentage of these clients also reported being homeless and

unemployed than the HIV-positive clients. However, they had higher percentages of uninsured rates and over half were uninsured at the time of their last visit. Thus, concerning demographics, these clients looked slightly different in general than the HIV-positive population served by the van.

In regards to behavioral risk factors, a substantial number of those being tested for HIV on the van had been incarcerated and they reported similar percentages of injection drug use and needle sharing as the HIV-positive clients of the van. HIV testing clients had a lower percentage of a history of drug use than HIV-positive clients. They also had lower percentages of transactional sex, as well as much lower percentages of condom usage when compared to HIV-positive clients. Men who have sex with men (MSM) make up a much smaller percentage of HIV testing clients than they do for incident cases of HIV infection in New Haven (see Figure 9). This suggests that this demographic should be targeted for testing campaigns.

While CHCV stops have changed and there have been fluctuations in service utilization, the percentage of clients come to the van for medical care has remained over 90%. Van visits peaked in 2005 and 2006. The most frequently utilized stops have been Congress and Chapel, which have been running for the entirety of this data set and have the highest visit rates annually.

The most frequently utilized procedures are PPD services, followed by STD services, HIV services, and blood pressure screening. While the three major service provisions are for infectious conditions, it seems that there is a need and a demand for screening for more chronic conditions in these populations as over 35% of patients have at least one chronic

condition but the screening for these conditions makes up less than 10% of services provided (though asthma and obesity are not recorded in procedural screening counts).

In evaluating the perception of the van services by clients, clients seemed to be very pleased with the services provided by the van and the quality of care they received. Many clients had experienced some barrier to health care and used the vans services for its convenience and quality. The importance of the staff in perception of the van was key, with over a quarter of clients saying they return to the van because of the staff and the majority of comments on strengths of the van mentioned the ability of the staff to communicate well with the clients and to provide quality health care. Van clients did not see weaknesses to the van outside of its availability and general structural issues with size and maintenance. Most recommendations were to have more hours or more vans so that a greater number of people can receive care at the van.

Providers also saw the van as an important source of care in the community, with many saying that if the van were not there, a number of their clients would not receive health care. This is supported by the fact that over 20% of clients interviewed used the van for their primary source of care and nearly 30% cited having no regular source of health care at all. Provider interviews also highlighted the diversity of the population that was served by the van and the various struggles faced by the communities served. Providers mentioned several barriers to care that prevented their clients from receiving health services at a traditional facility such as insurance, inability to navigate the health care system, and money. However, they noted how the van, in providing free care in a timely manner, was able to overcome some of those barriers.

Strengths of the van were its ability to provide a casual, informal environment where clients could trust the staff with their care. Other strengths mentioned by staff members are the attitude and dedication of their co-workers. Based on patient and provider data, it seems that the staff play an integral role in the success of the van in both its daily operation and in the quality of care it provides to its clients. While its strength is in its mobility and its environment of acceptance, limitations include the fact that it is a grant-funded van and it is limited in the breadth and complexity of procedures that can be provided. Some providers felt restricted in their ability to provide quality, well-informed continuity of care.

To determine the areas of greatest need, a spatial analysis was performed to look at areas of need in New Haven and to determine where clients were coming from. The van has stops located in the middle of or in close proximity to areas of the lowest income bracket according to 2010 median household income data. As can be seen in the maps, the zip codes with the highest proportion of lowest-income census brackets are the same as those that have the highest frequency of utilization rates of the CHCV Services. These areas also have the highest number of HIV-positive clients that receive services at the van and outside of the 06515 zip code, have the highest frequencies of HIV testing on the van.

10 Limitations of Study

While the van database has a very rich amount of data, there are some limitations in its ability to contribute to this evaluation. The current database used began in 2003 but information from 2003 is limited and data for 2011 includes only visits through July. Thus, while it contributes to the overall picture of the van, it cannot be seen as a complete picture of the CHCV program in 2003 or 2011 and comparison to other years is limited.

The program has changed in the services it provides over time and the methods by which it performs and records certain services. The intake forms are also documents that have been modified over time and so, information on certain variables cannot be assumed to be complete across the entire eight-year time span. For convenience, the van staff complete a long intake form at the initial visit of the patient and use short forms for subsequent visits. Patients that continue to visit should have a long intake form for visits after 6 months of their last long form. As the short forms do not capture all of the information that the long forms do, analysis performed based on the most recent visit of a patient may be for variables that are not included on the short form and thus are not from the actual most recent visit of the patient.

The qualitative analysis was conducted for patients based on convenience sampling and included clients that came in while the interviewer was present on the van and that were willing to answer questions. The ability of the survey population to represent the entire van population may be questioned. However, interviews were conducted over a period of 6 weeks on various days of the week and at all stops, which contributes to the randomization of the procedure.

Spatial analysis was done at the zip code level for patient protection and HIPPA regulation purposes. Zip codes often change and boundaries are not specific, which compromises the integrity of the spatial analysis. Also, presenting this information by zip code means that a great deal of detail is missed that could be seen at levels, such as the census block or block group. However, for the purposes of this project, it seemed to be adequate to present van client information from the zip code level while presenting data

from the US Census Bureau and the census block level in order to show areas of low median household income within the zip codes where van clients live.

In conclusion, it seems that the van is serving the needs of high-risk and marginalized populations within New Haven. There is a disproportionate burden of health disparities and a lack of access to health care amongst these groups of individuals and the van provides a necessary service that would otherwise be lacking in the community. Still, service utilization of the van has declined slightly in the last five years and the ability of staff to appropriately meet the pressing health care needs of the community may need some adjustment. Thus, recommendations for the program are proposed below.

11 Recommendations

In order to increase utilization of the van services, there seemed to be a demand from both the provider and the patient side to increase the hours of operation of the van. This could allow the van to stay for a longer time period at each stop and to expand its hours of service beyond the time when the working poor may be at their jobs. This could allow the van to meet the needs of a population that is largely underserved. One barrier to this is the funding and staffing issue. As an affiliate of Yale, the van does receive clients from some academic programs but could perhaps benefit from using students to provide volunteer care through the van. This could also allow the van to expand its social services, as students could be involved in patient advocacy and help in navigating the health care systems. Several medical schools use mobile clinics to meet the needs of marginalized populations while providing an educational opportunity to the student.

Another means of increasing service utilization is through increased advertising to the community about the types of services that they can receive at the van. Though there

are fliers out in some locations in the community, it may be important to update and expand efforts to increase community knowledge about the van. Another means of increasing community knowledge is through a collaborative partnership with other community-based organizations. While the van staff seemed to have relationships with a number of community-based organizations, it could be of mutual benefit to strengthen partnerships between these organizations to ensure that all services are able to maximize their potential within the community. One way this could be done through a structured referral system with community-based clinics, allowing the van to take over screening procedures and serve as a triage center for facilities.

As the HIV testing clients seem to look different from incident cases of HIV infection in New Haven, it may be important to provide targeted campaigns to reach these demographics. Newly diagnosed HIV cases in New Haven seem to be predominately in racial and ethnic minorities and are transmitted sexually. Testing campaigns targeted towards younger clients in high-risk communities, as well as towards the MSM population, should be considered. This could be done through advertising and social media methods.

To improve the services provided on the van and increase utilization of screening services for conditions that may be an issue for the community but are remaining undetected. Ensuring that clients are well informed about the range of services offered by the van is key and may increase service utilization for other procedures that are not often utilized on the van. One area that seemed to stand out in both the quantitative and qualitative data is the prevalence of mental health morbidity and the lack of service utilization for this type of condition. This highlights the need for a type of screening protocol or provider acuity for mental health conditions, as well as the need to build a

strong partnership with organizations that can best handle the seriousness of mental health needs of clients and advise the van of how this may impact the primary health care needs of the patient.

Lastly, several of the van staff mentioned that the van serves as a "link to care" and is able to either provide services for its clients or point them in the direction of a place that can. However, for those who experience a number of barriers to care, such as money, insurance, documentation and transportation, other sources of care are not an option. For a significant number of people, the van was a primary source of health care. However, some providers did not feel comfortable with this, as they did not feel adequately equipped to provide continued care. One way to overcome this is through maintaining a set of up-to-date patient records on the van. While intake forms are scanned in for data, a scanned copy can be kept on the van to ensure that complete patient files are available to providers. While it is expensive and may not be immediately attainable, another means of providing this information is through electronic records, which would prevent back up in both data entry and in completing patient records.

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13 Appendix

Community Health Care Van Patient Survey

1) Where do you typically receive health care?

❒Hospital ❒ Community Clinic ❒Private Care ❒ Community Health Care Van
❒Other: _____ ❒N/A

2) Where do you prefer to go when you are in need of health care? Why?

_____

_____

_____

3) When was the last time you were seen by a health professional?

❒ Less than one month ❒ Less than one year ❒ Greater than one year

4) How often do you receive professional health care?

❒ More than once a year ❒ Once a year ❒ Less than once a year

5) Have any of the following ever prevented you from receiving professional medical attention? *(Check all that apply)*

❒Lack of Transportation ❒Lack of Money ❒Lack of Documentation ❒No Insurance
❒Turned away by health professional ❒Language Barrier ❒Other:_____

6) How did you hear about the Community Health Care Van?

❒ Family/Friend ❒ Saw the van ❒ Community Outreach Worker ❒Other: _____

7) How long have you been visiting the Community Health Care Van? _____

8) What made you initially decide to visit the Community Health Care Van?

_____

_____

_____

9) Why do you visit the Community Health Care Van?

_____

_____

_____

10) How satisfied with are you with the care you receive at the Community Health Care Van?

❒ Very Satisfied ❒ Somewhat Satisfied ❒ Somewhat Dissatisfied ❒ Very Dissatisfied

Please answer true or false for the following questions.

11) I feel that my privacy is respected when receiving care at the Community Health Care Van.

❒ True ❒ False

12) My feelings and concerns are considered by my health care provider at the Community Health Care Van.

❒ True ❒ False

13) My health care provider at the Community Health Care Van clearly explains my health condition, procedures, and test results.

❒ True ❒ False

14) I feel that my health care provider at the Community Health Care Van really listens to me.

❒ True ❒ False

15) I am able to ask questions and get clear answers from my health care provider at the Community Health Care Van.

❒ True ❒ False

16) What do you like best about the Community Health Care Van?

17) What can the Community Health Care Van do to improve its services?

Do you have any other comments concerning your experience with the Community Health Care Van? _____

Community Health Care Van Provider Survey

Thank you for participating
Confidentiality Statement

1. Could you please describe your role within the Community Health Care Van program?
    - 1a. How long have you worked with the CHCV program?
    - 1b. Have you always had this role?
        - If no: what other roles have you had?
            - How long were you in the other roles?
2. What does a typical day in your job look like?
    - 2a. What do you see as the benefits of your job?
    - 2b. What are the challenges of your job?
3. Please describe the clients that you most regularly interact with (i.e. demographics, symptoms/conditions, etc.)
    - 3a. Describe any variation in clients between stops.
    - 3b. Describe variation in challenges between stops.
    - 3c. Describe any variation in service utilization between stops.
4. What are some the daily struggles that your CHCV clients face?
    - 4a. How does the CHCV program help with these struggles?
    - 4b. What can the CHCV do to improve its services to help ease these struggles?
5. What types of services does the CHCV provide?
    - 5a. What services are most often used? Why?
    - 5b. What services are least often used? Why?
    - 5c. What do you think can be done to improve the services provided by the CHCV?
6. What do you see as the biggest barriers to health care access within the communities that the CHCV serves?
    - 6a. How does the CHCV help overcome those barriers?
    - 6b. What else can the CHCV do to help in eliminating these barriers?
7. What are the greatest health concerns that the communities serviced by the CHCV face?
    - 7a. How does the CHCV help to address these concerns?
    - 7b. What can be done to better address these issues?
8. What current health care resources are lacking and most needed within the communities services by the CHCV?
    - 8a. How can the CHCV be better equipped to help in filling this need?
9. What do you see as some of the greatest strengths of the CHCV?
    - 9a. Why?
10. What do you see as some of the greatest weaknesses of the CHCV?
    - 10a. Why?
    - 10b. What can be done to compensate for these weaknesses?
11. Do you have any other comments regarding the CHCV?