

2013
RYAN WHITE PART A
NASHVILLE TRANSITIONAL
GRANT AREA
NEEDS ASSESSMENT



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Executive Summary

The Ryan White Part A Program was created to provide emergency assistance to Eligible Metropolitan Areas (EMA) and Transitional Grant Areas (TGA) that are most severely impacted by the epidemic of HIV disease. The Nashville TGA, based on the United States Census Bureau's designation of Metropolitan Statistical Areas, is comprised of 13 counties in Middle Tennessee. The Nashville TGA began receiving Ryan White Part A funds in 2007 when at least 1,000 persons had been reported with new AIDS diagnoses in the most recent five years.

An annual needs assessment is conducted in order to get a better understanding of the needs of those individuals living with HIV disease so that the system of care can be enhanced to better serve them. This assessment assists the Ryan White Planning Council, the body guiding how the funds are utilized, in making informed decisions about how to prioritize services and allocate funds in the Nashville TGA.

In 2012, 195 persons were newly diagnosed with HIV disease; this was an 18.1% decrease from 2011 HIV disease incidence (238). Non-Hispanic blacks represented 47.2% of new cases, followed closely by non-Hispanic whites representing 46.2% of cases; Hispanics and non-Hispanic others represented 5.6% and 1.0%, respectively. Non-Hispanic black males accounted for the greatest number of new cases of HIV disease with 41.5%; they were diagnosed with HIV disease at a rate of 70.3 cases per 100,000 persons, over five times that of any other group. Men who have sex with men (MSM) continued to represent the largest transmission category with 45.6% of new HIV disease diagnoses, although it has fallen from the 54.3% of new cases it represented in 2008. Persons 15-24 years of age (22.1%) and 25-34 years of age (30.8%) represented over half of new diagnoses in 2012.

There were 78 new AIDS diagnoses in 2012, including persons newly diagnosed with HIV and AIDS, as well as those persons who were previously diagnosed with HIV, but progressed to AIDS in 2012. This was a decrease of 29.7% from 2011 AIDS incidence in which 111 persons were newly diagnosed with AIDS. Nearly half (47.4%) of new AIDS diagnoses were among non-Hispanic blacks, while non-Hispanic whites represented 39.7% of new cases. Non-Hispanic blacks however had an AIDS incidence rate almost six times that of non-Hispanic whites and two times that of Hispanics.

Of the 238 persons who were diagnosed with HIV disease in 2011, 20.6% (49) were simultaneously diagnosed with HIV and AIDS or progressed to AIDS within 12 months of their initial diagnosis, indicating they were not diagnosed until a later stage of the disease.

At the end of 2012, the Nashville TGA had an HIV disease prevalence of 5,921 persons, of which 48.8% were living with HIV and 51.2% with AIDS. Non-Hispanic whites represented 48.6% of HIV-positive persons in the TGA, although they account for 73.7% of the general population; non-Hispanic blacks represented 45.4% of HIV-positive persons, yet they account for only 15.2% of the general population.

The majority of people living with HIV/AIDS (PLWHA) in the TGA lived in Davidson County (77.5%). Davidson County also had the highest rate of HIV disease prevalence with 721.8 cases per 100,000 persons. Rutherford County had the second highest prevalence (7.1%), yet one of the lower rates of people living with HIV disease (156.9 cases per 100,000 persons).

It is estimated that 65-70 PLWHA died in the TGA in 2012, although their deaths were not necessarily a result of their HIV disease.

Ryan White Part A funded providers served 3,520 PLWHA in the TGA in 2012. The majority received both medical and support services (68.8%, 2,423); 22.3% (786) received only support services and 8.8% (311) received only medical services. An estimate of unmet need suggests that 41.0% of PLWHA who are aware of their HIV-positive status are not receiving primary HIV medical care.

Five hundred eighty-one PLWHA (9.8%, 581) received dental care through Ryan White funding. Other programs utilized to help PLWHA maintain health were the Insurance Assistance Program (IAP) (611, 10.3%), AIDS Drug Assistance Program (ADAP) (1,069, 18.1%), and TennCare (Medicaid) (1,179, 19.9%); nationally 47% of PLWHA who are in care are receiving Medicaid.

To improve the survival of PLWHA and to reduce transmission, the Continuum of Care cascade is used to depict the proportion of people engaged in select stages of HIV care and identify areas in which too few people are meeting a measure. Compared to national estimates, the Nashville TGA has difficulty linking people to care within three months of HIV diagnosis, however, once people are in care, a greater portion of PLWHA in the TGA is retained in care and reach an undetectable viral load.

The Nashville TGA has either already met or is on track to meet the majority of the 2015 goals set in the National HIV/AIDS Strategy. However more information is necessary to determine if the TGA is on track to have an appropriate increase in the percentage of persons being linked to care within three months and the percentage of disproportionately affected persons with an undetectable viral load.

A number of special studies have been conducted to learn more about particular subpopulations of the HIV-positive community or to learn more about certain aspects of the general HIV-positive population, including service needs and barriers. The most commonly reported barriers to care, as self-reported by consumers in an Out of Care study, include being in jail/prison, having difficulty getting there, having difficulty keeping appointments, not having a stable place to live, having a drug/alcohol problem, and not having symptoms/not feeling sick.

It is the combination of these barriers and service needs, compounded with some of the more disproportionate HIV disease statistics that have led to the Needs Assessment Committee proposing the following recommendations:

1. Based on identified barriers and needs, further develop and implement strategies to address the barriers and needs as appropriate and feasible.
2. Coordinate prevention and treatment systems in order to enhance efforts to assure persons, particularly high-risk populations, know their status, and to assure that newly identified HIV-positive persons are quickly engaged in care.
3. Increase service capacity when funds are available in areas where significant gaps and limited resources are identified.

This Needs Assessment presents a general framework and strategy for improving HIV-related services in the Nashville TGA. With a commitment from Part A and non-Part A funded providers and treatment and prevention, in conjunction with insight from PLWHA, the transmission of HIV disease in the TGA can be notably reduced and the needs of PLWHA better supported.

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Glossary

ADAP: (AIDS Drug Assistance Program) This program assists with the purchase of specific drugs for HIV-positive individuals with a low-income and no other source of health coverage.

AIDS: Acquired Immune Deficiency Syndrome

CARE Act Services: The Ryan White Comprehensive AIDS Resources Emergency (CARE) Act was enacted in 1990. Its primary goal is to improve the quality and availability of medical and support services for individuals and families affected by HIV disease. CARE Act services are those services covered by one of the five CARE Act program areas-Part A, Part B, Part C, Part D, and Part F.

CAREWare: This is a software program used for managing and monitoring HIV disease medical and support services.

CDC: Centers for Disease Control and Prevention

Convenience Sample: This is a type of sampling in which respondents are selected, in part or in whole, based on opportunity and the convenience of the researcher. No or little attempt is made to ensure that the sample accurately represents a larger group or population.

eHARS: A CDC created database that contains demographic and biomedical information for people diagnosed with HIV disease.

EMA: (Eligible Metropolitan Area) This is the same as a Census-defined MSA (Metropolitan Statistical Area). An EMA is a Part A region that has had at least 2,000 new AIDS diagnoses in the last five years.

Frequency: This is the number of occurrences of an event per unit of time.

HIV: Human Immunodeficiency Virus

HIV Disease: This term is used to broadly describe the class of infections caused by the human immunodeficiency virus. It encompasses both HIV and AIDS. This is the more appropriate term to be used when referring to HIV/AIDS.

HRSA: Health Resources and Services Administration

IAP: (Insurance Assistance Program) This program assists eligible HIV-positive individuals with health insurance premiums, co-pays, and deductibles.

IDU: Intravenous/Injection Drug Use

Incidence: This term refers to the number of “new” cases, events, or deaths that occur in a specified time, usually one year.

HIV Disease Incidence: This refers to the number of new HIV disease diagnoses in a particular geographic area in a specified time frame. It includes people who were newly diagnosed with HIV disease, regardless of the stage of the disease: people who were newly diagnosed with HIV (not AIDS), as well as persons who were concurrently diagnosed with HIV and AIDS, but not persons who were newly diagnosed with AIDS if their HIV diagnosis was in a previous year.

AIDS Incidence: This refers to the number of new AIDS diagnoses in a particular geographic area in a specified time frame. It includes people who were newly diagnosed with AIDS, regardless of when their initial HIV disease diagnosis occurred: people who were newly diagnosed with HIV and AIDS concurrently, as well as persons who were previously diagnosed with HIV and have converted to AIDS.

IRB: Institutional Review Board

MAI: (Minority AIDS Initiative) This Part of the Ryan White CARE Act Program provides core medical and related support services to non-Hispanic blacks and other disproportionately impacted communities, to improve access to care and reduce disparities in health outcomes in metropolitan areas most effected by HIV disease.

Median: The median is the middle value of a distribution; half the values are above the median and half are below the median.

MPHD: Metropolitan Public Health Department (Part A Grantee)

MSM: (Men Who Have Sex with Men) This is a transmission category for HIV disease regardless of a man's sexual identity.

Part A: This Part of the Ryan White CARE Act Program provides funding assistance for HIV disease core medical services and related support services in areas most severely affected by HIV disease (eligible metropolitan areas and transitional grant areas).

PLWHA: People Living With HIV/AIDS

Prevalence: This term refers to the current total number of events or cases, both newly and previously diagnosed, that are living at a particular point in time.

Rate: A rate is a standardized fraction—the upper part (the numerator) is the number of people affected by a condition; the lower part (the denominator) is the standard number of persons in the population. Changing raw numbers into rates allows you to compare different population groups.

R-squared (R²): This is a statistical measure often referred to as the coefficient of determination. It is a measure of how well a regression line approximates real data points. The closer the value is to 1.0, the greater the ability to predict future data values.

STD: Sexually Transmitted Disease

STI: Sexually Transmitted Infection

TDOH: Tennessee Department of Health

TGA: (Transitional Grant Area) A TGA is a Part A region that had between 1,000-1,999 new AIDS diagnoses in the five years preceding becoming Part A eligible. The Nashville TGA, which began receiving Part A funding in 2007, is comprised of the following 13 counties in Middle Tennessee: Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Robertson, Rutherford, Smith, Sumner, Trousdale, Williamson, and Wilson.

Trendline: This is a line on a graph that displays a trend based on real data points and can be used to predict future data points.

Introduction

OBJECTIVE

The objective of the 2013 Needs Assessment is to provide information about the needs of persons living with HIV/AIDS (PLWHA), current resources available to meet those needs, including both CARE Act (Ryan White Part A) funded services and non-CARE Act funded services, determining what gaps in care and barriers to care exist, examining how the TGA compares to national benchmarks, and then proposing recommendations on ways to enhance the system of HIV care in the Nashville TGA. The purpose of CARE Act services is to fill the gaps in care by helping PLWHA remain in care, or for those individuals not in care to access care. The Ryan White Planning Council uses the data and recommendations to make informed decisions about the prioritization of services, allocation of funds, and how to improve the overall system of HIV care in the Nashville TGA, to get and keep more people engaged in HIV care.

This assessment is meant to build on data presented in prior needs assessments and is not meant to replace this previous information. However, the most recent epidemiology analysis should always be considered the most accurate. The 2013 Needs Assessment incorporates data compiled for previous needs assessments, such as surveys and interviews, as well as new data analyses and special studies. Including special studies conducted within the last three years along with recent data analyses will help the Planning Council to make the most informed decisions regarding service needs and resource allocation.

METHODS

The Needs Assessment was conducted in several stages. A profile of the epidemic was captured using eHARS, a disease surveillance database, in which variables were analyzed using SAS Enterprise Guide. This information included HIV disease incidence and prevalence and AIDS incidence and prevalence. Rates were calculated for HIV disease and AIDS incidence and prevalence according to multiple characteristics based on United States Census population reports. Data were also gathered on service utilization. CAREWare, a database of those PLWHA accessing Ryan White funded services, was analyzed. Special surveys and interviews have been conducted in order to get experiential data from consumers, providers, key informants, and the general community. National and statewide data were also gathered in order to allow for comparison between the Nashville TGA, Tennessee, and the United States.

POINTS OF CONSIDERATION

It is worth noting that for the purposes of this Needs Assessment the term HIV disease is used to indicate the class of infections caused by the human immunodeficiency virus. It is used when referencing both HIV and AIDS. It is also important to mention that once an individual is diagnosed with AIDS, he or she will always have an AIDS diagnosis. Even if that individual's CD4 count rises above 200 cells/mL, he will still be considered to have AIDS. A person's diagnosis will not revert back to HIV once he has received an AIDS diagnosis.

LIMITATIONS

This Needs Assessment has taken into account the best data available. Relying on data solely from some groups and not others introduces biases and can create a false picture of the community's actual HIV care needs. Therefore, this report has collected additional data through special studies from consumers, HIV service providers, key informants, and the general Nashville community. The most recent data available from each source has been included in this report. All of the epidemiological data and survey utilization data were analyzed between February and March 2013. The survey data has been gathered and analyzed over the last two years, but each study included is the most recent of its kind. Please keep in mind that all data presented are preliminary and are only good through the date in which they were extracted and analyzed. All calculations in the epidemiological profile are preliminary and are subject to change as cases are reviewed and confirmed. Other limitations to the data include:

1. A significant number of persons do not know their HIV disease status and are therefore underrepresented in the epidemiological profile. And although an estimation of the number of persons not knowing their status has been calculated, their needs are not known and are consequently not accounted for in the Needs Assessment data.
2. Many data sources are based on the perceptions of individual participants and are therefore only representative of those individuals' perceptions. The perceptions of individuals not contributing to that data source are not known and there is no way to determine what characteristics may vary between those who participated and those who did not.
3. Some PLWHA in the Nashville TGA do not see Ryan White Part A funded providers for HIV care and therefore the grantee does not have access to service information about them. These individuals and their needs consequently may not be captured in this assessment.
4. Some of the data presented have inherent weaknesses. Locality changes for PLWHA are not always known and therefore eHARS may not be updated promptly. While it is believed that roughly the same number of people who come into the TGA also leave the TGA, it is unknown to what degree persons diagnosed in the TGA still live in the TGA and individuals diagnosed outside of the TGA move into the Nashville TGA.
5. Also, some data sets are a compilation of data from multiple sources; therefore different standards for data entry and interpretation may have been used in each. Consequently, some data conclusions may too have inherent weaknesses.

It is important to remember that the purpose of the Needs Assessment is to provide a well-rounded picture of the current HIV disease epidemic in the Nashville TGA to allow the Ryan White Planning Council to make informed decisions about how to improve HIV disease services. It is not realistic to obtain information on every individual living with HIV disease in the TGA or every service utilized. However, it is hoped that this Needs Assessment is able to give an accurate impression of the system of HIV care, despite not having access to comprehensive data on all persons living with HIV disease in the Nashville TGA. Steps are always being taken to improve data collection and expand data accessibility in order to allow a more complete assessment of the needs of PLWHA in the Nashville TGA.

Epidemiology Profile

There were 5,921 persons living with HIV/AIDS (PLWHA) in the Nashville Transitional Grant Area (TGA) at the end of the 2012 calendar year. Since 2008, the number of persons living with HIV disease has increased from 5,001 to 5,921 (920 individuals, 18.4%). From the time HIV disease data began to be collected in 1981, 8,428 persons living in the Nashville TGA have been diagnosed with HIV disease.

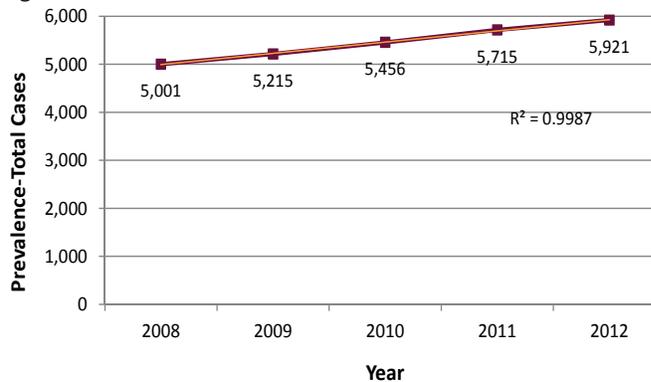
GEOGRAPHY

The Nashville TGA consists of the following 13 counties: Cannon, Cheatham, Davidson, Dickson, Hickman, Macon, Robertson, Rutherford, Smith, Sumner, Trousdale, Williamson, and Wilson.

The Nashville TGA has a disproportionately high number of PLWHA. According to the U.S. Census Bureau, the TGA had an estimated population of 1,644,703 in 2012 (25.5% of the state's total population). The total number of PLWHA who were living in Tennessee in 2012 was 19,031. The Nashville TGA represents 31.1% (5,921) of the state's PLWHA population, and only accounts for 25.5% of the state's total population.

While nearly 40% of the TGA's total population lives in Davidson County, almost twice the proportion of the Nashville TGA's PLWHA live in Davidson County (77.5%).

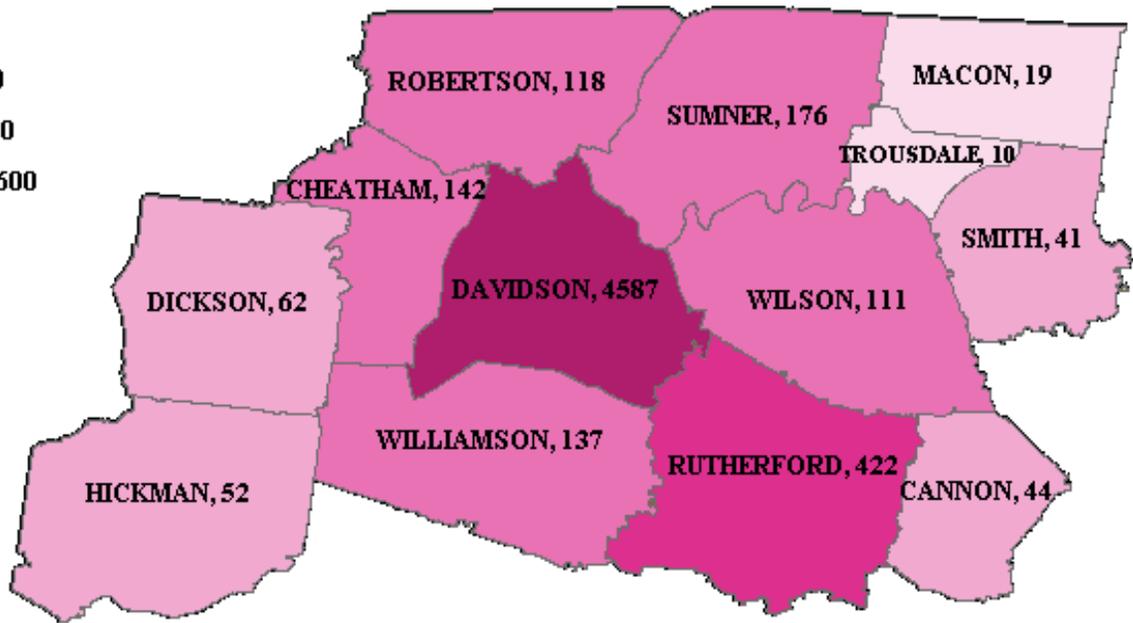
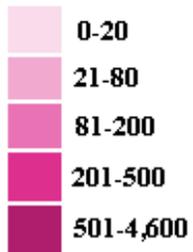
Figure 1: HIV Disease Prevalence, 2008-2012



Note: An R^2 value is used to estimate future data values. The closer the R^2 value is to 1.0, the greater the ability to predict data points. Therefore, a value of 0.9987 indicates that future data values can be approximated with near certainty. HIV disease prevalence is increasing consistently from one year to the next.

Figure 2: HIV Disease Prevalence in Nashville TGA by County, 2012

Number of Cases



Total Cases = 5,921

PREVALENCE (TOTAL LIVING CASES)

HIV DISEASE

At the end of 2012 there were 5,921 persons living with HIV disease in the Nashville TGA. Of those, 2,887 (48.8%) were living with HIV and 3,034 (51.2%) were living with AIDS. The proportion of HIV to AIDS cases is gradually becoming closer each year as people are living longer with the disease and fewer people are advancing to AIDS. However, the change occurs slowly because trends in prevalence take much longer to become apparent.

Residence of PLWHA: Most persons living with HIV disease in the Nashville TGA in 2012 lived in Davidson County (77.5%, 4,587), with the second highest prevalence being in Rutherford County (7.1%, 422). Over 24% of all HIV disease cases within the state of Tennessee reside in Davidson County. Other counties representing a significant portion of the TGA’s HIV disease prevalence include Sumner (3.0%), Cheatham (2.4%), Williamson (2.3%), Robertson (2.0%), and Wilson (1.9%). The remaining six TGA counties accounted for 3.9% of the total HIV disease prevalence.

Davidson County had the highest rate of HIV disease prevalence, with 721.8 cases per 100,000 persons. This means that for every 100,000 persons in that county’s population, 721.8 are living with HIV disease. Other counties with significant rates of HIV disease include Cheatham (363.4 cases per 100,000 persons), Cannon (319.7 cases per 100,000 persons), Smith (214.1 cases per 100,000 persons), and Hickman (213.1 cases per 100,000 persons). Counties, such as Williamson, Sumner, and Rutherford, despite having some of the highest frequencies, have some of the lowest rates. For instance, Rutherford County had the second highest number of PLWHA (422), however its rate of HIV disease is only 156.9 cases per 100,000 persons; there are six other counties with HIV disease rates greater than that of Rutherford County.

Figure 3: HIV Disease Prevalence Rates in Nashville TGA by County, 2012

Rate: Cases per 100,000 persons

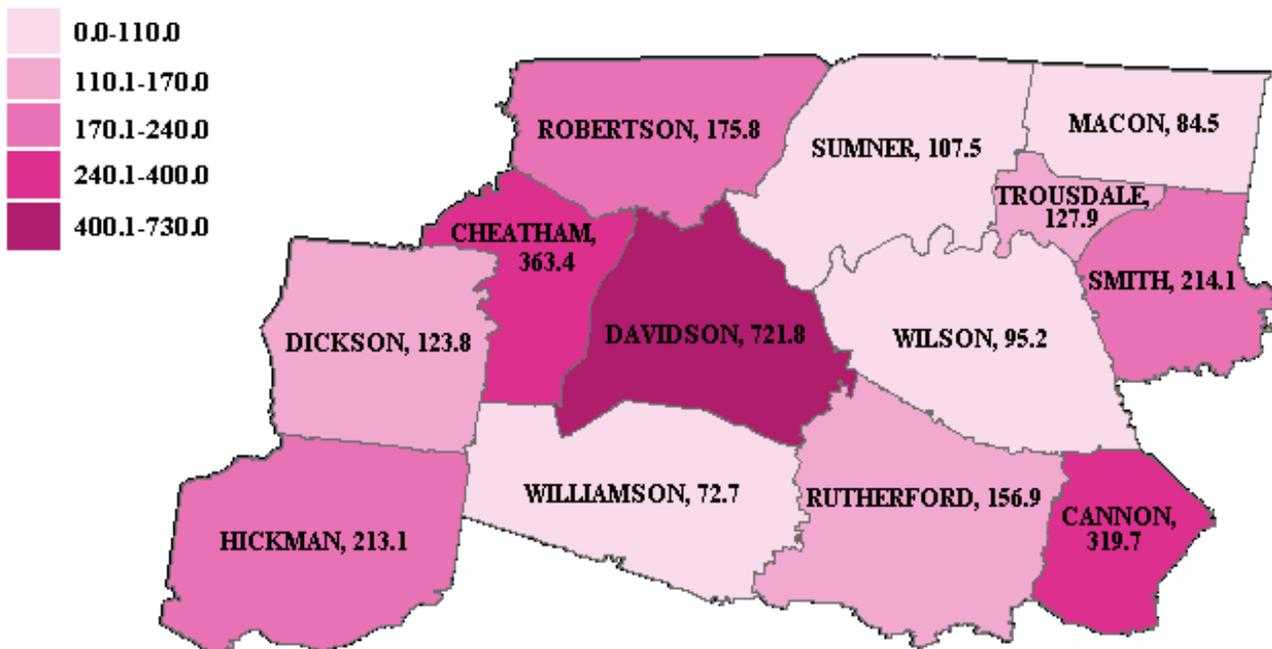
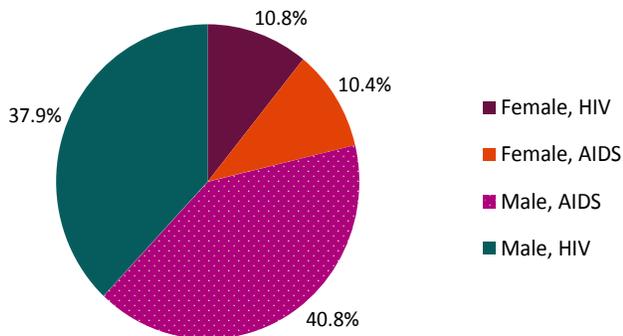


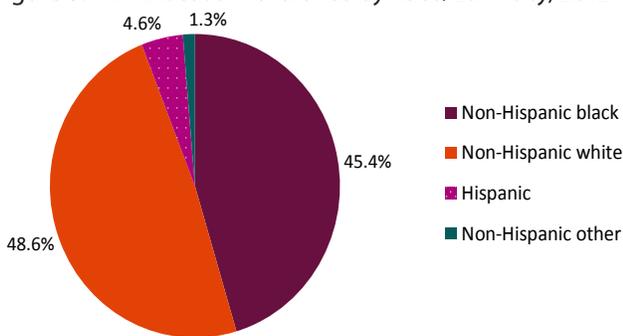
Figure 4: HIV Disease Prevalence by Gender and Diagnosis, 2012



Gender: The majority of PLWHA were males (78.7%, 4,662); only 21.3% (1,259) were females.

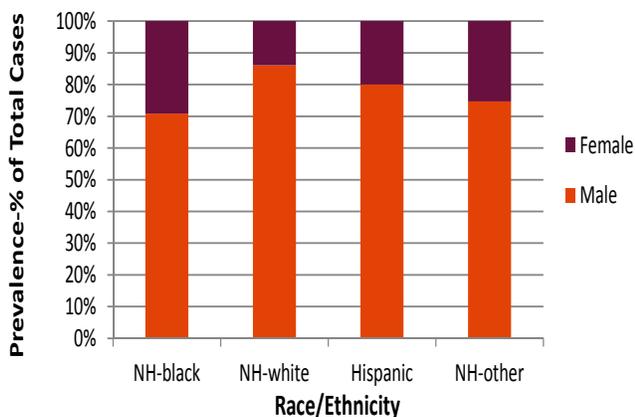
Forty percent (40.8%, 2,416) of PLWHA were males living with AIDS, 37.9% (2,246) were males living with HIV, 10.8% (641) were females living with HIV, and 10.4% (618) were females living with AIDS. The majority of the males were living with AIDS (51.8%), and the majority of females were living with HIV (50.9%).

Figure 5: HIV Disease Prevalence by Race/Ethnicity, 2012



Race/Ethnicity: Non-Hispanic whites represented the largest group of PLWHA (48.6%, 2,880) in the TGA. Non-Hispanic blacks accounted for 45.4% (2,687) of persons living with HIV disease, Hispanics represented 4.6% (275), and non-Hispanic others represented 1.3% (79). Non-Hispanic black prevalence rates of HIV disease infection (1,094.8 cases per 100,000 persons) are over 4.5 times that of non-Hispanic whites (241.3 cases per 100,000 persons) and over 4 times that of Hispanics (250.7 cases per 100,000 persons).

Figure 6: HIV Disease Prevalence by Race/Ethnicity and Gender, 2012



Race/Ethnicity and Gender: Non-Hispanic white males represented the largest racial/ethnic and gender group of all people in the TGA living with HIV disease; they accounted for 41.9% (2,480) of all living cases. Non-Hispanic black males also accounted for a significant proportion (32.1%, 1,903), followed by non-Hispanic black females (13.2%, 784), non-Hispanic white females (6.8%, 400), Hispanic males (3.7%, 220), and Hispanic females (0.9%, 55).

Even though the largest portion of PLWHA was non-Hispanic white males, non-Hispanic black males (1,652.0 cases per 100,000 persons) had an HIV disease prevalence rate almost four times that of non-Hispanic white males (425.4 cases per 100,000 persons). The rate for Hispanic males was 371.7 cases per 100,000 persons. Non-Hispanic black females had an HIV disease prevalence rate (602.0 cases per 100,000 persons) that is over 5.5 times that of Hispanic females (108.9 cases per 100,000 persons) and over 9 times that of non-Hispanic white females (65.5 cases per 100,000 persons).

Age: In 2012, persons currently aged 35-44 and 45-54 had the highest prevalence of HIV disease, accounting for 24.9% (1,474) and 37.3% (2,207), respectively. Sixteen percent (16.2%, 957) of PLWHA were between 55 and 64 years of age, and 13.5% (798) were persons 25-34 years of age, accounting for the third and fourth most prevalent groups. Other age groups accounting for lesser frequencies of individuals included 65 and over (4.1%, 242), 15-24 year olds (3.7%, 216), 5-14 year olds (0.4%, 21), and persons under 5 years of age (0.1%, 6).

Transmission Category: The largest portion of PLWHA had an HIV transmission mode of MSM (52.2%, 3,088); this accounted for nearly three times that of any other transmission category. The majority of MSM exposures were among non-Hispanic white males (61.3%, 1,894) and non-Hispanic black males (33.2%, 1,026). This accounts for 76.4% of non-Hispanic white males and 53.9% of non-Hispanic black males who are living with HIV disease. Hispanic males accounted for 4.3% (133) and non-Hispanic other males accounted for 1.1% (35) of cases attributed to MSM transmission.

Heterosexual contact accounted for the second largest portion of transmission categories of PLWHA, with 17.6% (1,043), followed by unknown/no risk reported (13.1%, 777), IDU (injection drug use) (11.7%, 690), MSM/IDU (4.0%, 235), and perinatal exposure (0.6%, 35). All other forms of transmission including hemophilia, transfusion/transplant, and other accounted for 0.9% (53).

There has been a consistent decrease in the incidence of persons becoming infected with HIV disease through IDU over the last five years. Consequently the prevalence proportion of PLWHA with an IDU transmission category has been steadily decreasing as well. It has decreased from 13.8% in 2008 to 11.7% in 2012. As the incidence of IDU transmission continues to decline, so will the prevalence of IDU transmission within the TGA's HIV-positive population.

It is important to recognize that the 13.1% (777) of people reporting an unknown/no risk reported

Figure 7: HIV Disease Prevalence by Age Group, 2012.

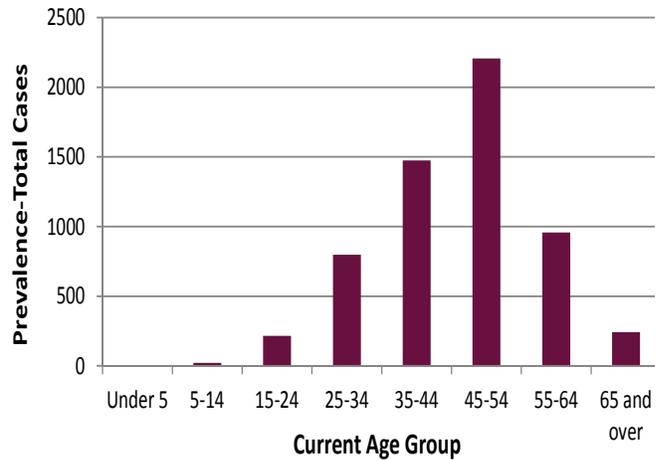


Figure 8: HIV Disease Prevalence of Males with an MSM Transmission Category by Race/Ethnicity, 2012

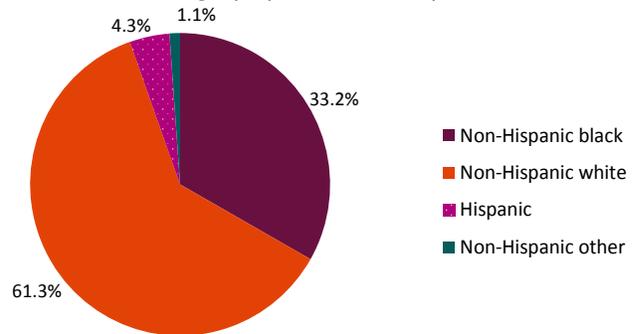


Figure 9: HIV Disease Prevalence by Transmission Category, 2012

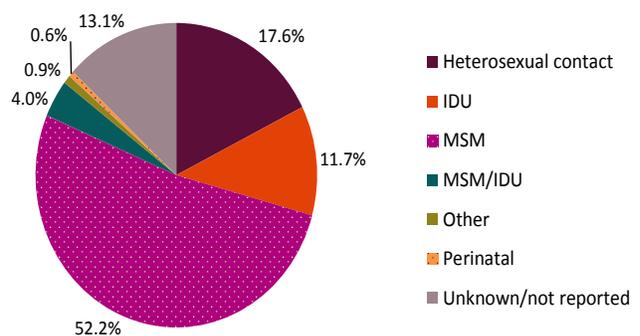


Figure 10: HIV Disease Prevalence and Incidence of IDU Transmission Category, 2008-2012

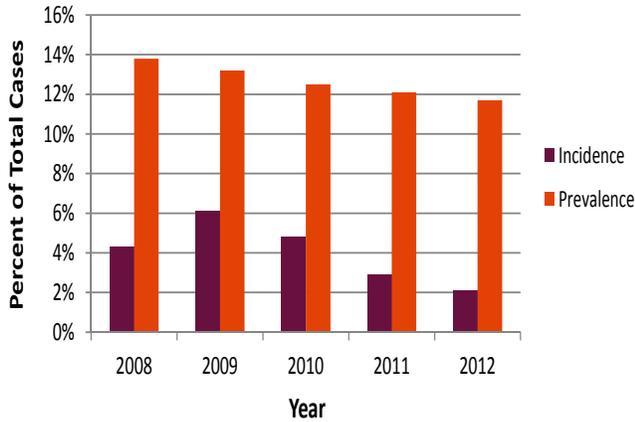
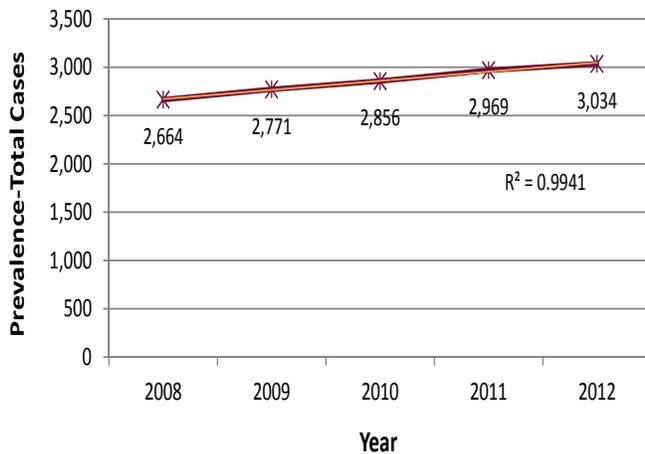


Figure 11: AIDS Prevalence, 2008-2012



Note: The closer the R^2 value is to 1.0, the greater the ability to predict data points. Therefore, a value of 0.9941 indicates that future data values can be approximated with near certainty.

transmission category could significantly impact the picture of HIV transmission if their transmission category was known. With so many persons being in this transmission category, a complete picture of how the HIV disease epidemic is changing cannot be understood.

AIDS

There were 3,034 individuals living with AIDS in the Nashville TGA at the end of 2012. Although fewer people are being diagnosed with AIDS on a yearly basis, AIDS prevalence is still increasing because people are living longer with the disease. However, the rate at which AIDS prevalence is increasing has decreased each year since 2007; 4.5% from 2007-2008, 4.0% from 2008-2009, 3.1% from 2009-2010, 4.0% from 2010-2011, and 2.2% from 2011-2012.

Gender: The male to female ratio of persons living with AIDS is about four to one, just as with HIV disease. Over 2,400 (79.6%, 2,416) males are living with AIDS in the TGA and 618 (20.4%) females. The AIDS prevalence rate for females is 74.7 cases per 100,000 persons, while it is over four times that for males (305.7 cases per 100,000 persons).

Race/Ethnicity: Non-Hispanic whites are the most prevalent racial/ethnic group among persons living with AIDS, representing 49.7% (1,509), followed by non-Hispanic blacks (44.1%, 1,338) and Hispanics (4.7%, 142). Although non-Hispanic whites have the highest AIDS prevalence, they have the lowest AIDS prevalence rate (126.4 cases per 100,000 persons); this is because even though non-Hispanic whites account for the greatest proportion of persons with AIDS, they also account for the greatest proportion of persons in the general population in the Nashville TGA. Hispanics have an AIDS prevalence rate of 129.5 cases per 100,000 persons, while non-Hispanic blacks have a rate four times as great (545.2 cases per 100,000 persons).

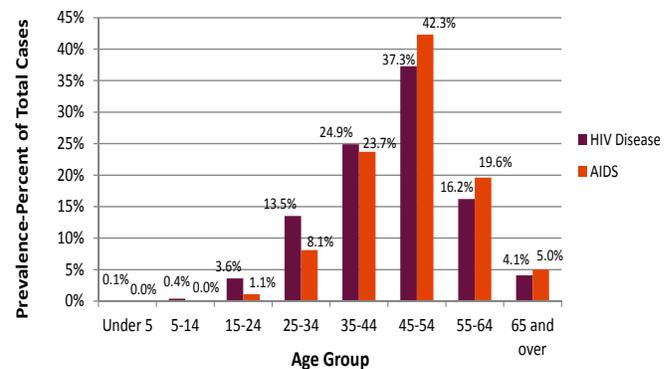
Race/Ethnicity and Gender: The largest portion of persons living with AIDS were non-Hispanic white males (43.3%, 1,313), followed by non-Hispanic black males (31.3%, 952), and non-Hispanic black females (12.7%, 386). Other groups

accounting for lesser proportions were non-Hispanic white females (6.5%, 196), Hispanic males (3.8%, 114), and Hispanic females (0.9%, 28). Non-Hispanic black males have an AIDS prevalence rate of 826.4 cases per 100,000 persons; this rate is almost three times that of the next highest rate, which is that of non-Hispanic black females (296.4 cases per 100,000 persons). Prevalence rates for other groups are 225.2 cases per 100,000 non-Hispanic white males, 192.6 cases per 100,000 Hispanic males, 55.4 cases per 100,000 Hispanic females, and 32.1 cases per 100,000 non-Hispanic white females.

Age: The majority of persons living with AIDS are 45 to 54 years of age (42.3%, 1,284), followed by persons 35-44 years old (23.7%, 719) and persons 55-64 years old (19.6%, 595). The proportion of persons in the age groups 35-44 and younger are greater when considering everyone living with HIV disease, whereas the proportions are greater among the age groups 45-54 and older among only persons living with AIDS.

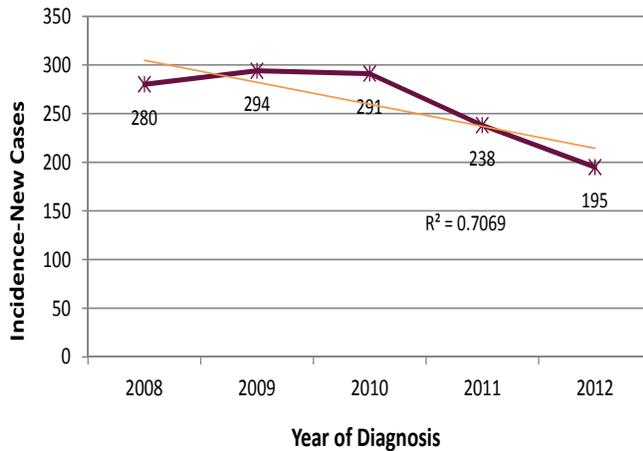
Transmission Category: MSM transmission accounts for the largest transmission category among persons living with AIDS (52.2%, 1,583), followed by heterosexual contact (18.5%, 561), IDU (13.5%, 408), unknown/no risk reported (9.9%, 300), and MSM/IDU (4.7%, 142). Perinatal exposure accounts for 9 (0.3%) persons living with AIDS and all other cases account for 1.0% (31).

Figure 12: HIV Disease and AIDS Prevalence by Age Group, 2012



INCIDENCE (NEW CASES) HIV DISEASE

Figure 13: HIV Disease Incidence, 2008-2012



Note: An R^2 value is used to estimate future data values. The closer the R^2 value is to 1.0, the greater the ability to predict data points. Therefore, a value of 0.7069 indicates that future data values can be estimated with moderate certainty based on the current data.

HIV disease incidence refers to people who were newly diagnosed with HIV disease, regardless of the stage of the disease (HIV or AIDS). Therefore, people who were newly diagnosed with HIV or concurrently diagnosed with HIV and AIDS were included; however, this does not include persons who were diagnosed with HIV in a previous year and may have converted to AIDS in the current year. There were a total of 195 new cases of HIV disease diagnosed in the TGA in 2012. This is an 18.1% decrease from 2011 (238) and a 30.4% decrease since 2008 (280).

Gender: The majority of new HIV disease diagnoses occurred among males, accounting for 86.2% (168), while females accounted for 13.9% (27) of new diagnoses. The proportion, as well as the number, of new diagnoses occurring among females has consistently decreased over the last five years. Since 2008, the proportion of female diagnoses has decreased by 45.7% and the frequency of new diagnoses among them has decreased by 62.0%.

Race/Ethnicity: Non-Hispanic blacks represented 47.2% (92) of new cases, while non-Hispanic whites accounted for 46.2% (90); Hispanics (5.6%, 11) and non-Hispanic others (1.0%, 2) accounted for significantly fewer new cases. Since 2011 the proportion of new diagnoses for non-Hispanic blacks and non-Hispanic whites has been nearly equal, compared to the years preceding in which non-Hispanic blacks had 11-16% more diagnoses than non-Hispanic whites. The rate of new infection among non-Hispanic blacks (37.5 cases per 100,000 persons) was five times greater than the rate of new infection for non-Hispanic whites (7.5 cases per 100,000 persons). Hispanics had a new infection rate of 10.0 cases per 100,000 persons.

Race/Ethnicity and Gender: Males represented the majority of cases among each of the racial/ethnic groups; however the proportion varies across these groups. Each racial/ethnic group of males was overrepresented among new HIV disease diagnoses in 2012 compared to their

occurrence within the population; conversely, each racial/ethnic group of females was underrepresented in terms of new HIV disease diagnoses compared to their occurrence within the general TGA population.

Non-Hispanic black males represented the greatest number of new diagnoses of HIV disease with 81 individuals (41.5%), while non-Hispanic white males fell closely behind with 77 (39.5%) new diagnoses; Hispanic males accounted for 9 (4.6%) new diagnoses. The number of new cases among non-Hispanic black males and non-Hispanic white males decreased by about 20 diagnoses each since 2011, whereas the number of diagnoses among Hispanic males stayed the same. Non-Hispanic white males were newly diagnosed with HIV disease at a rate of 13.2 cases per 100,000 persons. Hispanic males, although having significantly fewer new diagnoses, had a slightly higher rate of infection than did non-Hispanic white males with 15.2 cases per 100,000 persons. Non-Hispanic black males (70.3 cases per 100,000 persons) were diagnosed at a rate of 5.3 times that of non-Hispanic white males and 4.6 times that of Hispanic males.

Non-Hispanic black females (11) had fewer new diagnoses of HIV disease in 2012 than did non-Hispanic white females (13); however they had a rate of new infection four times that of non-Hispanic white females (8.4 cases/100,000 persons compared to 2.1 cases/100,000 persons, respectively). Hispanic females accounted for only two new diagnoses and had a new infection rate of 4.0 diagnoses per 100,000.

Age: HIV disease incidence decreased from 2011 to 2012 in every age group, except for those with only a couple individuals. The 15-24 year old age group experienced a decrease of 23.2%, while the 35-44 year old age group decreased by 39.3%. The age groups with the highest frequencies continue to be 25-34 year olds (30.8%, 60) and 15-24 year olds (22.1%, 43), representing over half of new diagnoses in 2012. Other significant age groups were 45-54 year olds (19.0%, 37), 35-44 year olds (17.4%, 34), and 55-64 year olds (7.7%, 15). Only 3.0% of new diagnoses were accounted for by the

Table 1: HIV Disease Incidence vs General Population

Subpopulation	Actual HIV Disease Incidence	General Population
NH-black males	41.5%	7.1%
NH-white males	39.5%	36.0%
NH-white females	6.7%	37.7%
NH-black females	5.6%	8.1%
Hispanic males	4.6%	3.7%
Hispanic females	1.0%	3.1%
Other	1.0%	4.2%

Figure 14: HIV Disease Incidence by Race/Ethnicity and Gender, 2012

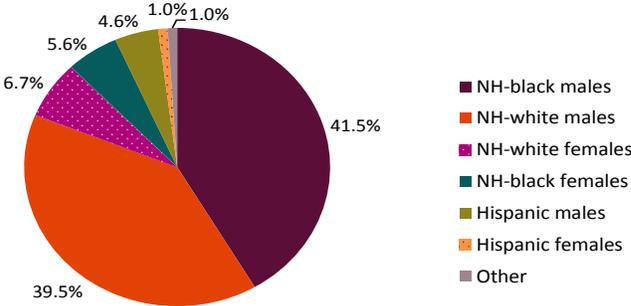
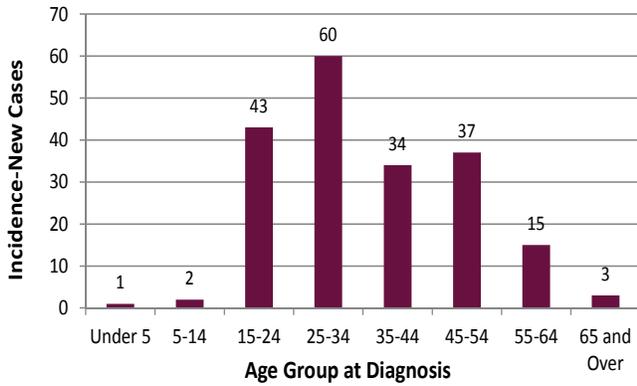


Figure 15: HIV Disease Incidence by Age Group, 2012



remaining age groups: under 5 (0.5%, 1), 5-14 years old (1.0%, 2), and persons 65 and over (1.5%, 3).

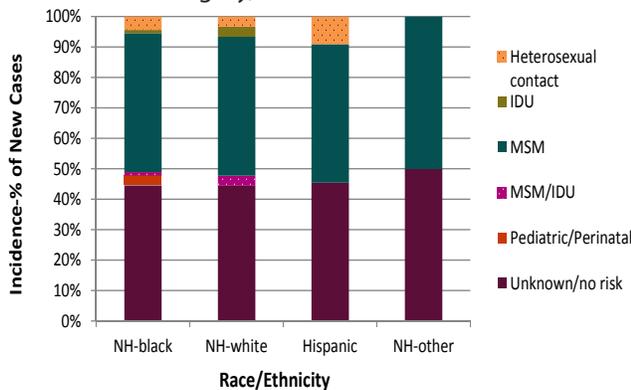
It is important to note that the 35-44 year old age group has decreased by 59.5% in the last five years. In 2008 this age group was tied for the most number of new diagnoses, however in 2012 it is only the fourth most represented age group.

Transmission Category: Men who have sex with men (MSM) represented 45.6% (89) of all new diagnoses in 2012. Although this is a slight increase from the 2011 proportion (44.5%, 106), there has been an overall decrease in the proportion of new diagnoses attributed to MSM; MSM was the mode of transmission for 54.3% of new diagnoses in 2008. In spite of this decrease, MSM's represent only an estimated 5.5% of the population in Tennessee according to a study in the Journal of Urban Health (2009), making them a significantly over-represented subpopulation. Unknown/no risk reported (adult) transmission (44.6%, 87) accounted for nearly the same proportion of new cases as MSM. Heterosexual contact, IDU, and MSM/IDU represented only small proportions of new cases: 4.1% (18), 2.1% (4), and 2.1% (4), respectively. Two individuals with pediatric no risk (1.0%) and one individual with perinatal exposure (0.5%) were diagnosed in 2012.

Non-Hispanic white males accounted for 46.1% (41) of all new MSM transmissions and 75.0% (3) of all new MSM/IDU transmissions; this group represents 47.3% of all diagnoses related to MSM. Non-Hispanic black males accounted for a combined 46.2% (43) of all MSM transmissions (including one MSM/IDU transmission). Hispanic males and non-Hispanic other males accounted for the remaining six individuals with a transmission category of MSM (5.4%, 5 and 1.1%, 1, respectively).

While few people reported a transmission category related to IDU (8), this transmission was only reported among males, regardless of whether the transmission was defined as MSM/IDU or solely IDU. Also, persons with an IDU or MSM/IDU transmission category were either non-Hispanic white males (6) or non-Hispanic black males (2).

Figure 16: HIV Disease Incidence by Race/Ethnicity and Transmission Category, 2012



Females were significantly more likely to have a transmission category of heterosexual contact; 25.9% (7) of females compared to 0.6% (1) of males. This is likely due to the nature of HIV disease and how it is spread. This category is also likely to be under-reported particularly for females. The transmission category of heterosexual contact includes individuals who report specific heterosexual contact with a person who has documented HIV disease or heterosexual contact with a person at increased risk for HIV disease (i.e. an injection drug user, transfusion recipient, a person with hemophilia, or a bisexual male) (Centers for Disease Control and Prevention (CDC), Division of HIV/AIDS Prevention, 2012). An individual who reports heterosexual contact with partners whose HIV risks and HIV status are not known is not placed in the transmission category of heterosexual contact, but rather in the category of unknown/no risk reported or identified. However, if heterosexual contact can later be confirmed then the person’s transmission category will be reclassified.

Females were nearly twice as likely as males to have a transmission category of unknown/no risk reported. Although males had overall greater numbers in this transmission category (68 compared to 19), a larger proportion of females (70.4%) were classified with this mode of transmission than were males (40.5%, 68).

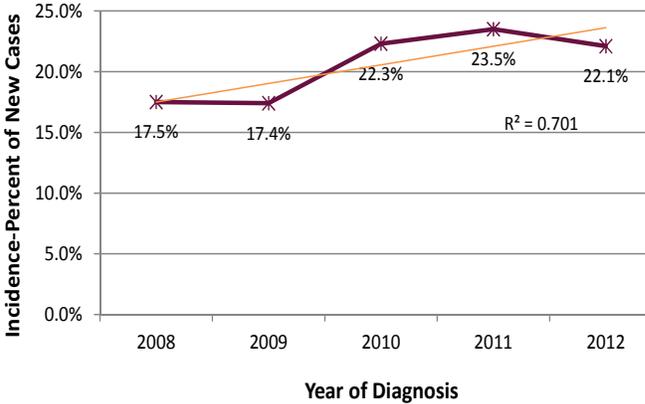
All three of the pediatric diagnoses (pediatric no risk reported and perinatal exposure) occurred among non-Hispanic black individuals.

IN-DEPTH REVIEW OF 15-24 AGE GROUP

The following is a comprehensive review of the 15-24 year old age group for 2012.

Forty-three (43) persons 15 to 24 years old were newly diagnosed with HIV disease in 2012. The majority of these individuals were 20-24 years old (88.4%, 38); only five of these persons were 15-19 years old (11.6%). The number of individuals in this age group being newly diagnosed with HIV disease decreased by 13 from 2011 to 2012; that is a 23.2% decrease in frequency. The proportion of all new

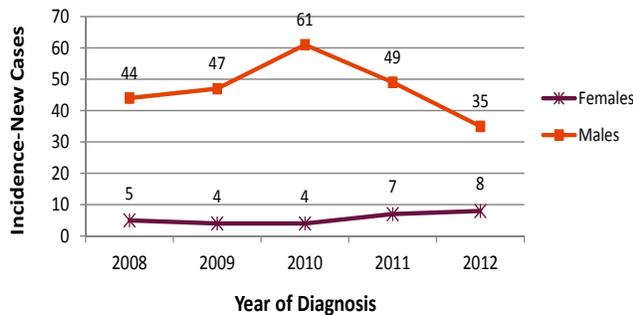
Figure 17: HIV Disease Incidence for 15-24 Year Olds, 2008-2012,



Note: An R² value of 1.0 indicates that one data point can be perfectly predicted from the others. A value of 0.701 indicates mildly strong predictive power.

cases accounted for by persons of this age group also decreased from 2011 to 2012, falling from 23.5% to 22.1%; however, the proportion of all new HIV disease cases that occurred among persons of this age group has experienced an overall increase over the last five-year period. This indicates that as HIV disease incidence is decreasing, other age groups are experiencing more significant decreases compared to the 15-24 age group.

Figure 18: HIV Disease Incidence by Gender for 15-24 Year Olds, 2008-2012



Gender: The majority of new HIV disease diagnoses among 15-24 year olds occurred among males (81.4%, 35); 18.6% (8) were among females. However, while all small numbers, the frequency of 15-24 year old females has been increasing since 2008, whereas the number of young males has been steadily decreasing since 2010. The reduction in the number of persons of this age group being newly diagnosed with HIV disease can be attributed to the reduction in young males being diagnosed as HIV-positive.

Race/Ethnicity: Non-Hispanic blacks accounted for over three-quarters (76.7%, 33) of all cases in this age group, while non-Hispanic whites represented the remaining 23.3% (10).

Table 2: Total HIV Disease Incidence vs 15-24 Year Old HIV Disease Incidence, 2012

Subpopulation	Total HIV Disease Incidence	15-24 Year Old HIV Disease Incidence
NH-black males	41.5%	67.4%
NH-white males	39.5%	14.0%
NH-white females	6.7%	9.3%
NH-black females	5.6%	9.3%
Hispanic males	4.6%	0.0%
Hispanic females	1.0%	0.0%
Other	1.0%	0.0%

Race/Ethnicity and Gender: The largest portion of cases was among non-Hispanic black males (67.4%, 29), followed by non-Hispanic white males (14.0%, 6), and non-Hispanic white females and non-Hispanic black females with 9.3% (4) each.

The 2012 HIV disease incidence by race/ethnicity among 15 to 24 year olds was very different from that of the whole TGA's 2012 incidence. While the incidence profile for the whole TGA was fairly evenly split between non-Hispanic black and non-Hispanic white males, the number of non-Hispanic black males 15-24 years old who were newly diagnosed was over four fold that of non-Hispanic white males. Additionally, the proportions of new diagnoses among non-Hispanic white and non-Hispanic black females 15-24 years old were greater than they were for the whole TGA 2012 incidence. And while only few Hispanics and non-Hispanic others were newly diagnosed in 2012, none of these were individuals in the 15-24 age group.

Transmission Category: A total of 30 individuals had an HIV disease transmission category of MSM. This represents 69.8% of individuals aged 15-24. The majority of these individuals were non-Hispanic black males (83.3%, 25), with the remaining 16.7% (5) occurring among non-Hispanic white males. Of the total 15-24 year old newly infected population, 58.1% were non-Hispanic black MSM's and 11.6% were non-Hispanic white MSM's.

Both of the cases categorized as heterosexual transmission were among females, one non-Hispanic black and one non-Hispanic white. They represented only 4.7% of all new diagnoses among 15-24 year olds in 2012.

A total of 11 individuals were classified with a transmission category of unknown/no risk reported. A greater portion of females (75.0%, 6) than males (14.3%, 5) fell into this category; however the frequency of females and males was comparable. Persons identifying heterosexual contact as their risk factor are included in the unknown/no risk transmission category if it could not be established that their contact was with a documented HIV-positive individual or a person at increased risk for the disease. Therefore, with time and verification of data, individuals presently included in this category may be reclassified into another transmission category. Persons may also not be comfortable disclosing too much information when they are initially diagnosed; as they become more comfortable they may share enough information to identify a specific transmission category.

Over half of cases with an unknown/no risk reported transmission category were among non-Hispanic blacks, 36.4% (4) non-Hispanic black males and 27.3% (3) non-Hispanic black females; non-Hispanic white females accounted for 27.3% (3) and non-Hispanic white males accounted for 9.1% (1).

AIDS

There were 78 new AIDS diagnoses in the Nashville TGA in 2012; this is a 29.7% decrease from 2011, in which there were 111 new AIDS

Figure 19: HIV Disease Incidence by Transmission Category: 15-24 Year Olds vs Total New Diagnoses, 2012

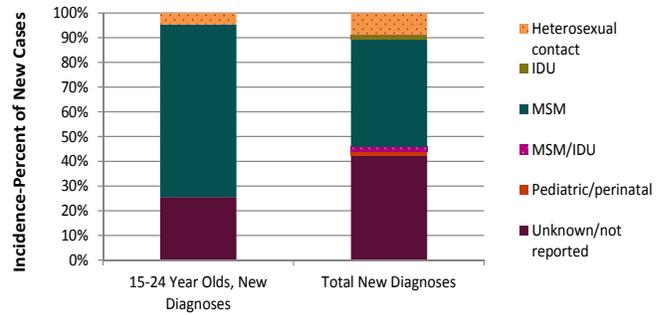
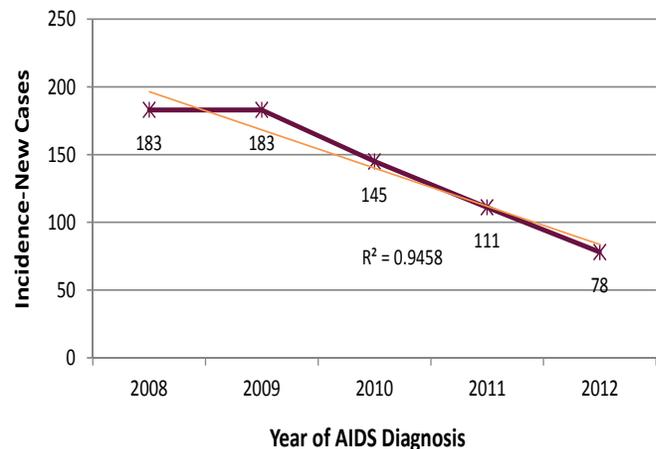


Figure 20: AIDS Incidence, 2008-2012



Note: An R^2 value of 0.9458 indicates that one data point can be nearly perfectly predicted from the others.

diagnoses. There has also been a 57.4% decrease in new AIDS diagnoses since 2008.

Gender: The majority of new AIDS diagnoses occurred among males (80.8%, 63); females accounted for 19.2% (15) of AIDS diagnoses. Females represented a larger portion of new AIDS diagnoses than new HIV disease diagnoses (13.8%).

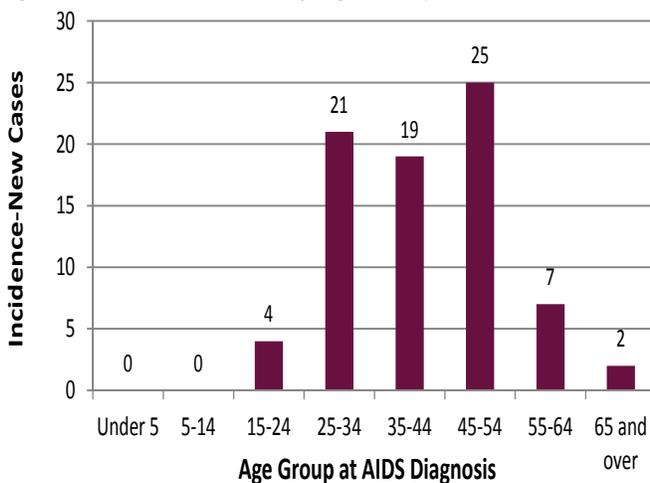
Race/Ethnicity: Of the new AIDS diagnoses, the largest portion was among non-Hispanic blacks (47.4%, 37), followed by non-Hispanic whites (39.7%, 31), Hispanics (10.3%, 8), and non-Hispanic others (2.6%, 2). The rate of newly diagnosed AIDS cases was greatest among non-Hispanic blacks (15.1 cases per 100,000 persons). The AIDS incidence rate among non-Hispanic blacks was two times that of Hispanics (7.3 cases per 100,000 persons) and almost six times that of non-Hispanic whites (2.6 cases per 100,000 persons).

Race/Ethnicity and Gender: Non-Hispanic black females (8) had the greatest number of new AIDS diagnoses among females in 2012; non-Hispanic white females accounted for five new cases and Hispanic females for one new case. The rate of new AIDS diagnoses among non-Hispanic black females was 6.1 cases per 100,000 persons; this is over 7.5 times the rate of non-Hispanic white females (0.8 cases per 100,000) and 3 times the rate of Hispanic females (2.0 cases per 100,000).

Non-Hispanic black males (29) and non-Hispanic white males (26) had almost the same number of AIDS diagnoses in 2012, however non-Hispanic black males (25.2 cases per 100,000 persons) had a rate of incidence 5.6 times that of non-Hispanic white males (4.5 cases per 100,000 persons). There were seven AIDS diagnoses among Hispanic males giving them an AIDS incidence rate of 11.8 cases per 100,000 persons.

Age: The largest portion of new AIDS diagnoses occurred among persons 45-54 years of age (32.1%, 25), followed by persons 25-34 years of age (26.9%, 21), and 35-44 years of age (24.4%, 19). In 2011, the 35-44 age group accounted for over twice the number of diagnoses as it did in 2012, with 43 diagnoses; it represented the largest number of

Figure 21: AIDS Incidence by Age Group, 2012



AIDS diagnoses in one age group. Other age groups accounted for low frequencies of AIDS diagnoses: 55-64 (9.0%, 7), 15-24 (5.1%, 4), 65 and over (2.6%, 2), under 5 (0.0%, 0), and 5-14 (0.0%, 0).

15-24 Year Olds: Four (4) individuals 15-24 years of age were newly diagnosed with AIDS in 2012. This is a 20.0% decrease from 2011 in which 5 individuals were newly diagnosed with AIDS. The majority of these 15-24 year olds were non-Hispanic black males (75.0%, 3), and one individual was a non-Hispanic white female (25.0%).

Transmission Category: The largest portion of persons newly diagnosed with AIDS had a transmission category of unknown/no risk reported (42.3%, 33). For the first time in the last five years MSM did not outnumber every other transmission category; MSM transmission accounted for 32.1% (25) of new diagnoses. Other transmission categories represented lesser frequencies: heterosexual contact (14.1%, 11), IDU (7.7%, 6), and MSM/IDU (3.9%, 3).

TRENDS IN INCIDENCE

Gender: Since 2008 there has been a consistent increase in the proportion of new HIV disease diagnoses among males, and likewise a consistent decrease in the proportion of females. In this five-year period, the proportion of males has grown by 11.6% and the proportion of females has decreased by 45.7%.

Race/Ethnicity: HIV disease incidence for each racial/ethnic group remained fairly stable from 2008 to 2009, however in 2010 noticeable changes occurred. Both non-Hispanic blacks and Hispanics experienced an increase in the proportion of new cases they accounted for, whereas non-Hispanic whites had a marked decrease of 40.5% to 36.4%. In 2011 the proportions shifted again; the proportion of non-Hispanic blacks decreased by 10.5%, Hispanics decreased by 48.3%, and non-Hispanic whites increased by 25.8%. The proportions have remained relatively stable the last two years.

Although the proportion of non-Hispanic blacks has been greater than that of any other group in each of the last five years, since 2011 the difference

Figure 22: AIDS Incidence for 15-24 Year Olds, 2008-2012

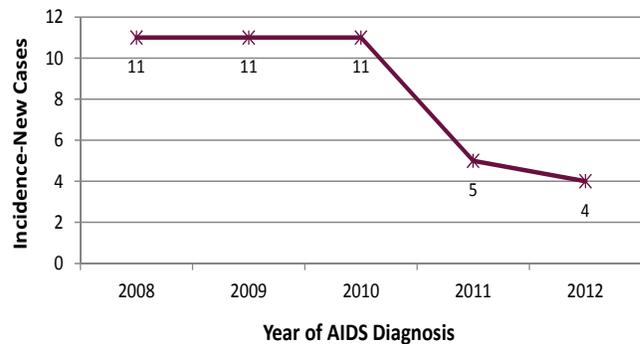


Figure 23: AIDS Incidence by Race/Ethnicity and Transmission Category, 2012

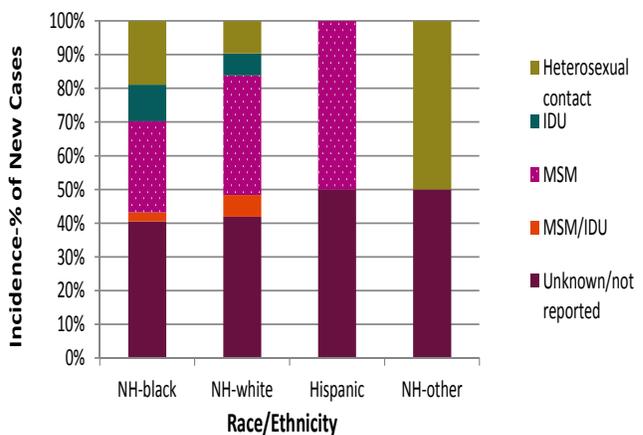
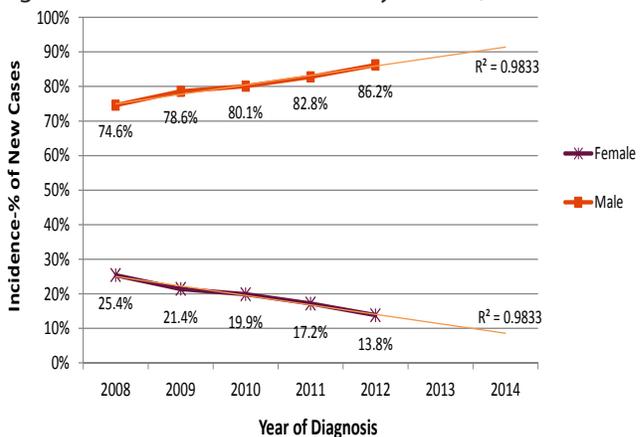
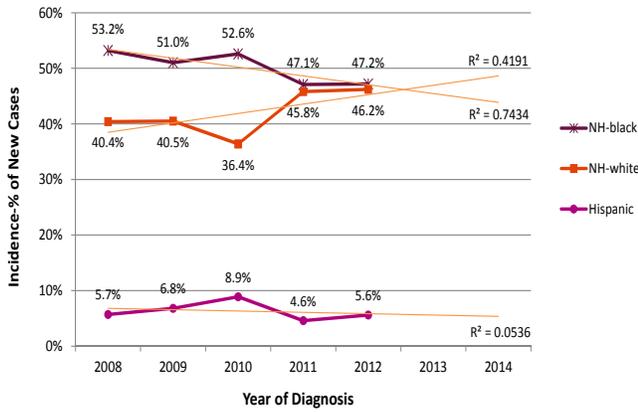


Figure 24: HIV Disease Incidence by Gender, 2008-2012



Note: A linear forecasting trendline has been used to predict the gender data points for the next two years' incidence data. An R^2 value of 1.0 indicates that the data points can be predicted with certainty based on the current data points available. Therefore, an R^2 value of 0.9833 indicates that the trendline can be used to predict with near certainty how the data will look over the next two years.

Figure 25: HIV Disease Incidence by Race/Ethnicity, 2008-2012



Note: A linear forecasting trendline of 1.0 indicates that the data points can be predicted with certainty. Accordingly, the R² value for Hispanics has no predictive power. The R² value for non-Hispanic whites (0.4191) has some predictive power, although is not strong enough to indicate much more than that the data values are increasing. Non-Hispanic blacks have the strongest R² value, with 0.7434, suggesting that the forecasting trendline is fairly predictive for future data points.

Figure 26: HIV Disease Incidence by Race/Ethnicity and Gender, 2008-2012

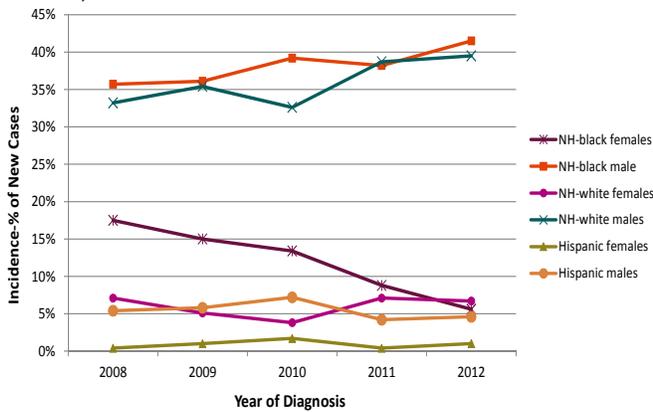
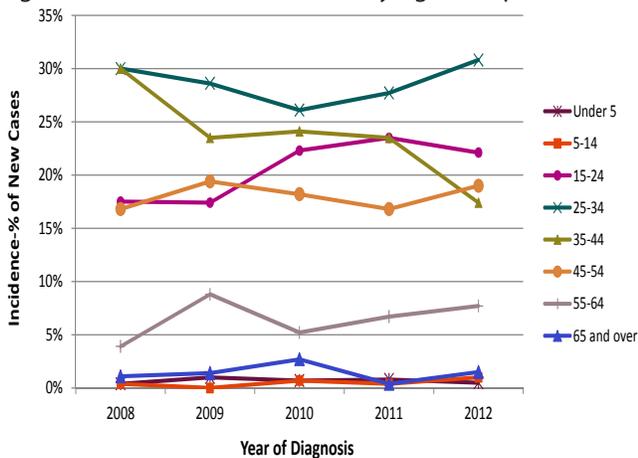


Figure 27: HIV Disease Incidence by Age Group, 2008-2012



between non-Hispanic blacks and non-Hispanic whites has been only 1.3% and 1.0%. This pattern is relatively new, beginning in only 2011, however non-Hispanic blacks have experienced an overall decrease in the last five years and non-Hispanic whites an overall increase. Therefore, if the trend continues, it is likely that the proportion of new diagnoses among non-Hispanic whites will be greater than that of non-Hispanic blacks within the next year or two.

Race/Ethnicity and Gender: The number of non-Hispanic black males exceeded the number of non-Hispanic white males in each of the last five years, except for 2011, in which there was one more non-Hispanic white male than non-Hispanic black males. The proportion of both of these groups is increasing, just as the proportion of males overall has been increasing since 2008. Oppositely, the proportion of non-Hispanic black females has been steadily declining in this five-year period; while this group was clearly the third most common group in 2008, a 68.0% decrease in proportion has led it below non-Hispanic white females. Non-Hispanic white females and Hispanic males and females have experienced fluctuations, yet have remained at low proportions.

Age: Trends in data indicate that an increasing proportion of younger people are becoming infected with HIV disease each year. This is most seen in the 15-24 year old age group and 25-34 year old group.

The proportion of persons 15-24 years of age has increased by 26.3% since 2008. Persons 25-34 have had an increase in proportion of 18.0% since 2010. Also, as these groups' proportions have been increasing, persons 35-44 years of age have experienced a notable decrease; the proportion of this group fell by 42.0% in this five-year period. The proportion of persons 55-64 years of age being newly diagnosed with HIV disease has fluctuated since 2008, however overall it has nearly doubled in this time period (from 3.9% to 7.7%). Other age groups have remained fairly stable.

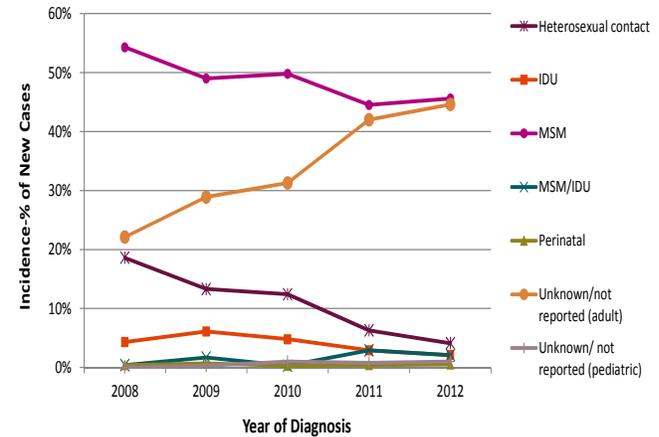
Transmission Category: Transmission category trends have changed markedly since 2008. The

unknown/not reported reported (adult) and MSM/IDU categories are the only transmission categories to have grown since 2008. MSM/IDU, while small in proportion, has increased by 425% since 2008. Additionally, the unknown/no risk reported (adult) category has grown by 101.8%, from 22.1% in 2008 to 44.6% in 2012. It is possible that this significant increase in proportion size is because some people do not feel comfortable reporting their risk factors at their time of diagnosis or because it takes time for the transmission category of some individuals to be determined; as time passes some of these individuals may be re-categorized into another group. It is important to note that persons reporting heterosexual contact who cannot be connected with a person with a confirmed HIV status or a person at high-risk of HIV disease, are included in this unknown/no risk reported (adult) category; while it is presumed heterosexual transmission, it does not meet the definition of the heterosexual contact transmission category. A noticeable decrease can be seen in the proportion of cases attributed to heterosexual transmission, dropping from 18.6% in 2008 to 4.1% in 2012.

MSM exposure continues to produce the greatest proportion of new HIV disease infections; however, its proportion has decreased by 16.0% since 2008.

Cases attributed to IDU, perinatal exposure, and unknown/no risk reported (pediatric) have remained relatively steady since 2008, however they have each experienced general decline in proportions.

Figure 28: HIV Disease Incidence by Transmission Category, 2008-2012



Diagnosis Lag

Late diagnosis is a measure designed to assess the number of persons who are either (a) diagnosed with HIV and AIDS at the same time or (b) diagnosed with AIDS within 12 months of the individual's initial HIV diagnosis. Late diagnosis is significant because the earlier an HIV infection is diagnosed the better the chance of the individual maintaining good health and preventing further transmission. As HIV disease progresses individuals become sicker, risks for opportunistic infections and comorbidities increase, individuals have less successful responses to medications, more aggressive medications and more extensive medical services may be necessary (which increases costs), and survival rates decrease (Department of Health and Human Services, 2012). It is therefore important that individuals be tested and diagnosed early in the course of the disease so that they may enter care as soon as possible.

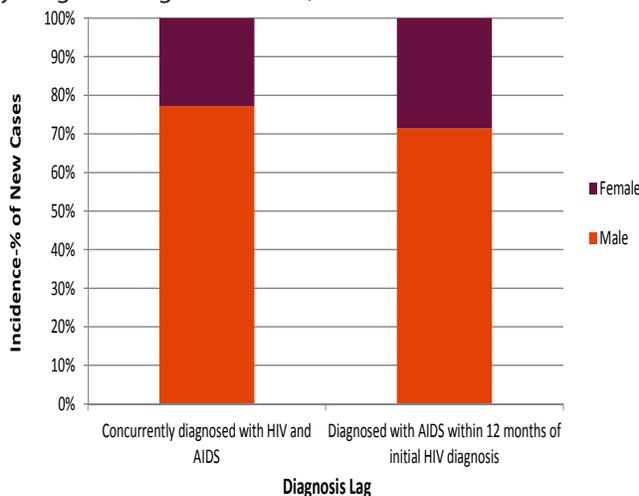
In a 2010 issue of Morbidity and Mortality Weekly Report, the CDC reported that 32.3% of new HIV disease diagnoses in 2007 (37 states were included) were late diagnoses; 25.0% of new HIV disease diagnoses in Tennessee in 2007 were considered to be late diagnoses.

It is important to note that late diagnosis cannot be analyzed until a full 12 months has passed from the end of the reporting cycle in order to allow the necessary time to see if a person diagnosed late in the year advances to AIDS within 12 months. As a result, 2011 data are being used for this measure because a full year has not yet lapsed for those individuals diagnosed in the latter part of 2012. Using 2012 data would lead to an inaccurate measure because the data would not be complete at this time.

INCIDENCE

In 2011, 238 individuals were newly diagnosed with HIV disease, and of these persons 20.6% (49) were simultaneously diagnosed with HIV and AIDS or

Figure 29: HIV Disease Incidence Cases with Late Diagnosis by Diagnosis Lag and Gender, 2011

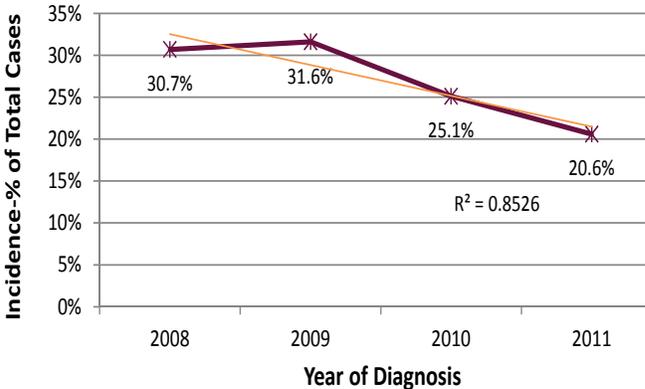


progressed to AIDS within 12 months of their initial HIV diagnosis. Of these persons, the majority were concurrently diagnosed with HIV and AIDS (71.4%, 35), while 28.6% (14) progressed to AIDS within 12 months of their initial HIV diagnosis (10 of these individuals advanced to AIDS within two months). Persons progressing to AIDS within 12 months of their initial HIV diagnosis did not do so because they did or did not enter care, but rather because they were likely diagnosed at a late stage of the disease. If people are tested and diagnosed early on in the course of the disease they are not likely to progress through the stages of the disease as rapidly.

Males represented 75.5% (37) of individuals having a late diagnosis, while females represented 24.5% (12) of these cases. The majority was among non-Hispanic whites (69.4%, 34); non-Hispanic blacks accounted for 26.5% (13) of late diagnoses and Hispanic accounted for 4.1% (2). Over half (53.1%, 26) of late diagnoses were among non-Hispanic white males. Persons 35-44 years of age and 45-54 years of age represented the largest proportions of people receiving a late diagnosis with 36.7% (18) and 32.7% (16), respectively. Other groups were also among those receiving a late diagnosis: 15-24 year olds (8.2%, 4), 25-34 year olds (10.2%, 5), and 55-64 year olds (12.2%, 6). The most common transmission categories among these individuals were unknown/no risk reported (42.9%, 21) and MSM (34.7%, 17). Of persons newly diagnosed with HIV disease in 2011, six individuals have since died; all of these individuals were diagnosed with HIV disease late in the course of the disease.

The percentage of newly diagnosed PLWHA in the Nashville TGA with a diagnosis lag, 20.6%, is lower than the national average of 32.3%. This indicates that in comparison to the entire country, a greater proportion of people in the TGA are diagnosed earlier in the disease than they are in the country as a whole. However, because this national average of 32.3% is based on data from 2007, it is possible that the average has decreased for the country just as it has for the TGA. It is worth noting though that even in 2007 the state of Tennessee had a lower proportion of late diagnoses (25.0%) than did the country. The R2 value of 0.8526 indicates that

Figure 30: HIV Disease Incidence Cases with Late Diagnosis, 2008-2011



Note: An R2 value of 0.8526 signifies that there is little variability in the trend of the data points and thus future data points can be predicted with reasonable certainty.

the data is consistently decreasing from year to year and is likely to decrease again next year.

PREVALENCE

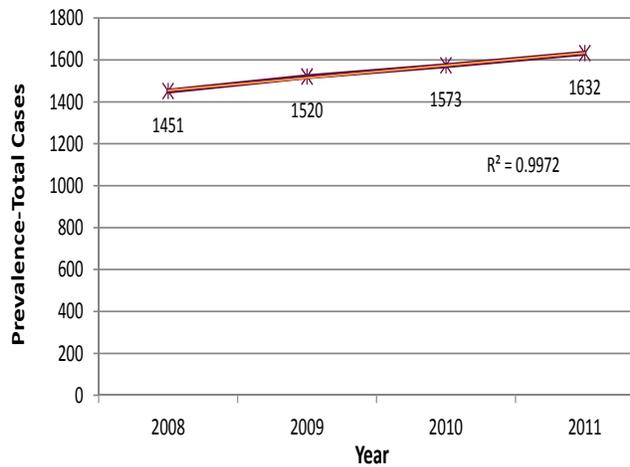
Of the 5,715 PLWHA in the Nashville TGA at the end of 2011, 1,632 of them had been diagnosed with HIV and AIDS simultaneously or progressed to AIDS within one year of their initial HIV diagnosis; these persons accounted for 28.6% of PLWHA at that time. The number of PLWHA with a late diagnosis has increased by 12.5% since 2008.

The majority of individuals in 2011 with a late diagnosis were males (81.8%, 1,335); females represented 18.2% (297). Non-Hispanic whites accounted for over half of all cases (52.7%, 860) with a late diagnosis, followed by non-Hispanic blacks (40.0%, 652), and Hispanics (5.8%, 95). Persons 45-54 years of age represented 41.1% (671) of these cases, with persons 35-44 (23.4%, 382) and 55-64 (20.1%, 328) accounting for significant proportions as well. MSMs represented the greatest number of late diagnoses (54.4%, 888); heterosexual contact (17.8%, 291), unknown/no risk reported (12.7%, 207), and IDU (10.2%, 166) also accounted for considerable proportions of transmission categories.

Non-Hispanic white males represented the single largest group of PLWHA who have received a late HIV disease diagnosis, accounting for 46.1% (753) of all PLWHA living with a late diagnosis as of 2011. They had a late diagnosis rate of 129.2 cases per 100,000 persons. Non-Hispanic black males had the second highest late HIV disease diagnosis prevalence (29.4%, 479); however their rate of late diagnosis (415.8 cases per 100,000 persons) is over three times that of non-Hispanic white males. Hispanic males had a late diagnosis comparable to that of non-Hispanic white males (138.6 cases per 100,000 persons) despite having a much lower frequency (5.0%, 82).

Non-Hispanic black females (173, 132.8 cases per 100,000 persons) had a late diagnosis rate that was over 7.5 times that of non-Hispanic white females (107, 17.5 cases per 100,000 persons), and 5.2 times that of Hispanic females (13, 25.7 cases per 100,000 persons).

Figure 31: HIV Disease Prevalence Cases with Late Diagnosis, 2008-2011



Note: An R^2 value of 1.0 is considered to have perfect predictive power of future data points based on the current data. Therefore, with an R^2 value of 0.9972, future data points can be predicted.

Deaths

A total of 21 people living with HIV disease in the Nashville TGA were identified as having died in 2012, although their deaths were not necessarily related to their HIV disease. It is important to note that death data may not have been complete at the time this data was analyzed. Due to data coming from different sources, and needing to be verified, confirmation of individuals and deaths is not timely.

The majority of 2012 deaths occurred among males (76.2%, 16); females accounted for 23.8% (5) of deaths. Non-Hispanic whites represented 66.7% (14) of deaths, while non-Hispanic blacks represented 33.3% (7). Non-Hispanic white males accounted for the single largest group of deaths (52.4%, 11), followed by non-Hispanic black males (23.8%, 5), non-Hispanic white females (14.3%, 3), and non-Hispanic black females (9.5%, 2). The largest portion of deaths occurred among persons 45-54 years of age (38.1%, 8), followed by persons 55-64 years of age (33.3%, 7).

Almost all of the deaths occurred among persons who had been diagnosed with AIDS (95.2%, 20); only one person had a diagnosis of HIV, not AIDS (4.8%). Of the 20 individuals who were living with AIDS, 30.0% (6) had been simultaneously diagnosed with HIV and AIDS, and another 15.0% (3) were diagnosed with AIDS within two months of their initial HIV diagnosis.

There was a 5.0% increase in the number of deaths from 2011 (20) to 2012 (21). However, it is likely that death data for these years is not yet complete and so the trend of the data may appear different after more deaths have been determined. Overall, from 2008 to 2010 there has been an 18.3% decrease in the number of deaths among persons living with HIV disease.

Figure 32: Deaths of HIV-Positive Persons by Race/Ethnicity and Gender, 2012

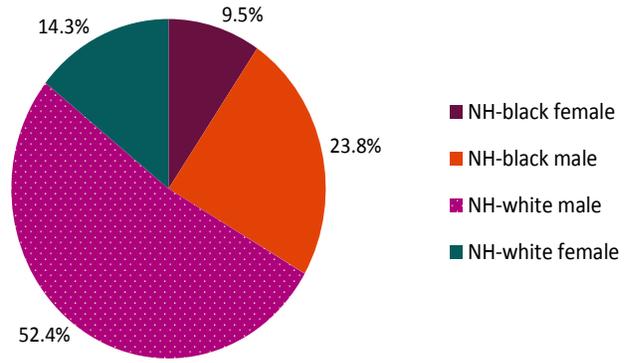


Figure 33: Deaths of HIV-Positive Persons by Age Group, 2012

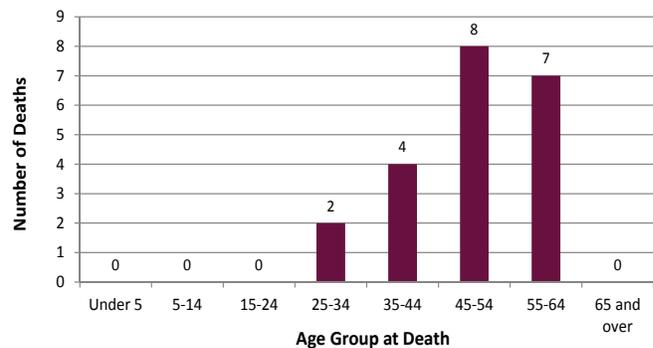
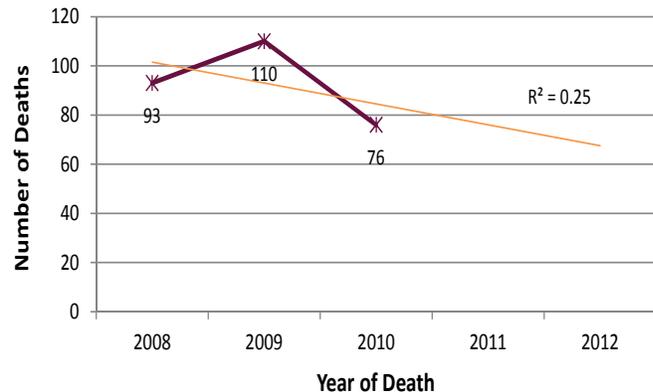


Figure 34: Deaths of HIV-Positive Persons, 2008-2012



Note: Because it takes time to verify deaths, only 2008-2010 death data was included in this graph. The values for 2011 and 2012 are estimated based on the data for 2008-2010. However, an R^2 value of 0.25 indicates that the data cannot be predicted with much certainty.

Co-Infection

CHRONIC HEPATITIS C

An estimated 25% of people living with HIV disease in the United States are also infected with hepatitis C (HCV). Co-infection is significantly higher among injection drug users, being upwards of 80% (Centers for Disease Control and Prevention [CDC], 2012). Chronic hepatitis C is not a reportable disease and therefore the actual number of persons co-infected with HIV disease and hepatitis C is not known. However, using national estimates, HIV/HCV co-infection in the TGA for 2012 is estimated to be about 1,480 individuals.

TUBERCULOSIS (TB)

A total of 9,951 new cases of tuberculosis were reported in the United States in 2012 (CDC, Division of TB, 2013). The rate of incidence was 3.2 cases per 100,000 persons; this was a 5.9% decrease from the 2011 rate of 3.4 cases per 100,000 persons. This is the 20th consecutive year in which the tuberculosis rate has decreased. Forty-nine (49) individuals were diagnosed with tuberculosis in the Nashville TGA in 2012; that was a rate of 3.0 cases per 100,000 persons. The Nashville TGA therefore has a lower incidence rate of tuberculosis infections than does the nation as a whole.

Latent TB (no symptoms and non-infectious) is much more likely to become active TB in someone with HIV disease because HIV weakens the immune system and makes it harder to fight off diseases like tuberculosis. Therefore, in HIV infected people tuberculosis is considered an AIDS-defining condition. In other words, someone who has both HIV and TB has AIDS. Seven (7) PLWHA in the TGA were diagnosed with tuberculosis in 2012; this accounts for 14.3% of the 2012 TB cases in the TGA. Only 0.1% of PLWHA were co-infected with active tuberculosis. Almost all HIV disease/TB co-infections occurred among people within Davidson County (6, 85.7%).

GONORRHEA

In 2012, 70 PLWHA in Davidson County were diagnosed with gonorrhea. This represented 1.5% of all HIV disease cases and 5.3% of all gonorrhea infections in Davidson County. PLWHA were diagnosed with a gonorrhea co-infection at a rate of 1,526.1 cases per 100,000 PLWHA.

CHLAMYDIA

In 2012, 75 PLWHA in Davidson County were diagnosed with Chlamydia. This represented 1.6% of all HIV disease cases and 2.0% of all Chlamydia infections in Davidson County. PLWHA were diagnosed with a Chlamydia co-infection at a rate of 1,635.1 cases per 100,000 PLWHA.

SYPHILIS

In 2012, 104 PLWHA in Davidson County were diagnosed with syphilis. This represented 2.3% of all HIV disease cases and 46.2% of all syphilis infections in Davidson County. PLWHA were diagnosed with a syphilis co-infection at a rate of 2,267.3 cases per 100,000 PLWHA.

Special Populations

JAIL

In 2012 there were 338 persons in the Davidson County jails who were known to be HIV-positive, out of an unduplicated jail population of 32,057. HIV-positive persons in this population had a prevalence rate of 1,054.4 cases per 100,000 persons in the Davidson County jails. Unlike the general HIV-positive population of the TGA, more PLWHA in the jail system were living with HIV (51.1%) compared to AIDS (48.9%). However, of those persons living with AIDS, 39.8% of them had a late HIV disease diagnosis; 19.5% were concurrently diagnosed with HIV and AIDS, while 20.3% were diagnosed with AIDS within 12 months of their initial HIV diagnosis. This is significantly higher than the percentage of people within the general HIV-positive population of the TGA, which had 28.6% of people receiving a late diagnosis. This may indicate that persons in jail are not being tested soon enough in the course of the disease, that because many persons in jail choose not to receive care or take medications while they are in jail that the disease is progressing rapidly, or that the lifestyle of persons who go in and out of jail is detrimental to their health and may lead to a more rapid progression of the disease.

The majority of persons were males (77.6%); females represented 22.4% of PLWHA in jail. Non-Hispanic blacks accounted for 71.0%, followed by non-Hispanic whites (26.5%), Hispanics (1.8%), and non-Hispanic others (0.7%). Non-Hispanic black males accounted for the single largest group, representing 54.8% of all PLWHA in the jail system. Persons 45-54 years of age represented the largest portion of the population (32.4%), followed by persons 35-44 (28.3%), persons 25-34 (18.0%), persons 55-64 (11.4%), persons 15-24 (8.8%), and persons 65 years of age and older (1.1%).

Figure 35: HIV-Positive Persons in the Davidson County Jails by Race/Ethnicity and Gender, 2012

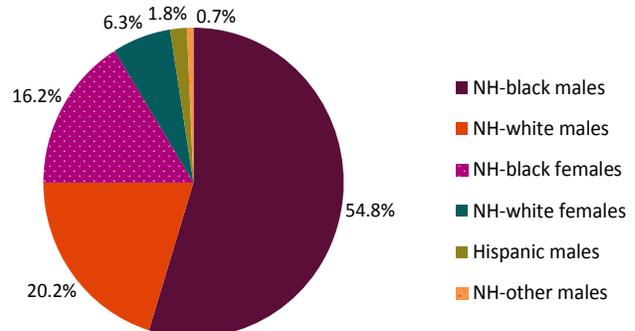
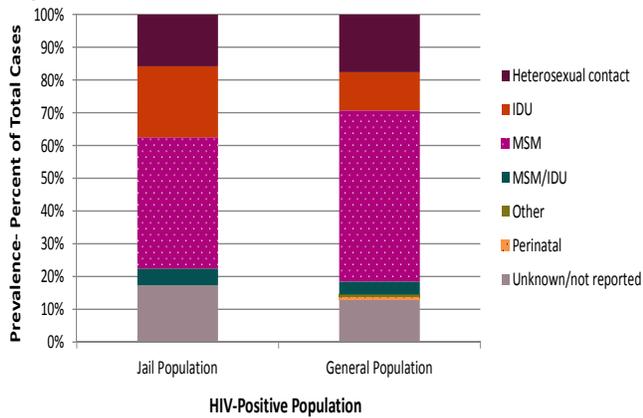


Figure 36: HIV Disease Prevalence by Transmission Category: Davidson County Jail Population vs General Population, 2012



Transmission category for HIV-positive persons in the jail system was different from those persons not in the jail system. While MSM transmission still accounted for the largest portion of cases, it represented only 40.1% of individuals in jail, compared to 52.2% of HIV-positive persons in the TGA in general. IDU transmission was the fourth most common transmission category for the whole PLWHA population (11.7%), however it was the second most common transmission amongst persons in jail; it represented nearly double the proportion of persons (21.7%). Other transmission categories amongst PLWHA in jail were unknown/no risk reported (17.3%), heterosexual contact (15.8%), and MSM/IDU (5.2%); unlike the general PLWHA population, there was no one in the jail system with a perinatal or other transmission category.

HOMELESSNESS

For the purposes of this section, “homelessness” or “homeless” refers to the definition set by the U.S. Department of Housing and Urban Development (HUD) and considers an individual homeless if he or she lives in an emergency shelter, transitional housing, or in a place generally not intended for human habitation (e.g. a car, abandoned building, the streets). (National Alliance to End Homelessness, 2012)

There are an estimated 3.5 million homeless people in the United States every year, according to the National Coalition for the Homeless (2009b). A 2012 report released by the National Alliance to End Homelessness stated that the national rate of homelessness was 21 homeless persons per 10,000 individuals in the general population in 2011; for veterans the rate was 31 homeless veterans per 10,000 veterans in the general population. On January 23, 2012, a point-in-time (PIT) count conducted by the U.S. Department of Housing and Urban Development (HUD) (OCPD, 2012a), found there to be 633,782 people homeless in the United States; 61.6% of these persons were sheltered (living in emergency shelter or transitional housing) and 38.4% were unsheltered. Homelessness on a single night decreased by less than 1% from January 2011 to January 2012; however it decreased by 5.7% since January 2007. Sixty-two percent (62.2%) of people were homeless as individuals, while 37.8% were homeless as persons in families. Tennessee has the 9th highest percentage of unsheltered persons in families with 36.1% (HUD OCPD, 2012b).

There were 9,426 homeless persons counted in Tennessee during the PIT count in January 2012 (38.7% unsheltered and 61.3% sheltered) (HUD HRE, 2012c). In the Nashville/Davidson County Continuum of Care (CoC), defined by HUD as a particular grant funded area, a total of 1,934 homeless persons were counted (HUD HRE, 2012b). There were also 218 homeless persons in the Murfreesboro/Rutherford County CoC during this 2012 point-in-time count (HUD HRE, 2012a).

Conditions of homelessness are significant contributing factors to illness and disease. A disproportionately high number of homeless individuals suffer from substance abuse and mental health disorders; it is these related behaviors that put people at increased risk for contracting HIV disease. Homelessness may also lead to sexual behaviors that increase the risk of contracting HIV disease because conditions of homelessness make it difficult to form stable sexual relationships. Homeless women and adolescents are at particular risk for reasons connected to sexual abuse, exploitation, and exchanging sex for food, clothing, and shelter (National Coalition for the Homeless, 2009a).

Homeless people are already three to six times more likely than housed individuals to become ill, and since HIV disease attacks the immune system, the body’s inability to fight off infection is exacerbated by homeless conditions (National Coalition for the Homeless, 2009a). Consequently, the rate of HIV disease prevalence is at least three times higher among the homeless than the general population. The National Alliance to End Homelessness (2006) estimates that 3.4% of homeless people are HIV-positive, compared to 0.4-1.0% of adults and adolescents in the general population. Other estimates of HIV disease prevalence among homeless individuals range from 3-20%, with certain subgroups having a much higher burden of disease (i.e. homeless injection drug users).

Homeless people are not just more susceptible of becoming infected with HIV disease, but people who are already living with HIV disease are more likely to become homeless or develop unstable housing. The National Alliance to End Homelessness (2006) reports that up to 50% of PLWHA in the United States are at risk of becoming homeless at some point. The costs of medical care and medications for HIV disease are significant, and often difficult to keep abreast of. PLWHA are also at risk of losing their jobs due to HIV-related absences and discrimination.

HUD's 2012 point-in-time count identified 95 homeless persons in Tennessee as living with HIV disease; this accounts for 1.0% of homeless persons on a single night in Tennessee in January 2012 (HUD HRE, 2012c). Forty-five homeless persons in Nashville/Davidson County reported being HIV-positive, accounting for 2.3% of homeless persons (HUD HRE, 2012b). No homeless persons self-identified as HIV-positive in the Murfreesboro/Rutherford County CoC or any of the other TGA counties (HUD HRE, 2012a). However, because HIV status is self-reported, it may have been under-reported.

Using the estimate from the National Alliance to End Homelessness that 3.4% of homeless persons are HIV-positive, it is estimated that about 320 homeless persons in Tennessee are actually HIV-positive; about 66 of these individuals are in Davidson County and 7 in Rutherford County. PIT counts were not available for the other TGA counties; these counties were included in larger regional groups. Consequently, HIV-positive homeless estimates cannot be calculated for the other TGA counties.

VETERANS IN THE VA SYSTEM LIVING WITH HIV DISEASE

UNITED STATES

The Veterans Health Administration (VA) is the single largest provider of HIV medical care in the United States, seeing 24,296 HIV-positive veterans in 2010 and 25,271 HIV-positive veterans in 2011. Therefore, about 1 of every 250 veterans receiving medical care from the VA is living with HIV disease.

The typical veteran with HIV disease at the VA is male (97%), 53 years of age, and is receiving anti-retroviral medications to treat HIV (80%). The most common co-morbidities in HIV-positive veterans in 2008 were depression (51%), hypertension (49%), and dyslipidemias (high cholesterol) (43%). One in four had chronic hepatitis C virus infection and 7% had chronic hepatitis B virus infection.

The number of HIV-positive veterans receiving care from the VA has remained relatively stable over the last five years, with approximately 9% entering VA care and 9% leaving (including deaths) VA care in a given year.

NASHVILLE TGA

In 2012, 253 HIV-positive veterans received HIV medical care (defined as having received at least one CD4 or viral load test) from the Nashville or Murfreesboro VA's; 170 (67.2%) of these individuals lived within the Nashville TGA.

TGA persons receiving HIV medical care from one of the VA's within the TGA were primarily males (96.5%, 164); only six individuals were female (3.5%). Non-Hispanic blacks accounted for 51.8% (88) of veterans in this group, compared to 46.5% (79) non-Hispanic whites, and 1.8% (3) non-Hispanic others. The largest portion of persons was 55-64 years of age (47.6%, 81), followed by persons 45-54 (26.5%, 45), and persons 65 and over (14.1%, 24). Veterans between 24 and 44 years of age only represented 11.8% (20) of those TGA persons receiving their HIV medical care from the VA. MSM transmission accounted for 51.8% (88) of person's transmission categories, followed by unknown/no risk reported (14.1%, 24), IDU (13.5%, 23), and heterosexual (11.8%, 20). Over three-quarters of these individuals resided within Davidson County (78.8%, 134).

The population of HIV-positive veterans in the TGA compared to those HIV-positive veterans not in the TGA who were receiving their HIV medical care from the Nashville or Murfreesboro VA's have some notable differences. The majority of TGA persons were living with AIDS (52.9%, 90); 47.1% (80) were living with HIV. Of those not living in the TGA, 68.7% (83) were living with HIV and 31.3% (26) with AIDS. This may indicate that more veterans in the TGA were diagnosed late in the disease or that they have poorer health status. Additionally, non-Hispanic blacks accounted for a larger proportion of veterans within the TGA than they did of those outside of the TGA. Veterans in the TGA were also markedly older than were the veterans outside of the TGA. Veterans outside of the TGA were more likely to have an unknown/no risk reported transmission category; this may be due to persons in this group having newer infections and thus have not had enough time for their true transmission category to be determined or be the result that people in the rural counties are less likely to share their risk factors.

Table 3: HIV-Positive Veterans in the TGA and HIV-Positive Veterans Not in the TGA Receiving HIV Medical Care from the Nashville or Murfreesboro VA's: Selected Characteristics, 2012

	HIV-Positive Veterans in the TGA	HIV-Positive Veterans Not in the TGA
HIV Status		
HIV	47.1%	68.7%
AIDS	52.9%	31.3%
Race/Ethnicity		
NH-black	51.8%	39.8%
NH-white	46.5%	50.6%
Hispanic	0.0%	4.8%
NH-other	1.8%	4.8%
Age Group		
35-44	8.2%	10.8%
45-54	26.5%	37.3%
55-64	47.6%	31.3%
65 and over	14.1%	14.5%
HIV Transmission Category		
MSM	51.8%	48.2%
Unknown/No Risk Reported	14.1%	26.5%
IDU	13.5%	10.8%
Heterosexual	11.8%	9.6%

Implications of Prevention

NASHVILLE TGA HIV TESTING DATA

The Nashville TGA has 13 local health departments that offer HIV counseling, testing, and referral. Other entities reporting HIV-positive tests in 2012 included: 32 health centers, 16 hospitals, 11 private physicians, 6 AIDS service organizations, 4 corrections facilities, 2 blood banks, and 1 university health center. As shown in Figure 37, the initiation of “rapid tests” in 2008 has changed the pattern of where persons are being diagnosed with HIV disease in the TGA. While there were significant differences in the number of HIV-positive tests found between AIDS service organizations, MPHD/health departments, doctors/health centers, and hospitals in 2008, the differences were much smaller in 2012. The locations of positive tests suggest key places for coordination between HIV prevention and treatment. (Source: eHARS, MPHD Division of Epidemiology)

HIV testing data is monitored by the Tennessee Department of Health for those sites receiving HIV Prevention funding (about 50% of testing events). Collection and analysis of data is essential for describing the process of testing in the community, as well as identifying testing trends. Table 4 depicts a summary of statewide results for 2012, while Table 5 provides testing information specific to the Nashville TGA.

Figure 37: Where People in the TGA Tested HIV-Positive, 2008-2012

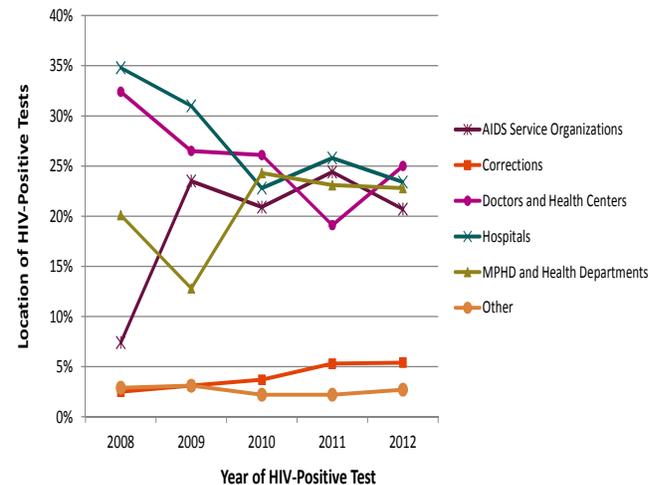


Table 4: HIV Testing in Healthcare and Non-Healthcare Settings in Tennessee, 2012

	Total Number of Test Events	Newly-diagnosed Positives					Previously-diagnosed Positives
		Number of New Positives	Results Received	Linked to Medical Care and Attended 1 st Appointment	Referred and Linked to Partner Services	Received or Referred for Prevention Services	
Category A (Traditional)	92,494	346 (0.4%)	324 (94%)	289 (84%)	300 (87%)	324 (94%)	528 (0.6%)
Category B (Expanded)	52,882	105 (0.2%)	100 (95%)	90 (86%)	84 (80%)	100 (95%)	127 (0.2%)
Total	145,376	451 (0.3%)	424 (94%)	379 (84%)	384 (85%)	424 (94%)	655 (0.5%)

(Source: Tennessee Department of Health, HIV/STD Program)

Table 5: HIV Testing in Healthcare and Non-Healthcare Settings in Nashville TGA, 2012

	Total Number of Test Events	Newly-diagnosed Positives					Previously-diagnosed Positives
		Number of New Positives	Results Received	Linked to Medical Care and Attended 1 st Appointment	Referred and Linked to Partner Services	Received or Referred for Prevention Services	
Category A, Category B	37,686	110 (0.3%)	102 (93%)	86 (78%)	93 (85%)	102 (93%)	53 (0.1%)

(Source: Tennessee Department of Health, HIV/STD Program)

RISK BEHAVIOR

Measuring HIV-related risk behaviors can provide key information for HIV planning, service development, and targeting interventions. Risk behaviors for HIV transmission include, but are not limited to the following: unprotected sex, having multiple sex partners, injection drug use, incidence of other sexually transmitted diseases, substance abuse, and perception of HIV risk. Monitoring these risk behaviors (especially by subpopulations), and educating the public on their significance, are critical to decreasing new infections and assuring access to testing and treatment as early as possible.

The Behavioral Risk Factor Surveillance System (BRFSS) and Youth Risk Behavior Survey (YRBS) provide important information on certain perceptions and behaviors of Tennessee residents' that are related to risky behavior. The 2010 Tennessee BRFSS reported that 61.9% of Tennessee residents have never been tested for HIV (61.7% in the Mid-Cumberland region and 56.5% in Davidson County). Also 4.0% of persons in Tennessee have participated in high-risk behavior in the past year (intravenous drug use, treatment for STD or venereal disease, giving/receiving money or drugs in exchange for sex, or anal sex without a condom); 4.8% of people in the Mid-Cumberland region and 7.0% in Davidson County reported high-risk behavior in the last year).

The Tennessee Youth Risk Behavior Survey is a tool used to measure priority health risk behaviors that contribute to disability, death, and social problems among youth and adults in the United States. Information related to drug use, sexual activities, and HIV disease was collected from high school students throughout Tennessee to determine risk behaviors and perceptions.

Table 6: Tennessee Youth Risk Behavior Survey Results, 2011

Drug Use	Frequency
Used heroin at least once	2.0%
Used cocaine at least once	2.7%
Taken steroids at least once	3.4%
Used methamphetamines at least once	3.5%
Used ecstasy (MDMA) at least once	7.3%
Used a needle to inject illegal drugs at least once	2.1%
Sexual Activity	
Have had sexual intercourse	52.4%
Average number of sexual partners	2.8
Used alcohol or drugs before last sexual intercourse	19.7%
Did not use a condom at last sexual intercourse	37.5%
Physically forced to have sexual intercourse	7.6%
HIV and AIDS	
	14.1% (no);
Have ever been taught about HIV or AIDS in school	5.3% (not sure)

INDIVIDUALS UNAWARE OF THEIR HIV-POSITIVE STATUS

Using the federal formula for calculating the estimated number of persons 13 years and older who do not know they are HIV-positive, it is estimated that 1,568 HIV-positive persons within the Nashville TGA are not aware of their status. Therefore, in addition to the 5,898 persons at least 13 years of age who have been diagnosed and are currently living with HIV disease, another 1,568 persons living in the TGA are also HIV-positive, but have not yet been diagnosed. Table 7 uses the CDC's estimates, adjusted to the TGA demographic make-up, to identify the demographics of those individuals in the TGA who are unaware of their HIV-positive status.

Estimated number of HIV-positive individuals at least 13 years of age who are unaware of their status as of 12/31/2012:

$$(0.21/0.79) \times 5,898 = 1,568$$

Table 7: Estimated Undiagnosed HIV-Positive Individuals ≥13 Years by Demographics: *CDC Estimates for Projecting TGA Numbers

		CDC %	CDC % Adjusted for TGA*	Projected TGA Prevalence (Unaware)	Diagnosed TGA Prevalence	Diagnosed Prevalence + Projected Prevalence
Gender	Female	22.9%	23.2%	364	1,247	1,611
	Male	77.1%	76.8%	1,204	4,651	5,855
Race/ Ethnicity [†]	NH Black	48.6%	57.9%	908	2,668	3,576
	NH White	30.9%	34.3%	538	2,877	3,415
	Hispanic	18.0%	6.9%	108	274	382
	NH Asian/Pacific Islander	1.9%	0.8%	13	41	54
	NH American Indian/ Alaskan Native	0.5%	0.1%	2	12	14
Age Group	13-24	9.9%	9.4%	147	219	366
	25-34	21.4%	23.0%	361	798	1,159
	35-44	32.7%	33.5%	525	1,474	1,999
	45-54	23.3%	23.0%	361	2,207	2,568
	55+	12.6%	11.1%	174	1,200	1,374
Transmission Category [‡]	Heterosexual-Female	18.3%		287	741	1,028
	Heterosexual-Male	12.0%		188	302	490
	IDU-Female	4.3%		67	267	334
	IDU-Male	8.2%		129	423	552
	MSM	53.7%		842	3,088	3,930
	MSM/IDU	2.9%		45	235	280
	Other [§]	0.7%		11	842	853
Total		100%	100%	1,568	5,898	7,466

*The CDC’s national percentage estimates were adjusted for the demographic composition of the Nashville TGA.

†TGA prevalence values for race/ethnicity do not equal the total prevalence count because some people in the TGA have a race/ethnicity category not included in the CDC estimates.

‡The CDC’s percentage estimates were used because there is no reason to believe that transmission category significantly differs in the Nashville TGA from the rest of the nation. Therefore, estimated percentages were not adjusted for the TGA.

§Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or unknown. The CDC estimate for “Other” is significantly lower than the reported TGA prevalence for this category because the CDC estimate assumes that the majority of cases without a known or reported risk factor can actually be redistributed into another category.

||Because column totals were calculated independently from the subpopulation values, and all values were rounded, the values may not sum to the respective column total.

Service Utilization

BACKGROUND AND METHODS

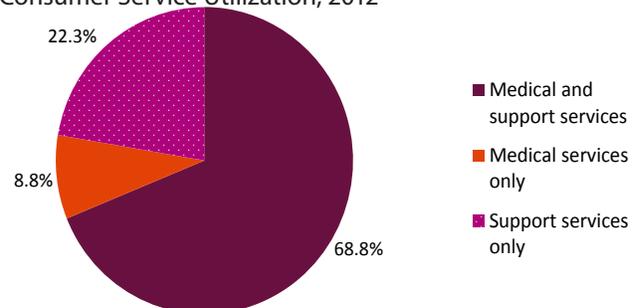
Service utilization data is collected electronically from all Ryan White Part A funded medical and support service providers (First Response Center, Meharry Wellness Clinic, MPHD STD Clinic, Nashville Cares, Street Works, and Vanderbilt's Comprehensive Care Clinic) on either a quarterly or semiannual basis. It is input into a MPHD managed CAREWare system, a centralized electronic database. The information collected includes demographic characteristics of the clients served by each agency, detailed information on the types and dates of services received by each client, as well as the clients' extent of service utilization (measured in units of service). The information is then cleaned, unduplicated, and analyzed for the calendar year by the MPHD Research Analyst. All service utilization data was run on March 28, 2013.

TOTAL SERVICE USE: PART A FUNDED AGENCIES

A total of 5,122 PLWHA received a service from a Ryan White Part A funded agency in 2012, regardless of locality of client residence or funding source. Over two-thirds (68.7%, 3,520) of these people receiving a service from a Part A provider lived within the TGA. Therefore, Ryan White Part A funded medical and support providers served 59.4% of all PLWHA in the Nashville TGA; this is down from 66.5% in 2011.

Of the 3,520 PLWHA who utilized services, 2,423 people received both HIV medical and support services, representing 68.8% of those who received services. This number represents 40.9% of HIV-positive persons in the TGA. Seven hundred eighty-six (786) PLWHA only received support services from a Ryan White Part A funded provider. This group accounts for 22.3% of the

Figure 38: Ryan White Part A Funded Service Providers: Consumer Service Utilization, 2012



people who utilized services in 2012 and 13.3% of the total number of PLWHA in the Nashville TGA. Three hundred eleven (311) persons received only HIV medical services from a Ryan White Part A funded provider, accounting for 8.8% of those receiving services and 5.3% of all people living with HIV disease in the TGA.

Since 2010 there has been a gradual increase in the proportion of persons receiving both medical and support services, moving from 59.4% in 2010, to 66.4% in 2011, and 68.8% in 2012. However, in the last year there was a decrease in the number of individuals receiving only support services (25.3% in 2011 compared to 22.3% in 2012). These patterns could indicate one of two things—that more people who are actively engaged in the HIV system of care are receiving HIV medical care or that more people are receiving their medical care from Ryan White Part A providers. In either case, the greater number of people seeking HIV medical care from the Ryan White Part A providers, the greater the burden of care placed on the system and the stronger the need for an expanded system of care.

SERVICE USE: PART A FUNDED HIV MEDICAL PROVIDERS

A total of 2,734 individuals received HIV medical services at a Ryan White Part A funded medical provider at least one time in 2012, although they may not have received Part A funding. This represents 46.2% of all PLWHA who resided in the Nashville TGA and 77.7% of all PLWHA who received services from a Ryan White Part A funded provider. Individuals were included in this group if they received any outpatient/ambulatory medical care service for their HIV disease in 2012.

Demographics: Of the 2,734 persons living with HIV disease who received an HIV medical service from a Ryan White Part A funded provider in 2012, 73.0% (1,996) were male, 26.3% (720) were female, and 0.7% (18) were transgender. Non-Hispanic blacks represented nearly half of individuals who received medical care from a Part A provider (49.2%, 1,346). Non-Hispanic whites represented slightly less (44.4%, 1,215), followed by Hispanics

(4.9%, 134), and non-Hispanic others (1.4%, 39). The majority of individuals are living at or below 300% of the poverty level (68.9%), including 41.3% who are living at or below the poverty line. The most represented age group was 45-54 years of age (35.8%, 979), followed by the 35-44 age group (26.1%, 713), 25-34 age group (16.6%, 454), and 55-64 age group (14.5%, 396). Persons 15-24 and 65 and over had the lowest frequencies with 4.4% (121) and 2.6% (71), respectively. No one under the age of 18 received medical care from a Part A provider. It is likely that a significant number of persons in the youngest groups are receiving medical care from Vanderbilt pediatrics; MPHDP however does not have access to this data for verification.

While the proportion of persons from each age group receiving HIV medical services is fairly comparable to the proportions these age groups make up within the greater HIV-positive population in the TGA, the age groups over 35 were slightly less likely to be receiving HIV medical care from a Part A provider than the proportion of the population they represent; the age groups under 35 were slightly more likely.

Persons with a risk factor of MSM represented the largest portion (51.4%, 1,404) of HIV-positive persons receiving medical care. Persons with a heterosexual risk factor represented 37.2% (1,018) and injection drug use represented 7.4% (203). All other risk factors accounted for 4.0% (109) of persons in medical care. It is important to note that these risk factors are based on client self-report in CAREWare and thus may not follow the CDC's transmission category hierarchy. Therefore these risk factor numbers may differ from the transmission category data derived from eHARS.

Frequency: Almost 15% (14.8%, 404) of the PLWHA who received a medical service from a Ryan White Part A provider in 2012 had not received HIV medical care from a Part A provider previously. Of the 2,734 persons who received a medical service, the largest portion of persons had five or more visits (may be an office visit or lab) (39.7%, 1,086), followed closely by three to four visits (32.3%, 882). Persons with two visits and one visit, representing 18.5% (506) and 9.5% (260),

Figure 39: Consumers who Received Medical Care from a Ryan White Part A Provider by Poverty Level, 2012

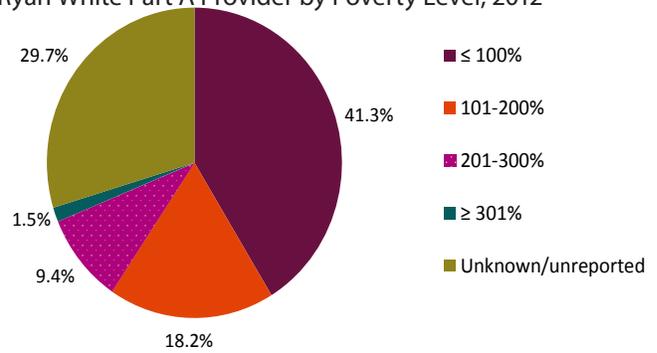
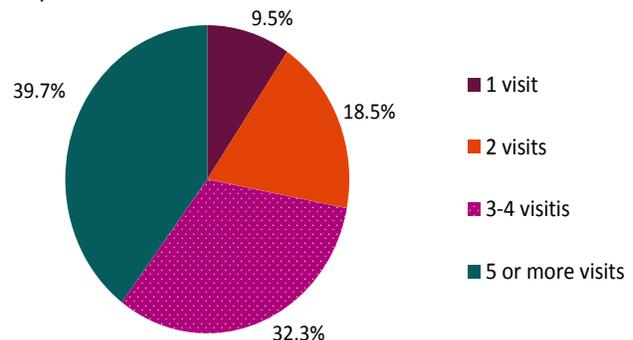


Figure 40: Medical Service Utilization by Number of Outpatient Visits, 2012



Note: An outpatient visit may have been a medical office visit or a lab. Therefore, these numbers are not indicative of how many times a client saw an HIV doctor.

Figure 41: Consumers Receiving Medical Services from Part A Providers by Race/Ethnicity, 2012

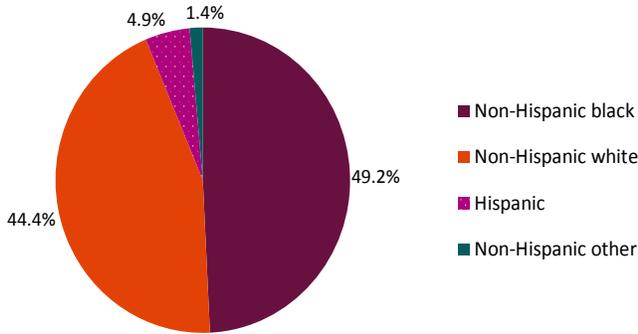
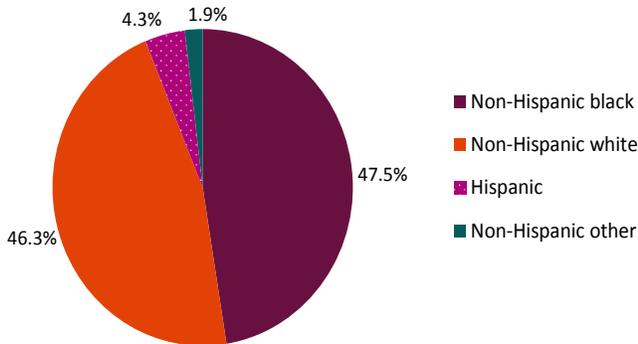


Figure 42: Consumers Not Receiving Medical Services from Part A Providers by Race/Ethnicity, 2012



respectively, accounted for less than one-third of individuals who received medical services. Since 2010 there has been a gradual shift in clients having more outpatient visits; the percentage having five or more visits has grown from 34.7% in 2010 to 39.7% in 2012.

Of the 786 PLWHA who visited a Ryan White Part A funded provider, but did not receive medical services, 76.6% (602) were male, 22.7% (178) were female, and 0.8% (6) were transgender. Non-Hispanic blacks represented 47.5% (373), non-Hispanic whites represented 46.3% (364), Hispanics represented 4.3% (34), and non-Hispanic others represented 1.9% (15). Persons 45-54 and 35-44 represented the largest portions of persons not receiving care; they accounted for 32.3% (254) and 23.5% (185), respectively. Persons 25-34 accounted for 16.4% (129), followed by persons 55-64 (16.2%, 127), 15-24 (7.8%, 61), 65 and over (2.4%, 19), and 5-14 (1.4%, 11). No individuals under the age of five received support services from Part A providers.

Individuals with a risk factor of MSM represented the largest group of persons not receiving medical care (52.9%, 416). Those with a risk factor of heterosexual contact also accounted for a significant proportion (35.2%, 277). IDU accounted for 5.3% (42), unknown/no risk reported accounted for 2.9% (23), and all other risk factors represented 3.6% (28). These risk factors reported in CAREWare were self-reported by the client and thus may vary from the official transmission categories listed in eHARS for these same individuals.

The demographics of those persons receiving HIV medical services varied slightly from the demographics of all PLWHA in the TGA. Females are slightly over-represented among persons receiving medical care (26.3%) compared to their proportion within the general HIV-positive population of the TGA (21.3%). While non-Hispanic blacks represented the largest proportion of PLWHA who received HIV medical care (49.2%), they accounted for only 45.4% of all PLWHA in the TGA; likewise, non-Hispanic whites represented 44.4% of those

who received medical care, but accounted for the largest percentage of PLWHA in the TGA (48.6%).

It is possible that non-Hispanic whites appear to be under-represented in terms of those receiving medical services because they may receive their HIV medical services from non-Part A providers. If they receive their care elsewhere then they are not accounted for here. This could then affect the proportion of non-Hispanic blacks, making it appear as if they are over-represented, when in fact they may only be over-represented at Part A providers. Females may be overrepresented because in general females tend to be more likely to engage in medical care than are males.

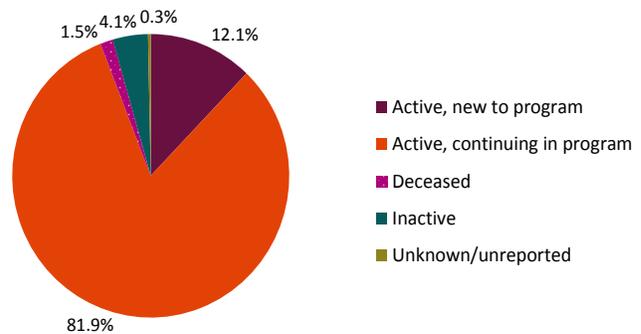
TOTAL SERVICE USE: PART A CLIENTS

Demographics: A total of 2,602 individuals in the TGA received at least one Ryan White Part A service in 2012. Thirteen percent (12.7%, 330) of them were new clients in 2012. Almost three-quarters (72.1%, 1875) of the Part A clients were male, while 27.2% (707) were female, and 0.8% (20) were transgender. Over half (53.2%, 1,384) were non-Hispanic black; 39.7% (1,034) were non-Hispanic white, 5.6% (146) were Hispanic, and 1.4% (37) were non-Hispanic other. Persons 35-44 years of age and 45-54 years of age represented over half of all persons who received a Part A service, accounting for 25.4% (662) and 34.8% (905) respectively. Persons 25-34 accounted for 17.5% (456), followed by those 55-64 (14.2%, 370), 15-24 (5.7%, 148), 65 and over (2.2%, 57), and 5-14 (0.2%, 4); no one under the age of five received a Part A service in 2012.

MSM was the most common risk factor among Part A recipients (49.0%, 1,275). The heterosexual risk factor also accounted for a significant proportion of consumers (38.8%, 1,010). IDU accounted for 7.9% (206) and all other risk factors accounted for a combined 4.3% (111).

The majority (57.4%, 1,493) of persons receiving Part A services had a household income equal to or below the federal poverty line. Over four-fifths (80.9%, 2,106) had stable/permanent housing,

Figure 43: Ryan White Part A Consumers' Enrollment Status, 2012



while 7.8% (706) were not permanently housed; two-hundred thirty-nine individuals (239, 9.1%) had a housing status of unknown/unreported. Over half (50.4%, 1,311) of the clients did not have any medical insurance. Persons having some form of private insurance accounted for 14.6% (379) and 14.1% (368) had Medicaid.

Services: Clients received a variety of Ryan White Part A funded services. From January 2012 through December 2012, the most common Part A-funded service received was medical case management (MCM), with 79.0% (2,056) of clients receiving at least one MCM service. The other most common services included food bank/home-delivered meals (46.8%, 1,218), outpatient/ambulatory medical care (42.2%, 1,099), mental health services (17.0%, 442), oral health care (16.9%, 441), and early intervention services (16.1%, 419).

Table 8 provides information on the number of clients served under Part A and Minority AIDS Initiative (MAI) in the 2012-2013 grant year (3/1/2012-2/28/2013), in addition to the number of units provided, the average number of units per person, and the performance measure for each service.

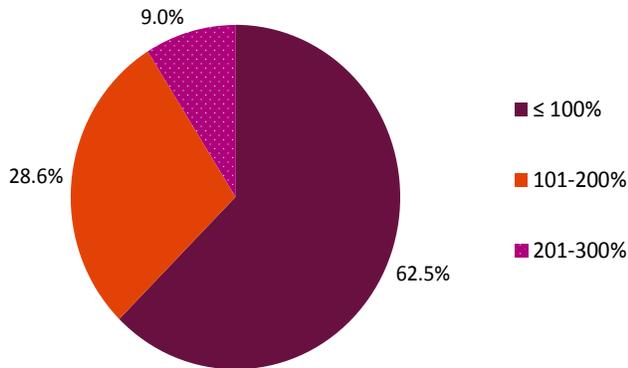
Table 8: Nashville TGA Service Utilization Report Year 6 (3/1/2012-2/28/2013)

	Utilization			Performance
	Number Served	Number of Units	Units/Person/Year	
Part A				
Outpatient ADAP Local Pharmacy	1,193	5,848 office visits	4.9 office visits	88.8% of patients had ≥2 medical visits at least 3 months apart within a 12-month period
Medical Case Management	2,865	15,252 hours	5.3 hours	66.2% of patients had ≥2 medical visits at least 3 months apart within a 12-month period
EIS Referral (for patient assistance programs)	354	1,797 hours	5 hours	63.3% of patients had ≥2 medical visits at least 3 months apart within a 12-month period
Substance Abuse	169	588 medications	3.5 medications	169 people had increased access to needed medications
Mental Health	116	2,035 hours	17.5 hours	99% reported awareness of relapse triggers, etc.
Oral Health	399	7,760 hours	19.4 hours	93% reported improvement in emotional stability, etc.
	332	702 office visits	2 office visits	89% of patients completed approved treatment plan

				100% of clients experienced increased knowledge of HIV services and how to access them, increased ability to self-manage HIV, increased knowledge of HIV, or increased comfort with having HIV
Psychosocial	220	1,375 hours	6.3 hours	
Transportation	40	50 \$20 units	1.3 \$20 units	40 people had increased access to HIV services
Food	1,470	4,906 \$20 units	3.3 \$20 units	1,470 people received food services to improve nutritional status
EFA	140	190 utility bills	1.4 bills	140 people received assistance to improve housing stability
Housing	67	88 rent bills	1.3 bills	100% reported improved health status
Linguistics	16	83 hours	5 hours	16 people received service to improve access to HIV services
MAI				
EIS	112	1,838 hours	16.4 hours	62.4% of patients had ≥2 medical visits at least 3 months apart within a 12-month period
Oral Health	42	127 office visits	3 office visits	81% of patients completed approved treatment plan
Food	241	716 \$20 units	3 \$20 units	241 people received food services to improve nutritional status

ORAL HEALTH CARE UTILIZATION

Figure 44: Oral Health Care Utilization by Client Poverty Level, 2012

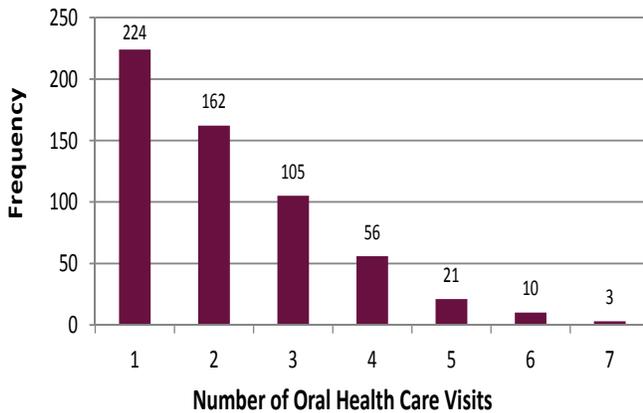


Note: The 2012 poverty level for one person was \$11,170 annually. The maximum annual income a family of one could have and still qualify for Ryan White services was \$33,510 (300% of poverty level).

Five hundred and eighty-one (581) people living with HIV disease in the Nashville TGA received oral health care services through Ryan White Part A, Ryan White Part B, or Ryan White MAI funding in 2012. The majority of individuals were male (67.0%, 389), while 32.4% (188) were female and 0.7% (4) were transgender. Non-Hispanic blacks (49.2%, 286) represented the largest group of dental recipients, followed by non-Hispanic whites (45.8%, 266), Hispanics (3.3%, 19), and non-Hispanic others (1.7%, 10).

The largest portion of persons receiving dental services lived in Davidson County (76.6%, 445). Significant utilization in other counties included Rutherford (8.3%, 48), Sumner (3.3%, 19), and Wilson (3.1%, 18). Nearly two-thirds (62.5%, 363) were living at or below 100% of the federal poverty level; 28.6% (166) were between 101-200% of the poverty level and 9.0% (52) were between 201-300% of the poverty level.

Figure 45: Oral Health Care Utilization by Number of Visits, 2012

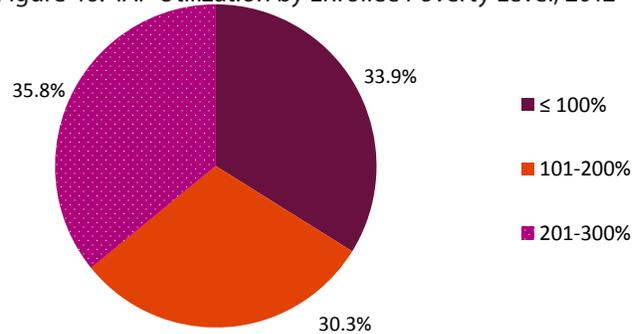


Each oral health recipient received anywhere from one to seven dental visits, depending on the level of care necessary. Over one-third (38.6%, 224) of the individuals had only one visit; 46.0% received two or three visits, and just over 15% had four or more visits (15.4%, 90). The average number of oral health care visits in 2012 was 2.2 visits per client.

INSURANCE ASSISTANCE PROGRAM (IAP) UTILIZATION

There were 611 PLWHA in the Nashville TGA who received insurance assistance in 2012. The majority of IAP recipients were male (75.9%, 464), followed by 23.6% (144) female, and 0.5% (3) transgender. Over half of the recipients were non-Hispanic white (56.0%, 342); 38.5% (235) were non-Hispanic black, 2.8% (17) were Hispanic, and 2.8% (17) were non-Hispanic other. One-third of IAP recipients were living at or below 100% of the poverty level (33.9%, 207); 30.3% (185) were at 101-200% of the poverty level and 35.8% (219) were at 201-300% of the poverty level. Seventy-four percent (74.3%, 454) of recipients resided in Davidson County and 11.0% (67) lived in Rutherford County. Only 6.1% (37) of IAP recipients were new to the program in 2012, compared to 16.0% of recipients in 2011. (Source: Tennessee Department of Health)

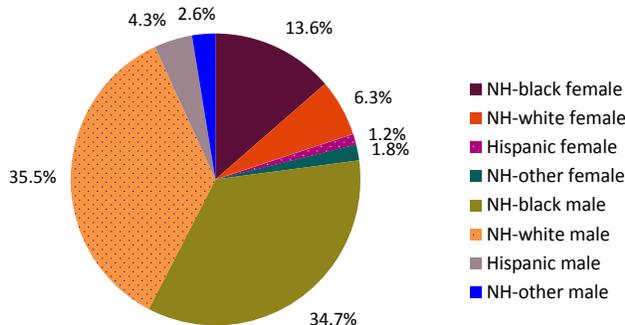
Figure 46: IAP Utilization by Enrollee Poverty Level, 2012



Note: The 2012 poverty level for one person was \$11,170 annually. The maximum annual finances a family of one could have and still qualify for Ryan White services was \$33,510 (300% of poverty level).

AIDS DRUG ASSISTANCE PROGRAM (ADAP) UTILIZATION

Figure 47: ADAP Utilization by Race/Ethnicity and Gender, 2012



A total of 1,069 people living with HIV disease in the Nashville TGA utilized ADAP services in 2012. ADAP recipients were 78.6% (840) male, 21.0% (224) female, and 0.5% (5) transgender. The largest portion was black (47.8%, 511), followed closely by whites (45.8%, 490), and then others (6.4%, 68). Ethnicity data was not known for all recipients, however 82.5% (882) identified as non-Hispanic and 8.3% (89) as Hispanic; ethnicity was not known for 9.2% (98). The majority of recipients were living at ≤100% of the poverty level (60.4%, 646); 27.1% (290) were 101-200% of the poverty level, 11.9% (127) were 201-300% of the poverty level, and 0.6% (6) were over 300% of the poverty level. Davidson County residents accounted for 75.8% (810) of ADAP enrollees, followed by Rutherford County residents (8.8%, 94) and Sumner County residents (3.1%, 33). One hundred sixty-five (165) of the 1,069 enrollees were new in 2012, accounting for 15.4% of the total Nashville TGA ADAP enrollment in 2012.

Table 9: TGA ADAP Utilization by Race/Ethnicity and Gender, 2012

Race	Female		Male		Transgender		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Black	125	24.5%	382	74.8%	4	0.8%	511	47.8%
White	79	16.1%	410	83.7%	1	0.2%	490	45.8%
Other	20	29.4%	48	70.6%	0	0.0%	68	6.4%
Total	224	21.0%	840	78.6%	5	0.5%	1,069	100%

Between the 1,069 ADAP recipients, a total of 48 different antiretrovirals (ARVs)/dosages were received. Drugs were dispensed to recipients between 1 and 12 times within the year. Protease inhibitors were taken by 45.3% (1,173) of individuals, followed by nucleoside reverse transcriptase (NRT) inhibitors (28.4%, 735), and non-NRT inhibitors (20.1%, 519). The most commonly taken antiretrovirals provided through ADAP included Truvada, Norvir (100mg), Atripla, Reyataz (300mg), and Prezista (400mg). These five drugs accounted for 70.8% of the ARVs taken by ADAP recipients. (Source: Tennessee State Department of Health)

Table 10: Most Commonly Utilized Anti-Retrovirals in the TGA through ADAP, 2012

Drug Name	Category of ARV	Frequency	Percent
Truvada	NRT Inhibitor	525	20.3%
Norvir (100mg)	Protease Inhibitor	517	20.0%
Atripla	Non-NRT Inhibitor	304	11.8%
Reyataz (300mg)	Protease Inhibitor	275	10.6%
Prezista (400mg)	Protease Inhibitor	209	8.1%

TENNCARE

In 2012, 248,697 persons in the Nashville TGA were enrolled in TennCare; 1,179 of these individuals were living with HIV disease (0.5%). This accounts for 19.9% of the total number of PLWHA in the TGA. The percentage of PLWHA in the Nashville TGA receiving TennCare is notably lower than other regions in the state. In the Memphis TGA 29.0% of PLWHA received TennCare and 29.6% of PLWHA in the rest of the state received TennCare, producing an average of 26.2% of HIV-positive individuals getting TennCare. According to a 2011 Kaiser Family Foundation national report, individuals living with HIV disease represent <1% of the total Medicaid population. While Medicaid recipients with HIV disease represent a small portion of the total Medicaid population, they account for 23% of people who have been diagnosed with HIV disease in the United States and 47% of those persons in regular care.

Table 11: TennCare Utilization by Region, 2012

	HIV Prevalence	Number of PLWHA on TennCare	Percent of PLWHA on TennCare
Memphis TGA	7,136	2,072	29.0%
Nashville TGA	5,921	1,179	19.9%
Rest of State	5,974	1,766	29.6%
Total	19,031	5,017	26.2% (Average)

Of the 1,179 PLWHA in the Nashville TGA receiving TennCare in 2012, 45.0% were female and 55.0% were male. Non-Hispanic blacks accounted for the largest portion of enrollees (54.0%), followed by non-Hispanic whites (35.1%), non-Hispanic others (9.1%), and Hispanics (1.8%). Over half (51.3%, 605) of the enrollees were 45-64 years of age; 41.3% were 21-44 years of age. The majority of PLWHA in the TGA enrolled in TennCare resided in Davidson County (72.4%, 854), followed by those living in Rutherford County (8.6%, 101) and Sumner County (5.3%, 63). A total of 9,601 HIV disease medications were provided to TennCare enrollees in 2012, for an average of 8.1 medications per TGA enrollee. (Source: TennCare)

Table 12: TGA TennCare Enrollees by Race/Ethnicity and Gender, 2012

	Female		Male		Total	
	Number	Percent	Number	Percent	Number	Percent
NH Black	308	58.1%	329	50.7%	637	54.0%
NH White	162	30.6%	252	38.8%	414	35.1%
Hispanic	10	1.9%	11	1.7%	21	1.8%
NH Other	50	9.4%	57	8.8%	107	9.1%
Total	530	45.0%	649	55.0%	1,179	100.0%

Unmet Need

DEFINITION OF UNMET NEED

HRSA defines unmet need as individuals who are HIV-positive and know their status, but are not currently receiving primary medical care for HIV disease. An individual is considered to have unmet need if there is no evidence of any of the following three components of HIV primary medical care in a specified 12-month period: (a) viral load testing, (b) CD4 count, or (c) provision of antiretroviral therapy. Unmet need focuses on HIV primary medical care and does not include support services in its assessment.

UNMET NEED METHODOLOGY

To calculate the 2012 unmet need estimate for the Nashville TGA several data sources were used. Ryan White Part A funded medical providers submitted client-level service data to the grantee. These data were analyzed using CAREWare, and the clients who received HIV primary medical care services were extracted. Additionally, the eHARS database includes lab values, although not all, so this data was also used in determining unmet need. Service utilization of the AIDS Drug Assistance Program (ADAP) was then obtained from the Tennessee State Department of Health because this data indicates the provision of anti-retroviral therapy.

All three data sources of 2012 medical care utilization were matched with the TGA's 2012 prevalence dataset. Data joining was conducted using SAS Enterprise Guide by matching a unique ID number. Data matching was accomplished in Link King using a specified matching algorithm to match names and dates of birth.

The unmet need estimate was then calculated by using Mosaica's unmet need framework. Mosaica, a HRSA contractor, developed the unmet need framework to assess the number of persons in a specified area living with HIV disease who meet the definition of unmet need. The framework calculates unmet need by subtracting the number of PLWHA who received at least one HIV medical care service (e.g. lab, office visit, anti-retroviral) from the total number of prevalence cases residing in the TGA in 2012. The remaining PLWHA are those persons not receiving any HIV medical care services from an HIV medical provider, and thus represent unmet need. A review completed by Mosaica in 2007 estimated the national unmet need to be 37% for Ryan White Part A and 43% for Ryan White Part B.

UNMET NEED ESTIMATION LIMITATIONS

The unmet need estimation is inherently limited for multiple reasons. The assessment of unmet need is a methodologically complicated process requiring the capacity to collect all the necessary data, integrate it all together, and translate pertinent information for appropriate use. Limitations exist in data availability and access. CAREWare is made up of service utilization data for only those persons receiving care from a Ryan White Part A provider. Therefore, if a person receives their medical care from a private physician or a medical entity outside of the Part A program, their utilization of medical services may not be known. These people not receiving CARE Act services are likely to be persons with higher incomes or those who are incarcerated.

Also, at this time, eHARS does not have all lab values included in its records; individuals may have had viral load testing or their CD4 count determined, however if it has not yet been input into eHARS and the individual does not appear on any of the other utilization lists, their medical service utilization is not confirmed for 2012. It is through eHARS that the HIV medical utilization of persons with higher incomes can be verified. Once all lab values are included in eHARS unmet need estimation is likely to be easier.

At this time there is a lack of access to non-CARE Act sources; this means that those HIV-positive individuals receiving their HIV medical care from private physicians, health maintenance organizations (HMO's), free clinics, or through providers using other funding sources may not be included in this unmet need estimation and could therefore be causing unmet need to be over-estimated.

Limitations exist with matching data from various databases. Challenges include matching equivalent data variables, determining typographical errors, and unduplicating clients so that they are only counted once. Because different systems and databases have different data entry rules, some data matches are not recognized by computer matching, and therefore visual matching by the Research Analyst is also necessary.

UNMET NEED ESTIMATE

In 2012 the estimated unmet need in the Nashville TGA was 41.0%. A total of 2,425 people did not receive HIV primary medical care in 2012. Unmet need decreased from 45.5% in 2011 to 41.0% in 2012. While it is likely that more PLWHA are receiving HIV medical care each year (the HIV medical care service utilization has been increasing from year to year), the improvements in unmet need are also attributable to the growing accuracy of data and increased access to it.

Table 13: Unmet Need Framework, 2012

Category	Number of Cases	Date Source
Population Size	N	
Number of persons in the Nashville TGA living with HIV disease, 2012	5,921	eHARS, Metro Public Health Department Division of Epidemiology
Care Patterns		
Number of PLWHA who received HIV primary medical care services in 2012	3,496	CAREWare, eHARS lab values, ADAP utilization
Calculated Results		
Number of PLWHA who did not receive primary medical care services in 2012	2,425	
Percentage of HIV+ individuals aware of their status, but not receiving HIV primary medical care services (quantified estimate of unmet need)	41.0% of PLWHA	

Figure 48: Nashville TGA Unmet Need, 2010-2012

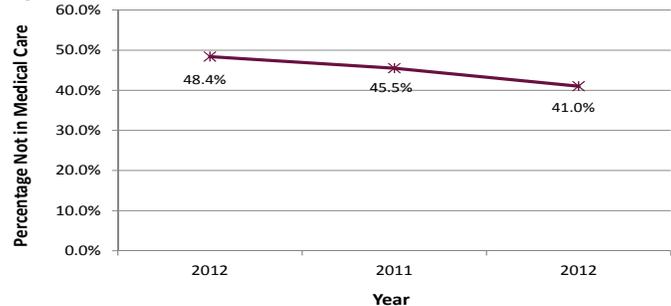


Table 14: Demographics: HIV Disease Prevalence Cases by In Medical Care and Out of Medical Care, 2012

Demographic	In Medical Care		Out of Medical Care		Total	
	N	%	N	%	N	%
Cases						
Total HIV and AIDS cases	3,496	59.0%	2,425	41.0%	5,921	100.0%
HIV	1,543	44.1%	1,344	55.4%	2,887	48.8%
AIDS	1,953	55.9%	1,081	44.6%	3,034	51.2%
Gender						
Female	788	22.5%	471	19.4%	1,259	21.3%
Male	2,708	77.5%	1,954	80.6%	4,662	78.7%
Race/Ethnicity						
Non-Hispanic Black	1,619	46.3%	1,068	44.0%	2,687	45.4%
Non-Hispanic White	1,672	47.8%	1,208	49.8%	2,880	48.6%
Hispanic	151	4.3%	124	5.1%	275	4.6%
Non-Hispanic Asian/Native Hawaiian/Pacific Islander	28	0.8%	13	0.5%	41	0.7%
Non-Hispanic American Indian/Alaska Native	4	0.1%	8	0.3%	12	0.2%
Non-Hispanic Multiple Races	22	0.6%	4	0.2%	26	0.4%
Current Age						
Under 5	3	0.1%	3	0.1%	6	0.1%
5-14	3	0.1%	18	0.7%	21	0.4%
15-24	142	4.1%	74	3.1%	216	3.7%
25-34	533	15.2%	265	10.9%	798	13.5%
35-44	859	24.6%	615	25.4%	1,474	24.9%
45-54	1,256	35.9%	951	39.2%	2,207	37.3%
55-64	577	16.5%	380	15.7%	957	16.2%
65+	123	3.5%	119	4.9%	242	4.1%
Transmission Category						
Heterosexual contact	656	18.8%	387	16.0%	1,043	17.6%
IDU	369	10.6%	321	13.2%	690	11.7%
MSM	1,831	52.4%	1,257	51.8%	3,088	52.2%
MSM & IDU	123	3.5%	112	4.6%	235	4.0%
Perinatal	7	0.2%	28	1.2%	35	0.6%
Unknown/No risk	488	14.0%	289	11.9%	788	13.3%
Other	22	0.6%	31	1.3%	42	0.7%
County of Residence						
Davidson	2,663	76.2%	1,924	79.3%	4,587	77.5%
Non-Davidson	833	23.8%	501	20.7%	1,334	22.5%

Comparison to National HIV/AIDS Strategy Goals

REDUCING NEW HIV INFECTIONS

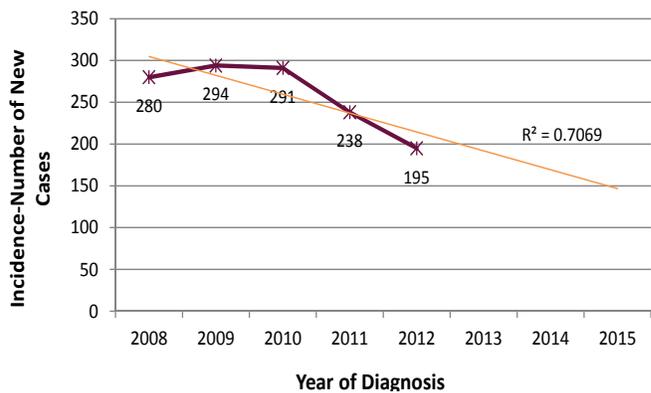
FROM 2010 TO 2015, LOWER THE ANNUAL NUMBER OF NEW INFECTIONS BY 25 PERCENT.

In 2010 the Nashville TGA had 291 individuals newly diagnosed with HIV disease. In order to meet the 2015 goal of reducing new infections by 25 percent, the TGA incidence would need to fall to no more than 218 new infections in 2015. In 2012 the TGA exceeded the goal of reducing new infections by 25%; so far there has been a 33.0% decrease in new cases since 2010. Based on HIV disease incidence data for the last five years, it is projected that new infections will drop to about 150 in 2015; this would be a 48.5% reduction in new infections.

FROM 2010 TO 2015, REDUCE THE HIV TRANSMISSION RATE BY 30 PERCENT.

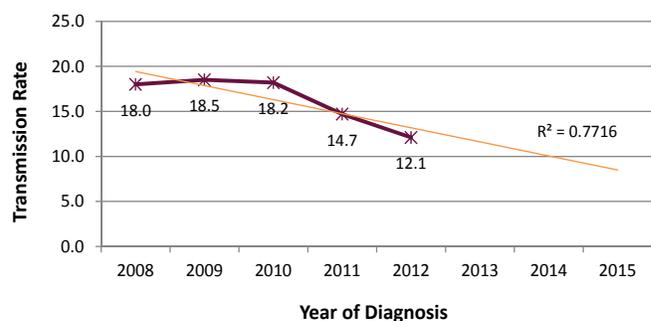
The Nashville TGA had an HIV transmission rate of 18.2 infections per 100,000 persons in 2010. To reduce the transmission rate by 30 percent, no more than 12.7 individuals per 100,000 persons should be newly infected per year by 2015. In 2012 the TGA surpassed the goal by reaching a transmission rate of 12.1 new cases per 100,000 persons; there has been a 33.5% decrease in the transmission rate since 2010. Based on transmission rate data from the last five years, it is projected that the HIV transmission rate will decrease to about 8.0 cases per 100,000 persons by 2015; this would be a 56.0% drop in rate of transmission.

Figure 49: HIV Disease Incidence Projections, 2008-2015



Note: An R^2 value is used to estimate future data values. The closer the R^2 value is to 1.0, the greater the ability to predict data points. The HIV disease incidence data for the Nashville TGA from 2008-2012 has been used to predict HIV disease incidence values for the next three years. Therefore, a value of 0.7069 indicates that future data values can be approximated with moderate certainty.

Figure 50: HIV Disease Transmission Rate Projections, 2008-2015



Note: An R^2 value of 0.7716 indicates that future data values can be estimated with moderate certainty. Thus, while the trendline may not predict the 2015 transmission rate exactly, if data trends continue as they have, the 2015 transmission rate will be around 8 or 9 cases per 100,000 persons.

FROM 2010 TO 2015, INCREASE THE PERCENTAGE OF PEOPLE LIVING WITH HIV DISEASE WHO KNOW THEIR SEROSTATUS FROM 79 PERCENT TO 90 PERCENT.

Generally a national estimate is used to measure the percentage of people who are unaware that they are HIV-positive. However, to examine this purely on a TGA level, diagnosis lag serves as a reasonable indicator. With the proportion of people with a diagnosis lag decreasing and consequently fewer people advancing to AIDS within 12 months of their initial diagnosis, it can be surmised that the percentage of people who know their serostatus is increasing.

INCREASING ACCESS TO CARE AND IMPROVING HEALTH OUTCOMES FOR PEOPLE LIVING WITH HIV

FROM 2010 TO 2015, INCREASE THE PROPORTION OF NEWLY DIAGNOSED PATIENTS LINKED TO CARE WITHIN THREE MONTHS OF THEIR HIV DIAGNOSIS FROM 65 PERCENT TO 85 PERCENT.

In 2010, 64.6% of newly diagnosed persons in the Nashville TGA were linked to HIV medical care within three months of their initial HIV diagnosis. However, of persons newly diagnosed in 2011, only 45.8% were linked to HIV medical care within three months; 59.2% were linked to care within six months of their initial diagnosis. Therefore, based on current data, there is no evidence that the Nashville TGA will meet the 2015 goal of 85% of newly diagnosed persons being linked to medical care within three months of their initial HIV diagnosis.

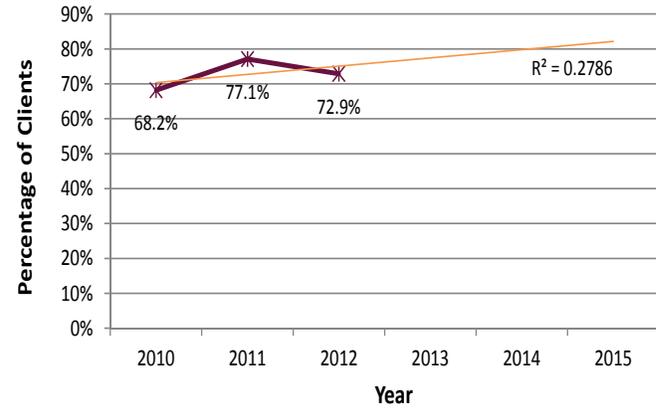
FROM 2010 TO 2015, INCREASE THE PROPORTION OF RYAN WHITE CLIENTS WHO ARE IN CONTINUOUS CARE (AT LEAST 2 MEDICAL VISITS IN A 12 MONTH PERIOD AT LEAST 3 MONTHS APART) FROM 73 PERCENT TO 80 PERCENT.

The Nashville TGA only had 68.2% of Ryan White Part A clients in continuous care in 2010, compared to the 73% nationally. However, since then there has been an overall increase in the proportion of people receiving two or more medical appointments at least three months apart within a 12-month period. While the TGA currently has a proportion of 72.9% for 2012, this data is not complete because persons being diagnosed in 2012 or entering into medical care in 2012 have not yet had a full 12 month period to receive two medical appointments in order to be considered “in continuous care”. Therefore, it is likely that the TGA has an even higher proportion for 2012. While the current data points do not depict a strong trend, and so future data points cannot be estimated with certainty, based on the data the Nashville TGA would meet the goal of having 80% of Ryan White Part A clients engaged in continuous medical care by 2015.

FROM 2010 TO 2015, INCREASE THE PERCENTAGE OF RYAN WHITE CLIENTS WITH PERMANENT HOUSING FROM 82 PERCENT TO 86 PERCENT.

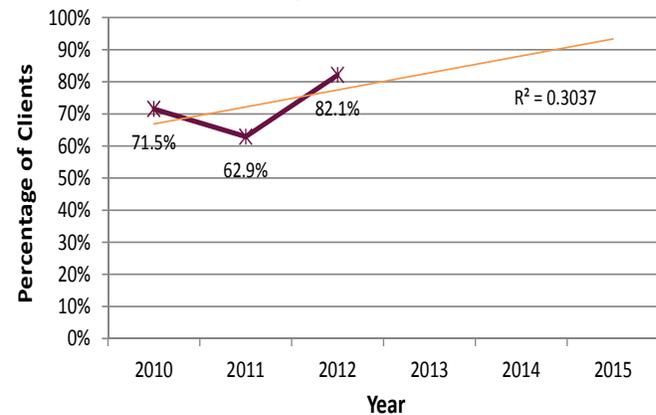
In 2012, 82.1% of Ryan White Part A clients had stable/permanent housing, compared to 62.9% in 2011 and 71.5% in 2010. With a national goal of having 86% of Ryan White clients in stable/permanent housing by 2015, the Nashville TGA still needs to improve. However, having been at 71.5% in 2010, compared to 82% nationally, the TGA has already displayed significant improvements. With only three years of data on housing status, as well as inconsistency of trends within the data, projections of housing status for the next three years are not likely to have much accuracy. An R² value of 0.3037 indicates a low level of accuracy for the trendline projection. If future data on housing status does follow the trendline though, then the

Figure 51: Ryan White Part A Clients Engaged in Continuous Medical Care, 2010-2015



Note: Data for 2012 is not complete because persons being diagnosed in 2012 or entering into medical care in 2012 would not have had a full 12-month period to engage in continuous HIV medical care. Thus, the 2012 proportion is likely higher than 72.9%. Because of the variability in data points the R² value (0.2786) is not strong; this value does not allow for predicting future data points with certainty.

Figure 52: Ryan White Part A Clients with Stable/Permanent Housing, 2010-2015



Note: An R² value is used to estimate future data values. The closer the R² value is to 1.0, the greater the ability to predict data points. A value of 0.3037 indicates a low level of certainty in predicting future data points.

TGA will be able to meet and exceed the goal that 86% of Ryan White clients will be in stable/permanent housing.

REDUCING HIV-RELATED HEALTH DISPARITIES FROM 2010 TO 2015, INCREASE THE PROPORTION OF HIV-DIAGNOSED GAY AND BISEXUAL MEN WITH UNDETECTABLE VIRAL LOADS BY 20 PERCENT.

Generally information about sexual orientation is not known. Therefore, transmission category data must be used to analyze this measure. At the end of 2012 48.7% (1,504) of all MSMs in the Nashville TGA who were diagnosed with HIV disease had a viral load less than or equal to 200 copies/mL. In order to increase this proportion by 20% from 2010 to 2015, 58.4% of MSMs would need to have a viral load ≤ 200 copies/mL; however this percentage is based on the 2012 value and so should likely be lower if the percentage was based on the 2010 value. Of those persons newly diagnosed with HIV disease in 2010, 37.9% of MSMs had a viral load ≤ 200 copies/mL by 2012, and 60.4% of MSMs diagnosed in 2011 had an undetectable viral load by 2012. Therefore, with over 60% of MSMs diagnosed with HIV disease in 2011 already having an undetectable viral load a year later and meeting this National HIV/AIDS Strategy goal, a similar proportion of MSMs can be expected for the few years before and after 2011; ultimately this trend should contribute to the growth of the proportion of MSMs with an undetectable viral load and lead to at least 58.4% of MSMs having a viral load ≤ 200 copies/mL by 2015.

FROM 2010 TO 2015, INCREASE THE PROPORTION OF HIV-DIAGNOSED NON-HISPANIC BLACKS WITH UNDETECTABLE VIRAL LOADS BY 20 PERCENT.

At the end of 2012 43.4% (1,167) of all non-Hispanic blacks in the Nashville TGA who were diagnosed with HIV disease had an undetectable viral load (≤ 200 copies/mL). In order to meet the goal of the National HIV/AIDS Strategy, the proportion of HIV-diagnosed non-Hispanic blacks with an undetectable viral load would need to increase by 20%; this would be an increase to 52.1%. However, because this percentage is based on a 2012 baseline instead of 2010, an increase of 20% should be lower than what is currently expected based on the 2012 value. Of non-Hispanic blacks newly diagnosed with HIV disease in 2010, 40.5% had a viral load ≤ 200 copies/mL by 2012, and 51.8% of those newly diagnosed in 2011 had an undetectable viral load by 2012. Consequently, with the proportion of newly diagnosed non-Hispanic blacks with an undetectable viral load increasing, it can also be expected that the overall proportion of non-Hispanic blacks with an undetectable viral load will increase.

FROM 2010 TO 2015, INCREASE THE PROPORTION OF HIV-DIAGNOSED LATINOS WITH UNDETECTABLE VIRAL LOADS BY 20 PERCENT.

Nearly 43% (42.9%, 118) of all HIV-diagnosed Hispanics in the Nashville TGA had an undetectable viral load at the end of 2012. So that the proportion of Hispanics with a viral load ≤ 200 copies/mL is increased by 20% from 2010-2015, 51.5% of Hispanics would need to have a viral load of 200 copies/mL or less by 2015; this percentage is based on a 2012 baseline, and should thus be lower if it were calculated as 20% greater than the 2010 value. Of Hispanics newly diagnosed in 2010, 38.5% of them had an undetectable viral load by 2012, and 59.3% of those newly diagnosed in 2011 already had an undetectable viral load by 2012. With a significantly higher proportion of newly diagnosed Hispanics than previously diagnosed Hispanics having an undetectable viral load, the overall proportion of Hispanics with a viral load ≤ 200 copies/mL should be increasing.

Continuum of Care/Cascade of Care

BACKGROUND

An estimated 1.2 million people in the United States are living with HIV disease, and approximately 20% of these individuals do not know they are infected. Reducing one's viral load is a key measure in successfully living with the disease. Therefore, to improve the survival of PLWHA and to reduce transmission, a continuum of services is used, which includes diagnosis, linkage to HIV medical care, retention in HIV medical care, and antiretroviral therapy (ART). Understanding this continuum can highlight areas of concern in which too few people are meeting a measure and can help guide ways to improve the HIV medical care system.

METHODS

CDC used three surveillance datasets to estimate the number of individuals in the United States meeting each stage of the continuum of care. Data from the National HIV Surveillance System was used to calculate rates by state per 100,000 persons in the population who have been diagnosed with HIV disease. Behavioral Risk Factor Surveillance System data was used to estimate the percentages of persons reporting testing for HIV disease. National data estimates of those receiving medical care were based on data collected from the 2009-2010 Medical Monitoring Project (Centers for Disease Control and Prevention [CDC], 2011).

For the Nashville TGA, two datasets were used to calculate the number of people at each stage of care. The Electronic HIV/AIDS Reporting System (eHARS) provided prevalence and lab information. CAREWare provided additional lab information, as well as usage of antiretroviral therapy.

CDC definitions for the stages of the continuum were as follows:

HIV-infected: Includes persons who have been diagnosed with HIV disease, as well as an estimation of persons who are HIV-positive, but unaware; these are unconfirmed cases. This is based on a federal estimation that 18% of HIV-positive individuals are not aware of their HIV-positive status.

HIV-diagnosed: Includes only those living persons who have actually been diagnosed with HIV disease through the specified date.

Linked to Care: Includes persons who were linked to HIV medical care within three months of their initial HIV diagnosis date, based on CD4 and viral load tests.

Retained in Care: Includes HIV-positive persons who received at least two medical appointments, at least three months apart within a 12-month period.

Need ART: Includes persons noted by medical providers as needing ART within the last year.

On ART: Includes persons on ART within the last year.

Adherent/Undetectable: Includes persons whose most recent viral load in the specified time period was less than or equal to 200 copies/mL.

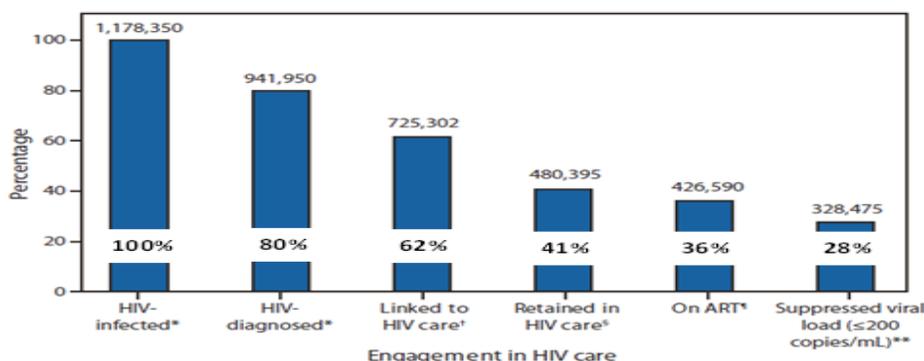
The Nashville TGA used the same definitions of each stage of care in order to be able to effectively compare local data with national data. For the TGA, *HIV-Infected* was calculated by first determining the 2012 TGA prevalence (*HIV-diagnosed*) using eHARS; a person was included in the TGA prevalence if his last known residence of 2012 was in a TGA county and if he was living as of 12/31/2012. For *HIV-infected*, a proportion was used to account for the 18% of people who are infected, but have not yet been diagnosed. *Linked to Care* was determined using lab values in eHARS; if a person had a CD4 or viral load test within three months of his initial HIV diagnosis he was considered to have been linked to HIV medical care. This is not a measure of whether or not a person linked into the HIV system of care, meaning he could have received a medical or support service; it is solely a measure of whether or not a person linked into the HIV medical system within three months. *Retained in Care*, a measure of whether or not an individual had two or more medical visits at least three months apart within a 12-month period, was estimated for the whole TGA based on data in CAREWare. The TGA's CAREWare database contains service utilization information from all of the Ryan White Part A providers; however, individuals who were not clients of Part A-funded agencies would not have their data included in this database. It was determined how many TGA prevalence people included in CAREWare met the measure and was then extrapolated for the entire TGA prevalence population. *Need ART* and *On ART* were also extrapolated from CAREWare. *Need ART* was determined based on whether or not an HIV medical doctor indicated that the individual needed ART and *On ART* was determined by whether or not the individual was on ART during the date span. Lastly, *Adherent/Undetectable* was calculated using eHARS and isolating those individuals whose last viral load test result in 2012 was 200 copies/mL or less. For each stage of the continuum lists were de-duplicated so that no individual was counted more than once.

The 2012 prevalence continuums of care were calculated based on data for January 1, 2012 through December 31, 2012. The 2011 incidence continuum of care was calculated based on data for January 1, 2011 through December 31, 2011.

NATIONAL RESULTS

The 2011 MMWR study released by CDC (Figure 53) determined that 80% of individuals living with HIV disease have been diagnosed. Only 62% of all HIV-positive persons (diagnosed and undiagnosed) were linked to care within three months of their diagnosis. Of those persons in HIV medical care, 41% were retained in care, 36% were on ART, and 28% were virally suppressed (≤ 200 copies/mL).

Figure 53: Number and Percentage of HIV-Infected Persons Engaged in Selected Stages of the Continuum of HIV Care — United States



Source: Centers for Disease Control and Prevention. (2010). Vital Signs: HIV Testing and Diagnosis Among Adults—United States, 2001-2009. Morbidity and Mortality Weekly Report.

A second report released by CDC in July 2012, provided adjusted percentages for each stage of the continuum of care (Figure 54). Of those persons living with HIV disease, 82% have been diagnosed. Two-thirds (66%) of people were linked to HIV medical care within three months of their HIV diagnosis. Of those persons in medical care, 37% were retained in care, 33% were prescribed ART, and 25% were virally suppressed. Dr. Irene Hall of CDC presented this new analysis at the XIX International AIDS Conference in 2012, indicating that it is now known that even fewer people living with HIV disease are virally suppressed (25%, down from the initial estimate of 28%) (Valdiserri, 2012).

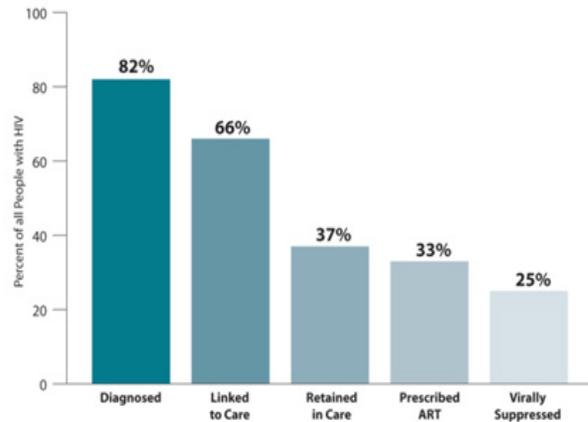
NASHVILLE TGA

For persons living with HIV disease in the Nashville TGA in 2012, it is estimated that 82% have been diagnosed with HIV disease; the national estimate is used because local estimates cannot be determined. Of those persons infected, but not necessarily diagnosed, only 34% were linked to HIV medical care within three months of their initial diagnosis. This is strikingly lower than the national estimate that 66% of PLWHA were linked to care within three months of diagnosis. However, although people in the Nashville TGA may not be initially linked to care as promptly as elsewhere, once they are linked, the TGA has higher proportions of people at each stage of care in the continuum. While only 37% of PLWHA nationally are retained in care, 45% of those in the TGA are retained. And only one-third of people nationally are receiving ART, but 47% are on ART in the TGA. Most importantly, 38% of individuals in the TGA who are in HIV medical care are virally suppressed, whereas only 25% are estimated to be virally suppressed nationally.

By examining the continuum of care by sex it can be seen that overall females are more engaged in the system than are males. Although females are slightly less likely to be linked to care within three months (33% for females compared to 34% for males), they have greater proportions when it comes to being retained in care, needing ART, and receiving ART. However, males and females are equally likely to be virally suppressed (38%).

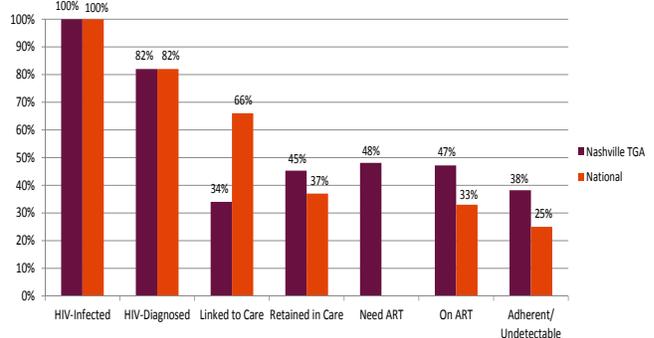
Figure 54: Percentage of HIV-Infected Persons Engaged in Selected Stages of the Continuum of HIV Care— United States (Revised)

OVERALL: Of the 1.1 million Americans living with HIV, only 25 percent are virally suppressed.



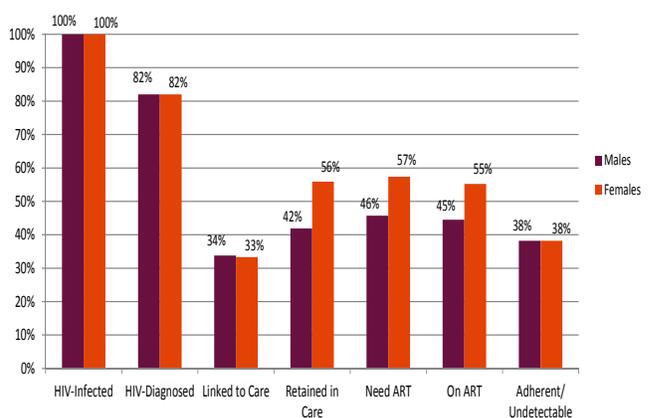
Source: Valdiserri, R. (2012). CDC Releases Demographic Analysis of HIV Treatment Cascade at AIDS 2012.

Figure 55: HIV-Infected Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care, 2012



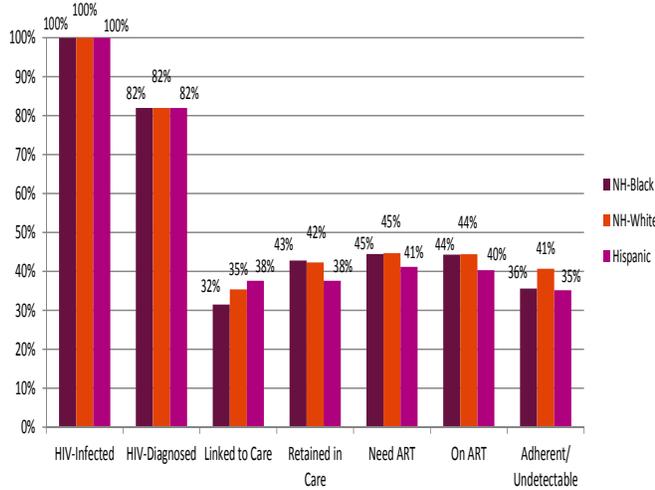
Note: Percentages are based on the number of persons believed to be infected with HIV and not the number who have been diagnosed with HIV disease.

Figure 56: HIV-Infected Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care by Sex, 2012



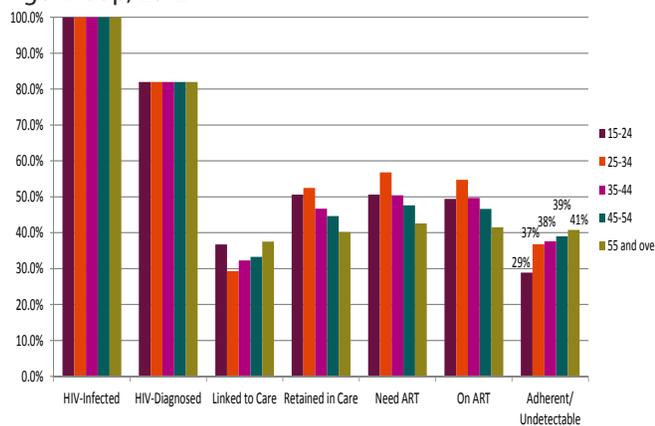
Note: Percentages are based on the number of persons believed to be infected with HIV and not the number who have been diagnosed with HIV disease.

Figure 57: HIV-Infected Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care by Race/Ethnicity, 2012



Note: Percentages are based on the number of persons estimated to be infected with HIV and not the number who have been diagnosed with HIV disease. Also, because Ryan White serves a disproportionately high proportion of non-Hispanic blacks compared to non-Hispanic whites, the percentages derived from CAREWare were adjusted for racial/ethnic prevalence in the whole PLWHA TGA population.

Figure 58: HIV-Infected Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care by Age Group, 2012



Note: Percentages are based on the number of persons believed to be infected with HIV and not the number who have been diagnosed with HIV disease.

By race/ethnicity, non-Hispanic blacks are the least likely to link into HIV medical care within three months of diagnosis, however they have the greatest proportion of persons who are retained in care, contrasting to Hispanics who had the greatest proportion of PLWHA link into medical care within three months, but the smallest proportion of people to be retained in care. Although non-Hispanic blacks and non-Hispanic whites are proportionately similar throughout much of the continuum of care, non-Hispanic whites are more likely to have achieved an undetectable viral load (≤ 200 copies/mL); 41% of non-Hispanic whites, compared to 36% of non-Hispanic blacks, and 35% of Hispanics.

Analysis of the continuum of care by age group elicits a clear pattern. With the exception of persons 15-24 years of age, the older the person, the more likely he is to link to HIV medical care within three months of diagnosis. However, it is persons in the younger age groups who are more likely to be retained in care; generally the older the person is, the less likely he is to be retained in care and on ART. Notably though, it is persons in the 55 and over age group who are the most likely to be virally suppressed; 41% of persons in this group compared to only 29% of persons 15-24 have a viral load of ≤ 200 copies/mL.

By transmission category, persons classified as MSM or heterosexual contact are the most likely to have an undetectable viral load (40% each). Persons with an unknown/no risk reported transmission category are only slightly behind with 38% having viral suppression. Injection drug users and MSM/injection drug users have not been as successful at achieving viral suppression; this could be related to their linking into HIV medical care occurring more slowly, as well as their history of substance abuse. Most striking perhaps is that persons with an other transmission category (hemophilia, transfusion/transplant) had the highest proportion of people to link into HIV medical care within three months of diagnosis (45.8%), but has the lowest proportion of persons to have an undetectable viral load (13.1%). It is likely that these persons are linked into care more quickly than others because the nature of their

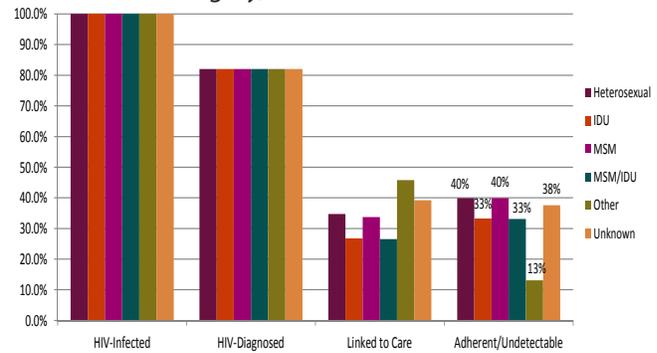
means of transmission would require that they were already engaged in some form of medical care. It is unknown why this group would have such a significantly lower proportion of people who are virally suppressed.

While the continuum of care is similar for those persons residing in Davidson County as it is for those residing outside of Davidson County, but still in a TGA county, those in non-Davidson counties are slightly more likely to link to care within three months, be retained in care, and be on ART. Non-Davidson county persons are also more likely to have a viral load of ≤ 200 copies/mL; 43.5% of non-Davidson county persons and 36.6% of Davidson county persons had undetectable viral loads as of the end of 2012.

Because many PLWHA in the TGA were diagnosed with HIV disease before data reporting became more complete, initial lab values and dates are not always available. By having incomplete data, certain measures in the continuum of care can be skewed, namely *Linked to Care*. By not having all of the data, it is likely that the proportion of persons who were linked to care within three months of their diagnosis is higher than what is definitively known and consequently reported. Therefore, by examining the continuum of care for a smaller, more recently diagnosed group of people, it can be better understood how the system is currently working to engage people in care and help them achieve viral suppression.

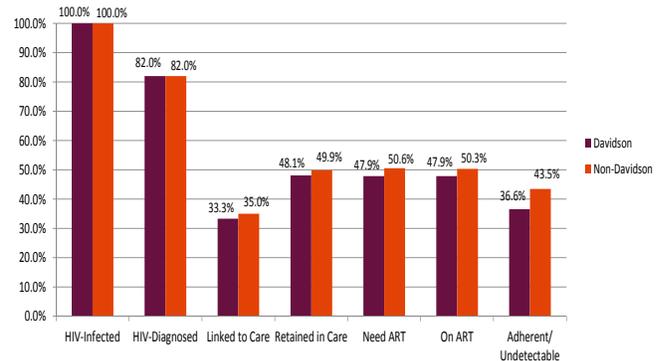
Examination of persons newly diagnosed with HIV disease in 2011 (2011 incidence) shows that 45.8% of people were linked to HIV medical care within three months of their diagnosis; only 41.1% of all people diagnosed with HIV disease in the TGA by the end of 2012 had been linked to care within three months of their initial diagnosis. The majority of persons diagnosed in 2011 have been retained in care (81.9%), meaning that they received at least two medical visits at least three months apart within 2012. Only 55.3% of all PLWHA in the TGA were retained in care in 2012. This difference may be attributed to newly diagnosed persons being more concerned about getting their disease undetectable, not yet being

Figure 59: HIV-Infected Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care by Transmission Category, 2012



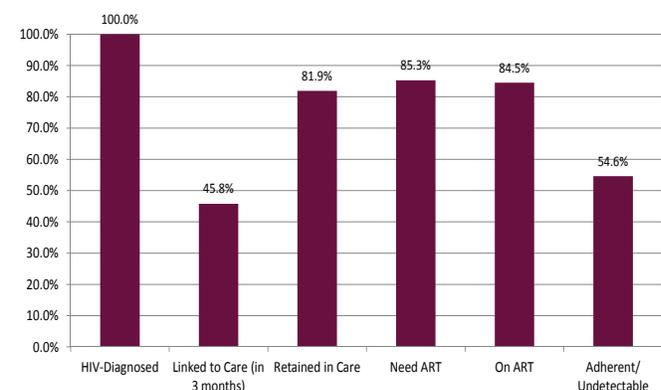
Note: Percentages are based on the number of persons estimated to be infected with HIV and not the number who have been diagnosed with HIV disease.

Figure 60: HIV-Infected Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care by County of Residence, 2012



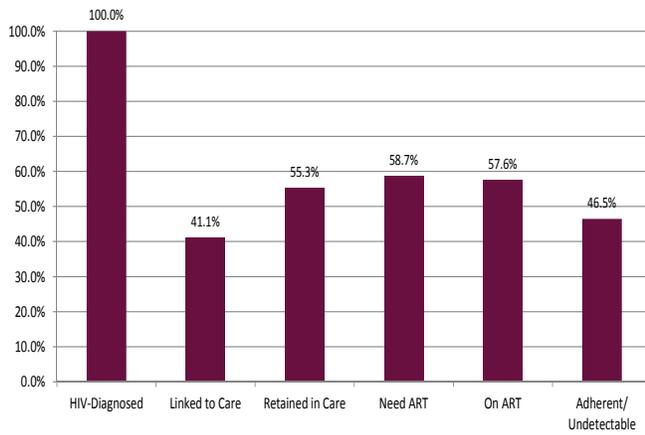
Note: Percentages are based on the number of persons estimated to be infected with HIV and not the number who have been diagnosed with HIV disease.

Figure 61: HIV-Diagnosed Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care, 2011 Incidence



Note: Percentages are based on the number of persons who have been diagnosed with HIV disease and not the number who are believed to be infected with HIV disease. These percentages thus cannot be compared with those derived from the number who are HIV-infected.

Figure 62: HIV-Diagnosed Persons in the Nashville TGA Engaged in Stages of the HIV Continuum of Care, 2012 Prevalence



Note: Percentages are based on the number of persons who have been diagnosed with HIV disease and not the number who are believed to be infected with HIV disease. These percentages thus cannot be compared with those derived from the number who are HIV-infected.

tired of the medical regime, or feeling sick and experiencing symptoms. Persons who have been engaged in the system longer may be tired of going to appointments and taking medications, may not be as concerned about their disease as they have lived with it longer, or may feel that their disease is under control and thus they do not need to receive as much medical care. Over half (54.6%) of those individuals who were newly diagnosed in 2011 had achieved an undetectable viral load by the end of 2012, whereas only 46.5% of all PLWHA in the TGA were virally suppressed at the end of 2012. It is important to note that a person who had a viral load of ≤ 200 copies/mL as their last viral load result in 2012 may not be virally suppressed at his next test; in the continuum of care, this measure does not count those individuals who have ever achieved viral suppression, but rather those who were virally suppressed at the end of 2012.

Out of Care Surveys: Dropped Out of Medical Care and Never Entered HIV Medical Care

BACKGROUND

In 2012 the MPHD Research Analyst and the Needs Assessment Committee created two out of care surveys, one directed at PLWHA who have dropped out of HIV medical care and the other for individuals who never entered HIV medical care after learning their HIV status.

In 2011 45.5% of HIV-positive individuals in the Nashville TGA were not receiving HIV medical care. And while it can be determined who is not receiving medical care, it cannot be determined for what reasons. Therefore, obtaining information as to why individuals have dropped out of HIV medical care or never entered HIV medical care, as well as the things that would make it easier for them to link into and remain in care, can help the Planning Council to better understand how to reduce unmet need in this community and then take action to make improvements.

METHODOLOGY

Confidentiality Measures: Participants completed surveys with the assistance of their early intervention specialist (EIS) or medical case manager (MCM); these are staff members who already have access to their clients' personally identifiable information and are thus held accountable by HIPAA guidelines. Each participant who completed a survey was informed that the survey was voluntary and confidential. While EIS workers and MCMs may have photocopied the survey for the client's records, because the survey included information that would be useful to the EIS/MCM as well, no names were included on the completed surveys returned to the Research Analyst. No survey questions required identifiable information to be disclosed.

Survey Administration: EIS workers and MCMs from four different Ryan White Part A provider sites (First Response Center, MPHD STD Clinic, Nashville Cares, and Street Works) completed surveys with appropriate clients during one-on-one appointments. Staff completed the surveys with the clients in order to increase the response rate and reduce any confusion that may have been associated with questions.

Data Entry and Data Cleaning: Two corresponding surveys were created using SurveyMonkey in order to allow for more accurate data entry. These surveys were used only by the Research Analyst for data entry and analysis purposes. The surveys were manually entered into SurveyMonkey following coding guidelines. All data entry was completed by the Research Analyst in order to improve consistency and reduce coding errors. After data entry occurred the Research Analyst checked the data for accuracy and to correct any improper coding.

It is important to note that each question, except for those regarding why the respondents did not remain in/enter HIV medical care, what would help to enter/remain in care, and why the person

decided to get tested for HIV disease, could have only one response, and therefore the number of responses for each question is indicative of the number of respondents answering the question.

Limitations: Because we do not have access to those individuals who are truly out of care, learning the factors affecting the decisions of persons who have recently re-engaged with the system or are interested in re-engaging with the system, as well as persons who have decided to newly engage in the HIV medical system, are the next closest. While these are individuals who at one time or another made a decision not to receive medical care for their HIV disease, they are now making efforts to connect with the system in some way and are thus different from those individuals who are still not interested in receiving HIV medical care.

Additionally, participant responses are based on the experiences and perceptions of the participant and therefore are only representative of his/her perceptions. Also, the experiences and perceptions of individuals not participating in the surveys are not known, nor is there a way to determine what characteristics may vary between individuals participating in the surveys from those who did not. Surveys were only conducted at four of the Ryan White Part A funded providers, in addition to only being conducted through the EIS and MCM programs, and so those PLWHA who did not receive services from these providers or these programs did not have the opportunity to disclose their needs and barriers to receiving HIV medical care.

Lastly, only a partial analysis is available at this time. Due to the small number of individuals who are not receiving HIV medical care (either because they dropped out or never entered), but have decided they may be interested in now engaging in the system, there are not many PLWHA for whom these surveys apply. Therefore, these surveys will be ongoing for a year, but only approximately four months of surveys have been collected at the time of this preliminary analysis.

KEY FINDINGS

A total of 97 useable surveys were submitted by PLWHA, including 59 *Dropped Out of HIV Medical Care* and 38 *Never Entered HIV Medical Care*.

It is important to note that some respondents may not have answered every question and therefore the n-value for each question is different. As a result, comparing frequencies across questions is not an accurate measure of difference; comparing percentages allows for a more accurate assessment.

DEMOGRAPHICS

Males represented 68.0% (66) of all respondents, followed by females (28.9%, 28), and transgender persons (3.1%, 3). The percentage of females was slightly higher among those persons who have dropped out of care (30.5%) than those persons who have never entered care (26.3%), and thus the percentage of males was slightly higher among those who have never entered care (71.1%) than among those who have dropped out of care (66.1%). Racially respondents were similar for both of the surveys with blacks accounting for 76% of respondents and whites for about 23%. While 9.3% (5) of persons who have dropped out of care indicated Hispanic ethnicity, no one completing the Never Entered Care survey noted Hispanic ethnicity.

Persons completing the *Dropped Out of Care* survey ranged in age from 21 to 57 years old, with an average of 40.9 years, compared to those participating in the *Never Entered Care* survey who ranged from 19 to 73 years of age and averaged 35.7 years. Overall for both surveys, the average age of respondents was 38.9 years. The majority of respondents resided in Davidson County (95.4%, 83).

HIV TESTING AND DIAGNOSIS

The most common types of testing site among both persons who have dropped out of care, as well as those who never entered care, were public/community clinics and emergency rooms. While other common sites of testing between the two groups were similar, percentages varied. Almost a quarter of persons who have dropped out of care were tested for HIV in jail/prison (13.8%, 8) or at an HIV-specific testing site (10.3%, 6), however of those who never entered care, no one was tested at an HIV-specific testing site (0.0%, 0) and only 2.7% (1) were tested in jail/prison. Conversely, 8.1% (3) of persons who never entered care were tested by a private doctor, whereas only 1.7% (1) of those who dropped out of care were tested by a private doctor.

The two most common reasons for getting tested for HIV for persons who dropped out of care were because they engaged in risky behavior (37.9%, 22) and they felt sick (36.2%, 21); the two most common reasons for persons who never entered care were because they engaged in risky behavior (29.7%, 11) and they were a male who had sex with men (29.7%, 11).

REASONS FOR STOPPING/NOT ENTERING HIV MEDICAL CARE

Respondents who had entered HIV medical care, but then dropped out of care cited various reasons for this change. The most frequent reason for dropping out of care was because the individual was in jail/prison. This response was given by over half of the respondents (52.5%, 31). Other common reasons for dropping out of medical care included being difficult to get there (28.8%, 17), it's hard to keep appointments (27.1%, 16), not having a stable place to live (22.0%, 13), using drugs/alcohol (18.6%, 11), and not having any symptoms/not feeling sick (13.6%, 8). Less frequent reasons included not wanting others to find out their HIV status (11.9%, 7), there aren't any HIV medical offices near their home (8.5%, 5), and they don't want medical care (6.8%, 4).

The majority of respondents who have not yet entered HIV medical care indicated it is because they were just diagnosed with HIV disease within the last three months (67.7%, 21). Other reasons

Figure 63: Most Common HIV Testing and Diagnosis Sites Used by Respondents

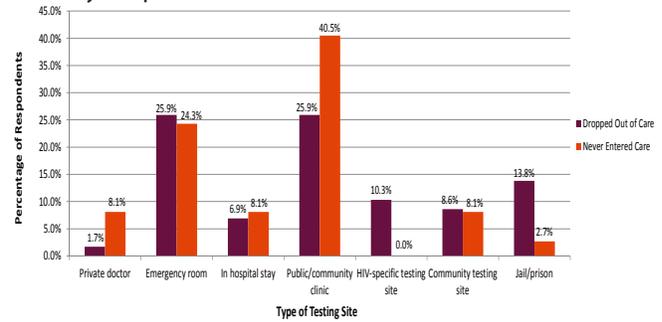
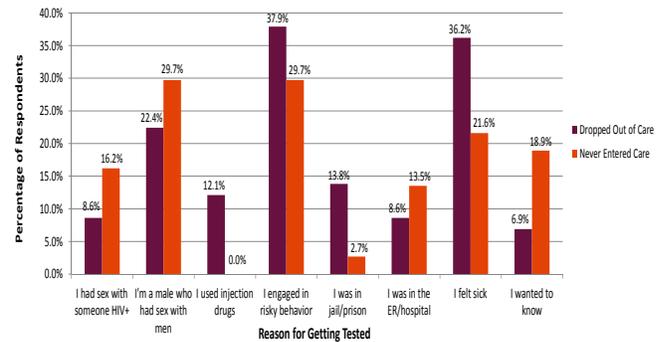
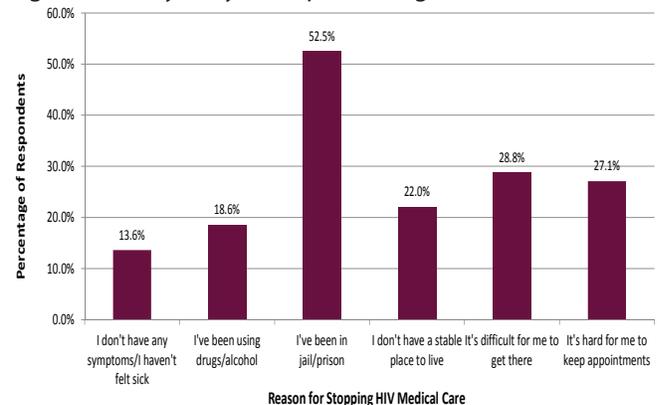


Figure 64: Why Respondents Decided to Get Tested for HIV Disease



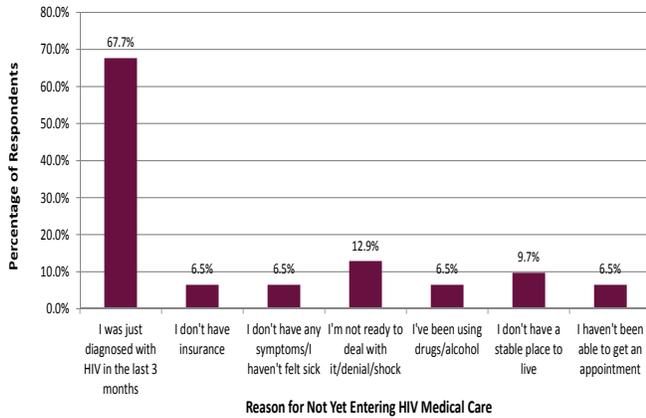
Note: Respondents could select more than one reason for deciding to get tested for HIV. Therefore, percentages do not total 100%. Individual percentages represent the total number of respondents who selected that reason.

Figure 65: Why did you stop receiving HIV medical care?



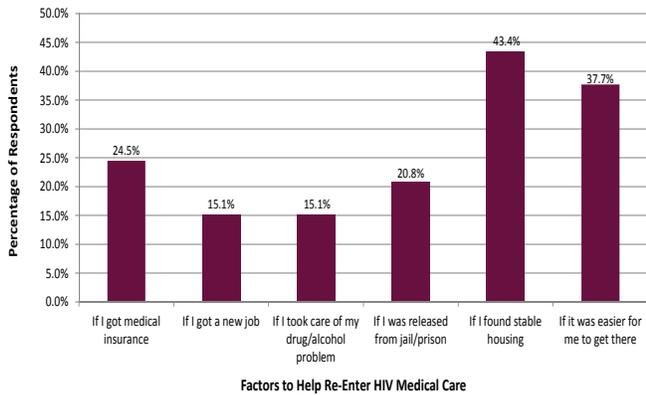
Note: Respondents could select more than one reason for dropping out of HIV medical care. Percentages therefore do not total 100%, but rather equal the percentage of all respondents who selected that reason.

Figure 66: Why have you not yet entered HIV medical care?



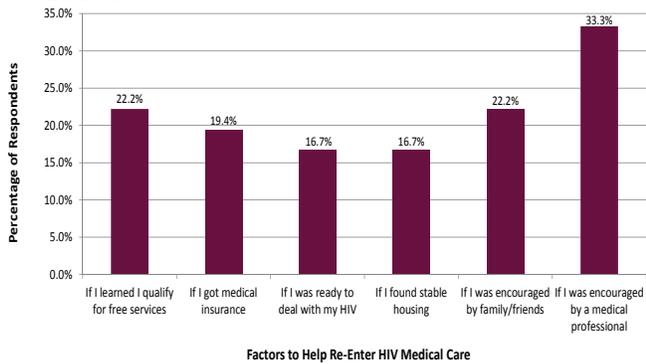
Note: Respondents could select multiple reasons for not yet having entered HIV medical care. Thus, percentages do not total 100%.

Figure 67: What would help you to re-enter and stay in HIV medical care?



Note: Responses do not total 100%; respondents could select multiple factors that would help them to re-enter HIV medical care.

Figure 68: What would help you to enter and stay in HIV medical care?



Note: Respondents could select more than one factor that would help them to enter HIV medical care. Therefore, responses do not total 100%; individual percentages represent the total portion of respondents who selected that item.

noted as to why the respondents have not yet entered care include not being ready to deal with it/denial/shock (12.9%, 4), not having a stable place to live (9.7%, 3), not having insurance (6.5%, 2), not having any symptoms/not feeling sick (6.5%, 2), having been using drugs/alcohol (6.5%, 2), and not being able to get an appointment (6.5%, 2).

FACTORS THAT HELP FOR ENTERING AND STAYING IN HIV MEDICAL CARE

The largest portion of respondents who have dropped out of care (43.4%, 23) reported that finding stable housing would help them to re-enter and stay in HIV medical care. Other factors reported by a significant percentage of respondents include being easier to get there (37.7%, 20), getting medical insurance (24.5%, 13), being released from jail/prison (20.8%, 11), getting a new job (15.1%, 8), and taking care of their drug/alcohol problem (15.1%, 8). Other less common responses cited as persuading the respondent to re-engage in HIV medical care include learning they qualify for free services (11.3%, 6), being ready to deal with their HIV (11.3%, 6), starting to have symptoms/feeling sick (9.4%, 5), and being encouraged by family/friends (9.4%, 5).

Respondents who have not yet entered medical care reported that they would if they were encouraged by a medical professional (33.3%, 12) or by family/friends (22.2%, 8). Frequently noted factors suggested for helping to enter care include learning they qualify for free services (22.2%, 8), getting medical insurance (19.4%, 7), being ready to deal with their HIV (16.7%, 6), and finding stable housing (16.7%, 6). Other factors that would help get the respondents to enter into HIV medical care include taking care of their drug/alcohol problem (13.9%, 5), finding a doctor they like (13.9%, 5), having someone to talk to about their concerns/questions (13.9%, 5), and being easier to get there (11.1%, 4).

ANALYSIS BY RACE/ETHNICITY

DROPPED OUT OF CARE

Significant differences were present between non-Hispanic blacks and non-Hispanic whites who

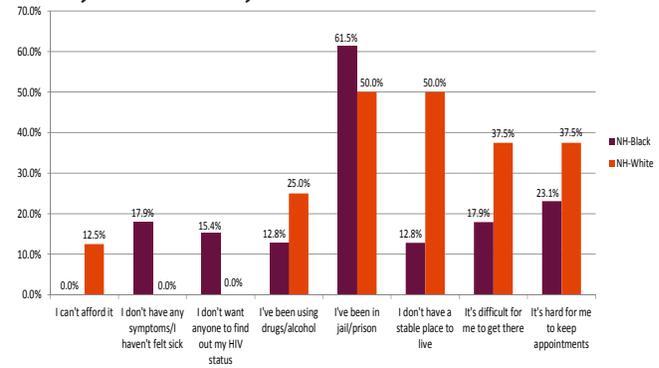
have dropped out of care. Non-Hispanic blacks were more likely than non-Hispanic whites to have dropped out of care due to being in jail/prison, not having symptoms/not feeling sick, and not wanting others to find out their HIV status. Conversely, non-Hispanic whites were more likely than non-Hispanic blacks to have dropped out because they did not have a stable place to live, were using drugs/alcohol, had difficulty getting to and keeping appointments, and could not afford to pay for HIV medical care.

Respondents' responses for items that would help them to re-enter and remain in care were generally related to the reasons they dropped out of care. Because 50.0% of non-Hispanic whites had indicated that they dropped out of care due to unstable housing, it is logical that 57.1% of non-Hispanic white respondents would state that finding stable housing would help them to re-enter care. Likewise in line with reasons for dropping out of care, factors stated to help them get back into care included being able to afford it (learning they qualify for free services, getting medical insurance, or getting a new job) and taking care of their drug/alcohol problem. The responses of non-Hispanic blacks were also congruent with the reasons they fell out of care—starting to have symptoms, being released from jail/prison, being able to more easily get there, and being encouraged by family and friends.

Significant differences were also apparent in the places and reasons that non-Hispanic blacks and non-Hispanic whites were tested for HIV disease. Nearly half (46.2%) of the non-Hispanic blacks who dropped out of care were tested for HIV in the emergency room or during an in hospital stay, whereas no non-Hispanic whites were tested positive in either of these types of places. Non-Hispanic whites were more commonly tested at HIV-specific testing sites, community testing sites, and in jail/prison. Both groups had significant portions of individuals who tested at public/community clinics.

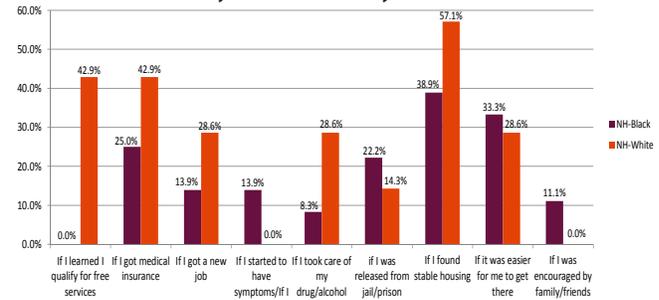
Respondents' reasons for getting tested for HIV disease are related to the reasons they dropped out of care and the factors that would help get them

Figure 69: Reasons for Stopping to Receive HIV Medical Care by Race/Ethnicity



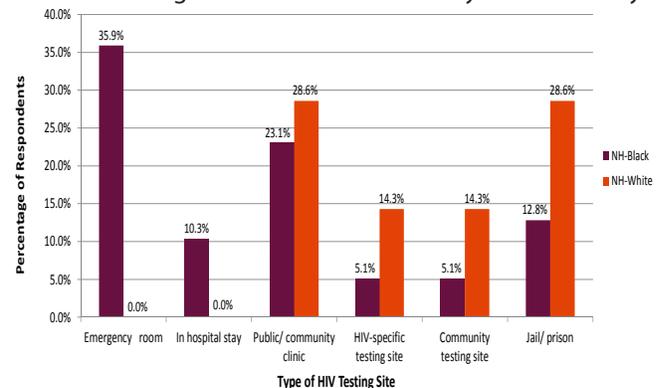
Note: Respondents could select more than one response. Therefore the percentage does not total 100%.

Figure 70: Factors that Would Help to Re-Enter and Stay in HIV Medical Care by Race/Ethnicity



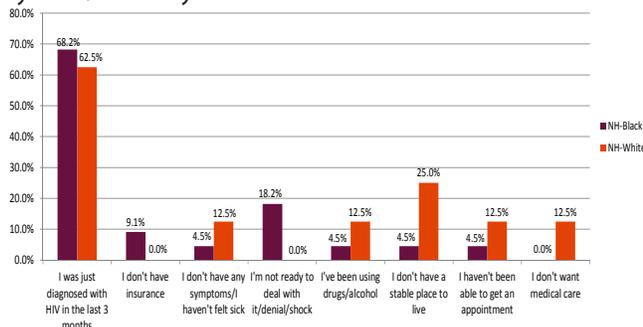
Note: Percentages do not total 100% because respondents could choose multiple factors that would help get them back into HIV medical care.

Figure 71: Where *Dropped Out of Care* Respondents were Tested and Diagnosed with HIV Disease by Race/Ethnicity



back into care as well. Twice the proportion of non-Hispanic whites (25.0%) as non-Hispanic blacks (12.8%) decided to get tested because they used injection drugs; 25.0% of non-Hispanic white respondents indicated that they fell out of care because they were using drugs/alcohol and 28.6% indicated that they would re-enter care if they were able to deal with their drug/alcohol problem. Non-Hispanic blacks were significantly more likely than non-Hispanic whites to have gotten tested because they got sick. This is supported by the fact that 46.2% of non-Hispanic blacks got tested in an emergency room or during a hospital stay. Furthermore, 17.9% of non-Hispanic blacks dropped out of care because they were not experiencing symptoms or feeling sick; while 13.9% stated they would re-enter care if they did start to experience symptoms. The most frequent reasons non-Hispanic blacks decided to get tested include having engaged in risky behavior, feeling sick, being in jail/prison, using injection drugs, being in the ER/hospital, and simply wanting to know. The most common reasons non-Hispanic whites got tested consist of being a male who had sex with men, engaging in risky behavior, using injection drugs, trading sex for money or drugs, having sex with someone who was HIV-positive, being in jail/prison, and having it recommended by a medical professional.

Figure 72: Reasons for Not Yet Entering HIV Medical Care by Race/Ethnicity



Note: Respondents could select more than one reason as to why they have not yet entered HIV medical care. Consequently, percentages do not total 100%.

NEVER ENTERED CARE

Differences between non-Hispanic blacks and non-Hispanic whites who have not yet entered HIV medical care were notable, although the majority of both non-Hispanic blacks and non-Hispanic whites indicated that they have not yet entered care because they were just diagnosed within the last three months. However, while non-Hispanic blacks were more likely to state not having insurance and not being ready to deal with the disease/denial/shock, non-Hispanic whites were more likely to state they have not yet entered care because they do not have a stable place to live, have been using drugs/alcohol, have not been able to get an appointment, and do not want medical care.

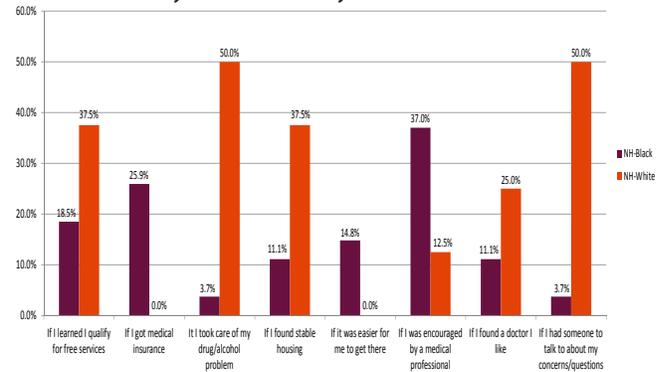
The factors noted by respondents that would help them to enter and remain in care were related to the reasons they have not yet entered care. A

barrier for non-Hispanic blacks was not having insurance, so learning they qualify for free services (18.5%) or being able to get medical insurance (25.9%) would help them to enter care. Also, being encouraged by a medical professional would help them to deal with their denial/shock and motivate them to enter care. Non-Hispanic whites were significantly more likely to state that taking care of their drug or alcohol problem would help them to enter care (50.0% compared to 3.7%). Furthermore, just as non-Hispanic whites indicated that unstable housing was a significant barrier for them to enter care, if they were to have stable housing (50.0%) they would be able to enter HIV medical care. Furthermore, non-Hispanic whites were more likely to report not wanting medical care and not being able to get an appointment as reasons they have not yet entered care; understandably 50.0% stated that having someone to talk to about their concerns/questions would help them to enter care.

Overall, the largest proportion of respondents (41.7%), including both non-Hispanic blacks and non-Hispanic whites, reported being tested and diagnosed with HIV disease at a public/community clinic. Additionally, both groups were as likely to have gotten tested at an emergency room (25.0%); whereas in the group of people who had dropped out of care, 35.9% of non-Hispanic blacks, but 0.0% of non-Hispanic whites had been tested in that type of setting. Furthermore, non-Hispanic whites were more likely to have gotten tested by a private physician or a blood/plasma donation, while non-Hispanic blacks were more likely to have been tested at a community testing site. No one in either group was tested at an HIV-specific testing site.

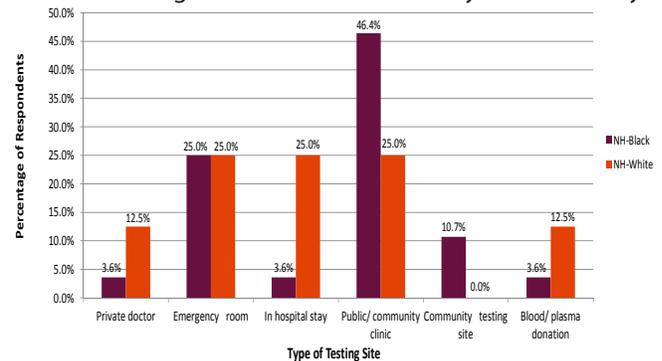
The reasons respondents provided for why they decided to get tested for HIV are also related to their barriers to care. Feeling sick was one of the most common reasons for testing between both racial/ethnic groups, and being in the emergency room or hospital was common among non-Hispanic whites. Engaging in risky behavior and being a man who had sex with men were the most common reasons provided by both non-Hispanic blacks and non-Hispanic whites. However, differences between the groups include non-Hispanic blacks being more likely to have gotten

Figure 73: Factors that Would Help to Enter and Stay in HIV Medical Care by Race/Ethnicity



Note: Respondents could select multiple factors to help them enter HIV medical care. Thus, percentages do not total 100%.

Figure 74: Where Never Entered Care Respondents were Tested and Diagnosed with HIV Disease by Race/Ethnicity



tested because their partner suggested it and non-Hispanic whites being more likely to have gotten tested because they were in jail/prison, traded sex for money or drugs, or because it was recommended by family/friends.

ANALYSIS OF MSMS

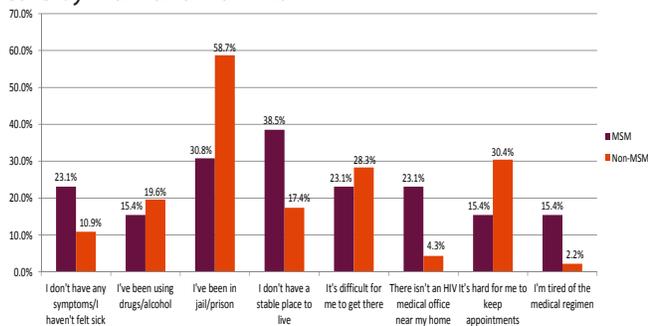
The MSM population is a group that was identified in the 2012 Nashville TGA Comprehensive Plan as needing increased access to HIV medical care and services. Therefore, by closely examining their barriers to care, and particularly for MSMs who are not currently receiving HIV medical care, access for this group can be improved.

It is important to note that only 13 of the 59 respondents for the *Dropped Out of Care* survey and 11 of the 38 respondents of the *Never Entered Care* survey stated that they were men who have had sex with men. While these numbers of MSM respondents are low, only preliminary analysis is being done at this time.

DROPPED OUT OF CARE

Respondents who indicated that they are a male who has had sex with men were most likely to indicate that they dropped out of HIV medical care because they did not have a stable place to live (38.5%); they were over twice as likely to report this than were non-MSM respondents (17.4%). MSMs (23.1%) were also over two times as likely as non-MSMs (10.9%) to report dropping out of care because of not having symptoms/not feeling sick. Other frequently noted reasons for MSMs dropping out of care include being in jail/prison (30.8%), having difficulty getting to HIV medical care (23.1%), and not having an HIV medical office near their home (23.1%). Respondents who did not identify as MSM were more likely to state that they dropped out of care due to being in jail/prison (58.7%), difficulty keeping appointments (30.4%), difficulty getting to appointments (28.3%), and because they have been using drugs/alcohol (19.6%).

Figure 75: Reasons for Stopping to Receive HIV Medical Care by MSM and Non-MSM



Note: Respondents could select as many responses as were applicable. Therefore, percentages do not total 100%.

The factors provided to help re-enter care were fairly similar between MSMs and non-MSMs, with the exception of a few areas. The most common reasons stated by both groups were finding stable

housing and it being easier to get to HIV medical care. The two groups were also equally likely to indicate that getting a new job or taking care of their drug/alcohol problem would help them to re-enter care. However, MSMs (23.1%) were three times more likely than non-MSMs (7.5%) to report that learning they qualify for free services would be helpful and non-MSMs (27.5%) were almost twice as likely as MSMs (15.4%) to report that getting medical insurance would help them to re-enter care.

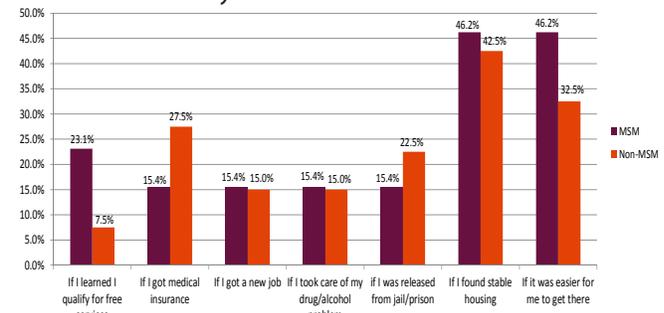
Significant differences appeared between the types of settings in which MSMs and non-MSMs were tested and diagnosed with HIV. MSMs were more likely to get tested at a public/community clinic (30.8%), an HIV-specific testing site (15.4%), or a community testing site (23.1%, compared to 4.4% for non-MSMs). Non-MSMs were more likely than MSMs to get tested at an emergency room (28.9%) or in jail/prison (15.6%).

NEVER ENTERED CARE

For those respondents who have not yet entered HIV medical care, there were significant differences in the reasons between MSMs and non-MSMs for having not yet entered. The majority of non-MSMs (77.3%) reported that they were just diagnosed with HIV in the last three months, while only 44.4% of MSMs reported just being diagnosed in the last three months. MSMs were significantly more likely to report not being ready to deal with the disease/denial/shock (33.3%), as well as not being able to get an appointment (22.2%). MSMs and non-MSMs were equally likely to report not having entered care because of not having a stable place to live.

Just as the reasons respondents have not yet entered care differ greatly between MSMs and non-MSMs, so do the factors that would help them to enter HIV medical care. One-third of MSMs has reported not entering care because of denial/shock and so accordingly 40.0% of MSM respondents indicated that being ready to deal with the disease would help get them into care (compared to 7.7% of non-MSMs). Additionally, difficulty getting to appointments was identified as a barrier for MSMs and 30.0% of them noted that if it were easier for

Figure 76: Factors that Would Help to Re-Enter and Stay in HIV Medical Care by MSM and Non-MSM



Note: Respondents could select more than one response so percentages do not total 100%.

Figure 77: Where Dropped Out of Care Respondents were Tested and Diagnosed with HIV Disease by MSM and Non-MSM

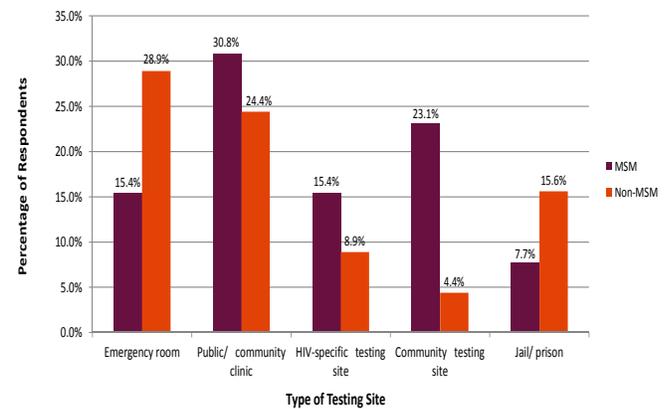
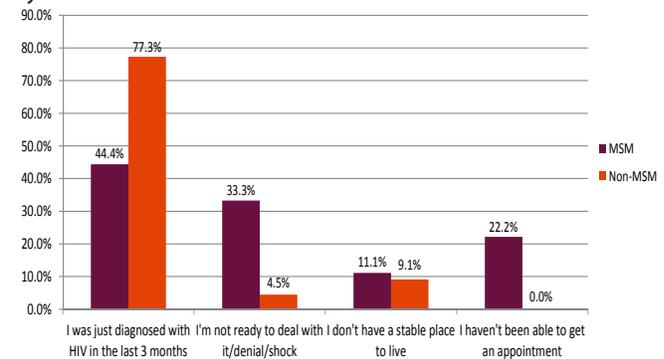
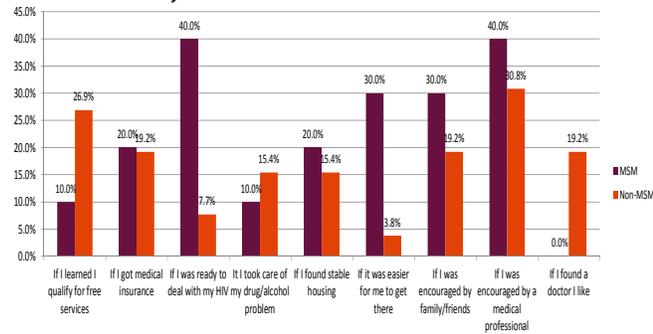


Figure 78: Reasons for Not Yet Entering HIV Medical Care by MSM and Non-MSM



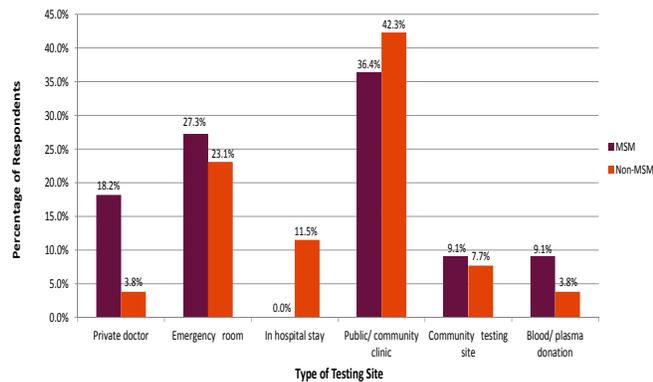
Note: Respondents could select more than one barrier. Therefore, percentages do not total 100%.

Figure 79: Factors that Would Help to Enter and Stay in HIV Medical Care by MSM and Non-MSM



Note: Respondents could select as many responses as were applicable. Therefore, percentages do not total 100%.

Figure 80: Where *Never Entered Care* Respondents were Tested and Diagnosed with HIV Disease by MSM and Non-MSM



them to get to appointments that they would be able to enter care. Non-MSMs were more likely than MSMs to identify qualifying for free services (26.9%), finding a doctor they like (19.2%), and taking care of their drug/alcohol problem (15.4%) as ways to help them get into HIV medical care.

MSM and non-MSM respondents of the *Never Entered Care* survey had similar testing patterns, with MSMs being nearly as likely as non-MSMs to have been tested and diagnosed in an emergency room, a public/community clinic, or a community testing site. Still, MSMs were over four times as likely as non-MSMs to have been tested by a private doctor. Also, 11.5% of non-MSMs and 0.0% of MSMs were tested during a hospital stay.

Aside from all of the MSMs reporting having slept with men as a reason for getting tested, and none of the non-MSMs reporting this, the two groups had similar reasons for deciding to get tested for HIV. The main reasons for getting tested include engaging in risky behavior, feeling sick, wanting to know, having sex with someone who was HIV-positive, and being in the emergency room/hospital.

CONCLUSIONS

While this is a preliminary analysis, notable differences were found between persons who have dropped out of care and persons who have never entered care, non-Hispanic blacks and non-Hispanic whites, and MSMs and non-MSMs.

Because understanding barriers to care is crucial to getting people into HIV medical care, it is important to also understand how specific groups feel their barriers could be alleviated. In this study, certain barriers had a greater impact on certain groups. Unstable housing and drug/alcohol problems were more commonly reported among non-Hispanic whites, while being in jail/prison was a more common barrier for non-Hispanic blacks. Likewise, non-MSMs were more likely to have stopped HIV medical care because of being in jail/prison, while MSMs were more commonly less ready to deal with their HIV/denial/shock and had more difficulty getting to appointments. Of those who have never entered care, non-MSMs were

much more likely than MSMs to have not yet entered care because they were just diagnosed within the last three months; this indicates that a greater proportion of MSMs are waiting longer to enter care, if they enter care at all.

While the system of care can make assumptions about how to improve linkage to HIV medical care based on the barriers PLWHA are encountering, it can be more beneficial to hear what the individual consumers themselves feel would help them most. The obvious solutions are not always the only ones that can make a significant impact. A person's financial situation can greatly affect his ability to enter and stay in care—non-Hispanic whites were the only group to clearly state that they could not afford HIV medical care and thus more commonly reported that qualifying for free services or getting medical insurance would help them to enter care. Additionally, MSMs were more likely to state that free services would be helpful; whereas non-MSMs were more likely to indicate that having medical insurance would make a difference. MSMs reported more often than non-MSMs that more easily being able to get to HIV medical appointments would help them enter care; this is related to the barrier that there are no HIV medical offices near their homes. By looking more precisely at where these individuals live it could be determined whether this is more of a transportation issue or medical offices not being sufficiently dispersed. One of the less obvious suggestions provided by many of the non-Hispanic black and MSM respondents that would help them to enter and stay in HIV medical care was being encouraged by a medical professional and/or family/friends to enter into care. These were also the same groups who reported not being ready to deal with their HIV/denial/shock, and thus may be in need of additional support. Many MSMs, particularly in the South, already do not receive the same level of support from their families as non-MSMs because of their lifestyle, and then compounded with an HIV infection, many MSMs can be estranged from their families. Receiving support and encouragement can be key steps to helping a person enter into medical care. It is worth noting that MSMs who have not yet entered care were more likely to report mental/emotional needs such as encouragement, while MSMs who have dropped out of care were more likely to report needing tangible things such as housing, an easier way to get to appointments, and financial assistance.

The location in which a person is tested for and diagnosed with HIV disease can make a significant impact on whether or not he enters into HIV medical care. For respondents who have never entered care, no one was tested at an HIV-specific testing site. This could imply that by testing at other types of locations, people are not receiving all of the necessary information about why to get linked to care or receiving assistance in actually getting connected. There was a high percentage of respondents for both the *Never Entered Care* and *Dropped Out of Care* surveys who were tested at an emergency room or in the hospital. Because HIV testing is not the primary function of these sites, it is possible that opportunities for educating the individuals on HIV and the importance of entering care were missed. More non-Hispanic blacks than non-Hispanic whites were tested in an emergency room or during a hospital stay; this could be indicative of non-Hispanic blacks being more likely to wait longer before being tested. Also, as was stated in the surveys, they often wait until they are sick to get tested, further supporting the idea that they are further along in the disease by the time they are diagnosed. MSMs were more likely to be tested at a place they would have consciously chosen to go to (i.e. public/community clinic, community testing site, private doctor), whereas non-MSMs were more likely to get tested at places of opportunity (i.e. emergency room, in hospital, jail/prison). These differences could suggest that MSMs are more likely to make an advanced, conscious decision to get tested for HIV, in contrast to non-MSMs more often getting tested either because a doctor makes the decision to test for HIV or because the individual just does not opt out of the test (as in jail/prison).

The reason a person decides to get tested for HIV can be useful in determining how to get people in for tests, as well as how to work with linking the individual into medical care should they have a positive

test result. Many non-Hispanic blacks did not get tested for HIV until they started to feel sick. However, they then dropped out of care because they were no longer feeling sick or experiencing symptoms. They also frequently stated that if they were to get sick again that they would enter or re-enter care. Non-Hispanic blacks are therefore more apt to base their care on feeling sick versus actually being sick. It is important for testers and others in the HIV system of care to educate people on the meaning of CD4 counts and viral loads so that people can better understand that just because they do not feel sick does not mean that they cannot transmit the virus or become sick. Non-Hispanic whites were more likely to get tested because they used injection drugs or traded sex for money or drugs. Drug/alcohol use was also found to be a major barrier for non-Hispanic whites to enter into and remain in care. In order to allow the person to be continuously engaged in HIV medical care, drug/alcohol dependencies also need to be addressed. Ideally they are treated simultaneously, but the approach must be tailored to the individual client's stage of readiness.

Overall, it is important to understand who is out of medical care in the community so that you can then understand why they are out of care. By learning why individuals have not yet linked into HIV medical care or why they have fallen out of HIV medical care, it is hoped that these issues can be addressed. The more people who are consistently in care, the lower the community viral load should be, and the less of a burden on the overall healthcare system.

Service Needs and Gaps

PURPOSE

In order to most effectively serve HIV-positive persons in our community, it is necessary to get a better understanding of whether or not the needs of HIV-positive persons are being met. Therefore, the Service Needs and Gaps Survey was created to determine the areas in which the needs of HIV-positive persons are being met, as well as the areas in which there are gaps in services, meaning the need for a service is greater than the availability or is hindered by accessibility. The primary aims of the study were to ascertain awareness of services, services needed and received by individuals, barriers to accessing services, and whether or not the services are meeting clients' needs.

RESULTS/HIGHLIGHTS

- ▶ 96.5% of respondents saw a medical provider for HIV care within the previous 6 months.
- ▶ 24.4% of respondents did not have enough food to eat for three or more days in a row.
- ▶ 19.8% of respondents reported they were living on the street or in a shelter at some point within the previous year.
- ▶ 23.7% of respondents missed an appointment in the last year with their HIV doctor because they did not have transportation; 27.0% missed support service appointments because of not being able to get there.
- ▶ Respondents were not aware of critical medical services available to them: health insurance assistance (32.8%), assistance with medication payments (25.6%), dental care (18.2%).
- ▶ Respondents were not aware of some important support services available to them: food bank (21.2%), housing (19.2%), transportation (16.2%).
- ▶ The top five prioritized services needed to maintain health were: 1. HIV medical care, 2. HIV medications, 3. Dental care, 4. Housing, and 5. Food.

CONCLUSIONS/IMPLICATIONS

HIV medical care and HIV medications are considered by the medical community, as well as by the respondents of this survey, to be the most important services for an HIV-positive individual to maintain good health. And while almost all respondents were receiving HIV medical care and the HIV medications they had been prescribed, there were still significant gaps in some key HIV services, including dental care, housing, food, and transportation.

Because HIV medical care is regarded as the top priority when it comes to funding HIV services, the majority of funding is placed there. And as the HIV-positive population continues to grow more money

will be needed to fund outpatient services, therefore causing less money to be available for other services. While there will always be some service gaps, certain services are more essential to the survival of a person living with HIV disease. Food and housing are necessary for everyone to lead a healthy life; however when a person is dealing with HIV disease as well, these elements become even more important because they impact other facets of a person's HIV care (i.e. storing and taking medication). Also, a person's immune system may be weakened due to insufficient nutrition or rest, leaving the person vulnerable to opportunistic infections. In addition, while dental care and transportation may be beneficial for the average person's life, they are even more critical to PLWHA. HIV-positive individuals are at greater risk for oral health problems and without proper dental care they could become susceptible to other infections. Transportation is critical as well; without transportation a person may not be able to receive necessary HIV medical care, pick up HIV medications, or pick up food bags.

For more information on this study please see Supplemental Volume I (2011).

Food and Transportation Survey

PURPOSE

Appropriate HIV treatment is essential for individuals living with HIV disease. Some key aspects of proper treatment include HIV-related medical and service appointment attendance, appropriate nutrition, and for many taking anti-retrovirals (ARV). In order for a person to receive a prescription for anti-retrovirals he must see a physician; this requires reliable transportation. And in order for many of those ARVs to be absorbed properly into the client's body, food is necessary.

A previous study conducted by the Ryan White Part A Program found that 24.4% of respondents did not have enough food to eat for three or more days in a row. It also found that 23.7% and 27.0% of respondents missed HIV medical care and HIV service appointments respectively. The purpose of this survey was to determine the services that are needed by persons who are HIV-positive and whether or not individuals are able to get these services.

RESULTS/HIGHLIGHTS

- ▶ 86.3% of respondents who were eligible for food services stated that they were receiving food services and 83.3% of respondents who were eligible for transportation services were receiving them.
- ▶ 45.5% of respondents stated that it was either somewhat difficult or very difficult to find transportation to access food services.
- ▶ 36.3% of non-Hispanic black respondents stated never having to cut the size of meals because of not having enough food or money; 57.7% of non-Hispanic white respondents gave this response.
- ▶ 43.8% of respondents receiving food services stated that they receive foods they do not eat. Non-Hispanic blacks were 40% more likely than non-Hispanic whites to receive food they do not eat.
- ▶ The majority of respondents were aware of other places to receive food assistance services; those most known were food stamps, food banks, and churches.
- ▶ 48.0% of respondents receiving transportation services have frequently or sometimes experienced times of unreliable transportation leading to missed appointments. Non-Hispanic blacks were 40% more likely to miss HIV-related appointments than non-Hispanic whites.
- ▶ Respondents with their own car were 189% more likely to report never missing an appointment than persons without their own car. Non-Hispanic whites were almost twice as likely as non-Hispanic blacks to have their own car.
- ▶ 65.0% of respondents reported needing additional assistance with transportation.

CONCLUSIONS/IMPLICATIONS

Significant differences appeared in the responses of non-Hispanic whites and non-Hispanic blacks. In general, non-Hispanic blacks were more likely to report experiencing food deficiencies, as well as inconsistent and unreliable access to transportation for HIV-related appointments. This is likely a reflection of the differences in socio-economic statuses among persons of different racial groups in this region. Locating food and transportation services available to and easily accessible to areas of predominantly non-Hispanic blacks may ensure that more persons who qualify for services are able to access the services.

Individuals would also benefit from further discussion with their medical case managers (MCM). To ensure that clients are aware of what services are available, know what they qualify for, and understand how to get the services, MCMs need to ask clients about their needs and clients need to inform the MCMs when they need more assistance.

For more information on this study please see Supplemental Volume II (2012).

Client Outpatient Satisfaction Survey

PURPOSE

It has been found that patients with higher satisfaction levels tend to have improved health outcomes. Therefore, in order to most effectively serve HIV-positive persons in our community, and improve health outcomes, it is essential to get a better understanding of how clients perceive the medical care they receive from Ryan White Part A providers. The purpose of this evaluation of client satisfaction is to determine any areas in which clients are dissatisfied with their HIV medical care, including access to care, waiting for appointments, experiences during the medical visit, and overall quality of HIV care.

RESULTS/HIGHLIGHTS

- ▶ 83.4% of respondents were always or mostly able to get an HIV medical appointment soon enough for their needs.
- ▶ Only 55.1% of respondents were able to always or mostly reach someone at the office when the clinic was closed.
- ▶ 17.6% of respondents felt uncomfortable discussing personal or intimate issues with their provider and 13.0% of respondents felt their providers felt uncomfortable asking about personal or intimate issues.
- ▶ Over half (62.1%) of respondents reported always or most of the time wanting to be more involved in making decisions about their health care.
- ▶ Respondents most frequently selected the following words to describe the care at their clinic: excellent (70.4%), respectful (50.7%), friendly (48.5%), caring (40.4%), and understanding (38.5%).
- ▶ The majority (81.0%) of respondents stated that they would definitely recommend their HIV medical clinic to HIV-positive friends with similar needs.
- ▶ Nineteen individuals (19) stated that they left an HIV medical provider because they were dissatisfied with the services and/or care they were receiving.

CONCLUSIONS/IMPLICATIONS

Overall clients are satisfied with the care they are receiving from their HIV medical provider; however, certain aspects of care received lower satisfaction levels. Over half of respondents want to be more involved in the decision-making related to their health care. If clients have an active role in their health decision-making they are more likely to follow through with the appropriate care. They are also more likely to discuss problems or concerns with their provider, allowing issues to be addressed sooner. Furthermore, only 55.1% of respondents were able to reach someone at the office when the clinic was closed and 69.5% were able to reach someone on the phone to discuss a medical question. Inability to

access services when needed can negatively impact one's feelings of need for medical care; if a person perceives that HIV medical care is not an essential part of treatment, he will be less likely to continue receiving it. Some respondents also felt uncomfortable discussing personal issues with their doctor; these individuals are therefore less likely to be completely honest about their risky behaviors and their doctor is not able to provide complete treatment and education.

In order to improve clients' health outcomes, areas of dissatisfaction need to be addressed. By improving clients' feelings of HIV medical care satisfaction, clients should have improved health outcomes.

For more information on this study please see Supplemental Volume II (2012).

Resource Audit

PURPOSE

The Ryan White Part A Program serves to address the unmet needs of persons living with HIV disease by funding medical and support services that improve access to and retention in care. HIV disease disproportionately affects people in poverty, racial/ethnic populations, and other persons who are underserved by health care systems. As a result, the most likely user of Part A services are those persons with no other source of health care, as well as persons with Medicaid or private insurance whose needs are otherwise not being met.

The Ryan White Part A Program however is the “payer of last resort,” meaning it is used to fill gaps in care that are not covered by other resources. Therefore, in order to know other ways in which the needs of HIV-positive persons can be met in the TGA, it is necessary to conduct a resource audit. This helps to provide a more comprehensive picture of the continuum of care of the organizations and individuals providing services to HIV-positive persons, regardless of whether the provider sees itself as an HIV disease service provider.

RESULTS/HIGHLIGHTS

- ▶ 62.7% of responding agencies do not provide services specific to HIV disease and therefore do not have a set budget for HIV disease services.
- ▶ 57.7% of responding agencies do not know if their clients are HIV-positive, but would serve them regardless. 35.2% of the agencies serve a larger population, but have some clients who are HIV-positive. 5.6% of responding agencies do not serve HIV-positive clients.
- ▶ Seven agencies reported adding services, some of which were focused on HIV disease—increased presence at HIV health fairs, counseling and economic support for PLWHA, outreach worker for HIV testing, and increased peer delivered services.
- ▶ Almost half (44.7%) of the responding agencies have at least one waiting list. The most common services to necessitate waiting lists were transitional housing (11.3%), permanent housing (9.7%), and child care (8.1%).
- ▶ The most commonly needed HIV disease and STD-related capacity building trainings were HIV disease general training, providing HIV disease linkages, and STD general training.
- ▶ 13.4% of agencies have evening hours, 11.9% have weekend hours, and 20.9% are open 24 hours/7 days a week or have someone on call at all times.
- ▶ The most common barriers encountered in providing services to HIV-positive persons were that the agency does not provide all of the services a person needs (21.5%), staff training in HIV disease is limited (16.9%), insufficient resources at the agency (15.4%), and clients missing appointments (12.3%).

CONCLUSIONS/IMPLICATIONS

Only 33.6% of agencies invited to participate in the resource audit completed the survey. Many agencies do not recognize the link between their work and the needs of HIV-positive persons, therefore the services they may have that HIV-positive individuals could utilize are not known. However, a number of agencies that do not specifically serve HIV-positive persons, but will, have indicated numerous services that HIV-positive persons can benefit from (food, housing, mental health, medical care, substance abuse, etc.). Many agencies also provide services during non-traditional hours, and outside of the office, providing clients greater opportunity to receive necessary services.

Because the Ryan White Program is a payer of last resort it is important to be aware of other services available in the TGA that HIV-positive persons may be able to benefit from. However, many agencies need to be educated on HIV disease so that they understand their potential role in providing services to HIV-positive individuals.

For more information on this study please see Supplemental Volume II (2012).

Town Hall Meetings

PURPOSE

People from different parts of the community are impacted by, at risk of, or infected with HIV disease. In order to better serve the community, it is therefore important to gain an understanding of the community's awareness of HIV testing and treatment services. With the number of new infections still rising and many people unaware of their HIV-positive status, it is critical that members of this community get tested for HIV disease and for those who have already tested HIV-positive to enter into and remain in care. Opinions, knowledge, and experiences from the community can help influence decisions about improvements to testing and treatment services.

RESULTS/HIGHLIGHTS

- ▶ Many believe that people choose to not get tested for HIV disease because they do not want to know if they are HIV-positive. "What I don't know won't hurt me."
- ▶ People often feel that things like HIV disease happen to "other" people and not to people like them. They feel that by engaging in risky behaviors only once or infrequently that they will not contract the disease. They therefore feel no reason to be tested for HIV disease.
- ▶ There is a lack of understanding about the HIV testing process. Many people are not aware that they can receive their test results within 15 minutes, that they do not have to return to the testing location a second time, or that free testing is available.
- ▶ Many people do not think about HIV testing on their own. It is only when they are presented with the idea that they decide to do so.
- ▶ The most widely known places to receive HIV testing included the health department, Nashville Cares, the VA, and college/university health centers.
- ▶ The most widely suggested reasons for not engaging in HIV care were emotions/not being ready to deal with it, financial concerns, and stigma.
- ▶ Frustration with the treatment process, problems with medications, and lack of access to services were suggested as the primary reasons for dropping out of care.
- ▶ Improving access to testing and treatment services, as well as educating about the importance of HIV care and the services that are available, were recommended to help get people tested and to get HIV-positive persons into care.

CONCLUSIONS/IMPLICATIONS

While the themes that developed in the town hall meetings were not atypical, they served to emphasize that stigma and education are still problems in this community. Many people do not have a sufficient level of knowledge of HIV disease and therefore do not recognize the importance of reducing one's risk factors, getting tested, or entering into and remaining in care if they are HIV-positive. However, because stigma is so high in this community, many people are not willing to discuss HIV; they also have the belief that only people engaging in alternative lifestyle behaviors are at risk. If stigma in this community can be reduced and therefore education about HIV disease be improved, it is likely that more people will get tested and enter into treatment if they are found to be HIV-positive.

Access to care can be improved through education as well. With a variety of services available to HIV-positive persons, the majority of services a person may need can be accessed once the person is made aware of them. Because some services may only indirectly be related to HIV disease, but still meet a significant need of HIV-positive persons, the community, as well as HIV-positive persons, need to be educated on how different systems of care can serve overlapping populations.

For more information on this study please see Supplemental Volume II (2012).

Key Informant Interviews

PURPOSE

HIV disease affects many facets of a person's life in addition to their health, including finances, housing, access to food, and access to medications. And because HIV disease disproportionately affects people in poverty, racial/ethnic populations, and other persons who are underserved by healthcare systems, many people living with HIV disease are in need of a variety of HIV-related medical and support services.

The Ryan White Part A Program serves to meet the needs of HIV-positive persons whose needs are not already being met through other resources. It is therefore important to have a good understanding of the needs of these persons and how their needs compare with the currently established system of care. An important way to get a better understanding of how the system is working to meet the needs of these persons is to speak with knowledgeable HIV service providers about their experiences in providing care to HIV-positive persons in the Nashville TGA.

RESULTS/HIGHLIGHTS

- ▶ Conducting rapid and expanded testing have given more people access to testing; EIS has also been a successful way of preventing HIV disease.
- ▶ The majority of informants noted that education is a major gap in preventing persons from contracting HIV; messages need to be directed towards everyone, and not just high-risk populations.
- ▶ Housing, food, and mental health were also noted as major gaps. A person's basic life needs must be met before a person can even begin worrying about their HIV disease.
- ▶ Transportation was the most common challenge reported when providing HIV medical and support services to HIV-positive persons. It is more difficult to get people in care and get them to stay in care if transportation is a problem. Stigma can also pose a significant problem for getting people in care and keeping them in care.
- ▶ Medical case management was the most commonly reported service that is insufficient. Heavy case loads make it difficult for medical case managers to find adequate time for each case, sometimes leading to client's needs being overlooked.
- ▶ The five most important services a person needs in order to successfully live with HIV disease included medical case management, housing, medical/dental services, education, and food.
- ▶ Each key informant listed a different critical change for improving the provision of HIV-related services in the Nashville TGA. Changes involved medical case management, EIS, treatment adherence, transportation in rural areas, stigma, and improving the infrastructure of services outside of Davidson County.

CONCLUSIONS/IMPLICATIONS

Overall the key informants felt that the services currently in place for HIV-positive individuals are successful, however there are not enough of them. Many of the difficulties with the system stem from insufficient funding; ways of improving the system without access to additional funds need to be determined. More effective and efficient uses of current funding are key.

The key informant interviews did not reveal much consensus. This is perhaps in part because each informant works in a different part of the HIV system and therefore encounters different challenges related to the different types of clients they serve. However, the lack of a strong consensus could also be the result of many areas of need within the existing system of HIV care.

For more information on this study please see Supplemental Volume I (2011).

Recommendations

Members of the Nashville TGA Part A Planning Council were asked to vote on the top seven recommendations. They were asked to include at least one recommendation in each category for their top seven. The seven recommendations receiving the most votes are denoted with an asterisk (*).

1. Based on identified barriers and needs, further develop and implement strategies to address the barriers and needs as appropriate and feasible.

Barrier/Need	Strategy(ies)	Recommendation				
		Funding	Directive	System	Prevention	Policy
A. Not accessing HIV medical services	Although data shows improvement, continue to require providers (MCM, EIS) to enhance tools for engaging PLWHA in medical care (e.g., consumer education, readiness assessment, motivational interviewing).		X			
	Reduce caseload size of medical case managers so clients' needs can better be met.	X	X			
B. Ability to access new avenues of insurance*	Train medical case managers on the Affordable Care Act and new insurance possibilities so that they can help clients sign up for new programs and transition smoothly.		X	X		
C. Inadequate resources for permanent housing	Coordinate meetings between HIV and housing providers to identify strategies for improved collaboration so that HIV-positive persons who need housing are quickly identified and connected with services.			X		
	Arrange meetings between housing funders to identify strategies to maximize housing resources.			X		
D. Homelessness	Coordinate meetings between HIV and homeless providers to identify strategies for improved collaboration so that HIV-positive homeless persons are quickly identified and connected with services.			X		

E. Substance Abuse*	Strengthen relationships between EIS and substance abuse treatment providers to identify and link HIV-positive persons to care. Use data from new TDMHSAS HIV funding to inform service enhancement for substance abusers.			X		
F. Incarceration	Coordinate with TDOH regarding the prison program (EIS and MCM).			X		
G. Not in care because do not feel sick (especially non-Hispanic blacks)	Implement a peer strategy to educate other consumers about the benefits of treatment.			X		
H. Need more involvement in health decision-making	Fund a peer model to focus on helping consumers self-manage their HIV disease and maintain wellness.	X				
I. Need peer support	Evaluate existing use of peers and explore potential to expand peer involvement.			X		
J. Need support from clergy (especially blacks)	Work with entities connected with faith based communities to increase collaboration.			X		
K. Transportation	Increase funding based on continued need.	X				
L. Insufficient food	In food bags, providers need to inform clients of other food sources. This could be in the form of a phone number list included in the bags. Increase funding based on continued need.		X			

2. Coordinate prevention and treatment systems in order to enhance efforts to assure persons, particularly high-risk populations, know their status, and to assure that newly identified HIV-positive persons are quickly engaged in care.

Barrier/Need	Strategies	Recommendation				
		Funding	Directive	System	Prevention	Policy
A. Need to enhance testing strategies and address stigma	<p>Monitor data to assess ongoing trends.</p> <p>Increase targeted messaging and testing to high-risk populations through varied strategies.</p> <p>Implement strategies to address stigma in the community.</p>			X	X	
B. HIV incidence in 18-24 year old population	<p>Make recommendations to TDOH for enhanced testing strategies targeted towards 18-24 year olds.</p>			X	X	
C. People are unaware they are HIV-positive*	<p>In collaboration with Prevention, review prevention/testing/treatment services and identify new strategies to address stigma and fear, particularly in non-Hispanic black communities.</p>			X	X	
D. An estimated 41.0% of HIV-positive persons are not in HIV medical care*	<p>Work collaboratively with Prevention to ensure that there is a strong link between testing/screening and linkage to medical care. (Focus on EIS.)</p> <p>Use data to guide development of strategic interventions to identify and link people to care.</p>			X	X	
E. Increase utilization of HIV testing data for planning and service development	<p>Collaborate with TDOH on data collection, analysis and reporting (including trends) to help guide planning and funding decisions.</p>			X	X	

3. Increase service capacity when funds are available in areas where significant gaps and limited resources are identified (excludes services mentioned above-outpatient, housing).

Barrier/Need	Strategies	Recommendation				
		Funding	Directive	System	Prevention	Policy
A. Medical case management needs	Increase funding to allow for expansion of the MCM system. If additional case managers are funded then caseload size will be reduced and the system will become more efficient.	X				
B. Mental health needs*	Maximize the use of other community resources. Collaborate with State Mental Health Authority to identify resources and improve screening and referral.		X	X	X	
C. Substance abuse needs*	Maximize the use of other community resources. Collaborate with State Substance Abuse Authority to improve screening and referral.		X	X	X	
D. Limited access to dental care*	Maximize the use of other community resources, particularly safety net dental providers. (CM, EIS) Increase collaboration with safety net dental providers. If unallocated funds become available, consider using for this service. Evaluate the Part A dental program to determine how need can be met and a meaningful impact be achieved.	X	X	X		

FUTURE DATA NEEDS:

In order to reduce the gaps in knowledge, and better define service gaps and existing barriers, more information about demographics, service utilization patterns and needs, etc. is needed on a range of topics, including:

NEW NEEDS

- ▶ Analysis of the continuum of care for 2010.
- ▶ Analysis of the continuum of care for 2011.
- ▶ Out of care population.
- ▶ Peers: is the need provider driven or client driven.

CONTINUED NEEDS

- ▶ Aging population: culturally tailored services available and needed, barriers to accessing HIV medical care and services, and assessment of service needs and gaps.
- ▶ Diagnosis lag incidence: monitor over time.
- ▶ Hispanics: culturally tailored services available and needed, barriers to accessing HIV testing and services, and assessment of service needs and gaps.
- ▶ HIV disease incidence: monitor over time by subpopulation, particularly Hispanics and persons 15-24 years old.
- ▶ Homeless persons: increase knowledge of number of people who are homeless and HIV-positive, testing resources for homeless, services available and needed, barriers to accessing HIV medical care and services.
- ▶ Housing: increase knowledge of housing costs (% of income spent on housing), types of housing available and needed, barriers to accessing safe and affordable housing, and assessment of service needs and gaps.
- ▶ Medical service utilization at non-Part A funded providers; potential sources of data include: private providers, support service providers, reported HIV lab data in eHARS, etc.
- ▶ Mental health: increase knowledge of number of people who have mental health disorders, level of services available and needed, barriers to accessing HIV medical care and services, and assessment of service needs and gaps.
- ▶ Persons 15-24 years old: culturally tailored services available and needed, barriers to accessing HIV medical care and services, and assessment of service needs and gaps.
- ▶ Persons living in rural/non-urban areas: increase knowledge of service needs and barriers to accessing HIV medical care and services.
- ▶ Persons not accessing any HIV services: demographic information, reasons for not utilizing services, and service needs.

- ▶ Substance abuse: increase knowledge of number of people who have substance abuse disorders, level of services available and needed, barriers to accessing HIV medical care and services, and assessment of service needs and gaps.
- ▶ Unmet need: improve access to resources for determining unmet need.

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Appendix

Below Poverty Level

2011 Estimated Percent of All People
(of All Ages) in Poverty

	# in Poverty	% in Poverty
Cannon	2,956	21.8%
Cheatham	5,518	14.3%
Davidson	118,715	19.4%
Dickson	7,682	15.5%
Hickman	4,718	20.7%
Macon	4,946	22.4%
Robertson	10,007	15.1%
Rutherford	31,803	12.1%
Smith	3,188	16.8%
Sumner	17,618	10.9%
Trousdale	1,499	19.5%
Williamson	11,606	6.2%
Wilson	13,604	11.8%
TGA	233,860	14.5%
Tennessee	1,148,161	18.4%

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates, 2011

The U.S. Census Bureau measures poverty according to poverty thresholds, as opposed to the poverty guidelines used by the U.S. Department of Health and Human Services. The poverty thresholds use a set of money income thresholds that differ by size of the family and age of its members. The thresholds are based on money incomes before taxes and do not include capital gains or non-cash benefits. The poverty threshold for a family of one in 2011 was \$11,484. Therefore, if a one-person family's income was below this \$11,484 threshold, he was considered to be living in poverty. (U.S. Census Bureau, Social, Economic, and Housing Statistics Division: Poverty, 2012)

Uninsured

2010 Estimated Percent of All People
Under Age 65 who are Uninsured

	# Uninsured	% in Uninsured
Cannon	2,038	17.8%
Cheatham	5,523	16.0%
Davidson	106,801	19.8%
Dickson	6,621	15.5%
Hickman	3,405	17.2%
Macon	3,883	20.5%
Robertson	9,792	16.9%
Rutherford	36,554	15.5%
Smith	2,762	16.8%
Sumner	21,472	15.4%
Trousdale	1,180	17.5%
Williamson	13,859	8.5%
Wilson	12,556	12.7%
TGA	226,446	16.3%
Tennessee	888,747	16.6%

Source: U.S. Census Bureau, Small Area Health Insurance Estimates, 2010

The American Community Survey (ACS) insurance question asks "Is this person currently covered by specifically stated health insurance or health coverage plans?"

HIV DISEASE INCIDENCE RATE TABLES

HIV Disease Incidence Rate by Age Group, 2010-2012

	2010	2011	2012
Under 5	1.7	1.8	0.9
5-14	0.9	0.5	0.9
15-24	31.1	25.5	19.6
25-34	31.6	27.5	25.0
35-44	30.4	24.5	14.9
45-54	22.4	17.0	15.7
55-64	8.3	8.5	7.9
65 and over	4.6	0.6	1.7

HIV Disease Incidence Rate by Race, 2010-2012

	2010	2011	2012
Non-Hispanic Black	61.7	45.6	37.5
Non-Hispanic White	8.9	9.1	7.5
Hispanic	26.9	10.0	10.0

HIV Disease Incidence Rate by Gender, 2010-2012

	2010	2011	2012
Female	7.1	5.0	3.3
Male	29.7	24.9	21.3

HIV Disease Incidence Rate by Race and Gender, 2010-2012

	2010	2011	2012
Non-Hispanic Black Female	29.5	16.1	8.4
Non-Hispanic Black Male	98.1	79.0	70.3
Non-Hispanic White Female	1.8	2.8	2.1
Non-Hispanic White Male	16.2	15.8	13.2
Hispanic Female	11.6	2.0	4.0
Hispanic Male	39.1	16.9	15.2

AIDS INCIDENCE RATE TABLES

AIDS Incidence Rate by Age Group, 2010-2012

	2010	2011	2012
Under 5	0.0	0.0	0.0
5-14	0.0	0.0	0.0
15-24	5.3	2.3	1.8
25-34	12.9	8.3	8.7
35-44	15.2	18.8	8.3
45-54	21.1	11.9	10.6
55-64	7.2	7.4	3.7
65 and over	2.9	0.6	1.1

AIDS Incidence Rate by Race, 2010-2012

	2010	2011	2012
Non-Hispanic Black	31.0	19.6	15.1
Non-Hispanic White	5.0	4.7	2.6
Hispanic	5.2	4.6	7.3

AIDS Incidence Rate by Gender, 2010-2012

	2010	2011	2012
Female	3.9	3.4	1.8
Male	14.4	10.5	8.0

AIDS Incidence Rate by Race and Gender, 2010-2012

	2010	2011	2012
Non-Hispanic Black Female	16.7	12.3	6.1
Non-Hispanic Black Male	47.4	27.8	25.2
Non-Hispanic White Female	1.1	1.6	0.8
Non-Hispanic White Male	9.0	7.9	4.5
Hispanic Female	4.6	2.0	2.0
Hispanic Male	5.6	6.8	11.8

HIV DISEASE PREVALENCE RATE TABLES

HIV Disease Prevalence Rate by Age Group, 2010-2012

	2010	2011	2012
Under 5	7.8	7.3	5.5
5-14	6.1	7.8	9.6
15-24	94.2	93.4	98.4
25-34	305.4	321.3	332.1
35-44	701.6	681.8	645.5
45-54	848.3	906.9	937.5
55-64	398.1	439.0	506.7
65 and over	92.0	108.6	136.9

HIV Disease Prevalence Rate by Race, 2010-2012

	2010	2011	2012
Non-Hispanic Black	994.9	1,054.5	1,094.8
Non-Hispanic White	222.5	233.5	241.3
Hispanic	260.4	238.9	250.7

HIV Disease Prevalence Rate by Gender, 2010-2012

	2010	2011	2012
Female	145.7	149.0	152.3
Male	543.9	567.2	589.9

HIV Disease Prevalence Rate by Race and Gender, 2010-2012

	2010	2011	2012
Non-Hispanic Black Female	568.9	592.7	602.0
Non-Hispanic Black Male	1,479.1	1,576.5	1,652.0
Non-Hispanic White Female	60.4	63.5	65.5
Non-Hispanic White Male	391.4	411.7	425.4
Hispanic Female	120.7	104.9	108.9
Hispanic Male	372.5	353.1	371.7

AIDS PREVALENCE RATE TABLES

AIDS Prevalence Rate by Age Group, 2010-2012

	2010	2011	2012
Under 5	0.0	0.0	0.0
5-14	1.4	1.4	1.4
15-24	24.4	18.7	15.0
25-34	101.4	101.5	102.8
35-44	347.5	337.2	314.9
45-54	509.6	538.6	545.4
55-64	252.6	276.4	315.1
65 and over	54.9	68.4	86.5

AIDS Prevalence Rate by Race, 2010-2012

	2010	2011	2012
Non-Hispanic Black	506.9	531.3	545.2
Non-Hispanic White	119.2	124.6	126.4
Hispanic	134.3	122.2	129.5

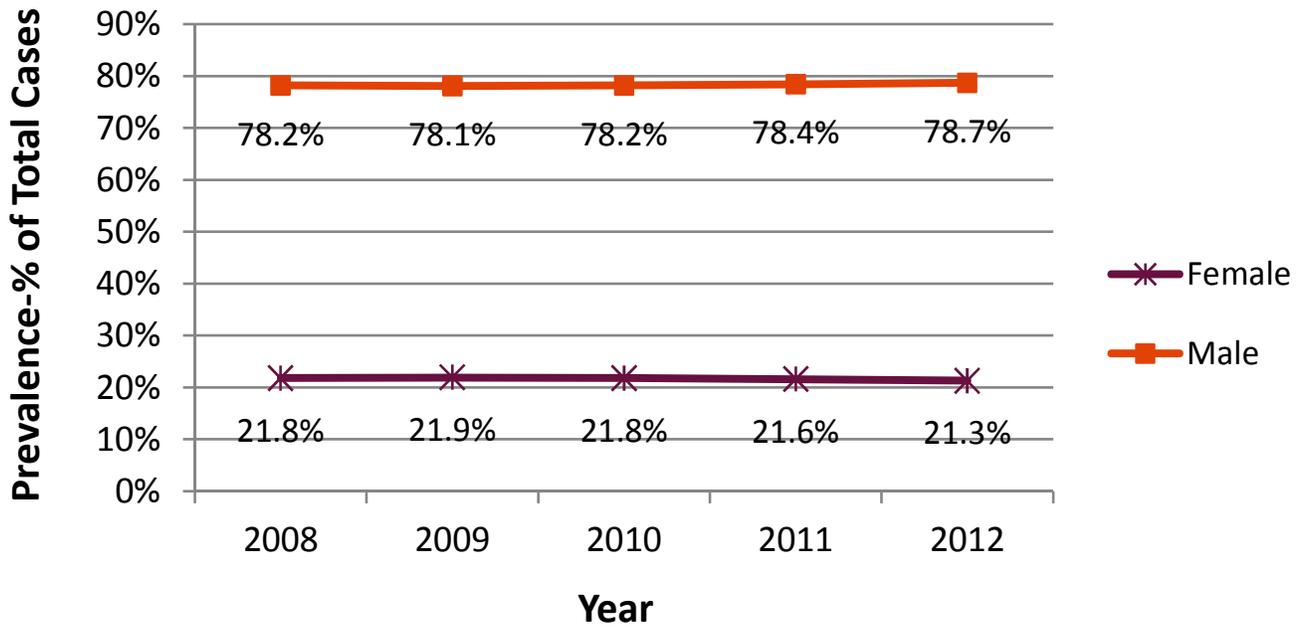
AIDS Prevalence Rate by Gender, 2010-2012

	2010	2011	2012
Female	71.6	73.5	74.7
Male	289.6	298.7	305.7

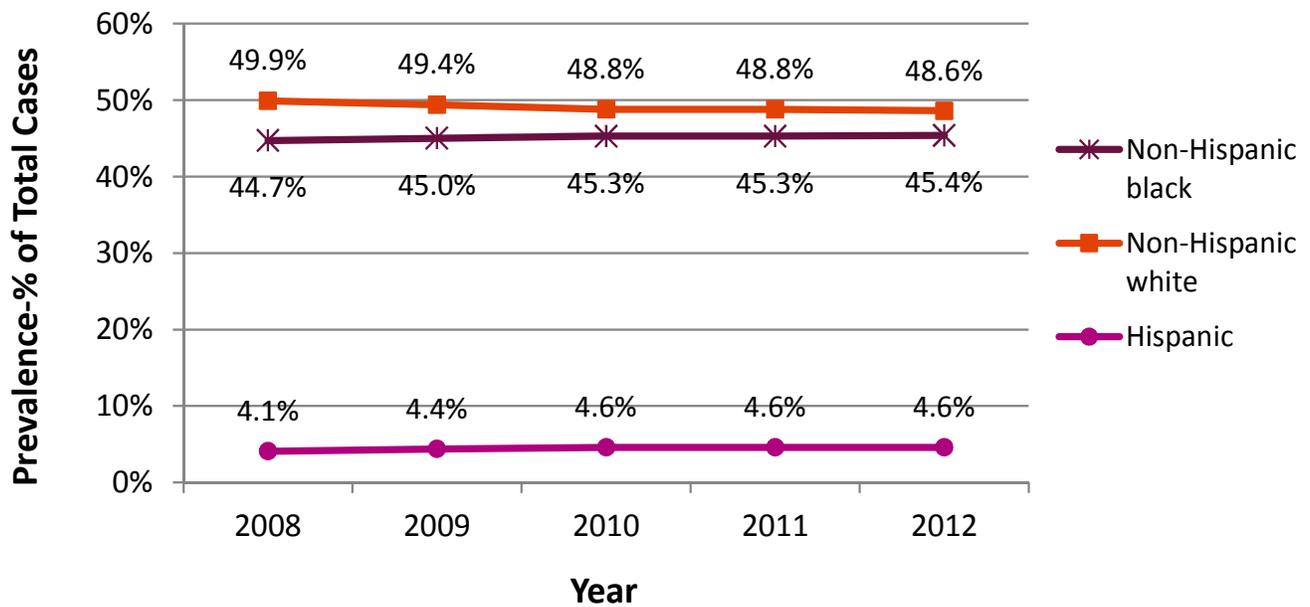
AIDS Prevalence Rate by Race and Gender, 2010-2012

	2010	2011	2012
Non-Hispanic Black Female	278.8	291.8	296.4
Non-Hispanic Black Male	766.2	802.1	826.4
Non-Hispanic White Female	30.1	31.8	32.1
Non-Hispanic White Male	212.1	222.0	225.2
Hispanic Female	60.4	53.5	55.4
Hispanic Male	193.7	180.8	192.6

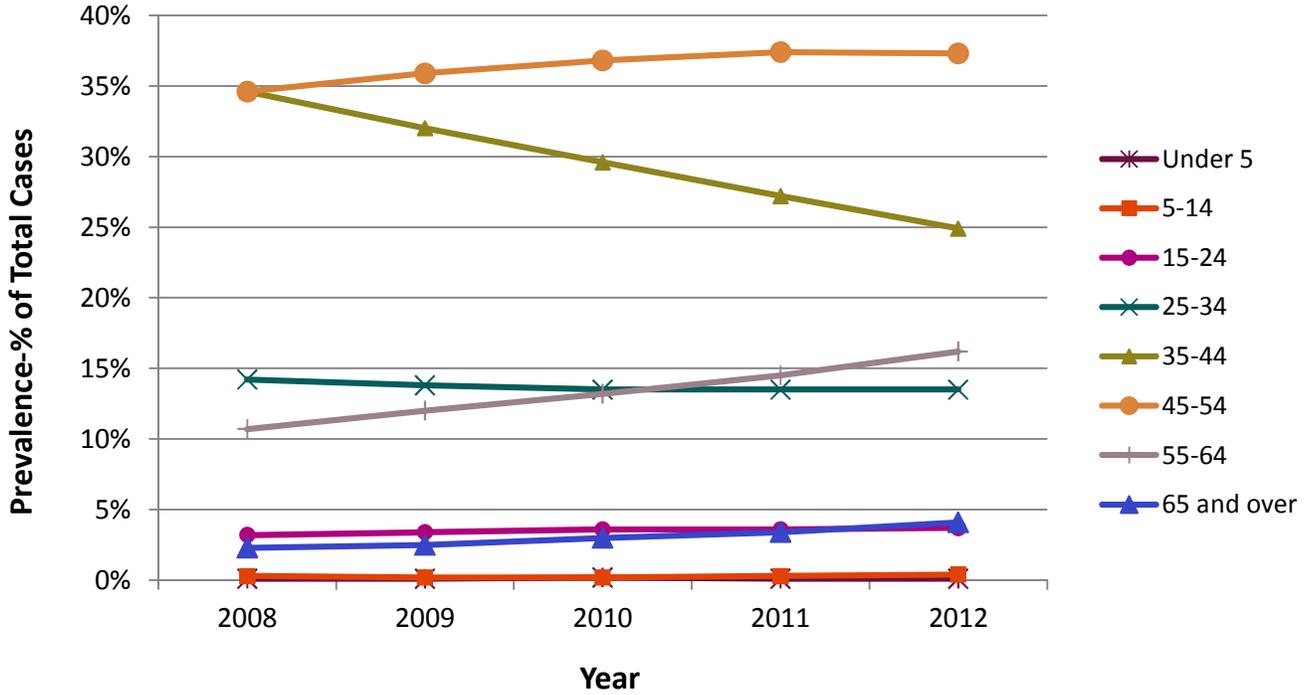
HIV Disease Prevalence by Gender, 2008-2012



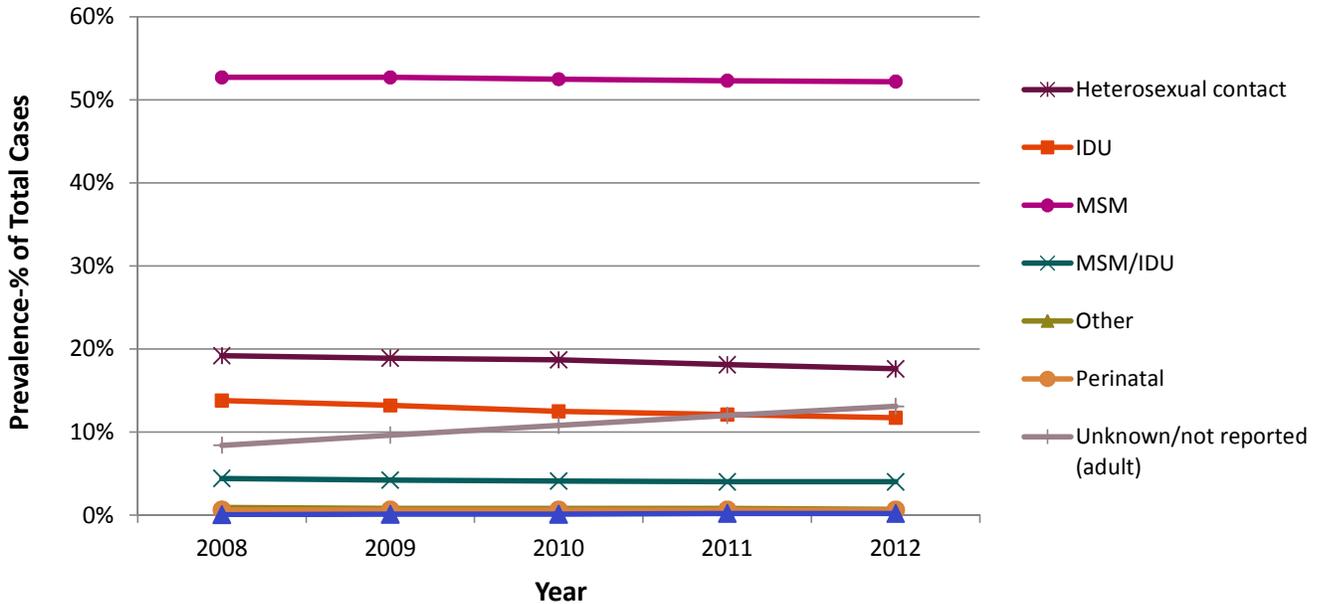
HIV Disease Prevalence by RaceEthnicity, 2008-2012



HIV Disease Prevalence by Age Group, 2008-2012



HIV Disease Prevalence by Transmission Category, 2008-2012



Rates of Disparities, 2012: Incidence

	Non-Hispanic White	Non-Hispanic Black
Incidence Cases (% of Total Cases) of HIV Disease	1 person icon	5 person icons
Incidence Cases of HIV Disease-Males	1 person icon	5 person icons
Incidence Cases of HIV Disease-Females	1 person icon	4 person icons
Incidence Cases of AIDS	1 person icon	6 person icons
Incidence Cases of AIDS-Males	1 person icon	6 person icons
Incidence Cases of AIDS-Females	1 person icon	8 person icons
Incidence Cases of Late Diagnosis of HIV and AIDS (2011)	1 person icon	2 person icons

Note: Rates were rounded to the nearest whole number for illustration purposes.

Rates of Disparities, 2012 Prevalence

	Non-Hispanic White	Non-Hispanic Black
Prevalence Cases (% of Total Cases) of HIV Disease	1 person icon	5 person icons
Prevalence Cases of HIV Disease-Males	1 person icon	4 person icons
Prevalence Cases of HIV Disease Females	1 person icon	9 person icons
Prevalence Cases of AIDS	1 person icon	4 person icons
Prevalence Cases of AIDS-Males	1 person icon	4 person icons
Prevalence Cases of AIDS-Females	1 person icon	9 person icons
Prevalence Cases of Late Diagnosis of HIV and AIDS (2011)	1 person icon	4 person icons

Note: Rates were rounded to the nearest whole number for illustration purposes.

The *Rates of Disparities, 2012* tables depict the differences in rates of occurrence of HIV disease and AIDS between non-Hispanic whites and non-Hispanic blacks. Using rates allows groups of different sizes to be compared. The rate of HIV disease and AIDS for a group is determined by taking the number of people in a group affected by the condition and dividing it by the number of persons in that group who are at risk of experiencing that condition. Rates therefore, measure the occurrence within the population relative to the population size.

Looking at these tables, if there was no disparity between non-Hispanic whites and non-Hispanic blacks the ratio would be 1:1. However, in each subcategory non-Hispanic blacks are affected at a higher rate than are non-Hispanic whites, ranging from two to nine times the rate of non-Hispanic whites.

Demographics: HIV Disease Prevalence Cases by Davidson County and Non-Davidson County, 2012

Demographic	Davidson County		Other TGA Counties		Total	
	N	%	N	%	N	%
Cases						
HIV and AIDS cases	4,587	77.5%	1,334	22.5%	5,921	100.0%
Gender						
Female	990	21.6%	269	20.2%	1,259	21.3%
Male	3,597	78.4%	1,065	79.8%	4,662	78.7%
Race/Ethnicity						
Non-Hispanic Black	2,310	50.4%	377	28.3%	2,687	45.4%
Non-Hispanic White	2,011	43.8%	869	65.1%	2,880	48.6%
Hispanic	212	4.6%	63	4.7%	275	4.6%
Non-Hispanic Asian/Native Hawaiian/ Pacific Islander	22	0.5%	19	1.4%	41	0.7%
Non-Hispanic American Indian/Alaska Native	10	0.2%	2	0.1%	12	0.2%
Non-Hispanic Multiple Races	22	0.5%	4	0.3%	26	0.4%
Current Age						
Under 5	3	0.1%	3	0.2%	6	0.1%
5-14	16	0.4%	5	0.4%	21	0.4%
15-24	167	3.6%	49	3.7%	216	3.7%
25-34	617	13.5%	181	13.6%	798	13.5%
35-44	1,143	24.9%	331	24.8%	1,474	24.9%
45-54	1,688	36.8%	519	38.9%	2,207	37.3%
55-64	773	16.9%	184	13.8%	957	16.2%
65+	180	3.9%	62	4.6%	242	4.1%
Transmission Category						
Heterosexual contact	843	18.4%	200	15.0%	1,043	17.6%
IDU	574	12.5%	116	8.7%	690	11.7%
MSM	2,408	52.5%	680	51.0%	3,088	52.2%
MSM & IDU	172	3.8%	63	4.7%	235	4.0%
Perinatal	24	0.5%	11	0.8%	35	0.6%
Unknown/No risk	540	11.8%	248	18.6%	788	13.3%
Other	26	0.6%	16	1.2%	42	0.7%
Deaths						
2012 Deaths*	14	66.7%	7	33.3%	21	100.0%

*Due to delays in reporting of deaths, the number of deaths occurring in 2012 may not have been complete at the time of analysis.

Demographics: HIV Disease Prevalence Cases by Region, 2012

Demographic	Davidson County		Rutherford, Williamson Counties		Robertson, Sumner Counties		Cheatham, Dickson, Hickman Counties		Cannon, Macon, Smith, Trousdale, Wilson Counties	
	N	%	N	%	N	%	N	%	N	%
Cases										
HIV and AIDS cases	4,587	77.5%	559	9.4%	294	5.0%	256	4.3%	225	3.8%
Gender										
Female	990	21.6%	106	19.0%	65	22.1%	53	20.7%	45	20.0%
Male	3,597	78.4%	453	81.0%	229	77.9%	203	79.3%	180	80.0%
Race/Ethnicity										
Non-Hispanic Black	2,310	50.4%	190	34.0%	77	26.2%	77	30.1%	33	14.7%
Non-Hispanic White	2,011	43.8%	327	58.5%	198	67.3%	169	66.0%	175	77.8%
Hispanic	212	4.6%	29	5.2%	15	5.1%	8	3.1%	11	4.9%
Non-Hispanic Asian/ Native Hawaiian/Pacific Islander	22	0.5%	12	2.1%	2	0.7%	1	0.4%	4	1.8%
Non-Hispanic American Indian/Alaska Native	10	0.2%	0	0.0%	1	0.3%	1	0.4%	0	0.0%
Non-Hispanic Multiple Races	22	0.5%	1	0.2%	1	0.3%	0	0.0%	2	0.9%
Current Age										
Under 5	3	0.1%	3	0.5%	0	0.0%	0	0.0%	0	0.0%
5-14	16	0.4%	3	0.5%	1	0.3%	1	0.4%	0	0.0%
15-24	167	3.6%	21	3.8%	13	4.4%	7	2.7%	8	3.6%
25-34	617	13.5%	92	16.5%	36	12.2%	30	11.7%	23	10.2%
35-44	1,143	24.9%	145	25.9%	78	26.5%	57	22.3%	51	22.7%
45-54	1,688	36.8%	197	35.2%	117	39.8%	106	41.4%	99	44.0%
55-64	773	16.9%	76	13.6%	40	13.6%	40	15.6%	28	12.4%
65+	180	3.9%	22	3.9%	9	3.1%	15	5.9%	16	7.1%
Transmission Category										
Heterosexual contact	843	18.4%	75	13.4%	47	16.0%	41	16.0%	37	16.4%
IDU	574	12.5%	39	7.0%	24	8.2%	29	11.3%	24	10.7%
MSM	2,408	52.5%	299	53.5%	139	47.3%	121	47.3%	121	53.8%
MSM & IDU	172	3.8%	23	4.1%	16	5.4%	15	5.9%	9	4.0%
Perinatal	24	0.5%	6	1.1%	2	0.7%	2	0.8%	1	0.4%
Unknown/No risk	540	11.8%	109	19.5%	63	21.4%	46	18.0%	30	13.3%
Other	26	0.6%	8	1.4%	3	1.0%	2	0.8%	3	1.3%
Deaths										
2011 Deaths	10	50.0%	4	20.0%	3	15.0%	1	5.0%	2	10.0%

