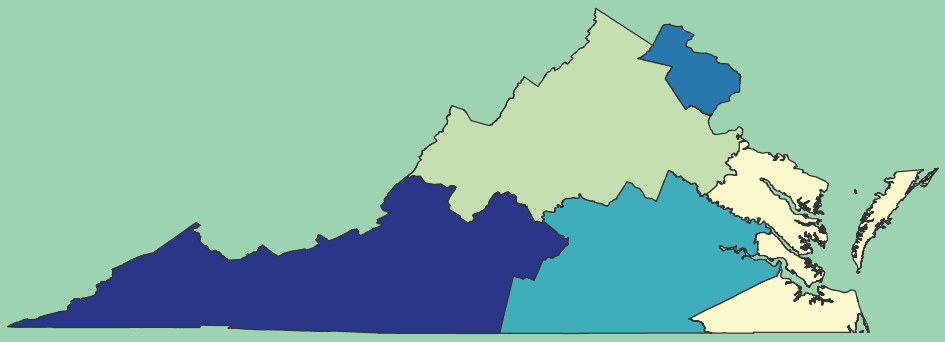

VIRGINIA HIV EPIDEMIOLOGIC PROFILE

2016

Acknowledgments

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VDH VIRGINIA DEPARTMENT OF HEALTH

Promoting & Protecting the Health of All Virginians
www.vdh.virginia.gov

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Technical Notes

Reporting requirements in Virginia

HIV and AIDS are reportable diseases in Virginia. Health care providers and facilities, laboratories and local health departments are required by law to report these conditions to the Virginia Department of Health. State and federal funding for surveillance, education, prevention, and care of infected persons is based on case numbers, which are dependent upon complete, accurate and timely reporting.

In addition, health care providers and facilities, laboratories, and local health departments are required by law to report ongoing CD4 and viral load lab tests of HIV-positive persons to the Virginia Department of Health. In October 2016, Virginia legislative regulations were passed that now require labs to report all HIV nucleotide sequences to VDH. HIV nucleotide sequences are used to identify antiretroviral drug resistance, evaluate genetic mutations associated with antiretroviral drug resistance, and monitor drug resistant strains of HIV in Virginia.

Counting and geographic assignment of cases

All states and territories count cases in the same manner for planning and federal funding purposes. For a new diagnosis, a person gets counted as an HIV case in the city/county in which he/she lives at the time of his/her initial HIV diagnosis. Once that person progresses to AIDS, he/she will be considered an AIDS case in the city/county of residence at the time of AIDS diagnosis. States and territories continually work with each other to make sure that persons are only counted in one state, so the case count for any individual city/county in Virginia could decline if surveillance information from another state/territory indicates a person had an earlier diagnosis in that state/territory.

For epidemiologic and community planning purposes, it is often helpful to evaluate all cases of HIV and AIDS as being part of one combined group: p persons living with HIV disease (PLWH). For most reporting, the assignment of newly diagnosed (or incident) HIV cases (including cases where HIV and AIDS are diagnosed at the same time (concurrent)) to a specific geographic area is based on city/county of residence of the person at the time of initial HIV diagnosis. The assignment of prevalent cases (or PLWH) to a specific geographic area is based on the most recent reported city/county of residence of the person, whether HIV diagnosis, AIDS diagnosis or a subsequent report received that provides more current residential address information.

HIV disease and AIDS surveillance data

HIV disease case reports represent persons who have a confirmed diagnosis with human immunodeficiency virus (HIV). This category represents all new diagnoses with HIV infection regardless of the stage of the disease. Cases are counted by the date of diagnosis or by the date of report for the initial diagnosis.

AIDS (acquired immunodeficiency syndrome) case reports represent only persons with HIV infection who have progressed to this later, more life threatening, stage of disease. AIDS cases are counted by the date of AIDS diagnosis or the date of AIDS report. Once a person meets the AIDS case definition, this person is always included as an AIDS case, even if his/her health improves. Most AIDS case reports represent persons who were diagnosed with HIV infection in earlier years. However, persons may be diagnosed with HIV infection and AIDS at the same time. Therefore, HIV disease reports and AIDS case reports should be considered separately during data reviews, evaluations, etc. The two categories should never be combined to estimate an infected population, since the category of HIV disease also includes AIDS cases initially diagnosed with an AIDS-defining condition.

Technical Notes

Year of report versus year of diagnosis

HIV disease is unlike most communicable diseases in that it is chronic in nature. Failure of providers to initially report cases and changes in city/county of residence after initial diagnosis can complicate case counting. Therefore, enhanced surveillance activities may artificially fluctuate the number of case reports counted by date entered into the HIV surveillance (eHARS) database (referred to as date of report). Counting cases by the date of initial diagnosis improves the analysis of the epidemic. Tabulating case totals by date of diagnosis inherently delays the reporting of disease information. Tables by date of diagnosis typically lag by one year.

HIV/AIDS transmission categories

A hierarchy of transmission categories developed by the Centers for Disease Control and Prevention (CDC) is used for surveillance purposes. Persons with more than one reported transmission risk are classified in the category listed first in the hierarchy, except for men who have sex with men (MSM) who have a history of injection drug use (IDU) which is considered a separate category. In addition, "undetermined" risk is where a person has an incomplete transmission history. Over time, a case with an undetermined risk category may be reassigned to another category if additional information is received.

MSM (Men who have sex with men): Males who have a history of sexual contact with other men or with both men and women.

IDU (Injection drug use): Persons who have a history of injecting drugs.

MSM & IDU: MSM who also have a history of injecting drugs.

Heterosexual contact: Males and females whose sexual partners are known to be HIV-infected or at high risk for HIV. The partners meet one of the following criteria: a history of sexual contact with bisexual males (for females), IDU, hemophiliacs, HIV+ transfusion/transplant recipients, or other HIV+ persons of unknown risk.

Blood recipient: HIV transmission via transfusing blood or blood products or transplanting tissue or organs

Perinatal exposure (pediatric): HIV transmission from mother to child during birth or through breastfeeding

Undetermined: Persons with no identified risk (NIR) or no reported risk (NRR).

Glossary of terms

AIDS: Diagnosis with any one of 26 different opportunistic illnesses which are indicative of a severe immune deficiency or a laboratory test demonstrating severe immune deficiency (i.e. CD4 count <200 or CD4 percent <14%).

Cumulative HIV disease diagnoses: The number of cases of a disease reported or diagnosed in a specific time, regardless of current vital status. Cumulative cases include those who have already died. AIDS and HIV disease totals are cumulative since 1982 and July 1989, respectively.

HIV and AIDS concurrently: Refers to anyone who is diagnosed with AIDS within 30 days of their initial HIV diagnosis.

Technical Notes

HIV diagnosis date: The earliest date associated with a verifiable report of HIV infection. Verifiable reports include positive antibody tests, detectable viral loads, positive antigens or cultures, or physician diagnosis, but not self-reported diagnosis dates, positive lab results from anonymous testing, or diagnosis dates from other states that remain unverified.

Late HIV diagnosis: Refers to anyone who is diagnosed with AIDS within 12 months of their initial HIV diagnosis.

New diagnoses: Number of cases newly diagnosed over a given period of time, usually a year. In HIV surveillance, new diagnoses do not necessarily represent new infections as newly diagnosed cases may have been infected for many years. Thus, only some newly diagnosed cases are also incident cases.

New HIV disease diagnoses: Refers to anyone who is diagnosed with HIV in a given time period, regardless of disease status (whether HIV only or HIV and AIDS concurrently).

Pediatric cases: Children <13 years at the time of diagnosis.

Case: A reported instance of HIV infection or AIDS in which the individual who received a confidential HIV or AIDS diagnosis resided in Virginia at the time of diagnosis. HIV cases do not include persons with a current HIV diagnosis who were originally reported with HIV in another United States (US) state or territory. AIDS cases include all persons who resided in Virginia at time of AIDS diagnosis, regardless of where an earlier HIV diagnosis might have occurred.

eHARS: The enhanced HIV/AIDS Reporting System contains names of HIV-positive persons reported in Virginia. The purpose of this surveillance system is to help Virginia monitor and respond to changes in the epidemic. This is a 2007 update of the previous HARS system. The data contains names, demographic information, risk behaviors, opportunistic infections and laboratory data related to HIV disease status.

Disease rate: A standardized proportion often used to represent risk for disease within a given population. A rate is usually calculated by dividing the number of cases (disease frequency) by the number of persons at risk for the disease (population estimate). Usually the general population, rather than the population potentially exposed to HIV infection by various high risk behaviors is used as the denominator since the latter is unknown. In this report, all rates are reported as cases per 100,000 Virginia residents.

Epidemiology: The study of the distribution, determinants and frequency of disease in humans.

GIS (Geographic Information Systems): The display and analysis of geographic data in map format.

Incidence: The number of new cases of a disease that occur in a population during a certain time period, usually a year.

Prevalence: The total number of persons living with a specific disease or condition at a given time. HIV prevalence data are generally presented as “persons living with HIV disease” or “PLWH.”

Public health surveillance: The ongoing systematic collection, analysis, interpretation, dissemination and evaluation of population-based information about persons with a condition or risk factor of public health concern.

Reporting delay: The time interval between the date a case is diagnosed and the date the case is reported to the health department. Reporting delays can result in recent data being incomplete.

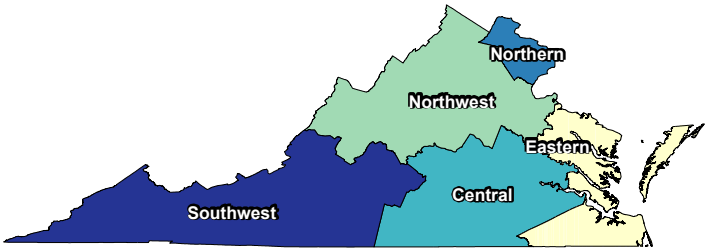
Abbreviations

ACA	Patient Protection and Affordable Care Act
ADAP	AIDS Drug Assistance Program
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral therapy
CBO	Community-based organization
CD4	CD4+ T white blood cells
CDC	Centers for Disease Control and Prevention
CHC	Community health centers
CMDB	Care Markers Database
CSB	Community services boards
CY	Calendar Year
DDP	Division of Disease Prevention
eHARS	Enhanced HIV/AIDS Reporting System
EMA	Eligible Metropolitan Area
HCC	HIV Care Continuum
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IDU	Injection drug use
LHD	Local health department
MH	Mental health
MI	Mental illness
MMP	Medical Monitoring Project
MMWR	Morbidity and Mortality Weekly Report
MRA	Medical record abstraction
MSA	Metropolitan Statistical Area
MSM	Male-to-male sexual contact/ Men who have sex with men
MSM/IDU	Male-to-male sexual contact/ injection drug use
NH	Non-Hispanic
NHBS	National HIV Behavioral Surveillance
PHQ	Patient Health Questionnaire
PLWH	Persons Living with HIV
PrEP	Pre-exposure prophylaxis
PWID	Persons/People who inject drugs
RW	Ryan White
SAMHSA	Substance Abuse and Mental Health Services Administration
STDs	Sexually transmitted diseases
STIs	Sexually transmitted infections
TB	Tuberculosis
TGA	Transitional Grant Area
US	United States
VA	Virginia
VDH	Virginia Department of Health
VEDSS	Virginia Electronic Disease Surveillance System
VL	Viral load

Virginia Socio-Demographic Characteristics

Virginia is a medium size southeastern state, consisting of 95 counties and 38 independent cities. The Commonwealth is divided into five health regions: Central, Eastern, Northern, Northwest, and Southwest, and 35 health districts (Figure 1).

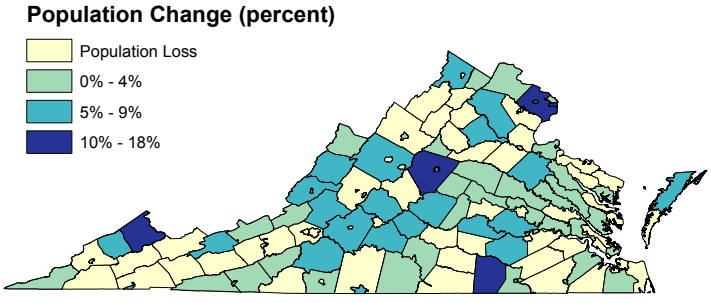
Figure 1: Virginia Health Regions



POPULATION GROWTH TRENDS

All population estimates in this report are as of 2014, the most recent and complete year of United States (US) Census Bureau population estimates. According to the US Census Bureau, Virginia's population in 2014 was 8,185,131, accounting for 2.6% of the national total of 314,107,084.[1] Virginia's population increased by over 325,000 from 2010 to 2014, for a growth rate of 4%, higher than the national growth rate of 3%. Virginia's growth rate was also higher than neighboring jurisdictions of West Virginia, and Maryland, but was less than the District of Columbia (10%).[1] More than 80% of the population growth in Virginia occurred in Northern Virginia, the Richmond area, and Hampton Roads (Figure 2). Northern Virginia's population alone grew by nearly 190,000, which represents more than half of Virginia's total increase. Virginia's population increase was due to both natural population growth and net migration.[1]

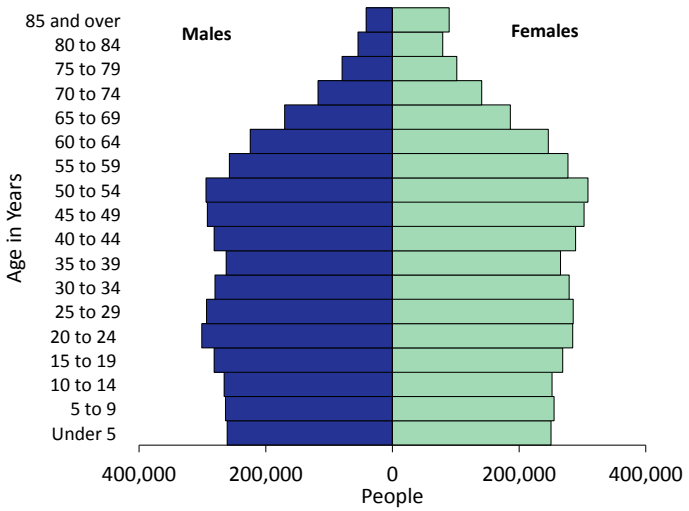
Figure 2: Virginia Population Changes by County, 2010-2014[1]



AGE

Virginia's population is similar to the national picture for age distribution.[1] According to the US Census Bureau, the median age in 2014 (the age at which half the population is older than and half is younger) was 37.6 years. This represents a nearly half-year increase from the estimated median age of 37.2 years in 2010, which indicates that Virginia's population is aging overall. During the same year, 23% of the population was under the age of 18, and 13% was 65 years and older. The age distribution varies regionally; the Southwest region has the highest percent (18%) of the population over the age of 65. In contrast, 27% of the population residing in the Northern region is under 20 years old, followed by the Northwest region at 26%, and the Eastern and Central regions at 25%, respectively.[1]

Figure 3: Virginia Population by Age and Gender, 2014[1]



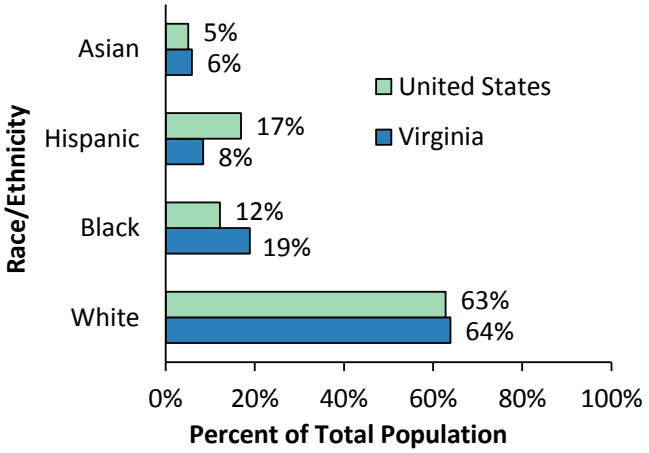
GENDER

Fifty-one percent of Virginians are female and 49% are male.[1] The younger age groups have relatively similar male to female ratios, however the proportion of males decrease with increasing age, as shown in Figure 3. In 2014, males represented 51% of all Virginians under 19 years old, while in the oldest age group (85 and over) they only made up 32% of the population. A majority of Virginia's seniors are women.[1]

RACE AND ETHNICITY

Compared to the overall US population in 2014, Virginia had similar proportions of persons who identified as White, non-Hispanic (NH) and Asian.[1] Further, Virginia had a higher percentage of Black, non-Hispanics and a lower percentage of Hispanics than the overall US population in 2014 (Figure 4). In 2014, a majority of Virginians (64%) were White, NH and approximately 19% were Black, NH. Nearly 6% of Virginia's population was Asian, up from an estimated 4% in 2006. Most notably, the Hispanic population in Virginia nearly doubled during the past decade. Over 8% of the population in Virginia identified as Hispanic/Latino in 2014.[1]

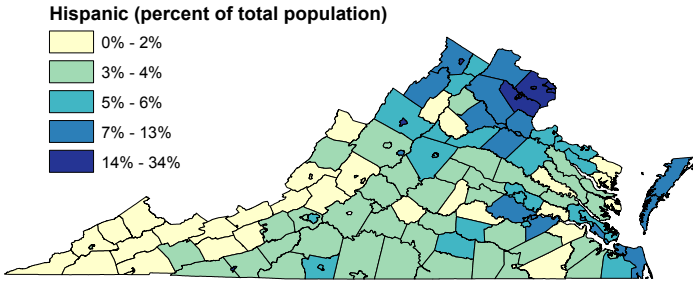
Figure 4: Total Population of the United States and Virginia by Race/Ethnicity, 2014[1]



Most of Virginia's Black, NH population is concentrated in the Eastern part of the state, while the Northwest and Southwest regions have a much lower proportion of Black, NH residents. Hispanics/Latinos were the second largest minority group in Virginia, with a population of over 687,000 in 2014.

The percentage of the Hispanic/Latino population varies widely by county, from a low of 0.1% in Cumberland County to a high of 34% in Manassas Park City (Figure 5). While Virginia's proportion of Hispanics/Latinos is well under the national average of 17%, it represents a sizeable population which is increasing and whose needs should be taken into account in the resource planning process.[1]

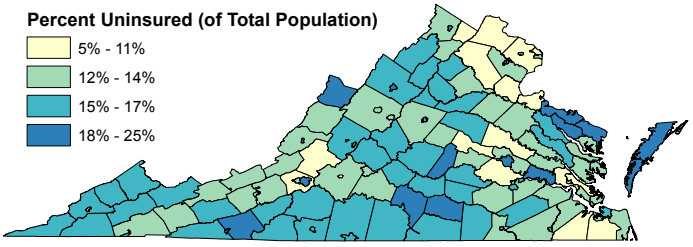
Figure 5: Hispanic Population in Virginia by Locality, 2014[1]



INSURANCE

Based on US Census Bureau estimates, the national estimate for uninsured people was 14% in 2014, representing a substantial decrease from nearly 17% in 2013.[2] Improved access to insurance, both nationally and in Virginia, is largely due to the implementation of the Patient Protection and Affordable Care Act's (ACA) mandate for personal health insurance in 2014.[2] Nationally, Hispanics were the group with the highest percent uninsured in 2014 at 36%, a decrease from 44% in 2013. From 2013 to 2014, there was an almost 3% decrease in the number of Blacks that were uninsured and a nearly 2% decrease among Asians. The percentage of uninsured White, NH's in Virginia (9%) did not significantly change from 2013 to 2014.[1]

Figure 6: Uninsured Population in Virginia by County, 2014[1]



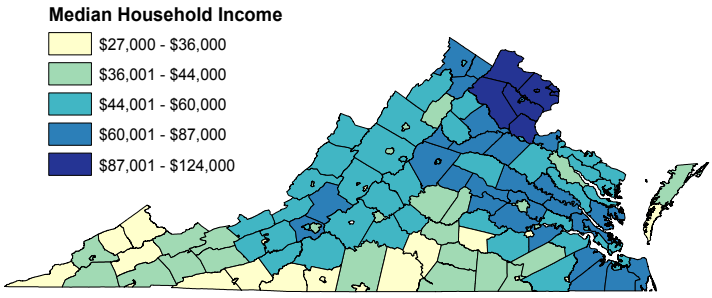
Virginia's uninsured population dropped from 14% in 2013 to 12% in 2014. Nationally, Virginia dropped from 20th in 2013 to 27th in 2014, as Virginia did not expand Medicaid with the ACA. Virginia had a lower percentage of uninsured individuals than North Carolina (15%), Tennessee (14%), but had a higher percentage than Maryland (9%).[2] The percentage of uninsured varies by region, with the highest percent in the Northwest region at almost 25% and the lowest in the Northern region at under 5% (Figure 6).[1]

Insurance status is influenced by several factors: income level, race and ethnicity, age, employment status and employer firm size.[2] People with income at or below 200% of the federal poverty level (2014: $24,142 for an individual) are more than twice as likely to be uninsured as people at higher income levels. This is true for racial and ethnic minority groups, who are less likely to be insured than White Virginians. Young adults, unemployed individuals, part-time workers, homemakers and employees of very small firms are also at greater risk of being uninsured than other groups.[2]

INCOME AND POVERTY

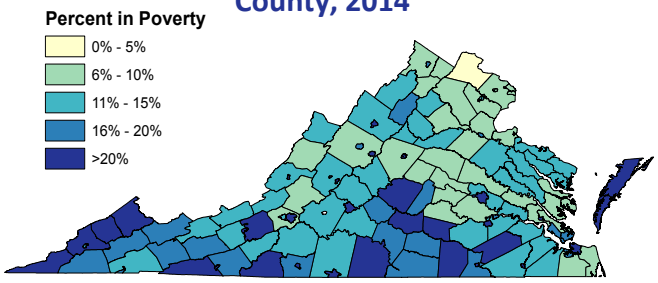
In 2014, the median household income in the US was $53,482, a 3% increase from 2010.[1] Real median income increased for White and Asian households between 2010 and 2014, while Black and Hispanic households did not have drastic changes. There continue to be significant differences in the median household income for minority Black and Hispanic/Latino households compared to White and Asian households. In 2014, the median household income in the US for Whites was 1.6 times higher than that of Blacks and 1.3 times that of Hispanic households. Income also varied by age, with the lowest median income estimated to be in 15-24 year olds, followed by people 65 and older. Southern states had the lowest estimated median household income of all US census regions.[1]

Figure 7: Median Household Income in Virginia by County, 2014[1]



In Virginia, the estimated median household income in 2014 was $64,792, higher than the national median of $53,482 during the same year. The counties with the highest income were in the Northern region and the lowest in the Southwest and Central regions (Figure 7). Statewide, nearly 12% of Virginians were living in poverty in 2014, lower than the national 16% estimate. However, estimates show large differences between counties in the Southwest and Central regions of Virginia versus counties in the Northern region. Thirty-three counties had 20% or more of their residents living below the poverty level in 2014 (Figure 8).[1] Since poverty is highly correlated with lower educational status and lack of access to healthcare, it is one of the main factors that affects rates of HIV and sexually transmitted diseases (STDs) in Virginia and nationwide.

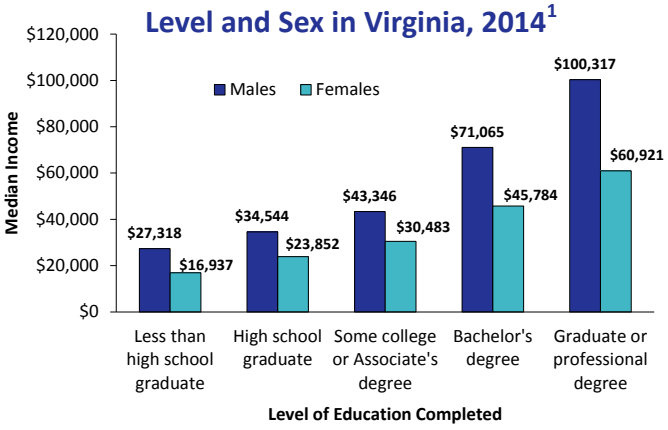
Figure 8: People Living in Poverty in Virginia by County, 2014[1]



EDUCATIONAL STATUS

In 2014, 89% of Virginians ages 25 and older had at least a high school education, comparable with the national estimate of 87%. A higher percent of Virginia residents (37%) had a Bachelor's degree than the estimated 30% nationwide in 2014. The highest level of education completed is tied closely with a person's income. Data from the US Census shows a wide gap in median income between groups of different education levels and sex in Virginia, with the lowest among females with less than a 9th grade education, at almost $17,000 and the highest among males with a graduate or professional degree at over $100,000.[1]

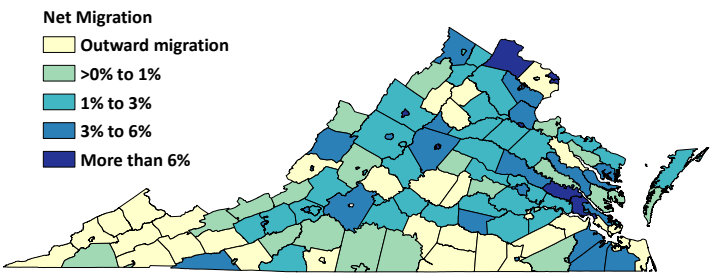
Figure 9: Median Income by Highest Education Level and Sex in Virginia, 2014[1]



GEOGRAPHIC MOBILITY

From 2010 to 2015, 42% of Virginia's population increase was due to net migration. In some areas, net migration surpassed the natural population increase. The map below shows the percent of the population change attributed to net migration by locality in Virginia, from 2010 to 2015.[5]

Figure 9: Population Net Migration, by County, 2010-2015[6 †]



In 2015, about half of the eight million Virginia residents were not born in Virginia. In other words, for every 10 Virginia residents there were five who were born in Virginia, four who were born in other states, and one who was foreign-born. Of those not US born, 42% were born in Asia and 36% in Latin America. Overall, people living in Virginia came from 150 countries around the globe. Countries contributing the most to Virginia's foreign-born population were El Salvador, Mexico, India, Korea and the Philippines. In 2015 alone, 7% of Virginians moved within the same county, about 5% moved to a different county within Virginia, and 3% moved into Virginia from out of state (0.8% came from a different country).[7]

Virginia's population is increasingly diverse as a result of migration. Population projections show that these trends are likely to continue in the future decade.

HEALTH PLANNING GEOGRAPHY

Virginia Department of Health (VDH) uses several common geographic boundaries when analyzing HIV disease or STD data. For health planning purposes, Virginia's counties and independent cities are organized in 35 health districts, which are then distributed into five health regions. The health districts may be comprised of just one county or city, or several localities, depending on the size of the population.

Virginia also uses census tracts as health planning units. Census tracts are small geographical subdivisions of counties and cities, which have between 2,500 to 8,000 inhabitants (an average of 4,000). Census tract boundaries get redesigned once every ten years, with each decennial US Census, in order to keep up with changes in local populations. Census tracts do not cross county boundaries as zip codes do. For that reason, and also for their relative permanence, they are preferred for geographical analyses to zip codes, which are subject to constant changes.

The US Census Bureau defines core-based statistical areas (CBSAs) as one or more adjacent counties or county equivalents that have at least one urban cluster of at least 10,000 population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties. The Census Bureau has defined two types of CBSAs: (1) a Metropolitan Statistical Area (MSA), which has an urban core population of 50,000 or more, or (2) a Micropolitan Statistical Area (µSA), which has an urban core population of 10,000 or more but less than 50,000. There are 11 MSAs and four µSAs defined in Virginia.

Finally, VDH uses well-defined geographical areas through which the Ryan White program provides funds throughout the country. Eligible metropolitan areas (EMAs) are those with a cumulative total of more than 2,000 reported AIDS cases over the most recent five-year period, and transitional grant areas (TGAs) are those with 1,000-1,999 reported AIDS cases over the most recent five-year period. For more details regarding the Ryan White funding schema please refer to the Ryan White HIV/AIDS program section of the HIV Epidemiology Profile.

VIRGINIA HEALTH REGIONS, HEALTH DISTRICTS AND LOCALITIES AND INDEPENDENT CITIES

Central

Health District	Locality
Chesterfield	Chesterfield
	Colonial Heights
	Powhatan
Crater	Dinwiddie
	Greensville
	Prince George
	Surry
	Sussex
	Emporia
	Hopewell
	Petersburg
Chickahominy	Charles City
	Goochland
	Hanover
	New Kent
Henrico	Henrico
Piedmont	Amelia
	Buckingham
	Charlotte
	Cumberland
	Lunenburg
	Nottoway
	Prince Edward
Richmond	Richmond City
Southside	Brunswick
	Halifax
	Mecklenburg

Eastern

Health District	Locality
Chesapeake	Chesapeake
Eastern Shore	Accomack
	Northampton
Hampton	Hampton
Norfolk	Norfolk
Peninsula	James City
	York
	Newport News
	Poquoson
	Williamsburg
Portsmouth	Portsmouth
Three Rivers	Essex
	Gloucester
	King & Queen
	King William
	Lancaster
	Mathews
	Middlesex
	Northumberland
	Richmond Co.
	Westmoreland
Virginia Beach	Virginia Beach
Western Tidewater	Isle of Wight
	Southampton
	Franklin City
	Suffolk

Southwest

Health District	Locality
Alleghany	Alleghany
	Botetourt
	Craig
	Roanoke Co.
	Covington
	Salem
Central Virginia	Amherst
	Appomattox
	Bedford
	Campbell
	Lynchburg
Cumberland Plateau	Buchanan
	Dickenson
	Russell
	Tazewell
Lenowisco	Lee
	Scott
	Wise
	Norton
Mount Rogers	Bland
	Carroll
	Grayson
	Smyth
	Washington
	Wythe
	Bristol
	Galax
New River	Floyd
	Giles
	Montgomery
	Pulaski
	Radford
Pittsylvania /Danville	Pittsylvania
	Danville
Roanoke	Roanoke City
West Piedmont	Franklin Co.
	Henry
	Patrick
	Martinsville

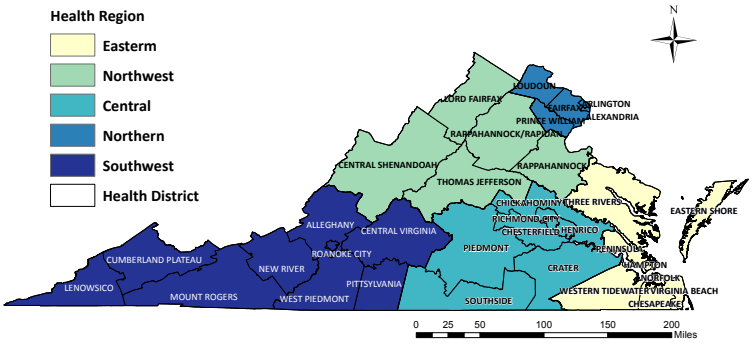
Northern

Health District	Locality
Alexandria	Alexandria
Arlington	Arlington Co.
Fairfax	Fairfax Co.
	Fairfax City
	Falls Church
Loudoun	Loudoun
Prince William	Prince William
	Manassas
	Manassas Park

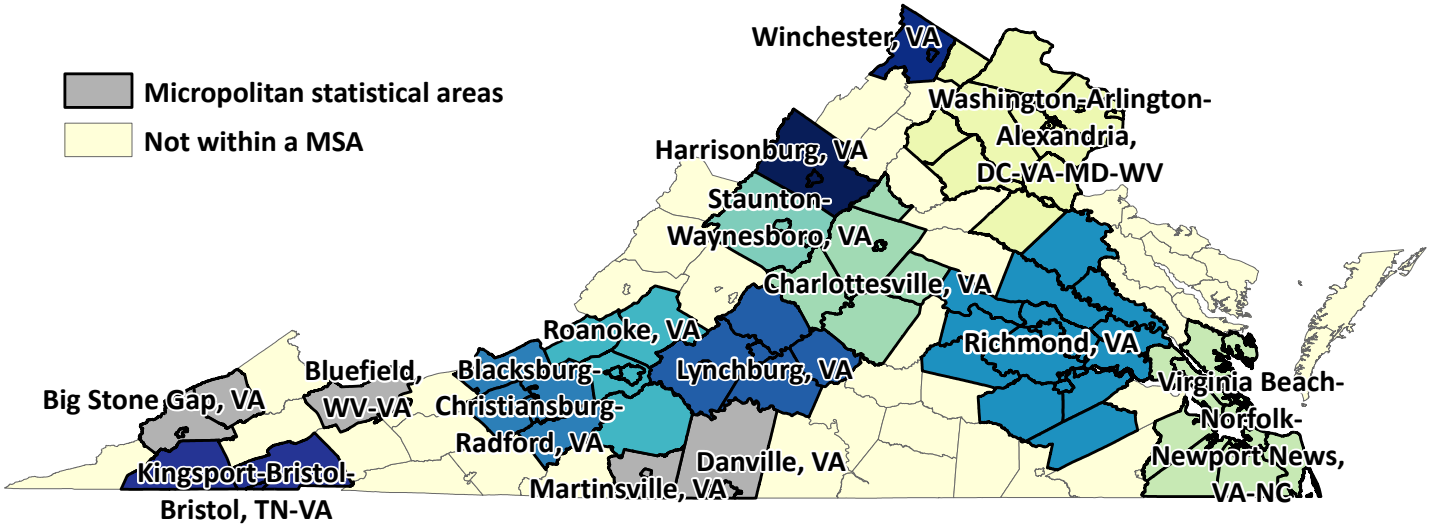
Northwest

Health District	Locality
Central Shenandoah	Augusta
	Bath
	Highland
	Rockbridge
	Rockingham
	Buena Vista
	Harrisonburg
	Lexington
	Staunton
	Waynesboro
Lord Fairfax	Clarke
	Frederick
	Page
	Shenandoah
	Warren
	Winchester
Rappahannock	Caroline
	King George
	Spotsylvania
	Stafford
	Fredericksburg
Rappahannock/ Rapidan	Culpeper
	Fauquier
	Madison
	Orange
	Rappahannock
Thomas Jefferson	Albemarle
	Fluvanna
	Greene
	Louisa
	Nelson
	Charlottesville

Virginia Health Districts and Regions



VIRGINIA METROPOLITAN STATISTICAL AREAS AS DEFINED BY THE US CENSUS BUREAU[8]



Norfolk Transitional Grant Area (TGA)

VA Portion of the DC Eligible Metropolitan Area

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† Population estimates are from April 1, 2010 to July 1, 2015

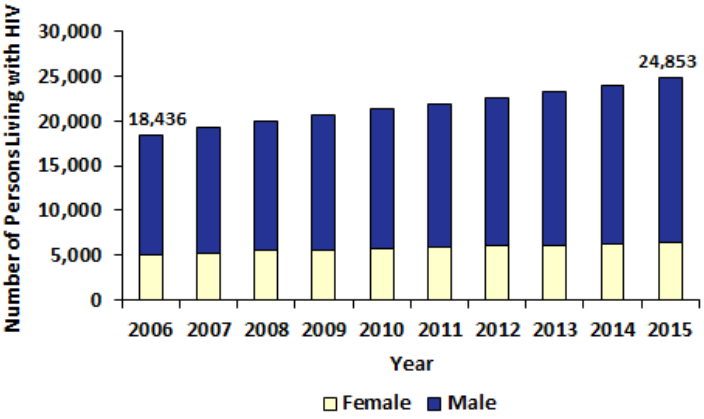
Persons Living with HIV Disease

As of December 31, 2015, there were 24,853 persons, or about one in 336 Virginia residents, who were living with HIV disease. A greater number of people are now living longer with HIV due to advances in medical treatment and care. From 2006 to 2015, the number of persons living with HIV disease (PLWH) in Virginia increased by about 35%. As of December 31, 2015, approximately 47% of the HIV-positive population had an AIDS-defining condition.

By Gender

By the end of 2015, there were 18,423 males and 6,430 females in Virginia who were living with HIV disease, with males representing 74% of the total HIV-positive population. Males were living with HIV disease at a rate of 450 per 100,000, and females at a rate of 152 per 100,000. Between the years of 2006 and 2015, males were almost three times more likely to be living with HIV disease than females.

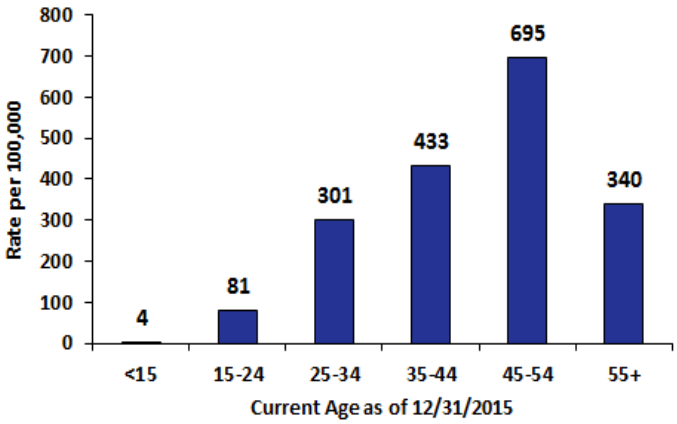
Figure 1: Persons Living with HIV Disease in Virginia by Gender, 2006-2015



By Current Age

As HIV medical treatment continues to improve, persons are living longer with HIV. By December 31, 2015, nearly 33% of persons living with HIV disease were between the ages of 45 to 54. Age distribution rates were highest among the 45-54 age group at 695 per 100,000, followed by the 35-44 age group at 433 per 100,000.

Figure 2: Age Distribution for Persons Living with HIV Disease in Virginia as of December 31, 2015

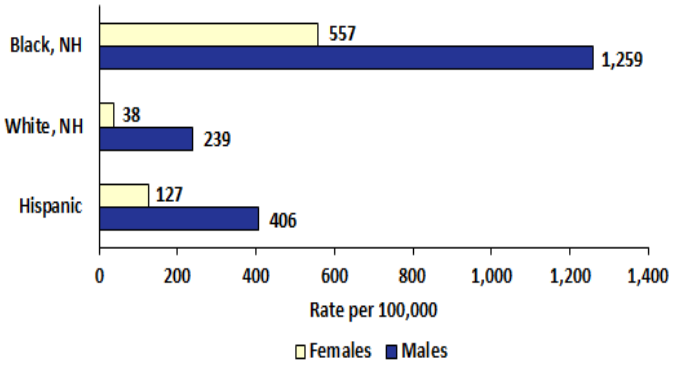


By Race/Ethnicity

Consistent with the epidemic, 59% of all persons living with HIV disease as of December 31, 2015 were Black, non-Hispanic, followed by White, non-Hispanic PLWH at 30%. Approximately 8% of living cases were Hispanic/Latino. Black, non-Hispanic persons were almost seven times more likely to be living with HIV disease at the end of 2015 than White, non-Hispanic persons. Hispanic/Latino persons were approximately two times more likely to be living with HIV disease as White, non-Hispanic persons.

As of 2015, 74% of all women and 54% of all men living with HIV were Black, non-Hispanic. Sixteen percent of all women and 34% of all men were White, non-Hispanic, and 7% of all women and 8% of all men were Hispanic/Latino. Black, non-Hispanic males had the highest rate of persons living with HIV disease, at 1,259 cases per 100,000 population. Black and Hispanic/Latino males were approximately five and two times more likely to be living with HIV disease than White males, respectively. Black females were almost 15 times more likely to be living with HIV than White females, and Hispanic/Latino females were approximately three times more likely than White females to be living with HIV.

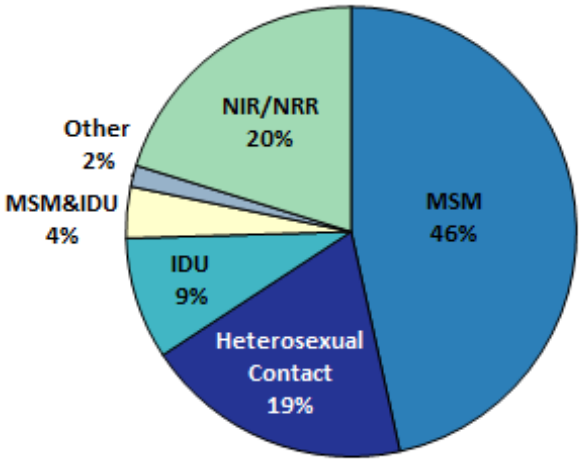
Figure 3: Persons Living with HIV Disease in Virginia by Race/Ethnicity and Gender as of December 31, 2015



By Transmission Risk

At the end of 2015, 47% of all living cases of HIV disease were attributed to male-to-male sexual contact (MSM). Heterosexual contact represented 19% of the living cases, and 9% of cases were attributed to injection drug use (IDU). Approximately 20% of PLWH had no reported risk (NRR) or no identified risk (NIR) for transmission. Other transmission risks (2%) included pediatric cases and blood recipients. Among women, heterosexual contact was the most common transmission risk (50%). Of all PLWH at the end of 2015, Black, non-Hispanic MSM were the largest transmission risk group living with HIV disease (22%), followed by White, non-Hispanic MSM (19%) and Black female heterosexuals (10%).

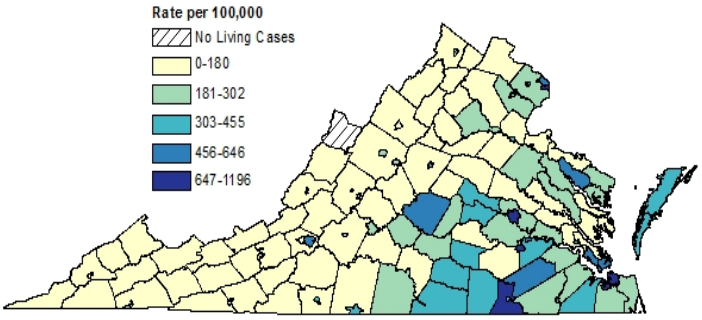
Figure 4: Persons Living with HIV Disease in Virginia by Transmission Risk as of December 31, 2015



By Region

The Commonwealth of Virginia is divided into five health regions: Central, Eastern, Northern, Northwest, and Southwest. The average rate of PLWH per region is 298 cases per 100,000. As of December 31, 2015, the rate of persons living with HIV disease was highest in the Central region with 420 cases per 100,000, followed by the Eastern region at 417 cases per 100,000 and the Northern region at 280 cases per 100,000. The Southwest and Northwest regions represented 155 and 150 cases per 100,000, respectively.

Figure 5: Persons Living with HIV Disease by Locality in Virginia as of December 31, 2015



As evidenced by the map above, the Central, Eastern, and Northern regions have higher rates of persons living with HIV disease with rates by locality as high as 1,196 cases per 100,000 population in those regions. Lower rates occurred primarily in the Northwest and Southwest regions of the state, where the lowest rate by locality was only 30 cases per 100,000 population.

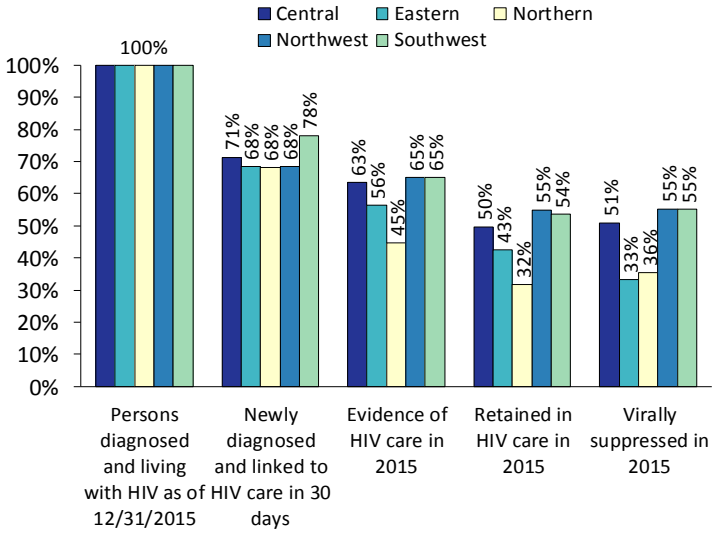
HIV CARE CONTINUUM

Figure 6: HIV Care Continuum Definitions

Care Marker	CD4 count or viral load lab test, HIV medical care visit, or ART prescription
Evidence of Care	One care marker within a 12 month time period
Linkage	Linked to HIV care within 30 days of diagnosis
Retention	Two care markers in a 12 month period at least 3 months apart
Viral Suppression	Last viral load in 12 month period that is < 200 copies/mL

The HIV Care Continuum (HCC) is a framework for assessing health outcomes among persons living in Virginia with diagnosed HIV infection. Figure 6 shows definitions for the HCC.

Figure 7: HIV Care Continuum by Health Region in Virginia, 2015



Central Region

As of December 31, 2015, 5,920 persons were living with HIV in the Central region (consists of Richmond City and areas bordering Richmond, including the cities of Petersburg and Emporia). Sixty-three percent of PLWH in the Central region had evidence of HIV care, 50% were retained in HIV care, and 51% were virally suppressed. Among the 245 persons newly diagnosed in the Central region, 71% were linked to HIV care within 30 days (Figure 7).

Eastern Region

As of December 31, 2015, 7,698 persons were living with HIV in the Eastern region (consists of the cities of Norfolk, Hampton, Newport News, Virginia Beach, Williamsburg, and surrounding areas). Fifty-six percent of PLWH in the Eastern region had evidence of HIV care, 43% were retained in HIV care, and 33% were virally suppressed. Among the 301 persons newly diagnosed in the Eastern region, 68% were linked to HIV care within 30 days.

Northern Region

As of December 31, 2015, 6,773 persons were living with HIV in the Northern region (consists of the cities of Alexandria, Fairfax, Falls Church, Manassas, Manassas Park, and the counties of Arlington, Fairfax, Loudoun, and Prince William). Forty-five percent of PLWH in the Northern region had evidence of HIV care, 32% were retained in HIV care, and 36% were virally suppressed. Among the 223 persons newly diagnosed in the Northern region, 68% were linked to HIV care within 30 days.

Northwest Region

As of December 31, 2015, 1,944 persons were living with HIV in the Northwest region (consists of the cities of Charlottesville, Winchester, Fredericksburg, and surrounding areas). Sixty-five percent of PLWH in the Northwest region had evidence of HIV care, 55% were retained in HIV care, and 55% were virally suppressed. Among the 92 persons newly diagnosed in the Northwest region, 68% were linked to HIV care within 30 days.

Southwest Region

As of December 31, 2015, 2,104 persons were living with HIV in the Southwest region (consists of the cities of Roanoke, Danville, Lynchburg, Martinsville, and surrounding areas). Sixty-five percent of PLWH in the Southwest region had evidence of HIV care, 54% were retained in HIV care, and 55% were virally suppressed. Among the 68 persons newly diagnosed in the Southwest region, 78% were linked to HIV care within 30 days.

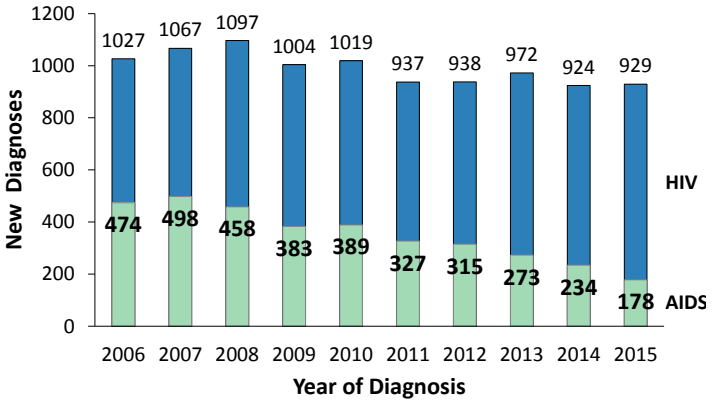
In 2015, as shown in the second column in Figure 7, the Southwest health region had the highest linkage rate of 78% for newly diagnosed persons linked to care within 30 days, followed by the Central region at 71%. Overall, the Northwest and Southwest regions had better retention and viral suppression rates than other health regions in Virginia, as seen in the fourth and fifth columns in Figure 7.

New HIV Diagnoses

In 2014, there were over 44,000 new HIV diagnoses in the United States (US). Over the past 10 years from 2005 to 2014, the number of new HIV diagnoses in the US decreased by 19%.[1] This decline in new diagnoses suggests a true decrease in new infections, and can be attributed to increased HIV testing and targeted HIV prevention efforts in recent years. By April of 2008, all 50 states had confidential name-based HIV reporting.[1]

Nationally, men who have sex with men (MSM) are the population most affected with HIV, accounting for over 67% of all new diagnoses in 2014. Among MSM, new HIV diagnoses have increased by 24% among Hispanics/Latinos and decreased by 18% among Whites from 2005 to 2014. New HIV diagnoses among Black MSM have increased by 22% over the past 10 years, but this increase has leveled off over the last five years. The majority of all new HIV diagnoses in the US were among persons ages 13-19 (36%) and 20-29 (24%). Geographical differences in the burden of HIV disease also exist in the US; rates were the highest in the South at nearly 19 per 100,000 and lowest in the Midwest with 8.2 per 100,000.[1]

Figure 1: Newly Diagnosed HIV Disease Cases and AIDS Cases, 2006-2015



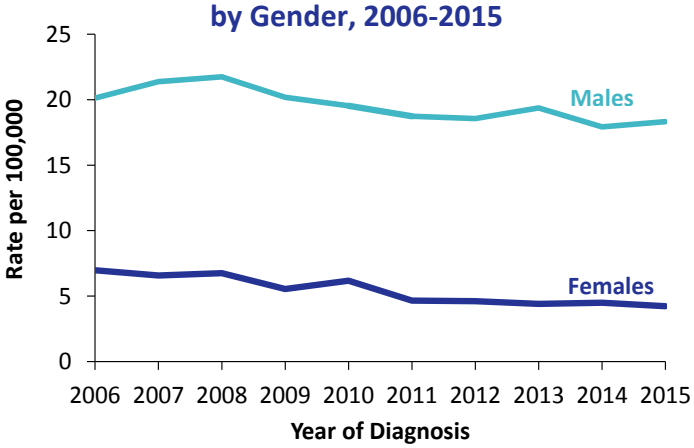
NEW HIV DIAGNOSES IN VIRGINIA

Virginia represented nearly 3% of the total population in the US and over 2% of the total HIV-positive population in 2014. In 2014, Virginia ranked 13th in the number of annual reported new HIV disease diagnoses in the US and 20th in highest rate of HIV disease diagnosis.[1] Virginia ranked 17th in the estimated rate of AIDS diagnoses in 2014 and ranks 35th in the number of cumulative reported cases of AIDS since the beginning of the epidemic.[2]

From 2006 to 2015, new HIV diagnoses in Virginia *decreased* by 11%.

In the past 10 years from 2006 to 2015, new HIV diagnoses in Virginia decreased by almost 11%. On average, 991 new HIV disease cases were diagnosed each year in Virginia. In 2015, 929 new HIV cases were diagnosed in Virginia. From 2006 to 2015, the average number of AIDS diagnoses reported annually was 353 cases. However, 2015 had the lowest number of AIDS diagnoses in Virginia, at 178 cases (Figure 1).

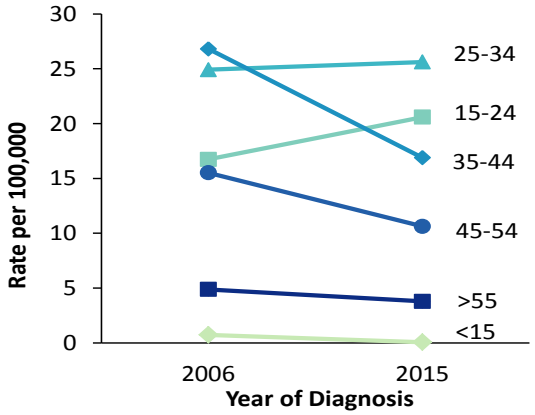
Figure 2: Newly Diagnosed HIV Disease Cases by Gender, 2006-2015



By Gender

In 2015, approximately 81% of the newly diagnosed HIV cases were among males. Rates of new diagnoses among males have stayed relatively stable from 2006 to 2015, at an average of 20 per 100,000 population. Rates of newly diagnosed cases among females have declined from 7 per 100,000 in 2006 to 4 per 100,000 in 2015 (Figure 2). Males were over four times more likely to be diagnosed with HIV disease than females in 2015.

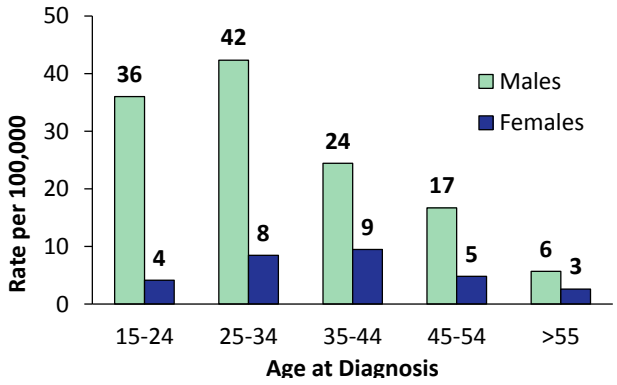
Figure 3: Newly Diagnosed HIV Disease Cases by Age at Diagnosis, 2006 versus 2015



By Age at Diagnosis

Newly diagnosed HIV disease cases among the young adult population have increased in recent years. In 2015, 25% of the new diagnoses were among persons 15 to 24 years of age, whereas, 17% of the new diagnoses in 2006 were among this age group. Overall, the highest rate of diagnosis occurred among the 25-34 age group in 2015, at 26 per 100,000. Rates among the 35-44 age group have steadily declined over the past 10 years, from 27 per 100,000 in 2006 to 17 per 100,000 in 2015 (Figure 3). Rates of new HIV diagnoses among persons ages 55 and older showed little change across the 10-year time period.

Figure 4: Newly Diagnosed HIV Disease Cases by Age at Diagnosis and Gender, 2015

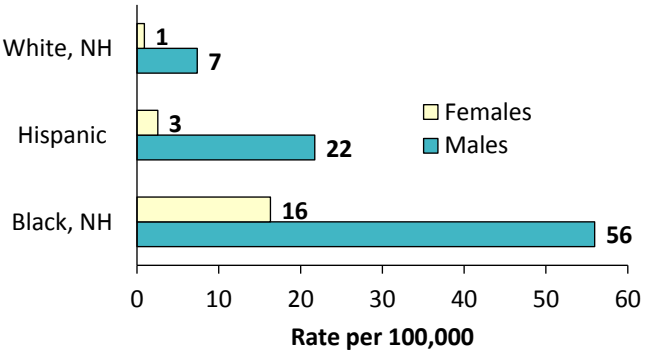


The highest rate of diagnosis in 2015 among males was the 25-34 age group (42 per 100,000), followed by the 15-24 age group (36 per 100,000) (Figure 4). Age at diagnosis for females was slightly older, as the highest rate of diagnosis for females was among the 35-44 age group (about 9 per 100,000). Even so, males ages 25-34 were over six times more likely to be diagnosed with HIV disease than females of the same age.

By Race/Ethnicity

In 2015, 63% of the newly HIV diagnosed cases were Black, non-Hispanic (NH), followed by White (24%), and Hispanic/Latino (10%) persons. On average from 2006 to 2015, 61% of all new HIV diagnoses were among Black persons. In 2015, Black persons were almost nine times more likely to be diagnosed with HIV than their White counterparts, and three times more likely than Hispanics/Latinos. The lowest rate of diagnosis in 2015 was among the White population at 4 per 100,000.

Figure 5: Newly Diagnosed HIV Disease Cases by Race and Gender, 2015

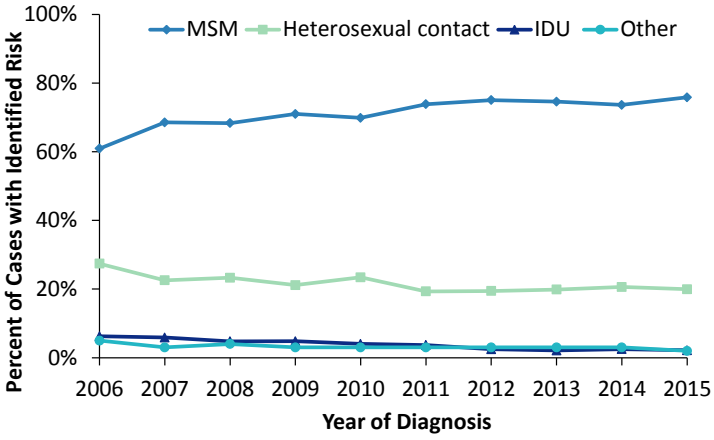


In 2015, Black females were 16 times more likely to be diagnosed with HIV disease than their White counterparts, and Hispanic/Latino females were three times more likely to be diagnosed than White females (Figure 5). Among the male population in Virginia, Black males were almost eight times more likely to be diagnosed than White males and nearly three times more likely to be diagnosed than Hispanic/Latino males. The greatest disparity in race and gender was among Hispanic/Latino persons, as Hispanic/Latino males were almost nine times more likely to be diagnosed with HIV disease than Hispanic/Latino females; whereas, White males were over eight times more likely to be diagnosed than White females, and Black males were over three times more likely to be diagnosed than Black females.

By Transmission Risk[‡]

In previous reports, HIV risk transmission was estimated using a multiple imputation (MI) procedure provided by CDC which probabilistically assigned those who did not report or identify a specific risk and estimated a potential risk factor for transmission. At the time of publication, this procedure was not available. Thus, those cases that did not report or identify a risk were not included in the graphs or analysis in this report.

Figure 6: Newly Diagnosed HIV Disease Cases by Transmission Risk, 2015



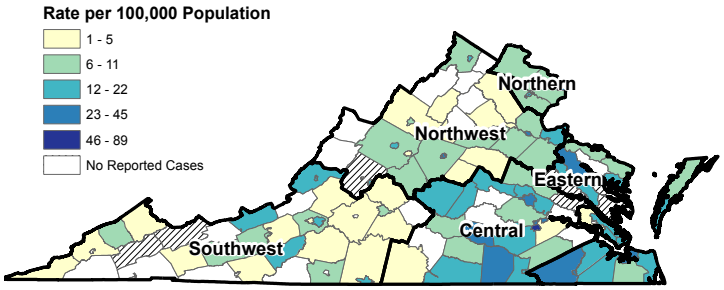
In 2015, nearly 41% of newly diagnosed persons did not report or identify a known risk for HIV transmission. From 2006 to 2015, the percent of newly diagnosed cases attributed to male-to-male sexual contact (MSM) increased from 61% to 76% (Figure 6). Heterosexual contact has remained relatively stable over the past 10 years, at an average of 22%. Injection drug use (IDU) has decreased, from 6% in 2006 to 2% in 2015.

By Health Region

Virginia is divided into 5 health regions: Central, Eastern, Northern, Northwest, and Southwest. In 2015, the rate of diagnosis was the highest in the Central and Eastern regions at 17 and 16 per 100,000 population, respectively. The lowest diagnosis rates occurred in the Southwest and Northwest health regions (7 and 5 per 100,000, respectively).

As evidenced from Figure 7, higher rates for persons newly diagnosed with HIV disease in 2015 are located in the southern Central region, and portions of the Eastern region. Lower rates occurred primarily in the Northern and Southwest regions, where rates by county ranged from 1 to 28 per 100,000.

Figure 7: Newly Diagnosed HIV Disease Cases by City/County, 2015



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Ł New HIV diagnoses that did not report or identify a transmission risk were excluded from analysis.

Men Who Have Sex With Men

HIV affects many different populations of all ages, races and/or ethnicities, and identities; however men who have sex with men (MSM) continue to be heavily impacted by the HIV epidemic. MSM are defined as males with a lifetime history of any male-to-male sexual contact. According to the Centers for Disease Control and Prevention (CDC), MSM are more severely affected by HIV than any other population in the United States. Overall, recent national data shows that diagnoses among MSM have increased from 2005 to 2014; approximately 54% of persons in the United States (US) diagnosed with HIV were MSM.[1]

In Virginia, an estimated 6.2% of adult males aged 18 years or older are MSM. Approximately 6.7% of White, non-Hispanic (NH), 5.2% Black, NH, and 6.4% Hispanic/Latino males in Virginia are estimated to be MSM in Virginia.[2] As of December 31, 2015, 47% of persons living with HIV (PLWH) in Virginia identified male-to-male sexual contact as the primary mode of HIV transmission.

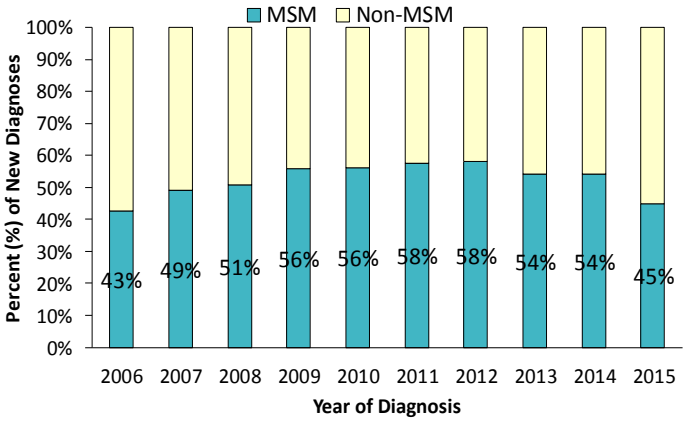
Due to the disparity of HIV diagnoses among MSM as compared to other populations, national, state, and local organizations work together to support HIV prevention services for MSM. In addition to providing HIV testing, support services, and a focus on culturally appropriate HIV medical care for MSM, the recent introduction of biomedical approaches to HIV prevention are compelling. PrEP, or Pre-Exposure Prophylaxis, is a medication for persons with risk behaviors for HIV to take once a day to reduce the chance of acquiring HIV. By taking this one-pill regimen daily as directed, PrEP can reduce the risk of HIV by over 90%, and a person's risk is even lower with condom use and other HIV prevention methods.[3]

Effective and comprehensive HIV prevention and care strategies for MSM can greatly improve health outcomes for MSM living with HIV in Virginia and nationwide.

HIV DISEASE DIAGNOSES

On average from 2006 to 2015, 52% of the total number of newly diagnosed HIV cases in Virginia were among MSM (Figure 1). Although 45% of the newly diagnosed HIV cases in 2015 were among MSM, there appears to be a slight decrease in the number of new diagnoses attributed to male-to-male sexual contact from previous years. The 2015 data is still considered preliminary and should be interpreted with caution.

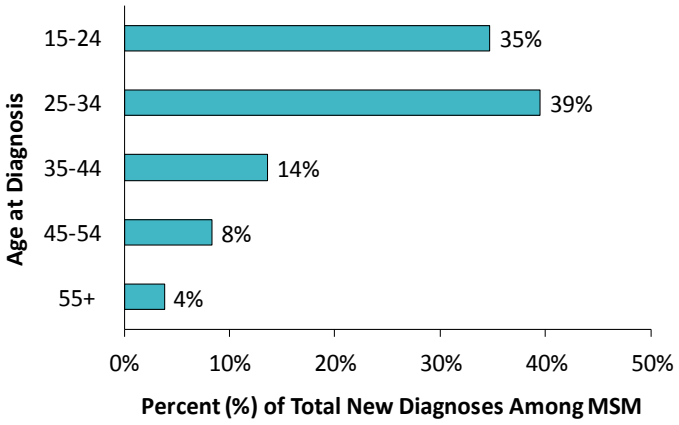
Figure 1: New HIV Disease Diagnoses among MSM, 2006-2015



By Age at Diagnosis

Among the 413 new HIV diagnoses among MSM in 2015, 74% were diagnosed between the ages of 15 and 34 years (Figure 2). Overall, there was a 28% increase in the number of MSM diagnosed with HIV ages 15 to 34 from 2006 to 2015.

Figure 2: Age of Diagnosis Distribution of New HIV Disease Diagnoses among MSM, 2015

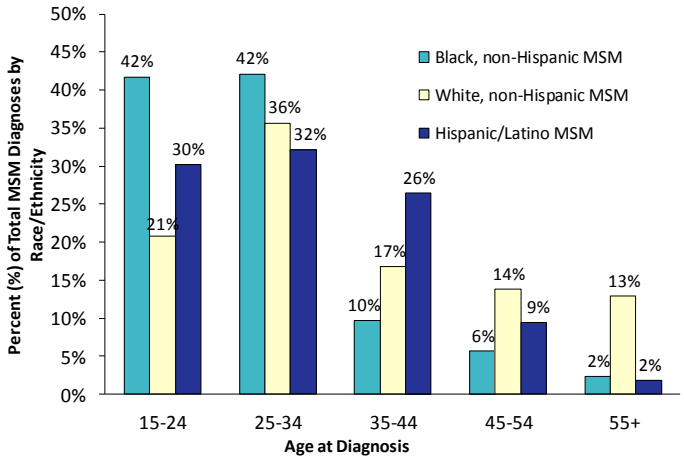


By Race/Ethnicity

In 2015, 59% of the new HIV diagnoses among MSM were Black, NH, followed by 24% White, NH, and 11% Hispanic/Latino, mirroring the race/ethnicity distribution for all new HIV cases diagnosed in Virginia in 2015. Approximately 2% of new MSM diagnoses in 2015 were Asian/Hawaiian/Pacific Islander. Overall, the distribution of newly diagnosed HIV cases among MSM by race/ethnicity group has remained relatively stable over the past 10 years.

Although new HIV diagnoses among Black, NH MSM overall have remained relatively stable over the past decade, similar to national trends[1], new HIV diagnoses among young Black MSM aged 15 to 34 years have increased from 2006 to 2015. In 2015, Black MSM aged 15 to 34 years represented 84% of all new HIV diagnoses among all Black MSM. From 2006 to 2015 in Virginia, there was an 88% increase in the number of new HIV diagnoses among young Black MSM. Young Hispanic/Latino MSM made up 62% of all Hispanic/Latino MSM diagnosed in 2015, and over half (56%) of new diagnoses in 2015 among White MSM were 15 to 34 years of age. White MSM were more likely to be older at age of diagnosis, as 27% of White MSM were newly diagnosed in 2015 at 45 years or older, compared to 11% of Hispanic/Latino MSM and 8% of Black MSM. (Figure 3).

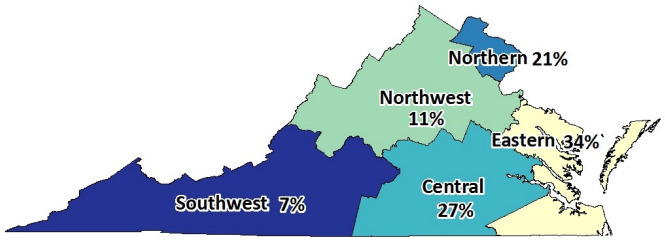
Figure 3: Age at Diagnosis by Race/Ethnicity among Newly Diagnosed MSM, 2015



By Health Region

Virginia consists of five health regions: Eastern, Central, Northern, Northwest, and Southwest. In 2015, 34% of the new HIV diagnoses among MSM were diagnosed in the Eastern region, followed by Central at 27%, and Northern at 21%. The Northwest region represented 11% of the new HIV diagnoses among MSM, and 7% of MSM were newly diagnosed in the Southwest (Figure 4).

Figure 4: Percentage of New HIV Diagnoses among MSM by Health Region in Virginia, 2015

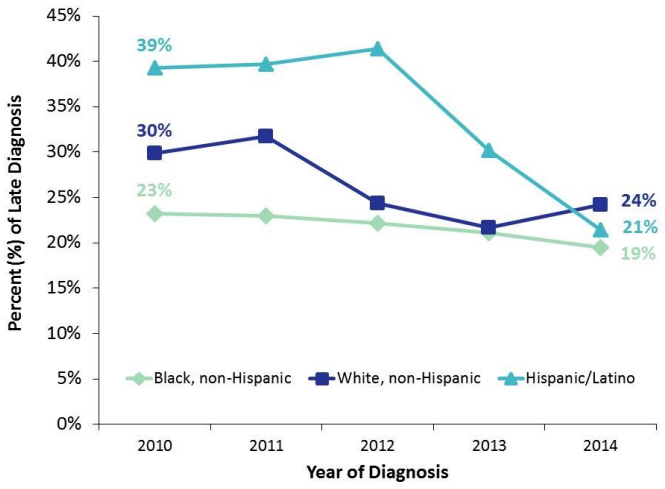


In the Eastern region, a majority of the newly diagnosed MSM in 2015 were Black, NH (73%) and diagnosed between the ages of 15 and 34 (84%). The Central region displayed similar demographics; seventy-two percent of new diagnoses among MSM in 2015 were Black, and 77% were diagnosed at 15 to 34 years of age. New diagnoses among MSM in the Northern region showed a slightly different demographic, as Hispanic/Latino MSM represented the highest percentage of new diagnoses among MSM in the Northern region, at 38%. MSM diagnosed in the Northern region were also more likely to be older at age of diagnosis; approximately 58% were diagnosed between the ages of 25 and 44. Fifty-eight percent of new MSM diagnoses were Black, NH in the Northwest, and 56% were diagnosed between the ages of 25 and 44 years. The Southwest region was the only region with more new HIV diagnoses among White MSM (52%), and the majority of MSM (48%) were diagnosed between the ages of 25 and 34 years.

LATE DIAGNOSIS

Early knowledge of HIV infection can improve a person's health outcomes and help prevent further HIV transmission. Late diagnosis is defined as having an initial AIDS diagnosis or having an AIDS diagnosis within 12 months of an HIV diagnosis. To determine late diagnosis, one year of follow-up from the first HIV diagnosis is needed to see if a person is also diagnosed with AIDS in that year. Because of this reason, the most recent year of data available in Virginia is 2014. In 2014, 21% of MSM were diagnosed late. White MSM (24%) had higher rates of late diagnosis than Hispanic/Latino MSM (21%) or Black MSM (19%) in 2014. However, from 2010 to 2014, Hispanic/Latino MSM had the highest rate of late diagnosis as compared to White or Black MSM (Figure 5).

Figure 5: Late Diagnosis among MSM by Race/ Ethnicity, 2010-2014



HIV/AIDS PREVALENCE

As of December 31, 2015, there were 11,563 MSM living with HIV in Virginia, 47% of whom had progressed to an AIDS-defining condition.

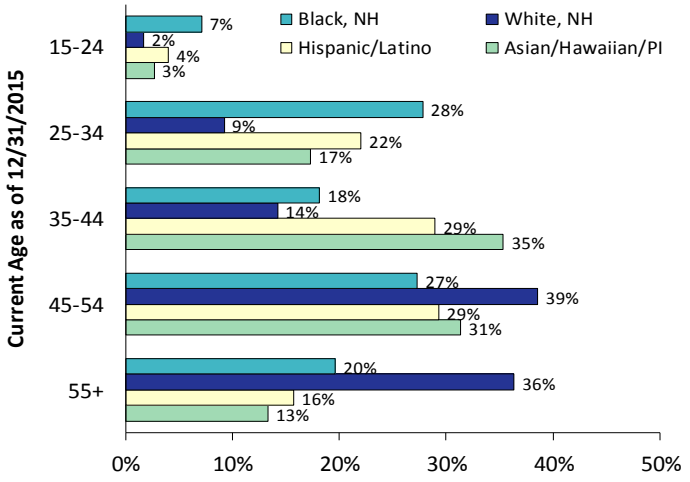
By Current Age and Race/Ethnicity

A greater number of persons are living longer with HIV due to advances in medical treatment and care. As of December 31, 2015, over half (58%) of MSM living with HIV were 45 years of age or older.

Forty-seven percent of MSM living with HIV as of December 31, 2015 were Black, NH, followed by 41% White, NH. Hispanic/Latino MSM represented 8% of the HIV-positive MSM population, and 1% were Asian/Hawaiian/Pacific Islander. Compared with the overall HIV epidemic in Virginia, there is a higher proportion of White MSM (41%) than White PLWH (29%) in Virginia. In addition, there was a lower proportion of Black MSM (47%) than Black PLWH (59%) in Virginia.

By current age and race/ethnicity, Black, NH MSM and Hispanic/Latino MSM were more likely to be living with HIV at a younger age at the end of 2015. Thirty-five percent of Black MSM and 26% of Hispanic/Latino MSM were 34 years of age or younger at the end of 2015, as compared to 20% of Asian/Hawaiian/Pacific Islander MSM and 11% of White MSM (Figure 6).

Figure 6: MSM Living with HIV by Race/Ethnicity and Current Age as of December 31, 2015

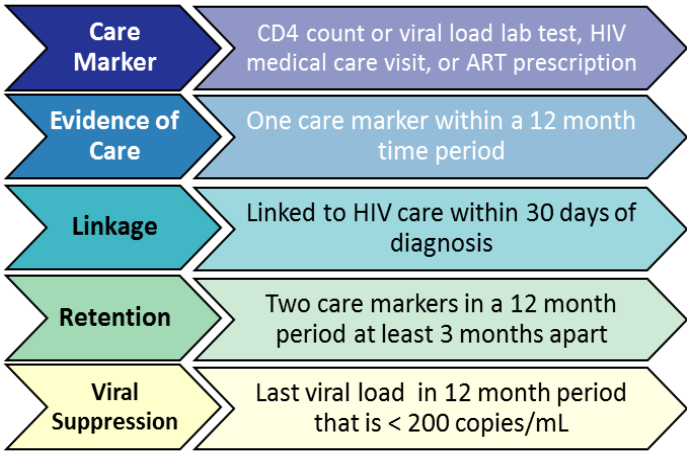


By Health Region

Over half of MSM living with HIV were residing in the Northern (30%) or Eastern (29%) health regions of Virginia at the end of 2015. Approximately 22% of MSM living with HIV were in the Central region, followed by the Southwest region at 9%, and the Northwest region at 8%. The three top localities of Fairfax County (Northern), Richmond city (Central), and Norfolk city (Eastern) represented 31% of all MSM living with HIV in Virginia as of December 31, 2015.

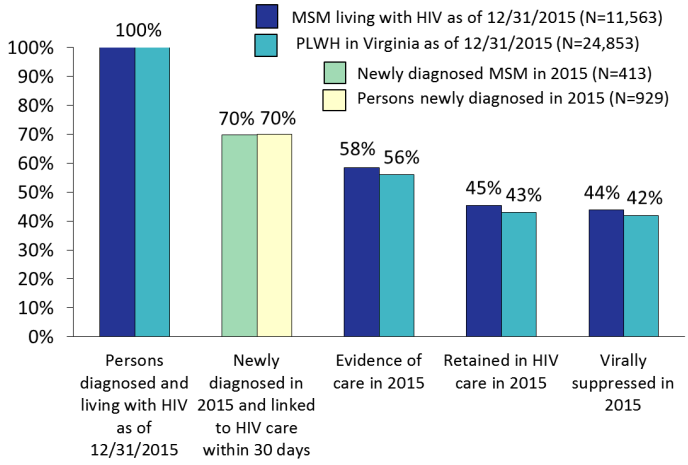
HIV CARE CONTINUUM

Figure 7: HIV Care Continuum Definitions



The HIV Care Continuum (HCC) is a framework for assessing health outcomes among PLWH in Virginia. Figure 7 shows definitions for the HCC health outcomes of linkage, retention, and viral suppression. Evidence of HIV care is defined through a "care marker": a CD4 or viral load test, HIV medical care visit, or antiretroviral (ART) prescription. In 2015, out of 11,563 MSM living with HIV in Virginia, 58% had evidence of HIV care, 45% were retained in HIV care, and 44% were virally suppressed in 2015. Among the 413 newly diagnosed HIV cases among MSM in 2015, 70% were linked to HIV care within 30 days. Compared to the overall HCC in Virginia, MSM living with HIV show similar health outcomes to all PLWH in Virginia.

Figure 8: HIV Care Continuum among MSM versus PLWH in Virginia, 2015



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[3] HIV PrEP Guidelines Press Release. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/nchhstp/newsroom/2014/PrEP-Guidelines-Press-Release.html

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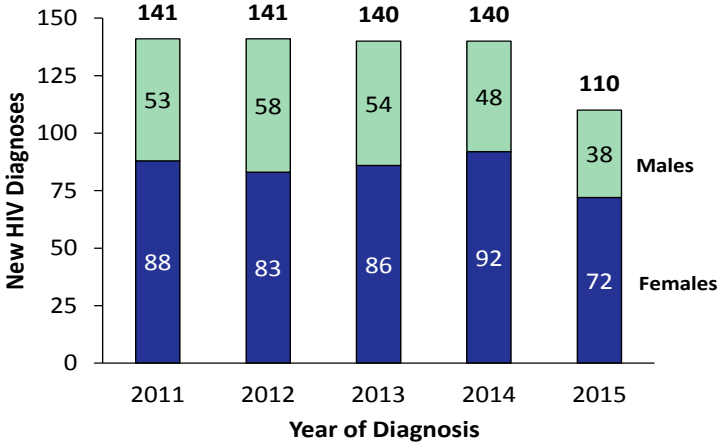
Heterosexuals

Heterosexual contact is the most common HIV transmission method among women and the second most common among men.[1] Of the 39,513 new HIV diagnoses in the United States (US) in 2015, 24% were attributed to heterosexual contact. While women accounted for 19% of the new HIV diagnoses in the US in 2015, over 86% of the new cases among women were due to heterosexual contact.[1]

A number of factors contribute to women who have a high risk for HIV, particularly those who do not use condoms or know their male partner's risk factors for HIV, including men who have sex with both men and women and injection drug use.[2] Further, many men who have sex with men (MSM), especially Blacks and Hispanic/Latinos, do not self-identify as gay, have sexual intercourse with both men and women without disclosing their sexual behavior to partners, and are inconsistent with condom use.[3]

Figure 1: New HIV Diagnoses in Virginia by Gender, 2011-2015

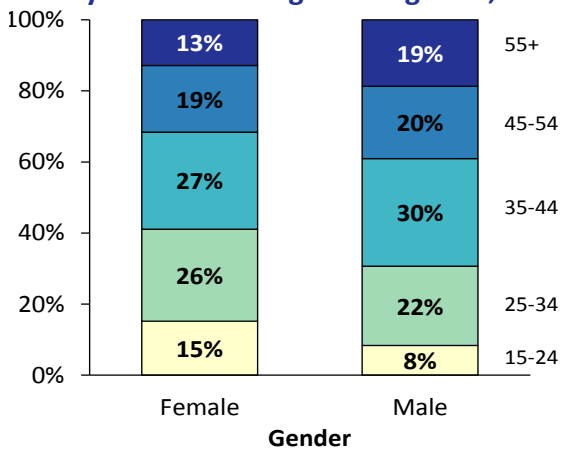


HIV DISEASE DIAGNOSES

In Virginia, the average number of new HIV diagnoses due to heterosexual contact from 2011 to 2015 was 134 new cases per year. On average, 14% of the total new HIV diagnoses in Virginia were attributed to heterosexual contact each year. New HIV diagnoses among heterosexuals in Virginia remained stable from 2011 to 2014, but decreased in 2015 (Figure 1). There were 110 new HIV diagnoses among those who reported heterosexual contact in Virginia in 2015.

Of the 110 new HIV cases among heterosexuals in 2015, 72 (62%) were females. Among heterosexuals newly diagnosed with HIV disease during this five-year period, approximately 72% were between the ages of 25 to 54. The smallest proportion of new HIV diagnoses among heterosexuals were younger, with only 13% among those 15 to 24 years.

Figure 2: New HIV Diagnoses due to Heterosexual Contact by Gender and Age at Diagnosis, 2011-2015



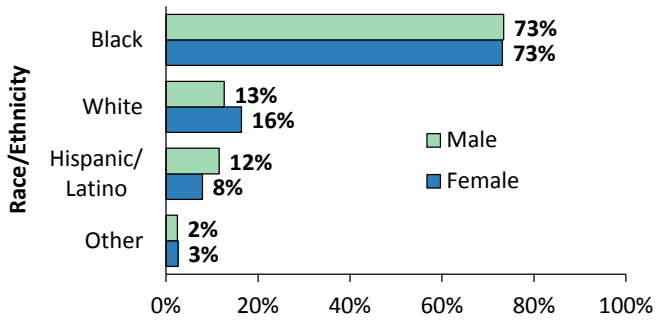
Among heterosexual males diagnosed with HIV disease in Virginia from 2011 to 2015, the majority were Black, non-Hispanic (NH) at 71%, followed by White, NH (15%) and Hispanic/Latino (12%). By age at diagnosis, the greatest proportion were those first diagnosed between the ages of 35 to 44 (3%) while those who were ages 25 to 34 at diagnosis comprised 22% of the total number of heterosexual HIV disease diagnoses from 2011 to 2015 (Figure 2).

Women are disproportionately affected by HIV disease among heterosexuals, especially women of color. From 2011 to 2015, 17% of new HIV diagnoses among women were White, NH and 8% were Hispanic/Latino. Black, NH women represented 72% of new HIV cases among women, even though only 20% of the female population in Virginia is Black, NH. There were 421 new HIV diagnoses among heterosexual women from 2011 to 2015 in Virginia. Among them, the majority were between the ages of 35 and 44 at the time of diagnosis (27%), followed by ages 25 to 34 at 26%, and 45 to 54 at 19% (Figure 2).

HIV/AIDS PREVALENCE

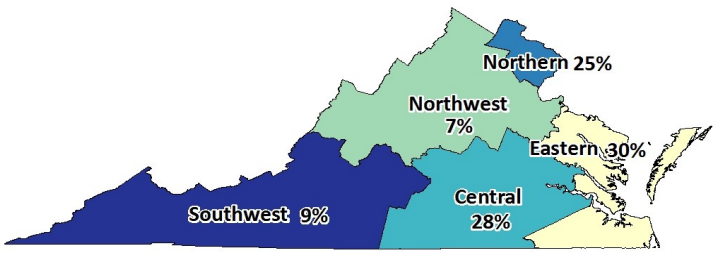
Of all persons living with HIV (PLWH) as of December 31, 2015, there were 4,781 (19%) PLWH due to heterosexual contact. Over 52% of this population had progressed to an AIDS-defining condition. Overall, men accounted for an estimated 32% of those living with HIV disease due to heterosexual contact in Virginia at the end of 2015. When separated into age groups, heterosexual men were more likely to be diagnosed later in life than women.

Figure 3: Persons Living with HIV Disease as of 12/31/2015 by Race/Ethnicity and Sex



At the end of 2015, the majority of heterosexual PLWH were Black, NH (73%), while 15% were White, NH and 8% were Hispanic/Latino. Among both males and females PLWH due to heterosexual contact, 73% were Black, NH. White heterosexual persons were more likely to be female than male and Hispanic/ Latino heterosexuals were more likely to be male than female (Figure 3). Virginia is divided into five health regions: Central, Eastern, Northern, Northwest, and Southwest. At the end of 2015, 30% of PLWH due to heterosexual contact in Virginia were living in the Eastern region, followed by the Central region (28%) and the Northern region (25%) (Figure 4). The lowest percentages of heterosexual PLWH were in the Southwest and Northwest regions of Virginia at 9% and 7%, respectively.

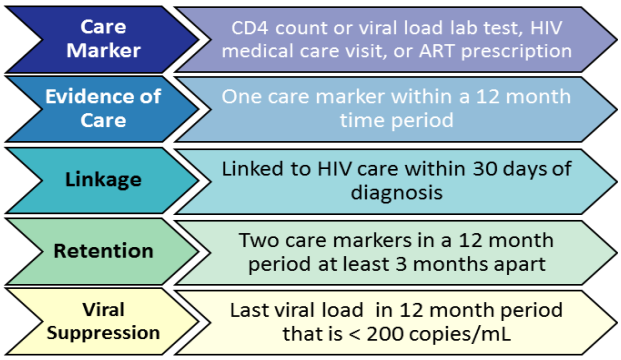
Figure 4: Persons Living with HIV Disease in Virginia as of December 31, 2015 by Health Region



HIV CARE CONTINUUM

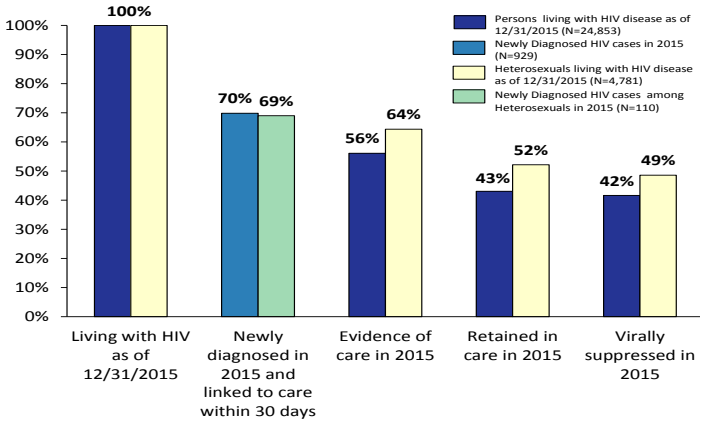
The HIV Care Continuum (HCC) is a framework for assessing health outcomes among PLWH (Figure 5).

Figure 5: HIV Care Continuum Definitions



Of the 4,781 heterosexual PLWH as of December 31, 2015, 64% had evidence of care in 2015, 52% were retained in care and 49% were virally suppressed. Of the 110 new HIV diagnoses attributed to heterosexual contact in 2015, 69% were linked to care within 30 days (Figure 6). Compared to all PLWH in Virginia, PLWH attributed to heterosexual contact had better health outcomes among all HCC measures in 2015. The percentage of those newly diagnosed with HIV in 2015 and linked to care in 30 days were similar among all new diagnoses and those due to heterosexual contact.

Figure 6: HIV Care Continuum in Virginia and among Heterosexuals, 2015



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Persons Who Inject Drugs

Persons who inject drugs (PWIDs) are at risk for HIV infection by using and sharing syringes and other injection equipment that were used by a person with HIV. They are also at risk if they engage in high-risk sexual behavior. Sharing syringes is a direct route of HIV transmission.[1] The Centers for Disease Control and Prevention (CDC) estimates that 7% of the 47,352 new HIV infections in 2013 in the United States (US) were due to injection drug use (IDU). An additional 3% were among PWIDs who also report male-to-male sexual contact (MSM). While national data indicate HIV infections due to IDU have decreased, IDU remains a serious risk for HIV.[1]

In 2013 in the US, 1,435 or 46% of new HIV diagnoses attributed to IDU were among Black persons. White persons represented 28% of new HIV diagnoses due to IDU. Hispanic/Latino persons represented 21%. The majority of 2013 HIV cases due to IDU in the US were among males (63%). Hepatitis C (HCV) co-infection is common among this population.

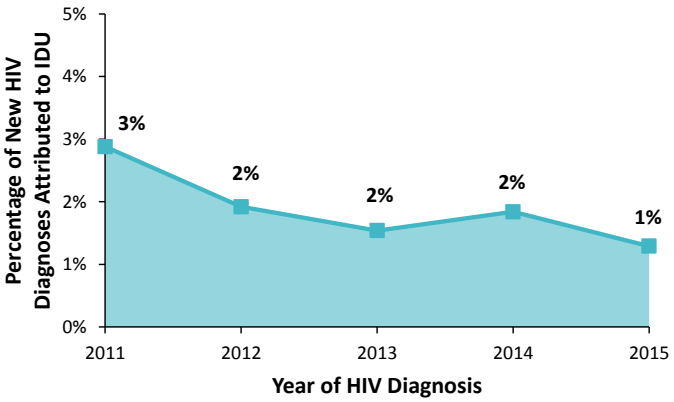
The National HIV Behavioral Surveillance (NHBS) collects information on HIV risk behavior and the utilization of, and need for, HIV prevention services among individuals at increased risk of HIV infection. NHBS collects data on PWIDs every three years, and found that 64% of PWIDs who knew they were HIV - positive also had an HCV diagnosis in 2012.[2]

The risk behavior of sharing injection equipment is common among PWIDs. Some states have syringe service programs that offer new equipment to PWIDs in an effort to reduce disease transmission.[1] Recent HIV outbreaks due to IDU have highlighted the importance of addressing IDU. IDU is harmful to individual health and has the capacity to contribute to HIV and HCV transmission.

HIV DISEASE DIAGNOSES

The percentage of new HIV diagnoses due to IDU has decreased over time in Virginia. In 2011, out of 937 new HIV diagnoses, 3% of the new HIV diagnoses were due to IDU alone. In 2015, 1% of the new HIV diagnoses were due to IDU alone. Figure 1 presents the percentage of new HIV diagnoses due to IDU from 2011 to 2015. Between 2011 and 2015, there were a total of 89 new HIV diagnoses due to IDU alone.

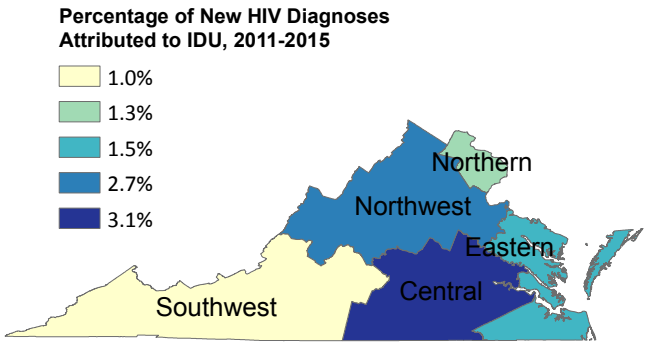
Figure 1: New HIV Diagnoses due to Injection Drug Use in Virginia, 2011-2015



By Health Region

From 2011 to 2015, the percentage of new HIV diagnoses due to IDU varied by region. The percentage of all HIV diagnoses due to IDU was highest in the Central region (3%) and lowest in the Southwest region (1%).

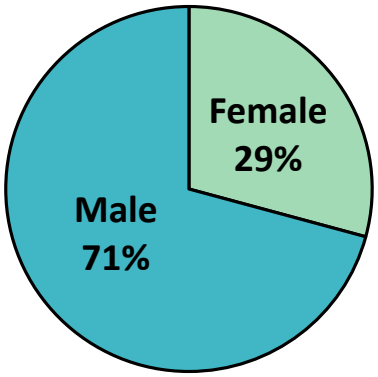
Figure 2: New HIV Diagnoses due to Injection Drug Use by Region, 2011-2015



By Gender

Among the 89 new HIV diagnoses due to IDU between 2011 and 2015, 71% were male and 29% were female (Figure 3). Of the 938 females diagnosed with HIV between 2011 and 2015, 26 (3%) were cases due to IDU. Of the 3,762 males diagnosed with HIV between 2011 and 2015, 63 (2%) were cases due to IDU.

Figure 3: New HIV Diagnoses due to Injection Drug Use by Gender, 2011-2015



By Race and Age

Among the 89 new HIV diagnoses due to IDU between 2011 and 2015, 60% of cases were Black, non-Hispanic (NH), 33% were White, NH, 4% were Hispanic/Latino, and 3% were Asian. The median age at diagnosis for persons diagnosed with HIV due to IDU between 2011 and 2015 was 44 years and ranged from 22 to 75 years.

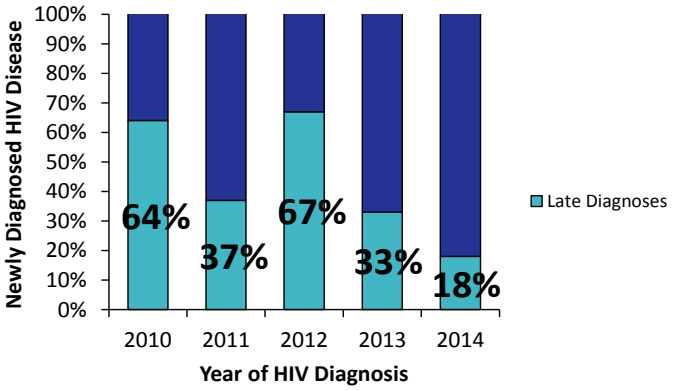
HIV and HCV Co-Infections

In Virginia between 2012 and 2015, there were 544 cases of HIV-HCV co-infection. There were 544 persons living with HIV (PLWH) as of December 31, 2015 who received an HCV diagnosis between 2012 and 2015. Of these, 176 (32%) reported IDU.

Late Diagnosis

Late diagnosis is defined as a person who is diagnosed with AIDS less than a year from initial HIV diagnosis, or a person who is diagnosed with AIDS at initial HIV diagnosis. Persons who are diagnosed late in the disease process have an increased risk of morbidity, increased health costs, and diminished responses to antiretroviral therapy, demonstrating the importance of access to HIV testing to increase timely diagnosis and early engagement in comprehensive HIV medical care. Among PWIDs in Virginia, late diagnosis rates changed between 2010 and 2014. For the most recent data available on late diagnosis, the highest rates of late diagnoses were observed in 2010 at 64% and 2012 at 67%. In more recent years the percentage of late diagnosis has declined to 18% in 2014 (Figure 4).

Figure 4: Late Diagnosis for HIV Among Persons Who Inject Drugs in Virginia, 2010-2014



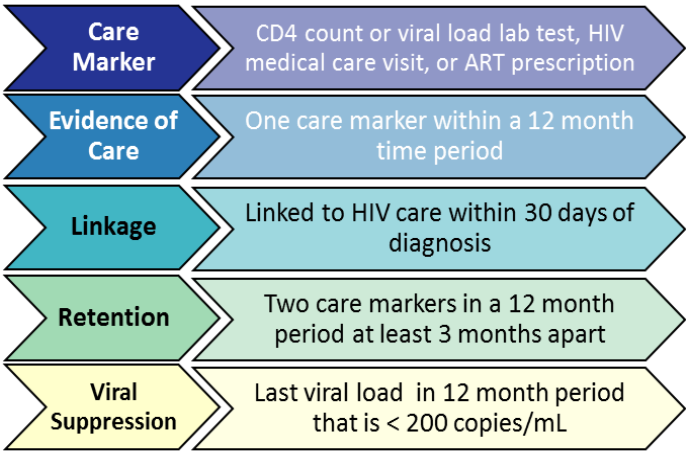
HIV/AIDS PREVALENCE

In Virginia as of December 31, 2015, there were 2,181 PLWH due to IDU alone. This represents 9% of all PLWH in Virginia. An additional 914 PLWH (4%) reported MSM and IDU.

Among PLWH due to IDU in Virginia, 74% were male and 26% were female. Sixty-six percent were Black, NH, 26% White, NH and 6% were Hispanic. The median current age of PLWH due to IDU was 55. Eighty-seven percent of cases were over the age of 45.

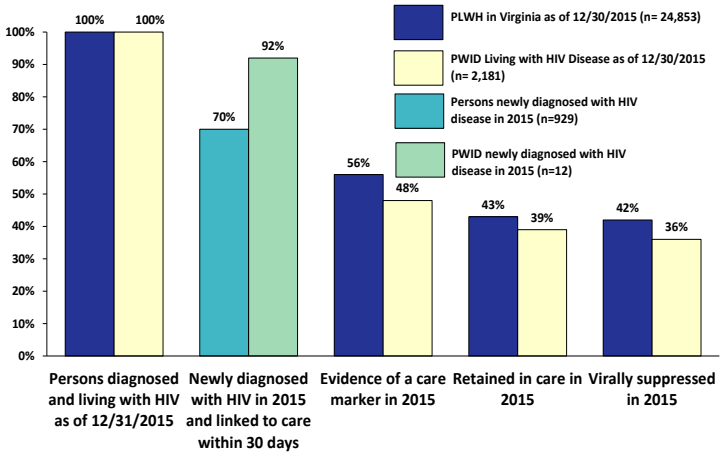
HIV CARE CONTINUUM

Figure 5: HIV Care Continuum Definitions



The HIV Care Continuum (HCC) is a framework for assessing health outcomes among persons living in Virginia with diagnosed HIV infection. Figure 5 shows the HCC definitions of linkage, retention, and viral suppression. Figure 6 displays the HCC for PLWH due to IDU in Virginia compared to the overall population in Virginia. As of December 31, 2015, 2,181 persons were diagnosed and living with HIV due to IDU. Forty-eight percent (1,044 persons) had evidence of care via a CD4 count, viral load, HIV medical care visit and/or antiretroviral (ART) prescription in 2015. Thirty-nine percent of the diagnosed population were retained in care (≥ 2 care markers at least 3 months apart), and 36% were virally suppressed (last viral load < 200 copies/mL) during calendar year 2015. Of those newly diagnosed in 2015, 92% were linked to medical care within 30 days of their HIV diagnosis. The PWID population had lower rates of retention in care and viral suppression compared to the overall population of Virginia in 2015, but did demonstrate higher linkage rates for PWID newly diagnosed with HIV as compared to the overall PLWH population in Virginia.

Figure 6. HIV Care Continuum Among Persons Living With HIV due to IDU, 2015



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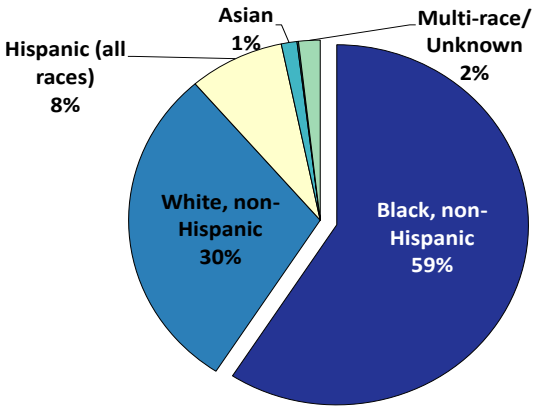
Black/African American Communities

African Americans make up the majority of persons living with HIV (PLWH) and the majority of new HIV diagnoses in Virginia. Of the 24,853 PLWH as of December 31, 2015, 14,703 persons (59%) were Black, non-Hispanic (NH) (Figure 1). In 2015, there were 929 newly diagnosed cases of HIV in Virginia, and 63% of the new diagnoses were among African Americans.

Figure 1. Race/Ethnicity Among Persons Living with HIV as of December 31, 2015 in Virginia



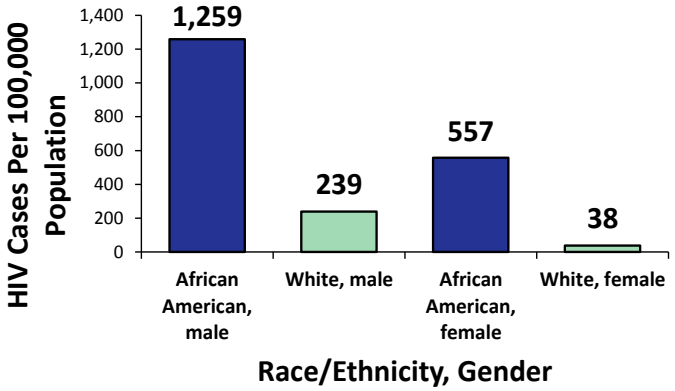
HIV/AIDS PREVALENCE

As of December 31, 2015, there were 14,703 Black, NH PLWH in Virginia. Black, NH persons are disproportionately affected by HIV compared to those of other race/ethnicities. As of December 31, 2015, the rate of Black, NH PLWH was 893 per 100,000 population in Virginia. Black, NH persons were seven times more likely to be living with HIV than White, NH persons (137 per 100,000) and over three times more likely to be living with HIV than Hispanic/Latino persons (272 per 100,000).

By Gender

The disparity is even more striking when the rate of HIV disease is further broken down by gender. As of December 31, 2015, the rate of PLWH was 1,259 per 100,000 for Black males compared to 239 per 100,000 for White males, and 557 per 100,000 for Black females compared to 38 per 100,000 for White females in Virginia (Figure 2). Black males are five times more likely to be living with HIV in Virginia than White males. Black females are 15 times more likely to be living with HIV in Virginia than White females. As of December 31, 2015, 68% of Black PLWH were male and 32% were female.

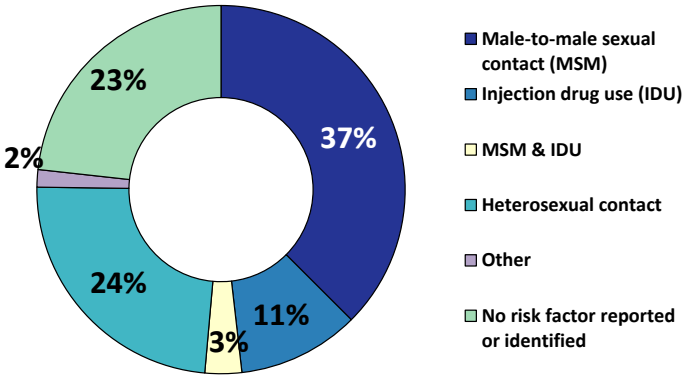
Figure 2. Rate of PLWH by Race/Ethnicity and Gender as of December 31, 2015 in Virginia



By Transmission Risk

As of the end of 2015, 56% of Black males were living with HIV due to male-to-male sexual contact (MSM), followed by heterosexual contact (11%), and injection drug use (IDU) (10%). Among Black females, the majority were living with HIV due to heterosexual contact (50%) or IDU (12%). Figure 3 shows transmission risk for Black, NH persons overall.

Figure 3. HIV Risk Among African Americans Living with HIV as of December 31, 2015 in Virginia



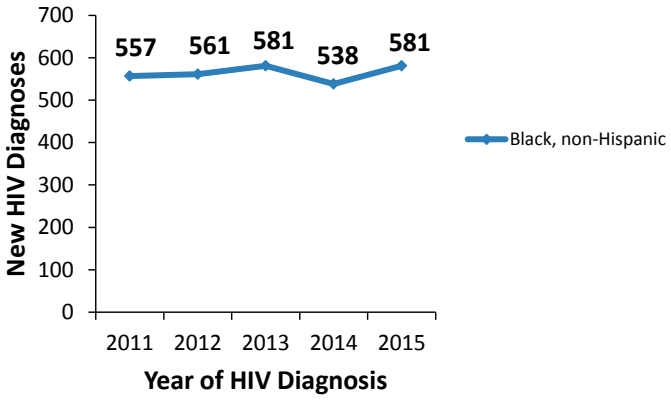
By Current Age

Sixty percent of Black, NH PLWH as of December 31, 2015 were ages 45 or older.

HIV DISEASE DIAGNOSES

New HIV diagnoses among Black, NH persons in Virginia stayed relatively stable over the past five years (Figure 4). From 2011 to 2015, the average number of new HIV diagnoses among African Americans was 564 cases per year. In 2015, 63% of the new HIV cases in Virginia were Black, NH.

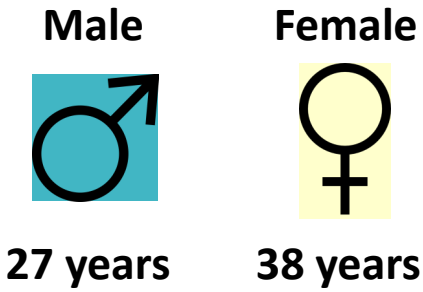
Figure 4. New HIV Diagnoses Among African Americans in Virginia, 2011-2015



By Gender and Age at Diagnosis

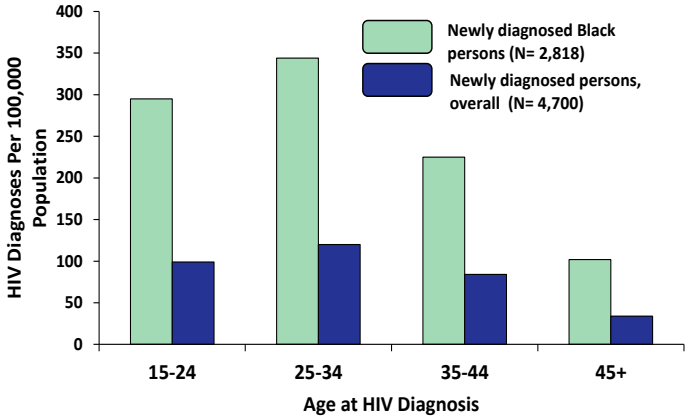
Among the newly diagnosed Black, NH cases in 2015, 76% were male and 24% were female. The median age at diagnosis for Black males in 2015 was 27 years and ranged from 4 to 78 years. The median age at diagnosis for Black females in 2015 was 38 years and ranged from 18 to 77 years (Figure 5).

Figure 5: Median Age at HIV Diagnosis by Gender among Black, non-Hispanic HIV Diagnoses in Virginia, 2015



In all age groups, the rate of HIV diagnoses per 100,000 population between 2011 and 2015 was higher among Black persons compared to the overall population (Figure 6). The highest diagnosis rate occurred among persons 25 to 34 years at time of diagnosis. Black, non-Hispanic persons aged 25 to 34 were nearly 3 times more likely to be diagnosed with HIV compared to the general population aged 25 to 34 years (340 per 100,000 versus 120 per 100,000).

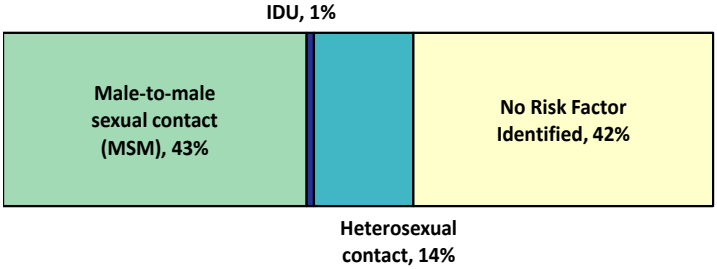
Figure 6. HIV Disease Diagnosis Rates Among African Americans and the Overall Population in Virginia, 2011-2015



By Transmission Risk

Of the 581 newly diagnosed HIV cases among African Americans in 2015, 43% were due to MSM, 14% were due to heterosexual contact, and 42% had no identified risk factor. Only 1% reported injection drug use (IDU) as the primary HIV transmission risk (Figure 7).

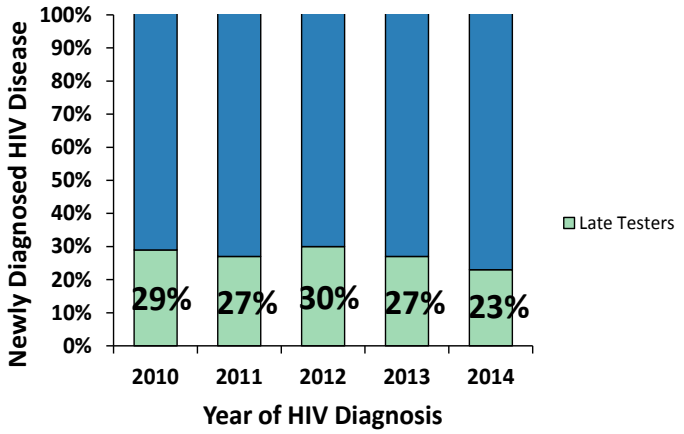
Figure 7: African Americans Newly Diagnosed with HIV by Transmission Risk, 2015



Late Diagnosis

Late diagnosis is defined as a person who is diagnosed with AIDS less than a year from initial HIV diagnosis, or a person who is diagnosed with AIDS at initial HIV diagnosis. Persons who are diagnosed late in the disease process have an increased risk of morbidity, increased health costs, and diminished responses to antiretroviral therapy, demonstrating the importance of access to HIV testing to increase timely diagnosis and early engagement in comprehensive HIV medical care. Between 2010 and 2014 (the most recent year for which data is available), among Black, NH persons in Virginia, the highest rate of late diagnosis was in 2012 at 30%. Twenty-three percent of new diagnoses in 2014 were diagnosed late. (Figure 8).

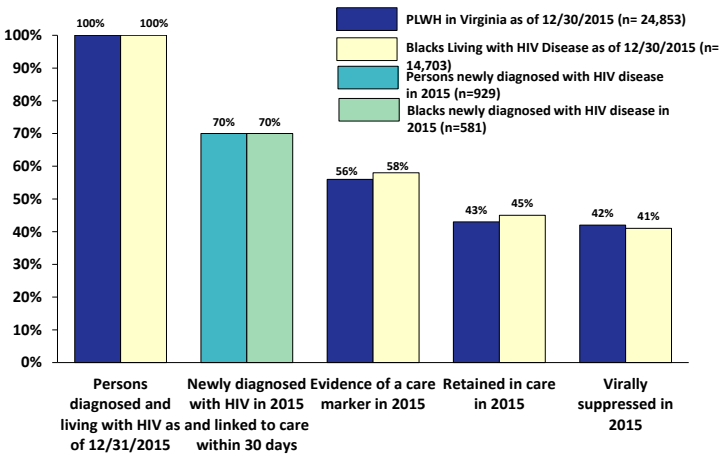
Figure 8: Late Diagnosis Among African Americans in Virginia, 2010-2014



HIV CARE CONTINUUM

The HIV Care Continuum (HCC) is a framework for assessing health outcomes among persons living in Virginia with diagnosed HIV infection. As of December 31, 2015, 14,703 Black, NH persons were diagnosed and living with HIV. Fifty-eight percent had evidence of care via a CD4 count, viral load, HIV medical care visit and/or antiretroviral (ART) prescription in 2015. Forty-five percent of the diagnosed population were retained in care (≥ 2 care markers at least 3 months apart), and 41% were virally suppressed (last viral load < 200 copies/mL) during calendar year 2015. Of those newly diagnosed in 2015, 406 (70%) were linked to medical care within 30 days of their HIV diagnosis. Figure 9 displays the HCC for Black, NH PLWH in Virginia compared to the overall population in Virginia. African American PLWH had comparable rates for all health outcomes as compared to the state as a whole.

Figure 9: HIV Care Continuum for the Overall Population and Black, non-Hispanic PLWH in Virginia, 2015



Hispanics/Latinos

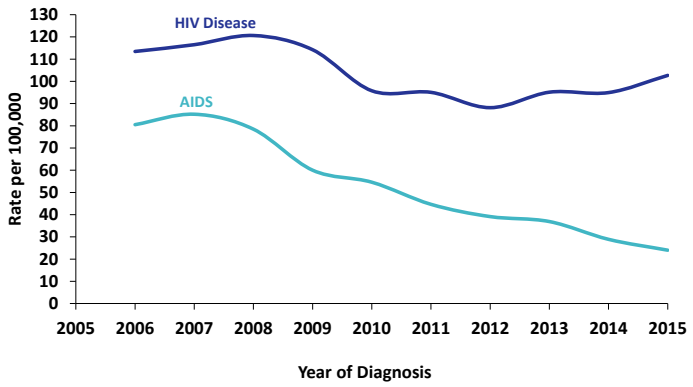
HIV is more common among Hispanics/Latinos in the United States (US).* The nationwide rate of new HIV infections among Hispanics/Latinos in 2015 was about three times that of Whites. The rate among Hispanic/Latino men was more than double the rate among White men (22 versus 8 per 100,000). The rate among Hispanic/Latina women was about triple that of Whites (2.5 versus 0.9 per 100,000)[1].

According to the Centers for Disease Control and Prevention (CDC), substance use, socioeconomic factors, language barriers, and stigma around homosexuality contribute to the spread of HIV among Hispanics[2]. CDC reports that Hispanic/Latino men who have sex with men (MSM) had the highest rates of unprotected male-to-male sexual contact (MMSC) among a sample of US MSM[2].

HIV DISEASE DIAGNOSES

In 2015, Hispanic/Latino persons accounted for 10% of the newly diagnosed HIV cases in Virginia in 2015; this has remained relatively stable over the past five years (2011 to 2015). As evidenced by Figure 1, rates per 100,000 population of Hispanic/Latino AIDS diagnoses have decreased steadily since 2007, with the rate per 100,000 in 2015 being 3.5 times lower than that in 2007 (85 in 2007 and 24 in 2015). The rate of HIV disease diagnoses has decreased overall in the last ten years, but has increased a low of 88 per 100,000 in 2012 to 103 per 100,000 in 2015.

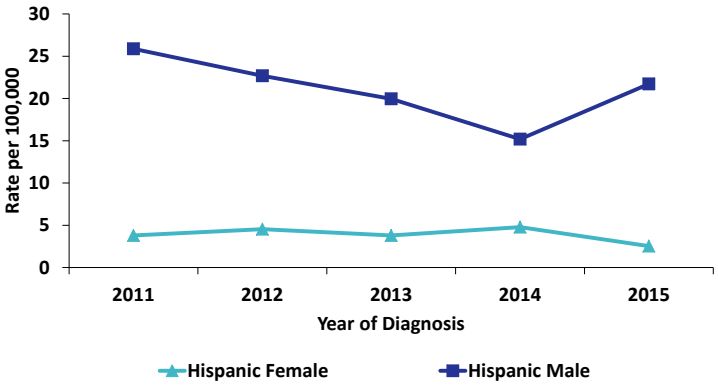
Figure 1: HIV Disease & AIDS Diagnosis Rates among Hispanics/Latinos in Virginia, 2006-2015



By Gender

From 2011 to 2015, the average rate of HIV diagnoses among Hispanic/Latino males was almost four times that of females (21 versus 6 per 100,000). New HIV diagnoses among Hispanic/Latina females have been stable from 2011 to 2015 (Figure 2).

Figure 2: HIV Disease Diagnoses among Hispanics/Latinos by Gender, 2011-2015



By Age at Diagnosis

Figure 3 shows higher rates of HIV diagnoses among Hispanics/Latinos aged 45 or older compared to the general HIV population. The highest rate of HIV diagnosis occurred among 45-54 year olds from 2011 to 2015. Figure 4 shows Hispanic/Latino persons aged 35 to 44 at diagnosis were the only age group with increasing rates of HIV diagnosis.

Figure 3: HIV Disease Rates among Hispanics/Latinos versus Virginia by Age at Diagnosis, 2011-2015†

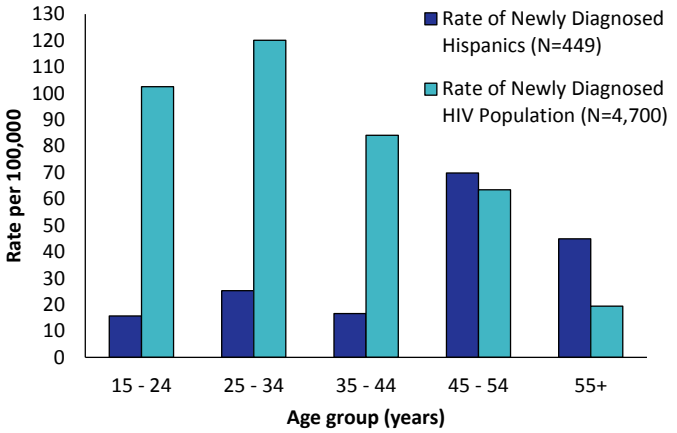
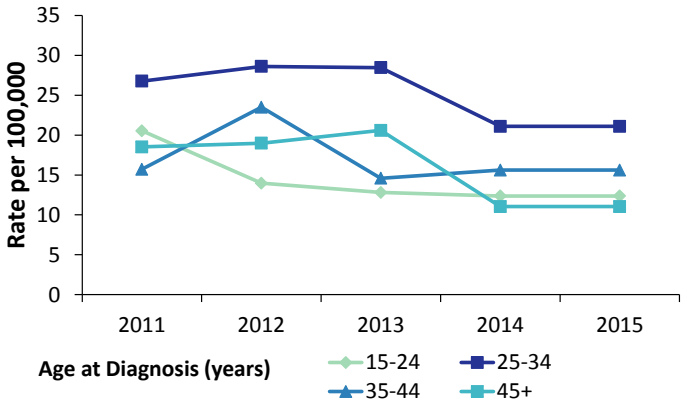


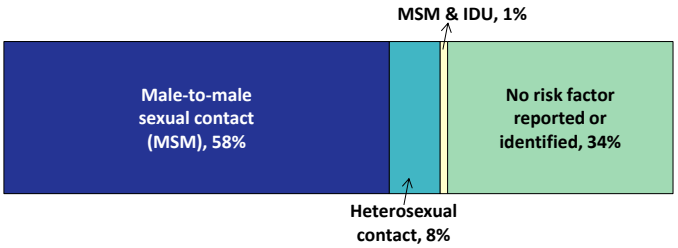
Figure 4: HIV Disease among Hispanics/Latinos by Age at Diagnosis, 2011-2015



By Transmission Category

In 2015, over half (58%) of the newly diagnosed HIV cases among Hispanic/Latinos were attributed to male-to-male sexual contact (MSM), followed by MSM with a history of injection drug use (IDU). (Figure 5). Heterosexual contact and infection with no risk reported or identified followed.

Figure 5: Hispanics/Latinos Newly Diagnosed with HIV by Transmission Risk, 2015



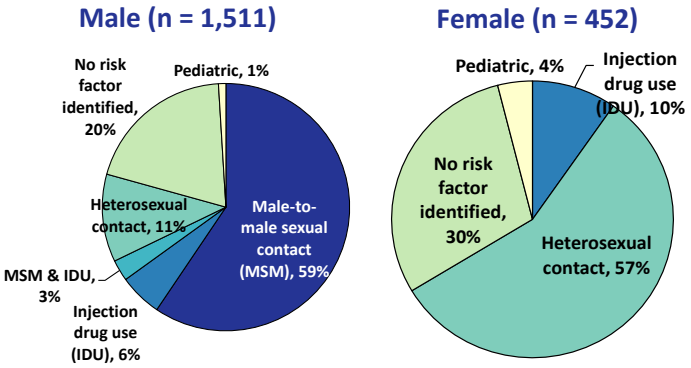
HIV/AIDS PREVALENCE

As of December 31, 2015, there were 2,003 Hispanic/Latinos living with HIV in Virginia, 52% of whom had progressed to an AIDS-defining condition.

By Transmission Category

Among male Latino PLWH, MSM is the primary risk factor for HIV, at 59%. IDU is more common among Hispanic/Latina women living with HIV versus males (10% versus 1%) (Figure 6). Transmission risk differs among Hispanic PLWH by gender. Heterosexual contact is the primary transmission risk for Hispanic/Latina women living with HIV at 57%; however, only 11% of Hispanic/Latino men living with HIV report heterosexual contact.

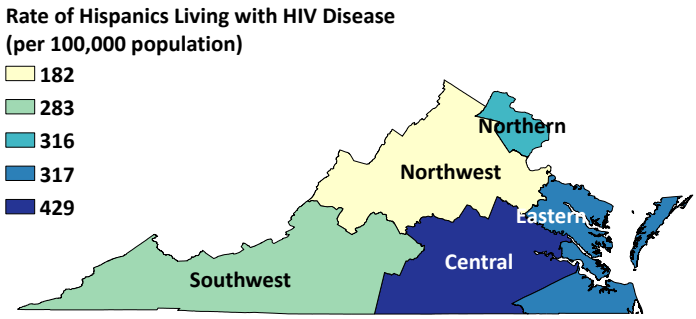
Figure 6: Hispanic/Latino PLWH by Transmission Risk in Virginia, 2015



By Health Region

There are five health regions in Virginia: Northern, Northwest, Eastern, Southwest and Central. Figure 7 shows rates per 100,000 population of Hispanics living with HIV. Rates are highest in the Central region, at 429 cases per 100,000, followed by the Eastern region at 317 cases per 100,000 population. The Northwest region has the lowest rate at 182 per 100,000 population.

Figure 7: Hispanics/Latinos Living with HIV Disease by City/County in Virginia, 2015‡



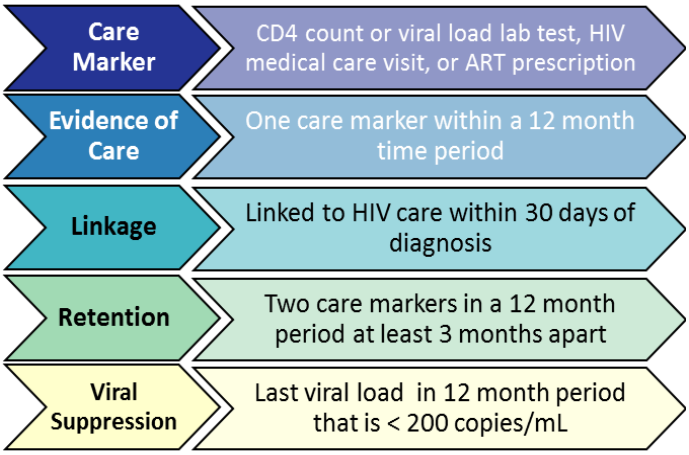
LATE DIAGNOSIS

Early knowledge of HIV infection can improve an individual's health outcome and help prevent further HIV transmission. Late diagnosis refers to cases that have an initial AIDS diagnosis or receive an AIDS diagnosis within 12 months of their HIV diagnosis. In Virginia, the rate of late diagnosis among Hispanics is three times that of White, non-Hispanic and Black, non-Hispanic persons.

HIV CARE CONTINUUM

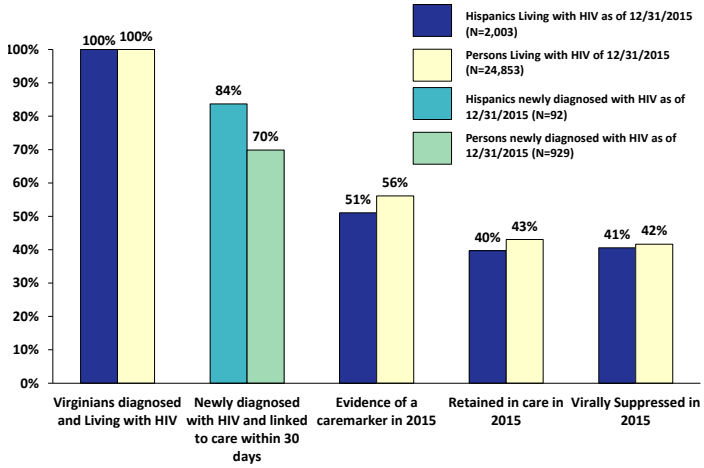
The HIV Care Continuum (HCC) is a framework for assessing health outcomes among persons living in Virginia with diagnosed HIV infection. Figure 8 shows definitions for the HCC.

Figure 8: HIV Care Continuum Definitions



In 2015, 51% of the 2,003 Hispanic/Latino PLWH in Virginia had a care marker. Of all PLWH in Virginia as of 2015, 57% had a care marker. Forty percent of Hispanic/Latino PLWH were retained in care and 41% were virally suppressed, compared to 45% and 43% of Virginians living with HIV in 2015. In 2015, 84% of Hispanics/Latinos newly diagnosed were linked to care within 30 days, compared to 70% of Virginians living with HIV in 2015 (Figure 9).

Figure 9: HIV Care Continuum among Hispanics/ Latinos versus PLWH in Virginia, 2015



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2. CDC (2013). "HIV among Hispanics/Latinos." Accessed April 2016: http://www.cdc.gov/hiv/group/racialethnic/hispaniclatinos.

*Hispanics/Latinos can be of any race. Hispanic and Latino/Latina are used interchangeably.

^Data presented in the national HIV incidence report are annual estimates of the number of new infections, whether or not they were actually diagnosed. In contrast, Virginia data are based on new diagnoses each year, which can include persons who were infected in previous years. These two sets of data cannot be directly compared; they are presented here only to show similarity in trends.

†Small case counts among some Hispanic/Latino age groups in 5 year increments may result in unreliable rate estimates.

‡ Small case counts among Hispanics/Latinos and small Hispanic population in some localities may result in unreliable rate estimates.

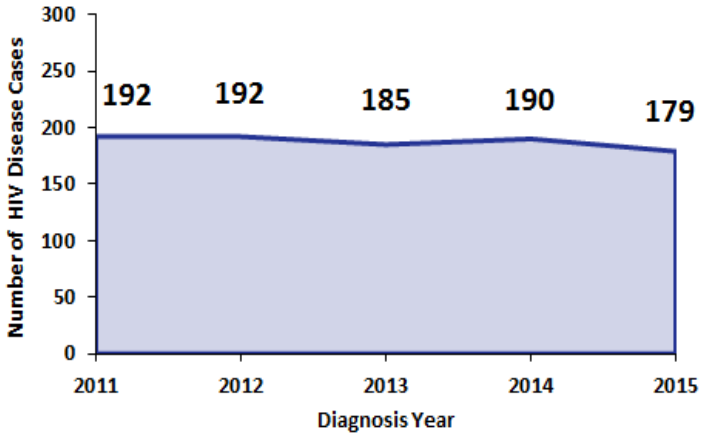
Women

Nationally, approximately one out of four persons living with HIV (PLWH) is female.[1] In 2014, there were 44,073 new HIV disease diagnoses among women in the United States. Of these cases, 62% were African American, 18% were White, and 16% were Hispanic/Latino. Nationally, most new diagnoses among women are attributed to heterosexual sex, followed by injection drug use (IDU). It is important to note that from 2005 to 2014, the number of newly diagnosed HIV disease cases among women decreased by 40%.[1]

NEW HIV DISEASE DIAGNOSES

In Virginia, from 2011 to 2015, 1,006 women were newly diagnosed with HIV. Women account for approximately 20% of all the newly diagnosed cases annually in Virginia. Figure 1 shows the trend of new diagnoses among women over the five-year time period, with 179 HIV disease cases diagnosed among women in 2015.

Figure 1: Newly Diagnosed HIV Disease Cases Among Women in Virginia, 2011-2015



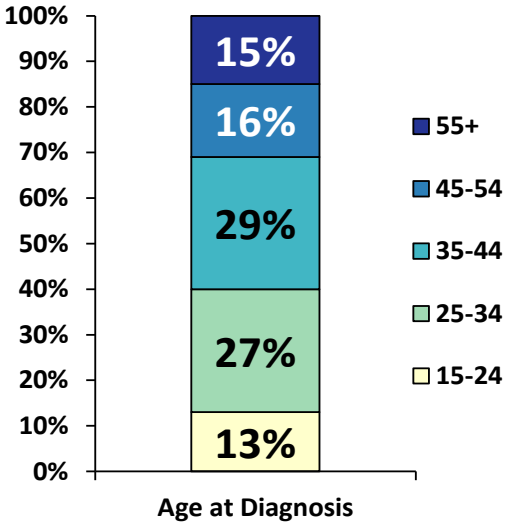
Transmission Category

In 2015, the most common transmission category for new HIV disease diagnoses among women was heterosexual contact (40%), followed by IDU at 1%. Approximately 59% of women had no reported or identified risk.

Age at Diagnosis

Of the 179 cases newly diagnosed in 2015, 29% of the women newly diagnosed with HIV were between the ages of 35 to 44, followed by women ages 25 to 34 (27%) (Figure 2).

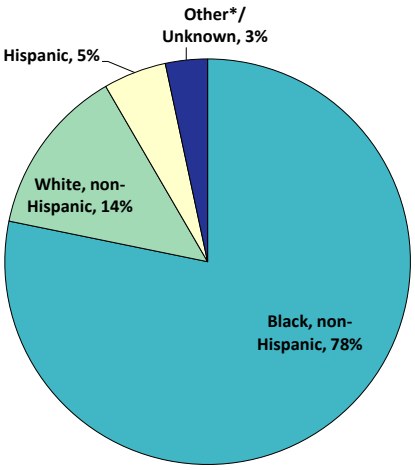
Figure 2: Newly Diagnosed HIV Disease Cases Among Women by Age at Diagnosis in Virginia, 2015



Race/Ethnicity

In 2015, 78% of new HIV disease diagnoses in Virginia occurred among Black, non-Hispanic (NH) women. White, NH women accounted for 13% of the new HIV disease diagnoses, while Hispanic/Latino women accounted for 5% of the new diagnoses.

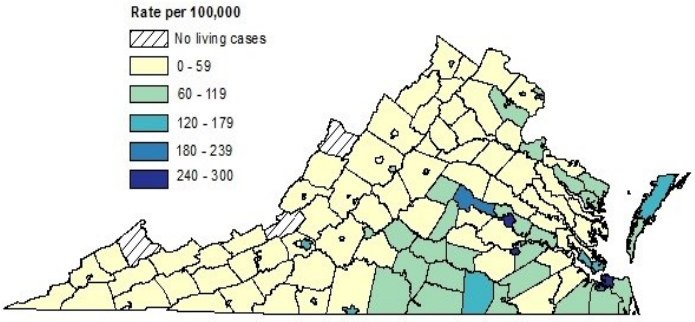
Figure 3: Newly Diagnosed HIV Disease Cases Among Women by Race/Ethnicity in Virginia, 2015



HIV/AIDS PREVALENCE

As of December 31, 2015, there were 6,430 women living with HIV in Virginia; 47% of women living in Virginia have progressed to an AIDS-defining condition. Figure 4 below shows a map of Virginia and the rate of women living with HIV by locality as of December 31, 2015. Higher rates of HIV disease diagnosis occurred in the Eastern and Central regions.

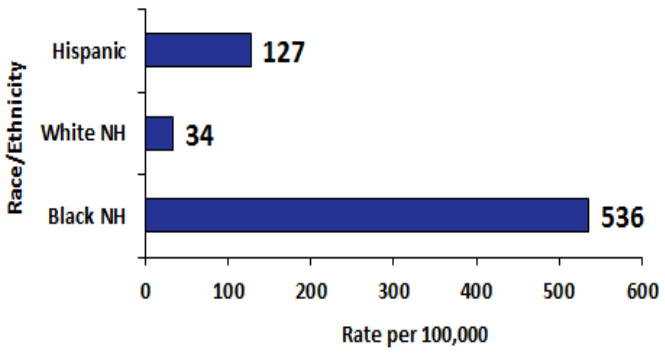
Figure 4: Rates of Women Living with HIV by City/ County in Virginia as of December 31, 2015



Race/Ethnicity

Of the 6,430 women living with HIV as of December 31, 2015, 74% were Black, NH. Sixteen percent were White, NH, and 7% were Hispanic/Latino. Black, NH women are approximately 16 times more likely to be living with HIV than White, NH women and four times more likely to be living with HIV compared to Hispanic/Latino women. Hispanic/Latino women are four times more likely to be living with HIV compared to White women (Figure 5).

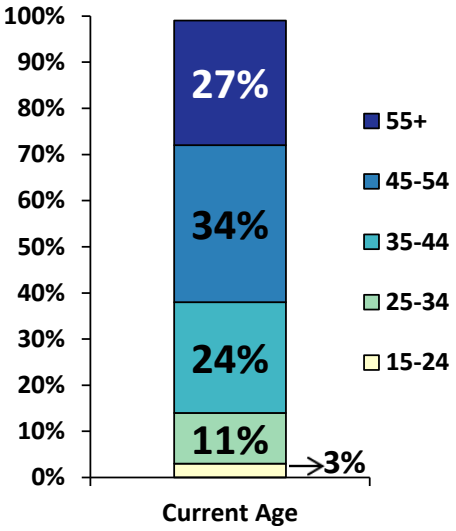
Figure 5: Rates of Women Living with HIV in Virginia by Race/Ethnicity as of December 31, 2015



Current Age

As of December 31, 2015, 34% of women living with HIV in Virginia were between the ages of 45 to 54. Twenty-seven percent were aged 55 or older (Figure 6).

Figure 5: Women Living with HIV by Current Age in Virginia as of December 31, 2015



Transmission Category

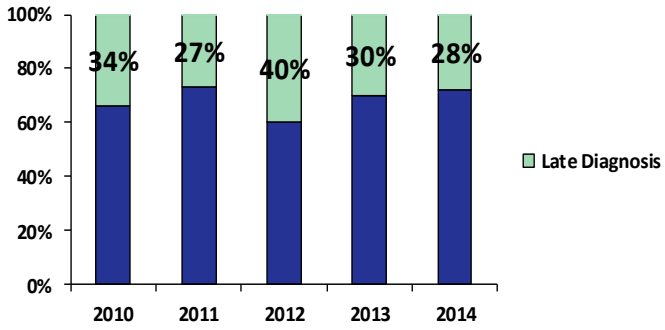
As of December 31, 2015, the most commonly identified transmission category among women living with HIV was heterosexual contact (50%). Thirteen percent reported IDU as their transmission category, and an additional 2% were pediatric/ perinatal exposure cases.

LATE DIAGNOSIS

Late diagnosis is defined as a person who is diagnosed with AIDS less than a year after initial HIV diagnosis, or a person who is diagnosed with AIDS at initial diagnosis. Persons who are diagnosed late in the disease process have an increased risk of morbidity, increased health costs, and diminished responses to antiretroviral therapy, demonstrating the importance of access to HIV testing to increase timely diagnosis and early engagement in comprehensive HIV medical care. Figure 7 displays the percentage of newly diagnosed HIV disease cases among women that were late diagnoses based on year of diagnosis.

To determine late diagnosis, one year of follow-up from the first HIV diagnosis is needed to determine if a person is also diagnosed with AIDS in that year. Because of this reason, the most recent year of data available in Virginia is 2014.

Figure 7: Percentage of Late Diagnoses in Newly Diagnosed HIV Disease Cases Among Women in Virginia, 2010-2014



Late testers consistently comprise less than 50% of the newly diagnosed cases among women each year. Overall, the percentage of late diagnosis among women appears to be decreasing from 2010 to 2014, from 34% in 2010 to 28% in 2014.

HIV CARE CONTINUUM

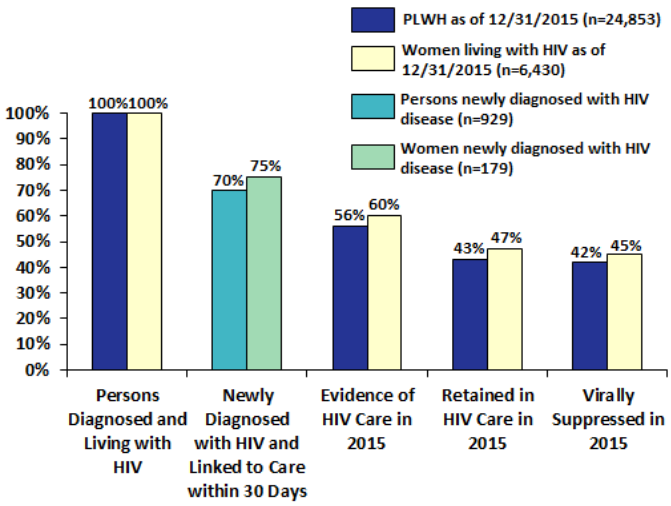
The HIV Care Continuum (HCC) is a framework for assessing the health outcomes for women living with HIV disease in Virginia. Figure 8 shows the definitions for the HCC.

Figure 9 displays the 2015 HIV care continuum for all women living with HIV compared to all HIV disease cases in the Commonwealth of Virginia.

Figure 8: HIV Care Continuum Definitions

Care Marker	CD4 count or viral load lab test, HIV medical care visit, or ART prescription
Evidence of Care	One care marker within a 12 month time period
Linkage	Linked to HIV care within 30 days of diagnosis
Retention	Two care markers in a 12 month period at least 3 months apart
Viral Suppression	Last viral load in 12 month period that is < 200 copies/mL

Figure 9: HIV Care Continuum for Women Living with HIV versus Virginia, 2015



In 2015, 60% of women had evidence of HIV care, measured through having at least one care marker (CD4 test, viral load, HIV medical care visit, or antiretroviral prescription). Forty-seven percent of women were retained in care in 2015, and 45% were virally suppressed in 2015.

Overall, women showed better health outcomes for linkage, retention in care, and viral suppression as compared to PLWH in Virginia as a whole.

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1. CDC (2016). "HIV among Women." Accessed April 14, 2016: http://www.cdc.gov/hiv/group/gender/women/.

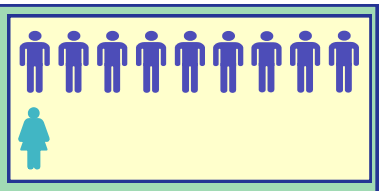
* The "other" race/ethnicity category includes: Asian, American Indian, Pacific Islander, Alaskan Native, and Multi-Race.

Youth

The Centers for Disease Control and Prevention (CDC) defines youth as persons 13 to 24 years of age. Youth may engage in high risk behaviors such as alcohol and drug use and unsafe sex. Engaging in risky behaviors during this age can increase the chance of sexually transmitted diseases and HIV disease through adulthood.[1, 2]

The CDC states that 9,731 youth were diagnosed with HIV disease in the United States (US) in 2014. Around 22% of all new HIV diagnoses in 2014 in the US were among youth. From 2005 to 2014, new diagnoses among Black, non-Hispanic (NH) and White, NH youth men who have sex with men (MSM) increased by 87%. However, rates among Black and White youth MSM have not changed in recent years. In 2014, 80% of all new youth HIV diagnoses in the US were gay and bisexual males. Youth are also the least likely of any age group to be linked to HIV care.

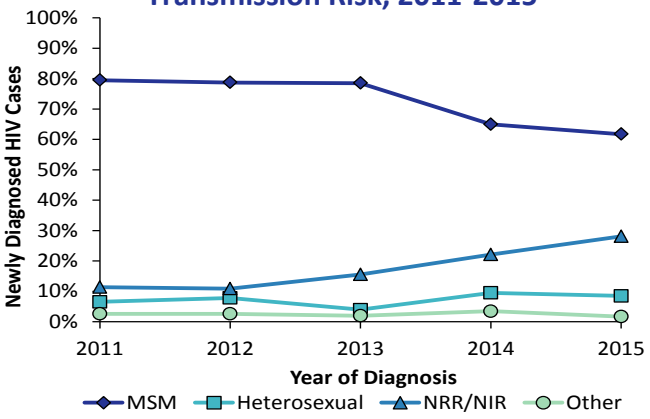
In 2015, *9 out of 10* new youth HIV cases were males in Virginia



NEW HIV DISEASE DIAGNOSES

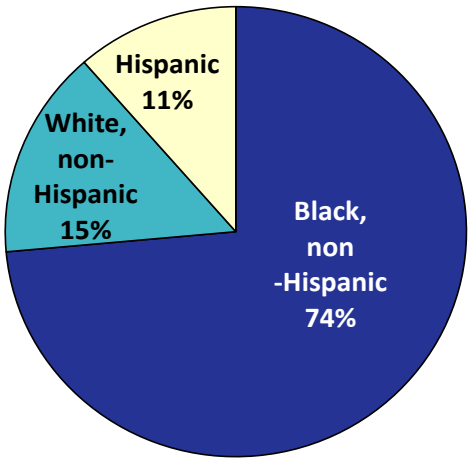
In Virginia, the average number of new HIV diagnoses among youth was 235 per year from 2011 to 2015. On average, 25% of the total new HIV diagnoses in Virginia each year were among youth. New HIV diagnoses among youth in Virginia remained stable from 2011 to 2015. In 2015, there were 235 new HIV diagnoses among youth in Virginia. Around 90% of all new youth HIV cases in 2015 were males. From 2011 to 2015, 18% of new HIV diagnoses among youth were White, NH, and 8% were Hispanic/Latino. Black, NH youth represented 74% of new youth HIV cases, even though only 23% of the youth population in Virginia is Black.

Figure 1: New HIV Diagnoses among Youth by Transmission Risk, 2011-2015



At an average of 73%, male-to-male sexual contact was the highest risk group among newly diagnosed youth from 2011 to 2015. However, new cases among youth MSM have decreased over time (Figure 1). During the same time period, new cases due to heterosexual contact increased. By race/ethnicity, among youth MSM diagnosed with HIV in 2015, 74% were Black, 15% were White, and 11% were Hispanic/Latino (Figure 2).

Figure 2: HIV Diagnoses among MSM 13-24 Years 13-24 by Race/Ethnicity, 2015



The Commonwealth is divided into five health regions: Central, Eastern, Northern, Northwest, and Southwest. Almost 44% of all new youth HIV cases were diagnosed in the Central Region. The lowest percentage of new HIV diagnoses among youth in 2015 was in the Southwest at 6%.

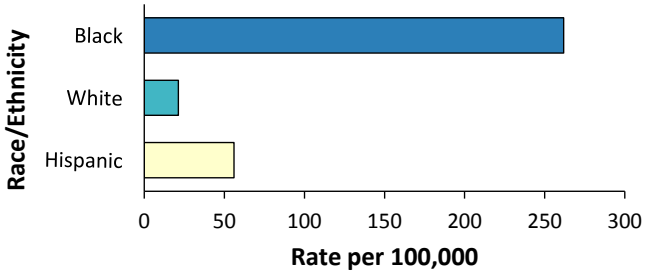
HIV/AIDS PREVALENCE

There were 940 youth living with HIV disease in Virginia as of December 31, 2015. Over 17% of youth had progressed to an AIDS-defining condition. Nearly 80% of all youth persons living with HIV (PLWH) in Virginia were male.

Prevalence Rates†

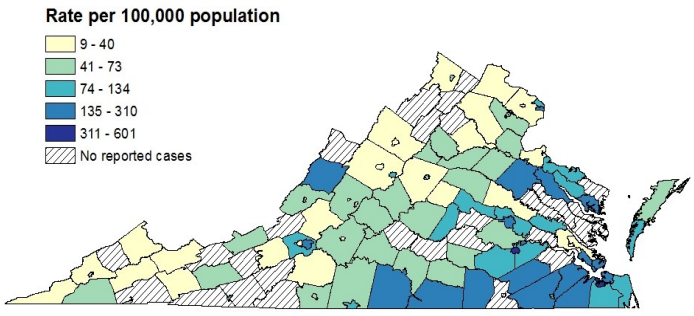
The US Census does not calculate population data for the 13-24 age group, so all rates are calculated for 15-24 year olds. At the end of 2015, the rate of PLWH ages 15 to 24 was 81 per 100,000. In contrast, the rate of PLWH for all ages was 298 per 100,000. At the end of 2015, male youth were almost four times more likely to be living with HIV than female youth. Minority youth had higher rates of PLWH compared to White youth. Black youth were 12 times and Hispanic/Latino youth were three times more likely to be living with HIV than White youth (Figure 3).

Figure 3: Youth (ages 15-24) PLWH in Virginia by Race/Ethnicity as of December 31, 2015



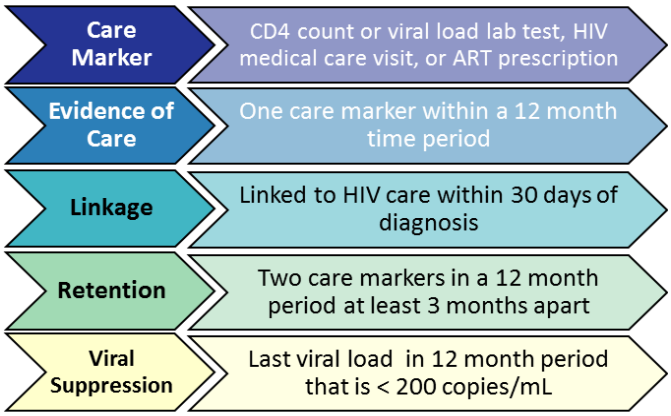
As seen in Figure 4, higher rates of youth PLWH were in the Central, Eastern, and Northern regions of the state. The Northwest and Southwest regions of the state had the lowest rates of youth PLWH at 9 per 100,000.

Figure 4: Youth (ages 15-24) Living with HIV Disease in Virginia as of December 31, 2015



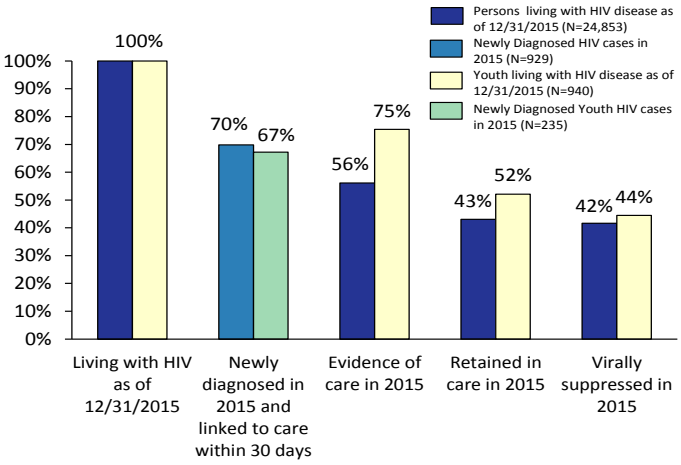
HIV CARE CONTINUUM

Figure 5: HIV Care Continuum Definitions



The HIV Care Continuum (HCC) is a framework for assessing health outcomes among PLWH (Figure 5). At the end of 2015, 940 youth were diagnosed and living with HIV in Virginia. Of the 940 youth PLWH, 75% had a care marker in 2015, 52% were retained in care and 44% were virally suppressed. Of the 235 new HIV cases among youth in 2015, 67% were linked to care within 30 days (Figure 6).

Figure 6: HIV Care Continuum in Virginia and among Youth (ages 13-24), 2015



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2. CDC. "Sexual Risk Behaviors: HIV, STD, & Teen Pregnancy Prevention." Accessed July 2016: http://www.cdc.gov/healthyyouth/sexualbehaviors/

*When describing transmission risk, MSM refers to male-to-male sexual contact or men who have sex with men and NRR/NIR refers to no reported risk or no identified risk information

†All rates are calculated for 15-24 year-olds only due to the lack of population information among the 13-14 age population in Virginia.

Hepatitis C and HIV Co-Infection

Hepatitis C is a liver infection that is caused by the Hepatitis C virus (HCV), primarily spread through the sharing of infected needles or the use of infected equipment used to inject drugs.[1] Although it is possible for people to spontaneously clear the virus from the bodies without treatment, it is estimated that 70-85% of persons infected with HCV develop a long-term, chronic infection.[2] Most persons with acute HCV infection do not display symptoms; however, some do show symptoms that range from mild (fever, nausea, loss of appetite) to severe (abdominal pain, jaundice). Those infected with chronic HCV typically do not display symptoms unless severe liver problems develop.[3] Acute and chronic HCV infection are treated with same antiviral medications.[4] However, there is no vaccine for HCV, and preventive measures are important to stop the spread of the disease.[1]

HEPATITIS C IN THE UNITED STATES

There are approximately 2.7 to 3.9 million people living with chronic HCV in the United States, with an estimated 30,500 acute cases in 2014.[5] HCV is twice as prevalent in Black persons compared to White persons.[6]

HEPATITIS C IN VIRGINIA

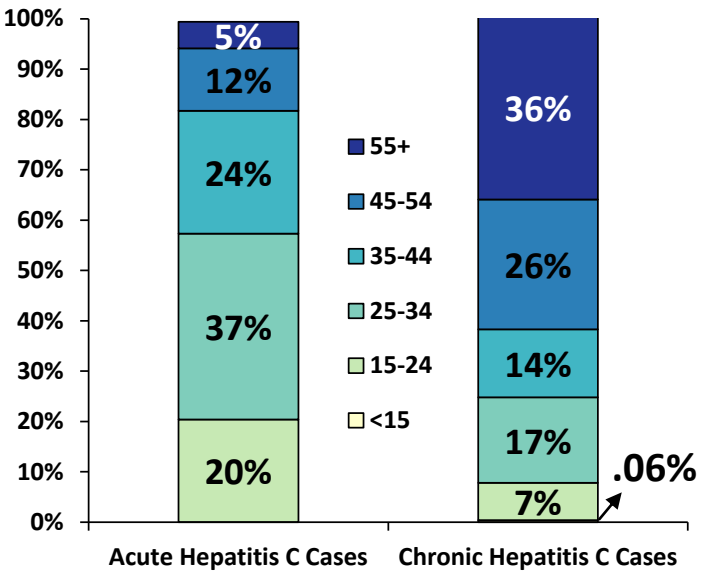
There were 27,805 cases of HCV in Virginia from 2012 to 2015, with an average of 6,952 cases per year. In this time period, less than 1% of the cases were acute. While the number of acute HCV cases appears to be decreasing, the number of chronic HCV cases is increasing.

Fifty-five percent of the acute cases were female, while 58% of the chronic HCV cases were male. Thirty-six percent of the chronic HCV cases were over the age of 55, while 37% of the acute HCV cases were between the ages of 25-34 (Figure 1). The Southwest health region of Virginia has the highest incidence of chronic and acute HCV cases in the Commonwealth.[7]

Acute vs. Chronic HCV Infection

- **Acute HCV infection** occurs within the first six months of being exposed to HCV. Acute HCV infection frequently leads to chronic HCV infection[2].
- **Chronic HCV infection** occurs when HCV remains in the body for a long period of time. The infection is long-term and can cause liver problems such as cirrhosis or liver cancer[2].

Figure 1: Comparison of Acute and Chronic HCV Cases by Age at Diagnosis in Virginia, 2012-2015



HEPATITIS C-HIV CO-INFECTION

Both HCV and HIV can be transmitted through injection drug use (IDU); approximately 50% to 90% of persons infected with HIV through IDU will become co-infected with HCV.[8] According to the Centers for Disease Control and Prevention (CDC), having an HIV co-infection can more than triple the risk for developing liver disease, failure, and liver-related death caused by HCV infection.[6] In addition, HCV infection can complicate the treatment and management of HIV.[6,8]

HEPATITIS C-HIV CO-INFECTION IN VIRGINIA

From 2012 to 2015, 544 cases of HCV were co-infected with HIV. Figure 2 shows the trend of HCV only and HIV co-infection cases from 2012 to 2015. Forty percent of these cases were over the age of 55, and 36% were between the ages of 45 and 54. Unlike the demographic profile of those infected with only HCV, 75% of the HIV co-infection cases were male. The majority of co-infections reported IDU as their transmission category for HIV infection.[7] Among PLWH, the Southwest region had the highest rate of HCV and HIV co-infection cases in 2015. (Figure 3).

Figure 2: Comparison of HCV Only and HIV Co-infection Cases by Year in Virginia, 2012-2015

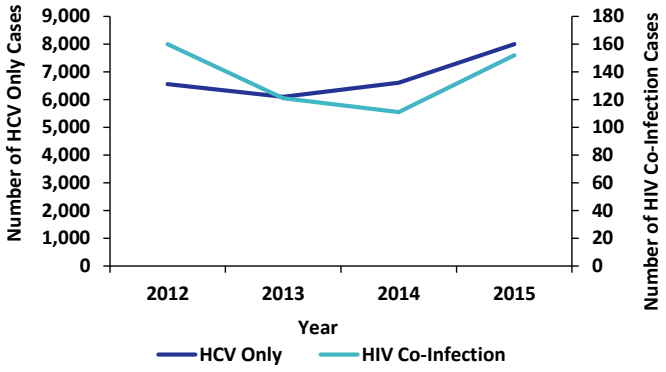
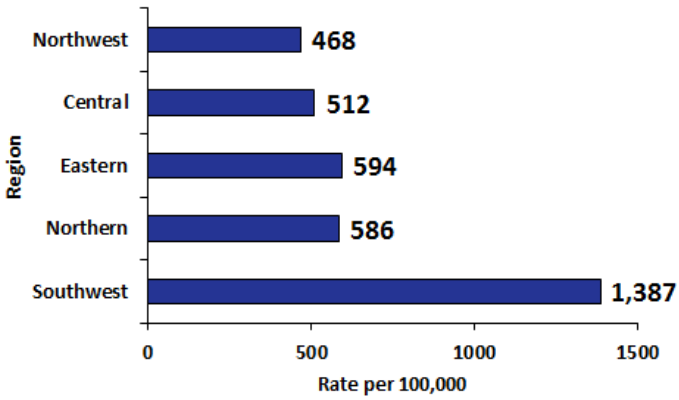


Figure 3: Rate of HCV -HIV Co-Infection Cases among PLWH by Health Region in Virginia, 2015



In 2015, 1 in every 163 PLWH in Virginia was co-infected with HCV

PREVENTION OF HEPATITIS C AND HIV CO-INFECTION

HCV transmission can be prevented by using sterile needles, not sharing drug injection equipment, or ceasing IDU.[6] Those infected with HCV should not consume alcohol due to the risk of increased liver damage. They should also use prescription pills and over-the-counter medications with the guidance of their health provider, as these substances could also damage the liver.[4] The CDC recommends that all HIV-infected individuals get tested for HCV infection. Those with HIV-HCV co-infection should seek care from a health provider who is well-versed in management and treatment of both HIV and HCV.[6]

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STD and HIV Co-Infection

Sexually transmitted diseases (STDs) such as chlamydia, gonorrhea, and syphilis are transmitted via the same risk behaviors as HIV, namely unprotected sexual activity with an infected partner and/or sexual activity with multiple or anonymous partners. Persons with a STD are more likely to acquire HIV compared to those who do not. Sores or inflammation resulting from a STD can also facilitate the transmission of HIV that may have been prevented with unbroken skin.[1]

CHLAMYDIA

Chlamydia is the most frequently reported bacterial STD reported in the United States, caused by *Chlamydia trachomatis.* While spread through sexual contact, chlamydia can also be transmitted perinatally from an infected, untreated mother to her child during childbirth.[2] While typically asymptomatic, if left untreated, women can develop pelvic inflammatory disease (PID), that can cause pelvic pain, ectopic pregnancies, and infertility.[3]

In 2014, 1,441,789 cases of chlamydia were reported to the Centers for Disease Control and Prevention (CDC).[3] The same year, the rate of infection among females was 627.2 per 100,000 females, while the rate of infection among males was 278.4 per 100,000 males.[4,5] Chlamydia is 6.7 times more prevalent among Black, non-Hispanics compared to White, non-Hispanics.[2]

Chlamydia is treated using antibiotics, primarily azithromycin or doxycycline[6], that can also be used with HIV-positive patients. Persons infected with chlamydia should avoid sexual activity throughout the treatment regimen. It is possible to become infected with chlamydia again if a person's sex partner has not been treated for the disease.

GONORRHEA

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae* and is transmitted through vaginal, oral, and anal sexual activity.

1 in 20 sexually active females between the ages of 14-24 have chlamydia.[2]

The CDC estimates that the majority of reported gonorrhea cases occur among those between the ages of 15-24.[5]

It can also be transmitted from mother to child during birth. Most people infected with gonorrhea are asymptomatic; however, if left untreated, gonorrhea can cause serious complications, such as PID in women.

Gonorrhea can also spread to the bloodstream and cause disseminated gonococcal infection, which can be life threatening. Gonorrhea can be treated using a dual therapy regimen; however, there is a growing concern of antimicrobial resistance among gonorrhea. It is possible to become re-infected with gonorrhea if a person's sex partner has not been treated for the disease. [8]

The CDC estimates that approximately 820,000 new infections of gonorrhea occur every year, with around 570,000 of those infections among those between the ages of 15-24.[8] The rate of infection per 100,000 people has increased 5.1% from 2013 to 2014.[9]

SYPHILIS

Syphilis is caused by the bacterium *Treponema pallidium,* transmitted via vaginal, oral, or anal sexual activity through a syphilitic sore known as a "chancre". Pregnant women can also transmit the disease to their unborn child. Syphilis occurs in multiple stages, with the first symptoms occurring anywhere from 10 to 90 days after infection. If left untreated, syphilis can remain in the body for years and develop into a late stage that causes damage to internal organs and can be life-threatening.

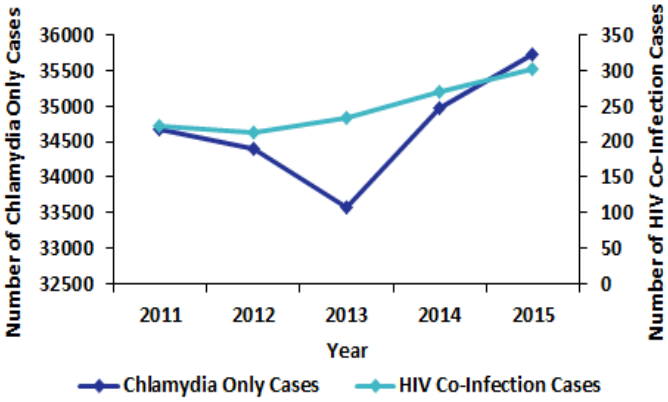
Those infected with HIV that acquire syphilis can develop very different symptoms and can have an increased risk of developing neurological effects.[10] In 2014, there were 63,450 cases of reported syphilis infection.[10] Recent outbreaks of syphilis among men who have sex with men (MSM) have coincided with high rates of HIV co-infection.[11]

STD AND HIV CO-INFECTION IN VIRGINIA

Chlamydia

From 2011 to 2015, there were a total of 174,589 cases of chlamydia diagnosed in Virginia, with less than 1% of those cases co-infected with HIV. The number of chlamydia and HIV co-infection cases appears to be increasing during this time period (Figure 1).

Figure 1: Comparison of Chlamydia Only and HIV Co-infection Cases by Year in Virginia, 2011-2015

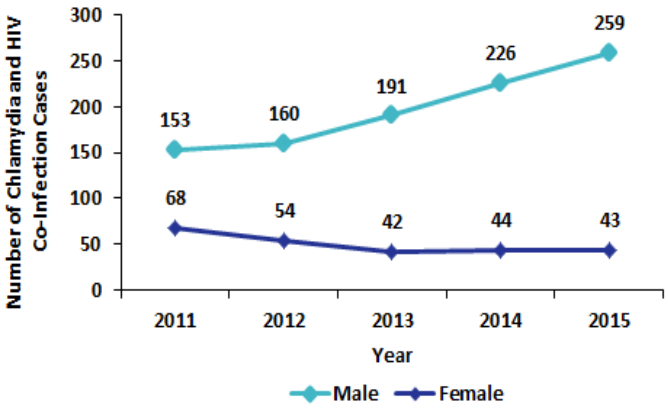


From 2011 to 2015, the chlamydia only cases occurred most frequently among males (70%), Black, non-Hispanics (45%), and those between the ages of 15-24 (69%).

HIV co-infection cases occurred mostly among males (80%), Black, non-Hispanics (68%), and those between the ages of 25-34 (37%). While the number of male co-infection cases from 2011 to 2015 is increasing, the number of female co-infection cases is decreasing (Figure 2).

In 2015, 1 in 82 PLWH were co-infected with Chlamydia in Virginia.

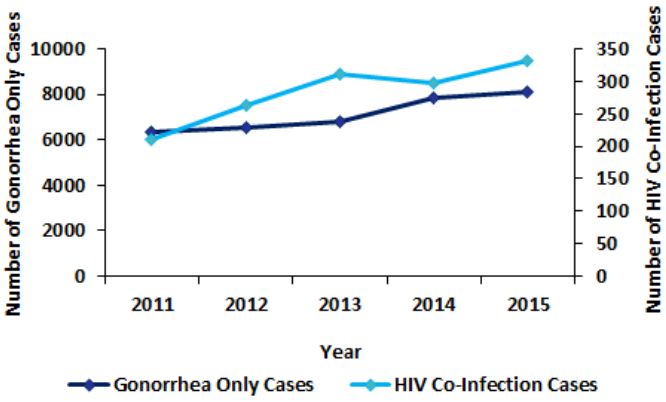
Figure 2: Comparison of Chlamydia-HIV Co-Infection Cases by Sex in Virginia, 2011-2015



Gonorrhea

There were 37,010 cases of gonorrhea diagnosed in Virginia between 2011 and 2015. Approximately 4% of those cases were co-infected with HIV. Figure 2 displays the number of gonorrhea and HIV co-infection cases by year. The number of gonorrhea and HIV co-infection cases appears to be increasing during this time period (Figure 3).

Figure 3: Comparison of Gonorrhea Only and HIV Co-infection Cases by Year in Virginia, 2011-2015



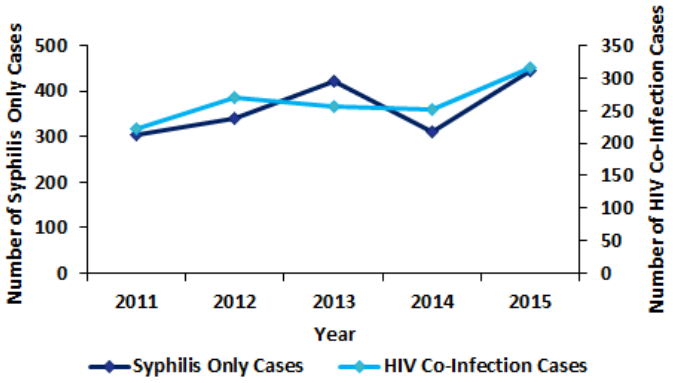
Of the 35,593 gonorrhea only cases, 55% were female. Sixty-five percent were Black, non-Hispanic, and 61% were between the ages of 15 -24. A majority (93%) of the HIV co-infection cases were male. In addition, the majority (68%) were Black, non-Hispanic and most commonly between the ages of 25-34 (39%).

In 2015, 1 in 75 PLWH were co-infected with Gonorrhea in Virginia.

Syphilis

There were 3,135 cases of syphilis diagnosed in Virginia between 2011 and 2015, with 42% of those cases co-infected with HIV. Figure 4 shows the number of syphilis only and HIV co-infection cases increasing from 2011 to 2015.

Figure 4: Comparison of Syphilis Only and HIV Co-infection Cases by Year in Virginia, 2011-2015

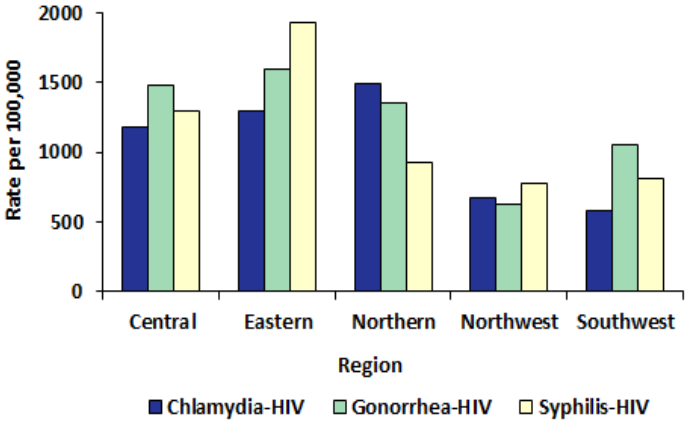


Of the 1,820 syphilis only cases, 84% were male. Fifty-two percent were Black, non-Hispanic and 38% were between the ages of 25-34. The majority of HIV co-infection cases were male (99%), Black, non-Hispanic (61%) and were most commonly between the ages of 25-34 (35%).

Regional Co-Infection

In 2015, the rates of Syphilis-HIV and Gonorrhea-HIV co-infection were highest in the Eastern health region, while the rates of Chlamydia-HIV co-infection were highest in the Northern region.

Figure 5: Rates of Chlamydia, Gonorrhea, and Syphilis-HIV Co-Infection among PLWH by region, Virginia, 2015



In 2015, 1 in 79 PLWH were co-infected with Syphilis in Virginia.

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TB and HIV Co-Infection

Tuberculosis (TB) is a disease caused by the bacterium *Mycobacterium tuberculosis.* Although the bacterium primarily attacks the lungs, it can reside in any part of the body, such as the brain, kidney, or spine. TB is an airborne, communicable disease that is spread when people infected with TB in the lungs or throat sneeze, cough, or speak, placing TB bacteria in the air that is then ingested by surrounding people [1].

Worldwide, TB is one of the leading causes of death in those living with HIV, with the risk of developing TB being approximately 26 to 31 times greater in persons living with HIV (PLWH) compared to those without HIV infection. Among those who have latent TB infection, HIV infection is the biggest risk factor for progressing to active TB disease [2,3].

The Three I's of TB/HIV

The WHO's Three I's Strategy was developed to address the impact of TB on PLWH.

- **Intensified case finding — all PLWH that come in for clinical care should be screened for TB and offered isoniazid preventive therapy if they do not have active TB [4].**
- **Isoniazid preventive therapy — all PLWH that do not have active TB should receive at least 6 months of isoniazid treatment [5].**
- **Infection control for tuberculosis - TB infection control practices should be implemented in all settings providing HIV care [6].**

Latent TB infection and TB disease

- **Latent TB infection — most people infected with TB are able to fight the bacteria and prevent them from multiplying. People with latent TB infection are not infectious and do not display any symptoms [1].**
- **TB disease — if the immune system cannot stop the bacteria from multiplying, latent TB infection becomes active TB disease. People with TB disease are infectious [1].**
- **Those with compromised immune systems, such as PLWH, have a higher risk of developing TB disease compared to those with normal immune systems [1].**

TREATMENT OF TB

Persons with latent TB infection are prescribed one or more of these medications to prevent TB disease: isoniazid, rifampin, and rifapentine. Treatment regimens last anywhere from three to nine months [7].

The treatment regimen for TB disease includes the first-line anti-TB agents isoniazid, rifampin, ethambutol, and pyrazinamide. The initial phase of the treatment last two months, and the continuation phase lasts anywhere from four to seven months [7].

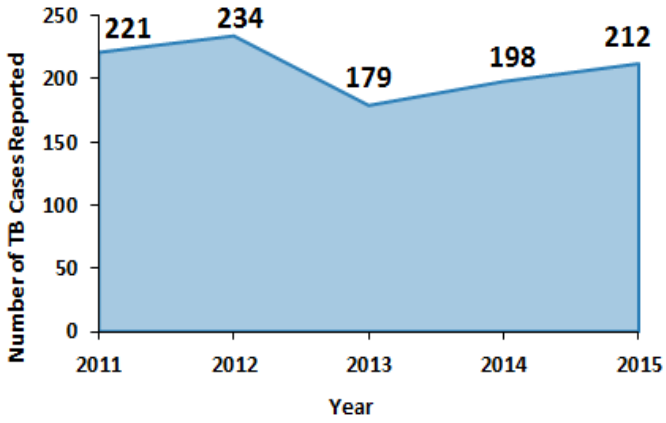
TB IN THE UNITED STATES

In 2014, 9,421 cases of TB were reported in the United States (US), at a rate of 2.96 cases per 100,000. 66% of the reported cases were foreign-born. The Asian populations had the highest rate of TB cases, at 17.8 cases per 100,000 [8]. In the US, 429 TB cases in 2014 were co-infected with HIV [9].

TB IN VIRGINIA

From 2011 to 2015, Virginia reported 1,044 cases of TB. Figure 1 displays the trend of TB cases (including those with HIV co-infection) reported from 2011 to 2015.

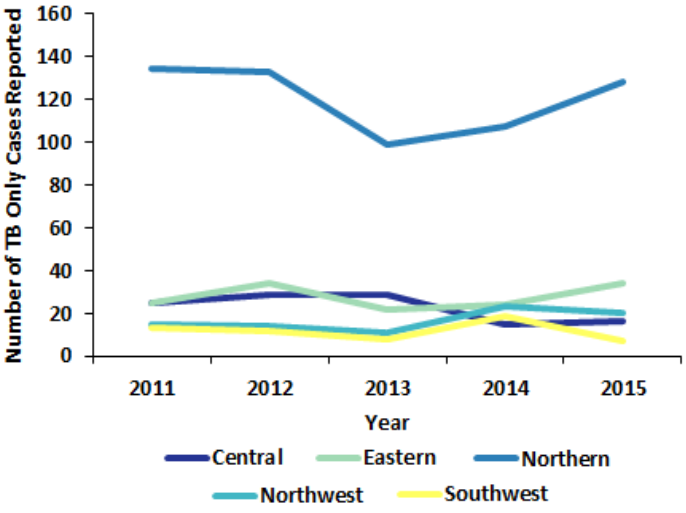
Figure 1: Number of TB Cases Reported in Virginia, 2011-2015



Of the TB only cases, 55% of the cases were male. The cases were most commonly Asian, non-Hispanic (43%), foreign-born (78%), aged 55 or older (36%), and from the Northern health region of Virginia (60%). Among those who were born in the US, most (47%) were White, non-Hispanic.

From 2011 to 2015, the number of cases in the Northern and Central regions are decreasing (Figure 2).

Figure 2: Number of TB Cases Reported in Virginia by Region, 2011-2015



TB-HIV CO-INFECTION

Of the 1,044 TB cases reported in Virginia from 2011 to 2015, 48 (5%) are co-infected with HIV. Similar to the demographic profile of the TB cases in Virginia, the majority of the co-infection cases were male (63%), located in the Northern region of Virginia (54%), and were foreign-born (67%). However, in contrast to the TB demographic, the majority of the co-infection cases were Black, non-Hispanic (65%) and between the ages of 35-44 (35%), mirroring the demographics of PLWH in Virginia.

In 2015, 1 in 3,550 PLWH in Virginia were co-infected with TB

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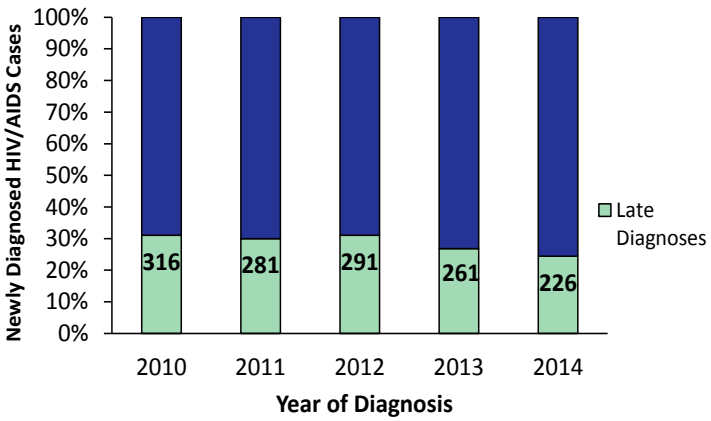
Late Diagnosis

Late diagnosis in Virginia is defined as a person who is diagnosed with AIDS at or within one year of their first HIV diagnosis. Concerns for both the individual and the public are associated with late diagnosis of HIV. Persons diagnosed late have a higher risk of illness, higher health costs, and weakened responses to antiretroviral therapy (ART).[1,2] Late diagnoses show how important access to HIV testing is in order to increase timely diagnosis and early engagement in HIV medical care.[3, 4]

In the US, *1 in 8* HIV-positive people do not know that they have HIV.

The Centers for Disease Control and Prevention (CDC) report that 1 in 8 HIV-infected people in the United States (US) do not know their HIV status. Many are tested late, usually as a result of illness. Late testing represents missed opportunities for HIV prevention and treatment. Research shows that there may be demographic differences among people diagnosed late with HIV. Late diagnosis may also affect retention in care and viral suppression among persons living with HIV (PLWH).[3] The CDC reports that 24% of the 41,661 new HIV diagnoses in the US in 2013 were diagnosed with AIDS at the same time.[4]

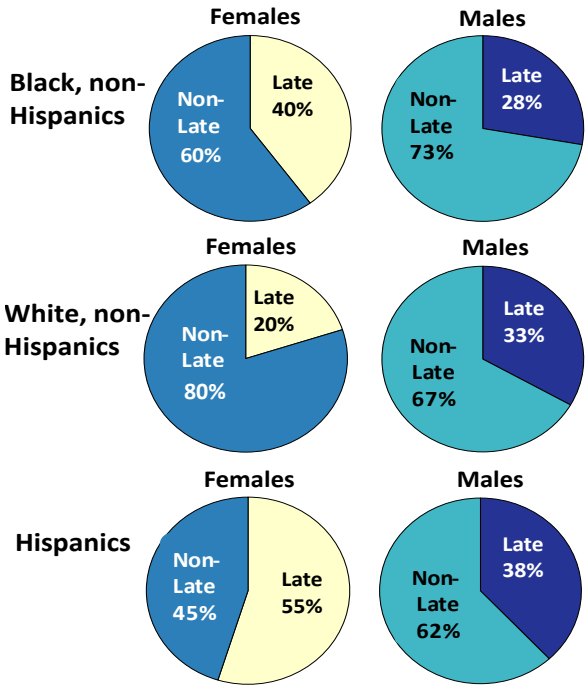
Figure 1: Late Diagnosis of HIV/AIDS in Virginia, 2010-2014



LATE DIAGNOSES IN VIRGINIA

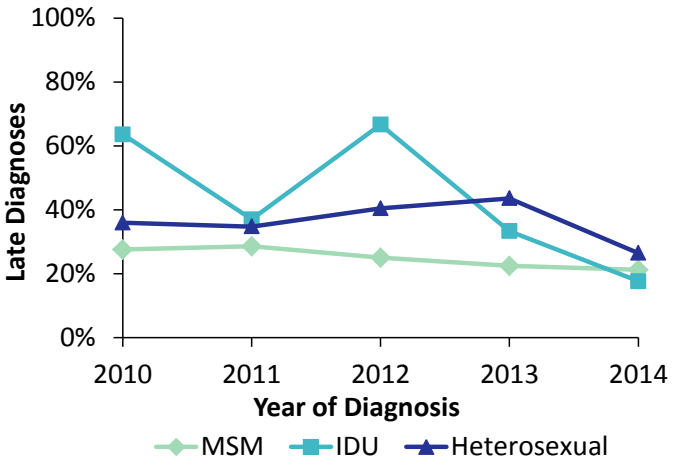
To categorize late diagnosis, one year of follow-up from the first HIV diagnosis is needed to determine if a person is also diagnosed with AIDS in that year. The most recent year of data available in Virginia is 2014. Of the 4,790 new HIV cases in Virginia from 2010-2014, 29% were late diagnoses. Over time, late diagnoses in Virginia have decreased (Figure 1). In 2014, 24% of the 924 new HIV diagnoses were considered late. Of the new HIV cases in 2014, 28% of females and 24% of males were late diagnoses.

Figure 2: Late Diagnosis among Newly Diagnosed HIV Disease Cases, by Sex and Race/Ethnicity, 2014



Over 29% of new HIV diagnoses among Hispanic/Latino persons were considered late in 2014. Among both males and females in 2014, Hispanics/Latinos had the highest percent of late diagnoses by race and gender (Figure 3). In 2014, 24% of White and 23% of Black persons were late diagnoses. White females and Black males had the lowest percent of late diagnoses among race and gender groups. Hispanic/Latino females were the only demographic group more likely to be diagnosed late than not late.

Figure 2: Late Diagnoses of HIV/AIDS in Virginia by Transmission Risk, 2010-2014



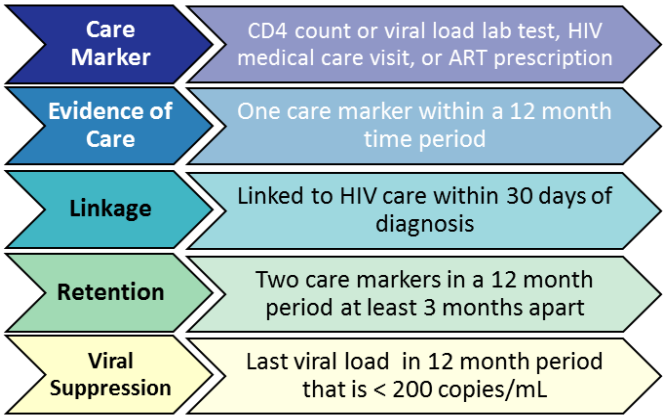
Late diagnoses due to injection drug use (IDU) decreased from 64% in 2010 to 18% in 2014. Among newly diagnosed MSM cases, late diagnosis was stable over time (Figure 2). Higher rates of late diagnosis were seen in older people than younger people from 2010 to 2014. Nearly 45% of those ages 45 and older at HIV diagnosis were considered diagnosed late. Overall, around 13% of new HIV diagnoses among youth (ages 13-24) were considered late.

Virginia is divided into five health regions: Central, Eastern, Northern, Northwest, and Southwest. Among the new HIV diagnoses in 2014, late diagnosis was highest in the Northern region at 33%, followed by the Northwest at 26%. Only 18% of persons in the Central region were diagnosed late in 2014.

HIV CARE CONTINUUM

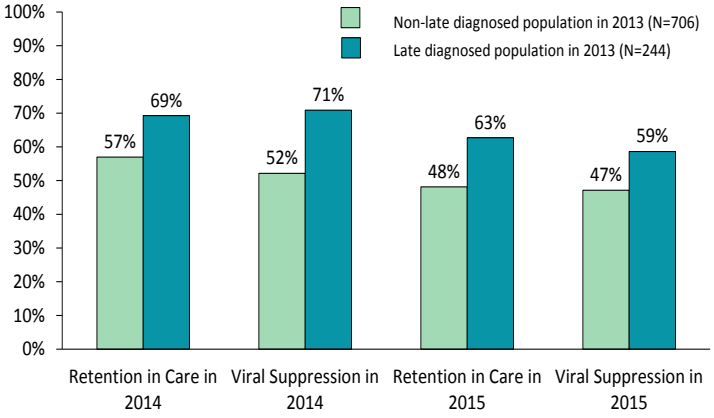
The HIV Care Continuum (HCC) is a framework for assessing health outcomes among PLWH (Figure 4). Persons diagnosed with HIV late had better overall HCC outcomes than non-late diagnoses, except for linkage. Of new HIV diagnoses in 2013, 60% of late diagnoses and 64% of non-late diagnoses were linked to care in 30 days. Figure 5 compares retention and viral suppression over time of late and non-late new HIV diagnoses in 2013.[5] Late diagnoses had higher retention and viral suppression outcomes in 2014 and 2015 than non-late diagnoses.

Figure 4: HIV Care Continuum Definitions



Better health outcomes were seen in persons diagnosed late, despite evidence of an increased risk of illness and death. This could be due to more comprehensive treatment since the disease has advanced, and better adherence to ART in response to HIV-related symptoms.[2]

Figure 5: Retention and Viral Suppression of New HIV Diagnoses in 2013: Late vs. Non-late Diagnoses, 2014 and 2015[5]



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Mental Health

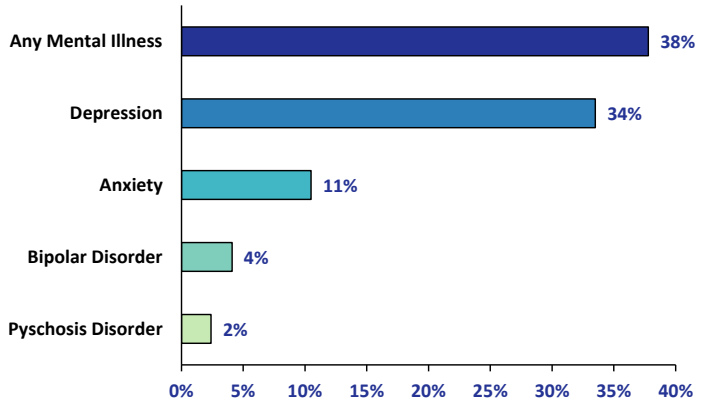
Mental illnesses are "characterized by altered mood, thoughts and/or behaviors associated with distress or impaired functioning".[1] Some common types of mental illnesses are depression, bipolar disorder and anxiety. In the United States (US), one in four adults experiences a MI in a year.[2] The number of PLWH and MI is unknown as MI often goes undiagnosed and can vary in duration. Percentage of HIV among adults with serious MI is estimated to be between 3% and 23%.[3]

MEDICAL MONITORING PROJECT

The Medical Monitoring Project (MMP) assesses the health-related behaviors, clinical outcomes and needs of HIV-infected adults receiving medical care. Data on MI are collected through a participant interview and a medical record abstraction (MRA). Participants are asked the Patient Health Questionnaire-8 (PHQ) to measure depression in the last two weeks. PHQ is one of the most validated instruments to measure depression.[4] The MRAs document diagnosed MIs since HIV diagnosis until 12 months before the interview.

In Virginia, from 2009 to 2013, 38% of participants had a MI listed in the medical chart, with depression being the most common (34%) (Figure 1). Those with HIV often suffer from MI as they adjust to complicated treatment regimens and stigmatization.

Figure 1. Diagnosed Mental Illness During the MMP Medical History Period, 2009-2013*



PLWH with severe MI have a slower rate of HIV viral suppression than those without severe MI.[5,6] The MMP findings highlight the importance of MH screening and treatment as an integrated component of HIV care.

RYAN WHITE SERVICE UTILIZATION

The Ryan White HIV/AIDS Program offers social and medical services for low-income PLWH. A key service offered by the Ryan White program in Virginia is referral to MH providers. About 6% of Ryan White services in 2015 in Virginia were utilized for MH referrals. Twenty percent of all clients in Virginia served by Ryan White in calendar year (CY) 2015 had at least one MH referral. In CY 2015, there were 10,812 Ryan White MH referrals. MH is the fourth most widely used service in Virginia, after outpatient care and both medical and non-medical case management. Thus, Ryan White MH services may be vital for continuity of both medical and non-medical comprehensive HIV care.

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*Medical History Period is the first medical care visit after HIV diagnosis to 12 months before the MMP interview or first contact attempt if no interview.

^Current depression was measured using a PHQ-8 score ≥10

HIV Testing

The Virginia Department of Health (VDH) supports free HIV testing in clinical, non-clinical, and pharmacy settings across the state. Clinical sites include sexually transmitted disease (STD) clinics, community health centers (CHCs), community services boards (CSBs), emergency departments, and other healthcare settings. Non-clinical HIV testing is provided by community-based organizations (CBOs) across the state and venues include CBO drop-in centers, community centers, libraries, health clubs, fairs, and other community settings. In 2015, VDH-supported programs provided 79,472 HIV tests and identified 371 HIV-positive cases. The following data covers HIV testing events from January 1, 2015 to December 31, 2015.

HIV TESTING STRATEGIES

Rapid-Rapid

A diagnostic algorithm using two sequential rapid HIV tests. It is used by CBOs to provide presumptive HIV diagnosis and linkage to care within one testing and counseling session.

4th Generation

A type of HIV test that detects "acute" infection by testing for both HIV antibodies and HIV antigen. It is available at all of Virginia's local health departments.

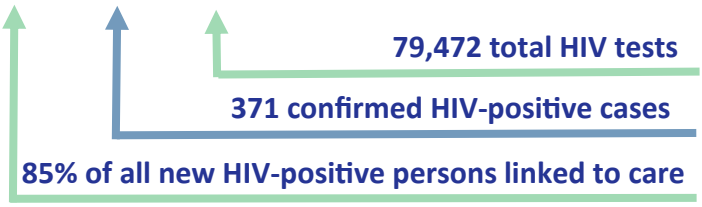
Couples HIV Testing and Counseling

This is an intervention that involves testing couples for HIV together and discussing relationship agreements to keep both partners protected and healthy.

Home Testing

This is a new program initiated in November 2015 serving men who are at risk of acquiring HIV. Through this program, HIV test kits are mailed to a person's home after the completion of a confidential web-based survey.

OVERVIEW OF HIV TESTING



TYPES OF HIV TESTING SITES

Clinical

These are STD Clinics, CHCs, CSBs, emergency departments, and other healthcare settings:

- 64,325 total tests in 2015
- 291 confirmed HIV-positive cases
- 84% of all confirmed HIV-positive persons were linked to medical care within 90 days of positive diagnosis

Non-Clinical

CBOs provide HIV testing in community or non-clinical settings in each of Virginia's five health regions:

- 15,147 total tests administered in 2015
- 80 confirmed HIV-positive cases
- 90% of confirmed HIV-positive persons linked to care within 90 days of HIV diagnosis

Pharmacy

There are 32 Walgreens pharmacies across the state that offer free, confidential HIV testing during regular pharmacy hours where the pharmacist performs the HIV test:

- 1,449 total tests in 2015
- 14 confirmed HIV-positive cases
- 87% of all confirmed HIV-positive persons were linked to care within 90 days of diagnosis

Home

VDH's In-Home HIV testing program offers free HIV test kits to persons at risk of acquiring HIV:

- 162 home HIV test kits were mailed in 2015
- VDH does not generally receive HIV test results and/or linkage information for this program

By Transmission Category

Heterosexual contact was the most reported primary risk, at 59,068 tests. VDH-sponsored programs provided 5,837 tests to men who have sex with men (MSM), 1,465 to persons who inject drugs (PWID), and 92 to individuals who identified combined MSM and injection drug use (IDU). A total of 13,010 tests were submitted with no risk or other risk reported or identified (Figure 1).

Figure 1: HIV Testing by Transmission Category, 2015 (n=79,472)

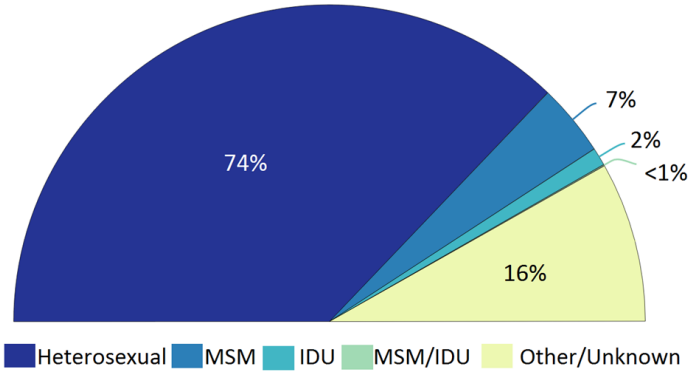
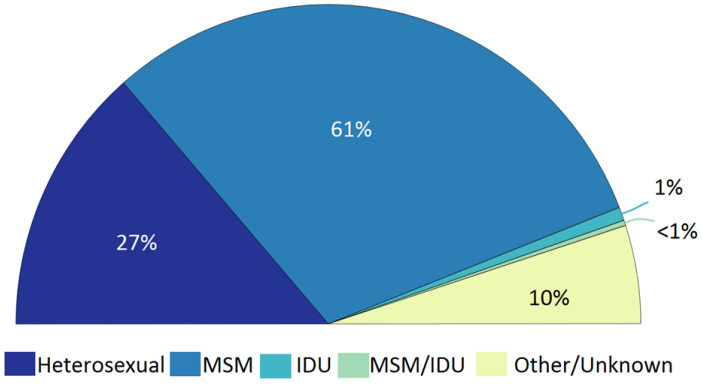


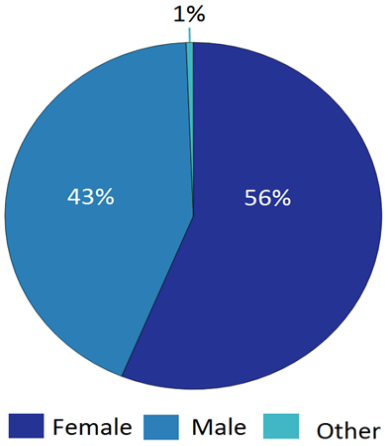
Figure 2 below shows that for all confirmed HIV positive tests in 2015, MSM was the most reported primary risk (61%), followed by heterosexual contact (29%), unknown (8%), IDU (1%) and MSM/IDU (<1%).

Figure 2: Confirmed HIV Positive Tests by Transmission Category, 2015 (n-79,472)



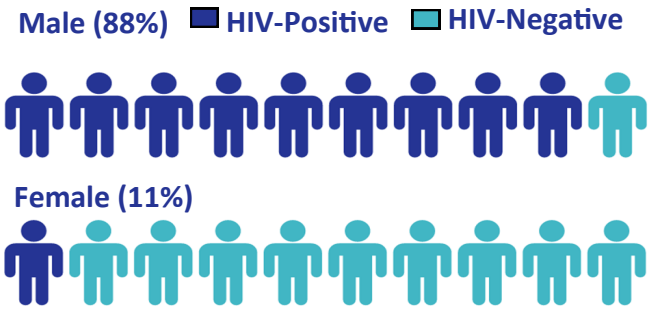
By Gender

Figure 3: HIV Testing by Gender, 2015 (n=79,472)



Female was the most reported gender, at 44,689 tests, followed by males, at 34,299 tests (Figure 3). The "other" group (n=484) consists of female-to-male, male-to-female, or unspecified transgender persons (n=211), persons who declined to answer (200), and persons who were not asked a gender question (73).

Figure 4: Confirmed HIV-Positive Persons by Gender, 2015 (n=371)

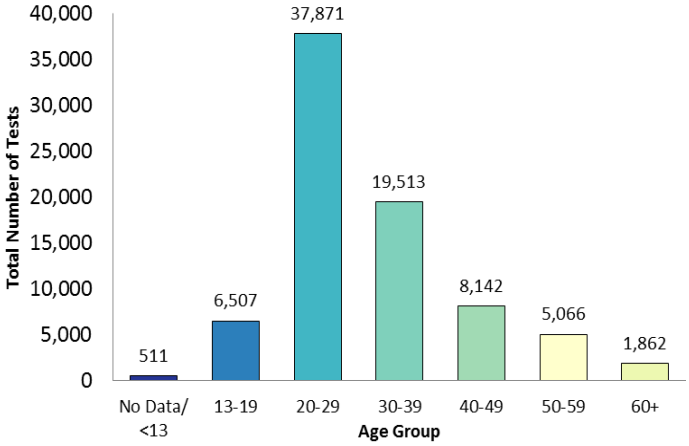


Of all persons with a confirmed positive HIV test, as noted with the dark blue color in Figure 4, 88% were men, 11% were women, and 1% were transgender (Figure 4). Of all men with a confirmed positive HIV test result, 61%, or 3 out of 5 men, were MSM. Because HIV testing data shows that men are eight times more likely to test positive for HIV, Virginia's HIV testing strategies focus on increasing HIV testing among men across the state.

By Age Group

The 20-29 age group comprised 48% of all HIV tests, followed by persons ages 30 to 39 (25%), 40 to 49 (10%), 13 to 19 (8%), and 50 to 59 (6%), and 60 and older (2%) (Figure 5). Persons under age 13 and those with no age reported comprised less than 1% of all tests.

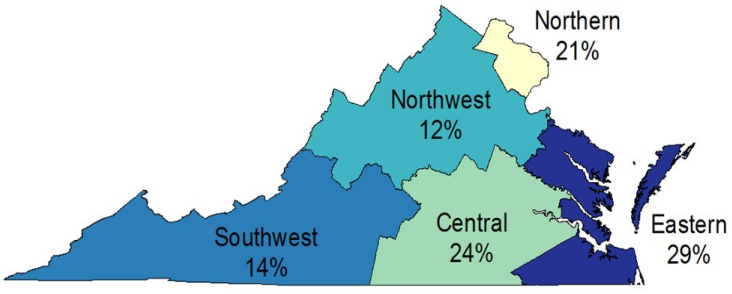
Figure 5: HIV Testing by Age, 2015 (n=79,472)



By Health Region

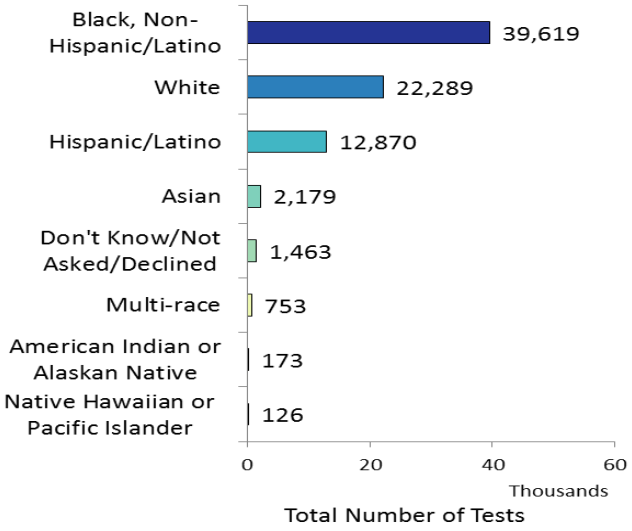
The map below shows HIV testing by health region. Of the 79,472 HIV tests administered in 2015, 29% were administered in Eastern, followed by Central (24%), Northern (21%), Southwest (14%), and Northwest (12%) (Figure 6).

Figure 6: HIV Testing by Health Region in Virginia, 2015 (n=79,472)



By Race/Ethnicity

Figure 7: HIV Testing by Race/Ethnicity, 2015 (n=79,472)



Agencies supported by VDH provided more tests to African-Americans (50%) than any other racial/ethnic group, followed by Whites (28%), Hispanics/Latinos (16%), and Asians (3%). Less than 1% of tests were provided to individuals who identified as more than one race, and nearly 2% of tests were provided to individuals who did not know their race or declined to answer (Figure 7).

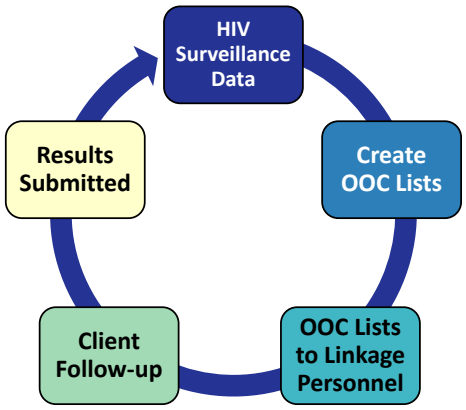
Data to Care

Data to Care (DtC) is a Centers for Disease Control and Prevention (CDC) national strategy to use HIV surveillance data to identify persons living with HIV (PLWH) who are out-of-care (OOC). Once OOC persons are identified, they are contacted to be linked or reengaged back into care.[1] DtC supports the 2020 National HIV/AIDS Strategy goals to reduce new HIV infections and improve access to care and health outcomes.[2] The goals of DtC are to increase the number of PLWH who are engaged in HIV care and virally suppressed (<200 copies/mL).[1]

DATA TO CARE IN VIRGINIA

The Virginia Department of Health (VDH) DtC program began in early 2015. DtC is a joint effort with VDH's HIV Surveillance, Care Services, Prevention, and STD Operations and Data Administration units. The main purpose of DtC is to improve health outcomes of PLWH in Virginia. The DtC initiative in Virginia has expanded statewide.

Figure 1: The Data to Care Process



Process

Virginia's DtC program uses HIV Surveillance and other data sources to create lists of people who are OOC (Figure 1). The OOC lists are given to Disease Intervention Specialists (DIS) and linkage staff at VDH's contracted agencies who follow up and try to locate clients or find updated information. Clients are only on a contractor's OOC list if the client has been seen at that agency before.

VDH also staffs a DtC Linkage Coordinator to look for clients who have never been in care or have been in care at agencies VDH does not contract with. Client information and care status are submitted to VDH. DtC results are used to update HIV surveillance data, identify reporting issues, and help improve future OOC lists.

To be on an OOC list, clients must be:

- HIV+ and reported to eHARS
- 18 years or older
- Living with a last known address in Virginia
- Meet the OOC definition

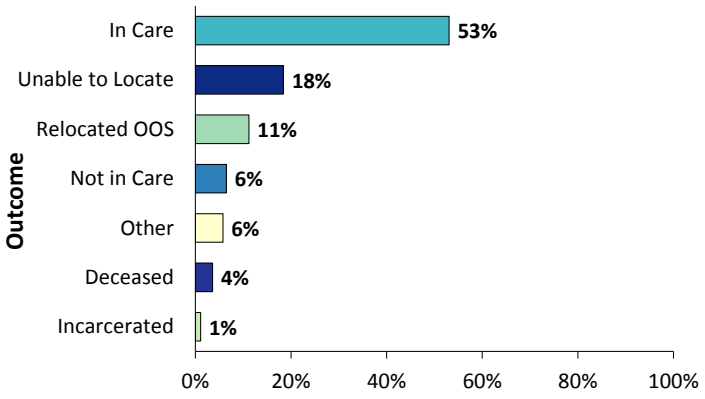
Out of Care Definition: Clients must have a care marker (CD4 or Viral load lab test, HIV medical care visit, or antiretroviral prescription) reported in the reference year, but no care marker in the following calendar year.

For example: the current OOC definition are persons who had a care marker in 2014, but have no evidence of care since.

Results

As of September 2016, 19 contracted agencies have been trained and are working on DtC. There were 235 clients who had DtC results submitted to VDH. Over 58% of clients were found to be in care, 15% were unable to be located, 11% relocated out of state (OOS) and 6% were not in care (Figure 2).

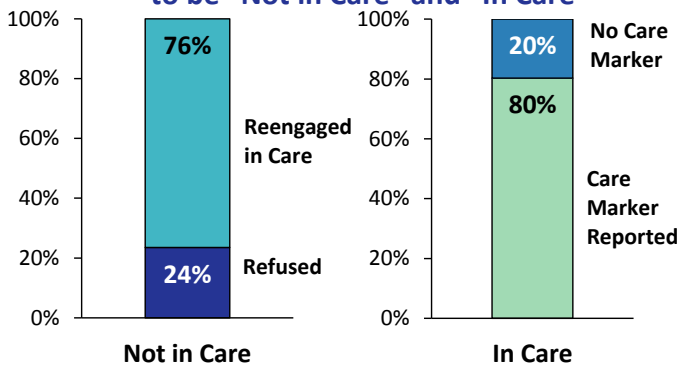
Figure 2: Data to Care Results



Results Continued

Of the 11 clients found "Not in Care," eight (62%) reengaged in care from DtC efforts (Figure 3). A client is considered reengaged when a care marker is reported to HIV surveillance after follow-up. Over 30% of clients found to be "In Care" did not have a care marker reported to HIV surveillance.

Figure 3: Data to Care Results of Persons Found to be "Not in Care" and "In Care"



Data to Care Implications

Results from DtC's first year of implementation show lower numbers of clients that are truly OOC. For clients who were not in care, DtC has been successful in helping them reengage back into HIV medical care. HIV surveillance data is enhanced through DtC outcomes by identifying clients who are no longer living in Virginia or who are deceased. This helps provide more accurate estimations of Virginia's HIV Care Continuum measures.

DtC results can also help identify agencies throughout Virginia that are not reporting their labs correctly. Persons on OOC lists who were found to be in care, but with no care markers reported to HIV surveillance, can show where reporting issues may be occurring. Moving forward, DtC will continue to expand throughout Virginia to help OOC clients get the resources and services that they need to get into HIV care, and stay in care over time to improve overall health and well-being.

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2. National HIV/AIDS Strategy: Updated to 2020. Accessed at https://www.aids.gov/federal-resources/national-hiv-aids-tsrategy/ nhas-update/index.html

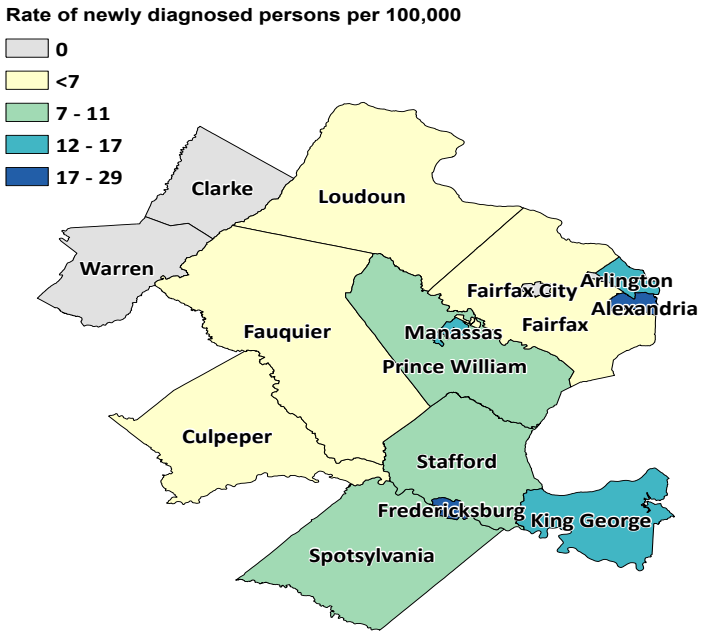
DC Eligible Metropolitan Area (EMA)

Part A of the Ryan White (RW) HIV/AIDS Treatment Extension Act of 2009 provides funding assistance to Eligible Metropolitan Areas (EMAs). For a geographical area to qualify for EMA status, an area must have reported at least 2,000 AIDS cases in the previous five years and have a population of at least 50,000. The District of Columbia (DC) EMA consists of localities from four jurisdictions: DC, Virginia, Maryland, and West Virginia. All data on the DC EMA will be focused on the Virginia portion of the DC EMA, which consists of 17 localities in Northern Virginia.

HIV DISEASE DIAGNOSES

In 2015, there were 262 persons newly diagnosed with HIV disease in the Virginia portion of the DC EMA, which represents 28% of all newly diagnosed cases in Virginia in 2015. Figure 1 shows the distribution of newly diagnosed cases across cities/counties in the DC EMA. The cities of Fredericksburg and Alexandria had the highest rates of newly diagnosed HIV cases in 2015, at 28 and 25 cases per 100,000 population, respectively. The locality with the lowest HIV diagnosis rate in 2015 was Culpeper County, at 4 cases per 100,000 population.

Figure 1: Rate of HIV Disease Diagnosis Rates among DC EMA Localities in Virginia, 2015

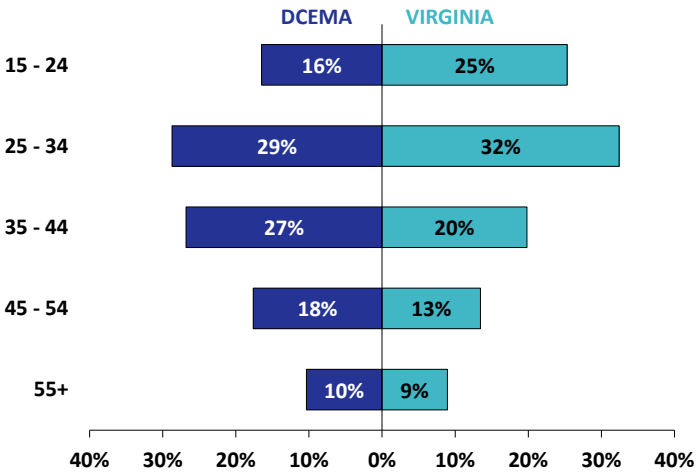


By Gender

Seventy-eight percent of the new HIV diagnoses in 2015 in the DC EMA were male, which is also comparable to the state's gender distribution of new HIV diagnoses in 2015.

By Age at Diagnosis

Figure 2: HIV Disease Diagnoses in the DC EMA and Virginia by Age at Diagnosis, 2015



According to Figure 2, the average age at diagnosis among new HIV diagnoses in 2015 in the DC EMA mirrors that of Virginia (35.8 versus 34.7 years). The highest percentage of new diagnoses occurred among the 25-34 age group in the DC EMA and in Virginia in 2015. Figure 2 shows a higher proportion of HIV-positive persons in the DC EMA being diagnosed at ages 35 to 44. Overall, the distribution in the DC EMA shows age at diagnosis of persons newly diagnosed with HIV is slightly more concentrated among persons ages 35 and older than in Virginia as a whole.

By Race/Ethnicity

In 2015, the highest percentage of new HIV disease diagnoses was among Black, non-Hispanics in the DC EMA (47%). In the DC EMA, the ratio of Whites to Hispanics/Latinos diagnosed with HIV in 2015 was roughly equal, whereas in Virginia overall, there were about two White persons for every one Hispanic/Latino person diagnosed with HIV in 2015.

Table 1: HIV Disease Diagnoses in the DC EMA and Virginia by Race/Ethnicity, 2015

Lower % Higher %

Race/Ethnicity	D.C. EMA	VIRGINIA
Black, non-Hispanic	47%	63%
White, non-Hispanic	23%	24%
Hispanic (all races)	23%	10%
Asian/Hawaiian/Pacific Islander	6%	3%
Multi-race/Unknown	1%	1%

By Transmission Category

Male-to-male sexual contact (MSM) accounted for most new HIV diagnoses among DC EMA residents in 2015 (44%), followed by heterosexual contact (13%), injection drug use (IDU) and MSM with a history of IDU (both <2%), and mother-to-child transmission (<1%).

LATE DIAGNOSIS

Early knowledge of HIV infection can improve an individual's health outcome and help prevent further HIV transmission. Late diagnosis refers to cases that have an initial AIDS diagnosis or receive an AIDS diagnosis within 12 months of their HIV diagnosis. To determine late diagnosis, one year of follow-up from the first HIV diagnosis is needed to determine if a person is also diagnosed with AIDS in that year. Because of this reason, the most recent year of data available in Virginia is 2014. In 2014, 31% of new diagnoses in the DC EMA were diagnosed late.

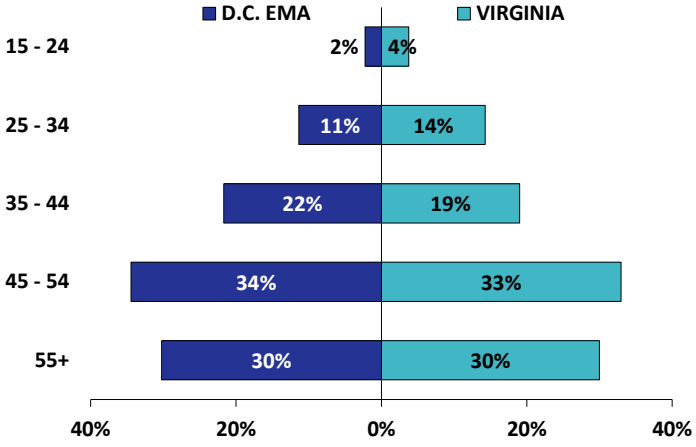
HIV/AIDS PREVALENCE

As of 2015, there were 7,555 persons living with HIV (PLWH) in the DC EMA, which represented 30% of all PLWH in Virginia (24,853). Fifty-one percent of PLWH in the DC EMA had an AIDS–defining condition as of December 31, 2015, versus 47% of PLWH in the state. Seventy-eight percent of PLWH in the DC EMA as of the end of 2015 were male.

By Current Age

The majority of PLWH in Virginia are 35 or older, comparable to the age distribution of PLWH in Virginia. In the DC EMA, the percentage of young adults aged 25 to 34 living with HIV is slightly lower than that in Virginia (11% versus 14%).

Figure 3: HIV Disease Diagnoses in the DC EMA and Virginia by Current Age as of December 31, 2015



By Race/Ethnicity

Table 2 shows a more even racial/ethnic distribution of PLWH in the DC EMA compared to the state, with the percentage of Black, non-Hispanics living with HIV in Virginia being 13% higher than that in the DC EMA. Approximately 15% of PLWH in the DC EMA are Hispanic/Latino, as compared to 8% in Virginia.

Table 2: Percentage of PLWH in the DC EMA and Virginia by Race/Ethnicity, 2015

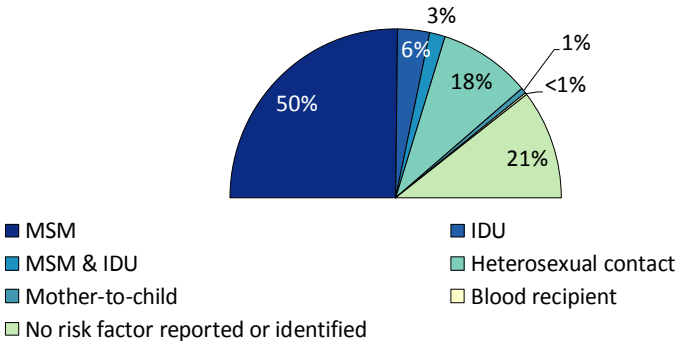
Lower % Higher %

Race	DCEMA	VIRGINIA
Black, non-Hispanic	46%	59%
White, non-Hispanic	34%	30%
Hispanic (all races)	15%	8%
Asian/Hawaiian/Pacific Islander	3%	1%
Multi-race/Unknown	2%	2%

By Transmission Category

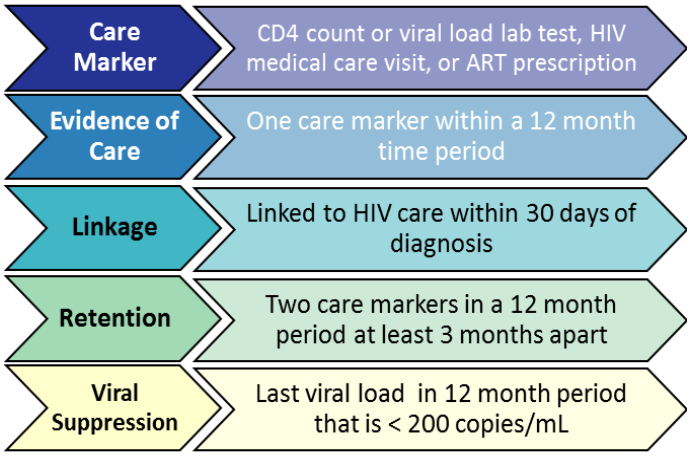
MSM accounted for most HIV infections among PLWH in the DC EMA (50%), followed by those with no risk reported or identified (21%), heterosexual contact (18%), IDU (6%), MSM & IDU (3%), mother-to-child transmission (1%) and receipt of blood products (<1%) (Figure 3).

Figure 4: HIV Disease by Transmission Category in the DC EMA, 2015



HIV CARE CONTINUUM

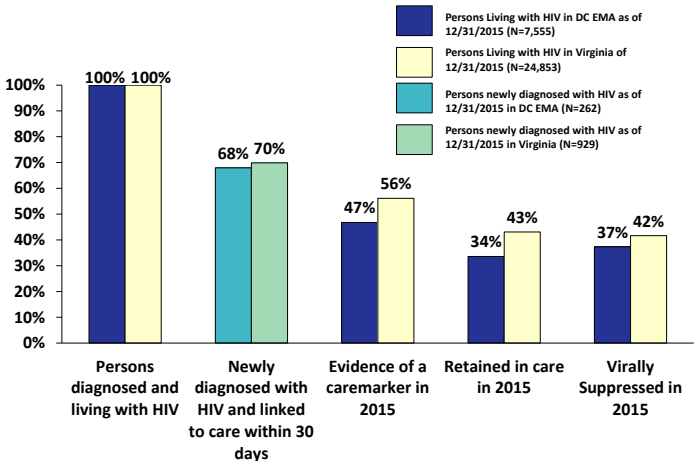
Figure 5: HIV Care Continuum Definitions



The HIV Care Continuum (HCC) is a framework for assessing health outcomes among persons living in the DC EMA with diagnosed HIV infection. Figure 5 shows definitions for the HCC health outcomes of linkage, retention, and viral suppression. As of 2015, 47% of the 7,555 PLWH in the DC EMA had evidence of HIV care in 2015. Only 34% of PLWH in the DC EMA were retained in care and 37% of them were virally suppressed, compared to 43% and 42% of Virginians living with HIV in 2015.

In 2015, 68% of newly diagnosed patients were linked to care within 30 days, compared to 70% of Virginians living with HIV in 2015 (Figure 6).

Figure 6: HIV Care Continuum among PLWH in the DC EMA and PLWH in Virginia, 2015



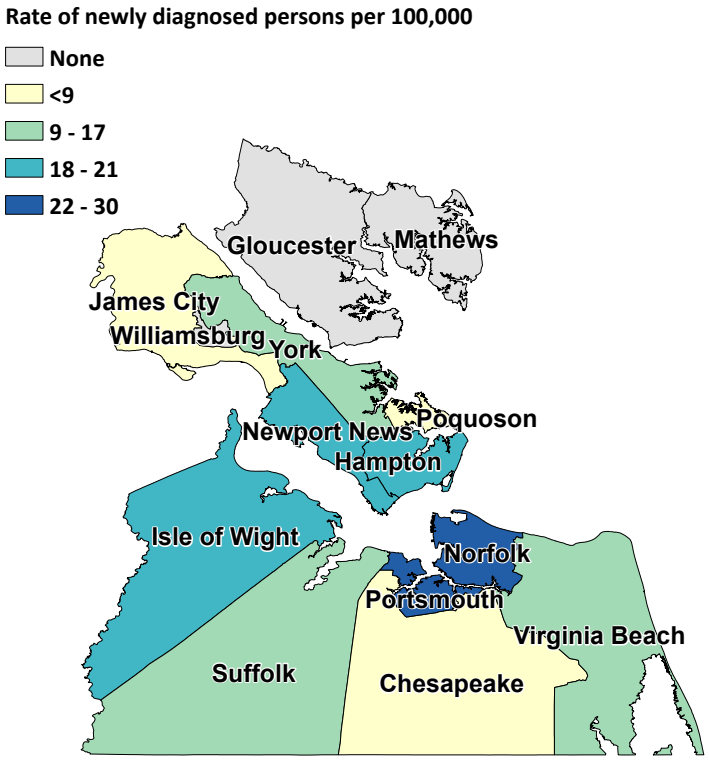
Norfolk Transitional Grant Area (TGA)

Part A of the Ryan White (RW) HIV/AIDS Treatment Extension Act of 2009 provides funding assistance to Transitional Grant Areas (TGAs). For a geographical area to qualify for TGA status, an area must have reported 1,000 to 1,999 AIDS cases in the most recent five years and have a population of at least 50,000. The Norfolk TGA consists of 14 localities in Eastern Virginia.

HIV DISEASE DIAGNOSES

In 2015, there were 280 persons newly diagnosed with HIV disease in the Norfolk TGA, which represents 30% of all newly diagnosed cases in Virginia in 2015. Figure 1 shows the distribution of newly diagnosed cases across cities/counties in the Norfolk TGA. The cities of Norfolk and Portsmouth had the highest rates of newly diagnosed HIV cases in 2015, both at 29 cases per 100,000 population, respectively. The locality with the lowest HIV diagnosis rate in 2015 was James City County, at 3 cases per 100,000 population.

Figure 1: Rate of HIV Disease Diagnosis Rates among Norfolk TGA Localities in Virginia, 2015

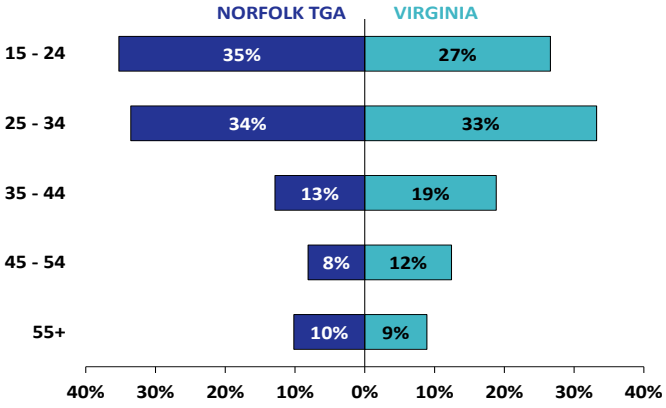


By Gender

Eighty percent of the new HIV diagnoses in 2015 in the Norfolk TGA were male, which is also comparable to the state's gender distribution of new HIV diagnoses in 2015.

By Age at Diagnosis

Figure 2: HIV Disease Diagnoses in Norfolk TGA and Virginia by Age at Diagnosis, 2015



According to Figure 2, the average age at diagnosis among HIV-positive persons in 2015 in the Norfolk TGA is slightly less than that of Virginia in 2015 (33.8 versus 34.7 years). The highest percentage of new diagnoses occurred among the 15-24 age group in the Norfolk TGA and among the 25-34 age group in Virginia in 2015. Figure 2 shows a higher proportion of HIV-positive persons in the Norfolk TGA being diagnosed at 15 to 34 years. The distribution in the Norfolk TGA shows age at diagnosis of persons newly diagnosed with HIV is more concentrated among persons younger than 35 years than in Virginia overall.

By Race/Ethnicity

In 2015, the highest percentage of new HIV disease diagnoses was among Black, non-Hispanics in the Norfolk TGA (74%). In the Norfolk TGA, the ratio of Whites to Hispanics/Latinos diagnosed with HIV in 2015 was 5 to 1, whereas in the state, there were about two White persons for every one Hispanic/Latino person diagnosed with HIV in 2015.

Table 1: HIV Disease Diagnoses in the Norfolk TGA and Virginia by Race/Ethnicity, 2015

Lower % Higher %

Race/Ethnicity	NORFOLK TGA	VIRGINIA
Black, non-Hispanic	74%	62%
White, non-Hispanic	21%	24%
Hispanic (all races)	4%	10%
Asian/Hawaiian/Pacific Islander	1%	3%
Multi-race/Unknown	0%	1%

By Transmission Category

Male-to-male sexual contact (MSM) accounted for most HIV infections among Norfolk TGA residents in 2015 (52%), followed by no risk factor reported or identified (35%), heterosexual contact (9%), injection drug use (IDU) (2%), and MSM with a history of IDU (<2%).

LATE DIAGNOSIS

Early knowledge of HIV infection can improve an individual's health outcome and help prevent further HIV transmission. Late diagnosis refers to cases that have an initial AIDS diagnosis or receive an AIDS diagnosis within 12 months of their HIV diagnosis. To determine late diagnosis, one year of follow-up from the first HIV diagnosis is needed to determine if a person is also diagnosed with AIDS in that year. Because of this reason, the most recent year of data available in Virginia is 2014. Twenty-four percent of 2014 new diagnoses in the Norfolk TGA had a late diagnosis, which is comparable to the percentage of late diagnosis in Virginia overall.

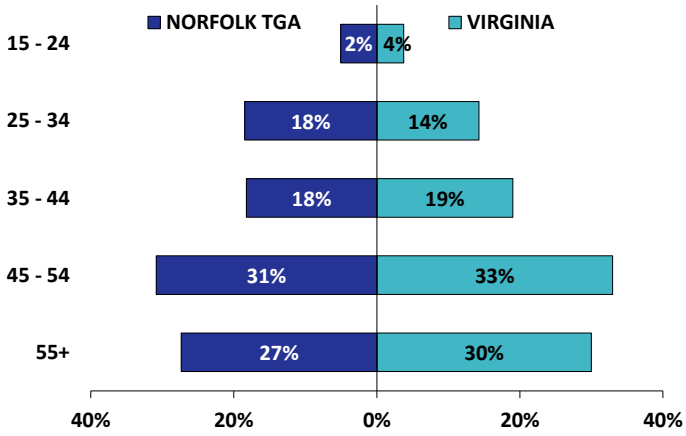
HIV/AIDS PREVALENCE

As of 2015, there were 7,271 persons living with HIV (PLWH) in the Norfolk TGA, which represented 29% of all PLWH in Virginia (24,853). Forty-three percent of PLWH in the Norfolk TGA had an AIDS–defining condition as of December 31, 2015, versus 47% of PLWH in the state. Seventy-two percent of PLWH in the Norfolk TGA as of the end of 2015 were male.

By Current Age

The majority of PLWH in the Norfolk TGA are 45 or older, comparable to the age distribution of PLWH in Virginia. In the Norfolk TGA, the percentage of young adults aged 25 to 34 living with HIV is slightly higher than that in Virginia (18% versus 14%) (Figure 3).

Figure 3: HIV Disease Diagnoses in the Norfolk TGA and Virginia by Current Age as of December 31, 2015



By Race/Ethnicity

Table 2 shows a much higher proportion of Black, non-Hispanics living with HIV in the Norfolk TGA compared to the state (70% versus 59%). The proportion of Hispanics/Latinos living with HIV in the Norfolk TGA is slightly lower than that of Virginia (5% versus 8%), and the percentage of White, non-Hispanics living with HIV is slightly lower than that in Virginia (23% versus 30%).

Table 2: Percentage of PLWH in the Norfolk TGA and Virginia by Race/Ethnicity, 2015

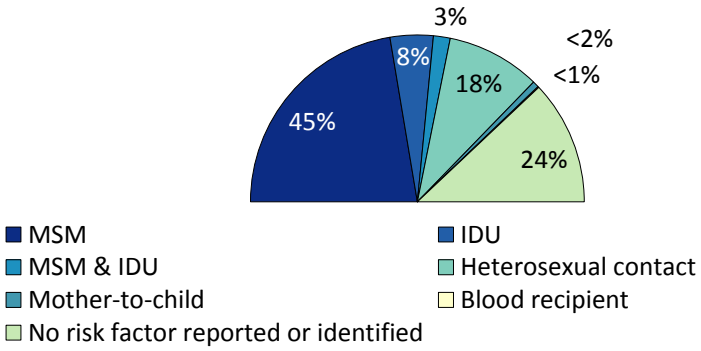
Lower % Higher %

Race/Ethnicity	NORFOLK TGA	VIRGINIA
Black, non-Hispanic	70%	59%
White, non-Hispanic	23%	30%
Hispanic (all races)	5%	8%
Asian/Hawaiian/Pacific Islander	1%	1%
Multi-race/Unknown	2%	2%

By Transmission Category

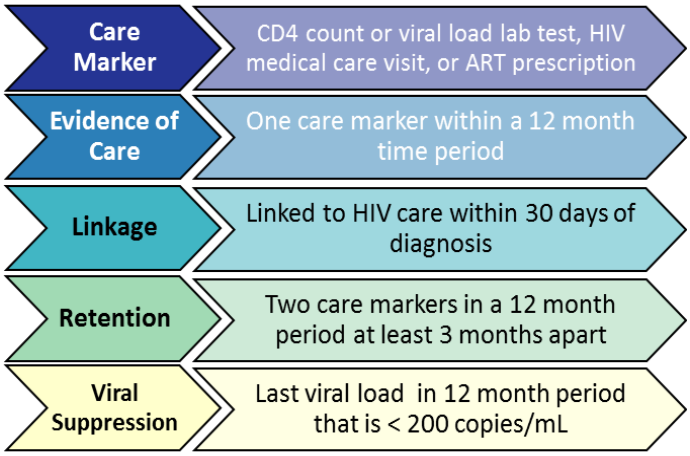
MSM accounted for most HIV infections among PLWH in the Norfolk TGA (45%), followed by those with no risk reported or identified (24%), heterosexual contact (18%), IDU (7%), MSM & IDU (3%), mother-to-child transmission (1%) and receipt of blood products (<1%) (Figure 4).

Figure 4: HIV Disease by Transmission Category in the Norfolk TGA, 2015



HIV CARE CONTINUUM

Figure 5: HIV Care Continuum Definitions



The HIV Care Continuum (HCC) is a framework for assessing health outcomes among persons living in the Norfolk TGA with diagnosed HIV infection. Figure 5 shows definitions for the HCC health outcomes of linkage, retention, and viral suppression. As of 2015, 57% of the 7,271 PLWH in the Norfolk TGA had evidence of HIV care in 2015. Only 43% of PLWH in the Norfolk TGA were retained in care and 33% were virally suppressed, compared to 43% and 42% of Virginians living with HIV in 2015.

In 2015, 69% of persons newly diagnosed with HIV were linked to HIV care within 30 days, roughly comparable to the 70% of Virginians living with HIV linked to HIV care in 2015 (Figure 6).

Figure 6: HIV Care Continuum among PLWH in the Norfolk TGA and PLWH in Virginia, 2015