Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri-2019

Bureau of Reportable Disease Informatics
Division of Community and Public Health
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Background

The Division of HIV/AIDS Prevention at the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA) released the revised *Integrated Guidance for Developing Epidemiologic Profiles* in 2019. These guidelines are meant to assist states in creating standardized profiles that meet the planning needs of HIV prevention and care programs, while allowing freedom to portray unique situations within the state. The epidemiologic profile is divided into two sections, within which four questions are addressed.

Profile Organization:

Section 1: Core Epidemiological Questions

This section deals with understanding the characteristics of the general population, the distribution of human immunodeficiency virus (HIV) disease and sexually transmitted diseases (STDs) in the state, and a description of the population at risk for HIV and STD infection. This section is organized around three key questions:

Question 1: What are the sociodemographic characteristics of the general population of Missouri?
Describes the overall demographic and socioeconomic characteristics of the general population of Missouri.

Question 2: What is the scope of the HIV disease epidemic in Missouri?
Describes the impact of the HIV disease epidemic in Missouri.

Question 3: What are the indicators of HIV disease risk in Missouri?
Provides an analysis of the high-risk populations. Both the direct and indirect measures of risk behaviors associated with HIV transmission and the indicators of high-risk behaviors are described in this section.

Section 2: Ryan White HIV/AIDS Care Act Special Questions and Considerations

This section focuses on the questions that pertain to the HRSA HIV/AIDS care planning groups. It describes access to, utilization of, and standards of care among persons in Missouri who are HIV infected. It is organized around one key question:

Question 4: What are the HIV service utilization patterns of individuals with HIV disease in Missouri?
Characterizes patterns in the use of services by the population living with HIV/AIDS in Missouri. Assesses the unmet need of persons who know they are HIV positive, but are not in care. Describes their service needs and perception of care.

General Information:

The 2019 *Profiles* provides a comprehensive update of all four questions in the *Profiles* including the sociodemographic characteristics of Missourians; epidemiology of HIV ,STDs, hepatitis, and unmet primary medical care needs among individuals living with HIV through 2019. Please refer to the data sources used in the *Profiles* on page ii and the technical notes on page v to develop a better understanding for interpreting the data presented. Additional sections of the *Profiles* are dedicated to providing data specific to each of the six HIV care regions to assist with regional level planning efforts.

Missouri Planning Cycle:

The statewide Missouri Comprehensive Prevention Planning Group (CPPG) usually operates on a five year planning cycle. The current comprehensive prevention plan was developed in 2010 and runs from 2011-2016. To best serve the CPPG planning process, updates to the epidemiologic profile are designed to coincide with the CPPG's planning cycle. As a result, a complete update of all four questions of the epidemiologic profile is completed every five years, coinciding with the development of the new comprehensive HIV prevention plan. In the other years, updates will only be made to selected questions of the *Profiles*. The current *Profiles* represents a comprehensive update to all questions in the *Profiles*. For data from the previous comprehensive *Profiles*, please refer to the *2009 Epidemiologic Profiles*, which can be accessed at http://health.mo.gov/data/hivstdaids/pdf/MOHIVSTD2009.pdf.

Data Sources

1. *Population Data*

American Community Survey, U.S. Census Bureau

The American Community Survey is a nationwide sample survey conducted every year by the U.S. Census Bureau. The survey provides population data regarding age, race, income, country of birth, languages spoken at home, education, employment, and many other areas. Single-year, three-year, and five-year estimates are currently available for the American Community survey. Single-year estimates are only available for geographic areas with a population of 65,000 or more. Three-year estimates are available for geographic areas with a population of 20,000 or more. Five-year estimates are available for all geographic areas. For more information, visit http://www.census.gov/acs/www/.

Migration Data Files, Internal Revenue Service (IRS)

State- and county-level migration estimates can be derived from changes in the tax filer's mailing address on domestic and foreign tax return forms between filing years. The IRS produces data files that are freely available. Migration patterns can be assessed by changes in the total number of exemptions reported between two filing years. There are some limitations associated with using tax return information to estimate migration patterns. First, the migration data file only includes tax returns filed through the 39th week of the year, which account for approximately 95% to 98% of all filed individuals returns. Second, differences exist in the likelihood of filing a tax return among various populations. Often the elderly and poor are less likely to file returns, and therefore would not be accurately represented in the migration data files. Third, the mailing address reported on the tax return may not reflect the true address of residence. Migration data are not available by demographic characteristics such as sex, age, and race/ethnicity. For more information, visit http://www.irs.gov/uac/SOI-Tax-Stats-Migration-Data.

Population Estimates, Missouri Department of Health and Senior Services (MDHSS), Bureau of Health Care Analysis and Data Dissemination and U.S. Census Bureau

MDHSS maintains population files for Missouri and its counties based on data provided by the U.S. Census Bureau in partnership with the Federal State Cooperative Program for Population Estimates. Census counts are produced every ten years, with the 2010 census representing the most recent census. Population estimates are produced for non-census years based on adjustments made to the most recent census counts. Due to the time required to compute the estimates, the most recent year's estimates are not available for use in the *Profiles*, and the 2018 population estimates are used instead. Beginning with the 2018 population estimates new race/ethnicity categories are being used, which include a separate estimate for persons identifying being of more than one race. This change reflects the current level of race/ethnicity detail that is captured for HIV surveillance data. As a result of the change, the population estimates from *Profiles* prior to 2009 will not be comparable with the current *Profiles*.

2. *HIV Epidemic Data*

HIV/stage 3 (AIDS) Surveillance Data, eHARS

Missouri's communicable disease reporting rule, 19 CSR 20-20.020, established reporting of stage 3 (AIDS) cases in 1983, named HIV cases in 1987, CD4 lymphocyte counts in 1991, and HIV viral load lab results in 2000. Demographic information, vital status, mode of exposure, laboratory results, and treatment and service referrals are collected on standardized case report forms and laboratory reports. The MDHSS, Bureau of Reportable Disease Informatics (BRDI) is responsible for managing the HIV/stage 3 (AIDS) surveillance data, stored in the enhanced HIV/AIDS Reporting System (eHARS). Evaluations have shown a high level of completeness of the surveillance system. However, the surveillance system primarily collects information only on individuals diagnosed with HIV disease in Missouri. Some information regarding those currently living with HIV in Missouri is maintained in eHARS, but is not complete. Therefore, the *Profiles* only includes data on those whose most recent diagnosis (HIV or stage 3 (AIDS)) occurred in Missouri. The data collected in the surveillance system is based on diagnosis date, and not the time of infection. The diagnosis can be made at any clinical stage of the disease. The characteristics associated with new diagnoses may not reflect characteristics associated with recent infection. The surveillance system only includes data on individuals that are tested confidentially and reported. Members of certain subpopulations may be more or less likely to be tested, and therefore different subpopulations could be over or under-represented among diagnosed and reported HIV cases.

3. *HIV-Related Indicators of Risk Data*

Behavioral Risk Factor Surveillance System (BRFSS) Survey, CDC

The BRFSS survey is an annual population-based, random-digit-dialed, telephone survey of the state's civilian, non-institutionalized, adult population, 18 years of age and older. Cell phone surveys were first included in the release of the 2011 data set, meaning that data sets starting with 2011 cannot be compared to the BFRSS data sets prior to 2011. Interviewers ask questions related to health behaviors, health screening, quality of life, mental health, impairment, and access to health care and insurance. The results

are weighted by demographic characteristics and by selection probability, and are used in planning, implementing, and evaluating health promotion and disease prevention programs. For participants 18 years of age and older, the interview includes questions regarding HIV/stage 3 (AIDS)-related behaviors and testing. The BRFSS does not always contain the same questions from one year to the next. For more information, visit http://www.cdc.gov/brfss/.

HIV Testing Database
CDC-funded prevention project areas, including Missouri, are required to collect information related to HIV tests performed at publicly funded HIV testing sites. The data collected include demographic information, behavioral risk information, and previous testing history, among other elements. Some data elements, such as previous testing history and behavioral risk, are typically only collected on persons testing positive and therefore data may be limited. The data are only representative of people who seek HIV testing at publicly funded testing sites. The data are collected for each testing experience, and multiple tests conducted on the same individual cannot be differentiated. Beginning in September 2007, MHDSS was funded by CDC to conduct expanding HIV testing initiatives in the state. This initiative was implemented to provide HIV testing in select urban facilities (including hospital emergency departments, private clinics, and public health clinics) with the intent to test all persons seeking care. Sites were selected in Kansas City and St. Louis, and testing began in early 2008. Beginning in 2012 an initiative was set in place to address the ongoing epidemic of HIV infection among black/African Americans in Missouri, existing testing sites were funded by CDC to enhance testing activities among black/African American youth, women, and men who have sex with men (MSM). Testing under this initiative began in 2014. The primary goal of these activities is to increase the proportion of black/African Americans who are aware of their HIV infection and to develop a seamless system that allows identifying HIV infected individuals, linking them to appropriate care, and re-engaging those who are lost to care.

Hepatitis Surveillance Data, MDHSS, WebSurv
Missouri's communicable disease reporting rule, 19 CSR 20-20.020, requires reporting of acute and chronic hepatitis B and C cases, perinatal hepatitis B, and prenatal hepatitis B within three days to the local health authority or MDHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. MDHSS BRDI is responsible for managing the hepatitis surveillance data, stored in the Missouri Health Surveillance Information Systems (WebSurv). Limitations of the data include incomplete race/ethnicity information and underreporting.

Hospitalization Discharge, Charges, and Days of Care, Missouri Information for Community Assessment (MICA)
The dataset includes hospital discharges among Missouri residents from non-federal and non-state acute care general and specialty hospitals. Discharges are classified into diagnosis categories based on the first of 23 possible diagnoses coded on the discharge record. Hospital charges represent the total amount billed, and may not reflect the costs associated with providing the service. Therefore, charge data should only be used to compare the impact between disease categories or geographic regions, and should not be used to produce a total cost associated with a specific disease. The data set also includes days of care, which is calculated as the difference between the admission and discharge dates. If admission and discharge occurred on the same day, days of care is set to one. For more information, visit https://healthapps.dhss.mo.gov/MoPhims/MICAHome.

National Survey of Substance Abuse Treatment Services (N-SSATS), Substance Abuse and Mental Health Services Administration (SAMHSA)
This national survey annually collects information from public and private facilities providing substance abuse treatment. The survey does not include information from treatment programs in jails or prisons. The survey collects information regarding the characteristics, services offered, and number of clients receiving treatment at the facilities. The survey response rate is typically very high (>95%). This survey is a point-prevalence survey, meaning that it captures a snapshot of the facility on a particular date. This survey does not represent the annual total of clients served, or necessarily the maximum capacity that a facility can handle. For more information, visit http://wwwdasis.samhsa.gov/dasis2/nssats.htm.

National Survey on Drug Use and Health, SAMHSA
This survey is a national, multi-stage probability sample regarding illicit drug, alcohol and tobacco use among the noninstitutionalized population twelve years of age or greater. Information is collected on lifetime, annual, and past-month usage of various substances; substance abuse treatment history; the perceived need for treatment; mental health indicators; and core demographics. Survey results prior to 2002 should not be compared with more recent surveys due to changes in recruitment and weighting procedures. For more information, visit https://nsduhweb.rti.org/.

School Health Profiles, CDC
The School Health Profiles is derived from a sample survey of schools that serve students from sixth through

twelfth grade in each state, territory, or city of interest. The survey is conducted in even years, and assesses school health policies and programs. Survey areas include school health education requirements, physical education requirements, health policies related to HIV/stage 3 (AIDS), tobacco-use prevention, nutrition, asthma management, and the coordination of school health with the family and community. In 2012, 45 states, 18 cities, four territories, and two tribal governments collected data and were included in the analysis. Surveys are sent from the state, local or territorial education or health agency to the principal. The principal and the school's lead health education teacher complete the appropriate survey responses. Results from the principal and teacher surveys are weighted. For more information, visit http://www.cdc.gov/healthyYouth/profiles/.

STD Surveillance Data, WebSurv

Missouri's communicable disease reporting rule, 19 CSR 20-20.020 requires reporting of chlamydia and gonorrhea cases within three days, and syphilis, including congenital syphilis, within one day to the local health authority or MDHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. MDHSS BRDI is responsible for managing all reportable STD surveillance data. STD data collected through 2011 were managed in the STD Management Information System (STD*MIS). Near the end of 2011, MDHSS BRDI began utilizing WebSurv to collect and manage STD surveillance data. The change in databases must be considered when assessing changes in STD cases reported since 2012 compared to prior years. Data in this system are presented based on the date of report to the health department and not the diagnosis date. The data represent only those individuals tested and reported, which underestimates the true burden of infection as many infected individuals do not seek care, often due to a lack of symptoms. In addition, many people receive treatment without being tested, again underestimating the true burden of infection. Since morbidity is frequently entered based on the receipt of laboratory reports at MDHSS, race and ethnicity information is often not available. Incomplete race and ethnicity reporting limits the interpretation of trends for these characteristics.

Treatment Episode Data Set (TEDS), SAMHSA

This data set collects national information regarding admissions to public and private providers of substance abuse treatment that receive public funding. At a minimum for all states, the data set includes demographic information, date of admission, number of prior treatment episodes, and information related to the substance abuse problem. TEDS does not include all admissions to substance abuse treatment; the completeness of client-level data included in the data set varies depending on state reporting practices and the availability of public funds. For more information, visit https://www.samhsa.gov/data/data-we-collect/teds-treatment-episode-data-set.

Youth Risk Behavior Surveillance System (YRBSS) Survey, CDC

The YRBSS survey is administered by the Missouri Department of Elementary and Secondary Education to monitor specific behaviors among high school students that contribute to the leading causes of morbidity and mortality. The survey is administered in the spring of odd-numbered years. Student participation is voluntary, and local parental permission procedures are followed. The students who participate in the survey constitute a valid sample of high school-age youth. The results may be used to make inferences about the health-risk behaviors of all Missouri public high school students. However, the results from the statewide survey cannot be used to provide estimates for smaller geographic areas than the state. The YRBSS does survey some large, urban school districts to obtain estimates for a smaller geographic area; no Missouri school district participated in the more area-specific survey. Data from the 2011 survey were not released due to small sample sizes. For more information, visit http://www.cdc.gov/healthyyouth/data/yrbs/index.htm.

Tuberculosis Disease Surveillance Data, WebSurv

Missouri's communicable disease reporting rule, 19 CSR 20-20.020, requires reporting of tuberculosis disease within one day to the local health authority or MDHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. MDHSS Bureau of Communicable Disease Control and Prevention is responsible for managing the tuberculosis surveillance data stored in WebSurv. Limitations of the data include incomplete race/ethnicity information and underreporting.

4. HIV Care Services Data

HIV Case Management Data, SCOUT

MDHSS participates in a cooperative agreement with HRSA for the provision of several programs funded by the Ryan White HIV Treatment Modernization Act. Data for persons served by these programs are collected and stored in the Securing Client Outcomes Using Technology (SCOUT) database. Data include key demographic and eligibility related variables for persons residing in Missouri, and portions of Illinois and Kansas. These data are used to monitor the level of need and the provision of services for individuals utilizing Ryan White funded services.

Technical Notes

Revised HIV Surveillance Case Definition: Case definitions are used for all national reportable conditions. Case definitions are a standardized set of requirements to determine whether an individual is counted as a case for a particular disease. Case definitions allow states to count cases in a standard fashion in order for data to be compared across the nation. When changes in testing technology and in the understanding of a disease occur, revisions to case definitions may occur. The HIV surveillance case definition was revised in 2014 in large part to account for the implementation of the new HIV testing algorithms that no longer required the western blot as the confirmatory test. A major change to remove the distinction between HIV cases and AIDS cases occurred in the 2014 revised surveillance case definition. All individuals infected with HIV disease are classified as HIV disease with progression of the disease classified as stages (0-3). For more information, visit http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm.

Stage 3 (AIDS): Stage 3 (AIDS) represents an advanced stage of HIV infection when the CD4+T-lymphocyte values are usually persistently depressed. Stages are defined primarily based on the CD4+T-lymphocyte values and age. For additional information, visit http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm.

HIV Disease, HIV Case, Stage 3 (AIDS) Case: HIV disease includes all individuals diagnosed with the HIV virus regardless of the stage of disease progression. All persons with HIV disease can be sub-classified as either a **stage 3 (AIDS) case** (if they are in the later stages of the disease process and have met the case definition for stage 3 (AIDS)), or an **HIV case** (if they are in the earlier stages of the disease process and have not met the stage 3 (AIDS) case definition). In this report, the sub-classification of HIV or stage 3 (AIDS) is based on an individual's most severe stage of HIV disease progression as of December 31, 2014.

Date of Diagnosis: Represents the date an individual was first diagnosed with the HIV virus, regardless of the stage of disease progression. However, in many instances the initial diagnosis of infection does not occur until several years after the initial infection, so at best the trends in diagnosed HIV cases can only approximate actual trends in new HIV infections.

Reporting Delay: Delays exist between the time HIV infection is diagnosed and the time the infection is reported to MDHSS. As a result of reporting delays, case numbers for the most recent years of diagnosis may not be complete. Data from recent years should be considered provisional. The data presented in this report have not been adjusted for reporting delay. The data in this report represent all information reported to MDHSS through February 28, 2015.

Place of Residence: Data are presented based on an individual's residence at time of most recent diagnosis of HIV or stage 3 (AIDS). Only cases whose most recent diagnosis was Missouri are included in the analyses presented in the *Profiles*. This residence at time of most recent diagnosis may or may not correspond with the individual's residence at the time of initial infection, or to the current residence.

Vital Status: Cases are presumed to be alive unless MDHSS has received notification of death. Current vital status information for cases is ascertained through routine matches with Missouri death certificates, reports of death from other states' surveillance programs, and routine site visits with major reporting sites. When comparing *Profiles*, changes in the number of living cases in a select year between the *Profiles* is due to adjustments based on results of death matching activities. Revisions for the number of persons living at the end of the year for the past ten years can be found in Figure 14 of the 2014 *Profiles*.

Exposure Category: Despite possible existence of multiple methods through which HIV can be transmitted, cases are assigned a single most likely exposure category based on a hierarchy developed by the CDC. A limitation of the dataset is the large number of cases reported with an undetermined exposure category. Data on cases with missing exposure category information have been proportionately re-distributed into known exposure categories in selected analyses.

categories in selected analyses.

Routine Interstate Duplicate Review (RIDR): The mobility of American citizens impacts the ability to accurately track individuals living with HIV/stage 3 (AIDS). Mobility may result in the same HIV infected person being counted in two or more different states. To help respond to potential duplication problems, the CDC initiated the Interstate Duplication Evaluation Project (IDEP), now called Routine Interstate Duplicate Review (RIDR) in 2002. RIDR compares patient records throughout the nation in order to identify duplicate cases. The states with duplicate cases contact one another to compare patient profiles in order to determine the state to which the case belongs, based on residence during the earliest date of diagnosis. Because of this process, the cumulative number of cases within Missouri may change, but the process has increased the accuracy of Missouri's data by reducing the chance that a case has been counted more than once nationally.

Small Numbers: Data release limitations are set to ensure that the information cannot be used to inadvertently identify an individual. It is difficult to make meaningful statements concerning trends in areas with low numbers of cases. Please interpret rates where the numerator is less than 20 cases with caution because of the low reliability of rates based on a small number of cases.

Glossary of Terms: A glossary of terms is located at the end of the profile. If the reader is unclear about any terms used in the *Profiles*, please feel free to contact MDHSS BRDI for additional information.

Race/Ethnicity: Race and ethnicity information has been collected under two different systems in the HIV/stage 3 (AIDS) reporting system. Since many cases were reported under the old classification system, the use of the race and ethnicity categories from the old classification system will be maintained in this report. All cases identified with a Hispanic ethnicity will be reported in the *Profiles* as Hispanic, regardless of reported race information. In the text of this document, whenever cases are being discussed, the term "white" means white, not Hispanic, and "black/African American" means black/African American, not Hispanic. The number of cases reported as "not Hispanic" may include individuals whose ethnicity was not reported. Individuals who reported multiple racial categories or whose race was unknown are included in the category "other/unknown" or "two or more races/unknown" depending on the table or figure.

Diagnoses in Correctional Facilities: For persons living in Missouri correctional facilities (which include state, county, and local facilities) at the time of their HIV/stage 3 (AIDS), chlamydia or gonorrhea diagnosis, the location of the correctional facility is considered the individual's residence at diagnosis. For persons living in Missouri correctional facilities at the time of their syphilis diagnosis, the residence at diagnosis is considered the individual's address prior to being incarcerated. Data for persons diagnosed in Missouri correctional facilities are included in the statewide data, since most of these individuals were likely Missouri residents prior to incarceration. However, diagnoses in Missouri correctional facilities are not included in the HIV/stage 3 (AIDS) data for the six HIV care regions of the state. This exclusion at the regional level is based on the fact that these individuals, especially those in the state prison system, are often incarcerated in a different location than where they were residing (and were likely infected) prior to imprisonment. If included among the cases from the area where imprisoned at the time of diagnosis, it would distort the picture of the epidemic in that area. Individuals diagnosed at federal correctional facilities in Missouri are not included in any data presented.

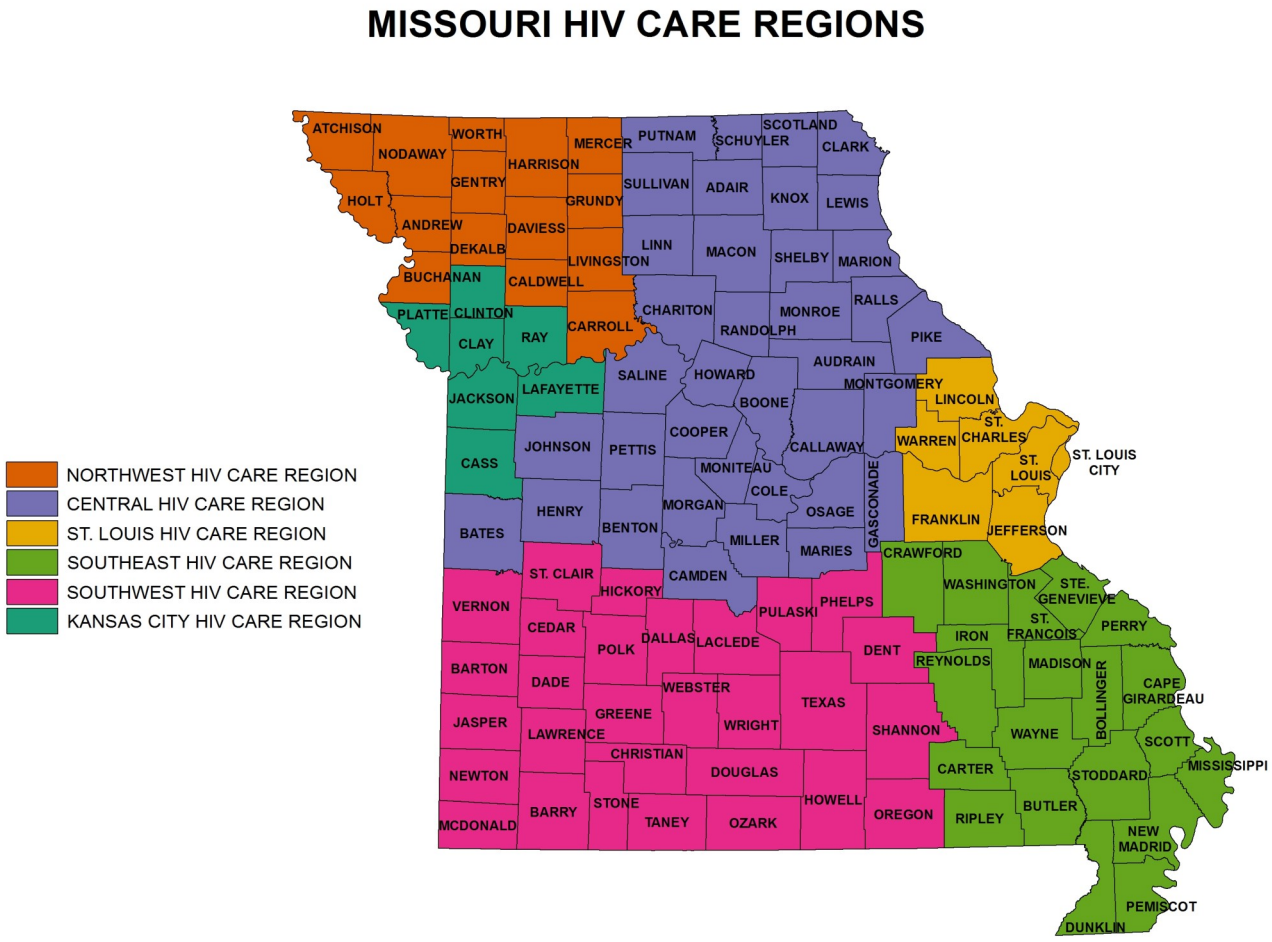
Anonymous Testing: The data do not include cases of HIV infection reported or diagnosed in persons anonymously tested at the state's four anonymous testing sites in St. Louis City, Kansas City, Springfield, and Columbia.

Geographic Area vs. HIV Care Region: When data are presented by geographic area, the St. Louis City represents individuals diagnosed in the St Louis City limits. St. Louis County represents individuals diagnosed in St. Louis County. Kansas City represents individuals diagnosed in the Kansas City limits. Outstate represents individuals diagnosed in all other areas. Refer to the map on the following page for the counties included when data are presented by HIV care region.

HIV Care Region vs. HIV Region: Previous *Profiles* divided the state into geographic regions known as HIV Regions using the HIV prevention planning regions. Based on guidance from the Bureau of HIV, STD, and Hepatitis (BHSH), the data in the 2014 *Profiles* is presented by HIV care regions in an effort to align with future goals to have a single definition for the geographic regions used for HIV planning. Beginning with the 2014 *Profiles*, the state was divided into geographic regions known as HIV care regions using the HIV medical case management (care) regions. The transition to care regions resulted in some changes. The North Central HIV Region is now known as the Central HIV Care Region. The remaining five regions maintained the same names. The counties comprising the St. Louis, Southeast, and Southwest HIV Care Regions remained the same. The Northwest HIV Care Region no longer contains Clinton County. Clinton County now belongs to the Kansas City

Epi Profiles Summary: Glossary

HIV Care Region. The Kansas City HIV Care Region no longer contains Johnson, Bates, Henry, and Benton Counties. These four counties now belong in the Central HIV Care Region. As a result of these changes regional data in the 2019 *Profiles* should not be compared to previous *Profiles*. Additionally, calculations for the past ten years were recalculated using the HIV care regions at the regional level in order to accurately display trends over time in the 2019 *Profiles*.



Abbreviations

AIDS=Acquired Immunodeficiency Syndrome

BHSH=Bureau of HIV, STD, and Hepatitis

BRDI=Bureau of Reportable Disease Informatics

BRFSS=Behavioral Risk Factor Surveillance System

CDC=Centers for Disease Control and Prevention

CPPG=Comprehensive Prevention Planning Group

eHARS=enhanced HIV/AIDS Reporting System

HIV=Human Immunodeficiency Virus

IDEP=Interstate Duplicate Evaluation Project

IDU=Injection drug use/Injection drug user

IRS=Internal Revenue Service

HRSA=Health Resources and Services Administration

MDHSS=Missouri Department of Health and Senior Services

MICA=Missouri Information for Community Assessment

MSM=Men who have sex with men

MSM/IDU=Men who have sex with men and inject drugs

NIR=No indicated risk

N-SSATS=National Survey of Substance Abuse Treatment Services

P&S=Primary and secondary

RIDR=Routine Interstate Duplicate Review

SAMSHA=Substance Abuse and Mental Health Services Administration

SCOUT=Securing Client Outcomes Using Technology

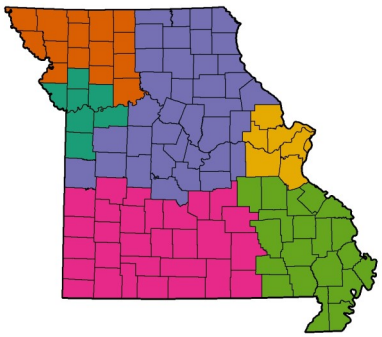
STD=Sexually Transmitted Disease

STD*MIS=Sexually Transmitted Disease Management Information System

TB=Tuberculosis

TEDS=Treatment Episode Data Set

YRBSS= Youth Risk Behavioral Surveillance System



MISSOURI STATE SUMMARY

Population Counts, by HIV Care Region, Missouri, 2018

	St. Louis HIV Care Region	Kansas City HIV Care Region	Northwest HIV Care Region	Central HIV Care Region	Southwest HIV Care Region	Southeast HIV Care Region	Missouri Total
Sex							
Male	1,024,721	599,551	111,987	441,927	584,703	244,674	**3,007,563**
Female	1,094,658	631,011	110,647	443,759	592,110	246,704	**3,118,889**
Total	**2,119,379**	**1,230,562**	**222,634**	**885,686**	**1,176,813**	**491,378**	**6,126,452**
Race/Ethnicity							
White	1,530,511	880,616	197,924	773,285	1,040,547	435,419	**4,858,302**
Black/African American	409,114	192,218	8,388	45,578	24,694	30,977	**710,969**
Hispanic	64,500	94,065	8,888	29,452	54,969	11,391	**263,265**
Asian/Pacific Islander	69,392	26,573	2,576	15,849	18,617	3,397	**136,404**
American Indian/Alaskan Native	4,228	5,282	896	3,530	10,692	2,031	**26,659**
Two or More Races/Other Race	41,634	31,808	3,962	17,992	27,294	8,163	**130,853**
Total	**2,119,379**	**1,230,562**	**222,634**	**885,686**	**1,176,813**	**491,378**	**6,126,452**
Race/Ethnicity-Males							
White Male	749,367	431,005	97,878	383,200	513,428	215,320	**2,390,198**
Black/African American Male	185,704	90,358	5,494	25,017	14,713	16,637	**337,923**
Hispanic Male	33,403	47,454	4,912	15,376	28,865	6,000	**136,010**
Asian/Pacific Islander Male	33,450	12,595	1,291	7,447	8,445	8,445	**71,673**
American Indian/Alaskan Native Male	2,095	2,635	462	1,838	5,400	1,014	**13,444**
Two or More Races/Other Race Male	20,702	15,504	1,950	9,049	13,852	4,086	**65,143**
Total	**1,024,721**	**599,551**	**111,987**	**441,927**	**584,703**	**251,502**	**3,014,391**
Race/Ethnicity-Females							
White Female	781,144	449,611	100,046	390,085	527,119	220,099	**2,468,104**
Black/African American Female	223,410	101,860	2,894	20,561	9,981	14,340	**373,046**
Hispanic Female	31,097	46,611	3,976	14,076	26,104	5,391	**127,255**
Asian/Pacific Islander Female	35,942	13,978	1,285	8,402	10,172	1,780	**71,559**
American Indian/Alaskan Native Female	2,133	2,647	434	1,692	5,292	1,017	**13,215**
Two or More Races/Other Race Female	20,932	16,304	2,012	8,943	13,442	4,077	**65,710**
Total	**1,094,658**	**631,011**	**110,647**	**443,759**	**592,110**	**246,704**	**3,118,889**
Age							
<2	49,883	31,125	5,212	20,945	28,637	11,258	**147,060**
2-12	285,066	178,951	29,541	118,358	161,187	66,551	**839,654**
13-18	159,291	96,010	16,712	67,779	90,615	37,488	**467,895**
19-24	151,247	84,655	19,800	91,851	105,104	35,949	**488,606**
25-44	560,459	338,948	54,496	215,956	280,779	117,406	**1,568,044**
45-64	565,477	314,689	56,441	224,838	290,370	129,414	**1,581,229**
65+	347,956	186,184	40,432	157,303	212,196	89,893	**1,033,964**
Total	**2,119,379**	**1,230,562**	**222,634**	**897,030**	**1,168,888**	**487,959**	**6,126,452**

Source: DHSS, Bureau of Health Care Analysis and Data Dissemination (BHCADD)

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Key Highlights: What are the sociodemographic characteristics of the general population of Missouri?

General Trends

- Missouri's population was estimated to be 6,126,452 in 2018.
- Overall, Missouri's population increased by an estimated 1% between 2014 and 2018.

Where

- Thirty-four counties were classified as being part of a metropolitan statistical area in 2015. At least one metropolitan statistical area was located in each of the six HIV care regions in 2015.
- Based on IRS tax filer information, the Central HIV Care Region had the greatest number of counties with a net in-migration of 1% or more (2). The Northwest, Central, and Southeast HIV Care Regions had the greatest number of counties with a net out-migration of less than 1% (3).
- Counties with the highest percentages of poverty were concentrated in the Southeast HIV Care Region.

Who

Sex

- In 2018, females represented 51% of Missouri's population.
- The distribution of highest educational attainment level was similar between males and females; approximately 89.6% of both males and females have completed high school or a high school equivalency or higher.
- Overall, unemployment rates were higher in males than females.

Race/Ethnicity

- In 2018, whites comprised 84.6% of Missouri's population; blacks/African Americans represented the second largest race/ethnicity category in Missouri (12.8%).
- The percent of population growth among race/ethnicity groups between 2014 and 2018 was greatest among Asians/Pacific Islanders reported (13%); two or more races had the second greatest percent of population growth over the same time period (12%).
- The highest level of educational attainment tended to be lower for minorities compared to whites.

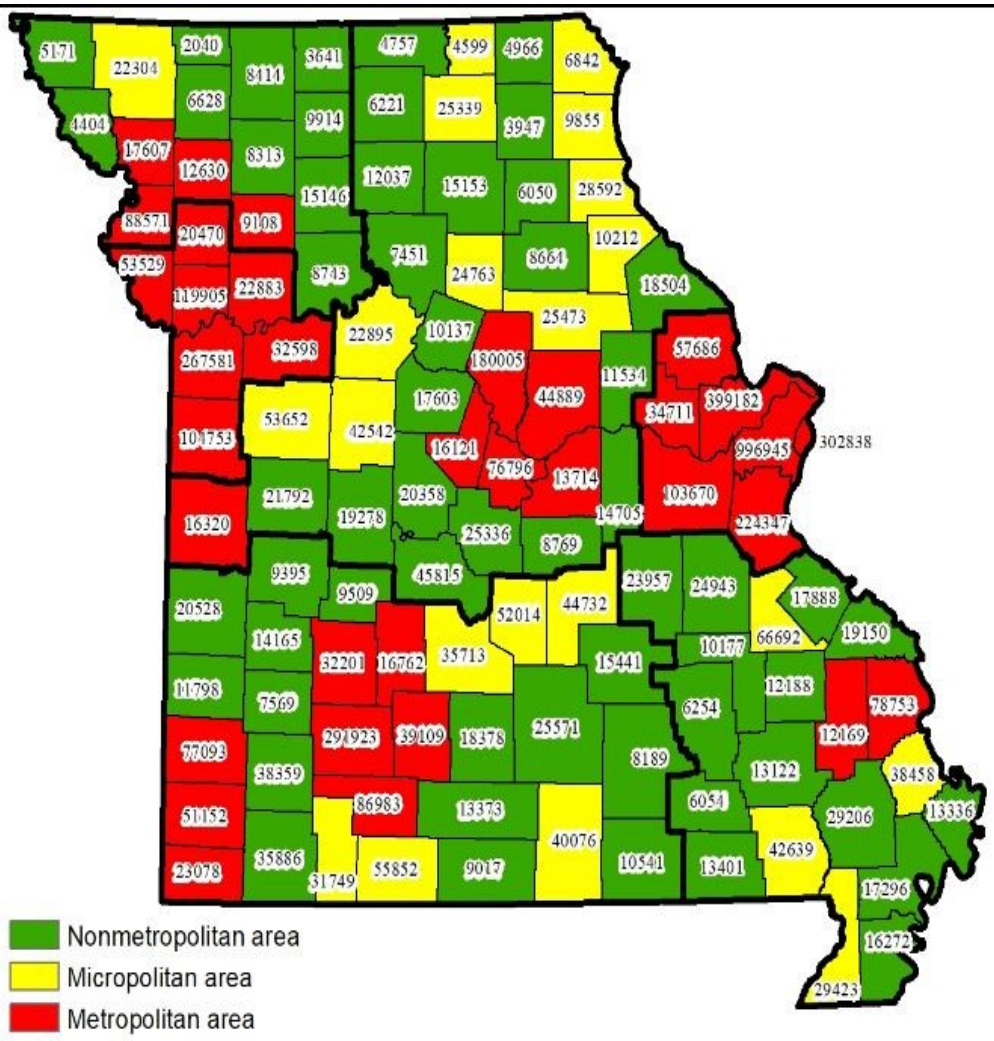
Age

- The median age in Missouri in 2018 was 38.1 years of age; Missouri's median age was slightly older than the U.S. median of 37.9 years old.
- Females in Missouri tended to be slightly older than males. The median age among females in Missouri in 2018 was 41 years old, compared to 38 years old among males.
- Unemployment rates between 2014 and 2018 tended to decrease with increasing age.

Foreign Born Population and Primary Language

- An estimated 4.1% of Missouri's population was born in a country outside of the U.S.
- Asia was the continent of birth for the largest number of foreign born Missouri residents. However, Latin America had the second largest number of foreign born persons residing in Missouri were born.
- An estimated 93.9% of Missourians five years of age or older spoke only English at home. Following English, Spanish or Spanish Creole were the most common languages spoken at home (2.6%).

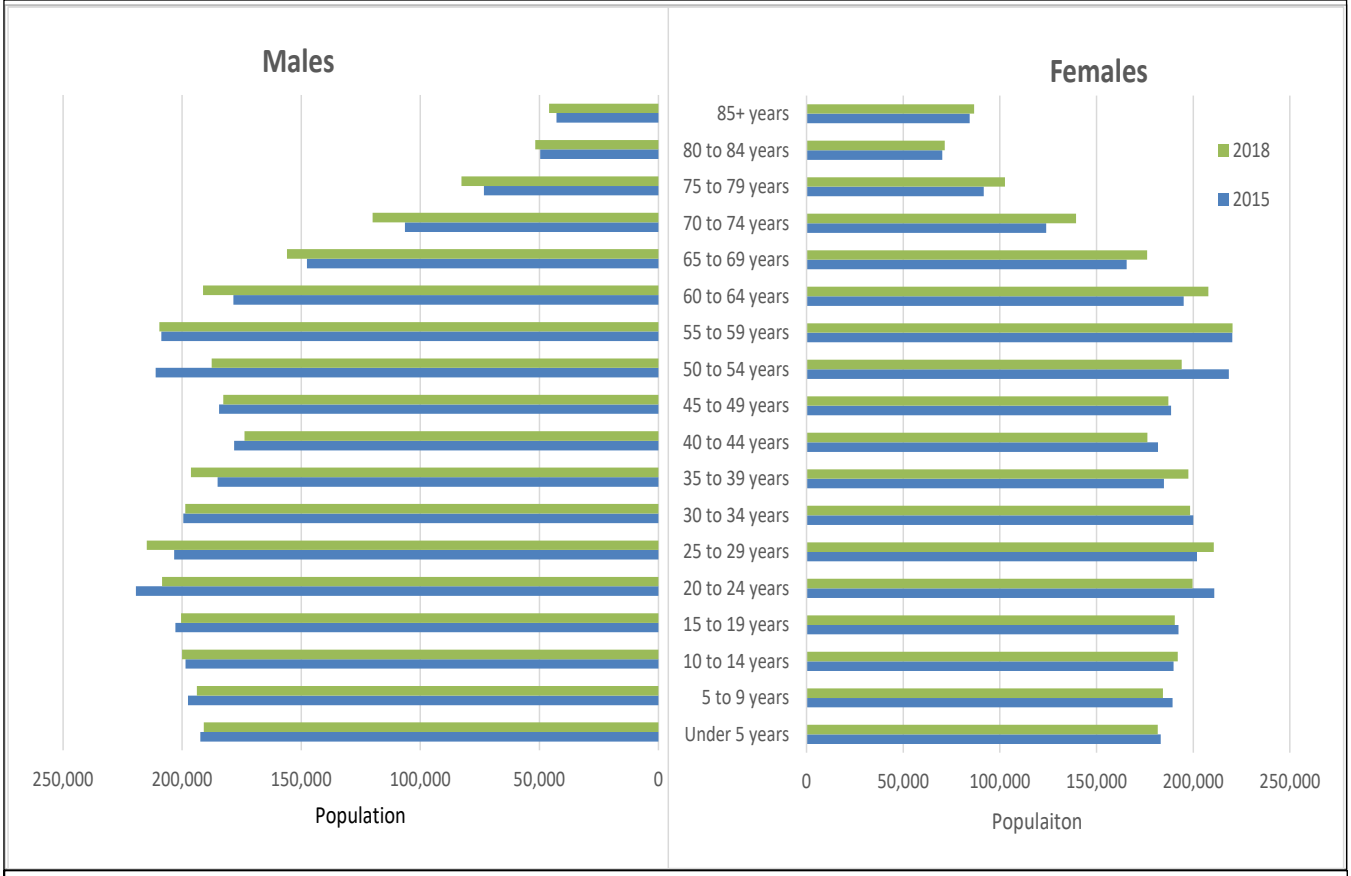
Figure 1. Population estimates and metropolitan statistical area classification, by county, Missouri, 2018



Sources: Sources: Missouri Census Data Center, MABLE/Geocorr14. 2015 Metropolitan Divisions
MDHSS, Bureau of Health Care Analysis and Data Dissemination, Population Estimates, 2018

Missouri's population was estimated to be 6,126,452 in 2018 based on U.S. Census Bureau estimates. Missouri is comprised of 114 counties, plus the independent city of St. Louis. The U.S. Census Bureau defines groups of counties as metropolitan, micropolitan, or nonmetropolitan areas based on the population size of a core urban area. A metropolitan area contains a core urban area with a population of at least 50,000. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. A micropolitan area contains a core urban area with a population between 10,000-49,999. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. An area that does not meet the population requirements for the metropolitan or micropolitan area is referred to as a nonmetropolitan area. Figure 1 illustrates the classification of Missouri counties based on 2018 population estimates. In total, 34 counties were classified as part of a metropolitan statistical area in 2018; 22 counties were classified as part of a micropolitan statistical area; and 59 counties were classified as nonmetropolitan areas.

Figure 2. Population by age and by sex, Missouri, 2015 and 2018



Source: U.S. Census Bureau, Population Estimates, 2014-2018

In 2018, the median age was 37.4 years old among Missouri males, and 40.1 years old among Missouri females. The median ages of males and females in Missouri were slightly higher than the median ages in the U.S. overall of 36.2 and 38.9 years of age for males and females, respectively. The distribution of the Missouri population by age among both males and females has shifted slightly between 2015 and 2018 (Figure 2). In both 2015 and 2018, there were a larger number of males between the ages of 0 and 29 compared to females. However, there tended to be a larger number of females 40 years of age or greater compared to males.

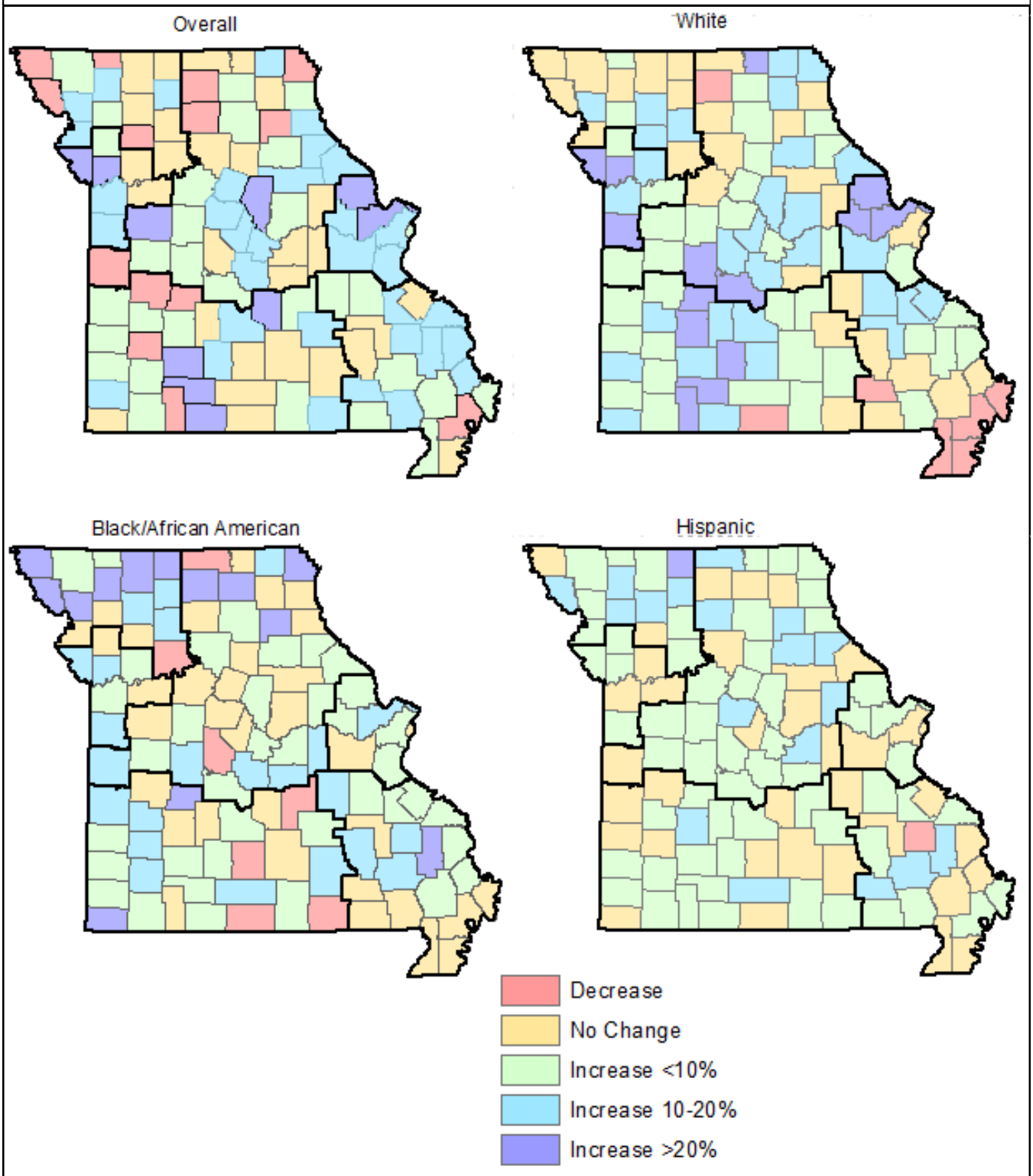
Table 1. Population change by race/ethnicity, Missouri, 2014-2018

Race/Ethnicity	2014	2015	2016	2017	2018	% Change 2014-2018
White	4,856,989	4,855,366	4,855,626	4,857,474	4,857,213	0%
Black/African American	702,200	704,858	707,200	708,995	710,233	1%
Hispanic	236,000	242,276	248,783	255,716	262,383	11%
Asian/Pacific Islander	119,085	123,459	126,091	130,983	134,634	13%
American Indian/Alaskan Nativ	25,426	25,738	26,030	26,419	26,711	5%
Two or More Races/Unknown	116,502	120,035	123,405	127,083	130,449	12%
Total	**6,056,202**	**6071732**	**6087135**	**610670**	**6,121,623**	**1%**

Sources: Sources: Missouri Census Data Center, Population Estimates, 2014-2018

Whites represented the majority of the population in Missouri from 2014 to 2018. However, estimated population growth between 2014 and 2018 was greatest among Asian/Pacific Islanders (Table 1). Persons of multiple races and Hispanics reported the second and third greatest percentage increase in population between 2014 and 2018, respectively. High rates of growth among particular populations may warrant attention when planning new disease prevention and outreach activities.

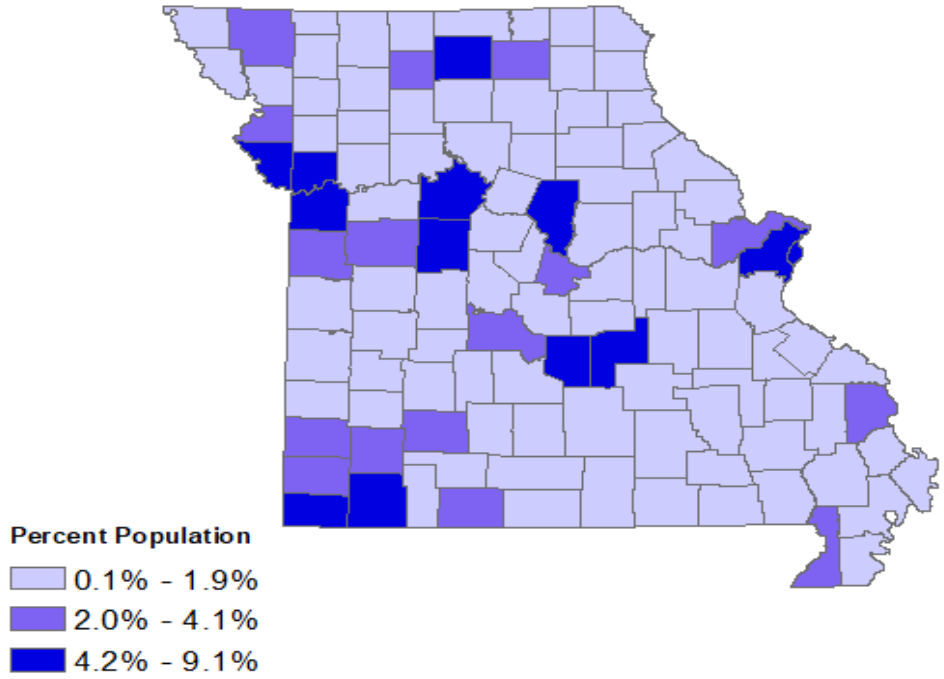
Figure 3. Percent population change* by county, overall and by race/ethnicity, Missouri, 2015-2018



Sources: Sources: Missouri Census Data Center, Population Estimates, 2015-2018

There were 43 counties in which the overall population increased by 10% or more between 2015 and 2018 (Figure 3). There were 14 counties where the overall estimated population decreased between 2015 and 2018. Population changes among whites tended to be similar to overall population changes. There were 13 counties where the black/African American population was estimated to increase by more than 20% between 2015 and 2018. Many of the counties experiencing the large increase were located in the Southwest HIV Care Region. Increases in the Hispanic population were seen throughout the state.

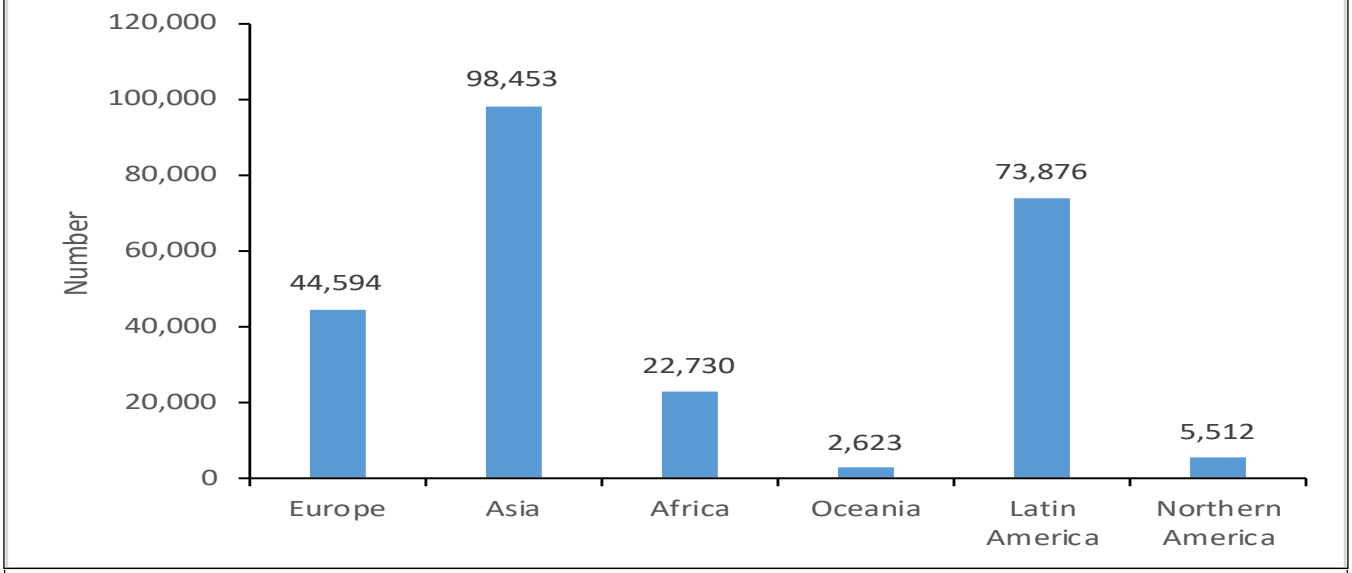
Figure 4. Estimated percent population born outside of the U.S., by selected county, Missouri, 2014-2018



Source: U.S. Census Bureau, American Community Survey, 2014-2018

Overall, 4.1% of Missouri's population was born in a country outside of the U.S., according to 2014-2018 American Community Survey estimates. Estimates of the percent of the population born outside of the U.S. by county were available only for selected counties. Estimates ranged from 0.2% of the population born outside of the U.S. in Carter County to 9.1% in Sullivan County (Figure 4).

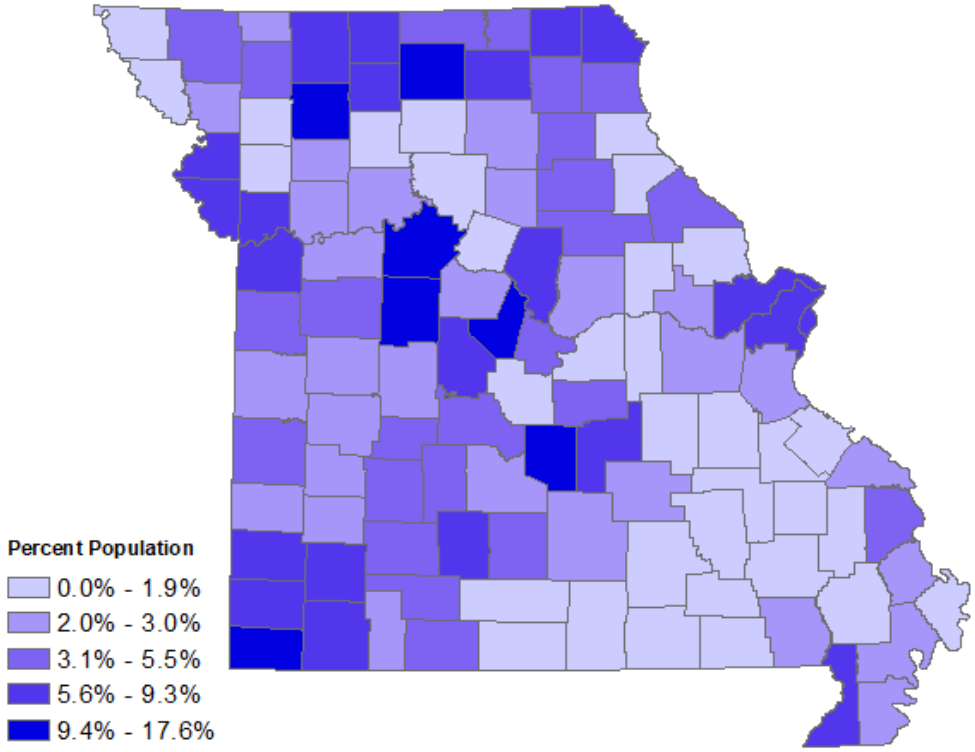
Figure 5. Region of birth among persons born outside of the U.S., Missouri, 2014-2018



Source: U.S. Census Bureau, American Community Survey, 2014-2018

Among persons born outside of the U.S. who now currently reside in Missouri, the largest numbers were born in Asia (Figure 5). Latin America represented the second largest region of birth among persons residing in Missouri.

Figure 6. Estimated percent population five years of age or older speaking a language other than English at home, by selected county, Missouri, 2014-2018



Source: U.S. Census Bureau, American Community Survey, 2014-2018

Among Missourians five years of age or older, an estimated 6.1% spoke a language other than English at home, according to 2014-2018 American Community Survey estimates. Estimates of the percent of the population speaking a language other than English at home by county were available only for a few selected counties. Estimates of persons five years of age or older speaking a language other than English ranged from 0.6% in Chariton and Mississippi County to 17.6% in Sullivan County (Figure 6).

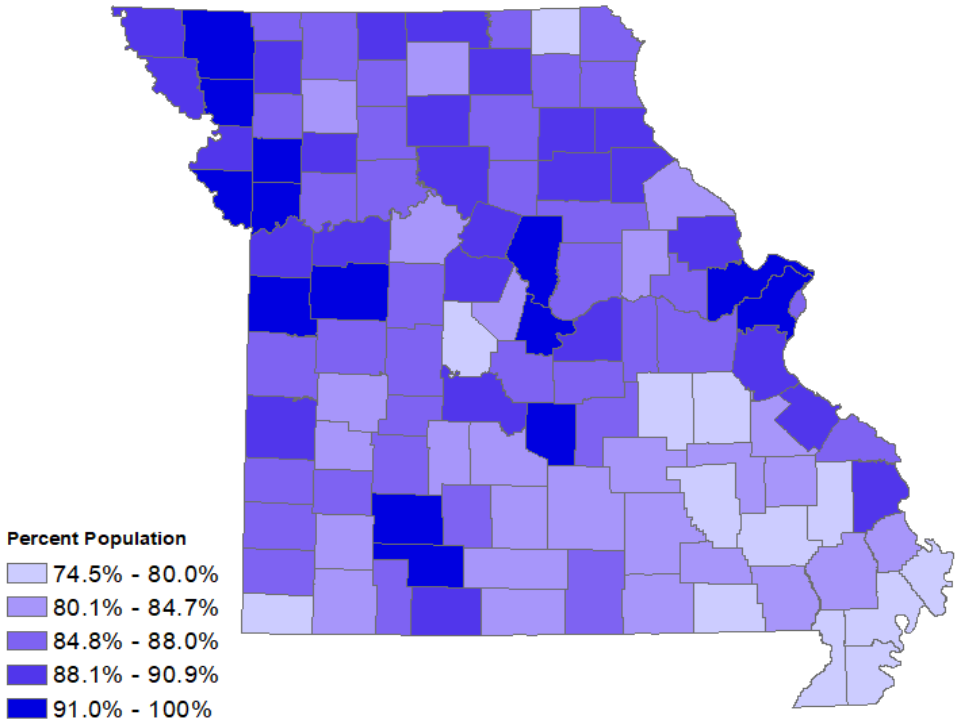
Table 2. Estimated population five years of age or older by the language spoken at home, Missouri, 2014-2018

Language	N	%
English Only	5,367,705	93.90%
Spanish	145,831	2.60%
Other Indo-Eurpoean languages	99,921	1.70%
Asian and Pacific Islander Languages	72,414	1.30%
Other Languages	31,259	0.50%
Missouri Total 5+ Years of Age	5,717,130	100.00%

Source: U.S. Census Bureau, American Community Survey, 2014-2018

The most common language spoken at home among Missourians five years of age or older, other than English, was Spanish or Spanish Creole (2.6%) (Table 2). Less than four percent of Missouri's population five years of age or older spoke a language other than English or Spanish.

Figure 8. Estimated percent of population 25 years of age or older completing high school, high school equivalency, or higher, by selected county, Missouri, 2014-2018



Source: U.S. Census Bureau, American Community Survey, 2014-2018

An estimated 89.6% of Missourians 25 years of age or older have completed at least high school or a high school equivalency. Estimates ranged from 74.5% of the population completing high school in Mississippi County to 95.4% in Platte County (Figure 8).

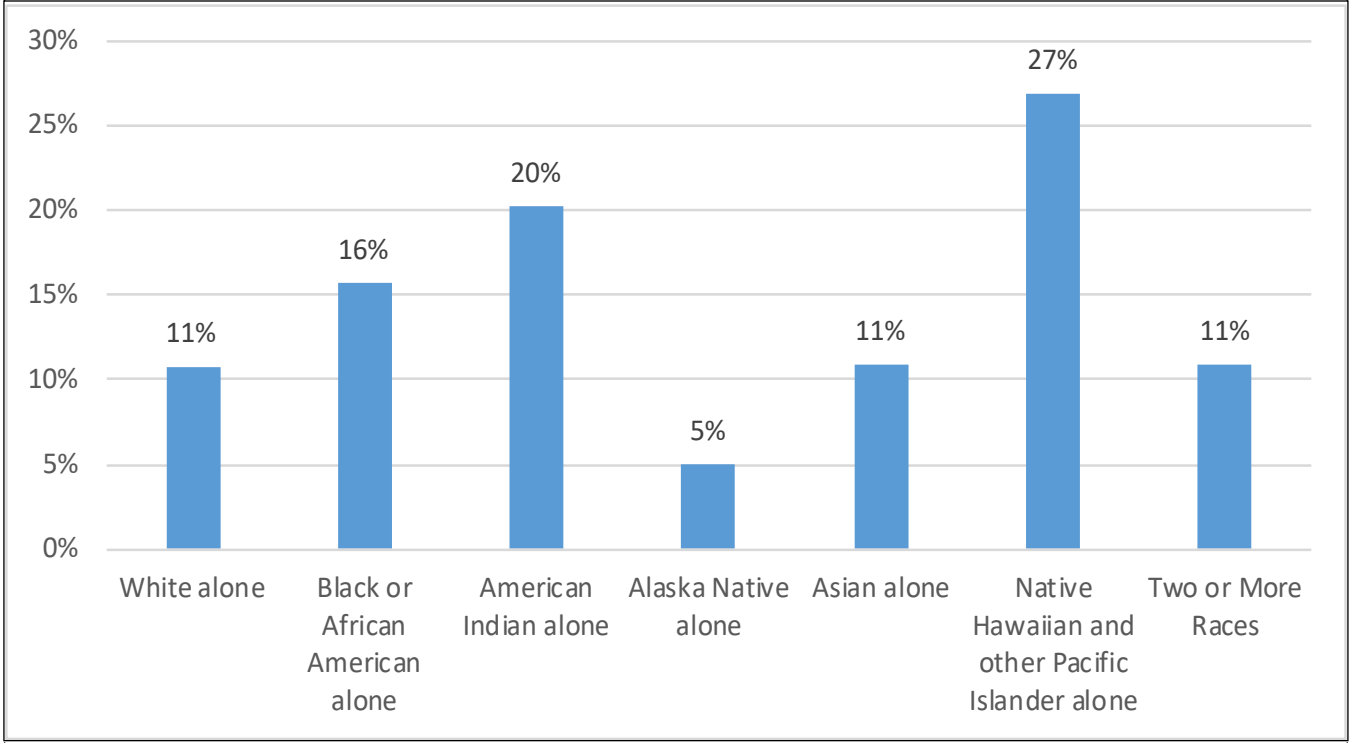
Table 3. Estimated highest educational attainment level, by age, Missouri, 2014-2018

		Highest Educational Attainment level			
Sex	Age	Less than high school diploma	Hish school graduate, GED, or alternative	Some college or associates	Bachelors degree or higher
Male	18 to 24	41,409	104,431	125,549	24,603
	25 to 34	34,594	117,090	131,232	117,538
	35 to 44	32,971	107,566	114,181	108,520
	45 to 54	38,888	131,411	111,573	102,122
	55 to 64	39,214	136,439	111,816	101,269
	65+	54,796	146,000	108,299	117,986
Female	18 to 24	30,478	75,503	142,743	34,189
	25 to 34	26,991	77,766	144,312	34,189
	35 to 44	26,555	78,368	122,754	138,596
	45 to 54	30,711	108,816	130,875	125,813
	55 to 64	33,844	135,842	137,148	111,010
	65+	78,736	224,097	139,864	102,160

Source: U.S. Census Bureau, American Community Survey, 2014-2018

The distribution of the highest level of education attainment varied by age (Table 3). Greater proportions of males ages 25 to 34 completed a bachelor's degree or higher compared to females. However, females 35 and older had a higher rate of completing a bachelor's degree or higher compared to males. The proportion of the population with less than a high school diploma was greatest among females 65 years and older (54,796) and lowest among females 35 to 44 (26,555).

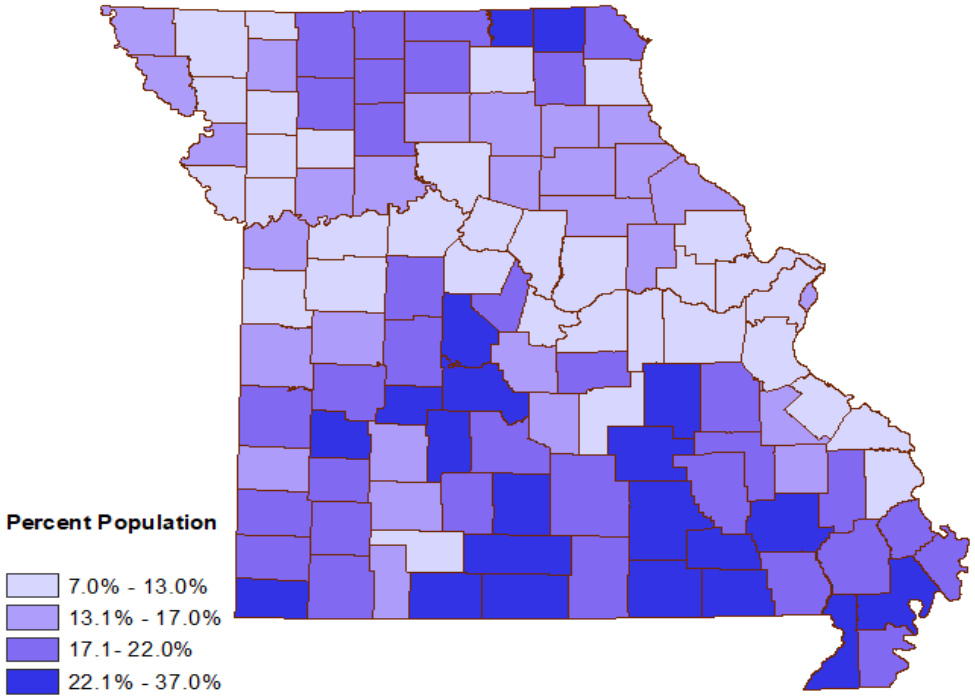
Figure 9. Estimated percent of population less than 65 years of age with no health insurance, by race, Missouri, 2014-2018



Source: U.S. Census Bureau, American Community Survey, 2014-2018

Overall, an estimated 15.5% of Missourians less than 65 years of age did not have health insurance, according to 2014-2018 American Community Survey estimates. The percentage of the population that was uninsured varied by race/ethnicity. The percentage of the population that was uninsured was greatest among Native Hawaiian and Pacific Islander (27%), and lowest among Alaska Native (5%) (Figure 9).

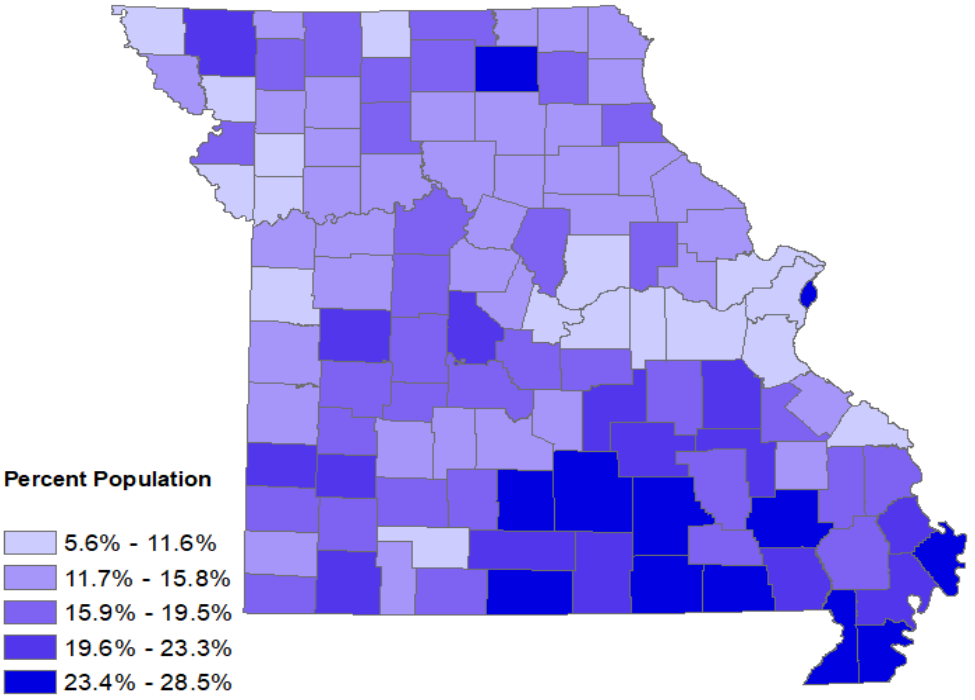
Figure 10. Estimated percent of population 19-64 years of age with no health insurance, by county, Missouri, 2014-2018



Source: U.S. Census Bureau, American Community Survey, 2014-2018

An estimated 14% of Missourians ages 18 to 64 were without health insurance in 2018. Estimates of the percent of population 18-64 years of age with no health insurance ranged from 7% in St. Charles County to 37% in Scotland County (Figure 10).

Figure 11. Estimated percent of population living in poverty, by county, Missouri, 2009-2013



Source: U.S. Census Bureau, American Community Survey, 2009-2013

An estimated 14.2% of Missourians were living in poverty in 2014 through 2018. Estimates of the percent of population living in poverty ranged from 5.6% in St. Charles County to 28.5% in Shannon County (Figure 11). Counties with the highest percentages of poverty were concentrated in the southeastern area of the state.

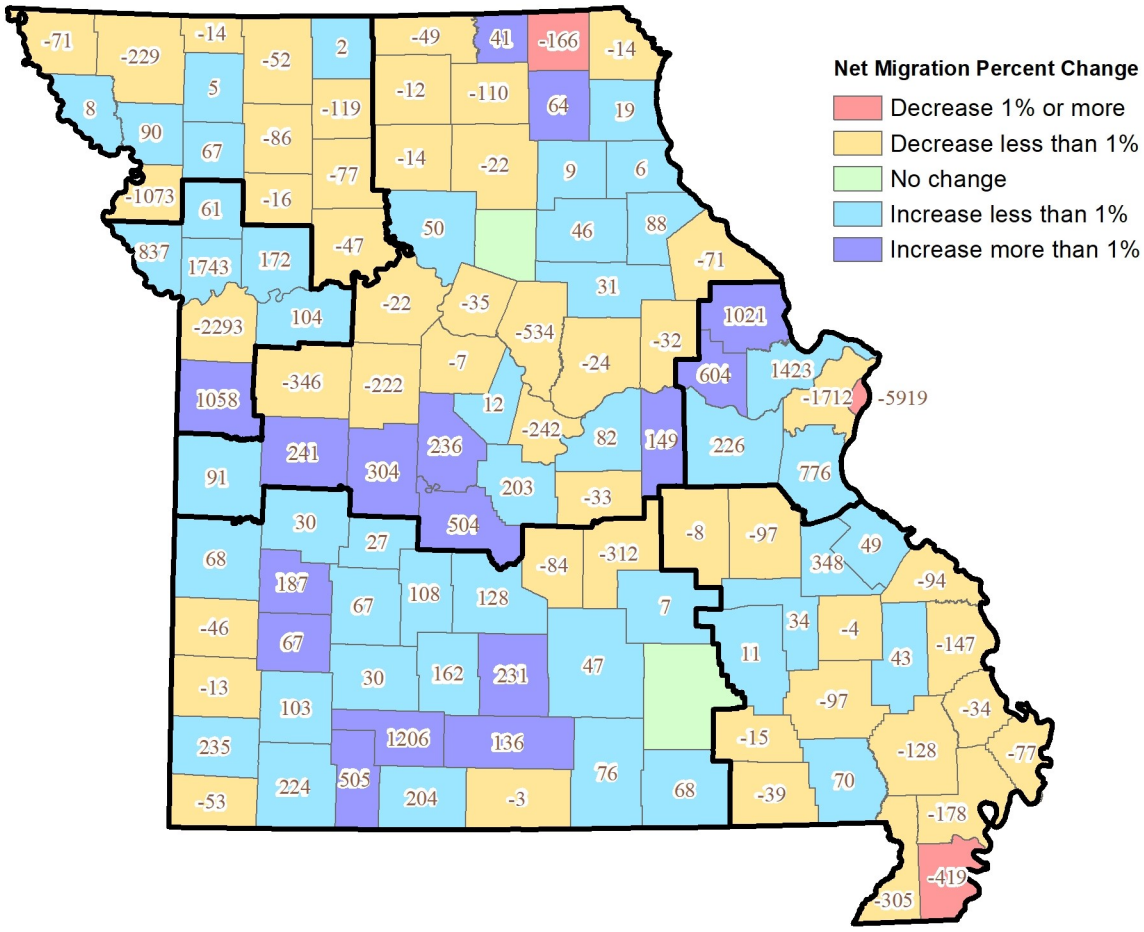
Table 4. Estimated unemployment rate by age, by sex, by educational attainment, Missouri, 2014-2018

Ages Included in Measurement	Category	Unemployment rate
16+ years of age	**Total Age**	3.2%
	16 to 19 years	6.5%
	20 to 24 years	6.9%
	25 to 44 years	4.1%
	45 to 54 years	3%
	55 to 64 years	1.9%
	65 to 74 years	0.7%
	75 years and over	0.2%
20-64 years of age	**Total Sex**	3.7%
	Male	4.2%
	Female	3.3%
25-64 years of age	**Total Educational Attainment**	3.3%
	Less than high school graduate	6.3%
	High school graduate (or equivalency)	4%
	Some college or associate's degree	3.2%
	Bachelor's degree or higher	1.8%

Source: U.S. Census Bureau, American Community Survey, 2014-2018

An estimated 3.2% of Missourians 16 years of age or older were unemployed, according to 2014-2018 American Community Survey estimates (Table 4). The unemployment rate generally decreased with increasing age. Among persons 20 to 64 years of age, the unemployment rate was higher in males than females. Unemployment rates decreased with increasing educational attainment among persons 25 to 64 years of age.

Figure 12. Net migration and percent change in migration based on IRS tax returns, by county, Missouri, 2017-2018



Note: The number in each county represents the total net migration in the county based on differences in tax filing addresses and total exemptions claimed between filing years. A positive value represents a net in-migration into the county. A negative value represents a net out-migration from the county.

Source: IRS Migration Files, 2017-2018

Among the counties in Missouri, 3 experienced a net out-migration of the population of 1% or more; 47 had a net out-migration less than 1%; two had no change in migration; 47 had a net in-migration of less than 1%; and 16 had a net in-migration of 1% or more (Figure 12). The Northwest, Central, and Southeast HIV care regions had the greatest number of counties with a net out-migration of less than 1% (3). The Central HIV care region had the greatest number of counties with a net in-migration of 1% or more (2).

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Key Highlights: What is the scope of the HIV disease epidemic in Missouri?

Magnitude of the Problem and General Trends

- From 1982 to 2019, there have been a total of 22,169 persons diagnosed with HIV disease in Missouri and reported to MDHSS. Of these individuals, 14,466 (65.3%) were subcategorized as stage 3 (AIDS) cases, and the remaining 7,703 (34.7%) were subcategorized as HIV cases. Of the cumulative number of persons diagnosed with HIV disease, 13.378 (60.3%) were presumed to be living at the end of 2019.
- The number of new diagnoses has fluctuated slightly between 2010 and 2019, with no sustained upward or downward trend in new HIV diagnoses over this time period. In 2019, there were 497 persons newly diagnosed with HIV disease. However, this value has not been adjusted for reporting delays, and therefore is likely to change.
- The number of persons living with HIV disease continued to increase every year, from 10,419 persons in 2010 to 13,379 persons in 2019. The increase is primarily due to the fact that individuals are living longer with the disease as a result of improved treatment and medical care.

Where

- HIV disease disproportionately impacts the state's two major metropolitan areas (St. Louis and Kansas City). The highest rates of new diagnoses and persons living with HIV disease were found in these two areas.
- The rate of persons newly diagnosed who remained classified as HIV cases at the end of 2019 was highest in St. Louis City (6.9 per 100,000). The second highest rate was in Kansas City (5.1 per 100,000). The rate of persons newly diagnosed who were classified as stage 3 (AIDS) cases at the end of 2019 was highest in St. Louis City (5.1 per 100,000).

Who

Sex

- Males represented the majority of persons newly diagnosed and living HIV disease (77.5%) . The rates of new diagnoses and persons living with HIV disease were around 3.6 times as high among males compared to females.

Race/Ethnicity

- HIV disease continues to disproportionately impact minorities. The rate of newly diagnosed HIV disease cases among blacks/African Americans was 8.8 times as high as whites, and 4.3 times as high among Hispanics compared to whites. The disparity was even greater among black/African American females. While black/African American females represented only 12% of Missouri's female population, black/ African American females accounted for 22.5% of new female HIV disease diagnoses. It should be emphasized that race/ethnicity in itself is not a risk factor for HIV infection; however, among many racial/ ethnic minority populations, social, economic, and cultural factors are associated with high rates of HIV risk behavior. These factors also may be barriers to receiving HIV prevention information or accessing HIV testing, diagnosis, and treatment.

Age

- The age of individuals living with HIV disease has increased over time. In 2010, the largest numbers of persons living with HIV disease were 45-49 years of age, whereas in 2019 persons 55-59 years old represented the largest number of living cases.
- The age of individuals newly diagnosed with HIV has slightly increased over time. In 2010, the largest numbers of persons newly diagnosed with HIV disease were between 19-24 years of age, compared to 2019 when the largest numbers of new diagnoses were 25-29 years of age. The difference may be attributed to increased testing among younger individuals or due to a true increase in the number of new infections at a younger age.

Exposure Category

- The majority of new diagnoses continue to be attributed to men who have sex with men (MSM). Among females, heterosexual contact was the primary mode of transmission.

Figure 13. HIV disease cases (living and deceased), by current HIV vs. stage 3 (AIDS) status, Missouri, 1982—2019

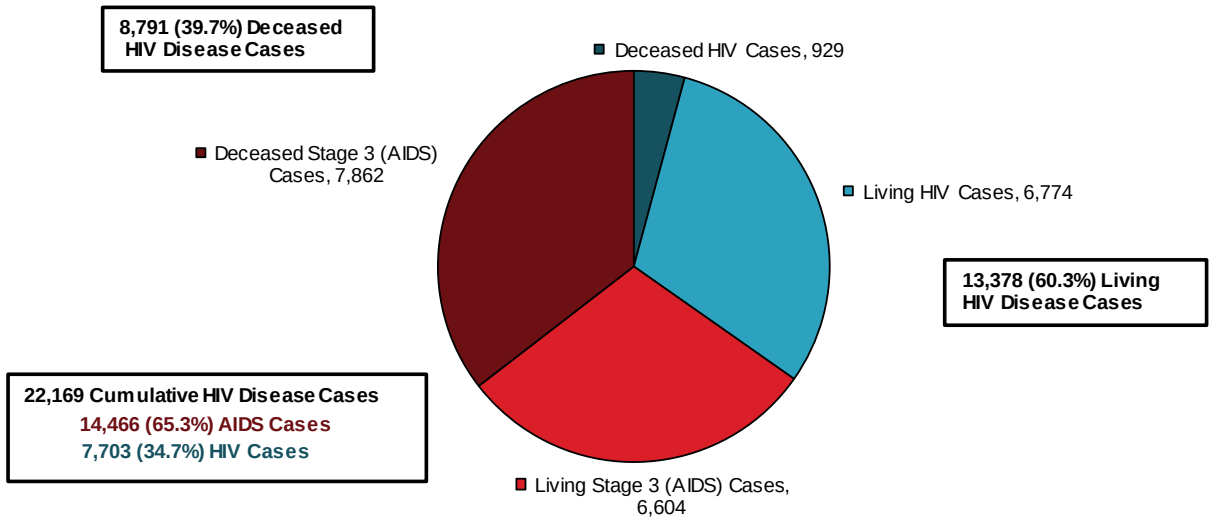
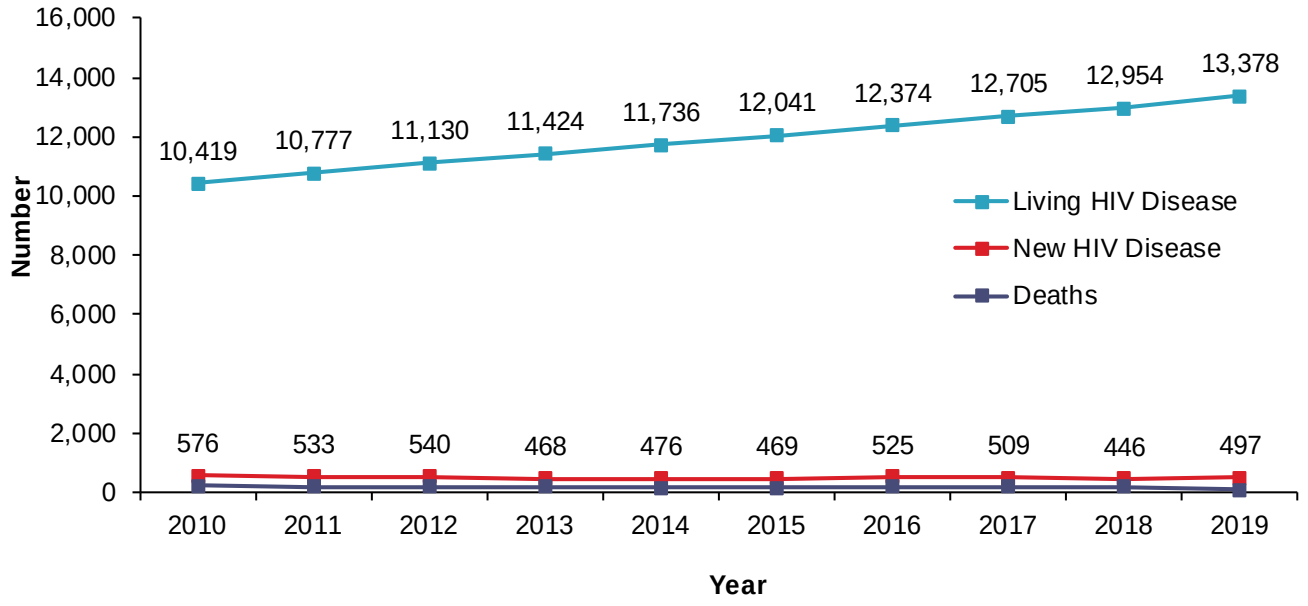


Figure 14. Living and new HIV disease cases and deaths by year*, Missouri, 2010—2019

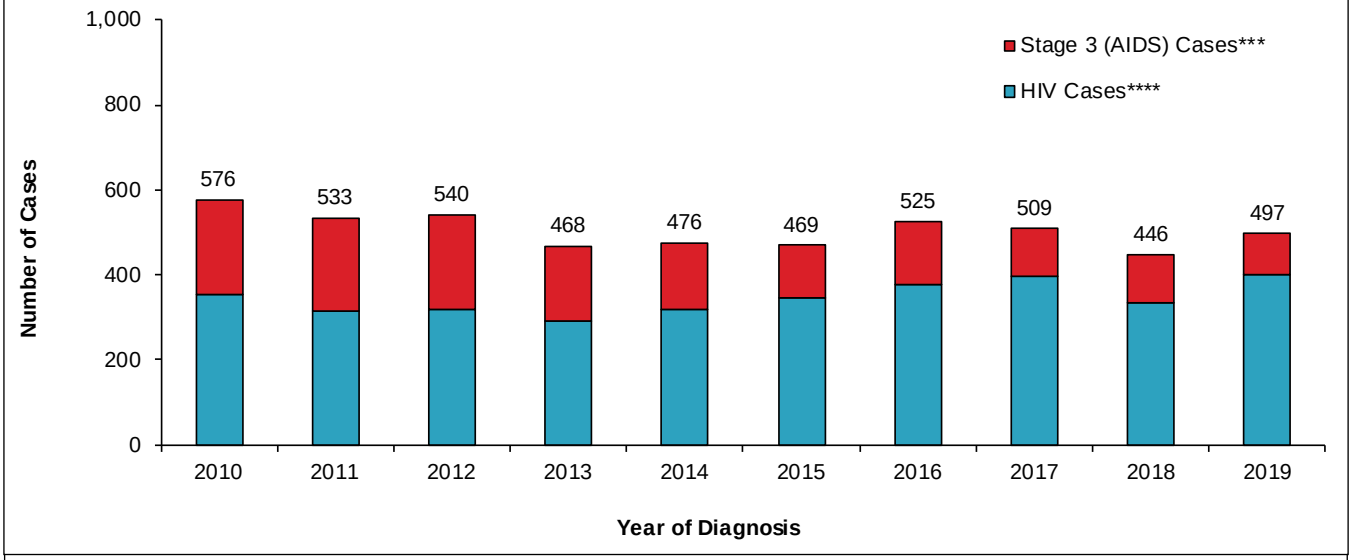


*For living HIV disease cases-the number of individuals living with HIV disease at the end of the year; For new HIV disease cases-the number of individuals newly diagnosed in the year; For HIV disease deaths-the number of individuals that died in the year.

From 1982 to 2019, there have been a total of 22,169 HIV disease cases diagnosed in Missouri and reported to MDHSS (Figure 13). Of the cumulative cases reported, 60.3% were still presumed to be living with HIV disease at the end of 2019. Among those living with HIV disease, 6,774 were classified as HIV cases at the end of 2019 and 6,604 were classified as stage 3 (AIDS) cases.

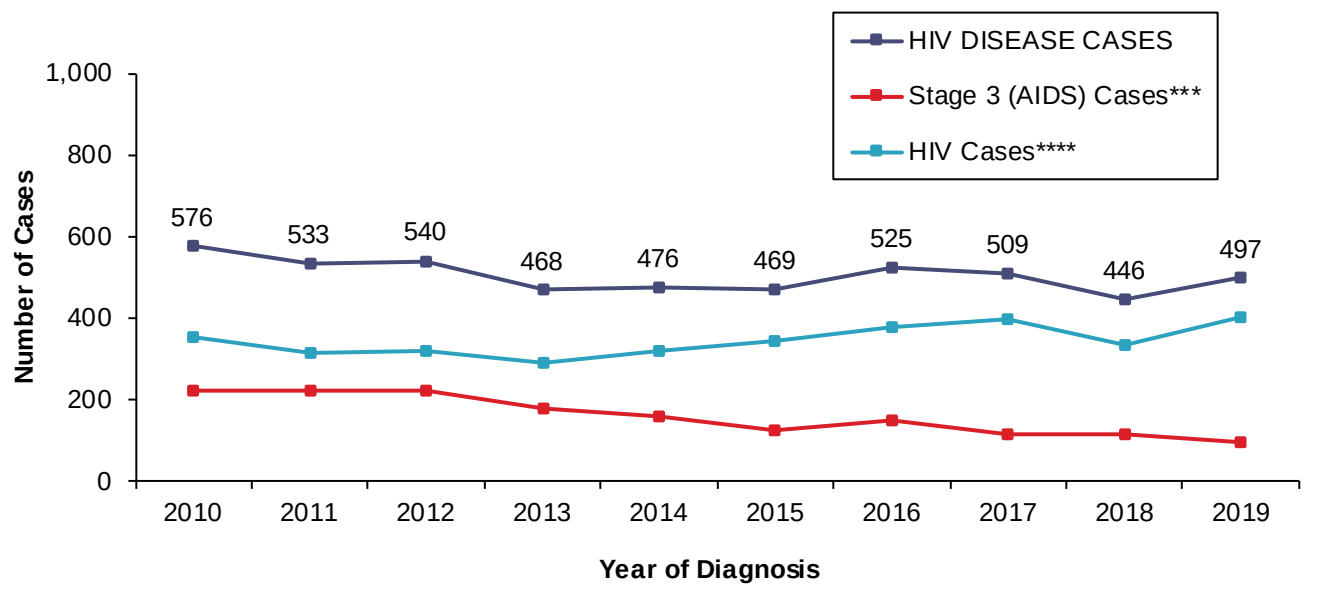
At the end of 2019, there were 13,378 persons living with HIV disease whose most recent diagnosis occurred in Missouri (Figure 14). The number of people living with HIV disease increased each year. There were 497 new HIV disease diagnoses in 2019. The number of new diagnoses from 2010 to 2019 has fluctuated; the number of new diagnoses ranged from 576 cases in 2010 to 446 cases in 2018. The number of deaths among persons with HIV disease each year has remained generally steady. The lower number of deaths in 2019 was likely due to delays in death reporting.

Figure 15. HIV disease cases, by current status* and year of diagnosis, Missouri, 2010-2019**



*HIV case vs. stage 3 (AIDS) case
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as a HIV case or a stage 3 (AIDS) case, was documented by the Department).
***These cases were either: 1) initially reported as HIV cases and then later reclassified as stage 3 (AIDS) cases because they subsequently met the stage 3 (AIDS) case definition; or 2) initially reported as stage 3 (AIDS) cases.
****These cases were initially reported as HIV cases and have remained HIV cases. They have not met the case definition for stage 3 (AIDS) as of December 31, 2019.

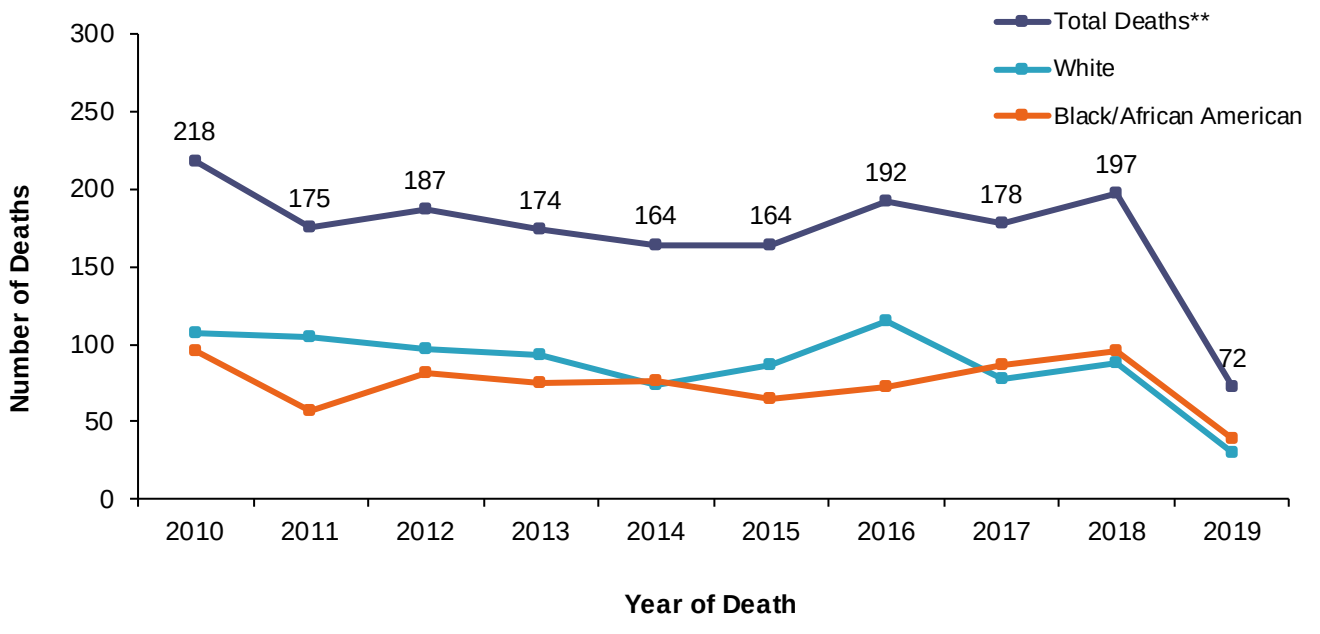
Figure 16. Reported HIV disease cases, by current status* and year of diagnosis, Missouri, 2010-2019**



*HIV case vs. stage 3 (AIDS) case
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as a HIV case or a stage 3 (AIDS) case, was documented by the Department).
***These cases were either: 1) initially reported as HIV cases and then later reclassified as stage 3 (AIDS) cases because they subsequently met the stage 3 (AIDS) case definition; or 2) initially reported as stage 3 (AIDS) cases.
****These cases were initially reported as HIV cases and have remained HIV cases. They have not met the case definition for stage 3 (AIDS) as of December 31, 2019.

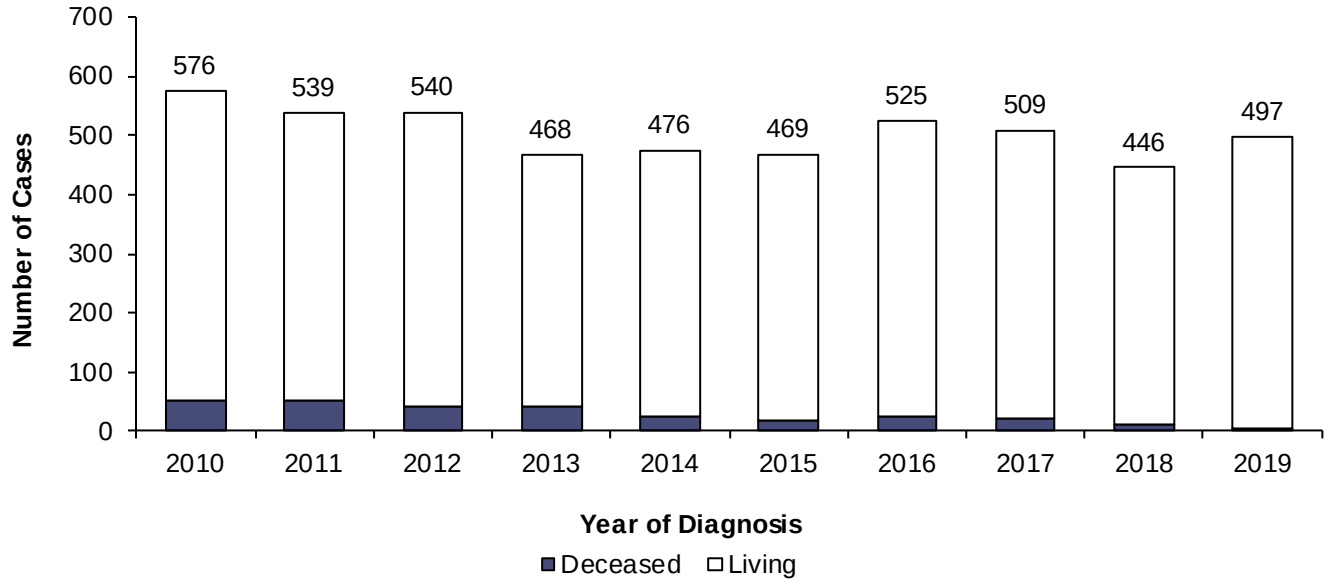
Between 2010 and 2019, the number of new HIV disease diagnoses has ranged from 576 cases in 2010, to 446 cases in 2018 (Figures 15 and 16). The number of new diagnoses has fluctuated slightly between 2010 and 2019, with no sustained upward or downward trend in new HIV diagnoses over this time period. However, the number of new cases in 2013, 2014, and 2018 was the lowest since 1986 (342 cases). Differences in the number of persons sub-classified as stage 3 (AIDS) cases each year are due to the progression of the disease over time. For those diagnosed with HIV disease in 2010, a larger number are currently classified as stage 3 (AIDS) cases compared to those diagnosed in 2019 because they have been living with the virus longer.

Figure 17. HIV disease deaths*, by selected race, by year of death, Missouri, 2010—2019†**



*Includes deaths that have occurred among those diagnosed with HIV disease in Missouri.
**Total deaths include persons of all races.
†Only includes deaths through December 31, 2019, and reported by February 28, 2020.

Figure 18. Persons diagnosed with HIV disease by current vital status* and year of diagnosis, Missouri, 2010—2019**



*Vital status on December 31, 2019.
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as a HIV case or a stage 3 (AIDS) case, was documented by the Department).

The number of deaths among persons with HIV disease was generally steady between 2010 and 2018, but then decreases drastically in 2019 (Figure 17). There was a decrease in deaths from 2018 to 2019 from 197 to 72. The lower number of deaths through 2019 is likely due to delays in death reporting. Of the 576 persons diagnosed with HIV disease in 2010, 51 (8.85%) were deceased by the end of 2010 (Figure 18). Among the 497 cases first diagnosed in 2019, 6 (1.21%) were deceased at the end of 2019. The difference in the proportion of cases that are deceased is due to the length of time individuals have been living with the disease.

Table 5. Living† HIV, stage 3 (AIDS), and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and by current age, Missouri, 2019

	HIV*			Stage 3 (AIDS)**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	5,527	81.6%	183.8	5,467	82.8%	181.8	10,994	82.2%	365.5
Female	1,247	18.4%	40.0	1,137	17.2%	36.5	2,384	17.8%	76.4
Total	**6,774**	**100.0%**	**110.6**	**6,604**	**100.0%**	**107.8**	**13,378**	**100.0%**	**218.4**
Race/Ethnicity									
White	3,143	46.4%	64.7	3,071	46.5%	63.2	6,214	46.4%	127.9
Black/African American	3,097	45.7%	435.6	3,038	46.0%	427.3	6,135	45.9%	862.9
Hispanic	344	5.1%	130.7	318	4.8%	120.8	662	4.9%	251.5
Asian/Pacific Islander	58	0.9%	42.5	43	0.7%	31.5	101	0.8%	74.0
American Indian/Alaskan Native	8	0.1%	30.0	3	0.0%	11.3	11	0.1%	41.3
Two or More Races/Unknown	124	1.8%	--	131	2.0%	--	255	1.9%	--
Total	**6,774**	**100.0%**	**110.6**	**6,604**	**100.0%**	**107.8**	**13,378**	**100.0%**	**218.4**
Race/Ethnicity-Males									
White Male	2,742	49.6%	114.7	2,739	50.1%	114.6	5,481	49.9%	229.3
Black/African American Male	2,334	42.2%	690.7	2,324	42.5%	687.7	4,658	42.4%	1378.4
Hispanic Male	295	5.3%	216.9	268	4.9%	197.0	563	5.1%	413.9
Asian/Pacific Islander Male	47	0.9%	72.5	30	0.5%	46.3	77	0.7%	118.7
American Indian/Alaskan Native Male	8	0.1%	59.5	3	0.1%	22.3	11	0.1%	81.8
Two or More Races/Unknown Male	101	1.8%	--	103	1.9%	--	204	1.9%	--
Total	**5,527**	**100.0%**	**183.8**	**5,467**	**100.0%**	**181.8**	**10,994**	**100.0%**	**365.5**
Race/Ethnicity-Females									
White Female	401	32.2%	16.2	332	29.2%	13.5	733	30.7%	29.7
Black/African American Female	763	61.2%	204.5	714	62.8%	191.4	1,477	62.0%	395.9
Hispanic Female	49	3.9%	38.5	50	4.4%	39.3	99	4.2%	77.8
Asian/Pacific Islander Female	11	0.9%	15.4	13	1.1%	18.2	24	1.0%	33.5
American Indian/Alaskan Native Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Two or More Races/Unknown Female	23	1.8%	--	28	2.5%	--	51	2.1%	--
Total	**1,247**	**100.0%**	**40.0**	**1,137**	**100.0%**	**36.5**	**2,384**	**100.0%**	**76.4**
Current Age‡									
<2	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
2-12	21	0.3%	2.5	2	0.0%	0.2	23	0.2%	2.7
13-18	52	0.8%	11.1	5	0.1%	1.1	57	0.4%	12.2
19-24	344	5.1%	70.4	63	1.0%	12.9	407	3.0%	83.3
25-44	3,192	47.1%	203.6	1,700	25.7%	108.4	4,892	36.6%	312.0
45-64	2,730	40.3%	172.7	4,131	62.6%	261.3	6,861	51.3%	433.9
65+	435	6.4%	42.1	703	10.6%	68.0	1,138	8.5%	110.1
Total	**6,774**	**100.0%**	**110.6**	**6,604**	**100.0%**	**107.8**	**13,378**	**100.0%**	**218.4**

†Includes persons diagnosed with HIV disease in Missouri who are currently living, regardless of current residence. Includes persons diagnosed in Missouri correctional facilities.
*Cases which remained HIV cases at the end of 2019
**Cases classified as stage 3 (AIDS) by December 31, 2019.
***The sum of HIV cases and stage 3 (AIDS) cases.
****Per 100,000 population based on 2013 MDHSS estimates.
‡Based on age as of December 31, 2019.
Note: Percentages may not total due to rounding.

Table 6. Diagnosed HIV, stage 3 (AIDS), and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and current age, Missouri, 2019

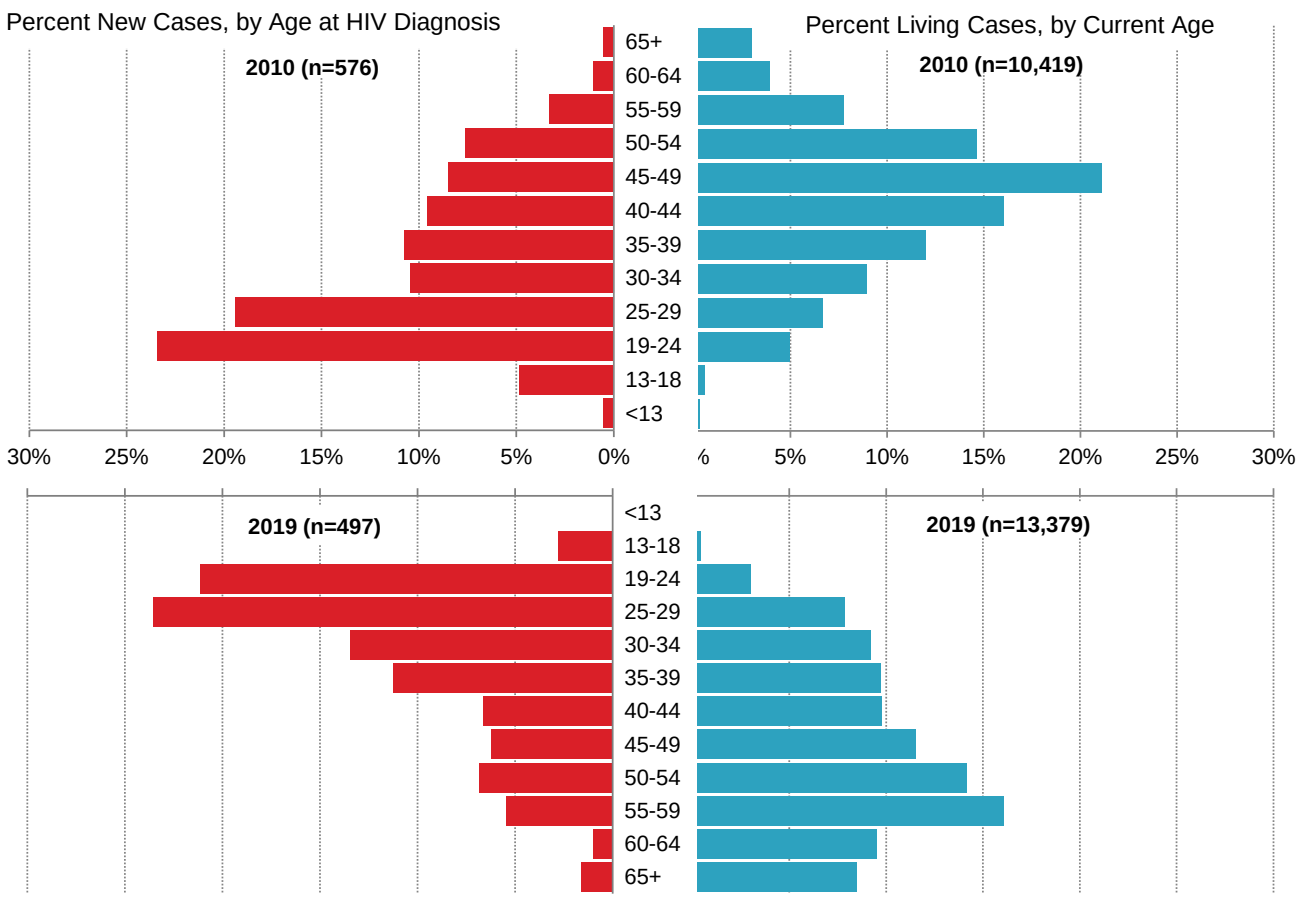
	HIV*			Stage 3 (AIDS)**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	311	77.6%	10.3	74	77.1%	2.5	385	77.5%	12.8
Female	90	22.4%	2.9	22	22.9%	0.7	112	22.5%	3.6
Total	**401**	**100.0%**	**6.5**	**96**	**100.0%**	**1.6**	**497**	**100.0%**	**8.1**
Race/Ethnicity									
White	143	35.7%	2.9	43	44.8%	0.9	186	37.4%	3.8
Black/African American	194	48.4%	27.3	45	46.9%	6.3	239	48.1%	33.6
Hispanic	39	9.7%	14.8	4	4.2%	1.5	43	8.7%	16.3
Asian/Pacific Islander	3	0.7%	2.2	3	3.1%	2.2	6	1.2%	4.4
American Indian/Alaskan Native	1	0.2%	3.8	0	0.0%	0.0	1	0.2%	3.8
Two or More Races/Unknown	21	5.2%	16.0	1	1.0%	0.8	22	4.4%	--
Total	**401**	**100.0%**	**6.5**	**96**	**100.0%**	**1.6**	**497**	**100.0%**	**8.1**
Race/Ethnicity-Males									
White Male	121	38.9%	5.1	34	45.9%	1.4	155	40.3%	6.5
Black/African American Male	135	43.4%	39.9	34	45.9%	10.1	169	43.9%	50.0
Hispanic Male	34	10.9%	25.0	3	4.1%	2.2	37	9.6%	27.2
Asian/Pacific Islander Male	3	1.0%	4.6	2	2.7%	3.1	5	1.3%	7.7
American Indian/Alaskan Native Male	1	0.3%	7.4	0	0.0%	0.0	1	0.3%	7.4
Two or More Races/Unknown Male	17	5.5%	--	1	1.4%	--	18	4.7%	--
Total	**311**	**100.0%**	**10.3**	**74**	**100.0%**	**2.5**	**385**	**100.0%**	**12.8**
Race/Ethnicity-Females									
White Female	22	24.4%	0.9	9	40.9%	0.4	31	27.7%	1.3
Black/African American Female	59	65.6%	15.8	11	50.0%	2.9	70	62.5%	18.8
Hispanic Female	5	5.6%	3.9	1	4.5%	0.8	6	5.4%	4.7
Asian/Pacific Islander Female	0	0.0%	0.0	1	4.5%	1.4	1	0.9%	1.4
American Indian/Alaskan Native Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Two or More Races/Unknown Female	4	4.4%	--		0.0%	--	4	3.6%	--
Total	**90**	**100.0%**	**2.9**	**22**	**100.0%**	**0.7**	**112**	**100.0%**	**3.6**
Current Age‡									
<2	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
2-12	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
13-18	11	2.7%	2.3	0	0.0%	0.0	11	2.2%	2.4
19-24	90	22.4%	17.9	9	9.4%	1.7	99	19.9%	20.3
25-44	227	56.6%	14.7	52	54.2%	3.4	279	56.1%	17.8
45-64	68	17.0%	4.2	32	33.3%	2.0	100	20.1%	6.3
65+	5	1.2%	0.5	3	3.1%	0.3	8	1.6%	0.8
Total	**401**	**100.0%**	**6.6**	**96**	**100.0%**	**1.6**	**497**	**100.0%**	**8.1**

*HIV cases diagnosed during 2019 which remained HIV cases at the end of the year. Includes persons diagnosed in Missouri correctional facilities.
**Stage 3 (AIDS) cases initially diagnosed in 2019.
***The sum of newly diagnosed HIV cases and newly diagnosed stage 3 (AIDS) cases. Does not include cases diagnosed prior to 2019 with HIV, which progressed to stage 3 (AIDS) in 2019.
****Per 100,000 population based on 2018 MDHSS estimates.
‡Based on age as of December 31, 2019.
Note: Percentages may not total due to rounding.

Of the 13,378 persons living with HIV at the end of 2019, 81.6% were males (Table 5). The rate of those living with HIV disease was 4.8 times as high among males compared to females. Although whites represented the largest proportion of living HIV disease cases (46.4%), the rate of those living with HIV disease was 6.7 times as high among blacks/African Americans compared to whites. The rate was 2 times as high among Hispanics compared to whites. Among males, the rate of living cases among blacks/African Americans was 6 times as high as the rate among whites, and 1.8 times as high among Hispanics compared to whites. Among females, the rate of those living with HIV disease among blacks/African Americans was 13.3 times as high as the rate among whites, and 2.6 times as high among Hispanics compared to whites.

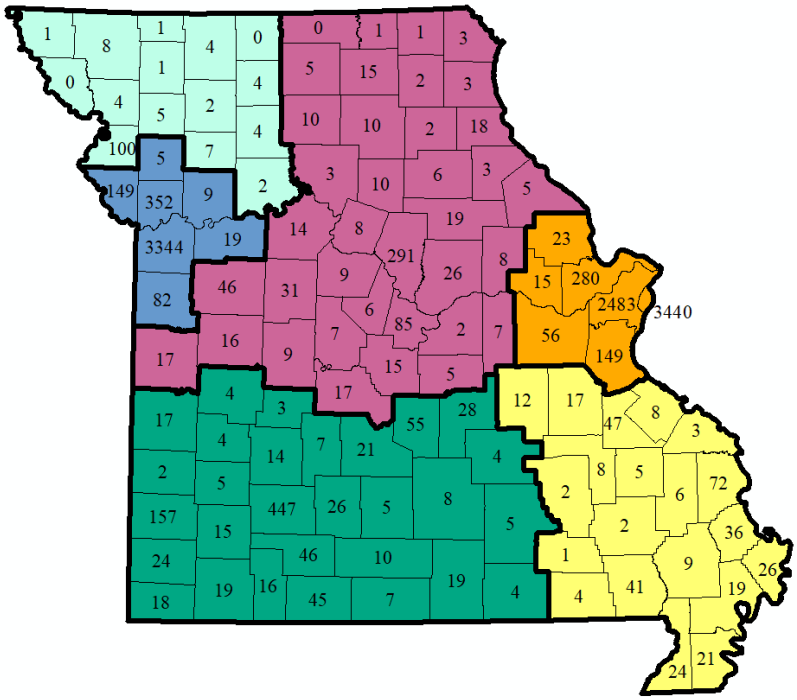
Of the persons 497 newly diagnosed with HIV disease in 2019, 19.3% were classified as stage 3 (AIDS) cases by the end of 2019 (Table 6). The rate of new HIV disease diagnoses was 3.6 times as high among males compared to females. The rate of new HIV disease cases was 8.8 times as high among blacks/African Americans compared to whites, and 4.3 times as high among Hispanics compared to whites. The rate of new HIV disease diagnoses was greatest among persons 19-24 years of age at the end of 2019 (20.3 per 100,000).

Figure 19. Distribution of new HIV disease cases by age at diagnosis and living HIV disease cases by current age in selected year, Missouri, 2010 and 2019



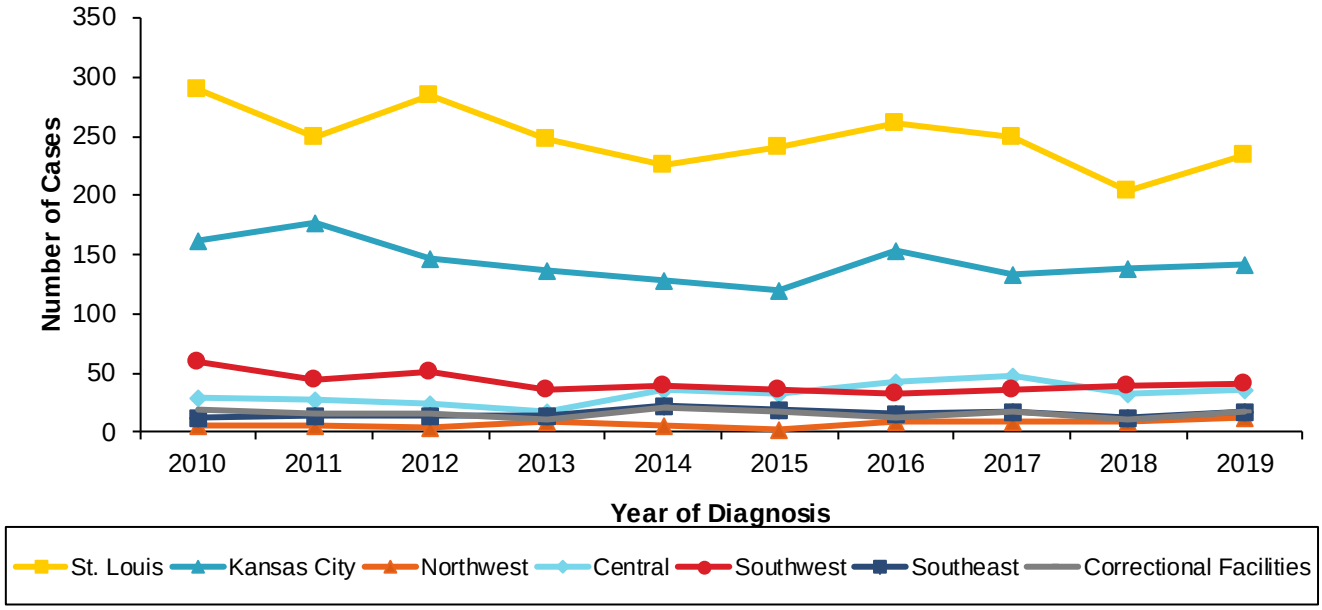
Changes have occurred in the distribution of the age at diagnosis among new HIV disease cases over time (Figure 19). In 2010, the greatest proportion of new diagnoses occurred among those ages 19-24 (23%) and 25-29 (19%). In 2019, the greatest proportion of new diagnoses occurred among ages 25-29 (24%). Although the age of new diagnoses has decreased, the age of individuals living with HIV has increased over time. In 2010, the greatest proportion of living cases was among those ages 45-49 (21%). In 2019, the greatest proportion of living cases was between 55-59 years old (16%).

Figure 20. Number of persons living with HIV disease by county of residence* and HIV care region at time of diagnosis, Missouri, 1982-2019



*Based on residence at time of most recent diagnosis of HIV or stage 3 (AIDS). Excludes persons diagnosed in Missouri correctional facilities (n=723).

Figure 21. Persons diagnosed with HIV disease by HIV care region at time of diagnosis, Missouri, 2010-2019



The largest numbers of persons living with HIV disease in 2019 were most recently diagnosed in St. Louis City (3440), Jackson County (3344), and St. Louis County (2483) (Figure 20). The St. Louis HIV Care Region has represented the largest number of new HIV disease diagnoses in each year from 2010-2019 (Figure 21). In 2018 the St. Louis HIV Care Region represented the lowest number of new cases (204) in a year since 1987.

The number of new diagnoses in the Kansas City Region and St. Louis Region has been generally stable from 2011 to 2018 with a slight increase in 2019 for the St. Louis Region. In the remainder of the HIV care regions, the number of new diagnoses has been generally stable from 2010 to 2019, with slight fluctuations seen in select years.

Table 7. New and living HIV and stage 3 (AIDS) cases and rates, by geographic area, and by HIV care region, 2019

	HIV Cases						Stage 3 (AIDS) Cases					
	Diagnosed 2019*			Living with HIV			Diagnosed 2019**			Living with Stage 3 (AIDS)		
Location	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***
Geograhic Area												
St. Louis City†	65	16.2%	21.5	1,778	26.2%	587.1	14	14.6%	4.6	1,662	25.2%	548.8
St. Louis County†	109	27.2%	10.9	1,337	19.7%	134.1	24	25.0%	2.4	1,146	17.4%	115.0
Kansas City†	78	19.5%	15.9	1,449	21.4%	294.6	20	20.8%	4.1	1,700	25.7%	345.6
Outstate†	133	33.2%	3.1	1,865	27.5%	43.0	37	38.5%	0.9	1,745	26.4%	40.3
Missouri Correctional Facilities††	16	4.0%	N/A	345	5.1%	N/A	1	1.0%	N/A	351	5.3%	N/A
MISSOURI TOTAL	**401**	**100.0%**	**6.5**	**6,774**	**100.0%**	**110.6**	**96**	**100.0%**	**1.6**	**6,604**	**100.0%**	**107.8**
HIV Care Region												
St. Louis†	191	47.6%	9.0	3,399	50.2%	160.4	43	44.8%	2.0	3,047	46.1%	143.8
Kansas City†	113	28.2%	9.2	1,856	27.4%	150.8	28	29.2%	2.3	2,104	31.9%	171.0
Northwest†	10	2.5%	4.5	69	1.0%	31.0	2	2.1%	0.9	74	1.1%	33.2
Central†	29	7.2%	3.2	405	6.0%	45.1	6	6.3%	0.7	330	5.0%	36.8
Southwest†	29	7.2%	2.5	530	7.8%	45.3	11	11.5%	0.9	505	7.6%	43.2
Southeast†	13	3.2%	2.7	170	2.5%	34.8	5	5.2%	1.0	193	2.9%	39.6
Missouri Correctional Facilities††	16	4.0%	N/A	345	5.1%	N/A	1	1.0%	N/A	351	5.3%	N/A
MISSOURI TOTAL	**401**	**100.0%**	**6.5**	**6,774**	**100.0%**	**110.6**	**96**	**100.0%**	**1.6**	**6,604**	**100.0%**	**107.8**

*HIV cases diagnosed and reported to the Department during 2019 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2019 that progressed to stage 3 (AIDS) in 2019.
***Per 100,000 population based on 2018 MDHSS estimates.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

There were differences in the proportion of persons newly diagnosed with HIV disease that were either concurrently diagnosed with stage 3 (AIDS) or progressed to stage 3 (AIDS) at the end of 2019 by geographic area and HIV care region (Table 7). Out of state had the highest proportion, 38.5%, of newly diagnosed HIV disease cases that progressed to stage 3 (AIDS) at the end of 2019. In comparison, the proportion was 25%, 20.8%, 14.6%, and 1% for St. Louis County, Kansas City, St. Louis City, and Missouri correctional facilities, respectively.

In St. Louis HIV Care Region, 44.8% of newly diagnosed HIV disease cases progressed to stage 3 (AIDS) at the end of 2019. The proportion was 29.2%, 11.5%, 6.3%, 5.2%, 2.1%, and 1% for Kansas City, Southwest, Central, Southeast, Northwest, and Missouri correction facilities the HIV care regions of respectively. The variation in the proportion of newly diagnosed individuals that progressed to stage 3 (AIDS) by the end of 2019 among the geographic areas may be related to differences in when individuals were tested in the course of their disease progression, or differences in active surveillance techniques.

The rate of new and living HIV and living stage 3 (AIDS) cases were greatest in St. Louis City. The rate of new HIV case diagnoses in St. Louis City was 5.1 times as high as Outstate, and 4.6 times as high in Kansas City compared to Outstate. This demonstrates the disproportionate impact of HIV disease on the major metropolitan areas in Missouri.

Table 8. Diagnosed HIV cases and rates, by selected race/ethnicity, by geographic area, Missouri, 2019

Area	White			Black/African American			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis City†	12	18.5%	8.7	48	73.8%	34.8	4	6.2%	32.0	65	16.2%	21.5
St. Louis County†	20	18.3%	3.1	74	67.9%	30.1	12	11.0%	40.6	109	27.2%	10.9
Kansas City†	27	34.6%	9.9	39	50.0%	27.8	9	11.5%	18.0	78	19.5%	15.9
Outstate Missouri†	74	55.6%	2.0	28	21.1%	15.0	14	10.5%	8.2	133	33.2%	3.1
Missouri Correctional Facilities††	10	62.5%	N/A	5	31.3%	N/A	0	0.0%	N/A	16	4.0%	N/A
MISSOURI TOTAL	**143**	**35.7%**	**2.9**	**194**	**48.4%**	**27.3**	**39**	**9.7%**	**14.8**	**401**	**100.0%**	**6.5**

*Per 100,000 population based on 2018 MDHSS estimates.
**Includes cases in persons whose race/ethnicity is either unknown or not listed.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Row percentages are shown. Percentages may not total due to rounding.

Table 9. Diagnosed HIV cases and rates, by selected race/ethnicity, by HIV care region, Missouri, 2019

HIV Care Region	White			Black/African American			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis†	43	22.5%	2.8	123	64.4%	30.1	18	9.4%	27.9	191	100.0%	9.0
Kansas City†	45	39.8%	5.1	49	43.4%	25.5	14	12.4%	14.9	113	100.0%	9.2
Northwest†	4	40.0%	2.0	3	30.0%	35.8	0	0.0%	0.0	10	100.0%	4.5
Central†	15	51.7%	1.9	7	24.1%	15.4	3	10.3%	10.2	29	100.0%	3.3
Southwest†	19	65.5%	1.8	5	17.2%	20.2	3	10.3%	5.5	29	100.0%	2.5
Southeast†	7	53.8%	1.6	2	15.4%	6.5	1	7.7%	8.8	13	100.0%	2.6
Missouri Correctional Facilities††	10	62.5%	N/A	5	31.3%	N/A	0	0.0%	N/A	16	100.0%	N/A
MISSOURI TOTAL	**143**	**35.7%**	**2.9**	**194**	**48.4%**	**27.3**	**39**	**9.7%**	**14.8**	**401**	**100.0%**	**6.5**

*Per 100,000 population based on 2018 MDHSS estimates.
**Includes cases in persons whose race/ethnicity is either unknown or not listed.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Row percentages are shown. Percentages may not total due to rounding.

The proportion of new HIV cases diagnosed in 2019 by race/ethnicity varied by geographic area (Table 8). Whites comprised 62.5% of new HIV case diagnoses in 2019 in Missouri correctional facilities but only 35% in Kansas City and 18% in St. Louis City and County. Out of state compromised 55.6% of new HIV cases. Differences in the general population distribution of each of these geographic areas likely explain some of the variation observed. The difference in the rate of new HIV case diagnoses by race/ethnicity also varied by geographic area.

In Outstate, the rate of new HIV cases among blacks/African Americans was 7.5 times as high as the rate among whites, and 4.1 times as high among Hispanics compared to whites. In comparison, the rate of new HIV cases was 9.7 times as high in blacks/African Americans compared to whites and 13.1 times for Hispanics compared to whites in St. Louis County.

Different patterns observed for the geographic areas were also present by HIV care region (Table 9). In the Southwest HIV Care Region, whites represented 65.5% of new HIV case diagnoses, whereas blacks/African Americans represented the majority of cases in the St. Louis HIV Care Region (64%) and Hispanics in the Kansas City HIV Care Region (12.4%).

Table 10. Newly diagnosed and living HIV and stage 3 (AIDS) cases in men who have sex with men, by selected race/ethnicity, Missouri, 2019

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%
White	83	39.2%	2,195	51.6%	20	43.5%	2,129	52.3%
Black/African American	92	43.4%	1,705	40.1%	21	45.7%	1,658	40.7%
Hispanic	30	14.2%	244	5.7%	2	4.3%	178	4.4%
Other/Unknown	7	3.3%	111	2.6%	3	6.5%	106	2.6%
MISSOURI TOTAL* **	**212**	**100.0%**	**4,255**	**100.0%**	**46**	**100.0%**	**4,071**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2019 that progressed to stage 3 (AIDS) in 2019.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 11. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by current age group, Missouri, 2019

	White		Black/African American		Hispanic		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	1	0.0%	7	0.2%	2	0.5%	10	0.1%
19-24	61	1.4%	199	5.9%	12	2.8%	287	3.4%
25-44	1,183	27.4%	1,647	49.0%	213	50.5%	3,152	37.9%
45-64	2,562	59.3%	1,360	40.4%	177	41.9%	4,177	50.2%
65+	517	12.0%	150	4.5%	18	4.3%	700	8.4%
MISSOURI TOTAL	**4,324**	**100.0%**	**3,363**	**100.0%**	**422**	**100.0%**	**8,326**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

The data presented for each exposure category for Tables 10-23 have not been adjusted to redistribute individuals with missing exposure category information. Therefore these data only represent those individuals with an exposure category reported to MDHSS. The total number of individuals in each exposure category is likely underestimated, especially among those newly diagnosed in 2019. These data are subject to change.

There were a total of 212 new HIV disease diagnoses attributed to MSM in 2019 (Table 10). Blacks/African Americans had the highest proportion of MSM new HIV cases and new stage 3 (AIDS) cases at 43.4% and 45.7% respectively. Whites had the largest proportion of MSM living with both HIV and stage 3 (AIDS) compared to blacks/African Americans and Hispanics. Of the newly diagnosed cases among MSM, 18% progressed to stage 3 (AIDS) by the end of 2019.

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM (Table 11). The largest proportion overall in Missouri were between the ages of 45-64 at 50.2%. Among white MSM living with HIV disease, the majority (59.3%) were between 45-64 years of age at the end of 2019. The greatest numbers of black/African American and Hispanic MSM living with HIV disease were between 25-44, and black/African Americans represented the largest number of MSM under the age of 25 (206).

Table 12. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2019

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	1,032	45.5%	1,124	49.5%	55	2.4%	2,270	27.3%
St. Louis County	583	37.1%	888	56.6%	71	4.5%	1,570	18.9%
Kansas City	1,110	50.5%	839	38.2%	175	8.0%	2,196	26.4%
Outstate	1,510	76.1%	305	15.4%	114	5.7%	1,983	23.8%
Missouri Correctional Facilities	89	29.0%	207	67.4%	7	2.3%	307	3.7%
MISSOURI TOTAL	**4,324**	**51.9%**	**3,363**	**40.4%**	**422**	**5.1%**	**8,326**	**100.0%**
HIV Care Region								
St. Louis	1,873	45.1%	2,055	49.4%	134	3.2%	4,157	49.9%
Kansas City	1,454	54.2%	928	34.6%	219	8.2%	2,685	32.2%
Northwest	58	89.2%	5	7.7%	2	3.1%	65	0.8%
Central	271	71.3%	82	21.6%	22	5.8%	380	4.6%
Southwest	461	82.6%	44	7.9%	31	5.6%	558	6.7%
Southeast	118	67.8%	42	24.1%	7	4.0%	174	2.1%
Missouri Correctional Facilities	89	29.0%	207	67.4%	7	2.3%	307	3.7%
MISSOURI TOTAL	**4,324**	**51.9%**	**3,363**	**40.4%**	**422**	**5.1%**	**8,326**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals include persons diagnosed in Missouri correctional facilities.
**Percentage of race/ethnicity in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 4,324 MSM living with HIV disease at the end of 2019, the largest proportion were diagnosed in St. Louis City (27.3%), followed by Kansas City (26.4%) (Table 12). There were differences in the proportion of living HIV disease cases among MSM diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 76% of persons living with HIV disease attributed to MSM were white, whereas only 29% of this group who were diagnosed in Missouri correctional facilities were white. The differences were likely due to variations in the general population of the geographic areas.

Similar patterns were also seen for the HIV care regions. The St. Louis HIV Care Region represented 50% of all living cases among MSM and the Kansas City HIV Care Region comprised 32%. The proportion of living cases among white MSM was highest in the Northwest HIV Care Region and lowest in Missouri correctional facilities.

Table 13. Newly diagnosed and living HIV and stage 3 (AIDS) cases in men who have sex with men and inject drugs, by selected race/ethnicity, Missouri, 2019

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%
White	14	60.9%	185	66.3%	5	83.3%	241	64.1%
Black/African American	6	26.1%	73	26.2%	1	16.7%	116	30.9%
Hispanic	1	4.3%	14	5.0%	0	0.0%	12	3.2%
Other/Unknown	2	8.7%	7	2.5%	0	0.0%	7	1.9%
MISSOURI TOTAL* **	**23**	**100.0%**	**279**	**100.0%**	**6**	**100.0%**	**376**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2019 that progressed to stage 3 (AIDS) in 2019.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 14. Living HIV disease cases in men who have sex with men and inject drugs, by selected race/ethnicity, by current age group, Missouri, 2019

	White		Black/African American		Hispanic		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	0	0.0%	0	0.0%	0	0.0%
19-24	6	1.4%	0	0.0%	1	3.8%	7	1.1%
25-44	143	33.6%	48	25.4%	14	53.8%	212	32.4%
45-64	236	55.4%	124	65.6%	11	42.3%	378	57.7%
65+	41	9.6%	17	9.0%	0	0.0%	58	8.9%
MISSOURI TOTAL	**426**	**100.0%**	**189**	**100.0%**	**26**	**100.0%**	**655**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

There were a total of 23 new HIV disease diagnoses attributed to men who have sex with men and inject drugs (MSM/IDU) in 2019 (Table 13). The small number of new cases diagnosed among MSM/IDU make patterns by race/ethnicity and sex are difficult to interpret. Although based on a small number of cases, 21% of newly diagnosed cases progressed to stage 3 (AIDS) by the end of 2019. Whites represented the majority (61%) of new HIV cases among MSM/IDU. Among living HIV and stage 3 (AIDS) cases, whites represented the largest proportion of cases, 66% and 64%, respectively.

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM/IDU (Table 14). Among white and black/African American MSM/IDU living with HIV disease, the majority, 55% and 66%, were between 45-64 years of age at the end of 2019. In contrast, the largest proportion of Hispanic MSM/IDU with HIV disease were between 25-44 years of age (54%). The highest proportion of MSM/IDU living with HIV disease were between 45-64 years of age (58%) while no cases of MSM/IDU living with HIV disease were between 13-18 years of age at the end of 2019.

Table 15. Living HIV disease cases in men who have sex with men and inject drugs, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2019

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	44	40.7%	59	54.6%	4	3.7%	108	16.5%
St. Louis County	25	46.3%	29	53.7%	0	0.0%	54	8.2%
Kansas City	102	62.6%	45	27.6%	10	6.1%	163	24.9%
Outstate	211	86.5%	17	7.0%	11	4.5%	244	37.3%
Missouri Correctional Facilities	44	51.2%	39	45.3%	1	1.2%	86	13.1%
MISSOURI TOTAL	**426**	**65.0%**	**189**	**28.9%**	**26**	**4.0%**	**655**	**100.0%**
HIV Care Region								
St. Louis	84	46.9%	88	49.2%	6	3.4%	179	27.3%
Kansas City	144	66.7%	52	24.1%	13	6.0%	216	33.0%
Northwest	12	100.0%	0	0.0%	0	0.0%	12	1.8%
Central	40	83.3%	4	8.3%	3	6.3%	48	7.3%
Southwest	84	91.3%	3	3.3%	3	3.3%	92	14.0%
Southeast	18	81.8%	3	13.6%	0	0.0%	22	3.4%
Missouri Correctional Facilities	44	51.2%	39	45.3%	1	1.2%	86	13.1%
MISSOURI TOTAL	**426**	**65.0%**	**189**	**28.9%**	**26**	**4.0%**	**655**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals include persons diagnosed in Missouri correctional facilities.
**Percentage of race/ethnicity in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 655 MSM/IDU living with HIV disease at the end of 2019, the largest proportion was diagnosed in Outstate Missouri (37%), followed by Kansas City (25%) (Table 15). There were differences in the proportion of living HIV disease cases among MSM/IDU diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 86.5% of living cases attributed to MSM/IDU were white. The Kansas City geographic area represented the largest proportion instate of all living cases among MSM/IDU at 63%.

Kansas City HIV Care Region represented the largest proportion of all living cases among MSM/IDU at 33% and then St. Louis HIV Care Region comprised 27%. The proportion of white living cases among MSM/IDU was highest in the Northwest HIV Care Region (100%) and lowest in the St. Louis HIV Care Region (47%). The proportion of black/African American among MSM/IDU was highest in St. Louis. Among Hispanics, the highest proportion was in Central and Kansas City.

Table 16. Newly diagnosed and living HIV and stage 3 (AIDS) cases in injecting drug users, by selected race/ethnicity and sex, Missouri, 2019

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	5	26.3%	97	34.0%	0	0.0%	101	25.3%
Black/African American Male	2	10.5%	65	22.8%	0	0.0%	124	31.0%
Hispanic Male	0	0.0%	4	1.4%	0	0.0%	18	4.5%
White Female	9	47.4%	73	25.6%	0	0.0%	70	17.5%
Black/African American Female	3	15.8%	40	14.0%	0	0.0%	70	17.5%
Hispanic Female	0	0.0%	3	1.1%	0	0.0%	3	0.8%
MISSOURI TOTAL* **	**19**	**100.0%**	**285**	**100.0%**	**0**	**0.0%**	**400**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2019 that progressed to stage 3 (AIDS) in 2019.
***Totals include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 17. Living HIV disease cases in injecting drug users, by selected race/ethnicity and sex, by current age group, Missouri, 2019

	White Males		Black/African American Males		White Females		Black/African American Females		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
19-24	1	0.5%	0	0.0%	3	2.1%	1	0.9%	5	0.7%
25-44	45	22.7%	31	16.4%	54	37.8%	21	19.1%	164	23.9%
45-64	134	67.7%	124	65.6%	81	56.6%	75	68.2%	441	64.4%
65+	18	9.1%	34	18.0%	5	3.5%	13	11.8%	75	10.9%
MISSOURI TOTAL	**198**	**100.0%**	**189**	**100.0%**	**143**	**100.0%**	**110**	**100.0%**	**685**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

There were a total of 19 new HIV disease diagnoses attributed to injection drug use (IDU) in 2019 (Table 16). The small number of new cases diagnosed among IDU make patterns by race/ethnicity and sex difficult to interpret. Of the newly diagnosed cases among IDU, none progressed to stage 3 (AIDS) by the end of 2019. There were 285 living HIV cases and 400 living stage 3 (AIDS) cases diagnosed among IDU. Males represented 60% of living HIV cases diagnosed among IDU.

Among IDU living with HIV disease, a smaller proportion of white males and white females had progressed to stage 3 (AIDS) by the end of 2019 compared to non-white males and females. There were differences in the distribution of living cases by race/ethnicity and sex among IDU between those classified as HIV cases compared to those classified as stage 3 (AIDS) cases. For example, white males represented the largest proportion of living HIV cases (34%) while black/African American males represented the largest proportion (31%) of living stage 3 (AIDS) cases among IDU.

The greatest numbers of persons living with HIV disease in each race/ethnicity and sex category presented among IDU were 45 to 64 years of age at the end of 2019 (Table 17). White males represented the largest proportion of living HIV diagnosed among IDU at 198 (29%) followed closely by black/African American males at 189 (28%).

Table 18. Living HIV disease cases in injecting drug users, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2019

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	21	16.9%	99	79.8%	2	1.6%	124	18.1%
St. Louis County	19	36.5%	31	59.6%	1	1.9%	52	7.6%
Kansas City	49	33.1%	80	54.1%	16	10.8%	148	21.6%
Outstate	197	81.1%	32	13.2%	12	4.9%	243	35.5%
Missouri Correctional Facilities	55	46.6%	57	48.3%	4	3.4%	118	17.2%
MISSOURI TOTAL	**341**	**49.8%**	**299**	**43.6%**	**35**	**5.1%**	**685**	**100.0%**
HIV Care Region								
St. Louis	72	34.6%	130	62.5%	3	1.4%	208	30.4%
Kansas City	90	46.2%	82	42.1%	19	9.7%	195	28.5%
Northwest	6	60.0%	3	30.0%	0	0.0%	10	1.5%
Central	33	71.7%	11	23.9%	2	4.3%	46	6.7%
Southwest	70	82.4%	10	11.8%	5	5.9%	85	12.4%
Southeast	15	65.2%	6	26.1%	2	8.7%	23	3.4%
Missouri Correctional Facilities	55	46.6%	57	48.3%	4	3.4%	118	17.2%
MISSOURI TOTAL	**341**	**49.8%**	**299**	**43.6%**	**35**	**5.1%**	**685**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals in clude persons diagnosed in Missouri correctional facilities.
**Percentage of race/ethnicity in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 685 IDU living with HIV disease at the end of 2019, the largest proportion was diagnosed in Outstate Missouri (35.5%), followed by Kansas City (21.6%) (Table 18). There were differences in the proportion of living HIV disease cases among IDU diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 81.1% of living cases attributed to IDU were white. Among black/African American the largest proportion of living HIV disease cases among IDU were in St. Louis City (79.8%), while Hispanics were in Kansas City (10.8%). The differences are likely due to variations in the general population of the geographic areas.

The St. Louis HIV Care Region represented 30.4% of all living cases among IDU, and the Kansas City HIV Care Region comprised 28.5%. The proportion of white living cases among IDU was highest in the Southwest HIV Care Region (82.4%) and lowest in the St. Louis HIV Care Region (34.6%). The highest proportion of black/ African American living cases among IDU were in St. Louis HIV Care Region (62.5%). Though proportions of Hispanic living cases among IDU by HIV care region are difficult to interpret due to small numbers of individuals in this population, the highest number of these cases are in the Kansas City Region (9.7%).

Table 19. Newly diagnosed and living HIV and stage 3 (AIDS) cases in heterosexual contacts, by selected race/ethnicity and sex, Missouri, 2019

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	8	9.0%	62	5.9%	2	8.3%	60	6.1%
Black/African American Male	17	19.1%	152	14.5%	4	16.7%	186	19.0%
Hispanic Male	1	1.1%	7	0.7%	1	4.2%	14	1.4%
White Female	9	10.1%	252	24.0%	6	25.0%	204	20.9%
Black/African American Female	48	53.9%	515	49.1%	10	41.7%	455	46.5%
Hispanic Female	3	3.4%	31	3.0%	1	4.2%	30	3.1%
MISSOURI TOTAL* **	**89**	**100.0%**	**1049**	**100.0%**	**24**	**100.0%**	**978**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2019 that progressed to stage 3 (AIDS) in 2019.
***Total includes cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 20. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity and sex, by current age group, Missouri, 2019

	White Males		Black/African American Males		White Females		Black/African American Females		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	1	0.3%	0	0.0%	3	0.4%	4	0.2%
19-24	0	0.0%	11	3.8%	7	1.7%	28	3.6%	48	2.9%
25-44	19	17.4%	117	40.5%	168	40.6%	394	51.0%	742	44.5%
45-64	73	67.0%	143	49.5%	206	49.8%	325	42.1%	782	46.9%
65+	17	15.6%	17	5.9%	33	8.0%	22	2.8%	93	5.6%
MISSOURI TOTAL	**109**	**100.0%**	**289**	**100.0%**	**414**	**100.0%**	**772**	**100.0%**	**1,669**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

There were a total of 89 new HIV disease diagnoses attributed to heterosexual contact in 2019 (Table 19). The small number of new cases diagnosed among heterosexuals make patterns by race/ethnicity and sex difficult to interpret. Though based on small numbers, black/African American females represented the largest number of new HIV disease diagnoses among heterosexuals. Black/African American females were more likely to have progressed to stage 3 (AIDS) by the end of 2019 (41.7%).

Females represented 76% of living HIV cases and 71% of living stage 3 (AIDS) cases among heterosexual contact cases. Among heterosexual contact cases, the greatest proportion of living cases was between 45-64 years of age in white males, black/African American males, and white females. However, in black/African American females the highest proportion was in 25-44 years of age (Table 20).

Table 21. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2019

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	64	11.4%	472	84.0%	16	2.8%	562	27.7%
St. Louis County	91	18.7%	366	75.3%	17	3.5%	486	24.0%
Kansas City	66	20.6%	227	70.9%	18	5.6%	320	15.8%
Outstate	337	60.3%	166	29.7%	29	5.2%	559	27.6%
Missouri Correctional Facilities	20	20.0%	77	77.0%	2	2.0%	100	4.9%
MISSOURI TOTAL	**578**	**28.5%**	**1,308**	**64.5%**	**82**	**4.0%**	**2,027**	**100.0%**
HIV Care Region								
St. Louis	206	18.4%	851	76.1%	35	3.1%	1,118	55.2%
Kansas City	116	27.8%	254	60.9%	30	7.2%	417	20.6%
Northwest	13	50.0%	12	46.2%	1	3.8%	26	1.3%
Central	82	60.3%	45	33.1%	4	2.9%	136	6.7%
Southwest	96	66.2%	33	22.8%	8	5.5%	145	7.2%
Southeast	45	52.9%	36	42.4%	2	2.4%	85	4.2%
Missouri Correctional Facilities	20	20.0%	77	77.0%	2	2.0%	100	4.9%
MISSOURI TOTAL	**578**	**28.5%**	**1,308**	**64.5%**	**82**	**4.0%**	**2,027**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals in clude persons diagnosed in Missouri correctional facilities.
**Percentage of race in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 2,027 living cases among heterosexual contacts at the end of 2019, the largest proportion was diagnosed in St. Louis City and Outstate (27.7% and 27.6%) (Table 21). There were differences in the proportion of living HIV disease cases among heterosexuals diagnosed in each geographic area by race/ethnicity. Among whites, the highest proportion of living HIV cases among heterosexual contacts were in Outstate (60.3%) while black African American were in St. Louis City (84%). Hispanics had lower HIV cases with a total of 82 living cases among heterosexual contacts. The largest number of cases were seen in Outstate. The differences are likely due to variations in the general population of the geographic areas. Blacks/African Americans represented a larger proportion of living HIV disease cases among heterosexual contact cases (64.5%) compared to all other exposure categories.

The St. Louis HIV Care Region represented 55.2% of all living cases among heterosexuals. The proportion of white living cases among heterosexuals was highest in the Southwest HIV Care Region (66.2%) and lowest in St. Louis (18.4%). The proportion of black/African American living cases was highest in Missouri correctional facilities (77%) and lowest in the Southwest HIV Care Region (22.8%). Among Hispanic living cases the highest proportion was in Kansas City (7.2%) while the lowest was in Missouri correction facilities (2%).

Table 22. Deaths* among HIV cases, by mode of transmission, by selected race and sex, Missouri, 1982—2019

	White Males		Black/African American Males		White Females		Black/African American Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	277	66.3%	189	58.2%	0	0.0%	0	0.0%	488	52.5%
MSM/IDU	50	12.0%	20	6.2%	0	0.0%	0	0.0%	74	8.0%
IDU	34	8.1%	33	10.2%	12	24.0%	20	24.4%	107	11.5%
Heterosexual Contact	9	2.2%	31	9.5%	27	54.0%	45	54.9%	117	12.6%
No Indicated Risk (NIR)	41	9.8%	51	15.7%	11	22.0%	16	19.5%	134	14.4%
MISSOURI TOTAL* **	**418**	**100.0%**	**325**	**100.0%**	**50**	**100.0%**	**82**	**100.0%**	**929**	**100.0%**

*May or may not be due to HIV-related illnesses.
**Totals include cases in persons whose race/ethnicity is either unknown or not listed.
***Total (numbers and percentages) include 9 cases (1.1%) with a mode of transmission not indicated on the table, such as hemophilia/ coagulation disorder, blood transfusion or tissue recipient, etc. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 23. Deaths* among stage 3 (AIDS) cases, by mode of transmission, by selected race and sex, Missouri, 1982—2019

	White Males		Black/African American Males		White Females		Black/African American Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	3,511	77.2%	1,428	66.6%	0	0.0%	0	0.0%	5,165	65.7%
MSM/IDU	472	10.4%	227	10.6%	0	0.0%	0	0.0%	728	9.3%
IDU	193	4.2%	206	9.6%	86	27.1%	117	24.1%	645	8.2%
Heterosexual Contact	77	1.7%	116	5.4%	171	53.9%	288	59.3%	676	8.6%
No Indicated Risk (NIR)	140	3.1%	145	6.8%	32	10.1%	57	11.7%	405	5.2%
MISSOURI TOTAL* **	**4,550**	**100.0%**	**2,145**	**100.0%**	**317**	**100.0%**	**486**	**100.0%**	**7,862**	**100.0%**

*May or may not be due to stage 3 (AIDS)-related illnesses.
**Totals include cases in persons whose race/ethnicity is either unknown or not listed.
***Total (numbers and percentages) include 243 cases (3.1%) with a mode of transmission not indicated on the table, such as h emophilia/ coagulation disorder, blood transfusion or tissue recipient, etc. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

The number of deaths that have occurred among persons still classified as HIV cases at the time of death was small (929) in comparison to the number of deaths among persons classified as stage 3 (AIDS) (7,862) (Tables 22 and 23). The greatest proportion of deaths among HIV cases has occurred among males that have sex with males (52.5%) (Table 22).

There were differences in the distribution of deaths among HIV cases by mode of transmission among the race/ ethnicity and sex categories. Among males, the majority of deaths occurred among cases attributed to MSM. Among female HIV cases, the largest number of deaths occurred among cases attributed to heterosexual contact. Similar patterns were observed for deaths among male stage 3 (AIDS) cases (Table 23). Among both white and black/African American female stage 3 (AIDS) cases, cases attributed to heterosexual contact represented the majority of deaths. The proportion of deaths among those with no indicated risk among stage 3 (AIDS) cases was smaller than that among HIV cases, likely because there was more time to obtain exposure category information.

Table 24. Newly diagnosed and living HIV and stage 3 (AIDS) cases with exposure category assignments for Missouri, 2019

Exposure Category	HIV Cases				Stage 3 (AIDS) Cases			
	2019*		Living		2019**		Living	
Adult/Adolescent								
MSM	243	60.6%	4,725	70.6%	58	60.4%	4,441	67.6%
MSM/IDU	26	6.5%	307	4.6%	7	7.3%	408	6.2%
IDU	22	5.5%	331	4.9%	0	0.0%	466	7.1%
Heterosexual Contact	107	26.7%	1,316	19.7%	31	32.3%	1,215	18.5%
Hemophilia/Coagulation Disorder	0	0.0%	5	0.1%	0	0.0%	29	0.4%
Blood Transfusion or Tissue Recipient	0	0.0%	2	0.0%	0	0.0%	7	0.1%
No Indicated Risk (NIR)	-----	-------	-----	-------	-----	-------	-----	-------
ADULT/ADOLESCENT SUBTOTAL	**401**	**† 100.0%**	**6,694**	**† 100.0%**	**96**	**100.0%**	**6,567**	**† 100.0%**
Pediatric (<13 years old)								
PEDIATRIC SUBTOTAL	**0**	**0.0%**	**80**	**100.0%**	**0**	**0.0%**	**37**	**100.0%**

*HIV cases reported during 2019 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2014 that progressed to stage 3 (AIDS) in 2019.
†Includes 2 cases with a confirmed "other" exposure category among persons living with HIV and one case among persons living with stage 3 (AIDS).
Note: Percentages may not total due to rounding.

The data in Table 24 have been adjusted to proportionately re-distribute individuals with no indicated risk factor based on sex and race/ethnicity to known exposure categories. These data do not reflect the true counts of persons reported in each exposure category. Among both new and living HIV and stage 3 (AIDS) cases, MSM represented the greatest proportion of cases. The proportion of MSM cases was greater for living HIV and stage 3 (AIDS) cases compared to the proportion among their respective new cases. This proportion may indicate changes in how individuals are being infected over time. However, the observed pattern may also be related to the method used to re-distribute those with unknown risks. The method used to re-distribute new cases may weight those with no indicated risk more heavily than the MSM category.

The majority of new HIV disease cases diagnosed in 2019 (94%) and those living with HIV disease (93%) were residents of a metropolitan area at the time of diagnosis (Table 25). The proportion of new HIV diagnoses in nonmetropolitan areas was slightly higher in 2019 compared to previous years. For a list of counties that were classified as a metropolitan area refer to the Appendix. There were differences in the proportion of living HIV disease cases by sex based on the population of the area of residence. The proportion of males living with HIV disease decreased as the population of the area of residence decreased. Whereas 83% of living HIV disease cases in metropolitan areas occurred among males, only 71% of living cases in nonmetropolitan areas were among males. There were differences in the distribution of living HIV disease cases by race/ethnicity based on the population of the area of residence. As the population of the area of residence became smaller, the proportion of living cases that occurred among whites increased. For example, only 68% of living HIV disease diagnoses were among whites in metropolitan areas compared to 78% in nonmetropolitan areas. There were also differences based on the population of area of residence in the distribution of living HIV disease cases by exposure category. As the population of the area of residence decreased, the proportion of cases attributed to MSM generally decreased. Among those living with HIV disease, the proportion of cases diagnosed between 45-64 years of age increased as the population of the area of residence decreased.

Table 25. Newly diagnosed and living HIV disease* cases, by population of area of residence at time of diagnosis, by sex, by race/ethnicity, by exposure category and age at diagnosis, Missouri, 2019†

	Newly Diagnosed						Living					
	Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****		Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Sex												
Male	346	77.1%	11	73.3%	12	75.0%	9,721	82.6%	369	73.4%	294	71.2%
Female	103	22.9%	4	26.7%	4	25.0%	2,045	17.4%	134	26.6%	119	28.8%
Total	**449**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**11,766**	**100.0%**	**503**	**100.0%**	**413**	**100.0%**
Race/Ethnicity												
White	158	35.2%	9	60.0%	8	50.0%	5,317	45.2%	344	68.4%	321	77.7%
Black/African American	225	50.1%	4	26.7%	5	31.3%	5,515	46.9%	116	23.1%	68	16.5%
Hispanic	42	9.4%	0	0.0%	1	6.3%	604	5.1%	25	5.0%	16	3.9%
Other/Unknown	24	5.3%	2	13.3%	2	12.5%	330	2.8%	18	3.6%	8	1.9%
Total	**449**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**11,766**	**100.0%**	**503**	**100.0%**	**413**	**100.0%**
Exposure Category												
MSM	243	69.6%	5	33.3%	6	37.5%	7,601	64.6%	236	46.9%	182	44.1%
MSM/IDU	24	6.9%	0	0.0%	1	6.3%	509	4.3%	35	7.0%	25	6.1%
IDU	14	4.0%	0	0.0%	2	12.5%	500	4.2%	32	6.4%	35	8.5%
Heterosexual Contact	11	3.2%	0	0.0%	0	0.0%	1,728	14.7%	105	20.9%	94	22.8%
No Indicated Risk (NIR)	55	15.8%	10	66.7%	6	37.5%	1,293	11.0%	82	16.3%	63	15.3%
Other	2	0.6%	0	0.0%	1	6.3%	41	0.3%	3	0.6%	4	1.0%
Pediatric	0	0.0%	0	0.0%	0	0.0%	94	0.8%	10	2.0%	10	2.4%
Total	**349**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**11,766**	**100.0%**	**503**	**100.0%**	**413**	**100.0%**
Age at Diagnosis												
<2	0	0.0%	0	0.0%	0	0.0%	45	0.4%	4	0.8%	5	1.2%
2-12	0	0.0%	0	0.0%	0	0.0%	38	0.3%	5	1.0%	3	0.7%
13-18	13	2.9%	0	0.0%	0	0.0%	319	2.7%	13	2.6%	11	2.7%
19-24	97	21.6%	3	20.0%	2	12.5%	1,967	16.7%	80	15.9%	42	10.2%
25-44	247	55.0%	7	46.7%	7	43.8%	7,363	62.6%	305	60.6%	227	55.0%
45-64	85	18.9%	4	26.7%	7	43.8%	1,952	16.6%	93	18.5%	119	28.8%
65+	7	1.6%	1	6.7%	0	0.0%	82	0.7%	3	0.6%	6	1.5%
Total	**449**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**11,766**	**100.0%**	**503**	**100.0%**	**413**	**100.0%**

*Includes all individuals diagnosed with the HIV virus, regardless of current status (i.e., HIV or stage 3 (AIDS))
†Does not include persons diagnosed in Missouri correctional facilities.
**A metropolitan area contains a core urban area with a population of at least 50,000. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. Based on 2018 US Census estimates. See Appendix for map of included counties.
***A micropolitan area contains a core urban area with a population between 10,000-49,999. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. Based on 2018 US Census estimates. See Appendix for map of included counties.
****An area that does not meet the population requirements for the metropolitan or micropolitan area. Based on 2018 US Census estimates. See Appendix for map of included counties.
Note: Percentages may not total due to rounding.

Figure 22. Length of time between HIV and stage 3 (AIDS) diagnosis, by race/ethnicity, Missouri, 20010-2018

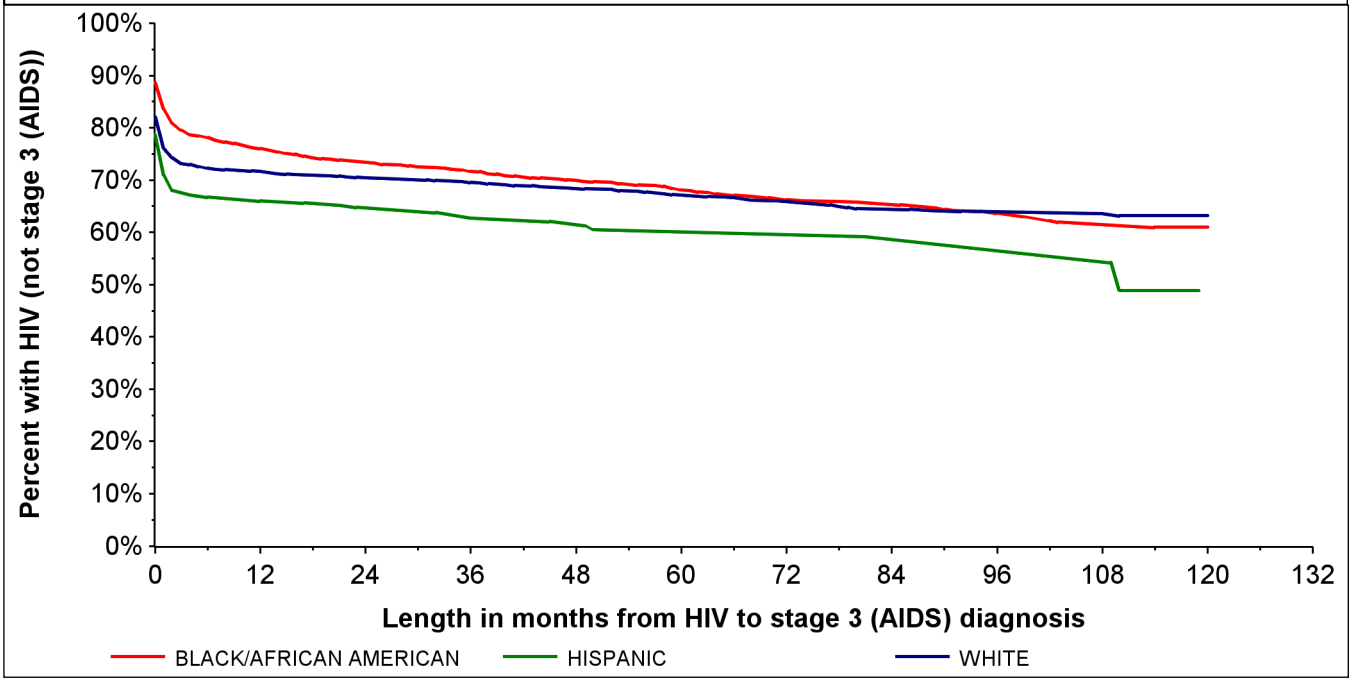
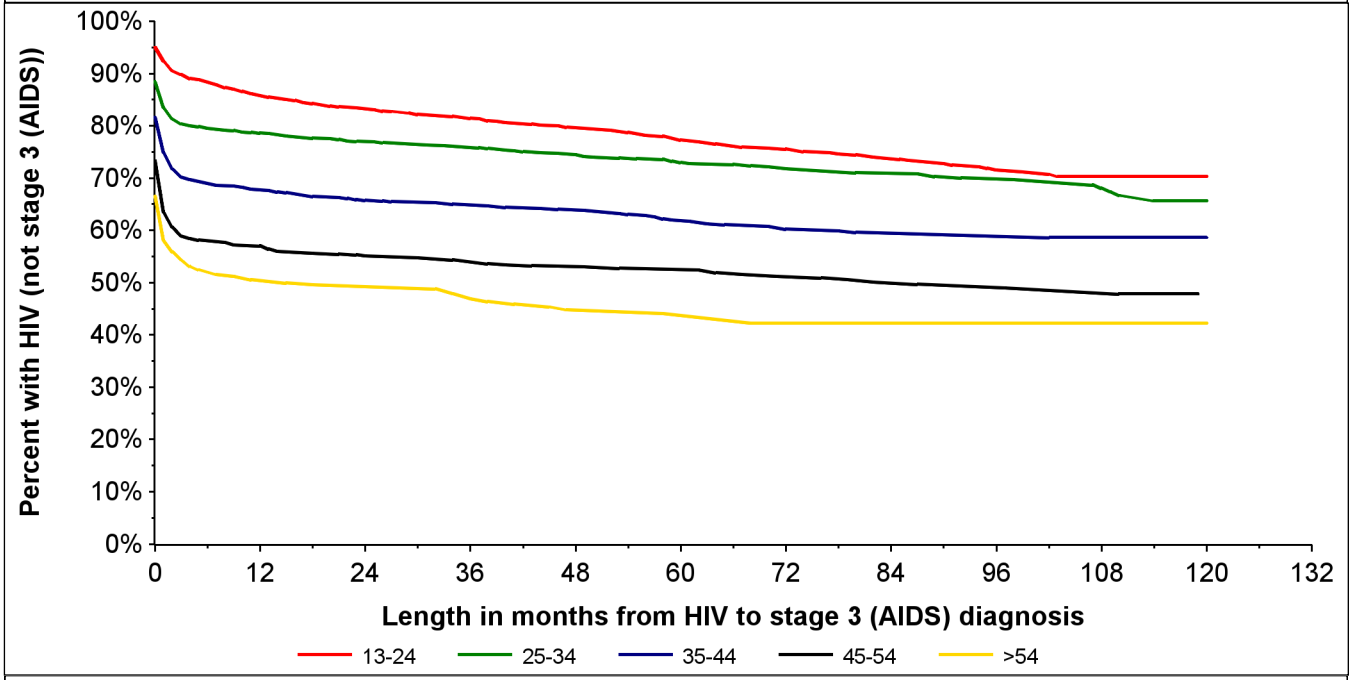


Figure 23. Length of time between HIV and stage 3 (AIDS) diagnosis, by age at diagnosis*, Missouri, 2010-2018



*Age at earliest diagnosis of HIV disease, regardless of disease progression.

A greater proportion of Hispanics progressed from HIV to stage 3 (AIDS) within 12 months of their HIV diagnosis compared to whites and blacks/African Americans (Figure 22). It is important to note that for all curves displayed, data in the later months should be interpreted with caution as they are based on small numbers. Please note, figures 22 through 29 are based on persons diagnosed as of 2018, as not enough time has elapsed to accurately measure length of time for progression to stage 3 (AIDS) or death for 2019 diagnoses.

Younger age was associated with slower progression from HIV to stage 3 (AIDS); the proportion of individuals progressing to stage 3 (AIDS) increased as age at diagnosis increased (Figure 23). Over time, the proportion of cases that progressed to stage 3 (AIDS) remained higher as the age at initial HIV diagnosis increased.

Figure 24. Length of time between HIV and stage 3 (AIDS) diagnosis, by mode of transmission, Missouri, 2010-2018

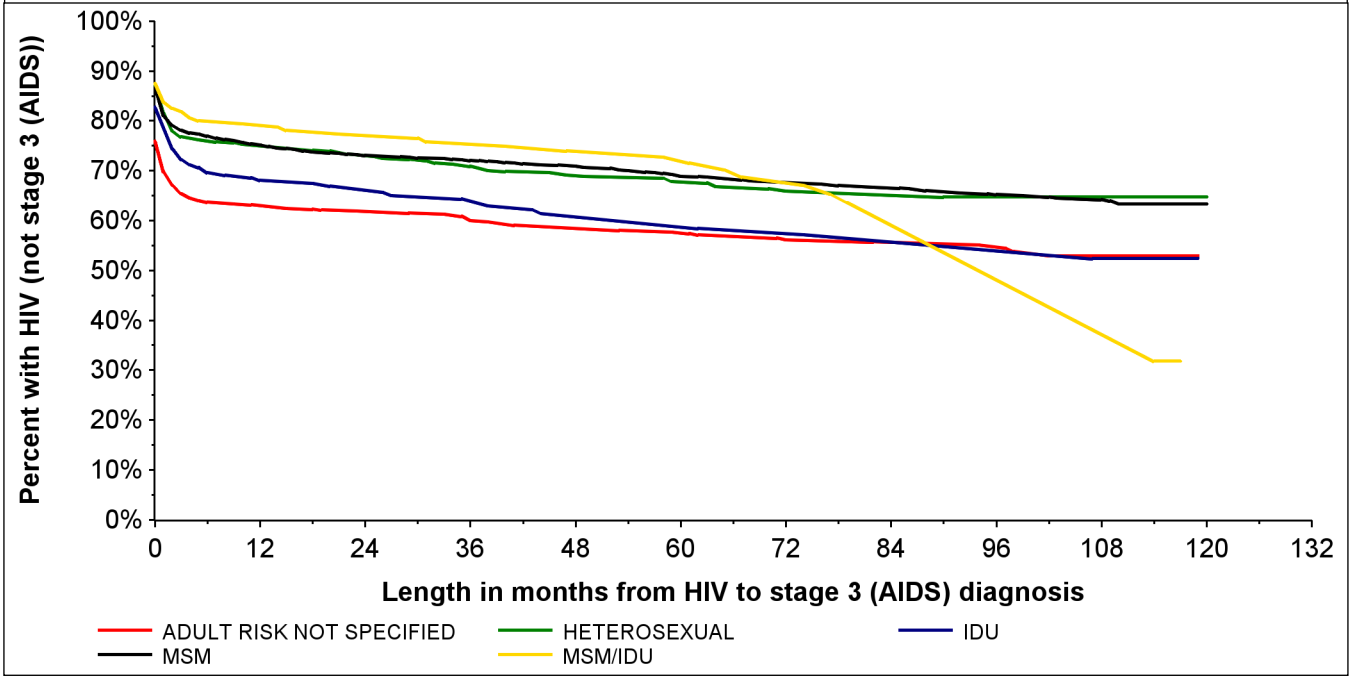
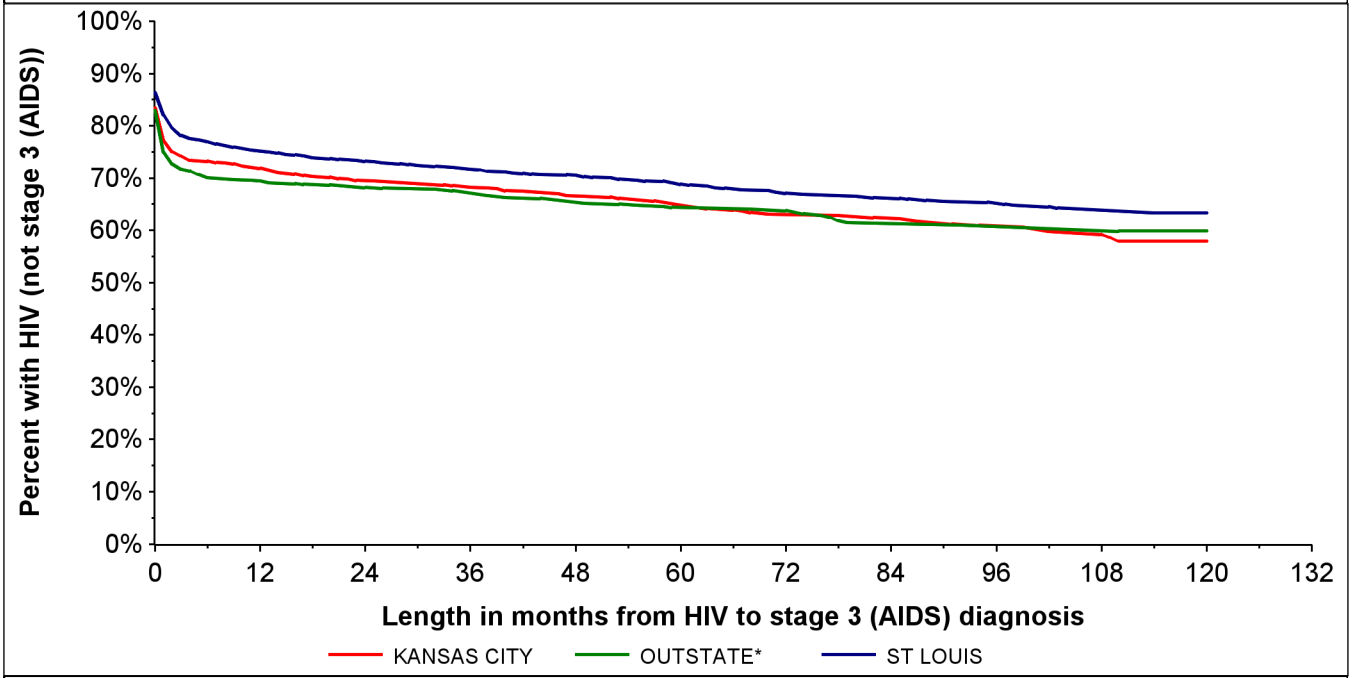


Figure 25. Length of time between HIV and stage 3 (AIDS) diagnosis, by HIV care region*, Missouri, 2010-2018



*Outstate includes the Central, Northwest, Southeast, and Southwest HIV Care Regions

A greater proportion of IDU progressed from HIV to stage 3 (AIDS) within 12 months of their HIV diagnosis compared to individuals from all other exposure categories (Figure 24). At 96 months after the initial HIV diagnosis, the proportion of cases that progressed to stage 3 (AIDS) remained higher for IDU compared with other exposure categories.

There were differences in the progression from HIV to stage 3 (AIDS) by HIV care region (Figure 25). The proportion of individuals that progressed to stage 3 (AIDS) over time was generally greater for the Kansas City HIV Care Region and all Outstate HIV Care Regions combined compared to the St. Louis HIV Care Region. Differences observed among the regions may be attributed in part to differences in the routine monitoring and reporting of CD4 counts and other active surveillance techniques.

Figure 26. Length of time between HIV diagnosis and death, by race/ethnicity, Missouri, 2010-2018

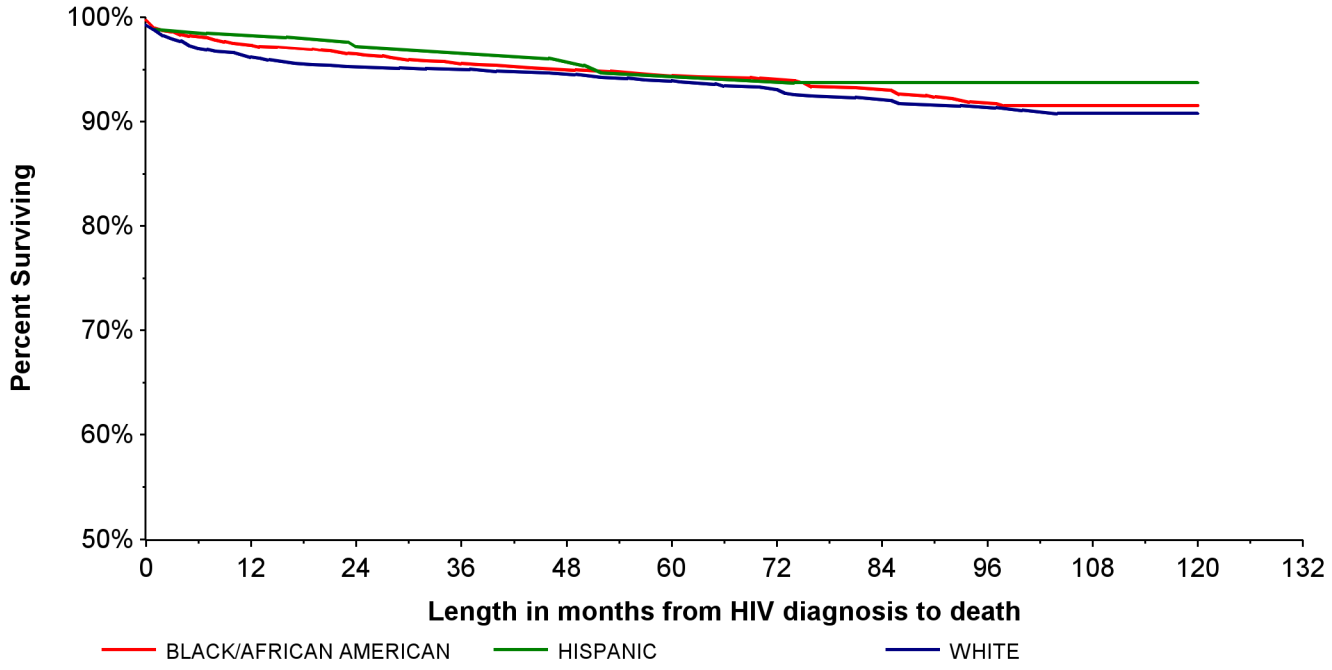
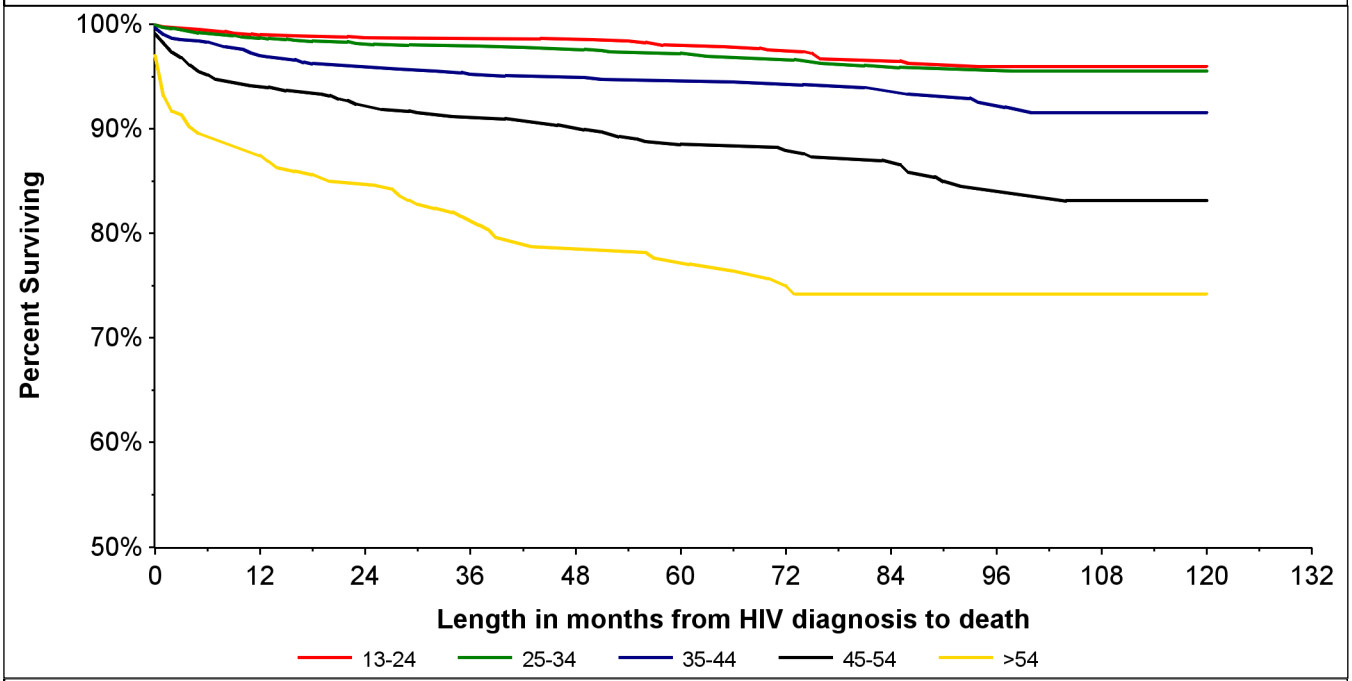


Figure 27. Length of time between HIV diagnosis and death, by age at diagnosis*, Missouri, 2010-2018



*Age at earliest diagnosis of HIV disease, regardless of disease progression.

The length of time between the initial HIV diagnosis and reported death was similar by race/ethnicity (Figure 26). Five years following the initial HIV diagnosis, 89% of all individuals were still living.

Over time, the proportion of cases that were deceased was higher as the age at initial HIV diagnosis increased (Figure 27). For example, 72 months following the initial diagnosis, 96% of individuals diagnosed between 13-24 years of age were still living, compared to only 77% of individuals diagnosed at greater than 54 years of age.

Figure 28. Length of time between HIV diagnosis and death, by mode of transmission, Missouri, 2010-2018

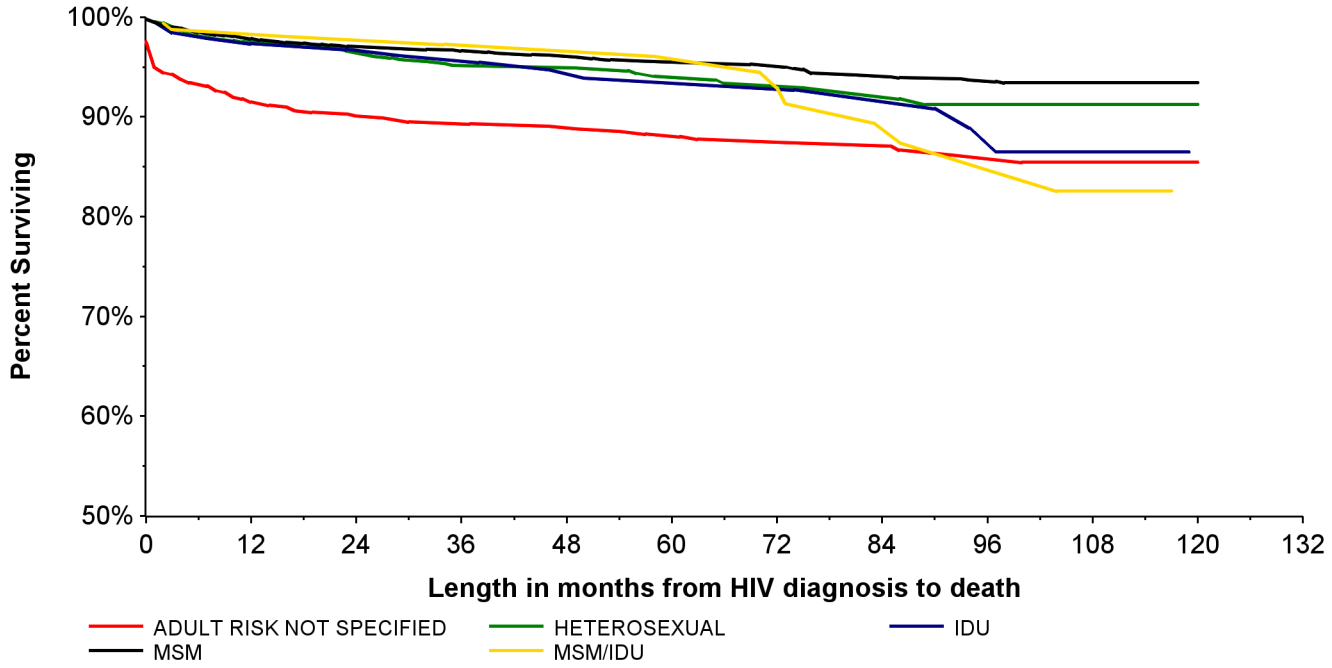
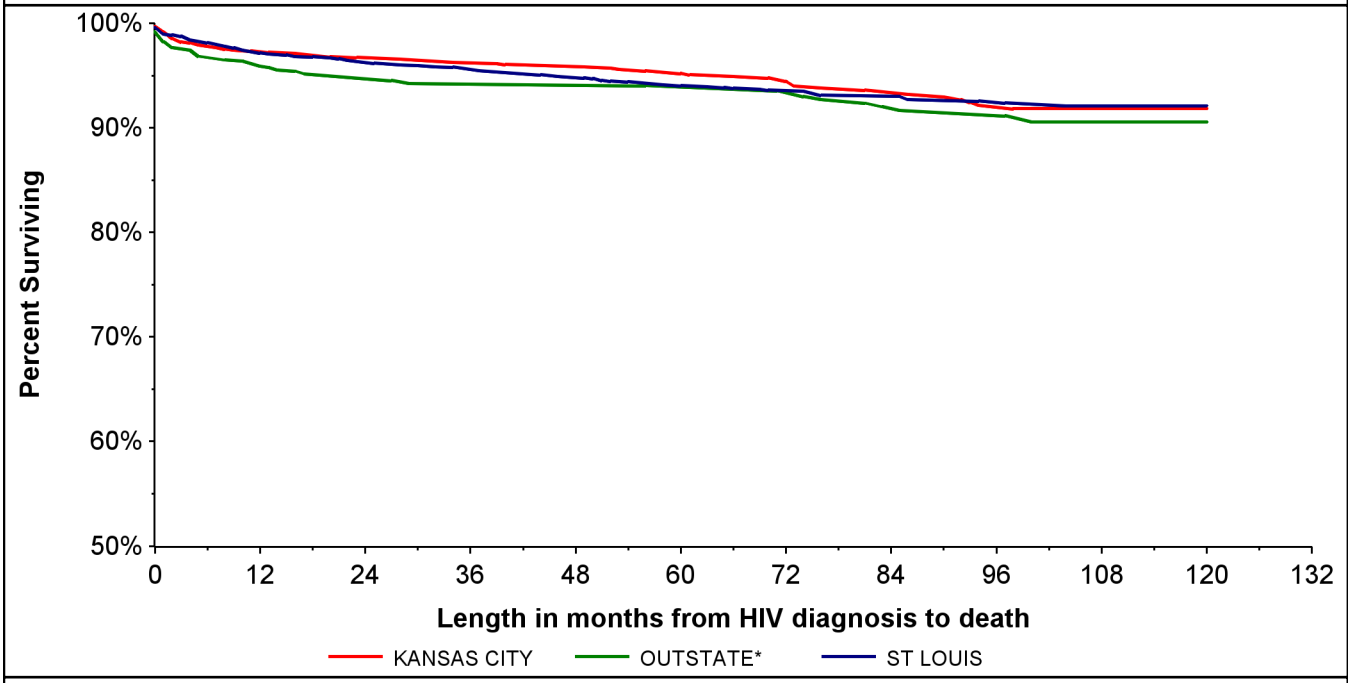


Figure 29. Length of time between HIV diagnosis and death, by HIV care region*, Missouri, 2010-2018



*Outstate includes the Central, Northwest, Southeast, and Southwest HIV Care Regions

A greater proportion of IDU and those with no reported risk were deceased within 36 months of their HIV diagnosis compared to individuals from all other exposure categories (Figure 28). Differences in survival persisted over time.

There were not significant differences in survival following HIV diagnosis by HIV care region (Figure 29). At 24 months following the initial HIV diagnosis, the proportion still living was 96% for the Kansas City HIV Care Region, 95% for the St. Louis HIV Care Region, and 94% for all other Outstate HIV Care Regions combined.

Table 26. Initial CD4 and viral load values† among adults and adolescents newly diagnosed with HIV disease, Missouri, 2018-2019

Viral Load (copies/mL)	CD4 Count (cells/µL)											
	No Test		<200		200-350		351-500		>500		Total	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%**
No Test	62	6.5%	6	0.6%	8	0.8%	5	0.5%	22	2.3%	103	10.8%
0-10,000	51	5.4%	12	1.3%	29	3.1%	39	4.1%	119	12.5%	250	26.3%
10,001-100,000	53	5.6%	52	5.5%	62	6.5%	56	5.9%	102	10.7%	325	34.2%
>100,000	27	2.8%	126	13.3%	48	5.1%	33	3.5%	38	4.0%	272	28.6%
Total	**193**	**20.3%**	**196**	**20.6%**	**147**	**15.5%**	**133**	**14.0%**	**281**	**29.6%**	**950**	**100.0%**

†Within 12 months of the initial HIV diagnosis
* % of table total
**% of column total

Of persons newly diagnosed with HIV disease between 2018 and 2019, 10.8% did not have a CD4 or a viral load laboratory result reported to MDHSS within 12 months of diagnosis (Table 26). Nearly 20.6% of persons diagnosed between 2018 and 2019 had an initial CD4 count of less than 200 cells/µL. This proportion indicates that a sizable proportion of individuals were being diagnosed at a later stage of disease progression and likely were unaware of their infection for at least several years. This proportion suggests greater emphasis is needed to establish routine HIV testing, so individuals are diagnosed within a shorter time period after becoming infected.

Table 27. Percent of adults and adolescents receiving at least one CD4 within 12 months of their HIV diagnosis and the median initial CD4 count, Missouri, 2018-2019

	Number	% with CD4 within 12 months of HIV diagnosis	Median of initial CD4 counts (cells/ µL)
HIV Status			
HIV (not stage 3 (AIDS))	725	74.6%	506
Concurrent HIV and stage 3 (AIDS)	160	100.0%	66
Stage 3 (AIDS) >1 month after HIV diagnosis	65	86.2%	181
Sex			
Male	765	80.4%	390
Female	185	76.8%	386
Race/Ethnicity			
White	368	86.4%	422
Black/African American	470	73.4%	367
Hispanic	69	82.6%	329
Other/Unknown	43	86.0%	350
Exposure Category			
MSM	539	80.0%	399
MSM/IDU	44	86.4%	411
IDU	43	93.0%	501
HRH	184	75.0%	367
Other	2	50%	654
NIR	138	79.0%	294
Age at HIV Diagnosis			
13-18	33	51.5%	563
19-24	210	77.6%	462
25-44	505	80.4%	380
45-64	183	85.2%	312
65+	19	78.9%	350

The percent of adults and adolescents receiving at least one CD4 within 12 months of their HIV diagnosis and the median initial CD4 count varied by sex, race/ethnicity, exposure category, and age at HIV diagnosis (Table 27). Of adults and adolescents newly diagnosed between 2018 and 2019, a greater proportion of Males had a CD4 within 12 months of diagnosis (80.4%) compared to Females (76.8%). The initial median CD4 count tended to be greater for Males (390 cells/µL) compared to Females (386 cells/µL). A greater proportion of Whites tended to have a CD4 count within 12 months of diagnosis compared to blacks/African Americans, with Whites having the highest proportion (86.4%). Among those with a CD4 count within 12 months of diagnosis, the initial median CD4 count tended to be lower among Hispanics (329 cells/µL). Among exposure categories, MSM and heterosexual contact cases had a greater proportion of adults and adolescents receiving an initial CD4 within 12 months of diagnosis compared to persons with other known exposure categories. The initial median CD4 tended to be lowest for persons with no indicated risk compared to all other exposure categories. The median initial CD4 count tended to decrease as the age at HIV diagnosis increased, except for those 65 and older. These data may be beneficial when determining groups that should be targeted for new testing initiatives to identify individuals earlier in their disease progression.

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Key Highlights: What are the indicators of HIV disease infection risk in Missouri?

Primary and Secondary (P&S) Syphilis

- The number of reported P&S syphilis cases increased from 806 cases in 2018 to 817 cases in 2019. The increase observed was due to increases in the St. Louis, Kansas City, Central, and Southwest HIV Care Regions.
- The rate of reported cases was highest in St. Louis City (26.3 per 100,000).
- Blacks/African Americans were disproportionately impacted, with a case rate 4.9 times as high as the rate among whites.

Early Latent Syphilis

- The number of early latent syphilis cases increased barley from 2018 (546 cases) to 2019 (567 cases). The increase was seen in the Kansas City, Southwest, and Southeast HIV Care Regions.
- The number of reported cases in 2019 was highest in Jackson County (158).
- Males represented the majority (67%) of reported early latent syphilis cases.
- The case rate was 2.4 times as high among blacks/African Americans compared to whites.

Gonorrhea

- The number of reported gonorrhea cases decreased from 2018 (15,091 cases) to 2019 (15,586 cases). The number of reported gonorrhea cases was higher in 2019 compared to 2018 in all HIV care regions except the Kansas City and Southwest HIV Care Regions.
- Kansas City had the highest rate of reported gonorrhea cases at 333 per 100,000 persons.
- A larger proportion of reported gonorrhea cases was diagnosed between 15 and 19 years of age among black/African American females (38.3%) compared to white females (22%), black/African American males (30..8%), and white males (8.8%).

Chlamydia

- The number of reported chlamydia cases decreased from 34,728 in 2018 to 34,418 in 2019. An decrease in the number of reported chlamydia cases was observed in all HIV care regions except Kansas City, Northwest, and Southeast.
- Kansas City had the highest chlamydia rate in 2019 (708 per 100,000). Jackson County reported the second highest case rate of chlamydia (926 per 100,000).
- A larger proportion of reported chlamydia cases was diagnosed between 15 and 19 years old among white females (39%) compared to black/African American females (35%), black/African American males (17%) and white males (9%).

Hepatitis B

- The number of reported hepatitis B cases in Missouri decreased by 80 cases from 2018 (585) to 2019 (505).
- St. Louis County had the greatest number of reported hepatitis B cases with 206 cases.
- Among both males and females, the largest numbers of cases were 40-49 years of age.

Hepatitis C

- The number of reported hepatitis C cases in Missouri increased by 79 cases from 2018 (4,730) to 2019 (4,809). This large increase in hepatitis C cases was likely the result of the expansion of screening recommendations, increased knowledge and awareness among individuals at risk, and increased testing.
- St. Louis City had the greatest number of reported hepatitis C cases with 1,346 cases.
- Among males, the largest number of cases were 50-59 years of age, while the largest number of cases among females were in 30-39 years of age.

HIV, STD, Hepatitis, and Tuberculosis (TB) disease Co-infections

- There were 920 persons living with HIV who were reported with an STD in 2019.
- Of the 567 early syphilis cases reported in 2019, 22.9% were among individuals living with HIV. Only 32% of gonorrhea cases and 18.3 of chlamydia cases reported in 2019 were among individuals living with HIV.
- St. Louis residents represented 63.8% of all living HIV cases reported with multiple STD co-morbidities in 2019, 64.9% of those with a chlamydia co-morbidity, 48.8% of those with an early syphilis co-morbidity, and 63.7% of those with a gonorrhea co-morbidity.
- Although blacks/African Americans represented only 45.9% of living HIV disease cases, they represented 57.8% of individuals diagnosed with an STD co-morbidity.
- Of the 13,378 individuals living with HIV disease, 79 were reported with a hepatitis co-morbidity in 2019.
- Of the 13,378 individuals living with HIV disease, five were reported with TB disease in 2019.

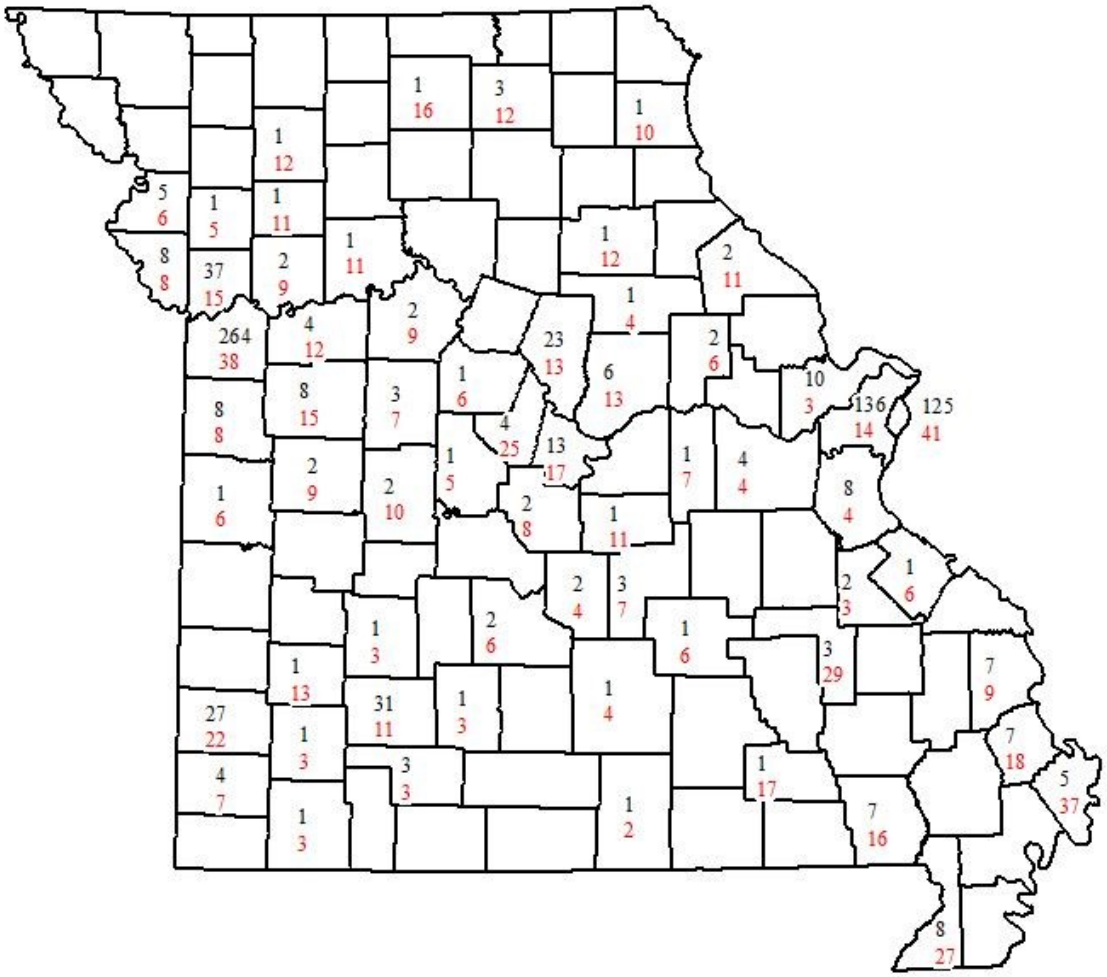
Table 28. Reported P&S syphilis cases and rates, by race*, by HIV care region, by sex, Missouri, 2019

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	316	49.5%	13.2	113	63.5%	4.6	429	8.8
Black/African American	256	40.1%	75.8	50	28.1%	13.4	306	43.0
Other/Unknown*	67	10.5%	--	15	8.4%	--	82	--
Total	**639**	**100.0%**	**21.2**	**178**	**100.0%**	**5.7**	**817**	**13.3**
St. Louis HIV Care Region								
White	68	29.2%	9.1	8	15.4%	1.0	76	5.0
Black/African American	148	63.5%	79.7	40	76.9%	17.9	188	46.0
Other/Unknown*	17	7.3%	--	4	7.7%	--	21	--
Total	**233**	**100.0%**	**22.7**	**52**	**100.0%**	**4.8**	**285**	**13.4**
Kansas City HIV Care Region								
White	132	51.8%	30.6	53	76.8%	11.8	185	21.0
Black/African American	90	35.3%	99.6	9	13.0%	8.8	99	51.5
Other/Unknown*	33	12.9%	--	7	10.1%	--	40	--
Total	**255**	**100.0%**	**42.5**	**69**	**100.0%**	**10.9**	**324**	**26.3**
Northwest HIV Care Region								
White	7	100.0%	7.2	1	100.0%	1.0	8	4.0
Black/African American	0	0.0%	0.0	0	0.0%	0.0	0	0.0
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total	**7**	**100.0%**	**6.3**	**1**	**100.0%**	**0.9**	**8**	**3.6**
Central HIV Care Region								
White	38	70.4%	9.9	23	92.0%	5.9	61	7.9
Black/African American	8	14.8%	32.0	1	4.0%	4.9	9	19.7
Other/Unknown*	8	14.8%	--	1	4.0%	--	9	--
Total	**54**	**100.0%**	**12.2**	**25**	**100.0%**	**5.6**	**79**	**8.9**
Southwest HIV Care Region								
White	47	79.7%	9.2	18	85.7%	3.4	65	6.2
Black/African American	4	6.8%	27.2	0	0.0%	0.0	4	16.2
Other/Unknown*	8	13.6%	--	3	14.3%	--	11	--
Total	**59**	**100.0%**	**10.1**	**21**	**100.0%**	**3.5**	**80**	**6.8**
Southeast HIV Care Region								
White	24	77.4%	11.1	10	100.0%	4.5	34	7.8
Black/African American	6	19.4%	36.1	0	0.0%	0.0	6	19.4
Other/Unknown*	1	3.2%	--	0	0.0%	--	1	--
Total	**31**	**100.0%**	**12.7**	**10**	**100.0%**	**4.1**	**41**	**8.3**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2018 MDHSS population estimates.

There were a total of 817 P&S syphilis cases reported in 2019 (Table 28). This number represented an increase from the 806 P&S syphilis cases reported in 2018. The majority of cases (78%) were reported among males. The rate of P&S syphilis cases among males was highest in the Kansas City HIV Care Region (42.5), followed by the St. Louis HIV Care Region (22.7). Forty percent of all P&S syphilis cases were reported in the Kansas City HIV Care Region and 34% were reported in the St. Louis HIV Care Region. The rate of reported P&S syphilis cases was higher for blacks/African Americans compared to whites in all regions that reported P&S syphilis cases among blacks/African Americans.

Figure 30. Reported P&S syphilis cases* and rates, by county, Missouri, 2019**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2018 MDHSS population estimates.

P&S syphilis cases were concentrated in metropolitan areas (Figure 30). There were 53 counties that did not report any P&S syphilis cases in 2019. Kansas City had the highest rate of reported P&S syphilis cases at 26 per 100,000 persons. This rate means that for every 100,000 persons living in Kansas City, there were 26 reported with P&S syphilis in 2019.

Figure 31. Reported P&S syphilis cases, by race and sex, by age group at diagnosis, Missouri, 2019

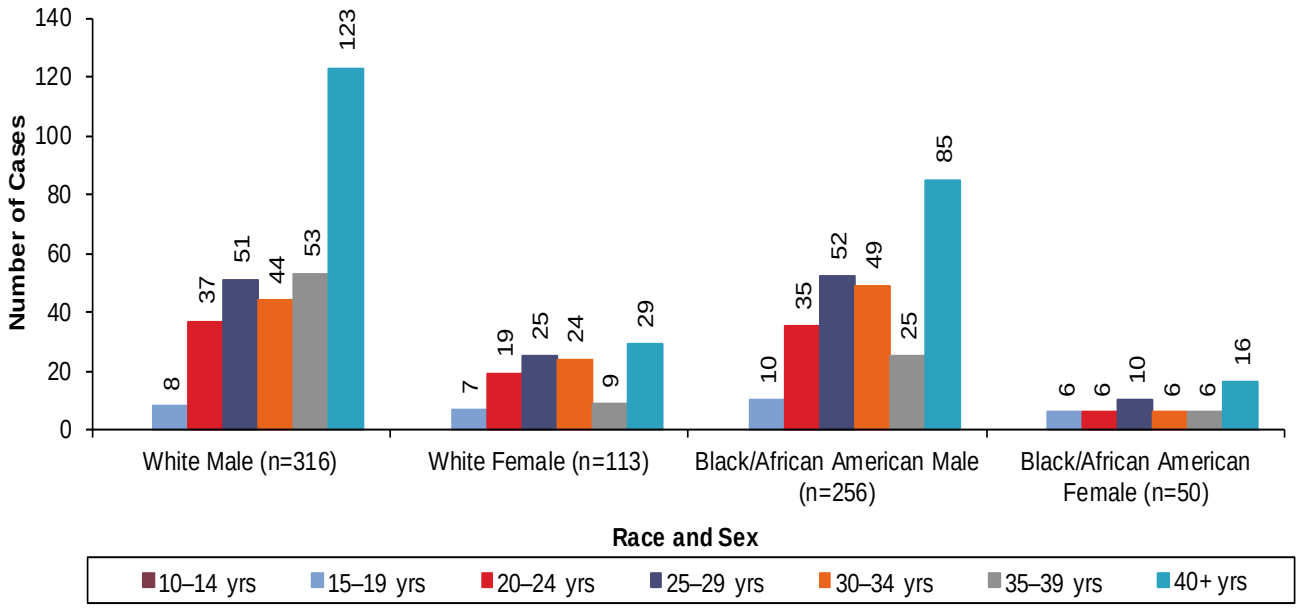
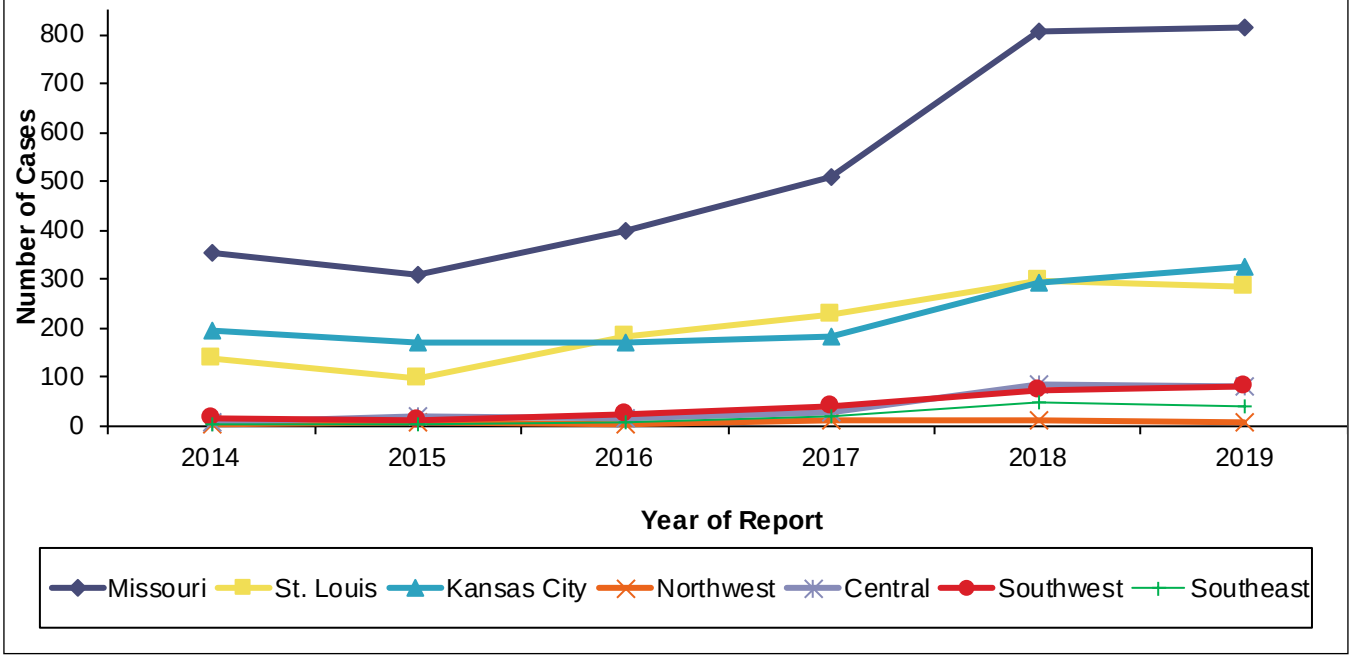


Figure 32. Reported P&S syphilis cases by HIV care region and year of report, Missouri, 2014-2019



The largest numbers of P&S syphilis cases were reported among white males (316) and black/African American males (256) (Figure 31). The number of reported cases increased from 2018 to 2019 among all other race/ethnicity and sex categories presented. There were differences in the distribution of reported cases by age at diagnosis among the race/ethnicity and sex categories. Among white males, black/African American males, white females, and black/African American females the largest number of cases was reported among individuals 40 or more years of age at the time of diagnosis.

The number of reported P&S syphilis cases in Missouri steadily increased from 2015 to 2017 and then increased drastically from 2017 to 2018 (Figure 32). The number of reported P&S syphilis cases decreased from 2018 to 2019 in the St. Louis HIV Care Region (101 to 136), the Kansas City HIV Care Region (298 to 285), the Central HIV Care Region (85 to 79), the Northwest HIV Care Region (10 to 8), and the Southeast HIV Care Region (47 to 41). The number of reported P&S syphilis cases increased from 2018 to 2019 in the remaining HIV regions.

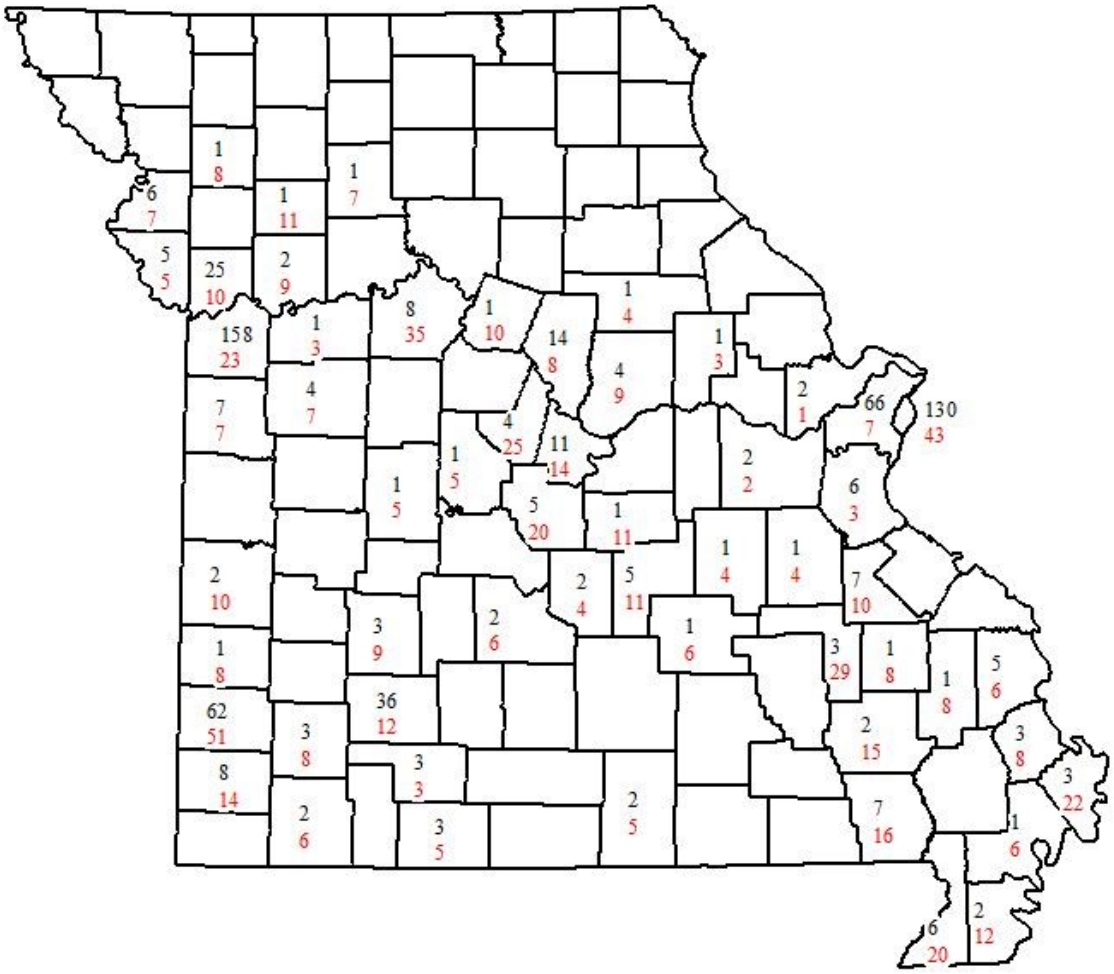
Table 29. Reported early latent syphilis cases and rates, by race*, by HIV care region, by sex, Missouri, 2019

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	237	65.1%	9.9	124	67.8%	5.0	361	7.4
Black/African American	83	22.8%	24.6	43	23.5%	11.5	126	17.7
Other/Unknown*	44	12.1%	--	16	8.7%	--	60	--
Total	**364**	**100.0%**	**12.1**	**183**	**100.0%**	**5.9**	**547**	**8.9**
St. Louis HIV Care Region								
White	48	67.6%	6.4	7	19.4%	0.9	55	3.6
Black/African American	11	15.5%	5.9	28	77.8%	12.5	39	9.5
Other/Unknown*	12	16.9%	--	1	2.8%	--	13	--
Total	**71**	**100.0%**	**6.9**	**36**	**100.0%**	**3.3**	**107**	**5.0**
Kansas City HIV Care Region								
White	77	53.1%	17.9	40	75.5%	8.9	117	13.3
Black/African American	46	31.7%	50.9	7	13.2%	6.9	53	27.6
Other/Unknown*	22	15.2%	--	6	11.3%	--	28	--
Total	**145**	**100.0%**	**24.2**	**53**	**100.0%**	**8.4**	**198**	**16.1**
Northwest HIV Care Region								
White	3	75.0%	3.1	4	80.0%	4.0	7	3.5
Black/African American	0	0.0%	0.0	0	0.0%	0.0	0	0.0
Other/Unknown*	1	25.0%	--	1	20.0%	--	2	--
Total	**4**	**100.0%**	**3.6**	**5**	**100.0%**	**4.5**	**9**	**4.0**
Central HIV Care Region								
White	14	48.3%	3.7	22	84.6%	5.6	36	4.7
Black/African American	14	48.3%	56.0	3	11.5%	14.6	17	37.3
Other/Unknown*	1	3.4%	--	1	3.8%	--	2	--
Total	**29**	**100.0%**	**6.6**	**26**	**100.0%**	**5.9**	**55**	**6.2**
Southwest HIV Care Region								
White	77	83.7%	15.0	36	83.7%	6.8	113	10.9
Black/African American	9	9.8%	61.2	1	2.3%	10.0	10	40.5
Other/Unknown*	6	6.5%	--	6	14.0%	--	12	--
Total	**92**	**100.0%**	**15.7**	**43**	**100.0%**	**7.3**	**135**	**11.5**
Southeast HIV Care Region								
White	18	78.3%	8.4	15	75.0%	6.8	33	7.6
Black/African American	3	13.0%	18.0	4	20.0%	27.9	7	22.6
Other/Unknown*	2	8.7%	--	1	5.0%	--	3	--
Total	**23**	**100.0%**	**9.4**	**20**	**100.0%**	**8.1**	**43**	**8.8**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2018 MDHSS population estimates.

There were a total of 547early latent syphilis cases reported in 2019, compared to 546 cases reported in 2018 (Table 29). The majority of cases (67%) were reported among males. The rate of early latent syphilis cases among all cases was highest in the Kansas City HIV Care Region (16.1), followed by the Southwest HIV Care Region (11.5). Thirty-six percent (36%) of all early latent syphilis cases were reported in the Kansas City HIV Care Region and 25% were reported in the Southwest HIV Care Region. The St. Louis HIV Care Region had the third largest number of early latent syphilis cases reported. The rate of reported early latent syphilis cases was higher for blacks/African Americans compared to whites in all regions that reported cases among blacks/African Americans.

Figure 33. Reported early latent syphilis cases* and rates, by county, Missouri, 2019**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2018 MDHSS population estimates.

Early latent syphilis cases were concentrated in metropolitan areas (Figure 33). There were 58 counties that did not report any early latent syphilis cases in 2019. Jackson County had the highest number of reported early latent syphilis cases (158).

Figure 34. Reported early latent syphilis cases, by race and sex, by age group at diagnosis, Missouri, 2019

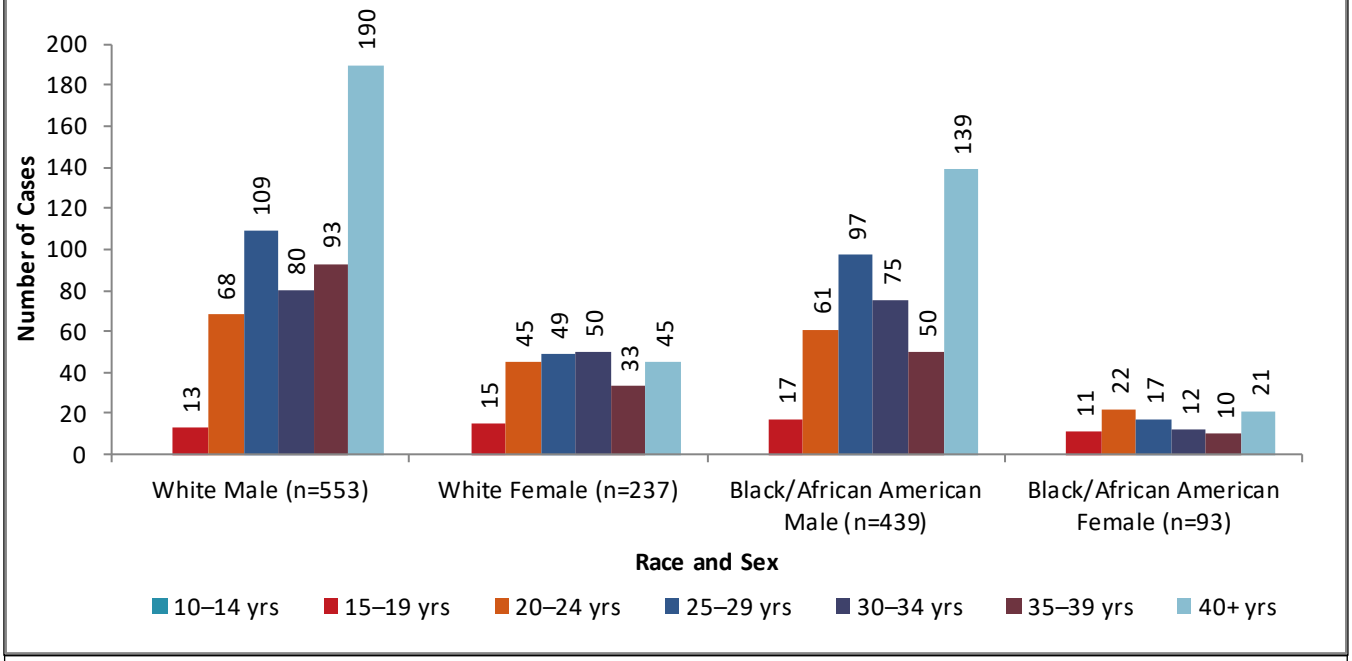
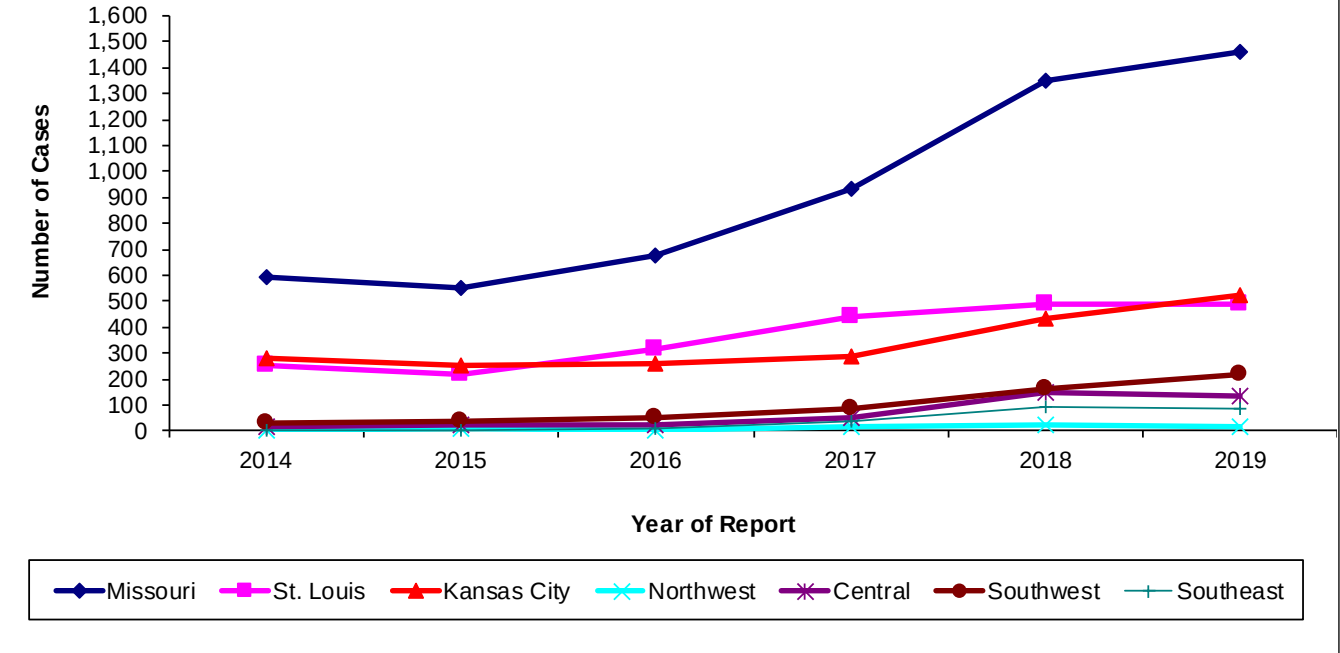


Figure 35. Reported early latent syphilis cases by HIV care region and year of report, Missouri, 2014-2019



The largest numbers of early latent syphilis cases were reported among white males (190) and black/African American males (139) (Figure 34). Among white males and black/African American males, the largest number of cases was reported among individuals 40 or more years of age at the time of diagnosis.

The number of reported early latent syphilis cases in Missouri increased steadily from 2014 to 2019 (Figure 35). Throughout all regions the number of reported early latent syphilis cases remained about the same from 2014 to 2016, increased through 2017, then in the decreased in the St. Louis HIV Care Region from 2018 to 2019. In the Kansas City HIV Care Region, reported early latent syphilis cases remained the same from 2014 to 2017, then increased through 2019. The number of reported early latent syphilis cases decreased or remained the same from 2018 to 2019 in the Northwest HIV Care Region.

Table 30. Reported gonorrhea cases and rates, by race*, by HIV care region, by sex, Missouri, 2019

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	2,750	32.1%	115.1	3,141	44.7%	127.3	5,891	121.3
Black/African American	4,470	52.3%	1322.8	2,944	41.9%	789.2	7,414	1042.8
Other/Unknown*	1,335	15.6%	--	945	13.4%	--	2,281	--
Total	**8,555**	**100.0%**	**284.4**	**7,030**	**100.0%**	**225.4**	**15,586**	**254.4**
St. Louis HIV Care Region								
White	601	16.7%	80.2	542	20.9%	69.4	1,143	74.7
Black/African American	2,375	65.9%	1278.9	1,671	64.3%	748.0	4,046	989.0
Other/Unknown*	627	17.4%	--	385	14.8%	--	1,013	--
Total	**3,603**	**100.0%**	**351.6**	**2,598**	**100.0%**	**237.3**	**6,202**	**292.6**
Kansas City HIV Care Region								
White	704	30.4%	163.3	697	39.1%	155.0	1,401	159.1
Black/African American	1,318	56.9%	1458.6	876	49.1%	860.0	2,194	1141.4
Other/Unknown*	296	12.8%	--	210	11.8%	--	506	--
Total	**2,318**	**100.0%**	**386.6**	**1,783**	**100.0%**	**282.6**	**4,101**	**333.3**
Northwest HIV Care Region								
White	150	65.2%	153.3	187	79.2%	186.9	337	170.3
Black/African American	47	20.4%	855.5	19	8.1%	656.5	66	786.8
Other/Unknown*	33	14.3%	--	30	12.7%	--	63	--
Total	**230**	**100.0%**	**205.4**	**236**	**100.0%**	**213.3**	**466**	**209.3**
Central HIV Care Region								
White	346	43.3%	90.3	578	65.6%	148.2	924	119.5
Black/African American	317	39.6%	1267.1	175	19.9%	851.1	492	1079.5
Other/Unknown*	137	17.1%	--	128	14.5%	--	265	--
Total	**800**	**100.0%**	**181.0**	**881**	**100.0%**	**198.5**	**1,681**	**189.8**
Southwest HIV Care Region								
White	652	64.4%	127.0	742	78.2%	140.8	1,394	134.0
Black/African American	184	18.2%	1250.6	69	7.3%	691.3	253	1024.5
Other/Unknown*	177	17.5%	--	138	14.5%	--	315	--
Total	**1,013**	**100.0%**	**173.3**	**949**	**100.0%**	**160.3**	**1,962**	**166.7**
Southeast HIV Care Region								
White	297	50.3%	137.9	395	67.8%	179.5	692	158.9
Black/African American	229	38.7%	1376.5	134	23.0%	934.4	363	1171.8
Other/Unknown*	65	11.0%	--	54	9.3%	--	119	--
Total	**591**	**100.0%**	**241.5**	**583**	**100.0%**	**236.3**	**1,174**	**238.9**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2018 MDHSS population estimates.

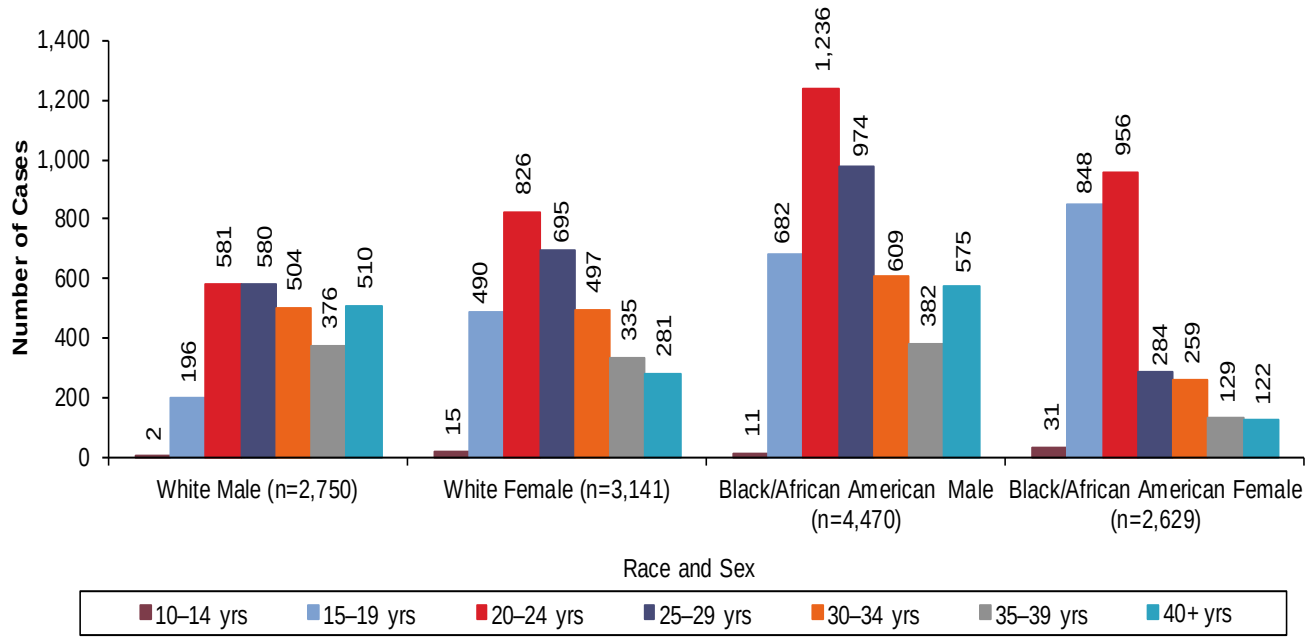
There were a total of 15,586 gonorrhea cases reported in 2019 (Table 30). This count represented a 3.3% increase in the number of reported cases compared to 2018. The majority of cases (55%) were reported among males. The proportion of gonorrhea cases reported among males varied by HIV care region. The Central HIV Care Region reported the lowest proportion of male cases (48%), followed by the Northwest (49%), Southeast (50%), Southwest (52%), Kansas City (57%), and St. Louis (58%) HIV Care Regions. The rate of gonorrhea cases among males was highest in the Kansas City HIV Care Region (386.6), followed by the St. Louis HIV Care Region (351.6). Forty percent (40%) of all gonorrhea cases were reported in the St. Louis HIV Care Region and 26% were reported in the Kansas City HIV Care Region. The Southwest HIV Care Region had the third largest number of gonorrhea cases reported. The rate of reported gonorrhea cases was higher for blacks/African Americans compared to whites in all regions.

Figure 36. Reported gonorrhea cases* and rates, by county, Missouri, 2019**

*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2018 MDHSS population estimates.

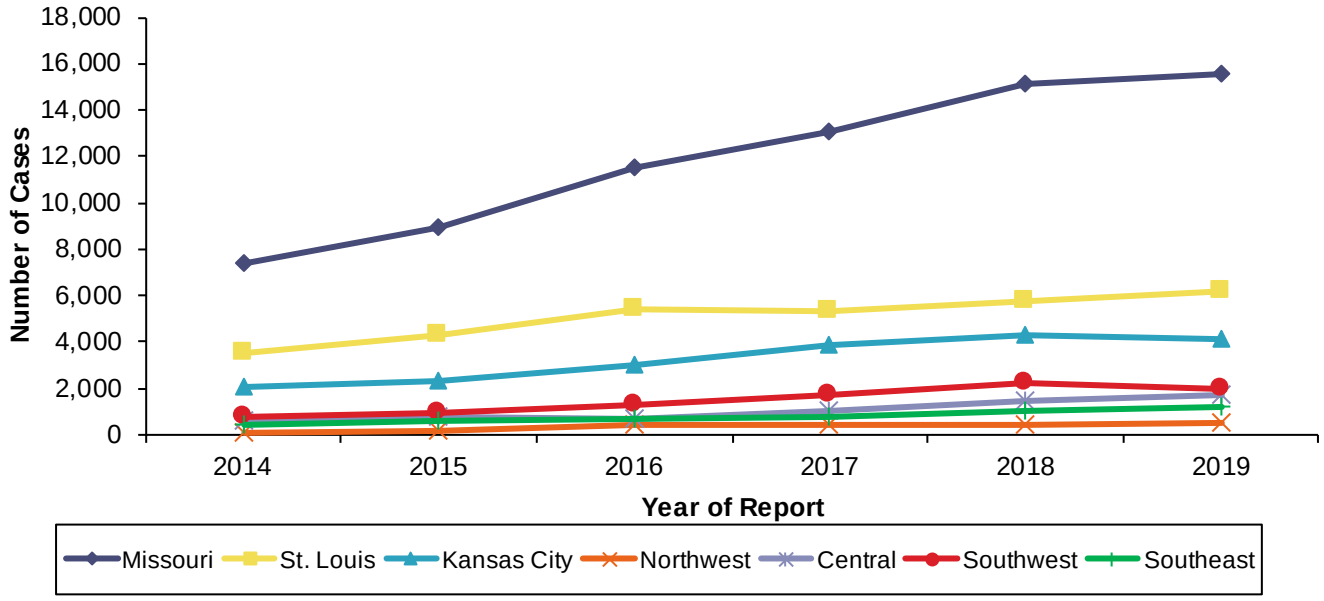
Gonorrhea cases reported in St. Louis City, St. Louis County, and Jackson County represented 56% of all reported cases in 2019 (Figure 36). There were 1 county that did not report any gonorrhea cases in 2019. Kansas City had the highest rate of reported gonorrhea cases at 333 per 100,000 persons. This rate means that for every 100,000 persons living in Kansas City, there were 333 reported with gonorrhea in 2019.

Figure 37. Reported gonorrhea cases, by race and sex, by age group at diagnosis, Missouri, 2019



Note: Totals include persons diagnosed at <10 years of age or whose age at diagnosis is unknown.

Figure 38. Reported gonorrhea cases by HIV care region and year of report, Missouri, 2010-2019



The largest numbers of gonorrhea cases were reported among black/African American males (4,470) and white females (3,141) (Figure 37). The number of reported cases increase from 2018 to 2019 among all race/ethnicity and sex categories presented except for black/African American females which decrease from 2,908 to 2,629 cases. Among all race/ethnicity and sex categories presented, the largest number of cases was reported among individuals 20-24 years of age at the time of diagnosis.

The number of reported gonorrhea cases in Missouri increased from 2014 through 2019 (Figure 38). The numbers of reported gonorrhea cases were fluctuated slightly from 2014 through 2019 in all HIV care regions. The number of reported gonorrhea cases was higher in 2017 compared to 2016 in all HIV care regions, except for the St. Louis HIV Care Regions.

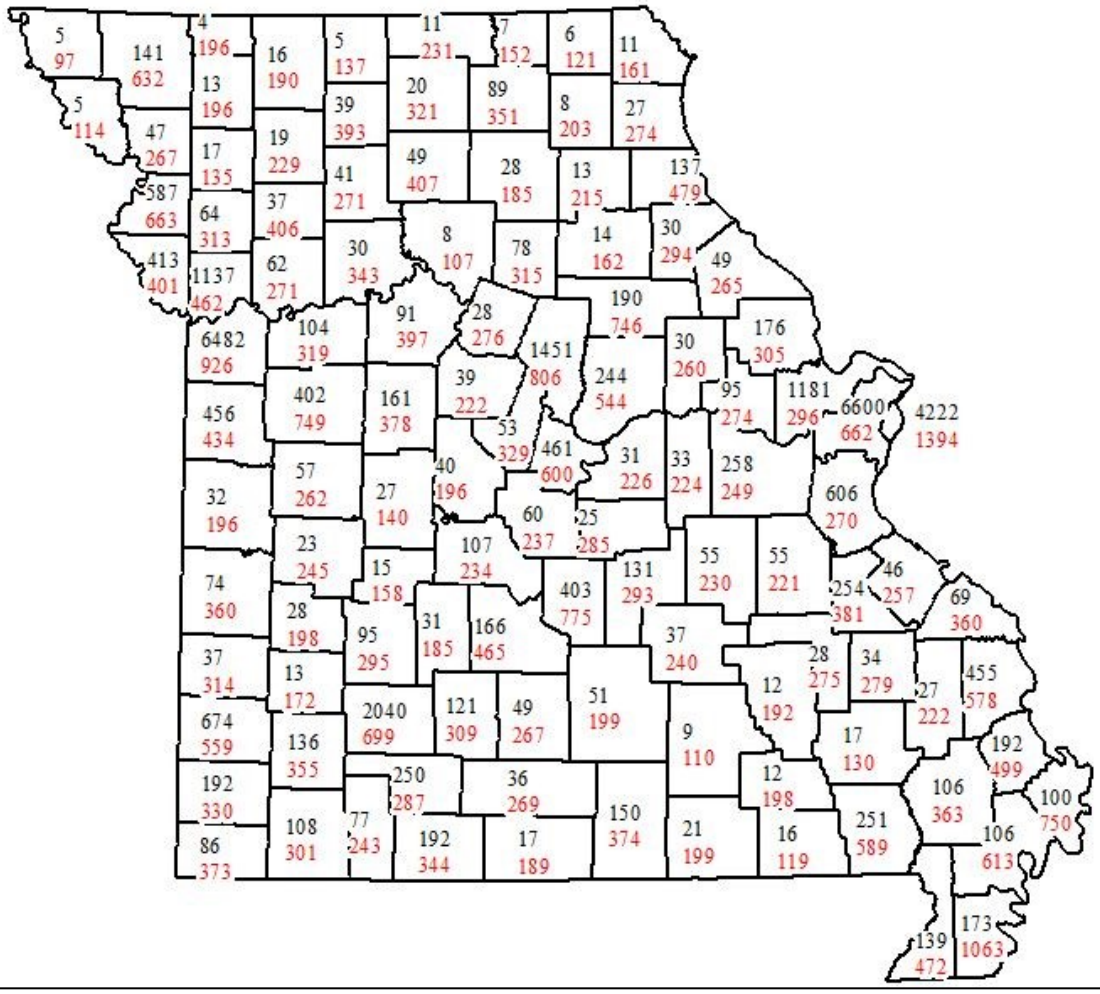
Table 31. Reported chlamydia cases and rates, by race*, by HIV care region, by sex, Missouri, 2019

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	4,199	35.2%	175.7	9,956	44.3%	403.4	14,155	291.4
Black/African American	5,348	44.8%	1582.6	7,864	35.0%	2108.1	13,212	1858.3
Other/Unknown*	2,381	20.0%	--	4,670	20.8%	--	7,051	--
Total	**11,928**	**100.0%**	**396.6**	**22,490**	**100.0%**	**721.1**	**34,418**	**561.8**
St. Louis HIV Care Region								
White	942	20.0%	125.7	1,961	23.3%	251.0	2,903	189.7
Black/African American	2,810	59.7%	1513.2	4,607	54.6%	2062.1	7,417	1812.9
Other/Unknown*	953	20.3%	--	1,865	22.1%	--	2,818	--
Total	**4,705**	**100.0%**	**459.1**	**8,433**	**100.0%**	**770.4**	**13,138**	**619.9**
Kansas City HIV Care Region								
White	870	27.9%	201.9	2,093	37.4%	465.5	2,963	336.5
Black/African American	1,542	49.5%	1706.5	2,187	39.0%	2147.1	3,729	1940.0
Other/Unknown*	703	22.6%	--	1,323	23.6%	--	2,026	--
Total	**3,115**	**100.0%**	**519.6**	**5,603**	**100.0%**	**887.9**	**8,718**	**708.5**
Northwest HIV Care Region								
White	218	65.3%	222.7	507	75.4%	506.8	725	366.3
Black/African American	62	18.6%	1128.5	56	8.3%	1935.0	118	1406.8
Other/Unknown*	54	16.2%	--	109	16.2%	--	163	--
Total	**334**	**100.0%**	**298.2**	**672**	**100.0%**	**607.3**	**1,006**	**451.9**
Central HIV Care Region								
White	687	50.9%	179.3	1,821	65.1%	466.8	2,508	324.3
Black/African American	398	29.5%	1590.9	472	16.9%	2295.6	870	1908.8
Other/Unknown*	264	19.6%	--	505	18.0%	--	769	--
Total	**1,349**	**100.0%**	**305.3**	**2,798**	**100.0%**	**630.5**	**4,147**	**468.2**
Southwest HIV Care Region								
White	1,148	64.9%	223.6	2,584	74.0%	490.2	3,732	358.7
Black/African American	304	17.2%	2066.2	229	6.6%	2294.4	533	2158.4
Other/Unknown*	317	17.9%	--	680	19.5%	--	997	--
Total	**1,769**	**100.0%**	**302.5**	**3,493**	**100.0%**	**589.9**	**5,262**	**447.1**
Southeast HIV Care Region								
White	334	50.9%	155.1	990	66.4%	449.8	1,324	304.1
Black/African American	232	35.4%	1394.5	313	21.0%	2182.7	545	1759.4
Other/Unknown*	90	13.7%	--	188	12.6%	--	278	--
Total	**656**	**100.0%**	**268.1**	**1,491**	**100.0%**	**604.4**	**2,147**	**436.9**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2018 MDHSS population estimates.

There were a total of 34,418 chlamydia cases reported in 2019 (Table 31). The majority of cases (65%) were reported among females. The proportion of chlamydia cases reported among females varied by HIV care region. The Southeast HIV Care Region reported the highest proportion of female cases (69%), followed by the Central and Northwest (67%), Southwest (66%), and both Kansas City (64%) and St. Louis (64%) HIV Care Regions. The rate of chlamydia cases among females was highest in the Kansas City HIV Care Region (887.9), followed by the St. Louis HIV Care Region (770.4). Thirty-eight percent (38%) of all chlamydia cases were reported in the St. Louis HIV Care Region and 25% were reported in the Kansas City HIV Care Region. The Southwest HIV Region had the third largest number of chlamydia cases reported. The rate of reported chlamydia cases was higher for blacks/African Americans compared to whites in all regions.

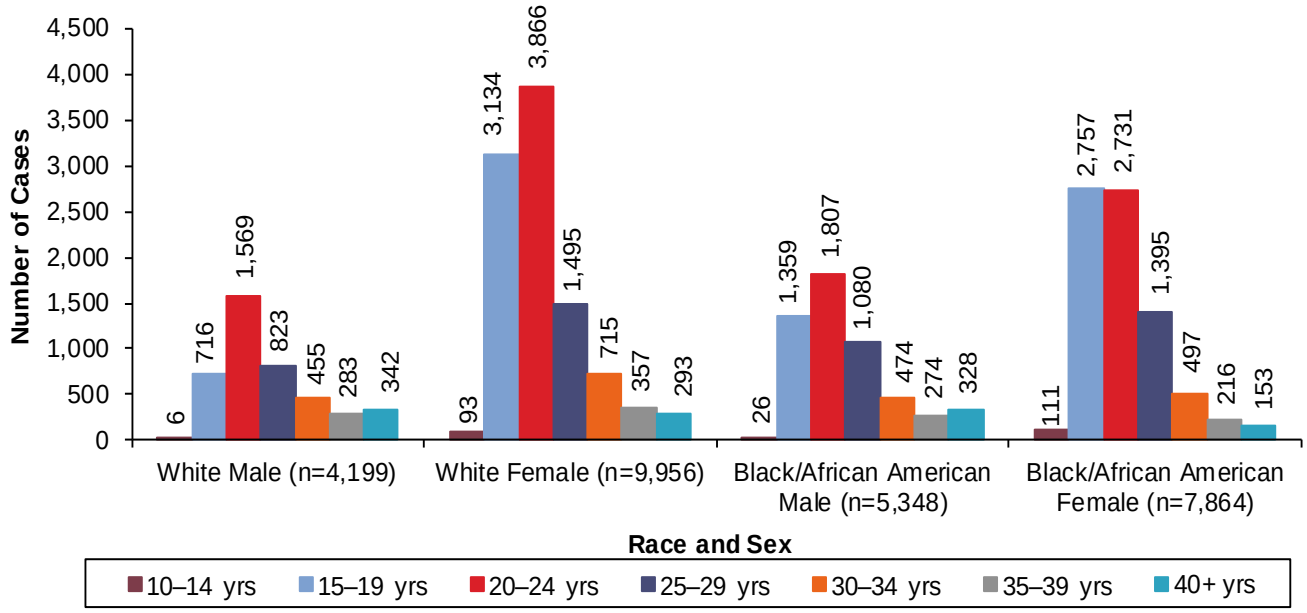
Figure 39. Reported chlamydia cases* and rates, by county, Missouri, 2019**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2018 MDHSS population estimates.

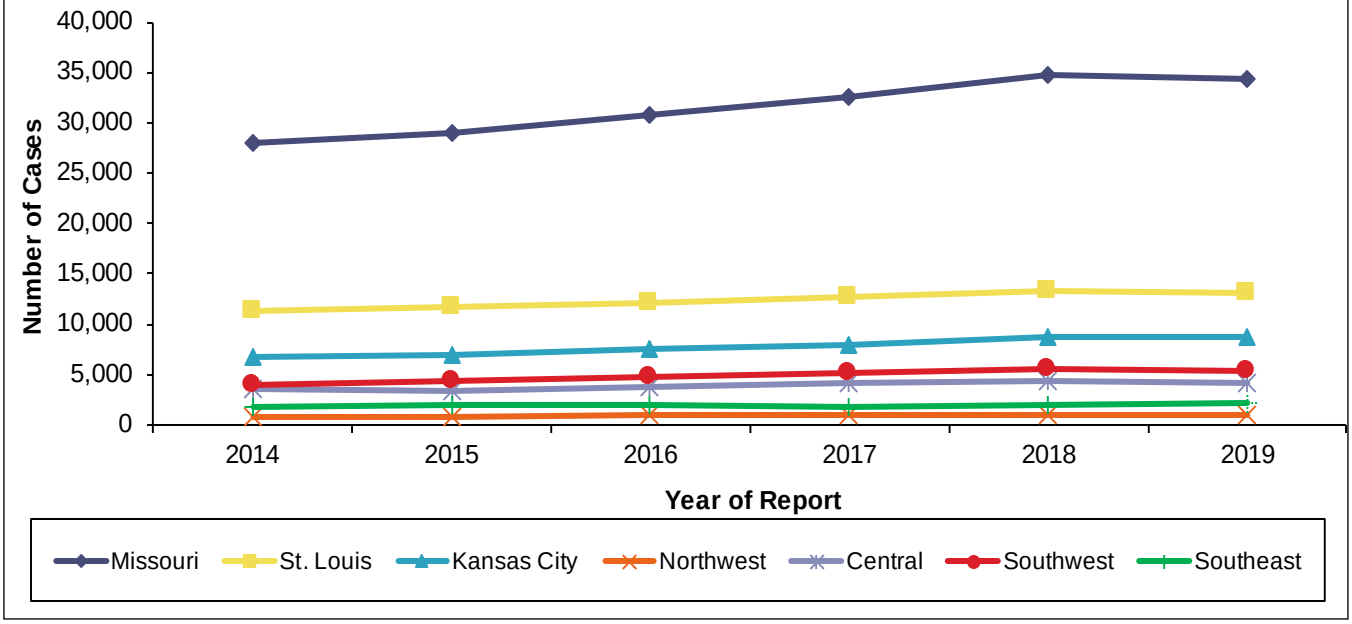
Chlamydia cases reported in St. Louis City, St. Louis County, and Jackson County represented 50% of all reported cases in 2019 (Figure 39), although these areas represent only 33% of Missouri's general population. All counties reported more than one chlamydia case in 2019. St. Louis County had the highest rate of reported chlamydia cases at 662 per 100,000 persons. This rate means that for every 100,000 persons living in St. Louis City, there were 662 reported with chlamydia in 2019.

Figure 40. Reported chlamydia cases, by race and sex, by age group at diagnosis, Missouri, 2019



Note: Totals include persons diagnosed at <10 years of age or whose age at diagnosis is unknown.

Figure 41. Reported chlamydia cases by HIV care region and year of report, Missouri, 2010-2019



The largest numbers of chlamydia cases were reported among white females (9,956) and black/African American females (7,864) (Figure 40). The number of reported cases decreased from 2018 to 2019 among while males, white females, and black/African American females. The number of reported cases increased from 2018 to 2019 among black/African American males. The total number of reported chlamydia cases in Missouri decreased slightly from 2018 to 2019. Among all race/ethnicity and sex categories presented the largest number of cases was reported among individuals 20-24 years of age at the time of diagnosis.

The number of reported chlamydia cases in Missouri increased from 2014 to 2018, then decreased slightly through 2019 (Figure 41). All HIV care regions reported an slight decrease in the number of chlamydia cases from 2018 to 2019.

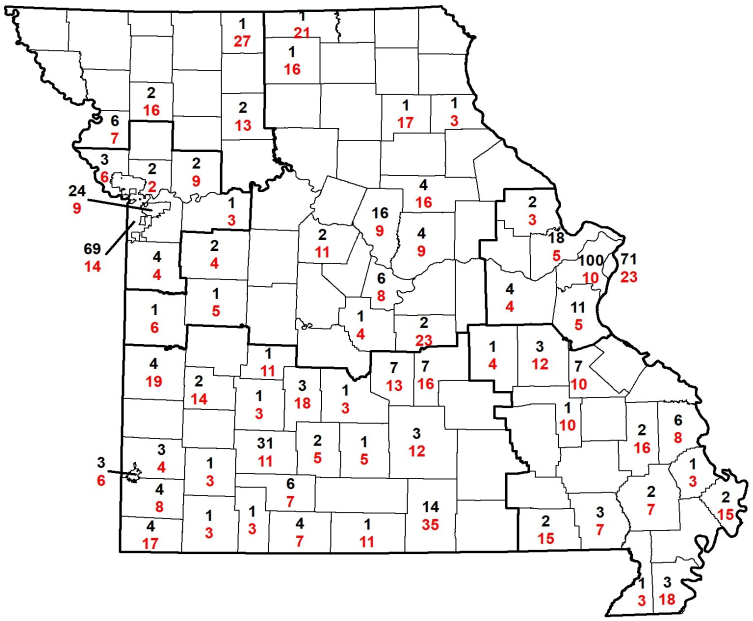
Table 32. Reported hepatitis B† cases and rates, by race*, by HIV care region, by sex, Missouri, 2019

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	116	37.4%	4.9	55	28.2%	2.2	171	3.5
Black/African American	65	21.0%	19.2	37	19.0%	9.9	102	14.3
Other/Unknown*	129	41.6%	--	103	52.8%	--	232	--
Total	**310**	**100.0%**	**10.3**	**195**	**100.0%**	**6.3**	**505**	**8.2**
St. Louis HIV Care Region								
White	27	21.4%	3.6	11	13.8%	1.4	38	2.5
Black/African American	40	31.7%	21.5	24	30.0%	10.7	64	15.6
Other/Unknown*	59	46.8%	--	45	56.3%	--	104	--
Total	**126**	**100.0%**	**12.3**	**80**	**100.0%**	**7.3**	**206**	**9.7**
Kansas City HIV Care Region								
White	14	24.6%	3.2	7	14.6%	1.6	21	2.4
Black/African American	15	26.3%	16.6	11	22.9%	10.8	26	13.5
Other/Unknown*	28	49.1%	--	30	62.5%	--	58	--
Total	**57**	**100.0%**	**9.5**	**48**	**100.0%**	**7.6**	**105**	**8.5**
Northwest HIV Care Region								
White	6	75.0%	6.1	2	50.0%	2.0	8	4.0
Black/African American	0	0.0%	0.0	0	0.0%	0.0	0	0.0
Other/Unknown*	2	25.0%	--	2	50.0%	--	4	--
Total	**8**	**100.0%**	**7.1**	**4**	**100.0%**	**3.6**	**12**	**5.4**
Central HIV Care Region								
White	16	50.0%	4.2	5	45.5%	1.3	21	2.7
Black/African American	3	9.4%	12.0	2	18.2%	9.7	5	11.0
Other/Unknown*	13	40.6%	--	4	36.4%	--	17	--
Total	**32**	**100.0%**	**7.2**	**11**	**100.0%**	**2.5**	**43**	**4.9**
Southwest HIV Care Region								
White	44	62.0%	8.6	19	55.9%	3.6	63	6.1
Black/African American	6	8.5%	40.8	0	0.0%	0.0	6	24.3
Other/Unknown*	21	29.6%	--	15	44.1%	--	36	--
Total	**71**	**100.0%**	**12.1**	**34**	**100.0%**	**5.7**	**105**	**8.9**
Southeast HIV Care Region								
White	9	56.3%	4.2	11	61.1%	5.0	20	4.6
Black/African American	1	6.3%	6.0	0	0.0%	0.0	1	3.2
Other/Unknown*	6	37.5%	--	7	38.9%	--	13	--
Total	**16**	**100.0%**	**6.5**	**18**	**100.0%**	**7.3**	**34**	**6.9**

†Includes confirmed and probable case classifications of hepatitis B acute, hepatitis B chronic, hepatitis B prenatal, and hepatitis B perinatal.
*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2018 MDHSS population estimates.

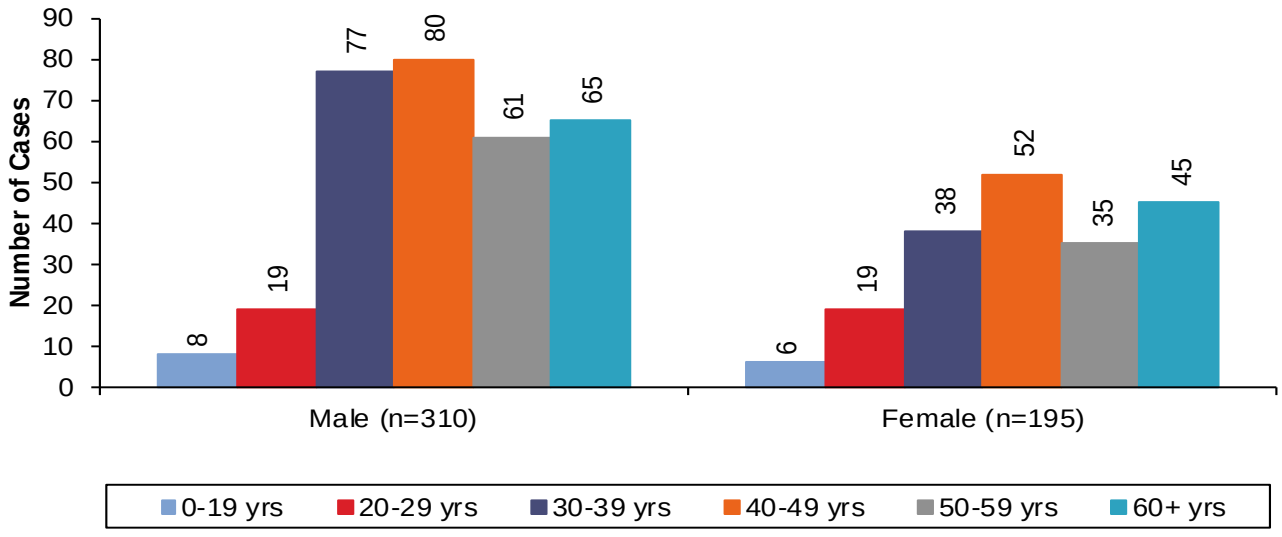
Of the 505 hepatitis B cases reported in 2019, 33 were reported with acute hepatitis B 472 with chronic hepatitis B. The number of reported hepatitis B cases in Missouri decreased by 89 cases from 2018 (594) to 2019 (505) (Table 32). Overall, the rate of reported hepatitis B cases was highest in the St. Louis HIV Care Region (9.7 per 100,000). Overall, 38% of reported cases were females, although variation in the ratio of male to female cases existed among the HIV care regions. The large proportion of cases with unknown race/ethnicity information makes it difficult to interpret differences in reported infections by race/ethnicity.

Figure 42. Reported hepatitis B cases* and rates, by jurisdiction, Missouri, 2019**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2018 MDHSS population estimates.

Figure 43. Reported hepatitis B cases, by sex and by age group at diagnosis, Missouri, 2019



Note: Totals include persons whose age at diagnosis is unknown.

St. Louis County had the greatest number of reported hepatitis B cases (122), followed by St. Louis City (90) (Figure 42). There were 50 jurisdictions that did not report any hepatitis B cases in 2019.

There were differences in the age distribution of reported hepatitis B cases by sex (Figure 43). Among males and females, the largest numbers of reported cases were among persons 40-49 years of age.

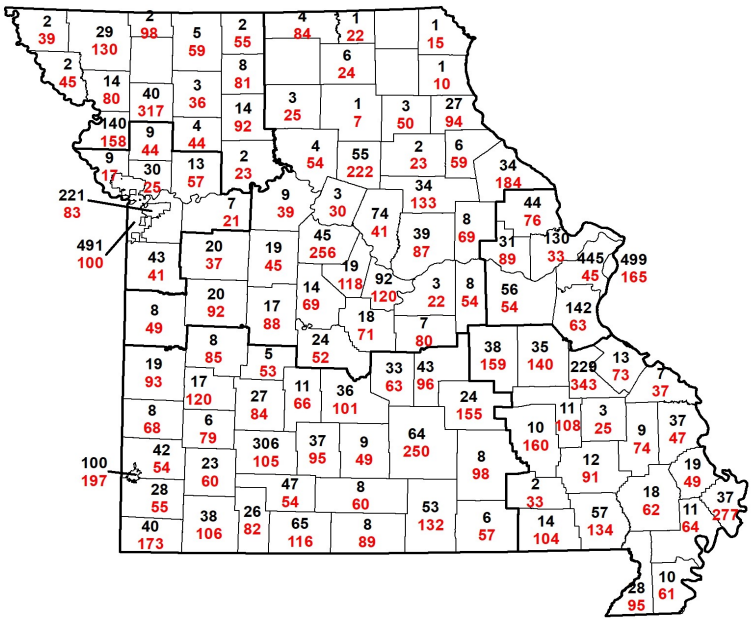
Table 33. Reported hepatitis C† cases and rates, by race*, by HIV care region, by sex, Missouri, 2019

	Male			Female			Total‡	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	1,573	50.0%	65.8	820	49.4%	33.2	2,393	49.3
Black/African American	442	14.0%	130.8	190	11.4%	50.9	632	88.9
Other/Unknown*	1,133	36.0%	--	651	39.2%	--	1,784	--
Total	**3,148**	**100.0%**	**104.7**	**1,661**	**100.0%**	**53.3**	**4,809**	**78.5**
St. Louis HIV Care Region								
White	265	31.3%	35.4	171	34.3%	21.9	436	28.5
Black/African American	237	28.0%	127.6	121	24.2%	54.2	358	87.5
Other/Unknown*	345	40.7%	--	207	41.5%	--	552	--
Total	**847**	**100.0%**	**82.7**	**499**	**100.0%**	**45.6**	**1,346**	**63.5**
Kansas City HIV Care Region								
White	241	46.5%	55.9	143	47.0%	31.8	384	43.6
Black/African American	76	14.7%	84.1	49	16.1%	48.1	125	65.0
Other/Unknown*	201	38.8%	--	112	36.8%	--	313	--
Total	**518**	**100.0%**	**86.4**	**304**	**100.0%**	**48.2**	**822**	**66.8**
Northwest HIV Care Region								
White	138	69.0%	141.0	48	71.6%	48.0	186	94.0
Black/African American	15	7.5%	273.0	2	3.0%	69.1	17	202.7
Other/Unknown*	47	23.5%	--	17	25.4%	--	64	--
Total	**200**	**100.0%**	**178.6**	**67**	**100.0%**	**60.6**	**267**	**119.9**
Central HIV Care Region								
White	256	57.4%	66.8	106	57.9%	27.2	362	46.8
Black/African American	38	8.5%	151.9	8	4.4%	38.9	46	100.9
Other/Unknown*	152	34.1%	--	69	37.7%	--	221	--
Total	**446**	**100.0%**	**100.9**	**183**	**100.0%**	**41.2**	**629**	**71.0**
Southwest HIV Care Region								
White	412	58.4%	80.2	265	60.4%	50.3	677	65.1
Black/African American	32	4.5%	217.5	4	0.9%	40.1	36	145.8
Other/Unknown*	262	37.1%	--	170	38.7%	--	432	--
Total	**706**	**100.0%**	**120.7**	**439**	**100.0%**	**74.1**	**1,145**	**97.3**
Southeast HIV Care Region								
White	261	60.6%	121.2	87	51.5%	39.5	348	79.9
Black/African American	44	10.2%	264.5	6	3.6%	41.8	50	161.4
Other/Unknown*	126	29.2%	--	76	45.0%	--	202	--
Total	**431**	**100.0%**	**176.2**	**169**	**100.0%**	**68.5**	**600**	**122.1**

†Includes confirmed and probable case classifications of hepatitis C acute and hepatitis C chronic.
*Includes cases identified with Hispanic ethnicity.
‡Includes persons with unknown or other sex.
**Per 100,000 population based on 2018 MDHSS population estimates.

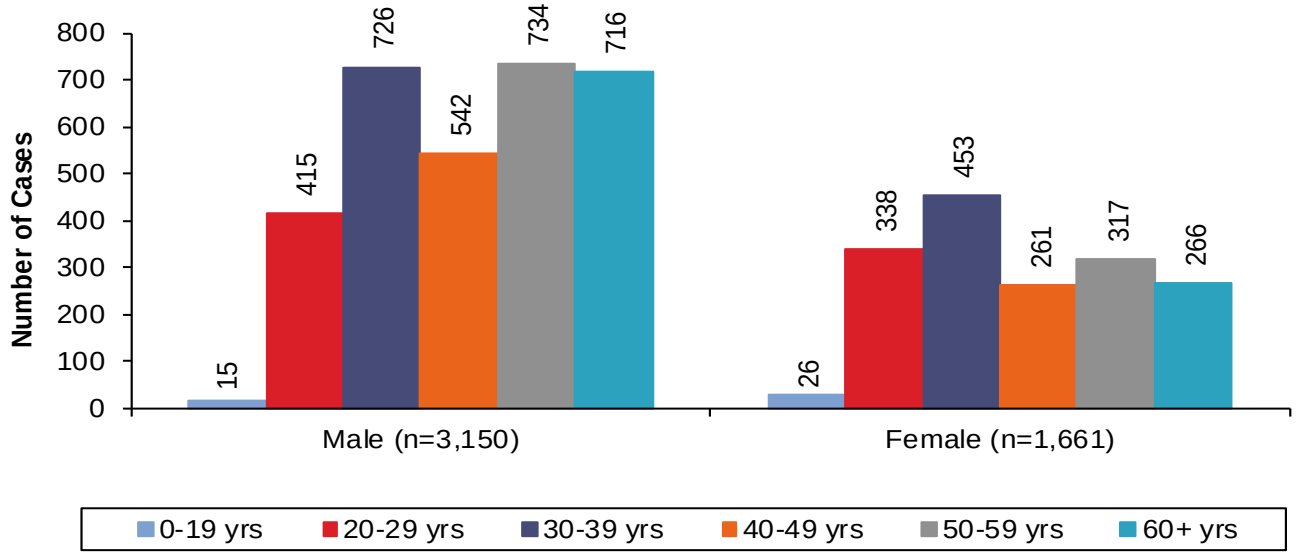
Of the 4,809 hepatitis C cases reported in 2019, two did not have a sex listed, 42 were reported with acute hepatitis C and 4,769 with chronic hepatitis C (Table 33). The number of reported hepatitis C cases in Missouri decreased by 135 cases from 2018 (4,946) to 2019 (4,811). Overall, the rate of reported hepatitis C cases was highest in the Southeast HIV Care Region (122.1 per 100,000). In Missouri overall, 65% of the reported cases were males. The large proportion of cases with unknown race/ethnicity information makes it difficult to analyze.

Figure 44. Reported hepatitis C cases* and rates, by jurisdiction, Missouri, 2019**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2018 MDHSS population estimates.

Figure 45. Reported hepatitis C cases, by sex and by age group at diagnosis, Missouri, 2019



Note: Totals include persons whose age at diagnosis is unknown.

St. Louis City had the greatest number of reported hepatitis C cases with 499 cases (Figure 44). The second largest number of hepatitis C cases occurred in Kansas City (491). There were four jurisdictions which did not report a hepatitis C case in 2014.

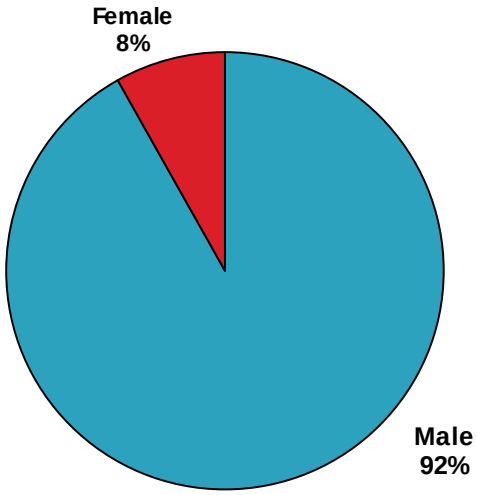
Among males, the largest numbers of reported hepatitis C cases were between 50-59 years and for females the largest number of cases were between 30-39 years (Figure 45).

Table 34. HIV and STD co-infections, Missouri, 2019

Co-infection	Diagnosed with HIV Prior to 2019		Diagnosed with HIV in 2019		Total	
	N	%	N	%	N	%
Chlamydia	145	18.8%	23	15.6%	168	18.3%
Gonorrhea	253	32.7%	42	28.6%	295	32.1%
Syphilis*	179	23.2%	32	21.8%	211	22.9%
Chlamydia and Gonorrhea	114	14.7%	32	21.8%	146	15.9%
Chlamydia and Syphilis*	21	2.7%	4	2.7%	25	2.7%
Gonorrhea and Syphilis*	35	4.5%	6	4.1%	41	4.5%
Chlamydia, Gonorrhea, and Syphilis*	26	3.4%	8	5.4%	34	3.7%
Total	**773**	**100.0%**	**147**	**100.0%**	**920**	**100.0%**

*Only includes diagnoses of primary, secondary, and early latent syphilis.

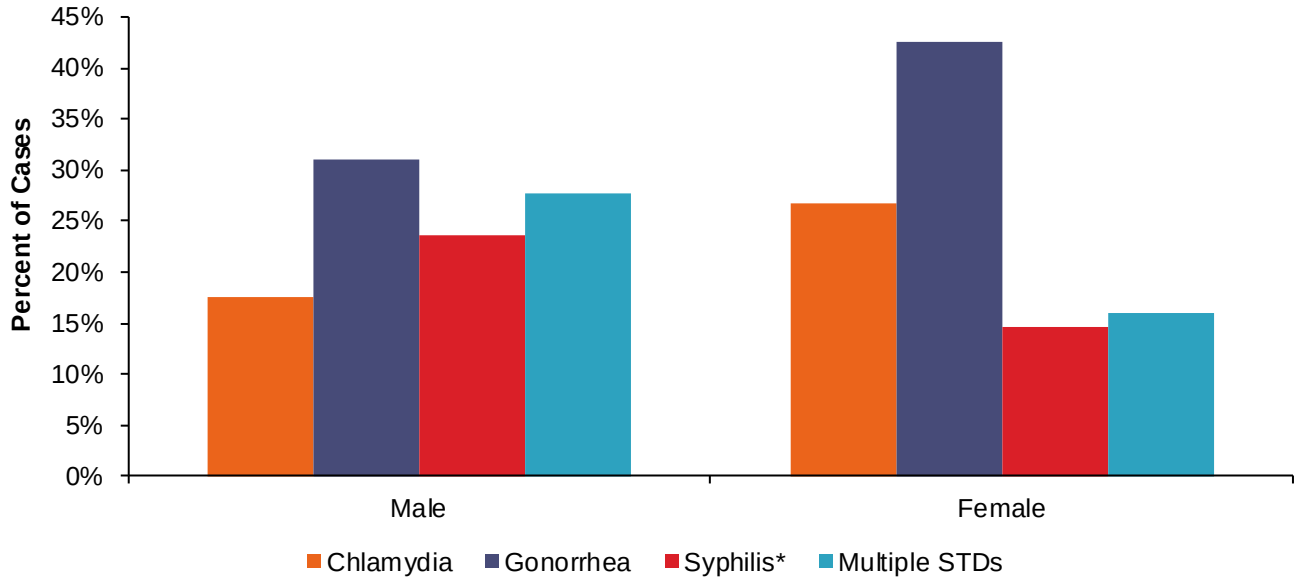
Figure 46. HIV and STD co-infections by sex, Missouri, 2019



Of the 13,378 individuals living with HIV disease, 920 were reported with an STD co-morbidity in 2019 (Table 34). The majority of those reported with an STD co-morbidity were diagnosed with HIV prior to 2019 (84%). There were not significant differences in the type of STD co-morbidity diagnosed based on when the individual was diagnosed with HIV. The largest numbers of HIV co-morbidities were with gonorrhea and syphilis alone. The proportion of reported STD infections in 2019 that were living with HIV varied by infection type. Of the 547 early syphilis cases reported in 2019, 39% were among individuals living with HIV. Only 2% of gonorrhea cases and less than .5% of chlamydia cases reported in 2019 were among individuals living with HIV.

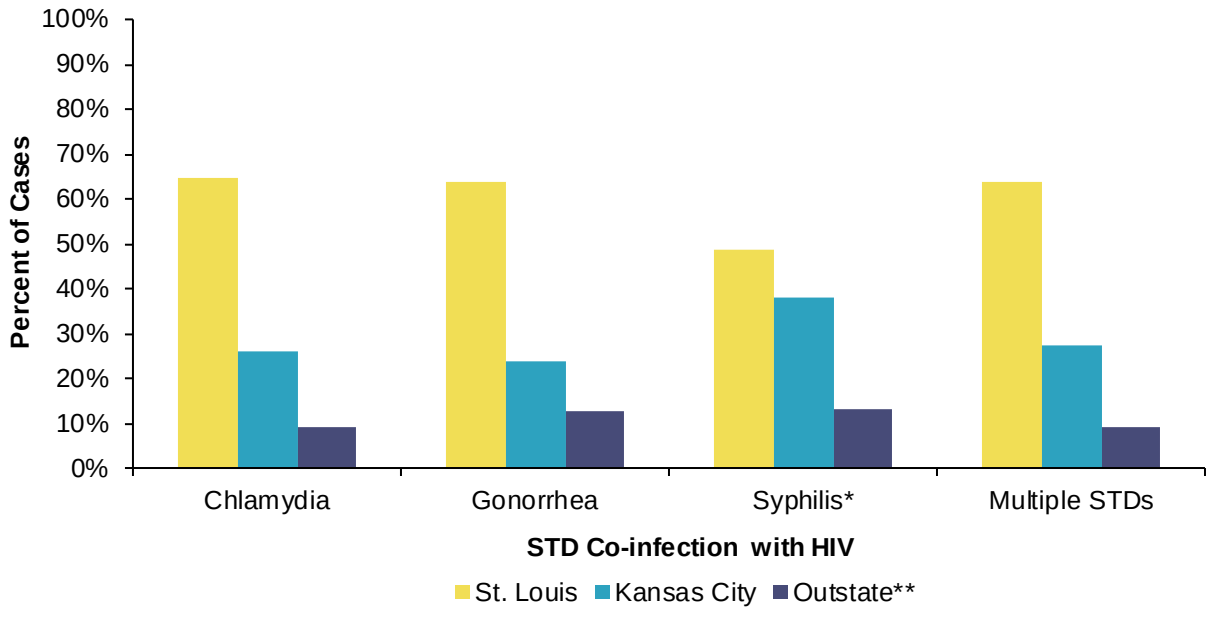
Of the 246 reported STD co-morbidity cases, 92% were among males (Figure 46). Males represented a higher proportion of the STD co-morbidity cases (92%) compared to all males living with HIV disease (82%).

Figure 47. HIV and STD co-infections by sex and type of co-infection, Missouri, 2019



*Only includes diagnoses of primary, secondary, and early latent syphilis.

Figure 48. HIV and STD co-infections by HIV care region of STD diagnosis, Missouri, 2019

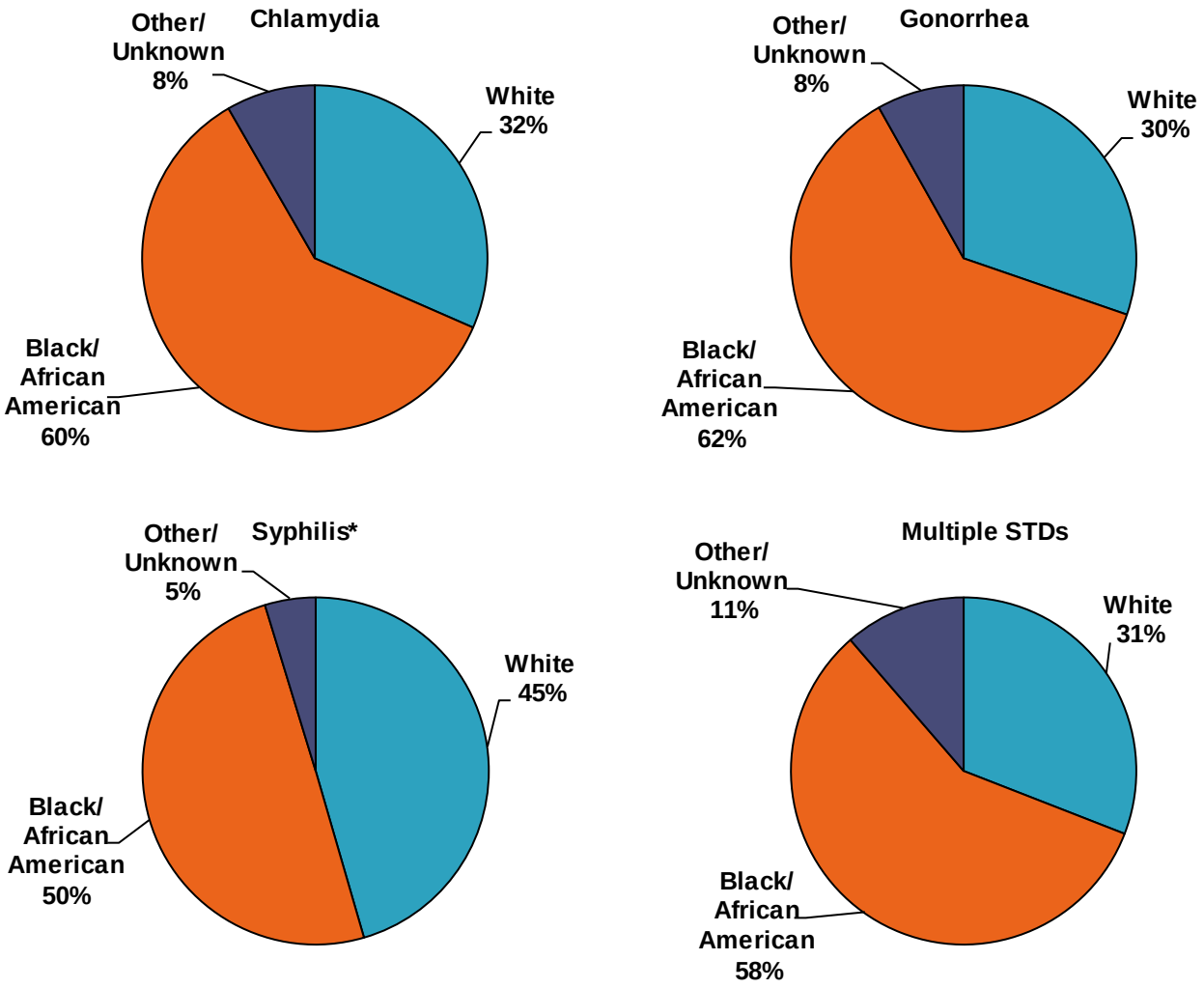


*Only includes diagnoses of primary, secondary, and early latent syphilis.
**Includes those diagnosed in the Central, Northwest, Southeast, and Southwest HIV Care Regions.
Note: Percentages may not total due to rounding.

There were differences in the distribution of STD co-morbidity types by sex (Figure 47). Among females living with HIV that were reported with an STD co-morbidity in 2019, 43% were co-infected with gonorrhea, 27% with chlamydia, 16% with multiple STDs, and 15% with early syphilis. In contrast, among males living with HIV reported with an STD co-morbidity in 2019, only 31% were co-infected with gonorrhea, 18% with chlamydia, 28% with multiple STDs, and 24% with early syphilis. Due to rounding, the proportion may not total to 100%.

Among all HIV and STD co-morbidity types, the greatest proportion of cases was diagnosed in the St. Louis HIV Care Region (Figure 48). Among those living with HIV that were reported with chlamydia in 2019, 65% were residents of the St. Louis HIV Care Region when diagnosed with chlamydia. The St. Louis HIV Care Region represented 64% of all living HIV cases reported with gonorrhea in 2019, 49% of those with early syphilis, and 64% of those with multiple STD co-morbidities. In St. Louis , STD co-morbidity with HIV was highest for chlamydia, while in Kansas City and Outstate, STD co-morbidity with HIV was highest for early syphilis.

Figure 49. HIV and STD co-infections by race/ethnicity and type of co-infection, Missouri, 2019



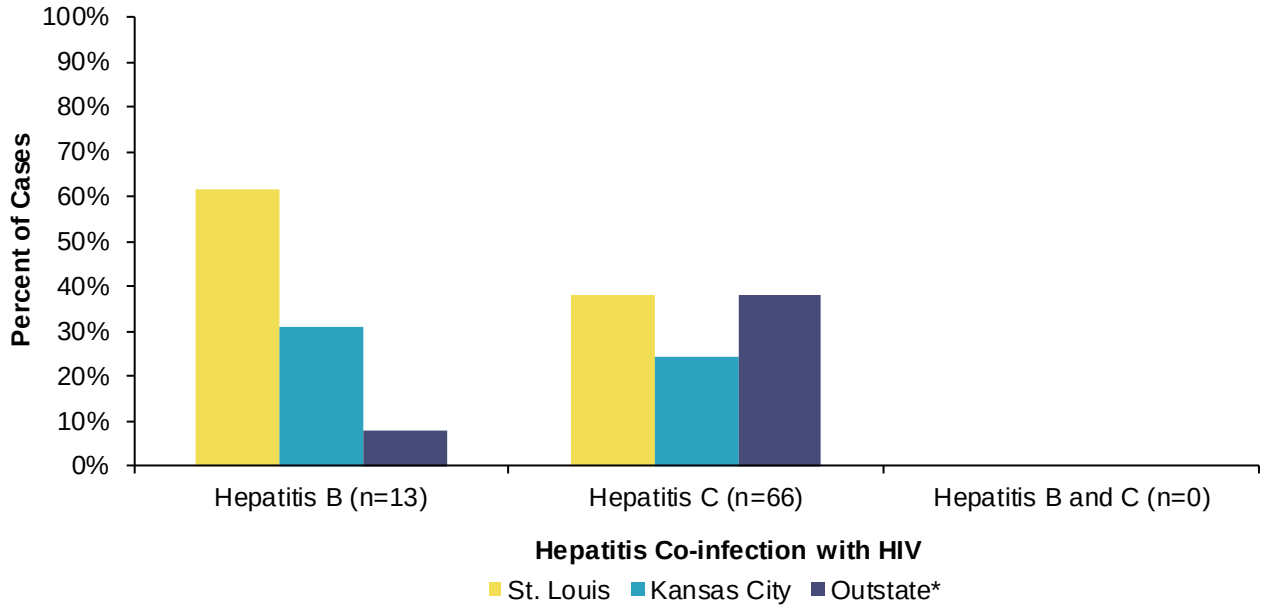
*Only includes diagnoses of primary, secondary, and early latent syphilis.

There were differences in the distribution of race/ethnicity among HIV and STD co-morbidities depending on the type of STD diagnosed (Figure 49). The proportion of co-morbidity cases attributed to blacks/African Americans was highest among those co-infected with gonorrhea (62%), followed by those co-infected with chlamydia (60%). In all instances, minorities were disproportionately represented in the proportion of co-morbidities that were reported. Although blacks/African Americans represented only 46% of living HIV disease cases, they represented 58% of individuals diagnosed with an STD co-morbidity.

Table 35. Reported hepatitis B and C infections among persons living with HIV disease, Missouri, 2019

Co-infection	Diagnosed with HIV Prior to 2019 N	Diagnosed with HIV in 2019 N	Total Co-infections N
Acute Hepatitis B	0	0	0
Chronic Hepatitis B	13	0	13
Prenatal Hepatitis B	0	0	0
Perinatal Hepatitis B	0	0	0
Acute Hepatitis C	0	0	0
Chronic Hepatitis C	65	1	66
Chronic Hepatitis B & C	0	0	0
Total	**78**	**1**	**79**

Figure 50. HIV and hepatitis co-infections by HIV care region of hepatitis diagnosis, Missouri, 2019

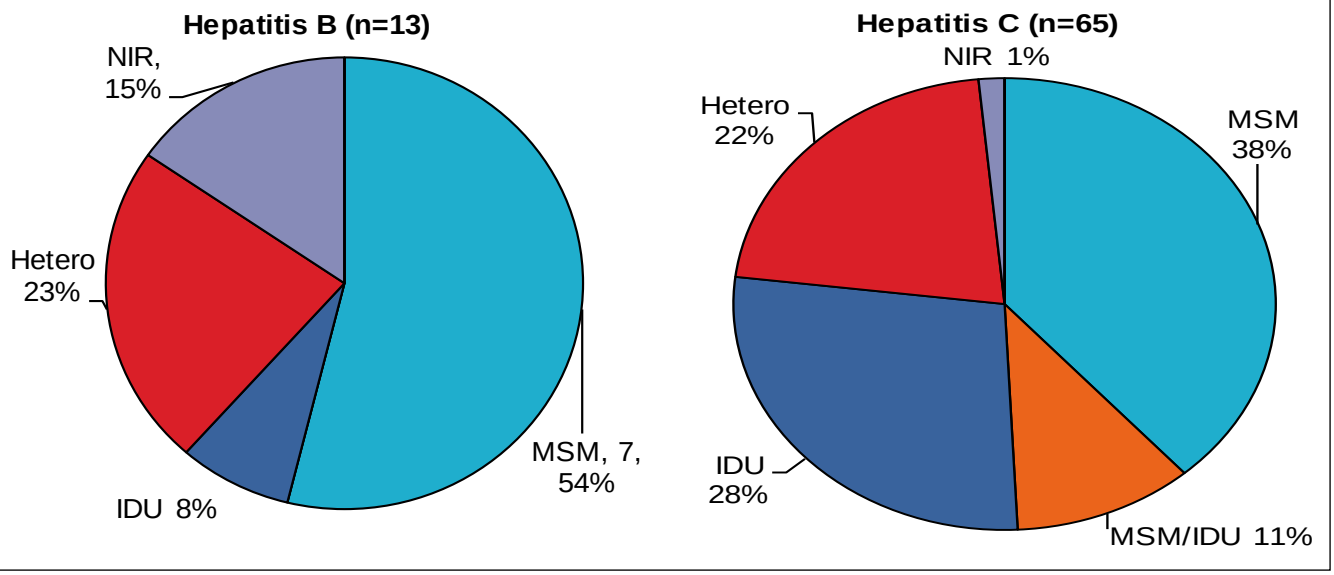


*Includes those diagnosed in the Central, Northwest, Southeast, and Southwest HIV Care Regions.

Of the 13,378 individuals living with HIV disease, 79 were reported with a hepatitis co-morbidity in 2019 (Table 35). The majority of those reported with a hepatitis co-morbidity were diagnosed with HIV prior to 2019 (99%). The largest number of HIV co-morbidities was with chronic hepatitis C. The proportion of reported hepatitis infections in 2019 that were living with HIV varied by infection type. Of the 472 chronic hepatitis B cases reported in 2019, 3% were among individuals living with HIV. Only 1% of chronic hepatitis C cases reported in 2019 were among individuals living with HIV.

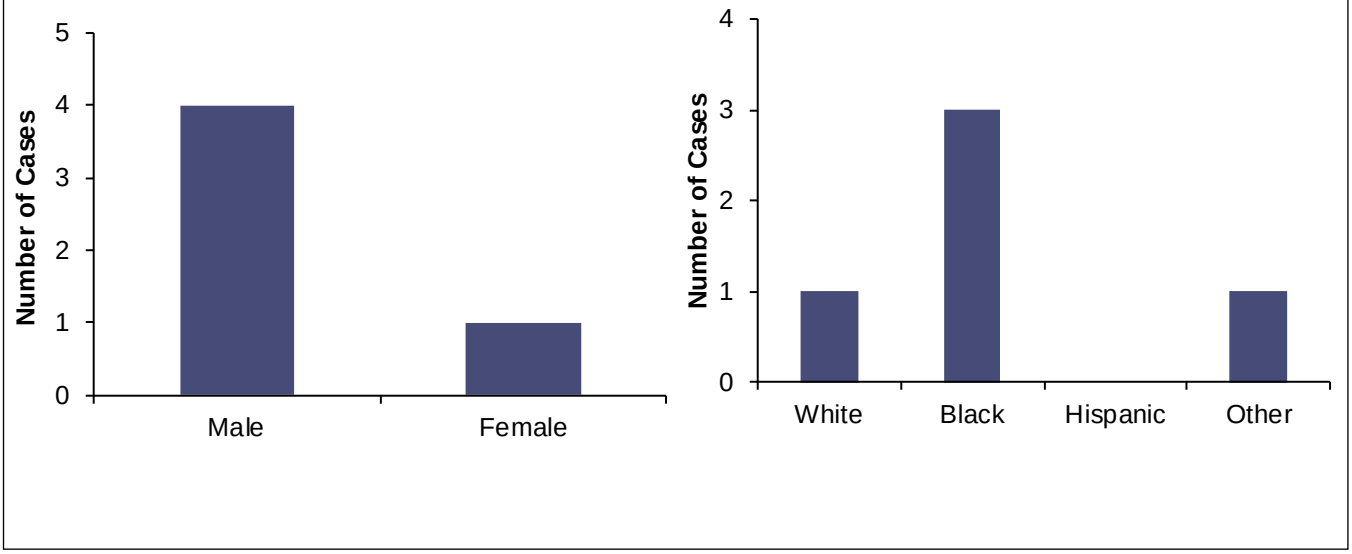
Among persons living with HIV disease that were reported with only a hepatitis B infection in 2019, the greatest proportion were residing in the St. Louis HIV Care Region (62%) at the time of the hepatitis diagnosis (Figure 50). Among HIV-positive persons reported with only a hepatitis C infection in 2019, the greatest proportion were residing in the St. Louis and Outstate HIV Care Region (38%) at the time of the hepatitis diagnosis.

Figure 51. HIV and hepatitis co-infections by HIV exposure category and type of co-infection, Missouri, 2019



Among persons living with HIV disease and reported with only a hepatitis B infection in 2019, 54% were among MSM (Figure 51). Among hepatitis C co-morbidity cases, 38% were attributed to MSM, and 28% were attributed to both IDU.

Figure 52. HIV and TB disease co-infections by sex, by race, Missouri, 2019



Among the 13,378 persons living with HIV disease, five were reported to be diagnosed with TB disease in 2019. Co-infections were reported among persons 25-34, 35-44, and 45-54 years of age at the end of 2019. Four of the co-infections were among males, and three of the co-infections were among blacks/African Americans (Figure 52).

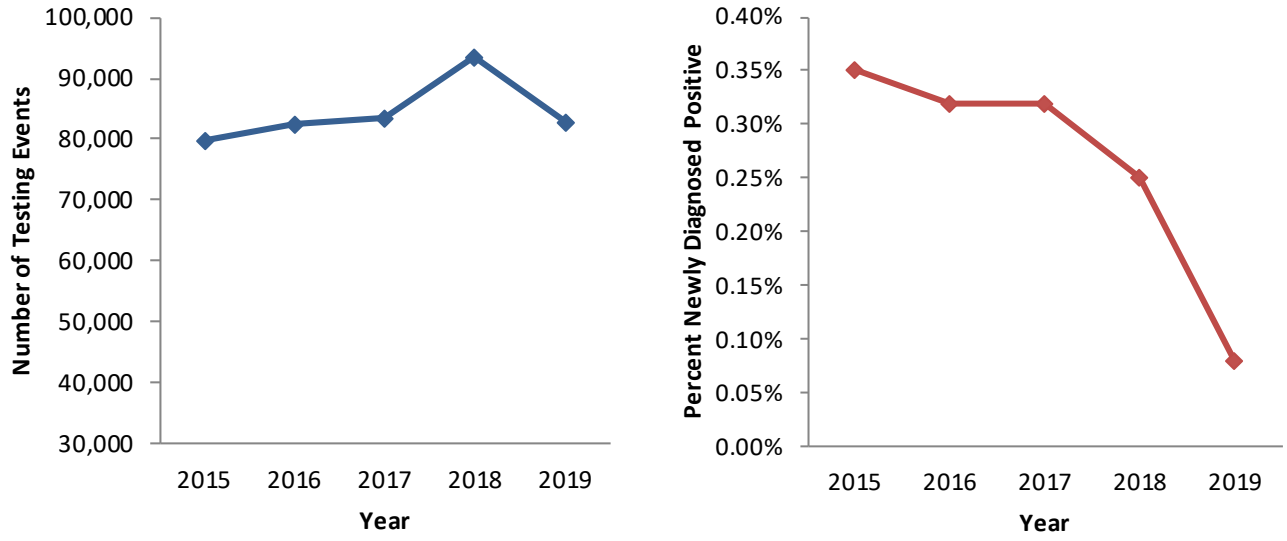
Table 36. Number of HIV testing events* and newly diagnosed positives among HIV testing sites, by current gender, race/ ethnicity, age, exposure category***, and test method¥, Missouri, 2019**

	Testing Events*	Newly Diagnosed Positives**	
	N	N	%
Total	82,598	71	0.1%
Current Gender			
Male	41,151	59	0.1%
Female	41,118	12	0.0%
Transgender	244	0	0.0%
Unknown	285	0	0.0%
Race/Ethnicity			
White	31,954	21	0.1%
Black	38,962	37	0.0%
Hispanic	4,480	8	0.0%
Other/Unknown	4,756	5	0.0%
Age at Test			
<13	193	0	0.0%
13-18	5,414	1	0.0%
19-24	21,633	22	0.1%
25-44	41,485	39	0.1%
45-64	12,985	6	0.0%
65+	1,041	2	0.2%
Unknown	47	1	2.1%
Exposure Category* **			
MSM	4,374	39	0.9%
MSM/IDU	98	4	4.1%
IDU	685	2	0.3%
High Risk Heterosexual Contact†	10115	14	0.1%
Other††	67,524	12	0.0%
Unknown	2	0	0.0%
Test Method¥			
Rapid	34,495	10	0.0%
Conventional	48,303	61	0.1%
Unknown	0	0	0.0%

*A testing event is a single test or series of tests conducted to determine an individual's HIV status. For example, a preliminary positive rapid test with a confirmatory conventional test is one testing event.
**Includes only tests where the individual did not self-report a previously positive HIV test and the individual did not have an existing HIV diagnosis in the HIV reporting system (enhanced HIV/AIDS Reporting System, eHARS).
***Exposure information is typically only collected for positive testing events, therefore the percent of positive tests among specific exposure category is likely biased and should be interpreted with extreme caution.
†Includes males and females who reported no injection drug use and reported high risk heterosexual behaviors with the opposite gender; corresponds with the CDC definition of high risk heterosexual contact.
††Includes any gender, including unknown, who reported risk factors that do not meet the criteria of the above exposure categories.
¥A rapid test method indicates a testing event where the initial test was conducted using rapid HIV testing technology but any subsequent testing within the event to confirm positive rapid results may have been done using conventional test technology. A conventional test method is a testing event where no rapid HIV testing technology was used in the event.
Source: HIV Testing Database

There were a total of 82,589 HIV testing events performed at all sites using DHSS funds to conduct HIV testing in 2019. Table 36 presents testing characteristics only among those tests where the results were available; there were 82,598 testing events that met these criteria. Overall, less than one percent of tests were newly positive for HIV disease. The positivity among transgender persons and those less than 13 years of age was (0%).

Figure 53. Number of HIV testing events and percent newly diagnosed positives at Missouri HIV testing sites, 2015-2019



From 2015 to 2019 as number of testing events decreased so did the percent of newly diagnosed positive individuals (Figure 53).

Table 37. Number of HIV tests and newly diagnosed positives at HIV testing sites, by test method*, by site type, Missouri, 2019**

	Healthcare Settings**			Non-Healthcare Settings**			Total		
	Total Tests	Newly Diagnosed Positives		Total Tests	Newly Diagnosed Positives		Total Tests	Newly Diagnosed Positives	
Test Method*	N	N	%	N	N	%	N	N	%
Rapid	27,577	3	0.0%	6,918	7	0.1%	34,495	10	0.0%
Conventional	47,080	58	0.1%	1,223	3	0.2%	48,303	61	0.1%
Total	74,657	61	0.1%	8,141	10	0.1%	82,798	71	0.1%

*A rapid test method indicates a testing event where the initial test was conducted using rapid HIV testing technology but any subsequent testing within the event to confirm positive rapid results may have been done using conventional test technology. A conventional test method is a testing event where no rapid HIV testing technology was used in the event.
**A healthcare setting is one that provides both medical diagnostic and treatment services (e.g., inpatient facilities, outpatient facilities, and emergency departments). A non-healthcare setting is one that does not provide both medical diagnostic and treatment services (e.g., HIV counseling and testing sites and community settings).
Source: HIV Testing Database

Healthcare and Non-healthcare settings had the same proportion of newly diagnosed positives (<1%) (Table 37). Sites conducting testing at non-healthcare settings focus on populations at high risk for infection. In 2019, there were a total of 82,798 HIV tests performed. Of all tests performed, 90% were performed at HIV testing sites in healthcare settings. Of all tests performed the majority (58%) were conventional rather than rapid.

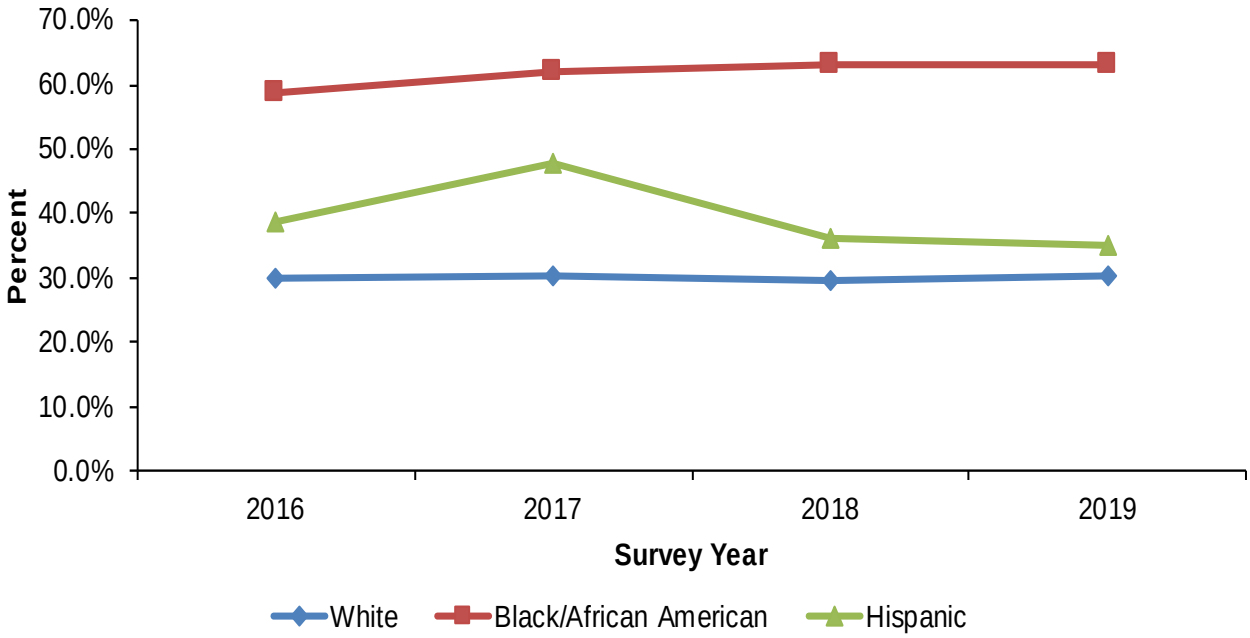
Table 38. Percent of adults 18 years of age and older ever tested for HIV, by sex, by race/ethnicity, by age, by income, by educational attainment, Missouri, 2019

		Crude Prevalence		
Demographic Groups	N	%	95% Lower CI	95% Upper CI
Total	6,637	34.6%	32.9%	36.2%
Sex				
Male	2,893	34.1%	31.7%	35.6%
Female	3,744	35.0%	32.7%	37.3%
Race/Ethnicity				
White	5,573	30.2%	28.5%	32.0%
Black/African American	610	63.0%	57.7%	68.2%
Hispanic	135	34.9%	24.8%	45.0%
Age				
18-24	402	32.4%	26.6%	38.2%
25-34	707	50.4%	45.8%	55.1%
35-44	663	50.8%	46.0%	55.6%
45-54	796	41.8%	37.4%	46.3%
55-64	1,281	30.5%	27.1%	33.8%
65+	2,715	11.7%	10.1%	13.4%
Income				
<$15,000	551	48.2%	42.0%	54.5%
$15-24,999	907	38.7%	34.1%	43.4%
$25-34,999	603	39.0%	33.3%	44.8%
$35-49,999	814	37.6%	32.7%	42.5%
$50-74,999	920	33.0%	28.6%	37.3%
$75,000+	1,584	34.2%	30.9%	37.4%
Highest Education				
Did not graduate High School	455	31.9%	25.8%	38.1%
Graduated High School	2,152	31.2%	28.4%	34.1%
Attended College or Technical School	1,852	39.3%	36.2%	42.5%
Graduated from College or Technical School	2,166	33.8%	31.0%	36.5%

Source: Missouri BRFSS, 2019

An estimated 34.6% of Missouri adults 18 years of age and older have ever been tested for HIV by 2019 (Table 38). There was not a significant difference in the percent of adults ever tested for HIV by sex. A significantly greater percent of blacks/African Americans reported ever being tested for HIV (63%) compared to whites (30.2%) and Hispanics (34.9%). Persons 25 to 34 and 35 to 44 years of age were significantly more likely to have ever been tested for HIV (50.4% and 50.8%, respectively) compared to other age groups. The percent of adults ever tested for HIV disease was greatest among person reporting an income of less than $15,000 (48.2%). The percent ever tested for HIV was similar for all of the other income levels. Those that attended College or Technical School were more likely than the other educational attainments to ever test for HIV (39.3%).

Figure 54. Percent of adults 18 years of age and older ever tested for HIV, Missouri, 2016-2019



Source: BRFSS

The percent of adults that were ever tested for HIV has remained generally steady between 2016 and 2019 for white and black/African Americans (Figure 54). The percent of adults that were ever tested for HIV increased from 2016 to 2017, then decreased from 2017 through 2019 for Hispanics. These data indicate that more work is needed to achieve the CDC recommendation that all adults 18 to 64 years of age receive routine HIV testing, especially among white adults.

Table 39. Years since last HIV test among adults 18 years of age and older who have ever been tested for HIV, by sex, by race/ethnicity, by age, by income, by educational attainment, Missouri, 2019

	21+ Years Ago			16-20 Years Ago			11-15 Years Ago			6-10 Years Ago			1-5 Years Ago			Less Than One Year Ago		
Demographic Groups	**N**	**%**	**C.I. (95%)**	**N**	**%**	**C.I. (95%)**	**N**	**%**	**C.I. (95%)**	**N**	**%**	**C.I. (95%)**	**N**	**%**	**C.I. (95%)**	**N**	**%**	**C.I. (95%)**
Total	2149	9.9	9.3-10.4	387	1.7	1.4-1.9	481	2.2	1.9-2.5	724	3.6	3.2-4.0	1378	7.2	6.7-7.7	15753	75.5	74.7-76.3
Sex																		
Male	954	9.4	8.6-10.2	132	1.2	0.9-1.5	183	1.9	1.5-2.2	287	3.2	2.8-3.7	580	6.1	5.5-6.7	7544	78.2	77.1-79.3
Female	1195	10.4	9.6-11.2	255	2.1	1.8-2.4	298	2.5	2.1-2.9	437	4.0	3.5-4.5	797	8.3	7.5-9.0	8204	72.7	71.6-73.9
Race/Ethnicity																		
White	1656	9.4	8.8-10.0	330	1.8	1.5-2.0	410	2.4	2.1-2.7	584	3.7	3.3-4.1	1003	6.5	6.0-7.0	12860	76.2	75.3-77.1
Black/Arican American	290	13.3	11.3-15.3	22	1.0	0.5-1.6	29	0.9	0.5-1.4	70	2.7	1.9-3.6	221	11.3	9.4-13.2	1563	70.8	68.1-73.4
Age																		
18-24	62	3.3	2.1-4.6	--	--	--	--	--	--	9	0.4	0.1-0.6	113	5.6	4.2-6.9	1864	90.7	89.0-92.5
25-34	243	8.1	6.9-9.3	6	0.2	0.0-0.4	58	1.7	1.1-2.2	182	5.8	4.7-6.9	365	11.0	9.6-12.4	2540	73.3	71.3-75.3
35-44	362	11.0	9.6-12.4	111	3.4	2.6-4.1	157	4.1	3.3-5.0	206	5.7	4.7-6.6	350	9.3	8.1-10.5	2319	66.5	64.5-68.6
45-54	670	14.6	13.2-15.9	147	2.9	2.3-3.5	158	3.4	2.7-4.1	163	3.3	2.6-3.9	302	6.1	5.2-7.0	3387	69.8	68.0-71.5
55-64	812	11.2	10.2-12.3	123	1.7	1.3-2.0	108	1.4	1.1-1.8	164	2.3	1.9-2.8	248	3.7	3.1-4.3	5643	79.7	78.4-80.9
Income																		
< $15,000	281	13.3	11.1-15.5	31	1.2	0.6-1.8	42	2.0	1.1-2.9	82	4.4	3.1-5.6	164	8.9	7.1-10.6	1419	70.2	67.4-73.1
$15-24,999	289	10.0	8.5-11.5	48	1.5	0.9-2.1	47	1.7	1-2.5	107	3.9	2.8-5	242	10.3	8.5-12.1	1910	72.6	70.2-75
$25-34,999	160	8.3	6.6-10	30	1.6	0.9-2.3	43	3.3	2.2-4.5	60	3.2	2.1-4.3	125	6.6	5-8.1	1316	77.0	74.4-79.6
$35-49,999	244	9.3	7.8-10.8	43	1.2	0.7-1.7	59	1.9	1.3-2.6	89	3.8	2.8-4.8	169	8.0	6.5-9.5	1912	75.8	73.5-78
$50-74,999	286	9.4	7.9-10.8	60	2.1	1.4-2.7	70	2.2	1.5-2.8	109	3.6	2.7-4.4	199	7.9	6.4-9.3	2287	75.0	72.8-77.1
$75,000+	571	9.6	8.6-10.7	148	2.4	1.9-2.8	183	2.9	2.3-3.5	233	4.5	3.8-5.3	357	6.6	5.7-7.5	4420	73.9	72.4-75.4
Highest Education																		
Did not graduate High School	169	11.4	9-13.9	19	1.0	0.4-1.7	23	1.7	0.8-2.6	52	2.7	1.8-3.7	102	7.7	5.7-9.8	1121	75.4	72.2-78.5
Graduated High School	579	9.2	8.2-10.1	77	1.2	0.8-1.5	89	1.5	1.1-1.9	165	2.8	2.2-3.4	355	5.9	5.1-6.7	4933	79.5	78.1-80.9
Attended College or Technical School	695	10.4	9.4-11.4	129	1.8	1.4-2.2	169	2.8	2.3-3.4	200	3.4	2.8-4.1	429	7.4	6.5-8.3	4504	74.1	72.6-75.6
Graduated from College or Technical School	703	9.4	8.5-10.3	161	2.3	1.9-2.7	198	2.4	2-2.8	307	5.2	4.4-5.9	491	8.3	7.3-9.2	5176	72.5	71.1-73.9

Source: Missouri BRFSS
-- Number of responses less than 50 and not sufficient to report.
All other race populations were not included in this table as a result of responses less than 50 and not sufficient to report.
Note: Time since tested is the time between the stated test month/year and the interview date. For example, you might interpret this as "Of those who stated they had an HIV test, 75.5% within 1 year of their BRFSS interview". This makes the table a little less intuitive, but we had to combine years because the numbers were so small. After looking at a single year of data, Dr. Li determined that a single year of data could not be released as it does not meet CDC thresholds.

Epi Profiles Summary: Glossary

Among Missouri adults 18 years of age and older who had ever been tested for HIV, the length of time between their last HIV test and the survey was calculated. The length of time since last HIV test does **not** represent the interval length between HIV testing episodes, but the length of time since an individual's last HIV test to a given point in time. Overall among individuals ever tested for HIV, the greatest percentage of individuals had their last HIV test less than a year ago (Table 39). Among those ever been tested less than one year ago, males had the greatest proportion at (78.2%). Whites tended to report a more recent HIV test (76.2% during the last year) compared to black/African American (70.8% with during the last year). A greater proportion of persons 18 to 24 years of age tested during the last year (90.7%) compared to the other age groups represented. A greater proportion of persons earning $25 to $34,999 tested during the last year (77%) compared to other income groups presented. A greater proportion of persons graduated high school tested during the last year (79.5%) compared to all other education levels presented.

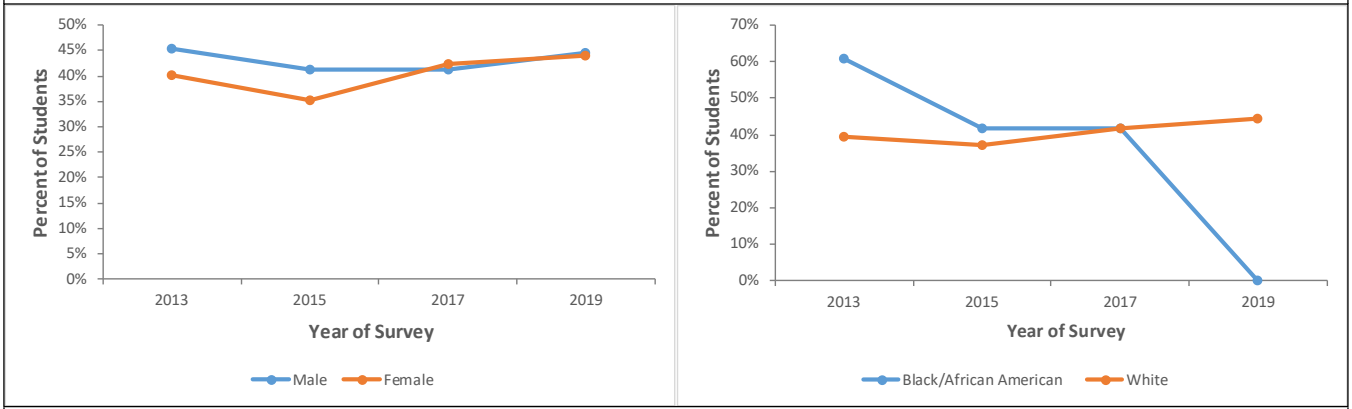
Table 41. Percent of adults who had four drinks or five or more drinks* on a single occasion when drinking in the past 30 days, by sex, by race/ethnicity, by age, by income, by educational attainment, Missouri, 2019

	Non-Binge Drinking*			Binge Drinking*		
Demographic Groups	N	%	C.I. (95%)	N	%	C.I. (95%)
Total	6097	83.2	81.9-84.5	855	16.8	15.5-18.1
Sex						
Male	2487	78.6	76.5-80.6	529.0	21.4	19.4-23.5
Female	3610	87.6	85.9-89.2	326.0	12.4	10.8-14.1
Race/Ethnicity						
White	5128	83.3	81.9-84.8	707.0	16.7	15.2-18.1
Black/African American	564	83.7	79.4-87.9	69.0	16.3	12.1-20.6
Age						
18-24	312	74.5	69.3-79.7	109.0	25.5	20.3-30.7
25-34	542	74.1	70.3-77.9	200.0	25.9	22.1-29.7
35-44	555	77.7	73.7-81.6	141.0	22.3	18.4-26.3
45-54	693	83.1	79.9-86.4	149.0	16.9	13.6-20.1
55-64	1169	86.0	83.5-88.6	155.0	14	11.4-16.5
65+	2740	95.8	94.7-96.8	99.0	4.2	3.2-5.3
Income						
< $15,000	514	80.2	74.9-85.5	69.0	19.8	14.5-25.1
$15-24,999	880	86.8	83.6-90	89.0	13.2	10-16.4
$25-34,999	544	86.1	82.2-89.9	65.0	13.9	10.1-17.8
$35-49,999	750	86.2	83-89.4	103.0	13.8	10.6-17
$50-74,999	814	80.8	77.2-84.5	136.0	19.2	15.5-22.8
$75,000+	1320	75.8	72.8-78.7	316.0	24.2	21.3-27.2
Highest Education						
Did not graduate High School	440	84.2	79.5-89	54.0	15.8	11-20.5
Graduated High School	2014	84.5	82.2-86.7	239.0	15.5	13.3-17.8
Attended College or Technical School	1695	82.8	80.3-85.2	250.0	17.2	14.8-19.7
Graduated from College or Technical School	1935	81.8	79.6-84.1	312.0	18.2	15.9-20.4

*Binge drinking is measured as five or more drinks on one or more occasions for males and as four or more drinks on one or more occasions for females in the past 30 days.
All other race populations were not included in this table as a result of responses less than 50 and not sufficient to report.
Source: BRFSS

Based on BRFSS survey data, an estimated 12.4% of Missouri adult females and 21.4% of Missouri adult males engaged in binge drinking of alcohol in 201 (Table 41). Binge drinking was measured as five or more drinks on one or more occasions for males and as four or more drinks on one or more occasions for females. There was not a significant difference in the percent of adults reporting drinking on one or more occasions four drinks by race/ethnicity. The percent of adults engaging in drinking five or more drinks on one or more occasions tended to decrease with increasing age; among adults 18 to 24 years of age 25.5% reported drinking five or more drinks on one or more occasions in the past 30 days, compared to 4.2% of adults 65 years of age and older. The percent of adults engaging in drinking four drinks on one or more occasions in the past 30 days did was greatest among individuals making an income of $75,000 and more.

Figure 55. Percent of students who ever had sexual intercourse, by sec, by race/ethnicity, Missouri, 2013-2019

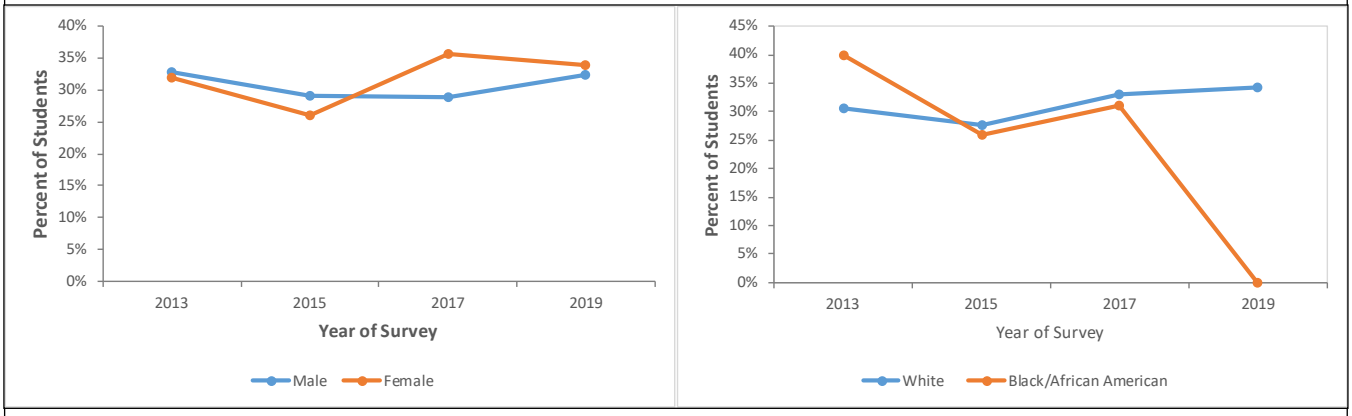


Source: YRBSS, Accessed via the CDC's Youth Online data portal,
† Percentage, confidence interval, cell size
N/A < 100 respondents for the subgroup
N=Denominator, total respondents included in calculation

Data presented based on results from the YRBSS survey represent the estimated prevalence of a certain behavior in the high school population. These point estimates are subject to some uncertainty since they were derived from a probability sample of public and private school students, and not from the entire population of high school students. As a result, although the point estimates presented in the figures may appear to be different, refer to the text for details as to whether the observed point estimates are in fact different based on the comparison of statistical confidence intervals, or whether the observed point estimates only appear to be different due to uncertainty associated with the estimates.

The percent of Missouri high school students who reported ever having sex in their lifetime remained generally steady between the survey periods of 2017 and 2019 (Figure 55). In 2013, 44% of all Missouri high school students reported ever having sex in their lifetime. There was not a significant difference in the percent of students who reported ever having sex between male and female students. A greater percentage of black students reported ever having sex compared to whites in all study periods between 2013 and 2017. However, in 2019 there was no documented information for black/African Americans.

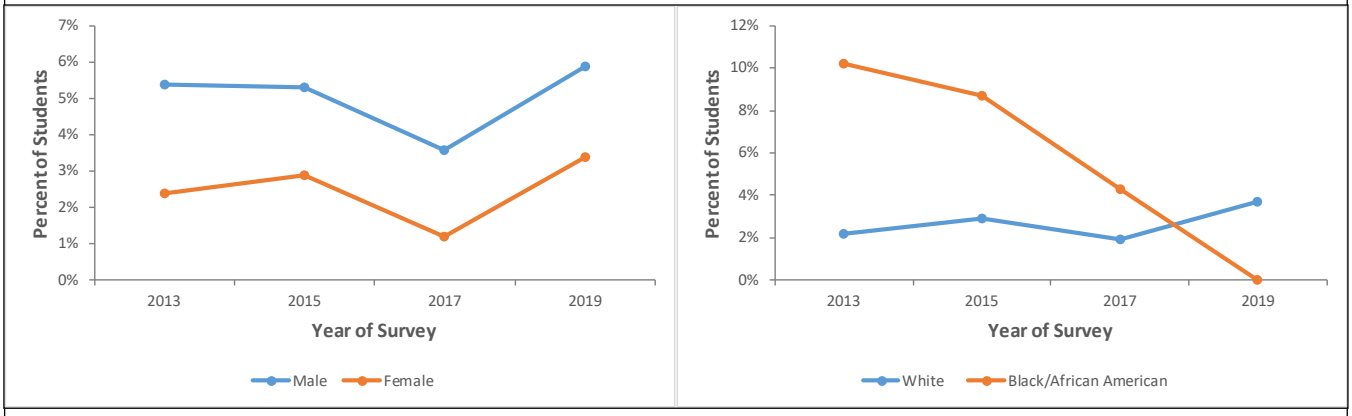
Figure 56. Percent of students who had sexual intercourse with at least one persons during the three months before the survey, by sex, by race/ethnicity, Missouri, 2013-2019



Source: YRBSS

The percent of Missouri high school students reporting sexual intercourse with at least one person within three months of the survey (i.e., recent sexual activity) remained generally steady with some fluctuations between the 2015 and 2019 survey periods among both males and females (Figure 56). There were not significant differences in the percent of students reporting recent sexual activity between males and females over the survey periods from 2013 to 2019. Although the percent of white students reporting recent sexual activity tended to be higher than black/African American students in 2015 through 2019.

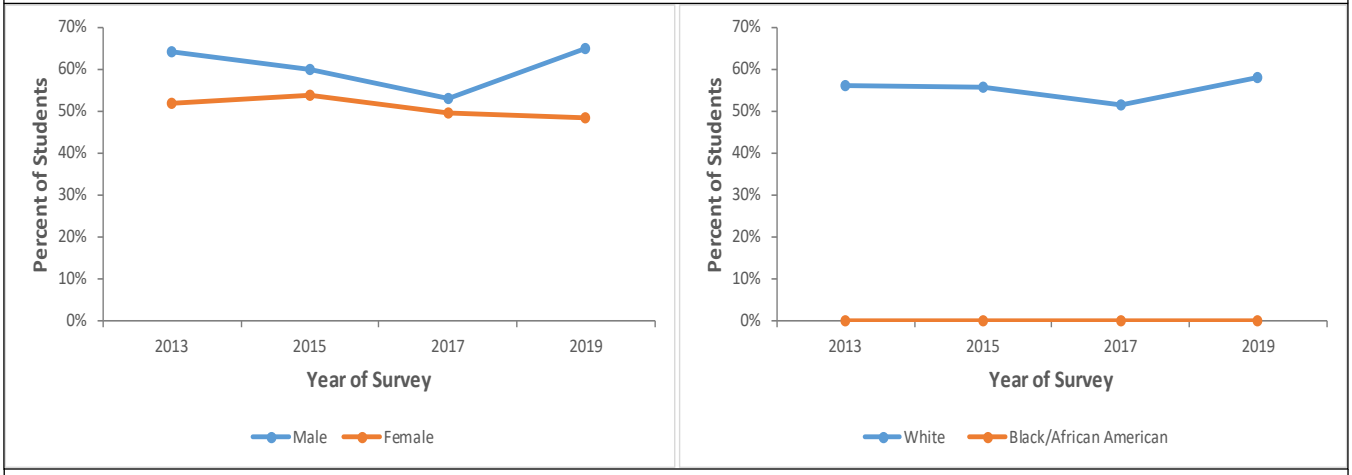
Figure 57. Percent of students who had sexual intercourse before age 13 years, by sex, by race/ethnicity, Missouri, 2013-2019



Source: YRBSS

The percent of Missouri high school students who had sexual intercourse before 13 years of age generally fluctuated over the surveys conducted between 2013 and 2019 (Figure 57). A greater percentage of males tended to reported first having sex before 13 years of age compared to all females. A greater percentage of blacks/African Americans reported first having sex before 13 years of age compared to whites in all survey years between 2013 and 2017 with exception to 2019. The decline in the percent of blacks reporting first having sex before 13 years of age over the survey years of 2013 to 2019 should be interpreted with caution, as the differences may solely be due to chance alone.

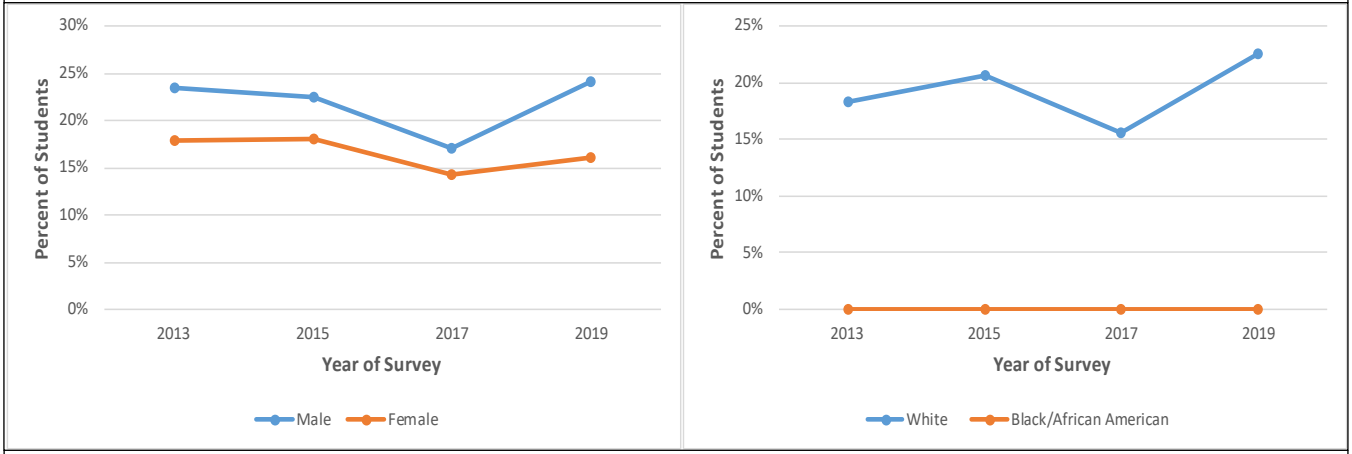
Figure 58. Percent of students who reported either they or their partner used a condom during last sexual intercourse among students who were currently sexually active, by sex, Missouri, 2013-2019



Source: YRBSS

Among Missouri high school students who were currently sexually active at the time of the survey, the percent that reported using a condom during their most recent sexual intercourse remained generally stable over the surveys from 2013 to 2019 (Figure 58). Although the estimated percent of sexually active students that used a condom tended to be higher for males compared to females, the differences were generally not significant in each of the survey years from 2003 to 2013. Due to the small sample size of black high school students who were currently sexually active, estimates of condom use among black/African American students were not produced for the surveys in 2013, 2015, 2017, and 2019. Overall in 2019, 43.6% of currently sexually active high school students used a condom during their last sexual intercourse.

Figure 59. Percent of students who drank alcohol or used drugs before last sexual intercourse among students who were currently sexually active, by sex, by race/ethnicity, Missouri, 2013-2019



Source: YRBSS

The percent of currently sexually active Missouri high school students who drank alcohol or used drugs before their last sexual intercourse remained generally stable over the survey periods from 2013 to 2015, then decreased from 2015 to 2017 and increased through 2019 (Figure 59). A greater percentage of sexually active males tended to report substance use prior to sexual intercourse compared to females. Due to the small sample size of black/African American high school students who were currently sexually active, estimates of alcohol and drug use before last sexual intercourse among black/African American students were not produced for the surveys in 2013, 2015, 2017 and 2013. Overall in 2019, 20.2% of currently sexually active Missouri high school students used alcohol or drugs prior to their last sexual intercourse.

Table 42. Percent of schools with policy and curriculum regarding HIV, STD, and pregnancy prevention, Missouri and 43 U.S. states, 2018 school year

Grade Levels	Topic taught in a required coures	% Missouri Schools	Median % among Schools in 43 States
6,7, or 8	How HIV and other STDs are transmitted	73.9	70.7
	The relationship between alcohol and other drug use and risk for HIV, other STDs, and pregnancy	76	70.5
	The health consequences of HIV, other STDs, and pregnancy	73.4	70.9
	The benefits of being sexually abstient	76.7	73.3
	How to prevent HIV, other STDs, and pregnancy	71.6	62.7
	How to access valid and reliable information, products, and services related to HIV, other STDs , and pregnancy	66.9	63.5
	The influences of media, family, and social and cultural norms on sexual behavior	69.3	70.8
	Communication and negotiation skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy	67.8	66.9
	Efficacy of condoms (how well they work and don't work)	54.6	51.4
	Importance of using condoms consistently and correctly	42.3	44
	How to obtain condmons	33	36.2
	How to correctly use a condom	24.5	27.6
9,10,11, or 12	How HIV and other STDs are transmitted	95.3	94.2
	The relationship between alcohol and tother drug use and risk for HIV, other STDs, and pregnancy	93	91.5
	The health consequences of HIV, other STDs, and pregnancy	92.6	93.2
	The benefits of being sexually abstient	94.7	93
	How to prevent HIV, other STDs, and pregnancy	89	87.4
	How to access valid and reliable information, products, and services related to HIV, other STDs , and pregnancy	91.6	91.2
	The influences of media, family, and social and cultural norms on sexual behavior	94.6	90.6
	Communication and negotiation skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy	91.8	89.6
	Efficacy of condoms (how well they work and don't work	73.1	82
	Importance of using condoms consistently and correctly	68	79.7
	How to obtain condmons	49	66.8
	How to correctly use a condom	37.4	62.1

Source: School Health Profiles

Among the topics assessed at the sixth, seventh, and eighth grades, teaching topics related to how to access valid and reliable information, products, and services related to HIV, other STDs, and pregnancy; the influences of media, family, and social and cultural norms on sexual behavior; communication and negotiation skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy; efficacy of condoms (how well they work and don't work); tended to be higher among Missouri schools compared to the survey median (Table 42). Of the other topics listed in the table regarding STD topics the percent of Missouri schools teaching those topics at the middle school level tended to be lower than the median percent of all 43 states surveyed.

Among the topics assessed at the ninth, tenth, eleventh, and twelfth grade levels, teaching topics related to health consequences of HIV, other STDs, and pregnancy; efficacy of condoms (how well they work and don't work); importance of using condoms consistently and correctly; how to obtain condoms; and how to correctly use a condom tended to be lower among Missouri schools compared to the survey median. Of the other topics listed in the table regarding STD topics the percent of Missouri schools teaching those topics at the high school level tended to be higher than the median percent of all 43 states surveyed.

Table 43. Substance abuse treatment admissions by primary substance of abuse, by sex, by age at admission, by race, and by ethnicity, Missouri, 2019

			Primary Substance														
		Total	Alcohol Only	Alcohol with secondary drug	Heroin	Other Opiates	Cocaine (Smoked)	Cocaine (other route)	Marijuana	Amphetamines	Other stimulants	Tranquilizers	Sedatives	Hallucinogens	PCP	Inhalants	Other/Unknown
Total	**No.**	**35447**	**5331**	**4740**	**5704**	**2227**	**853**	**323**	**6732**	**8701**	**46**	**286**	**21**	**35**	**161**	**28**	**259**
	%	100.0%	15.0%	13.4%	16.1%	6.3%	2.4%	0.9%	19.0%	24.5%	0.1%	0.8%	0.1%	0.1%	0.5%	0.1%	0.7%
Gender																	
Male	%	61.1%	73.1%	70.2%	57.6%	47.7%	55.9%	65.0%	68.4%	50.1%	50.0%	40.2%	38.1%	65.7%	70.8%	57.1%	54.4%
Female	%	38.9%	26.9%	29.8%	42.4%	52.3%	44.1%	35.0%	31.5%	49.9%	50.0%	59.8%	61.9%	34.3%	29.2%	42.9%	45.6%
Total	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Age at Admission																	
12 - 17 years	%	5.6%	0.6%	2.0%	0.3%	0.9%	0.2%	1.9%	24.3%	1.5%	6.5%	9.4%	9.5%	11.4%	0.0%	28.6%	4.2%
18 - 20 years	%	3.2%	0.8%	1.8%	3.0%	2.4%	0.1%	5.0%	5.9%	3.6%	4.3%	9.1%	4.8%	2.9%	0.0%	0.0%	5.8%
21 -25 years	%	12.2%	5.9%	8.9%	14.8%	15.5%	2.1%	10.2%	16.1%	13.2%	13.0%	12.6%	0.0%	22.9%	5.0%	7.1%	15.1%
26 - 30 years	%	18.5%	10.9%	14.9%	25.2%	26.1%	4.9%	18.0%	17.1%	21.3%	15.2%	16.8%	28.6%	14.3%	14.3%	17.9%	18.1%
31 - 35 years	%	17.0%	12.6%	16.2%	21.4%	21.1%	7.9%	10.8%	12.7%	20.7%	21.7%	12.9%	23.8%	20.0%	23.0%	7.1%	17.8%
36 - 40 years	%	13.9%	12.8%	15.4%	14.9%	14.0%	8.3%	12.1%	9.6%	16.6%	17.4%	14.7%	4.8%	11.4%	23.0%	17.9%	12.7%
41 - 45 years	%	8.8%	12.3%	10.7%	8.1%	6.2%	12.4%	11.1%	5.0%	9.4%	6.5%	6.3%	4.8%	8.6%	21.7%	7.1%	6.6%
46 - 50 years	%	7.4%	12.8%	10.5%	4.3%	4.9%	18.1%	10.5%	3.3%	7.0%	10.9%	5.9%	0.0%	5.7%	7.5%	7.1%	5.8%
51 - 55 years	%	6.7%	13.9%	6.5%	3.9%	4.1%	22.3%	11.5%	3.1%	4.1%	2.2%	4.5%	19.0%	0.0%	2.5%	3.6%	8.5%
56 - 60 years	%	4.4%	10.1%	6.5%	2.3%	3.4%	16.8%	7.1%	2.0%	2.0%	2.2%	4.9%	0.0%	0.0%	2.5%	3.6%	4.6%
61 - 65 years	%	1.7%	4.7%	2.0%	1.4%	1.1%	5.6%	1.2%	0.7%	0.5%	0.0%	2.4%	4.8%	2.9%	0.6%	0.0%	0.4%
66 year and over	%	0.7%	2.7%	0.5%	0.5%	0.4%	1.3%	0.6%	0.2%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.4%
Total	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Race																	
White	%	76.8%	81.9%	77.9%	65.3%	87.3%	17.7%	41.8%	68.3%	92.4%	87.0%	91.6%	81.0%	71.4%	5.6%	96.4%	77.2%
Black or African-American	%	17.9%	12.3%	16.8%	30.3%	9.1%	78.4%	52.6%	24.5%	3.0%	2.2%	6.6%	19.0%	20.0%	90.1%	3.6%	18.1%
American Indian or Alaska Native	%	20.0%	20.0%	30.0%	10.0%	0.0%	0.0%	0.0%	20.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asian or Native Hawaiian or other Pacific Islander	%	30.0%	60.0%	20.0%	20.0%	10.0%	10.0%	60.0%	30.0%	20.0%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	%	1.4%	2.5%	1.7%	1.0%	40.0%	70.0%	90.0%	1.9%	80.0%	6.5%	0.7%	0.0%	0.0%	0.0%	0.0%	80.0%
Unknown	%	3.4%	2.6%	3.2%	3.1%	3.1%	3.0%	4.0%	4.6%	3.5%	2.2%	1.0%	0.0%	6.6%	4.3%	0.0%	3.9%
Total	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ethnicity																	
Hispanic or Latino	%	2.3%	3.1%	2.6%	1.6%	1.2%	1.4%	2.5%	2.9%	1.9%	6.5%	2.1%	0.0%	0.0%	60.0%	0.0%	2.7%
Not Hispanic or Latino	%	97.7%	96.9%	97.4%	98.4%	98.8%	98.6%	97.5%	97.1%	98.1%	93.5%	97.9%	100.0%	100.0%	99.4%	100.0%	97.3%
Total	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: TEDS

In 2019, 35,447 admissions to substance abuse treatment centers in Missouri receiving public funding were recorded (Table 43). The most common primary substance of abuse among treatment center admissions was amphetamines (24.5%); marijuana use only was the second most common primary substance of abuse (19%). The majority of the total admissions were among males (61.1%). Females represented a greater proportion of admissions compared to males among persons admitted with a primary substance of abuse of tranquilizers, sedatives, or other opiates. Although persons 12-17 years of age comprised 5.6% of the total admissions, this age group comprised 28.6% of the admissions where inhalants were the primary substance of abuse. Although persons 31 to 35 years of age comprised 17% of the total admissions, these age groups represented 23.8% of the admissions where sedatives was the primary substance of abuse. Persons 46 to 50 years of age disproportionately represented treatment admissions related to smoked cocaine use. Whites, regardless of ethnicity, represented the majority of total treatment admissions (76.8%). However, blacks/African Americans, of any ethnicity, represented the majority of treatment admissions among persons admitted for smoked cocaine use and PCP use (78.4% and 90.1%, respectively).

Table 44. Select services provided by substance abuse treatment facilities, Missouri, 2018

	N	%
Total Facilities	**273**	**--**
Methadone therapy	14	5.1
HIV Testing	53	19.4
TB screening	75	27.5
Hepatitis B screening	54	19.8
Hepatitis C screening	61	22.3
STD testing	54	19.8
HIV/stage 3 (AIDS) education, counseling, or support	135	49.5
Early intervention for HIV	38	13.9
Program specifically for person living with HIV/stage 3 (AIDS)	31	11.4

Source: SAMSHA, National Survey of Substance Abuse Treatment Services

There were 273 substance abuse treatment facilities in Missouri that responded to the National Survey of Substance Abuse Treatment Services (N-SSATS) in 2018 (Table 44). Of responding facilities, only 19.8% offered STD testing; 19.4% offered HIV testing; 19.8% offered Hepatitis B screening; 22.3% offered Hepatitis C screening, and 27.5% offered TB screening. Although testing for HIV was not common among the facilities (19.4%), 49.5% of facilities offered HIV/stage 3 (AIDS) education, counseling or support. However, only 11.4% of facilities had a program designed specifically for persons living with HIV/stage 3 (AIDS). Given the strong body of evidence linking substance abuse with risky sexual behaviors, more widespread screening of STDs, hepatitis B and C, and HIV may be an important recommendation to substance abuse treatment facilities.

Table 45. Select drug and alcohol use, by age, Missouri, 2018-2019

	Age					
	12--17		18-25		26+	
Measure	**N**	**%**	**N**	**%**	**N**	**%**
ILLICIT DRUGS						
Past Month Illicit Drug Use[1,2]	35	7.52	143	22.72	365	9.08
Past Year Marijuana Use	53	11.35	204	32.52	506	12.58
Past Month Marijuana Use	27	5.88	130	20.73	302	7.52
Perceptions of Great Risk from Smoking Marijuana Once a Month	111	23.81	68	10.8	873	21.7
First Use of Marijuana[3,4]	22	5.05	32	8.93	11	0.57
Past Month Illicit Drug Use Other Than Marijuana[1,2]	11	2.46	34	5.49	105	2.62
Past Year Cocaine Use	2	0.38	26	4.12	40	1
Perceptions of Great Risk from Using Cocaine Once a Month	270	57.97	400	63.73	3,026	75.22
Past Year Heroin Use	0	0.003	3	0.43	11	0.28
Perceptions of Great Risk from Trying Heroin Once or Twice	308	66.04	504	80.41	3,572	88.81
Past Year Methamphetamine Use	1	0.27	7	1.19	37	0.93
Past Year Misuse of Pain Relievers[2]	13	2.74	37	5.95	139	3.46
ALCOHOL						
Past Month Alcohol Use	43	9.19	338	53.95	2,151	53.48
Past Month Binge Alcohol Use[5]	23	5.02	215	34.22	993	24.68
Perceptions of Great Risk from Having Five or More Drinks of an Alcoholic Beverage Once or Twice a Week	186	39.95	212	33.84	1,641	40.78
PAST YEAR SUBSTANCE USE DISORDER AND TREATMENT						
Illicit Drug Use Disorder[1,2,8]	15	3.23	46	7.33	85	2.11
Pain Reliever Use Disorder[2,8]	2	0.43	4	0.63	19	0.48
Alcohol Use Disorder[8]	8	1.8	59	9.46	199	4.95
Substance Use Disorder[1,2,8]	19	4.04	88	14.01	271	6.73
Needing But Not Receiving Treatment for Illicit Drug Use[1,2,9]	13	2.82	41	6.57	75	1.87
Needing But Not Receiving Treatment for Alcohol Use[9]	8	1.73	56	8.89	192	4.78
Needing But Not Receiving Treatment for Substance Use[1,2,9]	18	3.77	85	13.53	246	6.11
PAST YEAR MENTAL HEALTH ISSUES						
Any Mental Illness[4,10]	--	-	195	31.06	861	21.4
Serious Mental Illness[4,10]	--	-	57	9.09	201	5
Received Mental Health Services[11]	--	-	118	18.86	709	17.62
Major Depressive Episode[4,12]	72	15.54	97	15.5	310	7.71
Had Serious Thoughts of Suicide[13]	--	-	83	13.27	152	3.77
Made Any Suicide Plans[14]	--	-	25	4.05	49	1.22
Attempted Suicide[14]	--	-	13	2.02	21	0.53

*Percent of population within the age group with the measure of interest
[1] Includes marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics not used for medical reasons.
[2] Drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.
[3] Respondents classified as needing treatment for illicit drugs, but not receiving treatment for an illicit drug problem at a specialty facility (i.e., drug and alcohol rehabilitation facilities [inpatient or outpatient], hospitals [inpatient only], and mental health centers).
[4] Respondents classified as needing treatment for alcohol, but not receiving treatment for an alcohol problem at a specialty facility (i.e., drug and alcohol rehabilitation facilities [inpatient or outpatient], hospitals [inpatient only], and mental health centers).
[5] Defined as in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), which specifies a period of at least 2 weeks when a person experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of specified depression symptoms.
[6] Mental Illness is defined as having a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder, assessed by the Mental Health Surveillance Study (MHSS), which is based on the 4th edition of DSM-VI where mental illness is divided into three categories, including mild mental illness, moderate mental illness, and serious mental illness (SMI). Any mental illness (AMI) includes individuals in any of the three categories.
Source: SAMHSA, National Survey on Drug Use and Health

A greater proportion of the population 18 to 25 years of age reported various illicit drug use and alcohol use compared to persons 12 to 17 years of age and persons 26 years of age or older (Table 45). Past year dependence and abuse of illicit drugs and alcohol was also greater among persons 18 to 25 years of age compared to the other age groups. These findings suggest that prevention efforts regarding the relationship between substance use and risky sexual behaviors should target persons 18 to 25 years of age. The greatest numbers of new HIV diagnoses in recent years have been among persons in this age range.

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Key Highlights: What are the HIV service utilization patterns of individuals with HIV disease in Missouri?

Magnitude of the Problem

- Overall, 66.4% of Missourians living with HIV disease had their primary care medical needs met (i.e., evidence of a CD4 lymphocyte or viral load test or diagnosis with an opportunistic infection in 2019).
- Persons enrolled in HIV medical case management were significantly more likely to have their primary care medical needs met. Of the 13,378 persons living with HIV disease in Missouri, 5,380 (40.2%) were enrolled in medical case management at some point in 2019. Eighty-nine percent (89%) of individuals in case management had their primary care medical needs met in 2019.
- Persons living with HIV who were subcategorized as stage 3 (AIDS) cases in 2019 were more likely to have their medical needs met (71.5%) compared to persons subcategorized as HIV cases (61.4%). Similar patterns were seen regardless of whether the individuals were enrolled in HIV medical case management.
- Enrollment in HIV medical case management and current diagnostic status (i.e., HIV or stage 3 (AIDS)) were important factors influencing unmet need.

Where

- Overall, the proportion of individuals with a met need was greatest in the Northwest and Southeast HIV Care Regions (68.5% and 68.0%), and lowest in the Kansas City HIV Care Region (64.6%).
- Among those enrolled in HIV medical case management, the proportion with a met need ranged from 83.0% in the Northwest HIV Care Region to 93.5% in the Southwest HIV Care Regions.
- For those not enrolled in HIV medical case management, the proportion with a met need ranged from 47.8% in the Southwest HIV Care Region to 60.0% in the Northwest HIV Care Region.

Who

Sex

- Overall, females not in case management was more likely to have unmet need than males, after controlling for factors such as enrollment in HIV medical case management, and current diagnostic status (i.e., HIV or stage 3 (AIDS)).

Race/Ethnicity

- Unmet need tended to be greater among minority populations, although factors such as case management and diagnostic status influenced the relationship between race and unmet need.
- Among persons diagnosed in 2018-2019, the likelihood of entering care was lower for blacks/African Americans than other races.

Age

- There were differences in unmet need by current age among individuals enrolled in HIV medical case management. Unmet need was greatest among individuals 25-44 years of age (15.4%).
- There were differences in unmet need by current age among individuals not enrolled in HIV medical case management. Unmet need was greatest among individuals 45-64 years of age (49.5%).

Exposure Category

- Unmet need by exposure category varied depending upon enrollment in medical case management and current diagnosis status.

Table 46. Hospital charges and days of care, by viral infection type, by sex, by race*, and by pay source, Missouri, 2019

	Number of Discharges			Hospital Days of Care Total (Per Discharge)			Hospital Charges Total (Per Day Hospitalized)		
	HIV Infection	Hepatitis	Other Viral Infection	HIV Infection	Hepatitis	Other Viral Infection	HIV Infection	Hepatitis	Other Viral Infection
Total	**297**	**539**	**1,143**	**2,933**	**2,359**	**3,941**	**$ 23,592,712**	**$ 18,297,339**	**$ 27,461,429**
				(9.9)	(4.4)	(3.4)	($8044)	($7756)	($6968)
Sex									
Male	227	276	558	2,080	1,175	1,941	$ 16,768,051	$ 9,149,561	$ 14,199,408
				(9.2)	(4.3)	(3.5)	($8062)	($7787)	($7316)
Female	70	263	585	853	1,184	2,000	$ 6,824,661	$ 9,147,778	$ 13,262,021
				(12.2)	(4.5)	(3.4)	($8001)	($7726)	($6631)
Race*									
White	111	480	889	897	2,129	3,013	$ 7,619,615	$ 17,006,311	$ 21,003,115
				(8.1)	(4.4)	(3.4)	($8495)	($7988)	($6971)
Black/African American	169	36	162	1,772	149	616	$ 13,150,403	$ 802,588	$ 417,162
				(10.5)	(4.1)	(3.8)	($7421)	($5386)	($677)
Pay Source									
Commercial	86	122	366	757	593	1,179	$ 6,716,438	$ 4,601,105	$ 8,171,662
				(8.8)	(4.9)	(3.2)	($8872)	($7759)	($6931)
Medicaid	99	92	238	1,281	373	601	$ 9,392,862	$ 2,303,499	$ 3,953,137
				(12.9)	(4.1)	(2.5)	($7332)	($6176)	($6578)
Medicare	67	163	437	505	906	1,844	$ 4,424,766	$ 7,894,234	$ 12,551,210
				(7.5)	(5.6)	(4.2)	($8762)	($8713)	($6807)
Other / Unknown	1	3	4	32	9	22	$ 175,643	$ 218,869	$ 213,398
				(32)	(3)	(5.5)	($5489)	($24319)	($9700)
Other Gov	0	7	22	0	23	75	-	$ 214,428	$ 622,686
				(0)	(3.3)	(3.4)	-	($9323)	($8302)
Self / No Charge	44	152	76	358	455	220	$ 2,883,003	$ 3,065,204	$ 1,949,336
				(8.1)	(3)	(2.9)	($8053)	($6737)	($8861)

*Includes persons of Hispanic origin
Source: DHSS MICA

Data regarding hospital discharges, days of care, and hospital charges billed in 2019 among Missouri residents whose primary reason for admission was related to a viral infection are displayed in Table 46. Viral infections other than HIV and hepatitis comprised the majority of all hospitalizations (58%). Among persons whose primary reason for admission was related to HIV infection, 56% of the hospitalizations were paid for by Medicare or Medicaid, compared to 47% and 59% of the hospitalizations among persons whose admissions were primarily related to hepatitis and other viral infections, respectively. Although hospital admissions related to HIV infection represented only 15% of all discharges among persons with viral infections, 32% of all days of hospitalization were attributed to HIV infection related admissions. Data regarding the length of hospitalization per discharge should be interpreted with some caution as the data were not adjusted for outliers. Among persons admitted for HIV, hepatitis and other viral infection, the length of hospitalization per discharge tended to be slightly longer for females compared to males. The total hospital charges billed was greatest among patients admitted for other viral infection. Assessing the hospitalization charges per day hospitalized should be interpreted with some caution as the data were not adjusted for outliers. Overall, the billed hospitalization cost per day of hospitalization was greatest for persons admitted for HIV ($8,044). However, among females, the hospitalization cost per day tended to be slightly higher among males with HIV infection as the primary reason for admission ($8,062) compared to males whose admission were related to hepatitis ($7,787).

Table 47. The impact of HIV case management on access to primary medical care by HIV care region* and race/ethnicity among individuals living with HIV disease as of December 31, 2019

Region	Total HIV Population		Enrolled in Case Management		Not Enrolled in Case Management	
	Met Need** N (%)	Unmet Need*** N (%)	Met Need** N (%)	Unmet Need*** N (%)	Met Need** N (%)	Unmet Need*** N (%)
St. Louis Region						
White	1,593 (65.2%)	852 (34.8%)	632 (91.6%)	58 (8.4%)	961 (54.8%)	794 (45.2%)
Black/African American	2,492 (68.3%)	1,158 (31.7%)	1,564 (85.7%)	261 (14.3%)	928 (50.8%)	897 (49.2%)
Hispanic	132 (64.4%)	73 (35.6%)	71 (91.0%)	7 (9.0%)	61 (48.0%)	66 (52.0%)
Other/Unknown	110 (75.3%)	36 (24.7%)	68 (90.7%)	7 (9.3%)	42 (59.2%)	29 (40.8%)
Total	**4,327 (67.1%)**	**2,119 (32.9%)**	**2,335 (87.5%)**	**333 (12.5%)**	**1,992 (52.7%)**	**1,786 (47.3%)**
Kansas City Region						
White	1,240 (64.7%)	677 (35.3%)	540 (91.2%)	52 (8.8%)	700 (52.8%)	625 (47.2%)
Black/African American	1,028 (64.8%)	559 (35.2%)	645 (88.4%)	85 (11.6%)	383 (44.7%)	474 (55.3%)
Hispanic	189 (59.1%)	131 (40.9%)	97 (92.4%)	8 (7.6%)	92 (42.8%)	123 (57.2%)
Other/Unknown	103 (75.7%)	33 (24.3%)	45 (90.0%)	5 (10.0%)	58 (67.4%)	28 (32.6%)
Total	**2,560 (64.6%)**	**1,400 (35.4%)**	**1,327 (89.8%)**	**150 (10.2%)**	**1,233 (49.7%)**	**1,250 (50.3%)**
Northwest Region						
White	71 (69.6%)	31 (30.4%)	32 (80.0%)	8 (20.0%)	39 (62.9%)	23 (37.1%)
Black/African American	20 (66.7%)	10 (33.3%)	8 (88.9%)	1 (11.1%)	12 (57.1%)	9 (42.9%)
Hispanic	3 (42.9%)	4 (57.1%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	4 (100.0%)
Other/Unknown	4 (100.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	3 (100.0%)	0 (0.0%)
Total	**98 (68.5%)**	**45 (31.5%)**	**44 (83.0%)**	**9 (17.0%)**	**54 (60.0%)**	**36 (40.0%)**
Central Region						
White	345 (71.6%)	137 (28.4%)	177 (92.2%)	15 (7.8%)	168 (57.9%)	122 (42.1%)
Black/African American	119 (61.3%)	75 (38.7%)	65 (85.5%)	11 (14.5%)	54 (45.8%)	64 (54.2%)
Hispanic	23 (56.1%)	18 (43.9%)	12 (80.0%)	3 (20.0%)	11 (42.3%)	15 (57.7%)
Other/Unknown	12 (66.7%)	6 (33.3%)	3 (75.0%)	1 (25.0%)	9 (64.3%)	5 (35.7%)
Total	**499 (67.9%)**	**236 (32.1%)**	**257 (89.5%)**	**30 (10.5%)**	**242 (54.0%)**	**206 (46.0%)**
Southwest Region						
White	573 (71.1%)	233 (28.9%)	336 (93.3%)	24 (6.7%)	237 (53.1%)	209 (46.9%)
Black/African American	65 (50.8%)	63 (49.2%)	40 (93.0%)	3 (7.0%)	25 (29.4%)	60 (70.6%)
Hispanic	33 (54.1%)	28 (45.9%)	21 (95.5%)	1 (4.5%)	12 (30.8%)	27 (69.2%)
Other/Unknown	26 (65.0%)	14 (35.0%)	17 (94.4%)	1 (5.6%)	9 (40.9%)	13 (59.1%)
Total	**697 (67.3%)**	**338 (32.7%)**	**414 (93.5%)**	**29 (6.5%)**	**283 (47.8%)**	**309 (52.2%)**
Southeast Region						
White	160 (69.6%)	70 (30.4%)	98 (88.3%)	13 (11.7%)	62 (52.1%)	57 (47.9%)
Black/African American	73 (66.4%)	37 (33.6%)	41 (85.4%)	7 (14.6%)	32 (51.6%)	30 (48.4%)
Hispanic	7 (63.6%)	4 (36.4%)	4 (100.0%)	0 (0.0%)	3 (42.9%)	4 (57.1%)
Other/Unknown	7 (58.3%)	5 (41.7%)	5 (71.4%)	2 (28.6%)	2 (40.0%)	3 (60.0%)
Total	**247 (68.0%)**	**116 (32.0%)**	**148 (87.1%)**	**22 (12.9%)**	**99 (51.3%)**	**94 (48.7%)**
Statewide (MO)****						
White	4,134 (66.5%)	2,080 (33.5%)	1,892 (91.4%)	179 (8.6%)	2,242 (54.1%)	1,901 (45.9%)
Black/African American	4,085 (66.6%)	2,050 (33.4%)	2,517 (86.2%)	402 (13.8%)	1,568 (48.8%)	1,648 (51.2%)
Hispanic	394 (59.5%)	268 (40.5%)	210 (91.3%)	20 (8.7%)	184 (42.6%)	248 (57.4%)
Other/Unknown	271 (73.8%)	96 (26.2%)	143 (89.4%)	17 (10.6%)	128 (61.8%)	79 (38.2%)
Total	**8,884 (66.4%)**	**4,494 (33.6%)**	**4,762 (88.5%)**	**618 (11.5%)**	**4,122 (51.5%)**	**3,876 (48.5%)**

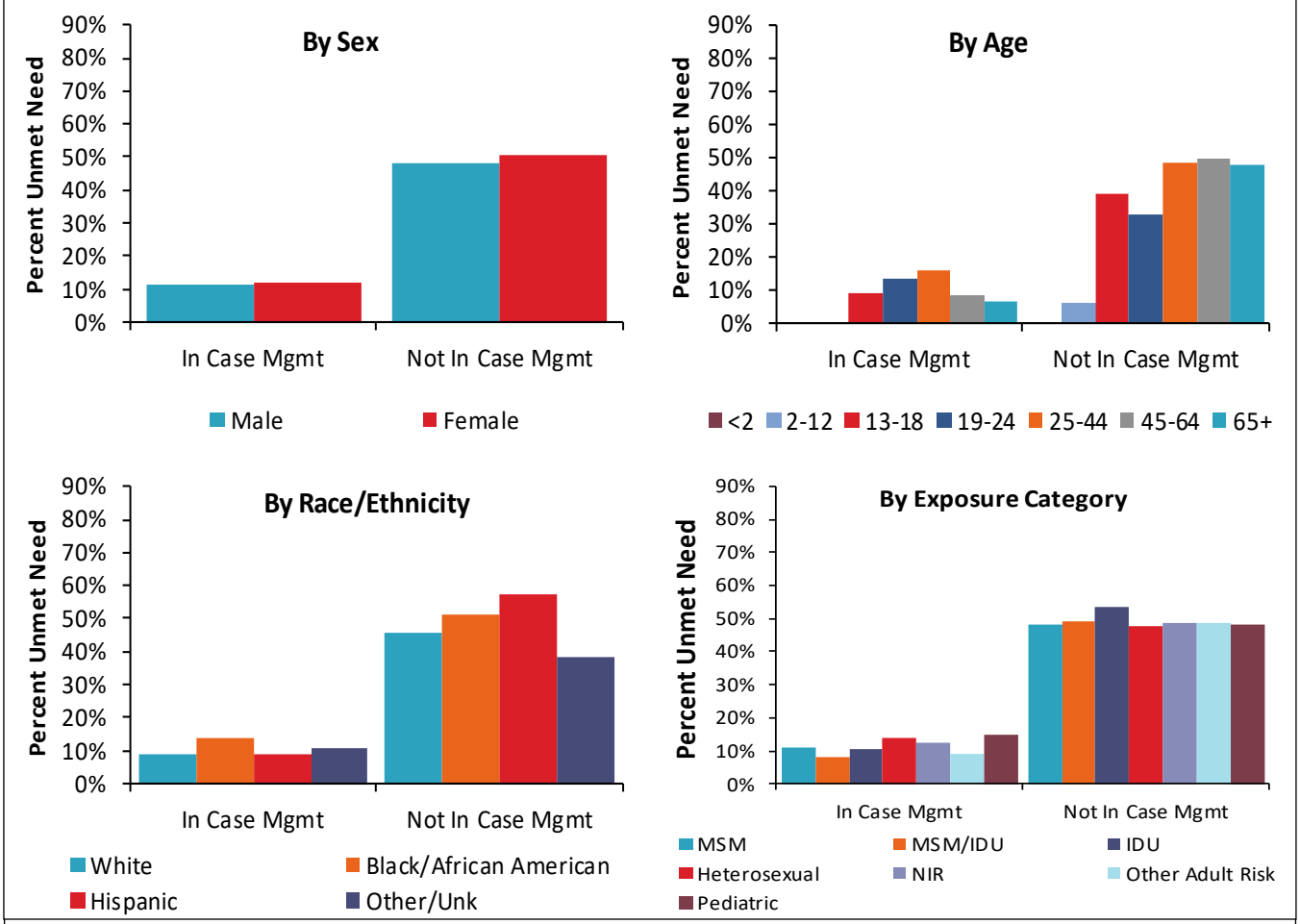
*Includes all individuals still living whose most recent diagnosis (i.e., HIV or stage 3 (AIDS)) occurred in the region. Does not reflect the number of individuals currently living in the region.
**Evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.
*** No evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.
****Statewide figures include living individuals whose most recent diagnosis occurred in a correctional facility or is unknown.
Note: Percentages may not total to 100% due to rounding.

Of the 13,378 persons living with HIV at the end of 2019, 66.4% had evidence of met primary care medical needs (i.e., met need) in 2019 (Table 47). The primary care medical need was considered to be met if an individual had a CD4 lymphocyte or viral load laboratory test; or diagnosis of an opportunistic infection in 2019 that was reported to MDHSS. There were differences in the proportion of individuals with met needs depending on whether the individual was enrolled in HIV medical case management in 2019. A significantly greater proportion of those enrolled in HIV medical case management had a met need (88.5%) in 2019 compared to those not enrolled (51.5%). Several factors may contribute to the differences observed. First, case management assists clients to locate and access medical care by referral. Second, case management clients receive health education and counseling to understand the nature of routine medical care. Third, case management assists clients in identifying appropriate payer sources to fund routine medical care. Finally, it is possible that those not enrolled in case management were less likely to be currently living in Missouri, and therefore indicators of primary medical care would not be reported to MDHSS. The data were presented based on individuals whose most recent diagnosis occurred in Missouri, not those known to be currently living in Missouri, as accurate data on current residence are difficult to collect.

There were differences in the proportion of individuals with a met need by HIV care region. It is important to note that data presented by HIV care region represent those who currently have a met need that were most recently diagnosed with HIV or stage 3 (AIDS) in the selected HIV care region. It does not necessarily reflect where individuals are currently living and receiving care. Overall, the proportion of individuals with a met need was greatest in the Northwest and Southeast HIV Care Regions (68.5% and 68%), and lowest in the Southwest HIV Care Region (67.3%). The pattern was slightly different between the regions depending on whether individuals were enrolled in HIV medical case management. For those not enrolled in HIV medical case management, the proportion with a met need ranged from 40% in the Northwest HIV Care Region to 52.2% in the Southwest HIV Care Region.

There were differences in the proportion of persons with a met need by race/ethnicity. Overall statewide, met need was lower among Hispanics (59.5%) compared to all other race/ethnicity groups presented. Within each region and depending on whether the individuals were enrolled in HIV medical case management, the patterns by race/ethnicity varied slightly. Among individuals not enrolled in case management, the proportion of black/ African Americans with a met need was lower in all HIV care regions compared to whites, and the proportion of Hispanics with a met need was lower in all HIV care regions compared to whites.

Figure 60. Percent of individuals living with HIV having an unmet* primary medical care need in 2019 by enrollment in HIV case management and selected characteristics



*No evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.

Figure 60 examines the proportion of cases with unmet need depending on whether the individuals were enrolled in HIV medical case management for selected characteristics. There were no differences in the proportion of individuals with unmet needs between the sexes, regardless of whether enrolled in HIV medical case management. There were differences in the proportion of individuals with unmet needs by current age among those not enrolled in case management. Unmet need was greatest among individuals 45-64 years of age (49.5%). Those 2-12 years old had the lowest proportions of unmet need. There were differences in the proportion of individuals with unmet needs by current age among those enrolled in case management. Unmet need was greatest among 25-44 year olds (15.4%). There were differences in the proportion of individuals with unmet needs by race/ethnicity among those not enrolled in case management. Among those not enrolled in case management, unmet need was greatest among Hispanics (57.4%) and lowest among other/unk (38.1%). Among those enrolled in case management by race/ethnicity black/African American's had the greatest unmet need (13%). There were differences in the proportion of individuals with unmet need by exposure category regardless of whether enrolled in HIV medical case management. The denominator in the proportion of individuals enrolled in case management with an exposure category of other adult risk was small and unstable, causing the percent of unmet need for other adult risk to be interpreted with extreme caution. Unmet need was greatest among individuals not enrolled in case management for those who indicated IDU as an exposure category (53.3%). Compared to individuals enrolled in case management, unmet need was greatest among those who had heterosexual contact as their exposure category (13.8%).

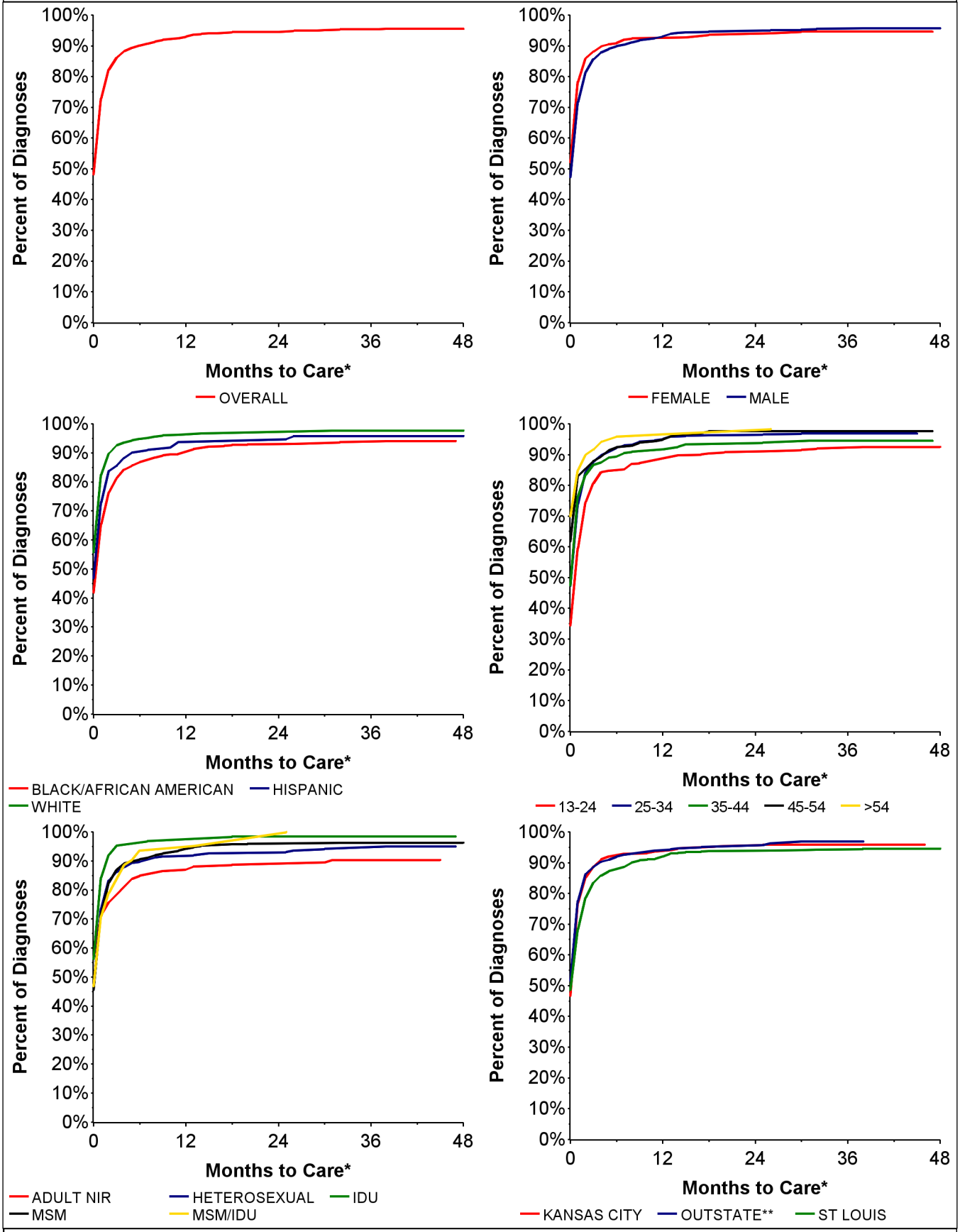
Table 48 examines the proportion of cases reported with unmet need based on current status (i.e., HIV or stage 3 (AIDS)) and selected characteristics. Overall, the proportion of those with an unmet need was greater for those classified as HIV cases compared to stage 3 (AIDS) cases. The same trend was observed regardless of whether individuals were enrolled in HIV medical case management.

Table 48. Percent of individuals living with HIV having an unmet* primary medical care need in 2019 by current status, enrollment in HIV case management, and selected characteristics**

	Total Population		Enrolled in Case Management		Not Enrolled in Case Management	
	HIV Cases with Unmet Need* % (N)	Stage 3 (AIDS) Cases with Unmet Need* % (N)	HIV Cases with Unmet Need* % (N)	Stage 3 (AIDS) Cases with Unmet Need* % (N)	HIV Cases with Unmet Need* % (N)	Stage 3 (AIDS) Cases with Unmet Need* % (N)
Sex						
Male	38.8% (2,142)	29.1% (1,588)	13.3% (258)	9.5% (217)	52.5% (1,884)	43.0% (1,371)
Female	37.7% (470)	25.9% (294)	14.6% (81)	10.2% (62)	56.2% (389)	43.9% (232)
Race/Ethnicity						
White	37.6% (1,181)	29.3% (899)	10.8% (106)	6.7% (73)	49.8% (1,075)	41.7% (826)
Black/African American	39.4% (1,221)	27.3% (829)	15.8% (212)	12.0% (190)	57.4% (1,009)	43.9% (639)
Hispanic	42.4% (146)	38.4% (122)	10.7% (11)	7.1% (9)	56.0% (135)	59.2% (113)
Other/Unknown	33.7% (64)	18.1% (32)	13.9% (10)	8.0% (7)	45.8% (54)	28.1% (25)
Current Age‡						
<2	-- (0)	-- (0)	-- (0)	-- (0)	-- (0)	-- (0)
2-12	4.8% (1)	0.0% (0)	0.0% (0)	-- (0)	6.3% (1)	0.0% (0)
13-18	34.6% (18)	20.0% (1)	11.1% (1)	0.0% (0)	39.5% (17)	33.3% (1)
19-24	24.4% (84)	15.9% (10)	12.0% (19)	17.1% (7)	34.9% (65)	13.6% (3)
25-44	35.6% (1,137)	28.4% (482)	16.3% (233)	14.2% (121)	51.4% (904)	42.7% (361)
45-64	42.6% (1,164)	28.6% (1,180)	10.2% (81)	7.7% (137)	56.1% (1,083)	44.2% (1,043)
65+	47.8% (208)	29.7% (209)	5.4% (5)	6.6% (14)	59.4% (203)	39.8% (195)
Exposure Category						
MSM	37.8% (1,610)	29.6% (1,207)	13.2% (202)	9.2% (156)	51.7% (1,408)	44.3% (1,051)
MSM/IDU	31.9% (89)	27.1% (102)	9.0% (13)	7.4% (13)	56.3% (76)	44.3% (89)
IDU	44.9% (128)	26.3% (105)	14.9% (14)	8.8% (19)	59.7% (114)	46.7% (86)
Heterosexual Contact	36.3% (381)	27.3% (267)	15.3% (70)	12.4% (60)	52.6% (311)	41.7% (207)
No Indicated Risk (NIR)	44.6% (362)	25.5% (180)	14.9% (37)	9.8% (28)	57.7% (325)	36.0% (152)
Other Adult Risk	33.3% (5)	37.1% (13)	0.0% (0)	11.1% (1)	38.5% (5)	46.2% (12)
Pediatric	46.3% (37)	21.6% (8)	17.6% (3)	11.8% (2)	54.0% (34)	30.0% (6)
Total	**38.6%(2,612)**	**28.5%(1,882)**	**13.6%(339)**	**9.7%(279)**	**53.1%(2,273)**	**43.1%(1,603)**

*No evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.
**HIV case vs. stage 3 (AIDS) case.
‡Based on age as of December 31, 2019.
Note: Rows with the percent marked '- -' indicates that there were no living persons in the selected category.

Figure 61. Length of time in months to enter care* after initial HIV diagnosis among persons diagnosed between 2016 and 2018, by selected characteristics, Missouri



*Defined as first reported CD4 lymphocyte or viral load lab result reported to MDHSS.
**Outstate includes the Central, Northwest, Southeast, and Southwest HIV Care Regions.
Source: eHARS

Figure 61 examines the length of time until first entry into care among persons newly diagnosed with HIV disease between 2018 and 2019. Entry into care was measured as the receipt of a CD4 lymphocyte or viral load laboratory result by MDHSS. Overall, 90% of persons recently diagnosed had entered care by one year after diagnosis. Within four years of initial diagnosis, 94% had entered care. There was not a significant difference in the proportion of new diagnoses entering care between males and females. There were differences in the proportion of new diagnoses entering care by race/ethnicity. Over time, a significantly lower proportion of blacks/African Americans entered care compared to whites and Hispanics. At one year after diagnosis, only 86% of blacks/African Americans had entered care, compared to 94% of Hispanics and 96% of whites. There were differences in the proportion of new diagnoses entering care by age at diagnosis. Of persons diagnosed between the ages of 13 and 24, only 85% entered care within one year of diagnosis, compared to 95% of persons 55 years of age or older at the time of diagnosis. There were not significant differences over time in likelihood to enter care by exposure category. Differences in entry to care following diagnosis varied by HIV care region of diagnosis. Persons diagnosed in the St. Louis HIV Care Region were significantly less likely to enter into care over time. At one year after diagnosis, 92% of persons diagnosed in the Kansas City HIV Care Region, 94% of persons diagnosed in Outstate, and 87% of persons diagnosed in the St. Louis HIV Care Region entered care. Entry into care remained lower among those recently diagnosed in the St. Louis HIV Care Region over time. These data can be used to target populations for outreach efforts to assist with entry into HIV medical care among persons recently diagnosed.

Glossary

Case rate
The frequency of a defined event in a specified population for a given time period, usually expressed as the number of cases per 100,000 people in a population. Case rate is calculated by dividing the number of cases in the population of interest by the total number of people in the population. Then multiplying by 100,000 to get the rate per 100,000.

Case definition for stage 3 (AIDS)
All HIV-infected people six years and older who have fewer than 200 $CD4^+$ T cells per cubic millimeter of blood, all HIV-infected people between the ages of one to five who have fewer than 500 $CD4^+$ T cells per cubic millimeter of blood, and HIV-infected individuals under the age of one who have less than 750 $CD4^+$ T cells per cubic millimeter of blood (healthy adults usually have 800 to 1,200, with 1,000 the average). In addition, the definition includes 26 clinical conditions that affect people with advanced HIV disease. Most of these conditions are opportunistic infections that generally do not affect healthy people. For additional information, visit http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm?s_cid=rr6303a1_e.

$CD4^+$ T cells
This is a white blood cell with CD4 molecules on its surface. These cells play an important role in the human immune system. Sometimes referred to as "helper" cells, they orchestrate the body's response to certain microorganisms such as viruses. HIV virus particles attack and utilize these cells to multiply.

Cumulative number of cases
The number of all cases diagnosed with a particular condition including living and deceased individuals in a specified area.

Date of diagnosis
The date a laboratory makes a diagnosis based on the chemical analysis of a specimen.

Epidemic
The "occurrence in a community or region of cases of an illness, specified health-related behavior, or other health-related events clearly in excess of normal expectancy."

Highly active antiretroviral therapy (HAART)
This is a treatment protocol using a combination of antiretroviral drugs to suppress the HIV virus. These drugs consist of four basic classes depending on their method of suppression: reverse transcriptase (RT) inhibitors, protease inhibitors (PI), fusion inhibitors, entry inhibitors, and integrase inhibitors.

HIV case
It refer to an individual who has been infected with the human immunodeficiency virus (HIV) that is in the early stages of the disease process and has not met the case definition for stage 3 (AIDS).

HIV disease case
This includes all individuals who have been infected with the human immunodeficiency virus (HIV). Cases can be sub-classified into either HIV cases or stage 3 (AIDS) cases.

Incidence
The number of new cases of a specified condition diagnosed within a given time. The calendar year is used in the *Profiles* to calculate incidence.

Incidence rate
The number of new cases diagnosed in a specified population for a given time period, usually expressed as the number of cases per 100,000 people in a population. Incidence rate is calculated by dividing the number of new cases in the population of interest by the total number of people in that population. Then multiplying by 100,000 to get the rate per 100,000.

Modes of transmission
Also referred to as **exposure categories**, this term refers to the way in which an individual acquired the HIV virus. The most common modes of transmission are: men who have sex with men (MSM), heterosexual contact, injection drug users (IDUs), men who have sex with men and practice injection drug use (MSM/IDUs), hemophilia/coagulation disorder, and blood transfusion or tissue recipients.

Point prevalence
This refers to the number of persons living with a specified condition at a given point in time. December 31st, is used for the *Profiles* to calculate the number of persons living with HIV or stage 3 (AIDS) for each year.

Prevalence rate
The number of individuals living with the specified condition in a specified population for a given time period, usually expressed as the number of cases per 100,000 people in a population. A prevalence rate is calculated by dividing the number of living cases in the population of interest by the total number of people in that population. Then multiplying by 100,000 to get the rate per 100,000.

Sexually Transmitted Infections
Sexually transmitted infections (STIs), commonly called **sexually transmitted diseases (STDs)** and once called venereal diseases, are among the most common infectious diseases in the United States today. They are a group of infections that are predominantly transmitted through sexual activity.

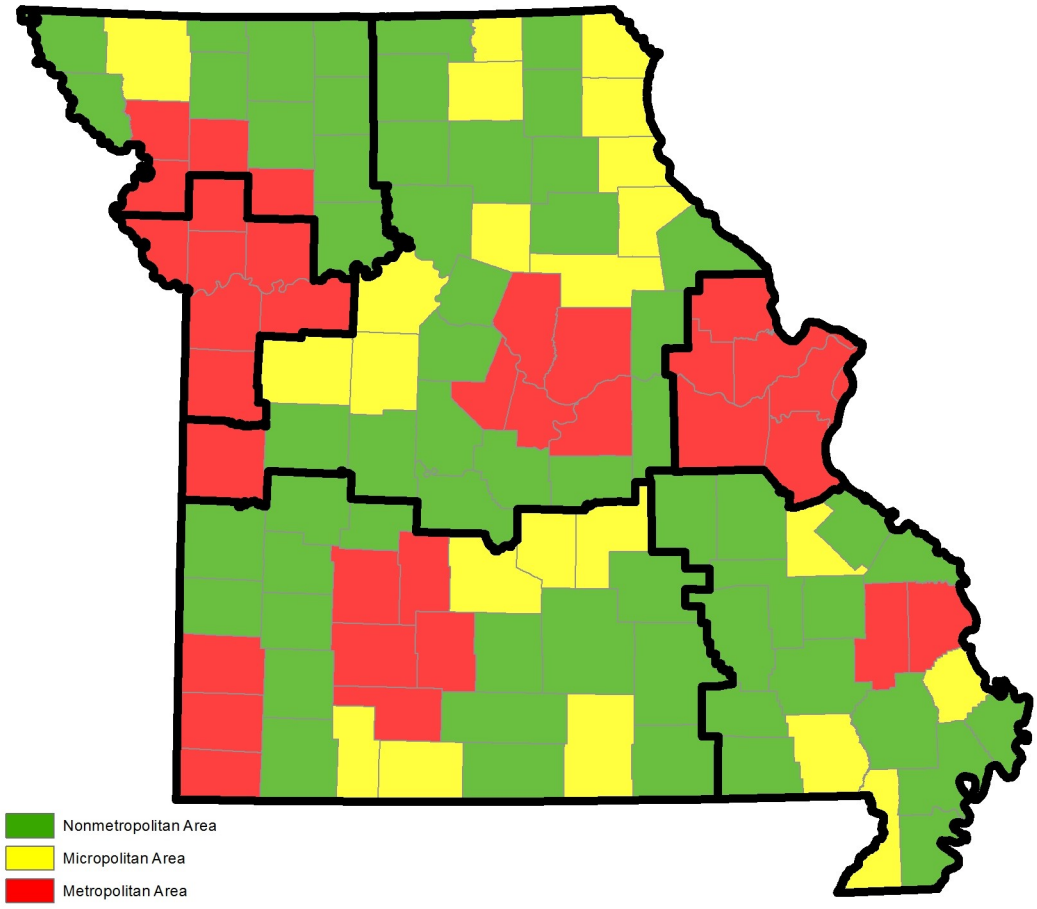
Sexually Transmitted Infections and the Organisms Responsible

Disease	Organism(s)
Acquired Immunodeficiency Syndrome (AIDS)	Human immunodeficiency virus
Chlamydial infections	Chlamydia trachomatis
Gonorrhea	Neisseria gonorrhoeae
Syphilis	Treponema pallidum

Stage 3 (AIDS) case
This refers to an individual who has been infected with human immunodeficiency virus (HIV) that is in the later stages of the disease process and has met the case definition for acquired immunodeficiency syndrome (AIDS).

Appendix

Metropolitan, Micropolitan, and Nonmetropolitan Areas by County



Source: Missouri Census Data Center, MABLE/Geocorr124 2015 Metropolitan Divisions.