Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri-2018

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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 *Integrated Guidelines for Developing Epidemiologic Profiles* in 2004. 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 five 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 infection 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 (Acquired Immunodeficiency Syndrome) 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 two key questions:

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 disease in Missouri.

Question 5: What are the number and characteristics of the individuals who know they are HIV positive but who are not in care?
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 2018 *Profiles* provides a selective update of the questions in the *Profiles,* including the epidemiology of HIV, STDs, hepatitis, and unmet primary medical care needs among individuals living with HIV through 2018. Please refer to the data sources used in the *Profiles* on page ii and the technical notes on page iii 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 planning regions to assist with regional-level planning efforts.

Missouri Planning Cycle:

The statewide Missouri Comprehensive Prevention Planning Group (CPPG) operates on a five-year planning cycle. The current comprehensive prevention plan was developed in 2015 and runs from 2016 to 2020. 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 five 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* represent a selective update to all questions in the *Profiles*. For data from the most recent comprehensive *Profiles*, please refer to the *2014 Epidemiologic Profiles*, which can be accessed at http://health.mo.gov/data/hivstdaids/pdf/MOHIVSTD2014.pdf.

Data Sources

1. *Population Data*

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

DHSS 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 2017 population estimates are used instead. Beginning with the 2008 population estimates, new race/ethnicity categories are being used, which include a separate estimate for persons identifying as 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. Additionally, in 2016, Missouri's communicable disease reporting rule was updated to include the reporting of the following: CD4 lymphocyte percent; all test results used for diagnosis or monitoring of HIV infection and all test results (positive and negative) in the test series that indicate HIV infection; pregnancy among newly identified or pre-existing HIV positive women; and negative, undetectable, or indeterminate HIV lab results occurring within 180 days prior to the test result used for diagnosis of HIV infection. 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 DHSS, 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 include data on those whose most recent diagnosis (HIV or stage 3 (AIDS)) occurred in Missouri. The data collected in the surveillance system are 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 thus may not reflect characteristics associated with recent infection. The surveillance system only includes data on individuals who 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*

Hepatitis Surveillance Data, DHSS, WebSurv

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

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 DHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. DHSS 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, DHSS 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 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 DHSS, race and ethnicity information is often not available. Incomplete race and ethnicity reporting limits the interpretation of trends for these characteristics.

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 DHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. DHSS Bureau of Communicable Disease Control and Prevention (BCDCP) 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
DHSS 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 standardized sets 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 so that data can 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 HIV 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 status of disease progression as of December 31, 2018.

Date of Diagnosis: Represents the date an individual was first diagnosed with HIV, 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 DHSS. 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 DHSS through February 28, 2019.

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 occurred in 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 with the current residence.

Vital Status: Cases are presumed to be alive unless DHSS 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 2 of the 2018 *Profiles*.

Epi Profiles Summary: Introduction

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 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.

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, 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 on 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.

Cumulative Interstate Duplicate Review (CIDR): In addition to RIDR, CDC initiated the Cumulative Interstate Duplicate Review (CIDR) in 2018. CIDR compares patient records throughout the nation in order to identify duplicate cases and reviews cases from the very beginning. 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 on 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. This will be a five-year project, from 2018 to 2022.

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 with a numerator of 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 *Profiles*. For clarification of any terms used in the *Profiles*, please feel free to contact DHSS BRDI for additional information.

Race/Ethnicity: Race and ethnicity information has been collected under two different classifications in the HIV/stage 3 (AIDS) reporting system. Since many cases were reported under the old classification, the use of the race and ethnicity categories from the old classification 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.

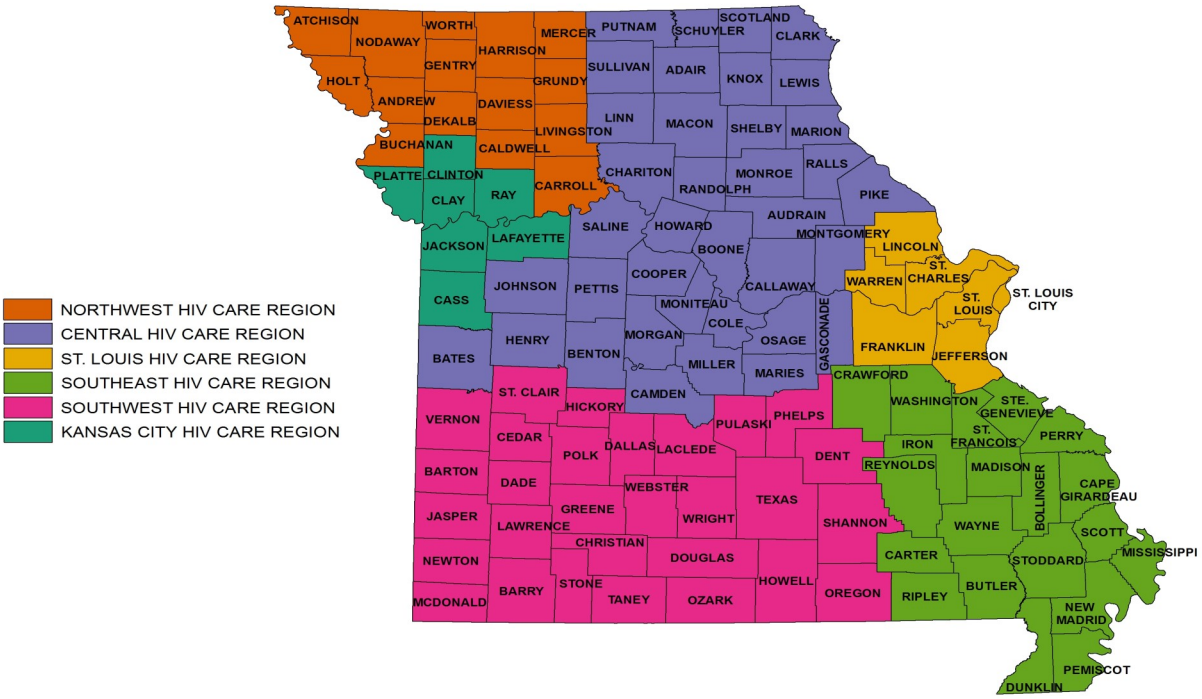
Anonymous Testing: The data do not include cases of HIV infection reported or diagnosed in persons anonymously tested at the state's four anonymous testing sites in St. Louis City, Kansas City, Springfield, and Columbia.

Pregnancy and HIV: Pregnant women with HIV have the potential to transmit the virus to the baby before, during birth, and after birth. Women of childbearing age should be tested for HIV, especially once they become pregnant. If a pregnant woman is newly or previously diagnosed with HIV, it is important she follow the antiretroviral therapy (ART) plan as prescribed by her doctor. The ART can cross the placenta and provide the unborn baby protection from the virus.

Geographic Area vs. HIV Care Region: When data are presented by geographic area, 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 below for the counties included when data are presented by HIV care region.

HIV Care Region vs. HIV Region: Prior to the 2014 *Profiles,* the state was divided into geographic regions known as HIV Regions using the HIV prevention planning regions. Based on guidance from the DHSS, Bureau of HIV, STD, and Hepatitis (BHSH), the data in the *Profiles* from 2014 and later are 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. HIV care regions use the HIV medical case management (care) regions (see map below). 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 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. Regional data in the 2014 *Profiles* and later 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 *Profiles* for 2014 and later.

MISSOURI HIV CARE REGIONS



Revised Hepatitis C Surveillance Case Definition: The hepatitis C surveillance case definition was revised in 2016 largely due to the evolution and improvement of diagnostic tests and because of the realization that infected individuals can clear a hepatitis C infection and potentially become re-infected in their lifetime. The improvements that have been made in laboratory reporting, namely electronic laboratory reporting, have made it easier for some states to receive laboratory results, including those that meet the revised case definition for hepatitis C. However, WebSurv is not currently capable of storing certain hepatitis C conditions that meet the revised case definition, namely conditions considered to be probable based on a positive hepatitis C antibody test. Until WebSurv can be amended to account for these changes, hepatitis C cases will likely be underreported in Missouri. For more information about the revised case definition, visit https://wwwn.cdc.gov/nndss/conditions/hepatitis-c-chronic/case-definition/2016/.

Abbreviations

AIDS=Acquired Immunodeficiency Syndrome

ART=Antiretroviral Therapy

BCDCP=Bureau of Communicable Disease Control and Prevention

BHCADD=Bureau of Health Care Analysis and Data Dissemination

BHSH=Bureau of HIV, STD, and Hepatitis

BRDI=Bureau of Reportable Disease Informatics

CDC=Centers for Disease Control and Prevention

CIDR=Cumulative Interstate Duplicate Report

CPPG=Comprehensive Prevention Planning Group

DHSS=Missouri Department of Health and Senior Services

eHARS=enhanced HIV/AIDS Reporting System

Hetero=Heterosexual sexual contact

HIV=Human Immunodeficiency Virus

HRH=High-risk heterosexual contact

HRSA=Health Resources and Services Administration

IDEP=Interstate Duplicate Evaluation Project

IDU=Injection drug use/Injection drug user

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

P&S=Primary and secondary

RIDR=Routine Interstate Duplicate Review

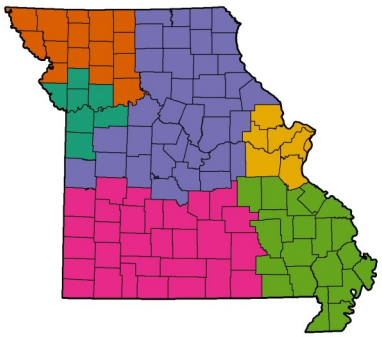
SCOUT=Securing Client Outcomes Using Technology

STD=Sexually Transmitted Disease

STD*MIS=Sexually Transmitted Disease Management Information System

TB=Tuberculosis

WebSurv=Missouri Health Surveillance Information 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	1,024,879	595,924	112,517	441,122	581,829	245,965	**3,002,236**
Female	1,093,673	626,806	111,154	442,798	589,004	247,861	**3,111,296**
Total	**2,118,552**	**1,222,730**	**223,671**	**883,920**	**1,170,833**	**493,826**	6,113,532
Race/Ethnicity							
White	1,532,708	877,191	199,330	773,711	1,038,122	438,165	**4,859,227**
Black/African American	410,395	190,248	8,436	45,247	24,198	31,328	**709,852**
Hispanic	63,376	93,511	8,734	28,894	53,409	11,230	**259,154**
Asian/Pacific Islander	67,105	25,782	2,517	15,104	17,712	3,228	**131,448**
American Indian/Alaskan Native	4,230	5,233	882	3,453	10,610	2,035	**26,443**
Two or More Races/Other Race	40,738	30,765	3,772	17,511	26,782	7,840	**127,408**
Total	**2,118,552**	**1,222,730**	**223,671**	**883,920**	**1,170,833**	**493,826**	6,113,532
Race/Ethnicity-Males							
White Male	750,657	429,230	98,538	383,437	512,286	216,667	**2,390,815**
Black/African American Male	186,348	89,407	5,566	24,944	14,455	16,891	**337,611**
Hispanic Male	32,941	47,474	4,763	15,067	28,118	5,956	**134,319**
Asian/Pacific Islander Male	32,524	12,323	1,316	7,071	8,041	1,515	**62,790**
American Indian/Alaskan Native Male	2,120	2,601	452	1,832	5,358	1,010	**13,373**
Two or More Races/Other Race Male	20,289	14,889	1,882	8,771	13,571	3,926	**63,328**
Total	**1,024,879**	**595,924**	**112,517**	**441,122**	**581,829**	**245,965**	3,002,236
Race/Ethnicity-Females							
White Female	782,051	447,961	100,792	390,274	525,836	221,498	**2,468,412**
Black/African American Female	224,047	100,841	2,870	20,303	9,743	14,437	**372,241**
Hispanic Female	30,435	46,037	3,971	13,827	25,291	5,274	**124,835**
Asian/Pacific Islander Female	34,581	13,459	1,201	8,033	9,671	1,713	**68,658**
American Indian/Alaskan Native Female	2,110	2,632	430	1,621	5,252	1,025	**13,070**
Two or More Races/Other Race Female	20,449	15,876	1,890	8,740	13,211	3,914	**64,080**
Total	**1,093,673**	**626,806**	**111,154**	**442,798**	**589,004**	**247,861**	3,111,296
Age							
<2	50,575	31,071	5,301	20,525	29,127	11,454	**148,053**
2-12	286,232	179,203	29,768	116,896	162,463	68,277	**842,839**
13-18	160,661	95,873	16,888	66,470	91,098	37,942	**468,932**
19-24	154,222	85,058	20,085	92,166	105,927	36,641	**494,099**
25-44	556,388	334,421	54,530	211,102	281,134	118,862	**1,556,437**
45-64	572,576	316,386	57,311	224,054	293,816	131,996	**1,596,139**
65+	337,898	180,718	39,788	152,707	207,268	88,654	**1,007,033**
Total	**2,118,552**	**1,222,730**	**223,671**	**883,920**	**1,170,833**	**493,826**	6,113,532

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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 2018, a total of 21,734 persons have been diagnosed with HIV disease in Missouri and reported to DHSS. Of these individuals, 14,257 (65.6%) were subcategorized as stage 3 (AIDS) cases, and the remaining 7,477 (34.4%) were subcategorized as HIV cases. Of the cumulative number of persons diagnosed with HIV disease, 13,109 (60.3%) were presumed to be living at the end of 2018.
- The number of new diagnoses has fluctuated slightly between 2009 and 2018, with no sustained upward or downward trend in new HIV diagnoses over this time period. 2018 saw the lowest numbers of new HIV diagnoses with 456 since 2009. However, the 2018 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 10,101 persons in 2009 to 13,109 persons in 2018. 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 2018 was highest in St. Louis City (25.3 per 100,000). The second highest rate was in Kansas City (17.6 per 100,000). The rate of persons newly diagnosed who were classified as stage 3 (AIDS) cases at the end of 2018 was highest in Kansas City (4.9 per 100,000).

Who

Sex

- Males represented the majority of persons newly diagnosed (82.0%) and living with (82.4%) HIV disease. The rate of new diagnoses was 4.6 times higher and the rate of persons living with HIV disease was 4.8 times higher among males compared to females.

Race/Ethnicity

- HIV disease continues to disproportionately impact people of color. The rate of newly diagnosed HIV disease cases among blacks/African Americans was 8.3 times as high among whites, and 3.3 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 12.0% of Missouri's female population, they accounted for 58.5% of new HIV disease diagnoses among females. It should be emphasized that race/ethnicity in itself is not a risk factor for HIV infection; however, among many racial/ethnic 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 2009, the largest number of persons living with HIV disease was among those 45 to 49 years of age, whereas in 2018 persons 55 to 59 years old represented the largest number of living cases.
- Although the age of persons living with the disease has increased over time, the age of new diagnoses has remained relatively consistent. In both 2009 and 2018, the largest numbers of persons newly diagnosed with HIV disease were between 19 and 24 years of 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. In 2018, there were three persons less than 13 years of age diagnosed with HIV disease.

Figure 1. HIV disease cases (living and deceased), by current HIV vs. stage 3 (AIDS) status, Missouri, 1982-2018

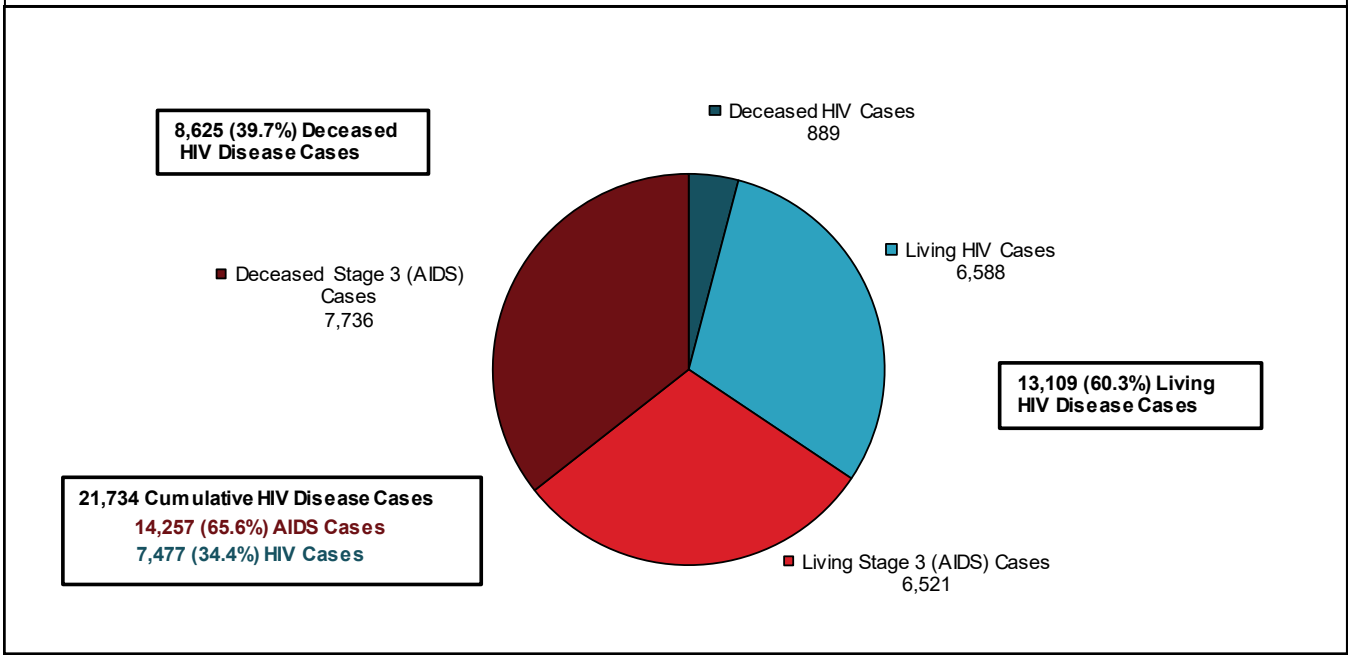
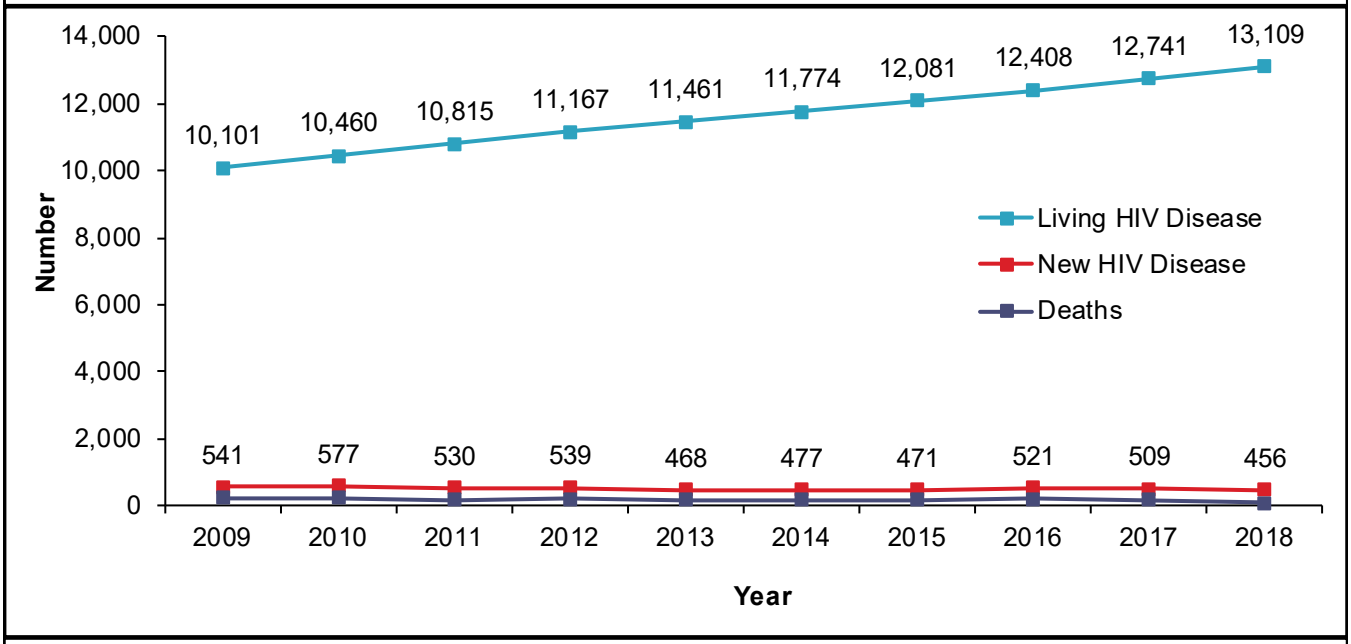


Figure 2. Living and new HIV disease cases and deaths, by year*, Missouri, 2009-2018

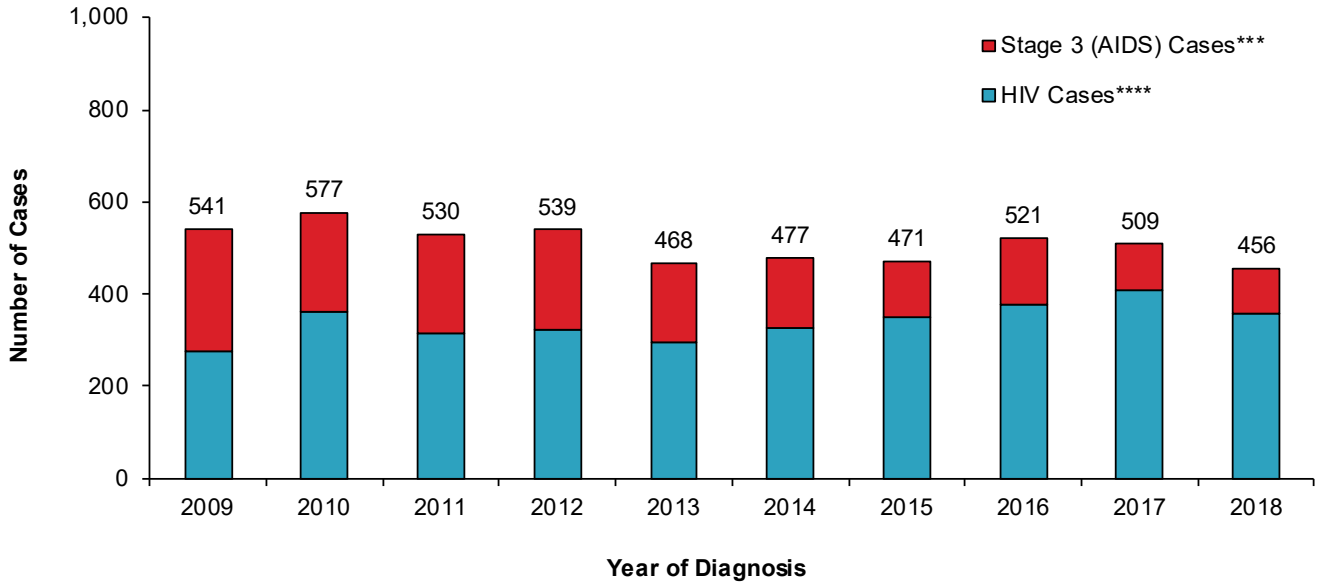


*Living HIV disease cases represent the number of individuals living with HIV disease at the end of the year. New HIV disease cases represent the number of individuals newly diagnosed in the year. HIV disease deaths represent the number of individuals who died in the year.

From 1982 to 2018, a total of 21,734 HIV disease cases have been diagnosed in Missouri and reported to DHSS (Figure 1). Of the 21,734 cumulative cases reported, 60.3% were still presumed to be living with HIV disease at the end of 2018. Among the 13,109 persons living with HIV disease, 6,588 were classified as HIV cases at the end of 2018 and 6,521 were classified as stage 3 (AIDS) cases.

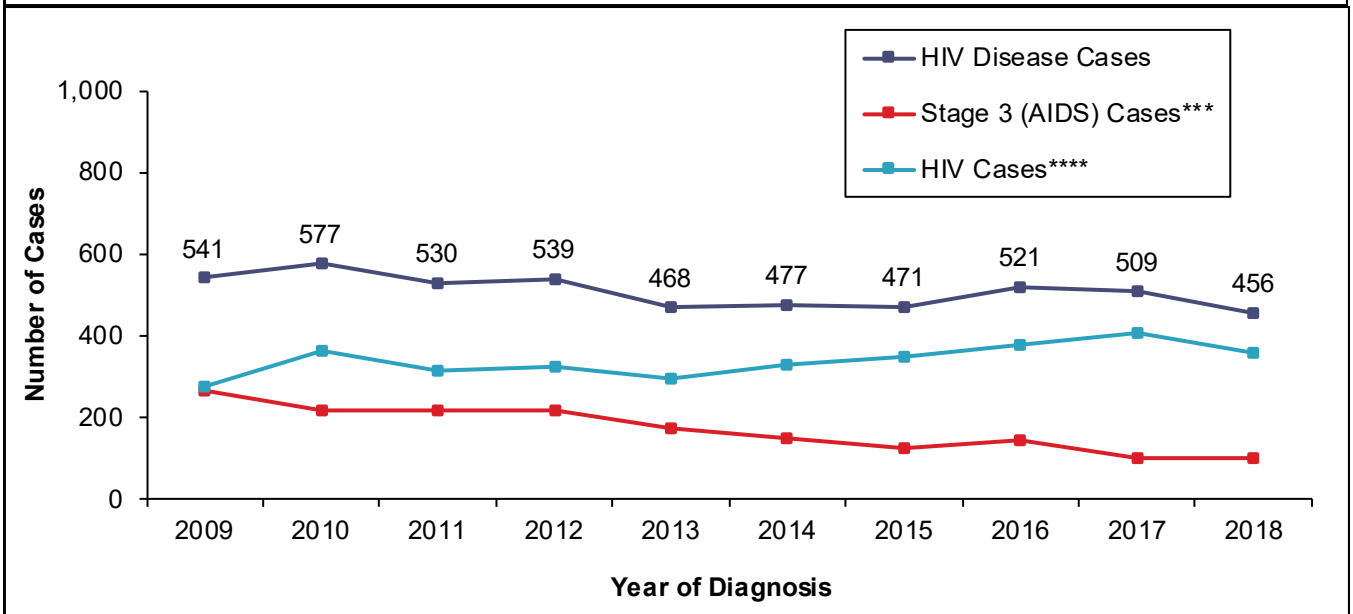
At the end of 2018, there were 13,109 persons living with HIV disease whose most recent diagnosis occurred in Missouri (Figure 2). The number of people living with HIV disease increased each year. There were 456 new HIV disease diagnoses in 2018. The number of new diagnoses each year from 2009 to 2018 has fluctuated, but there has been a decrease in each of the last two years. The number of deaths among persons with HIV disease each year has remained generally steady. The lower number of deaths in 2018 (88) was likely due to delays in death reporting.

Figure 3. HIV disease cases, by current status* and year of diagnosis, Missouri, 2009-2018**



*HIV case vs. stage 3 (AIDS) case.
**Cases are indicated by year of initial diagnosis reported to DHSS (i.e., the year in which the first diagnosis of the person, whether as an HIV case or a stage 3 (AIDS) case, was documented by DHSS).
***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, 2018.

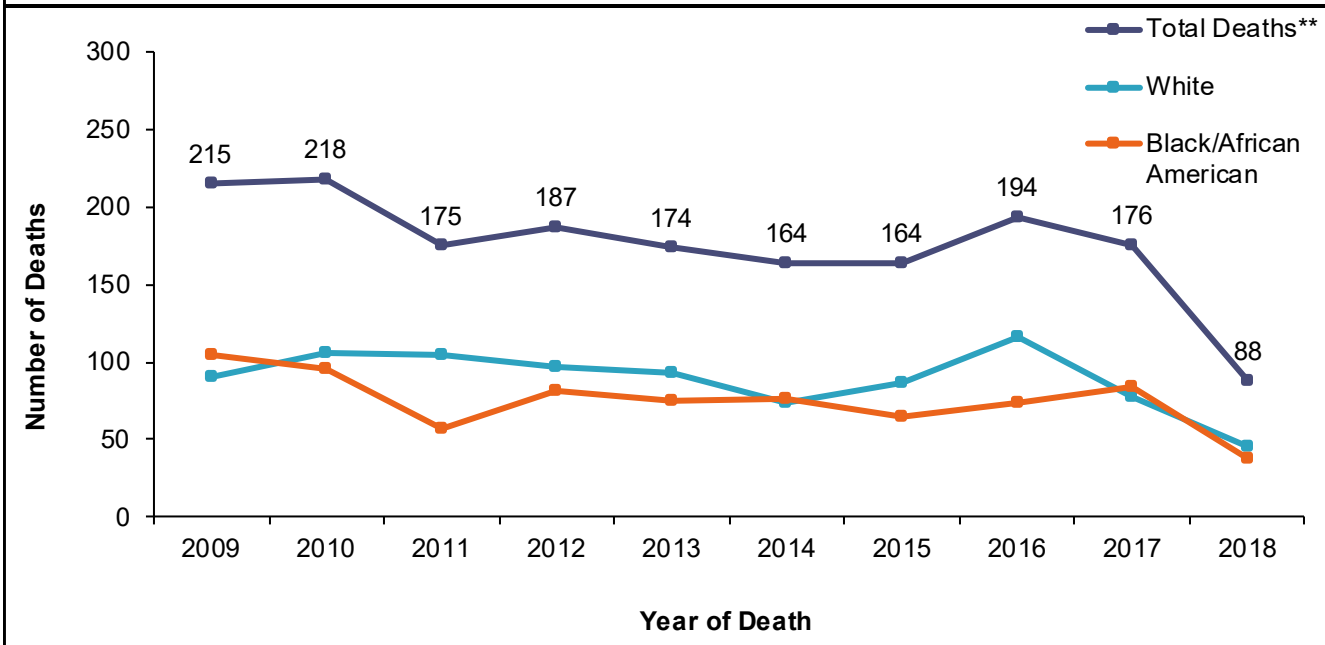
Figure 4. Reported HIV disease cases, by current status* and year of diagnosis, Missouri, 2009-2018**



*HIV case vs. stage 3 (AIDS) case.
**Cases are indicated by year of initial diagnosis reported to DHSS (i.e., the year in which the first diagnosis of the person, whether as an HIV case or a stage 3 (AIDS) case, was documented by DHSS).
***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, 2018

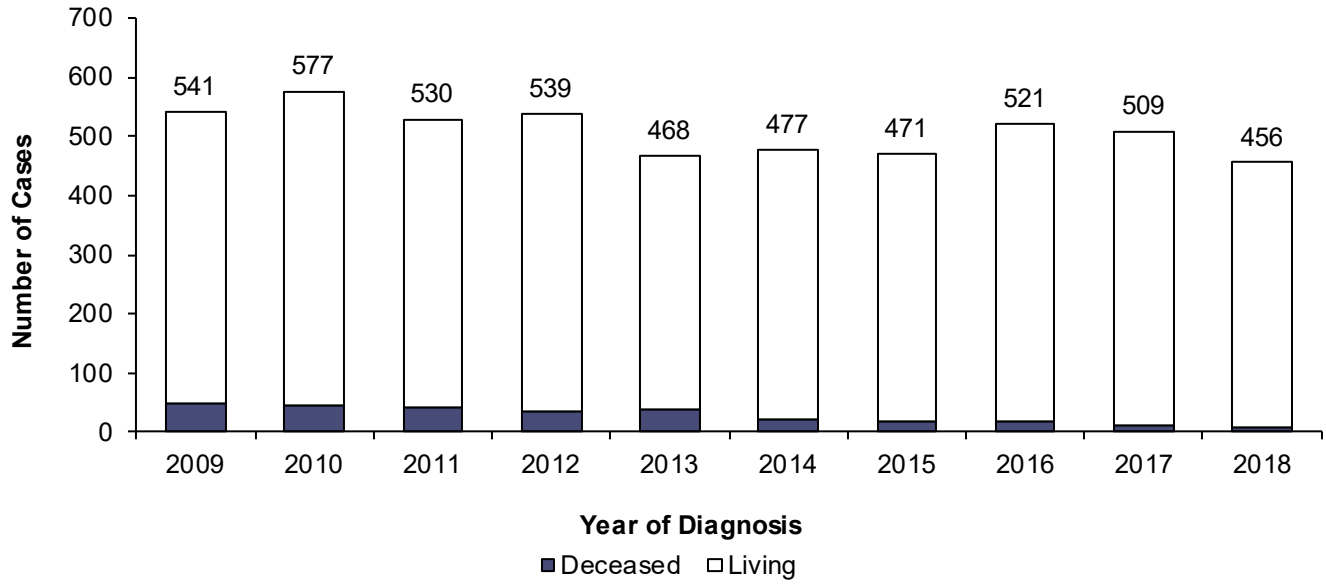
Between 2009 and 2018, the number of new HIV disease diagnoses has ranged from 541 cases in 2009 to 456 cases in 2018 (Figures 3 and 4). The number of new diagnoses had an overall downward trend between 2010 and 2015, with an upward spike in 2016. The last two years from 2016 to 2018, the number of new diagnoses are again trending downward. 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 2009, a larger number are currently classified as stage 3 (AIDS) cases compared to those diagnosed in 2018 because they have been living with the virus longer.

Figure 5. HIV disease deaths*, by selected race and year of death, Missouri, 2009-2018†**



*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, 2018, and reported by February 28, 2019.

Figure 6. Persons diagnosed with HIV disease, by current vital status* and year of diagnosis, Missouri, 2009-2018**



*Vital status on December 31, 2018.
**Cases are indicated by year of initial diagnosis reported to DHSS (i.e., the year in which the first diagnosis of the person, whether as an HIV case or a stage 3 (AIDS) case, was documented by DHSS).

The number of deaths among persons with HIV disease remained generally steady from 2009 to 2010 and then decreased from 2010 to 2011. The number of deaths steadily decreased between 2012 and 2015 with an increase in 2016 (Figure 5). The lower number of deaths in 2018 (88) is likely due to delays in death reporting. Of the 541 persons diagnosed with HIV disease in 2009, 48 (8.9%) were deceased by the end of 2018 (Figure 6). Among the 456 cases first diagnosed in 2018, (1.5%) were deceased at the end of 2018. 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 1. Living† HIV, stage 3 (AIDS), and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and by current age, Missouri, 2018

	HIV*			Stage 3 (AIDS)**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	5,387	81.8%	179.4	5,412	83.0%	180.3	10,799	82.4%	359.7
Female	1,201	18.2%	38.6	1,109	17.0%	35.6	2,310	17.6%	74.2
Total	**6,588**	**100.0%**	**107.8**	**6,521**	**100.0%**	**106.7**	**13,109**	**100.0%**	**214.4**
Race/Ethnicity									
White	3,086	46.8%	63.5	3,055	46.8%	62.9	6,141	46.8%	126.4
Black/African American	3,027	45.9%	426.4	2,999	46.0%	422.5	6,026	46.0%	848.9
Hispanic	309	4.7%	119.2	307	4.7%	118.5	616	4.7%	237.7
Asian/Pacific Islander	58	0.9%	44.1	41	0.6%	31.2	99	0.8%	75.3
American Indian/Alaskan Native	7	0.1%	26.5	3	0.0%	11.3	10	0.1%	37.8
Two or More Races/Unknown	101	1.5%	--	116	1.8%	--	217	1.7%	--
Total	**6,588**	**100.0%**	**107.8**	**6,521**	**100.0%**	**106.7**	**13,109**	**100.0%**	**214.4**
Race/Ethnicity-Males									
White Male	2,694	50.0%	112.7	2,730	50.4%	114.2	5,424	50.2%	226.9
Black/African American Male	2,295	42.6%	679.8	2,300	42.5%	681.3	4,595	42.6%	1361.0
Hispanic Male	262	4.9%	195.1	260	4.8%	193.6	522	4.8%	388.6
Asian/Pacific Islander Male	46	0.9%	73.3	28	0.5%	44.6	74	0.7%	117.9
American Indian/Alaskan Native Male	7	0.1%	52.3	3	0.1%	22.4	10	0.1%	74.8
Two or More Races/Unknown Male	83	1.5%	--	91	1.7%	--	174	1.6%	--
Total	**5,387**	**100.0%**	**179.4**	**5,412**	**100.0%**	**180.3**	**10,799**	**100.0%**	**359.7**
Race/Ethnicity-Females									
White Female	392	32.6%	15.9	325	29.3%	13.2	717	31.0%	29.0
Black/African American Female	732	60.9%	196.6	699	63.0%	187.8	1,431	61.9%	384.4
Hispanic Female	47	3.9%	37.6	47	4.2%	37.6	94	4.1%	75.3
Asian/Pacific Islander Female	12	1.0%	17.5	13	1.2%	18.9	25	1.1%	36.4
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	18	1.5%	--	25	2.3%	--	43	1.9%	--
Total	**1,201**	**100.0%**	**38.6**	**1,109**	**100.0%**	**35.6**	**2,310**	**100.0%**	**74.2**
Current Age‡									
<2	1	0.0%	0.7	0	0.0%	0.0	1	0.0%	0.7
2-12	25	0.4%	3.0	3	0.0%	0.4	28	0.2%	3.3
13-18	49	0.7%	10.4	5	0.1%	1.1	54	0.4%	11.5
19-24	364	5.5%	73.7	66	1.0%	13.4	430	3.3%	87.0
25-44	3,078	46.7%	197.8	1,714	26.3%	110.1	4,792	36.6%	307.9
45-64	2,689	40.8%	168.5	4,146	63.6%	259.8	6,835	52.1%	428.2
65+	382	5.8%	37.9	587	9.0%	58.3	969	7.4%	96.2
Total	**6,588**	**100.0%**	**107.8**	**6,521**	**100.0%**	**106.7**	**13,109**	**100.0%**	**214.4**

†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 2018.
**Cases classified as stage 3 (AIDS) by December 31, 2018.
***The sum of HIV cases and stage 3 (AIDS) cases.
****Per 100,000 population based on 2017 DHSS estimates.
‡Based on age as of December 31, 2018
Note: Percentages may not total 100% due to rounding.

Table 2. Diagnosed HIV, stage 3 (AIDS), and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and by current age, Missouri, 2018

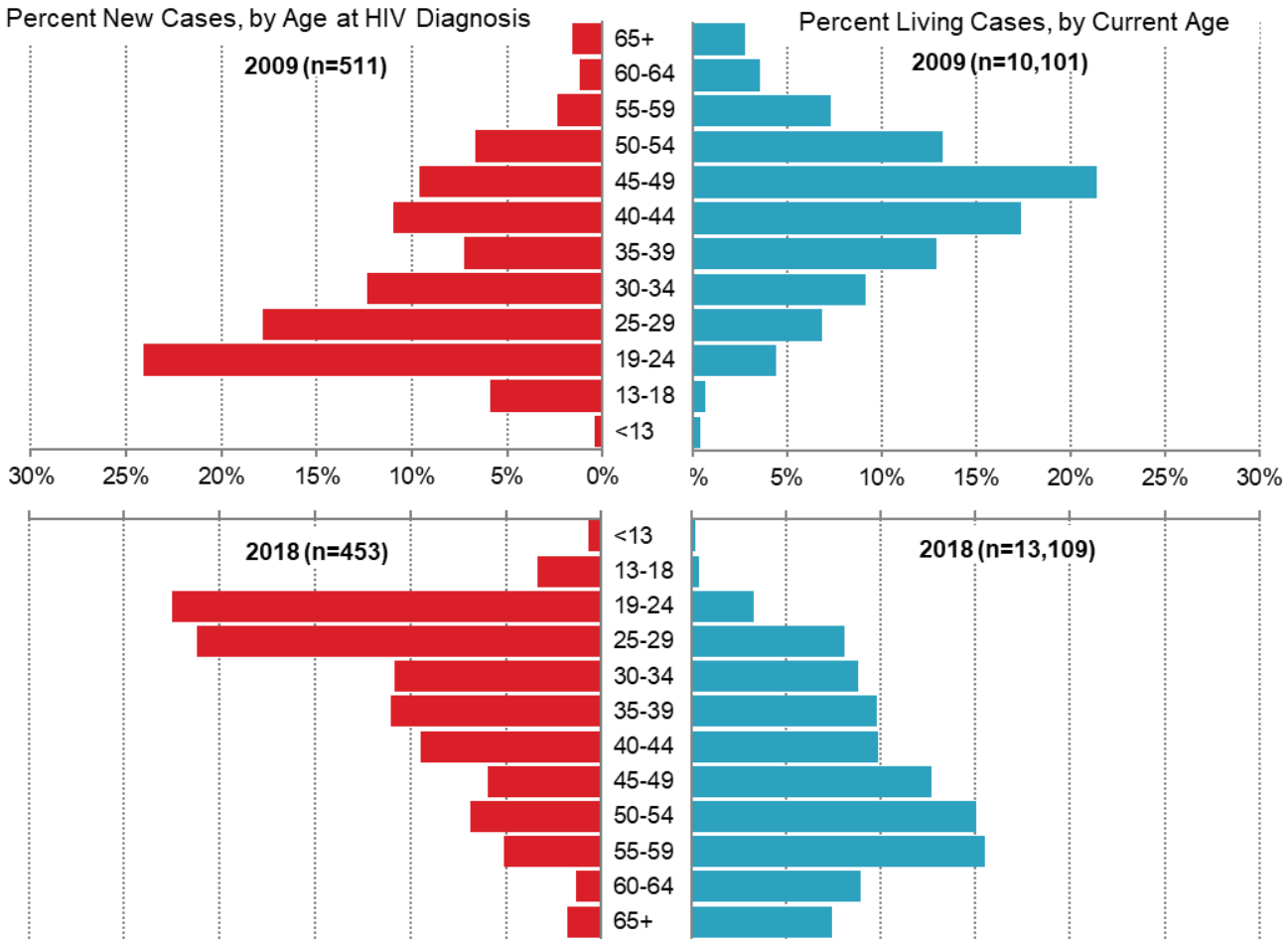
	HIV*			Stage 3 (AIDS)**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	285	79.6%	9.5	89	90.8%	3.0	374	82.0%	12.5
Female	73	20.4%	2.3	9	9.2%	0.3	82	18.0%	2.6
Total	**358**	**100.0%**	**5.9**	**98**	**100.0%**	**1.6**	**456**	**100.0%**	**7.5**
Race/Ethnicity									
White	140	39.1%	2.9	41	41.8%	0.8	181	39.7%	3.7
Black/African American	176	49.2%	24.8	42	42.9%	5.9	218	47.8%	30.7
Hispanic	23	6.4%	8.9	9	9.2%	3.5	32	7.0%	12.3
Asian/Pacific Islander	6	1.7%	4.6	1	1.0%	0.8	7	1.5%	5.3
American Indian/Alaskan Native	1	0.3%	3.8	0	0.0%	0.0	1	0.2%	3.8
Two or More Races/Unknown	12	3.4%	9.4	5	5.1%	3.9	17	3.7%	--
Total	**358**	**100.0%**	**5.9**	**98**	**100.0%**	**1.6**	**456**	**100.0%**	**7.5**
Race/Ethnicity-Males									
White Male	115	40.4%	4.8	39	43.8%	1.6	154	41.2%	6.4
Black/African American Male	133	46.7%	39.4	37	41.6%	11.0	170	45.5%	50.4
Hispanic Male	19	6.7%	14.1	9	10.1%	6.7	28	7.5%	20.8
Asian/Pacific Islander Male	6	2.1%	9.6	1	1.1%	1.6	7	1.9%	11.1
American Indian/Alaskan Native Male	1	0.4%	7.5	0	0.0%	0.0	1	0.3%	7.5
Two or More Races/Unknown Male	11	3.9%	--	3	3.4%	--	14	3.7%	--
Total	**285**	**100.0%**	**9.5**	**89**	**100.0%**	**3.0**	**374**	**100.0%**	**12.5**
Race/Ethnicity-Females									
White Female	25	34.2%	1.0	2	22.2%	0.1	27	32.9%	1.1
Black/African American Female	43	58.9%	11.6	5	55.6%	1.3	48	58.5%	12.9
Hispanic Female	4	5.5%	3.2	0	0.0%	0.0	4	4.9%	3.2
Asian/Pacific Islander Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
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	1	1.4%	--	2	22.2%	--	3	3.7%	--
Total	**73**	**100.0%**	**2.3**	**9**	**100.0%**	**0.3**	**82**	**100.0%**	**2.6**
Current Age‡									
<2	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
2-12	3	0.8%	0.4	0	0.0%	0.0	3	0.7%	0.4
13-18	12	3.4%	2.6	1	1.0%	0.2	13	2.9%	2.8
19-24	86	24.0%	17.1	14	14.3%	2.7	100	21.9%	20.2
25-44	189	52.8%	12.2	50	51.0%	3.3	239	52.4%	15.4
45-64	63	17.6%	3.9	30	30.6%	1.9	93	20.4%	5.8
65+	5	1.4%	0.5	3	3.1%	0.3	8	1.8%	0.8
Total	**358**	**100.0%**	**5.9**	**98**	**100.0%**	**1.6**	**456**	**100.0%**	**7.5**

*HIV cases diagnosed during 2018 which remained HIV cases at the end of the year. Includes persons diagnosed in Missouri correctional facilities.
**Stage 3 (AIDS) cases initially diagnosed in 2018.
***The sum of newly diagnosed HIV cases and newly diagnosed stage 3 (AIDS) cases. Does not include cases diagnosed prior to 2018 with HIV which progressed to stage 3 (AIDS) in 2018.
****Per 100,000 population based on 2017 DHSS estimates.
‡Based on age as of December 31, 2018.
Note: Percentages may not total 100% due to rounding.

Of the 13,109 persons living with HIV at the end of 2018, 82.4% were males (Table 1). 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 (46.8%), the rate of those living with HIV disease was 6.7 times as high among blacks/African Americans compared to whites. The rate was 1.9 times higher among Hispanics compared to whites. Among males, the rate of living cases among blacks/African Americans was 6.0 times as high as the rate among whites, and 1.7 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.

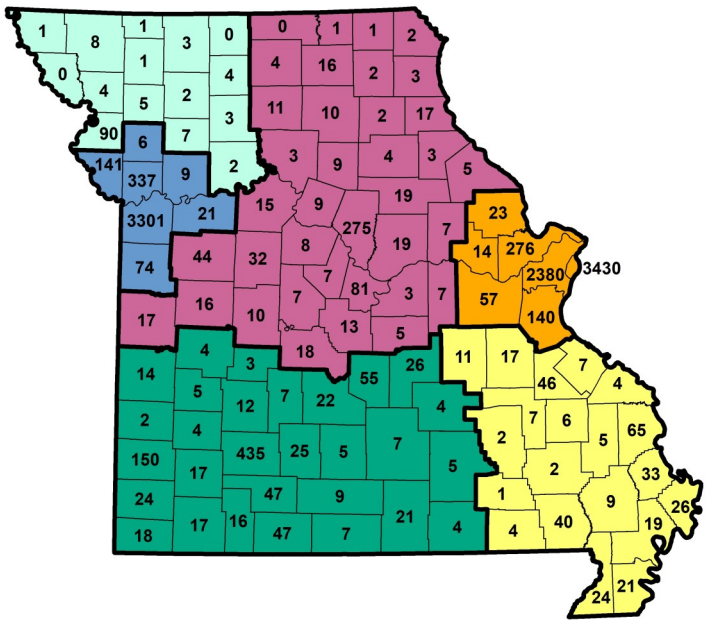
Of the 456 persons newly diagnosed with HIV disease in 2018, 21.5% were classified as stage 3 (AIDS) cases by the end of 2018 (Table 2). The rate of new HIV disease diagnoses was 4.8 times as high among males compared to females. The rate of new HIV disease cases was 8.3 times as high among blacks/African Americans compared to whites and 3.3 times as high among Hispanics compared to whites. The rate of new HIV disease diagnoses was greatest among persons 19 to 24 years of age at the end of 2018 (20.2 per 100,000).

Figure 7. Distribution of new HIV disease cases, by age at diagnosis, and living HIV disease cases, by current age in selected year, Missouri, 2009 and 2018



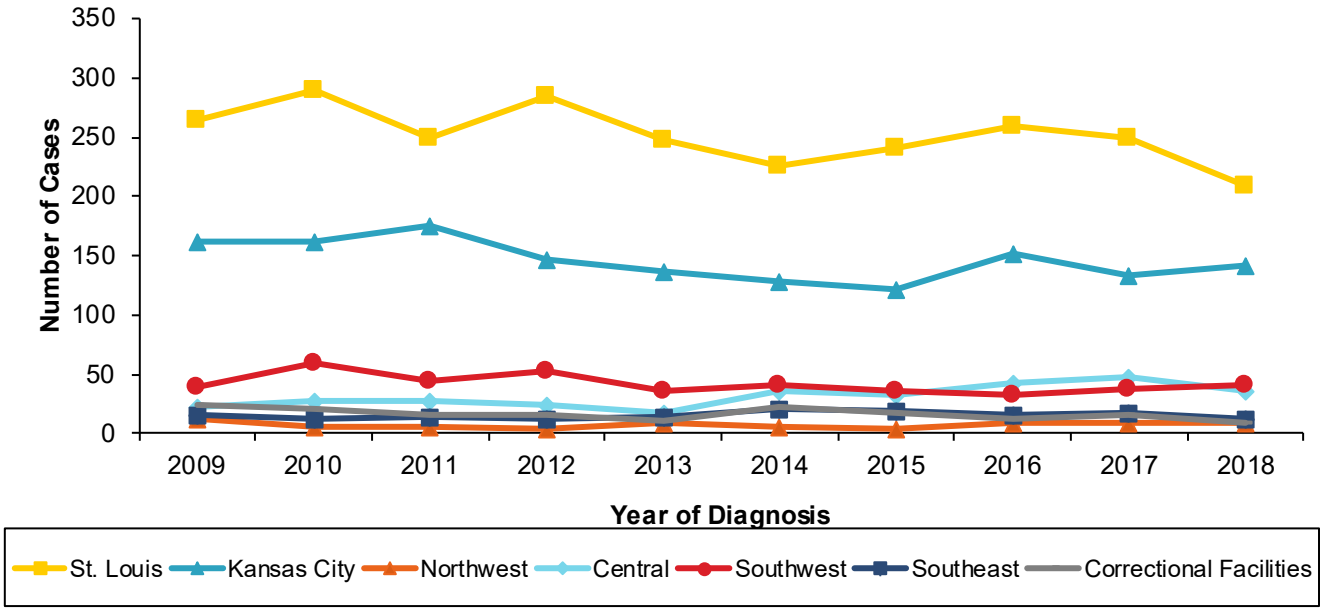
The distribution of the age at diagnosis among new HIV disease cases has remained among younger populations over time (Figure 7). In 2009, the greatest proportion of new diagnoses occurred among those ages 19 to 24 (24.1%) and 25 to 29 (17.8%). In 2018, the greatest proportion of new diagnoses occurred among those ages 19 to 24 (21.9%) followed closely by those 25 to 29 (21.2%). Although the age of new diagnoses has remained consistent, the age of individuals living with HIV has increased over time. In 2009, the greatest proportion of living cases was among those ages 45 to 49 (21.4%). In 2018, the greatest proportion of living

Figure 8. Number of persons living with HIV disease, by county of residence* and HIV care region at time of diagnosis, Missouri, 1982-2018



*Based on residence at time of most recent diagnosis of HIV or stage 3 (AIDS). Excludes persons diagnosed in Missouri correctional facilities (n=703).

Figure 9. Persons diagnosed with HIV disease by HIV care region at time of diagnosis, Missouri, 2009-2018



The largest numbers of persons living with HIV disease in 2018 were most recently diagnosed in St. Louis City (3,430), Jackson County (3,301), and St. Louis County (2,380) (Figure 8).

The St. Louis HIV Care Region represented the largest number of new HIV disease diagnoses in each year from 2009 to 2018 (Figure 9). The numbers of new diagnoses reported in the St. Louis HIV Care Region fluctuated from 2009 to 2012, then a slightly lower fluctuation between 2013 to 2015. Increases were seen in all regions other than the St. Louis HIV Care Region and the Kansas City HIV Care Region from 2016 to 2017. The Kansas City HIV Care Region and Southwest HIV Care Region saw increases from 2017 to 2018 while the rest of the state saw decreases.

Table 3. New and living HIV and stage 3 (AIDS) cases and rates, by geographic area, and by HIV care region, Missouri, 2018

	HIV Cases						Stage 3 (AIDS) Cases					
	Diagnosed 2018*			Living with HIV			Diagnosed 2018**			Living with Stage 3 (AIDS)		
Location	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***
Geograhic Area												
St. Louis City†	78	21.8%	25.3	1,773	26.9%	574.5	12	12.2%	3.9	1,657	25.4%	536.9
St. Louis County†	69	19.3%	6.9	1,263	19.2%	126.7	22	22.4%	2.2	1,117	17.1%	112.1
Kansas City†	86	24.0%	17.6	1,417	21.5%	289.8	24	24.5%	4.9	1,691	25.9%	345.8
Outstate†	117	32.7%	2.7	1,790	27.2%	41.4	39	39.8%	0.9	1,698	26.0%	39.3
Missouri Correctional Facilities††	8	2.2%	N/A	345	5.2%	N/A	1	1.0%	N/A	358	5.5%	N/A
MISSOURI TOTAL	**358**	**100.0%**	**5.9**	**6,588**	**100.0%**	**107.8**	**98**	**100.0%**	**1.6**	**6,521**	**100.0%**	**106.7**
HIV Care Region												
St. Louis†	166	46.4%	7.8	3,314	50.3%	156.4	43	43.9%	2.0	3,006	46.1%	141.9
Kansas City†	111	31.0%	9.1	1,803	27.4%	147.5	31	31.6%	2.5	2,086	32.0%	170.6
Northwest†	4	1.1%	1.8	60	0.9%	26.8	4	4.1%	1.8	71	1.1%	31.7
Central†	29	8.1%	3.3	385	5.8%	43.6	6	6.1%	0.7	320	4.9%	36.2
Southwest†	31	8.7%	2.6	520	7.9%	44.4	10	10.2%	0.9	492	7.5%	42.0
Southeast†	9	2.5%	1.8	161	2.4%	32.6	3	3.1%	0.6	188	2.9%	38.1
Missouri Correctional Facilities††	8	2.2%	N/A	345	5.2%	N/A	1	1.0%	N/A	358	5.5%	N/A
MISSOURI TOTAL	**358**	**100.0%**	**5.9**	**6,588**	**100.0%**	**107.8**	**98**	**100.0%**	**1.6**	**6,521**	**100.0%**	**106.7**

*HIV cases diagnosed and reported to DHSS during 2018 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2018 that progressed to stage 3 (AIDS) in 2018.
***Per 100,000 population based on 2017 DHSS estimates.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total 100% 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 2018 by geographic area and HIV care region (Table 3). In Outstate, 39.8% of newly diagnosed HIV disease cases progressed to stage 3 (AIDS) by the end of 2018. In comparison, the proportions were 24.5%, 22.4%, and 12.2% for Kansas City, St. Louis County, and St. Louis City, respectively. In the St. Louis HIV Care Region, 43.9% of newly diagnosed HIV disease cases progressed to stage 3 (AIDS) at the end of 2018, whereas the proportions were 31.6%, 10.2%, 6.1%, 4.1%, and 3.1% for Kansas City HIV Care Region, Southwest HIV Care Region, Central HIV Care Region, Northwest HIV Care Region, and Southeast HIV Care Region, respectively. The variation in the proportion of newly diagnosed individuals that progressed to stage 3 (AIDS) by the end of 2018 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 rates of new and living HIV and living stage 3 (AIDS) cases were greatest in St. Louis City (Table 3). The rate of new HIV case diagnoses in St. Louis City was 9.4 times as high as Outstate and 6.5 times as high in Kansas City compared to Outstate. The rate of new stage 3 (AIDS) case diagnoses was 5.4 times as high in Kansas City compared to Outstate and 4.3 times as high in St. Louis City compared to Outstate. This demonstrates the disproportionate impact of HIV disease in the major metropolitan areas in Missouri.

Table 4. Diagnosed HIV cases and rates, by selected race/ethnicity and geographic area, Missouri, 2018

Area	White			Black/African American			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis City†	19	24.4%	14.0	55	70.5%	38.7	1	1.3%	8.0	78	100.0%	25.3
St. Louis County†	12	17.4%	1.8	51	73.9%	20.9	5	7.2%	17.2	69	100.0%	6.9
Kansas City†	34	39.5%	12.5	40	46.5%	28.6	10	11.6%	20.5	86	100.0%	17.6
Outstate Missouri†	71	60.7%	1.9	26	22.2%	14.1	7	6.0%	4.1	117	100.0%	2.7
Missouri Correctional Facilities††	4	50.0%	N/A	4	50.0%	N/A	0	0.0%	N/A	8	100.0%	N/A
MISSOURI TOTAL	**140**	**39.1%**	**2.9**	**176**	**49.2%**	**24.8**	**23**	**6.4%**	**8.9**	**358**	**100.0%**	**5.9**

*Per 100,000 population based on 2017 DHSS estimates.
**Includes cases among 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 100% due to rounding.

Table 5. Diagnosed HIV cases and rates, by selected race/ethnicity and HIV care region, Missouri, 2018

HIV Care Region	White			Black/African American			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis†	46	27.7%	3.0	108	65.1%	26.3	7	4.2%	11.0	166	100.0%	7.8
Kansas City†	49	44.1%	5.6	47	42.3%	24.7	11	9.9%	11.8	111	100.0%	9.1
Northwest†	1	25.0%	0.5	1	25.0%	11.9	2	50.0%	22.9	4	100.0%	1.8
Central†	14	48.3%	1.8	9	31.0%	19.9	1	3.4%	3.5	29	100.0%	3.3
Southwest†	19	61.3%	1.8	5	16.1%	20.7	2	6.5%	3.7	31	100.0%	2.6
Southeast†	7	77.8%	1.6	2	22.2%	6.4	0	0.0%	0.0	9	100.0%	1.8
Missouri Correctional Facilities††	4	50.0%	N/A	4	50.0%	N/A	0	0.0%	N/A	8	100.0%	N/A
MISSOURI TOTAL	**140**	**39.1%**	**2.9**	**176**	**49.2%**	**24.8**	**23**	**6.4%**	**8.9**	**358**	**100.0%**	**5.9**

*Per 100,000 population based on 2017 DHSS 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 100% due to rounding.

The proportion of new HIV cases diagnosed in 2018 by race/ethnicity varied by geographic area (Table 4). Whites comprised 60.7% of new HIV case diagnoses in Outstate, but only 24.4% of new HIV cases in St. Louis City and 17.4% in St. Louis County. 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 7.4 times as high as the rate among whites and 2.2 times as high among Hispanics compared to whites. In comparison, in St. Louis City, the rate of new HIV cases was 2.8 times as high in blacks/African Americans compared to whites.

Similar patterns to those observed for the geographic areas were also present by HIV care region (Table 5). In the Southeast HIV Care Region, whites represented 77.8% of new HIV case diagnoses, whereas blacks/African Americans represented the majority of cases in the St. Louis HIV Care Region (65.1%).

Table 6. Newly diagnosed and living HIV and stage 3 (AIDS) cases in men who have sex with men, by selected race/ethnicity, Missouri, 2018

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%
White	77	39.3%	2,159	52.1%	23	45.1%	2,127	52.7%
Black/African American	90	45.9%	1,667	40.2%	22	43.1%	1,643	40.7%
Hispanic	17	8.7%	214	5.2%	4	7.8%	173	4.3%
Other/Unknown	12	6.1%	103	2.5%	2	3.9%	96	2.4%
MISSOURI TOTAL* **	**196**	**100.0%**	**4,143**	**100.0%**	**51**	**100.0%**	**4,039**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2018 that progressed to stage 3 (AIDS) in 2018.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total 100% due to rounding.

Table 7. Living HIV disease cases in men who have sex with men, by selected race/ethnicity and current age group, Missouri, 2018

	White		Black/African American		Hispanic		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	13	0.4%	0	0.0%	14	0.2%
19-24	63	1.5%	213	6.4%	14	3.6%	306	3.7%
25-44	1,175	27.4%	1,596	48.2%	189	48.8%	3,063	37.4%
45-64	2,606	60.8%	1,356	41.0%	169	43.7%	4,199	51.3%
65+	442	10.3%	132	4.0%	15	3.9%	600	7.3%
MISSOURI TOTAL	**4,286**	**100.0%**	**3,310**	**100.0%**	**387**	**100.0%**	**8,182**	**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 100% due to rounding.

The data presented for each exposure category in Tables 6 through 19 have not been adjusted to redistribute individuals with missing exposure category information. Therefore, these data represent only those individuals with an exposure category reported to DHSS. The total number of individuals in each exposure category is likely underestimated, especially among those newly diagnosed in 2018. These data are subject to change.

A total of 247 new HIV disease diagnoses were attributed to men who have sex with men (MSM) in 2018 (Table 6). The number of new HIV cases among blacks/African Americans was 1.2 times as many new HIV cases among whites; however, whites represented 1.0 times the number of new stage 3 (AIDS) cases compared to blacks/African Americans in 2018. Whites represented a larger 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, 20.6% progressed to stage 3 (AIDS) by the end of 2018.

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM, with those who identify as non-white tending to be between 25 and 44 years of age (Table 7). Among white MSM living with HIV disease, the majority (60.8%) were between 45 and 64 years of age at the end of 2018. However, only 41.0% of living black/African American MSM and 43.7% of living Hispanic MSM with HIV disease were in this age group. The greatest numbers of black/African American and Hispanic MSM living with HIV disease were between 25 and 44 years of age. Blacks/African Americans represented the largest number of MSM under the age of 25 (226).

Table 8. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2018

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	1,031	45.8%	1,117	49.6%	49	2.2%	2,250	27.5%
St. Louis County	575	38.2%	844	56.1%	61	4.1%	1,505	18.4%
Kansas City	1,102	50.6%	845	38.8%	166	7.6%	2,179	26.6%
Outstate	1,486	76.9%	290	15.0%	104	5.4%	1,933	23.6%
Missouri Correctional Facilities	92	29.2%	214	67.9%	7	2.2%	315	3.8%
MISSOURI TOTAL	**4,286**	**52.4%**	**3,310**	**40.5%**	**387**	**4.7%**	**8,182**	**100.0%**
HIV Care Region								
St. Louis	1,860	45.8%	2,003	49.3%	116	2.9%	4,064	49.7%
Kansas City	1,446	54.4%	929	35.0%	205	7.7%	2,658	32.5%
Northwest	57	89.1%	5	7.8%	2	3.1%	64	0.8%
Central	262	71.6%	78	21.3%	20	5.5%	366	4.5%
Southwest	456	82.9%	42	7.6%	31	5.6%	550	6.7%
Southeast	113	68.5%	39	23.6%	6	3.6%	165	2.0%
Missouri Correctional Facilities	92	29.2%	214	67.9%	7	2.2%	315	3.8%
MISSOURI TOTAL	**4,286**	**52.4%**	**3,310**	**40.5%**	**387**	**4.7%**	**8,182**	**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 100% due to rounding.

Of the 8,182 MSM living with HIV disease at the end of 2018, the largest proportion was diagnosed in St. Louis City (27.5%), followed by Kansas City (26.6%) (Table 8). There were differences in the proportion of living HIV disease cases among MSM diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 76.9% of persons living with HIV disease attributed to MSM were white, whereas only 29.2% of persons living with HIV disease 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 49.7% of all living cases among MSM and the Kansas City HIV Care Region comprised 32.5%. The proportion of living cases among white MSM was highest in the Northwest HIV Care Region (89.1%) and lowest in Missouri correctional facilities (29.2%).

Table 9. 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, 2018

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%
White	11	68.8%	175	67.0%	4	0.0%	231	62.9%
Black/African American	3	18.8%	68	26.1%	1	0.0%	117	31.9%
Hispanic	2	12.5%	13	5.0%	1	0.0%	11	3.0%
Other/Unknown	0	0.0%	5	1.9%	0	0.0%	8	2.2%
MISSOURI TOTAL* **	**16**	**100.0%**	**261**	**100.0%**	**6**	**100.0%**	**367**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2018 that progressed to stage 3 (AIDS) in 2018.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total 100% due to rounding.

Table 10. Living HIV disease cases in men who have sex with men and inject drugs, by selected race/ethnicity, by current age group, Missouri, 2018

	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	7	1.7%	2	1.1%	2	8.3%	11	1.8%
25-44	130	32.0%	41	22.2%	13	54.2%	190	30.3%
45-64	240	59.1%	128	69.2%	9	37.5%	384	61.1%
65+	29	7.1%	14	7.6%	0	0.0%	43	6.8%
MISSOURI TOTAL	**406**	**100.0%**	**185**	**100.0%**	**24**	**100.0%**	**628**	**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 100% due to rounding.

A total of 22 new HIV disease diagnoses were attributed to men who have sex with men and inject drugs (MSM/IDU) in 2018 (Table 9). The small number of new cases diagnosed among MSM/IDU makes patterns by race/ethnicity and sex difficult to interpret. Six diagnosed case progressed to stage 3 (AIDS) by the end of 2018. Whites represented the majority (68.8%) of new HIV cases among MSM/IDU. Among living HIV and stage 3 (AIDS) cases, whites represented the largest proportion of cases (67.0% and 62.9%, respectively).

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM/IDU (Table 10). Among white and black/African American MSM/IDU living with HIV disease, the majority (59.1% and 69.2%, respectively) were between 45 and 64 years of age at the end of 2018. Comparatively, only 37.5% of Hispanic MSM/IDU living with HIV disease were between 45 and 64 years of age.

Table 11. 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, 2018

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	46	41.8%	59	53.6%	4	3.6%	110	17.5%
St. Louis County	24	46.2%	28	53.8%	0	0.0%	52	8.3%
Kansas City	100	62.9%	42	26.4%	10	6.3%	159	25.3%
Outstate	196	87.1%	17	7.6%	9	4.0%	225	35.8%
Missouri Correctional Facilities	40	48.8%	39	47.6%	1	1.2%	82	13.1%
MISSOURI TOTAL	**406**	**64.6%**	**185**	**29.5%**	**24**	**3.8%**	**628**	**100.0%**
HIV Care Region								
St. Louis	83	46.9%	87	49.2%	6	3.4%	177	28.2%
Kansas City	140	67.0%	49	23.4%	12	5.7%	209	33.3%
Northwest	9	100.0%	0	0.0%	0	0.0%	9	1.4%
Central	36	85.7%	4	9.5%	2	4.8%	42	6.7%
Southwest	81	91.0%	3	3.4%	3	3.4%	89	14.2%
Southeast	17	85.0%	3	15.0%	0	0.0%	20	3.2%
Missouri Correctional Facilities	40	48.8%	39	47.6%	1	1.2%	82	13.1%
MISSOURI TOTAL	**406**	**64.6%**	**185**	**29.5%**	**24**	**3.8%**	**628**	**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 100% due to rounding.

Of the 628 MSM/IDU living with HIV disease at the end of 2018, the largest proportion was diagnosed in Outstate Missouri (35.8%), followed by Kansas City (25.3%) (Table 11). 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, 87.1% of living cases attributed to MSM/IDU were white, whereas only 41.8% of living cases diagnosed in St. Louis City among MSM/IDU were white.

The Kansas City HIV Care Region represented 33.3% of all living cases among MSM/IDU, and the St. Louis HIV Care Region comprised 28.2%. The proportion of living cases among white MSM/IDU was highest in the Northwest HIV Care Region (100.0%) and lowest in the St. Louis HIV Care Region (46.9%).

Table 12. Newly diagnosed and living HIV and stage 3 (AIDS) cases in injection drug users, by selected race/ethnicity and sex, Missouri, 2018

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	8	47.1%	93	33.9%	2	50.0%	103	25.8%
Black/African American Male	2	11.8%	67	24.5%	2	50.0%	127	31.8%
Hispanic Male	0	0.0%	4	1.5%	0	0.0%	17	4.3%
White Female	6	35.3%	65	23.7%	0	0.0%	68	17.0%
Black/African American Female	0	0.0%	38	13.9%	0	0.0%	71	17.8%
Hispanic Female	1	5.9%	5	1.8%	0	0.0%	9	2.3%
MISSOURI TOTAL* **	**17**	**100.0%**	**274**	**100.0%**	**4**	**100.0%**	**400**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2018 that progressed to stage 3 (AIDS) in 2018.
***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 100% due to rounding.

Table 13. Living HIV disease cases in injection drug users, by selected race/ethnicity and sex and current age group, Missouri, 2018

	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%	1	0.8%	1	0.9%	3	0.4%
25-44	43	21.9%	40	20.6%	48	36.1%	20	18.3%	166	24.6%
45-64	138	70.4%	123	63.4%	82	61.7%	78	71.6%	445	66.0%
65+	14	7.1%	31	16.0%	2	1.5%	10	9.2%	60	8.9%
MISSOURI TOTAL	**196**	**100.0%**	**194**	**100.0%**	**133**	**100.0%**	**109**	**100.0%**	**674**	**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 100% due to rounding.

A total of 21 new HIV disease diagnoses were attributed to injection drug use (IDU) in 2018 (Table 12). The small number of new cases diagnosed among IDU makes patterns by race/ethnicity and sex difficult to interpret. Of the newly diagnosed cases among IDU, 19.0% progressed to stage 3 (AIDS) by the end of 2018. Males represented approximately 61.0% of all living HIV disease cases among IDU.

Among IDU living with HIV disease, a smaller proportion of white males had progressed to stage 3 (AIDS) by the end of 2018 compared to non-white males. 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 (33.9%) while black/African American males represented the largest proportion (31.8%) 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 2018 (Table 13). The age group of 25 to 44 represented the second highest number of cases. The proportion of living HIV disease cases between the ages of 25 and 44 was greatest among white females.

Table 14. Living HIV disease cases in injection drug users, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2018

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	21	16.7%	100	79.4%	3	2.4%	126	18.7%
St. Louis County	19	37.3%	30	58.8%	1	2.0%	51	7.6%
Kansas City	50	33.3%	83	55.3%	15	10.0%	150	22.3%
Outstate	187	81.3%	31	13.5%	12	5.2%	230	34.1%
Missouri Correctional Facilities	52	44.4%	59	50.4%	4	3.4%	117	17.4%
MISSOURI TOTAL	**329**	**48.8%**	**303**	**45.0%**	**35**	**5.2%**	**674**	**100.0%**
HIV Care Region								
St. Louis	70	33.8%	130	62.8%	4	1.9%	207	30.7%
Kansas City	86	45.3%	85	44.7%	17	8.9%	190	28.2%
Northwest	5	71.4%	2	28.6%	0	0.0%	7	1.0%
Central	32	71.1%	10	22.2%	3	6.7%	45	6.7%
Southwest	68	81.9%	10	12.0%	5	6.0%	83	12.3%
Southeast	16	64.0%	7	28.0%	2	8.0%	25	3.7%
Missouri Correctional Facilities	52	44.4%	59	50.4%	4	3.4%	117	17.4%
MISSOURI TOTAL	**329**	**48.8%**	**303**	**45.0%**	**35**	**5.2%**	**674**	**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 100% due to rounding.

Of the 674 IDU living with HIV disease at the end of 2018, the largest proportion was diagnosed in Outstate Missouri (34.1%), followed by Kansas City (22.3%) (Table 14). There were differences in the proportion of living HIV disease cases among IDU diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 81.3% of living cases attributed to IDU were white, whereas only 16.7% of living cases diagnosed in St. Louis City among IDU were white. The differences are likely due to variations in the general population of the geographic areas.

The St. Louis HIV Care Region represented 30.7% of all living cases among IDU, and the Kansas City HIV Care Region comprised 28.2%. The proportion of living cases among white IDU was highest in the Southwest HIV Care Region (81.9%) and lowest in the St. Louis HIV Care Region (33.8%), while the reverse was true of black/African American living cases among IDU (12.0% and 62.8%). 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 was in the Kansas City HIV Care Region (17).

Table 15. Newly diagnosed and living HIV and stage 3 (AIDS) cases in heterosexual contacts, by selected race/ethnicity and sex, Missouri, 2018

	HIV Cases*				Stage 3 (AIDS) Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	2	3.0%	57	5.7%	1	10.0%	60	6.3%
Black/African American Male	7	10.6%	142	14.3%	1	10.0%	182	19.2%
Hispanic Male	0	0.0%	6	0.6%	1	10.0%	12	1.3%
White Female	16	24.2%	250	25.1%	1	10.0%	201	21.2%
Black/African American Female	39	59.1%	484	48.6%	4	40.0%	439	46.2%
Hispanic Female	2	3.0%	29	2.9%	0	0.0%	28	2.9%
MISSOURI TOTAL* **	**66**	**100.0%**	**996**	**100.0%**	**10**	**100.0%**	**950**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2018 that progressed to stage 3 (AIDS) in 2018.
***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 100% due to rounding.

Table 16. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity and sex, by current age group, Missouri, 2018

	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%	1	0.1%	2	0.1%
19-24	0	0.0%	5	1.5%	6	1.3%	40	4.3%	54	2.8%
25-44	22	18.8%	115	35.5%	138	30.6%	392	42.5%	725	37.3%
45-64	73	62.4%	179	55.2%	264	58.5%	449	48.6%	1,025	52.7%
65+	22	18.8%	24	7.4%	43	9.5%	41	4.4%	140	7.2%
MISSOURI TOTAL	**117**	**100.0%**	**324**	**100.0%**	**451**	**100.0%**	**923**	**100.0%**	**1,946**	**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 100% due to rounding.

A total of 76 new HIV disease diagnoses were attributed to heterosexual contact in 2018 (Table 15). Black/African American females represented the largest number of new HIV disease diagnoses among heterosexuals. They were also more likely to have progressed to stage 3 (AIDS) by the end of 2018 than white females (40.0% compared to 10.0%). Overall, 13.2% of newly diagnosed cases attributed to heterosexual contact progressed to stage 3 (AIDS) by the end of 2018. Females represented 76.6% of living HIV cases and 70.3% of living stage 3 (AIDS) cases among heterosexual contact cases.

Among heterosexual contact cases, the greatest proportion of living cases was among adults aged 45 to 64 years of age in all race and sex categories presented (Table 16). This age group comprised just over half (52.7%) of total cases.

Table 17. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity, by geographic area, by HIV care region, Missouri, 2018

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	67	12.2%	454	82.8%	15	2.7%	548	28.2%
St. Louis County	86	19.1%	341	75.6%	13	2.9%	451	23.2%
Kansas City	64	21.3%	211	70.1%	17	5.6%	301	15.5%
Outstate	331	61.0%	161	29.7%	28	5.2%	543	27.9%
Missouri Correctional Facilities	20	19.4%	80	77.7%	2	1.9%	103	5.3%
MISSOURI TOTAL	**568**	**29.2%**	**1,247**	**64.1%**	**75**	**3.9%**	**1,946**	**100.0%**
HIV Care Region								
St. Louis	204	19.1%	809	75.7%	30	2.8%	1,069	54.9%
Kansas City	111	28.5%	234	60.2%	28	7.2%	389	20.0%
Northwest	13	52.0%	11	44.0%	1	4.0%	25	1.3%
Central	82	61.7%	43	32.3%	4	3.0%	133	6.8%
Southwest	93	66.4%	32	22.9%	8	5.7%	140	7.2%
Southeast	45	51.7%	38	43.7%	2	2.3%	87	4.5%
Missouri Correctional Facilities	20	19.4%	80	77.7%	2	1.9%	103	5.3%
MISSOURI TOTAL	**568**	**29.2%**	**1,247**	**64.1%**	**75**	**3.9%**	**1,946**	**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 in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total 100% due to rounding.

Of the 1,946 living cases among heterosexual contacts at the end of 2018, the largest proportion was diagnosed in St. Louis City (28.2%), and the next highest was Outstate Missouri (27.9%) (Table 17). There were differences in the proportion of living HIV disease cases among heterosexuals diagnosed in each geographic area by race/ethnicity. In Outstate, 61.0% of living cases attributed to heterosexual contact were white, whereas only 12.2% of living cases diagnosed in St. Louis City among heterosexual contact cases were white. 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 (64.1%) compared to whites and Hispanics.

The St. Louis HIV Care Region represented 54.9% of all living cases among heterosexuals, and the Kansas City HIV Care Region comprised 20.0%. The proportion of white living cases among heterosexuals was highest in the Southwest HIV Care Region (66.4%) and lowest in the St. Louis HIV Care Region (19.1%). The proportion of black/African American living cases was highest in Missouri correctional facilities (77.1%) and lowest in the Southwest HIV Care Region (22.9%).

Table 18. Deaths* among HIV cases, by selected race and sex and mode of transmission, Missouri, 1982-2018

	White Males		Black/African American Males		White Females		Black/African American Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	267	65.3%	175	57.4%	0	0.0%	0	0.0%	462	52.0%
MSM/IDU	50	12.2%	19	6.2%	0	0.0%	0	0.0%	73	8.2%
IDU	35	8.6%	32	10.5%	12	25.0%	19	24.7%	106	11.9%
Heterosexual Contact	8	2.0%	28	9.2%	25	52.1%	41	53.2%	106	11.9%
No Indicated Risk (NIR)	42	10.3%	50	16.4%	11	22.9%	16	20.8%	133	15.0%
MISSOURI TOTAL* **	**409**	**100.0%**	**305**	**100.0%**	**48**	**100.0%**	**77**	**100.0%**	**889**	**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 (1.0%) 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 100% due to rounding.

Table 19. Deaths* among stage 3 (AIDS) cases, by selected race and sex and mode of transmission, Missouri, 1982-2018

	White Males		Black/African American Males		White Females		Black/African American Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	3,485	77.4%	1,399	66.9%	0	0.0%	0	0.0%	5,106	66.0%
MSM/IDU	464	10.3%	224	10.7%	0	0.0%	0	0.0%	716	9.3%
IDU	190	4.2%	202	9.7%	85	27.3%	114	24.1%	634	8.2%
Heterosexual Contact	74	1.6%	108	5.2%	166	53.4%	285	60.1%	656	8.5%
No Indicated Risk (NIR)	133	3.0%	135	6.5%	32	10.3%	51	10.8%	382	4.9%
MISSOURI TOTAL* **	**4,502**	**100.0%**	**2,091**	**100.0%**	**311**	**100.0%**	**474**	**100.0%**	**7,736**	**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 242 cases (3.1%) 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 100% due to rounding.

The number of deaths that have occurred among persons still classified as HIV cases at the time of death was small (889) in comparison to the number of deaths among persons classified as stage 3 (AIDS) (7,736) (Tables 18 and 19). The greatest proportion of deaths among HIV cases has occurred among white males (52.0%) (Table 18).

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 stage 3 (AIDS) cases (Table 19). The proportion of deaths among stage 3 (AIDS) cases with no indicated risk was smaller than that among HIV cases, likely because there was more time to obtain exposure category information.

Table 20. Newly diagnosed and living HIV and stage 3 (AIDS) cases with exposure category assignments, Missouri, 2018

Exposure Category	HIV Cases				Stage 3 (AIDS) Cases			
	2018*		Living		2018**		Living	
Adult/Adolescent								
MSM	240	67.6%	4,625	71.1%	72	69.2%	4,399	67.9%
MSM/IDU	19	5.4%	288	4.4%	8	7.7%	397	6.1%
IDU	21	5.9%	321	4.9%	6	5.8%	464	7.2%
Heterosexual Contact	74	20.8%	1,263	19.4%	18	17.3%	1,182	18.2%
Hemophilia/Coagulation Disorder	0	0.0%	5	0.1%	0	0.0%	31	0.5%
Blood Transfusion or Tissue Recipient	0	0.0%	2	0.0%	0	0.0%	7	0.1%
No Indicated Risk (NIR)	-----	-------	-----	-------	-----	-------	-----	-------
ADULT/ADOLESCENT SUBTOTAL	**355**	**† 100.0%**	**6,509**	**† 100.0%**	**104**	**100.0%**	**6,481**	**† 100.0%**
Pediatric (<13 years old)								
PEDIATRIC SUBTOTAL	**3**	**100.0%**	**80**	**100.0%**	**1**	**100.0%**	**37**	**100.0%**
TOTAL	**358**		**6,589**		**105**		**6,518**	

*HIV cases reported during 2018 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2018 that progressed to stage 3 (AIDS) in 2018.
†Includes one case with a confirmed "other" exposure category among persons newly diagnosed with HIV, three cases among persons living with HIV, and one case among persons living with stage 3 (AIDS).
Note: Percentages may not total 100% due to rounding.

The data in Table 20 have been adjusted to proportionately redistribute individuals with no indicated risk factor to known exposure categories based on sex and race/ethnicity. 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. Three new HIV cases and one new stage 3 (AIDS) case were diagnosed among children less than 13 years of age in 2018.

The majority of HIV disease cases diagnosed in 2018 (92.6%) and those living with HIV disease (92.7%) were residents of a metropolitan area at the time of diagnosis (Table 21). For a list of counties classified as a metropolitan area, please 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 was lower in less populated areas than in metropolitan areas. Whereas 82.8% of living HIV disease cases in metropolitan areas occurred among males, only 71.4% 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 decreased, the proportion of living cases that occurred among whites increased. Only 45.7% of living HIV disease diagnoses were among whites in metropolitan areas compared to 79.1% in nonmetropolitan areas. There were also differences based on the population of the area of residence in the distribution of new and living HIV disease cases by exposure category. Among those newly diagnosed, the percentage of diagnoses among MSM were similar in metropolitan and micropolitan populations, but decreased in nonmetropolitan populations. However, among those living with HIV disease, the proportion of cases attributed to MSM generally decreased as the area of residence decreased. Among those newly diagnosed and living with HIV disease, the proportion of persons between 45 and 64 years of age were highest in nonmetropolitan areas.

Table 21. 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 by age at diagnosis, Missouri, 2018†

	Newly Diagnosed						Living					
	Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****		Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Sex												
Male	341	82.4%	13	72.2%	12	80.0%	9,529	82.8%	369	73.9%	287	71.4%
Female	73	17.6%	5	27.8%	3	20.0%	1,976	17.2%	130	26.1%	115	28.6%
Total	**414**	**100.0%**	**18**	**100.0%**	**15**	**100.0%**	**11,505**	**100.0%**	**499**	**100.0%**	**402**	**100.0%**
Race/Ethnicity												
White	154	37.2%	11	61.1%	12	80.0%	5,255	45.7%	340	68.1%	318	79.1%
Black/African American	208	50.2%	3	16.7%	2	13.3%	5,397	46.9%	116	23.2%	63	15.7%
Hispanic	31	7.5%	1	5.6%	0	0.0%	557	4.8%	26	5.2%	16	4.0%
Other/Unknown	21	5.1%	3	16.7%	1	6.7%	296	2.6%	17	3.4%	5	1.2%
Total	**414**	**100.0%**	**18**	**100.0%**	**15**	**100.0%**	**11,505**	**100.0%**	**499**	**100.0%**	**402**	**100.0%**
Exposure Category												
MSM	234	56.5%	8	44.4%	4	26.7%	7,455	64.8%	234	46.9%	178	44.3%
MSM/IDU	17	4.1%	1	5.6%	4	26.7%	487	4.2%	36	7.2%	23	5.7%
IDU	17	4.1%	0	0.0%	1	6.7%	489	4.3%	34	6.8%	34	8.5%
Heterosexual Contact	69	16.7%	3	16.7%	2	13.3%	1,643	14.3%	103	20.6%	97	24.1%
No Indicated Risk (NIR)	73	17.6%	6	33.3%	4	26.7%	1,296	11.3%	79	15.8%	57	14.2%
Other	1	0.2%	0	0.0%	0	0.0%	41	0.4%	3	0.6%	3	0.7%
Pediatric	3	0.7%	0	0.0%	0	0.0%	94	0.8%	10	2.0%	10	2.5%
Total	**414**	**100.0%**	**18**	**100.0%**	**15**	**100.0%**	**11,505**	**100.0%**	**499**	**100.0%**	**402**	**100.0%**
Age at Diagnosis												
<2	0	0.0%	0	0.0%	0	0.0%	45	0.4%	5	1.7%	5	1.2%
2-12	3	0.7%	0	0.0%	0	0.0%	38	0.3%	3	1.0%	3	0.7%
13-18	13	3.1%	2	11.1%	0	0.0%	314	2.7%	11	3.7%	11	2.7%
19-24	96	23.2%	3	16.7%	3	20.0%	1,912	16.6%	41	13.7%	41	10.2%
25-44	217	52.4%	7	38.9%	6	40.0%	7,216	62.7%	220	73.6%	220	54.7%
45-64	77	18.6%	6	33.3%	6	40.0%	1,907	16.6%	16	5.4%	116	28.9%
65+	8	1.9%	0	0.0%	0	0.0%	73	0.6%	3	1.0%	6	1.5%
Total	**414**	**100.0%**	**18**	**100.0%**	**15**	**100.0%**	**11,505**	**100.0%**	**299**	**100.0%**	**402**	**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 2013 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 2013 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 2013 US Census estimates. See Appendix for map of included counties.
Note: Percentages may not total 100% due to rounding.

Figure 10. Length of time between HIV and stage 3 (AIDS) diagnosis, by race/ethnicity, Missouri, 2009-2017

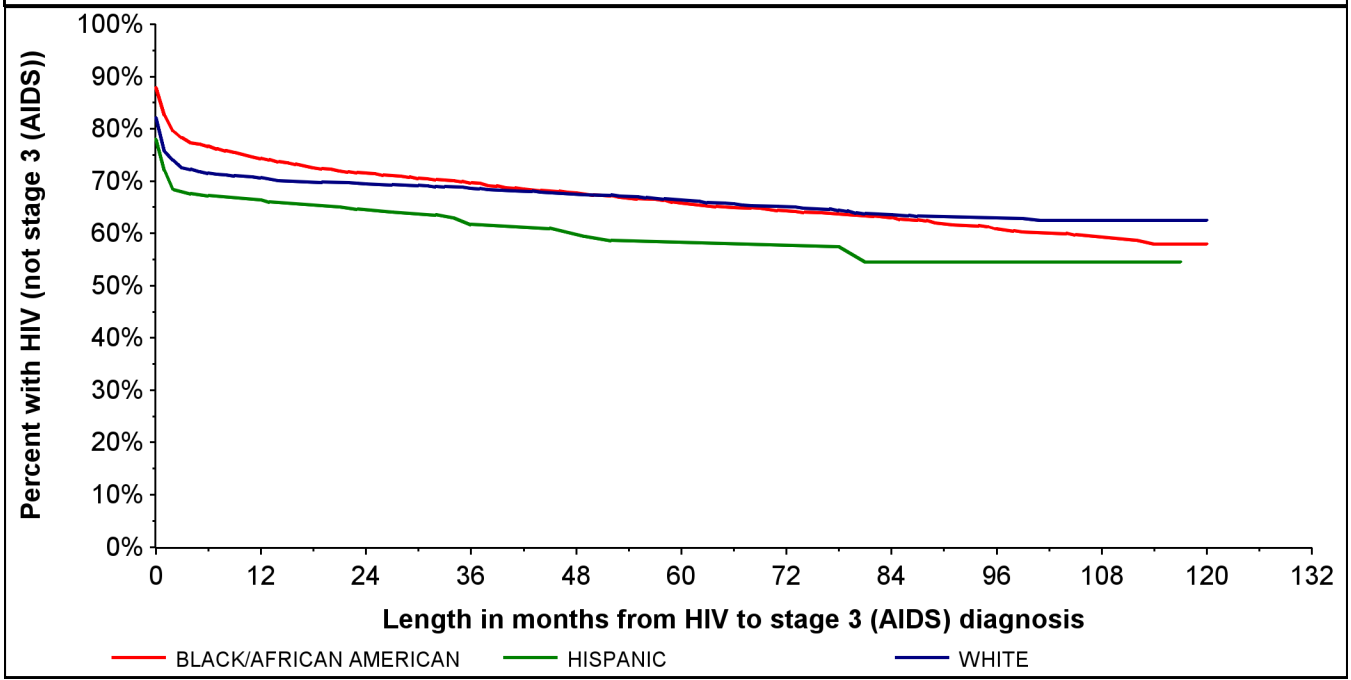
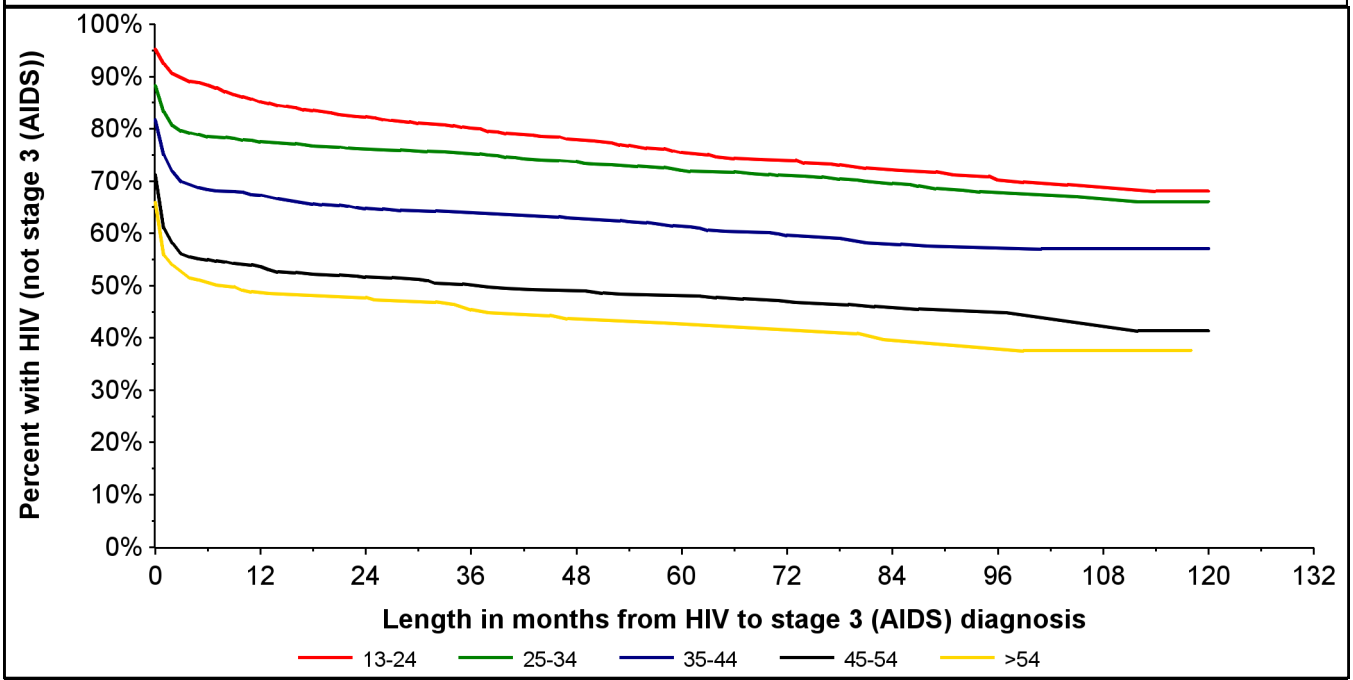


Figure 11. Length of time between HIV and stage 3 (AIDS) diagnosis, by age at diagnosis*, Missouri, 2009-2017



*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 10). 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 10 through 17 are based on persons diagnosed as of 2017, as not enough time has elapsed to accurately measure length of time for progression to stage 3 (AIDS) or death for 2018 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 11). Over time, the proportion of cases that progressed to stage 3 (AIDS) remained higher as the age at initial HIV diagnosis increased.

Figure 12. Length of time between HIV and stage 3 (AIDS) diagnosis, by mode of transmission, Missouri, 2009-2017

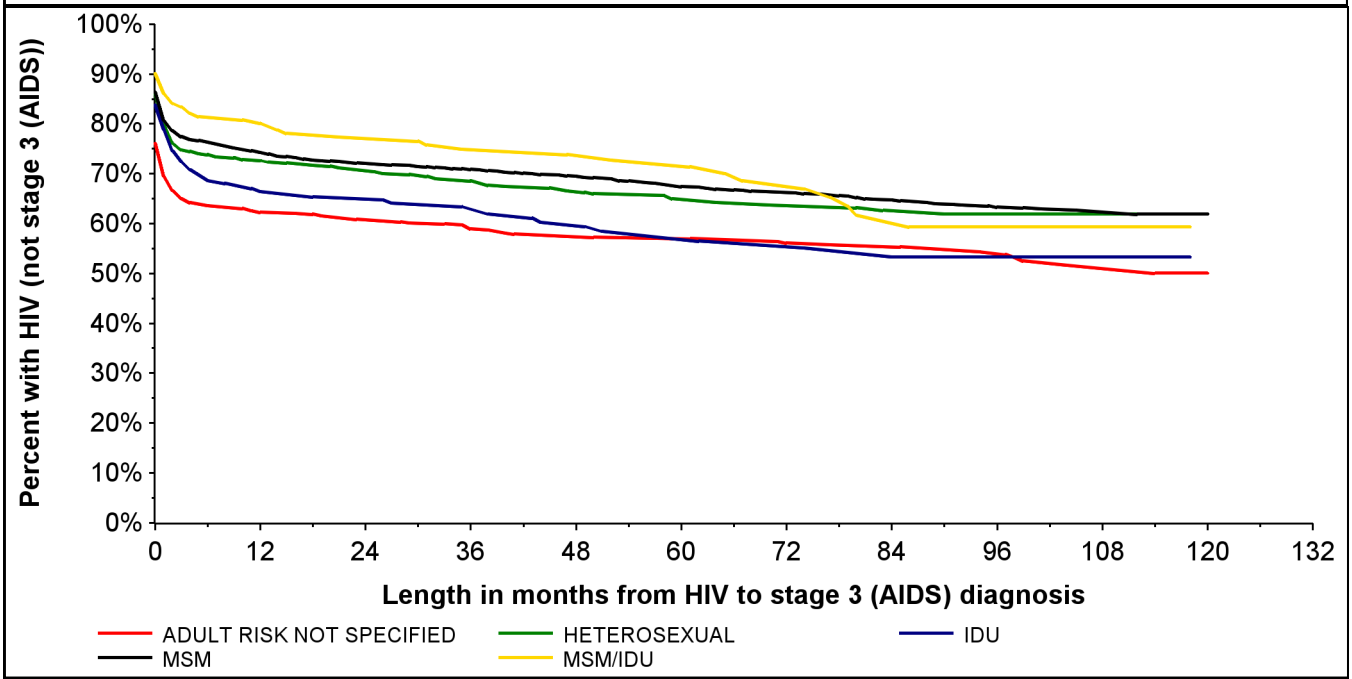
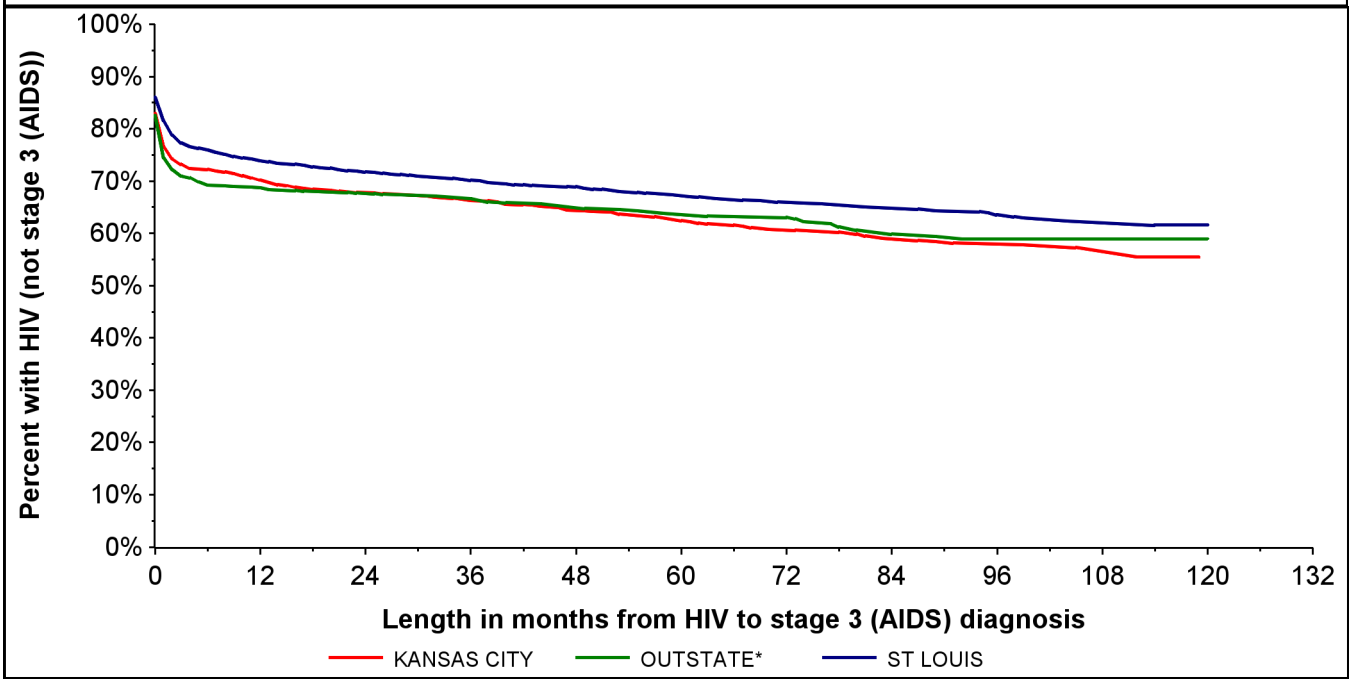


Figure 13. Length of time between HIV and stage 3 (AIDS) diagnosis, by HIV care region*, Missouri, 2009-2017



*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 12). 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 13). 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 14. Length of time between HIV diagnosis and death, by race/ethnicity, Missouri, 2009-2017

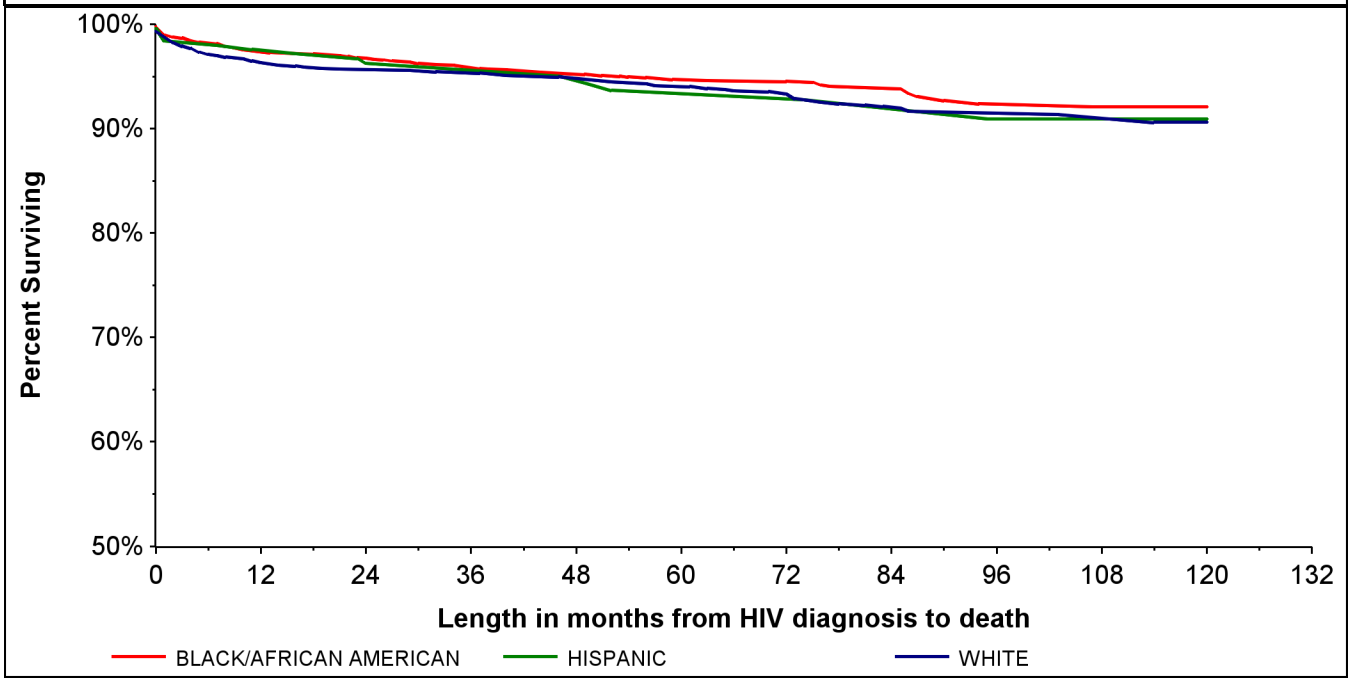
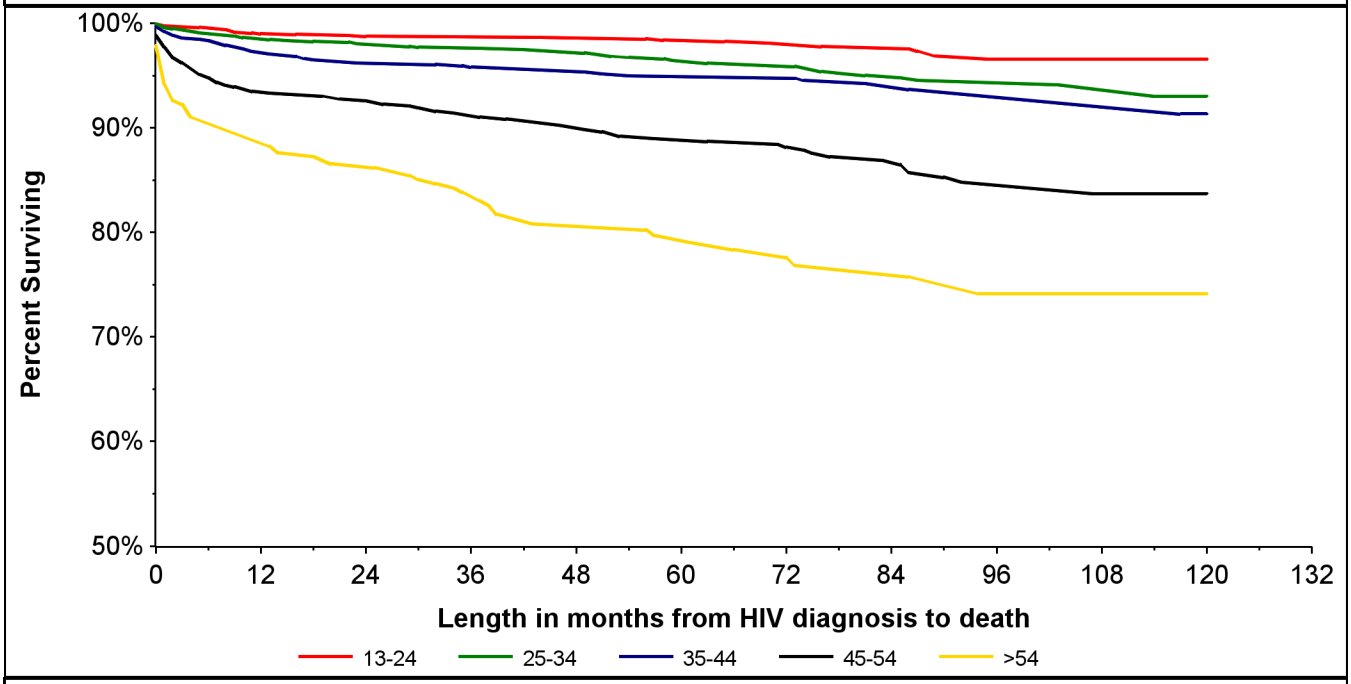


Figure 15. Length of time between HIV diagnosis and death, by age at diagnosis*, Missouri, 2009-2017



*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 14). Five years following the initial HIV diagnosis, 93% 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 15). For example, 72 months following the initial diagnosis, nearly 98% of individuals diagnosed between 13 and 24 years of age were still living, compared to only 70% of individuals diagnosed at greater than 54 years of age.

Figure 16. Length of time between HIV diagnosis and death, by mode of transmission, Missouri, 2009-2017

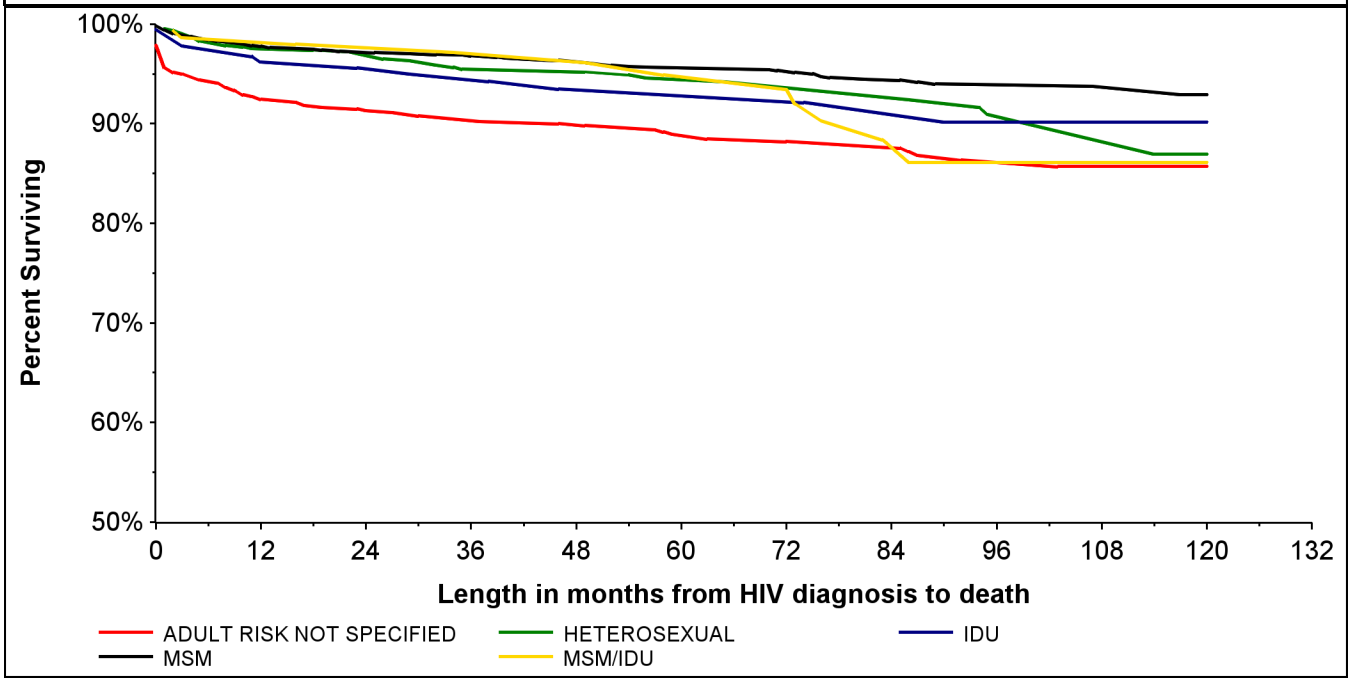
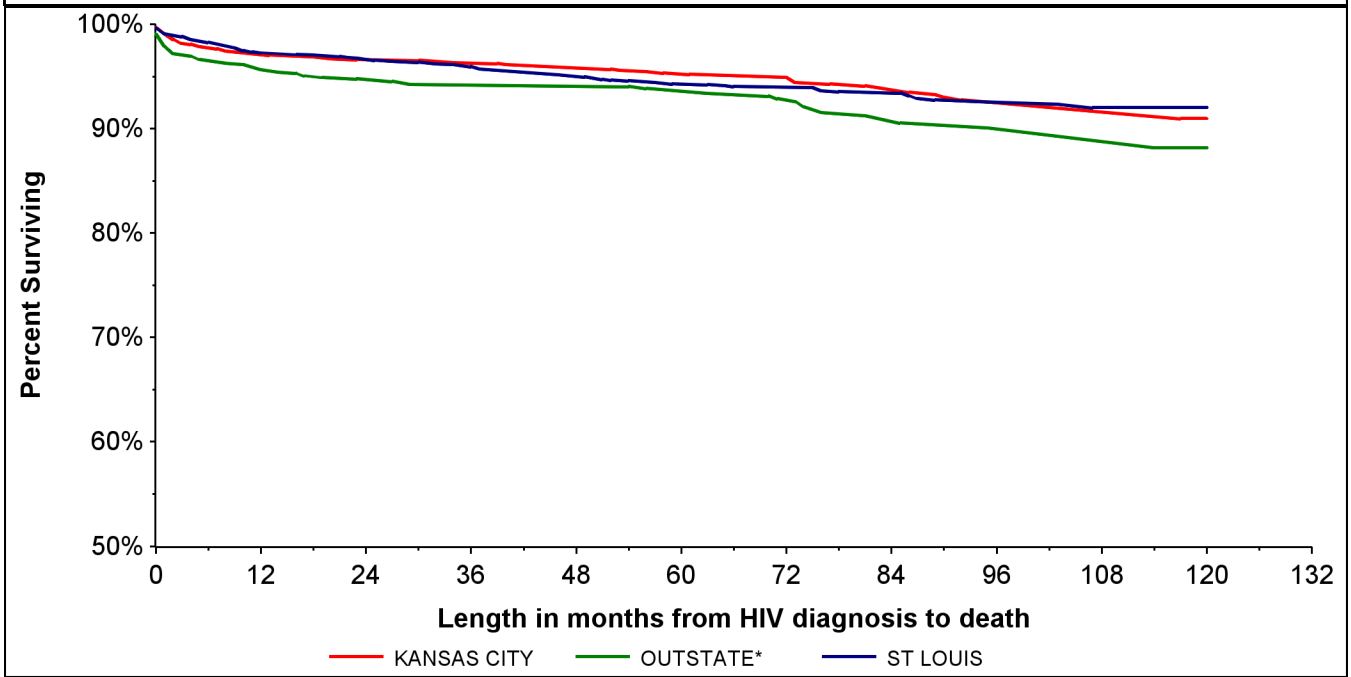


Figure 17. Length of time between HIV diagnosis and death, by HIV care region*, Missouri, 2009-2017



*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 16). Differences in survival persisted over time until 72 months when MSM/IDU survival decreases to that of those with no reported risk.

There were not significant differences in survival following HIV diagnosis by HIV care region (Figure 17). At 24 months following the initial HIV diagnosis, the proportion still living was 97% for the Kansas City HIV Care Region and the St. Louis HIV Care Region, and 95% for the Outstate HIV Care Regions combined.

Table 22. Initial CD4 and viral load values† among adults and adolescents newly diagnosed with HIV disease, Missouri, 2016-2017

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	80	7.8%	1	0.1%	11	1.1%	7	0.7%	26	2.5%	125	12.2%
0-10,000	41	4.0%	16	1.6%	35	3.4%	37	3.6%	133	13.0%	262	25.7%
10,001-100,000	49	4.8%	64	6.3%	79	7.7%	52	5.1%	102	10.0%	346	33.9%
>100,000	20	2.0%	135	13.2%	49	4.8%	42	4.1%	42	4.1%	288	28.2%
Total	**190**	**18.6%**	**216**	**21.2%**	**174**	**17.0%**	**138**	**13.5%**	**303**	**29.7%**	**1,021**	**100.0%**

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

Please note, data in tables 22 and 23 reflect new HIV disease diagnoses in 2016 and 2017, as not enough time has elapsed to accurately measure CD4 and viral load values among persons diagnosed with HIV disease in 2018. Of persons newly diagnosed with HIV disease between 2016 and 2017, 7.8% did not have a CD4 or a viral load laboratory result reported to DHSS within 12 months of diagnosis (Table 22). Approximately 21% of persons diagnosed between 2016 and 2017 had an initial CD4 count of less than 200 cells/µL. This 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 suggests greater emphasis is needed to establish routine HIV testing, so individuals are diagnosed within a shorter time period after becoming infected.

Table 23. Percent of adults and adolescents receiving at least one CD4 within 12 months of their HIV diagnosis and the median initial CD4 count, Missouri, 2016-2017

	Number	% with CD4 within 12 months of HIV diagnosis	Median of initial CD4 counts (cells/ µL)
HIV Status			
HIV (not stage 3 (AIDS))	779	77.0%	506
Concurrent HIV and stage 3 (AIDS)	181	100.0%	69
Stage 3 (AIDS) >1 month after HIV diagnosis	61	82.0%	182
Sex			
Male	816	82.0%	395
Female	205	79.0%	330
Race/Ethnicity			
White	399	88.2%	415
Black/African American	508	75.0%	354
Hispanic	78	87.2%	425
Other/Unknown	36	83.3%	407
Exposure Category			
MSM	612	82.4%	409
MSM/IDU	38	89.5%	421
IDU	40	87.5%	396
HRH	203	78.8%	324
Other	2	100%	734
NIR	126	76.2%	314
Age at HIV Diagnosis			
13-18	42	78.6%	446
19-24	236	79.7%	449
25-44	509	79.2%	393
45-64	218	89.4%	261
65+	16	75.0%	357

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 race/ethnicity, exposure category, and age at HIV diagnosis (Table 23). There was no significant difference in the percent of females (79.0%) compared to males (82.0%) with at least one CD4 within 12 months of initial diagnosis. The initial median CD4 count tended to be greater for males (395 cells/µL) compared to females (330 cells/µL). A greater proportion of Hispanics and whites tended to have a CD4 count within 12 months of diagnosis compared to blacks/African Americans, with Hispanics having 87.2%, whites having 88.2%, and blacks/African Americans having 75.0%. Among those with a CD4 count within 12 months of diagnosis, the initial median CD4 count tended to be lower among black/African Americans (354 cells/ µL). Among exposure categories, MSM/IDU and IDU cases had a higher 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 among individuals with no identified risk compared to all other exposure categories. The median initial CD4 count tended to decrease as the age at HIV diagnosis increased and then rises again 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 has more than doubled from 2016 (400 cases) to 2018 (806 cases). Increases were seen in all HIV care regions except Northwest HIV Care Region which remained steady.
- The rate of reported cases was highest in Iron County (58.7 per 100,000).
- Blacks/African Americans were disproportionately impacted, with a case rate 5.2 times as high as the rate among whites.

Early Latent Syphilis

- The number of early latent syphilis cases increased from 2017 (423 cases) to 2018 (546 cases). Increases were seen in all HIV care regions except St. Louis HIV Care Region.
- The rate of reported cases was highest in Dunklin County (63.1 per 100,000).
- Males represented the majority (76.6%) of reported early latent syphilis cases.
- The case rate was 4.6 times as high among blacks/African Americans compared to whites.

Gonorrhea

- The number of reported gonorrhea cases increased from to 2017 (13,086 cases) to 2018 (15,091). Increases were seen in all HIV care regions.
- The rate of reported cases was highest in St. Louis City (738.8 per 100,000).
- A larger proportion of reported gonorrhea cases was diagnosed between 15 and 19 years of age among black/African American females (37.1%) compared to white females (24.1%), black/African American males (30.5%), and white males (8.3%).

Chlamydia

- The number of reported chlamydia cases increased from 2017 (32,683 cases) to 2018 (34,728 cases). Increases were seen in all HIV care regions except the Northwest HIV Care Region.
- The rate of reported cases was highest in St. Louis City (1,421.5 per 100,000).
- A larger proportion of reported chlamydia cases was diagnosed between 15 and 19 years of age among white females (40.2%) compared to black/African American females (34.5%), black/African American males (15.7%) and white males (9.6%).

Hepatitis B

- The number of reported hepatitis B cases in Missouri decreased from 2017 (594 cases) to 2018 (585 cases).
- The rate of reported cases was highest in Sullivan County (32.1 per 100,000).
- Among females, the largest number of cases was among persons 30 to 39 years of age, while among males the largest number of cases was among persons 50 to 59 years of age.

Hepatitis C

- The number of reported hepatitis C cases in Missouri decreased from 2017 (4,946 cases) to 2018 (4,730 cases). Please note that this is not likely due to a true decrease in morbidity but is more likely attributed to a change in case definition and data collection methods. Please see the Technical Notes section for more information.
- The rate of reported cases was highest in Carter County (259.4 per 100,000).
- Among males, the largest number of cases was among persons greater than or equal to 60 years of age. Among females, the largest number of cases was among persons 30 to 39 years of age.

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

- There were 877 persons living with HIV who were reported with at least one other STD in 2018.
- Of the 1,352 early syphilis cases reported in 2018, 22.3% were among individuals living with HIV. Only 3.0% of gonorrhea cases and 1.1% of chlamydia cases reported in 2018 were among individuals living with HIV.
- The St. Louis HIV Care Region represented 54.7% of all living HIV cases reported with multiple STD co-infections in 2018.
- Although blacks/African Americans represented only 46.0% of living HIV disease cases, they represented 58.6% of individuals diagnosed with an STD co-infection.
- Of the 13,109 individuals living with HIV disease, 73 were reported with a hepatitis B and/or C co-infection in 2018.
- Approximately four percent (5.1%) of chronic hepatitis B cases and less than 1.0% of chronic hepatitis C cases reported in 2018 were among persons living with HIV disease.
- Of the 13,109 individuals living with HIV disease, one was reported with TB disease in 2018.

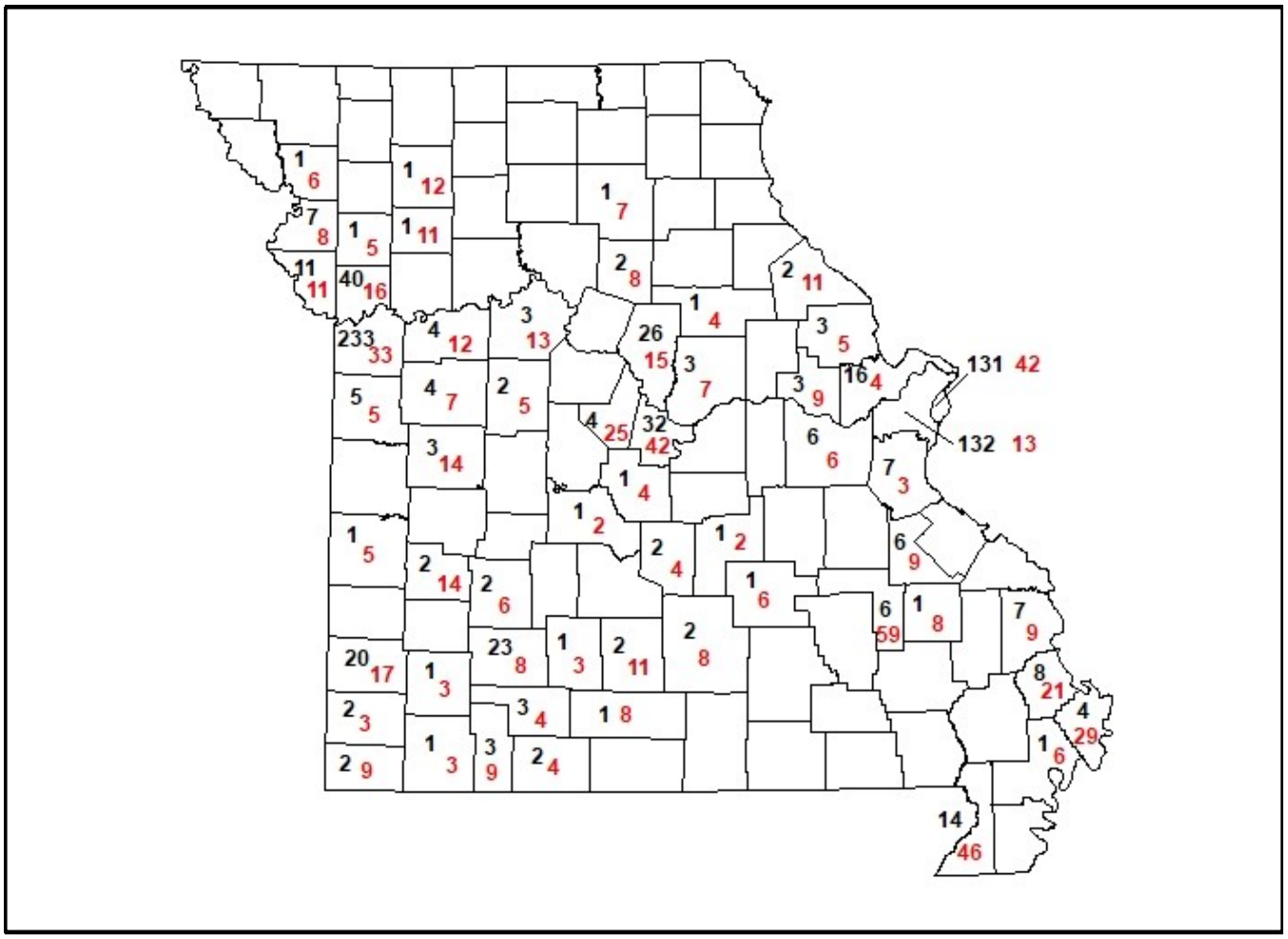
Table 24. Reported P&S syphilis cases and rates, by sex, HIV care region, and race*, Missouri, 2018

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	325	50.4%	13.6	97	60.2%	3.9	422	8.7
Black/African American	269	41.7%	79.7	51	31.7%	13.7	320	45.1
Other/Unknown*	51	7.9%	--	13	8.1%	--	64	--
Total	**645**	**100.0%**	**21.5**	**161**	**100.0%**	**5.2**	**806**	**13.2**
St. Louis HIV Care Region								
White	94	36.7%	12.5	9	21.4%	1.2	103	6.7
Black/African American	147	57.4%	78.9	32	76.2%	14.3	179	43.6
Other/Unknown*	15	5.9%	--	1	2.4%	--	16	--
Total	**256**	**100.0%**	**25.0**	**42**	**100.0%**	**3.8**	**298**	**14.1**
Kansas City HIV Care Region								
White	128	53.6%	29.8	36	65.5%	8.0	164	18.7
Black/African American	87	36.4%	97.3	12	21.8%	11.9	99	52.0
Other/Unknown*	24	10.0%	--	7	12.7%	--	31	--
Total	**239**	**100.0%**	**40.1**	**55**	**100.0%**	**8.8**	**294**	**24.0**
Northwest HIV Care Region								
White	7	77.8%	7.1	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*	2	22.2%	--	0	0.0%	--	2	--
Total	**9**	**100.0%**	**8.0**	**1**	**100.0%**	**0.9**	**10**	**4.5**
Central HIV Care Region								
White	25	44.6%	6.5	20	69.0%	5.1	45	5.8
Black/African American	26	46.4%	104.2	5	17.2%	24.6	31	68.5
Other/Unknown*	5	8.9%	--	4	13.8%	--	9	--
Total	**56**	**100.0%**	**12.7**	**29**	**100.0%**	**6.5**	**85**	**9.6**
Southwest HIV Care Region								
White	46	83.6%	9.0	16	94.1%	3.0	62	6.0
Black/African American	4	7.3%	27.7	0	0.0%	0.0	4	16.5
Other/Unknown*	5	9.1%	--	1	5.9%	--	6	--
Total	**55**	**100.0%**	**9.5**	**17**	**100.0%**	**2.9**	**72**	**6.1**
Southeast HIV Care Region								
White	25	83.3%	11.5	15	88.2%	6.8	40	9.1
Black/African American	5	16.7%	29.6	2	11.8%	13.9	7	22.3
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total	**30**	**100.0%**	**12.2**	**17**	**100.0%**	**6.9**	**47**	**9.5**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2017 DHSS population estimates.
Note: Percentages may not total 100% due to rounding.

A total of 806 P&S syphilis cases were reported in 2018 (Table 24). This number represented a 101.5% increase from the 400 P&S syphilis cases reported in 2016. The majority of cases (80.0%) were reported among males. The rate of P&S syphilis cases among males was highest in the Kansas City HIV Care Region (40.1 per 100,000), followed by the St. Louis HIV Care Region (25.0 per 100,000). Thirty-seven percent (37.0%) of all P&S syphilis cases were reported in the St. Louis HIV Care Region and 36.5% were reported in the Kansas City HIV Care Region. The rate of reported P&S syphilis cases was higher for blacks/African Americans compared to whites in all regions except Northwest HIV Care Region which had no cases reported for black/ African Americans.

Figure 18. Reported P&S syphilis cases* and rates, by county, Missouri, 2018**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2017 DHSS population estimates.

P&S syphilis cases were concentrated in metropolitan areas (Figure 18). There were 57 counties that did not report any P&S syphilis cases in 2018. Iron County had the highest rate of reported P&S syphilis cases at 58.7 per 100,000 persons. This means that for every 100,000 persons living in Iron County, there were 58 reported with P&S syphilis in 2018.

Figure 19. Reported P&S syphilis cases, by race and sex and age group at diagnosis, Missouri, 2018

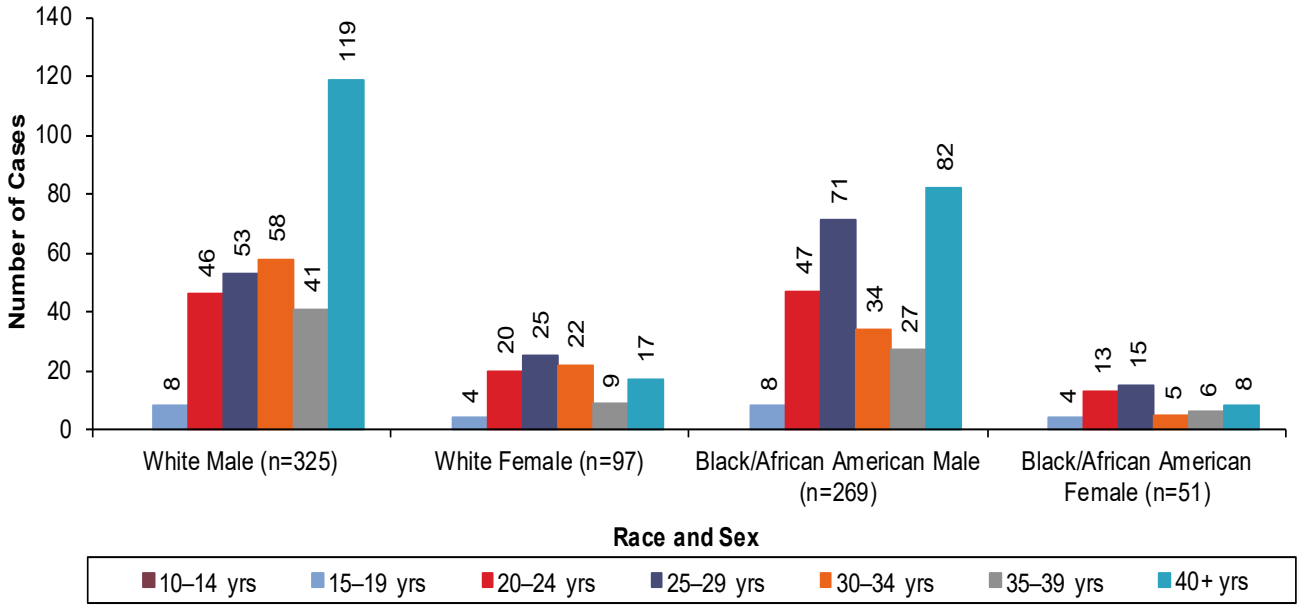
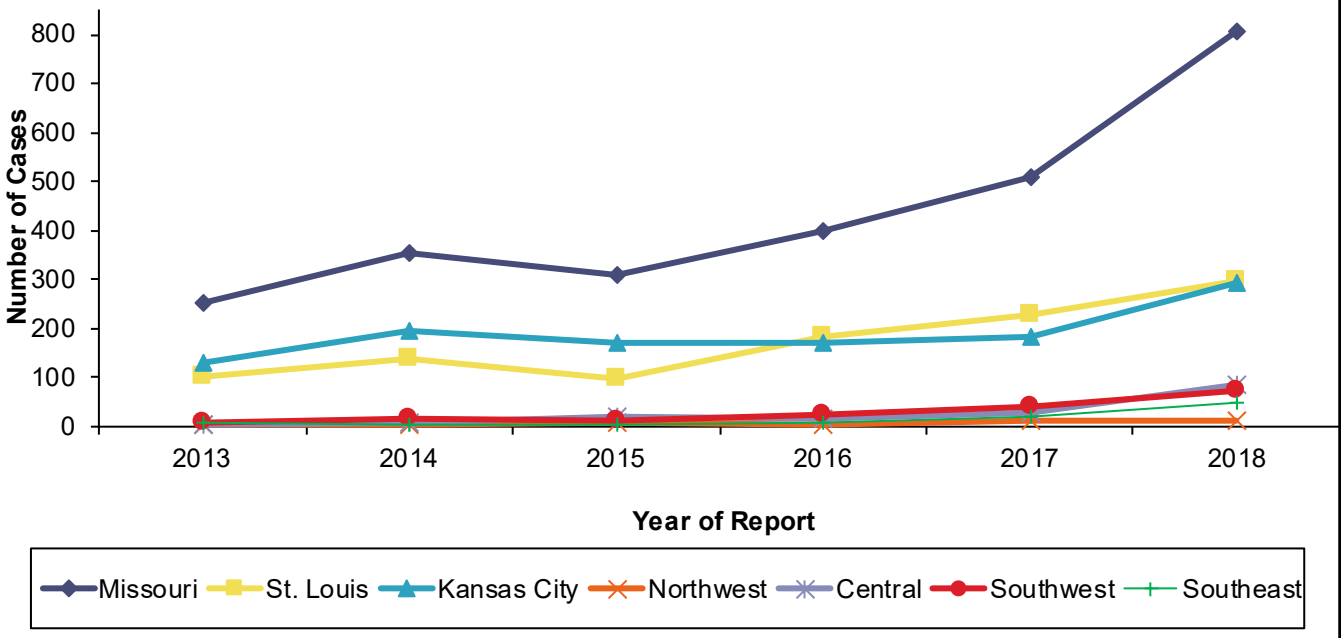


Figure 20. Reported P&S syphilis cases, by HIV care region and year of report, Missouri, 2013-2018



The largest numbers of P&S syphilis cases were reported among white males (325) and black/African American males (269) (Figure 19). The number of reported cases increased from 2017 to 2018 among all 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 and black/African American males, the largest numbers of cases were reported among individuals 40 or more years of age at the time of diagnosis. Among white females and black/African American females, the largest numbers of cases were reported among individuals 25 to 29 years of age.

The trend in the number of reported P&S syphilis cases in Missouri has fluctuated from 2013 to 2015, with increases seen from 2015 to 2018 (Figure 20). The number of reported P&S syphilis cases increased from 2017 to 2018 in the St. Louis HIV Care Region (229 to 298), the Southwest HIV Care Region (39 to 72), the Southeast HIV Care Region (17 to 47), the Kansas City HIV Care Region (183 to 294), and the Central HIV Care Region (29 to 85). The Northwest HIV Care Region remained level with 10 reported cases.

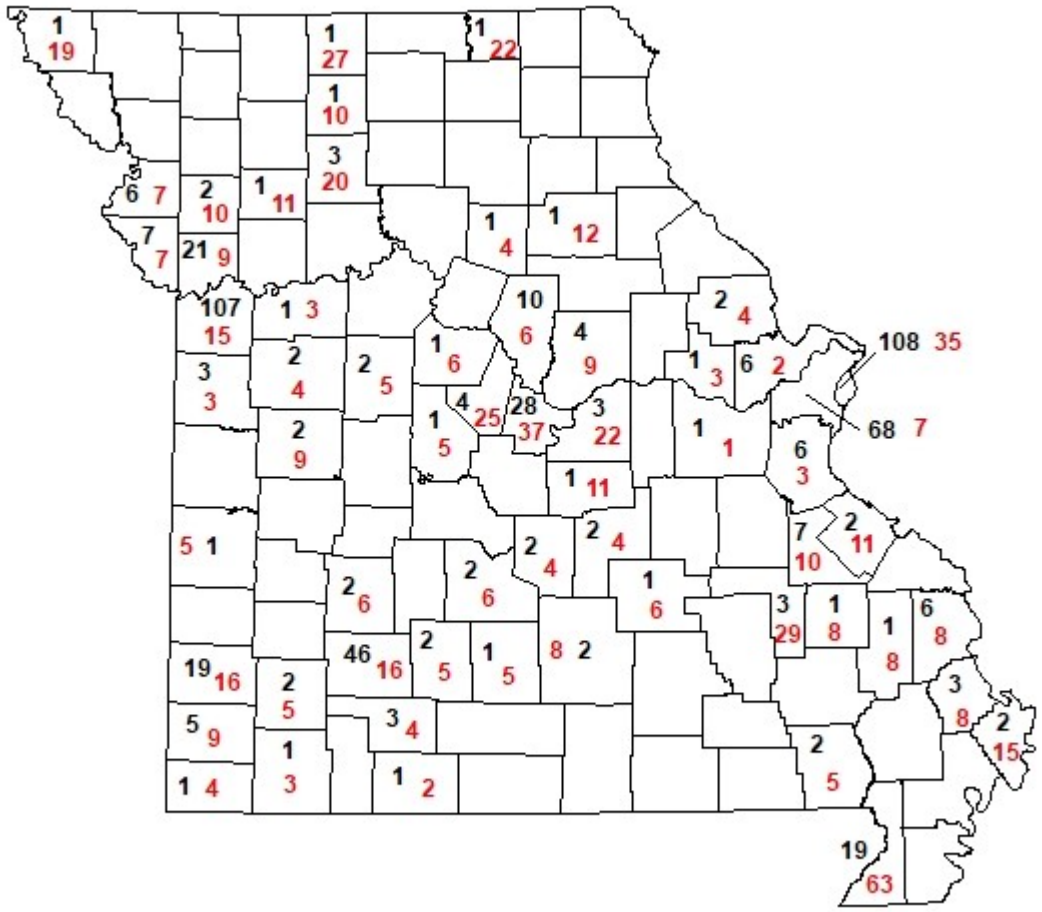
Table 25. Reported early latent syphilis cases and rates, by sex, HIV care region and race*, Missouri, 2018

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	215	51.4%	9.0	73	57.0%	3.0	288	5.9
Black/African American	151	36.1%	44.7	40	31.3%	10.7	191	26.9
Other/Unknown*	52	12.4%	--	15	11.7%	--	67	--
Total	**418**	**100.0%**	**13.9**	**128**	**100.0%**	**4.1**	**546**	**8.9**
St. Louis HIV Care Region								
White	61	38.4%	8.1	8	24.2%	1.0	69	4.5
Black/African American	83	52.2%	44.5	23	69.7%	10.3	106	25.8
Other/Unknown*	15	9.4%	--	2	6.1%	--	17	--
Total	**159**	**100.0%**	**15.5**	**33**	**100.0%**	**3.0**	**192**	**9.1**
Kansas City HIV Care Region								
White	60	54.5%	14.0	15	48.4%	3.3	75	8.6
Black/African American	33	30.0%	36.9	8	25.8%	7.9	41	21.6
Other/Unknown*	17	15.5%	--	8	25.8%	--	25	--
Total	**110**	**100.0%**	**18.5**	**31**	**100.0%**	**4.9**	**141**	**11.5**
Northwest HIV Care Region								
White	4	50.0%	4.1	5	100.0%	5.0	9	4.5
Black/African American	2	25.0%	35.9	0	0.0%	0.0	2	23.7
Other/Unknown*	2	25.0%	--	0	0.0%	--	2	--
Total	**8**	**100.0%**	**7.1**	**5**	**100.0%**	**4.5**	**13**	**5.8**
Central HIV Care Region								
White	18	47.4%	4.7	16	69.6%	4.1	34	4.4
Black/African American	17	44.7%	68.2	4	17.4%	19.7	21	46.4
Other/Unknown*	3	7.9%	--	3	13.0%	--	6	--
Total	**38**	**100.0%**	**8.6**	**23**	**100.0%**	**5.2**	**61**	**6.9**
Southwest HIV Care Region								
White	56	71.8%	10.9	13	86.7%	2.5	69	6.6
Black/African American	8	10.3%	55.3	1	6.7%	10.3	9	37.2
Other/Unknown*	14	17.9%	--	1	6.7%	--	15	--
Total	**78**	**100.0%**	**13.4**	**15**	**100.0%**	**2.5**	**93**	**7.9**
Southeast HIV Care Region								
White	16	64.0%	7.4	16	76.2%	7.2	32	7.3
Black/African American	8	32.0%	47.4	4	19.0%	27.7	12	38.3
Other/Unknown*	1	4.0%	--	1	4.8%	--	2	--
Total	**25**	**100.0%**	**10.2**	**21**	**100.0%**	**8.5**	**46**	**9.3**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2017 DHSS population estimates.
Note: Percentages may not total 100% due to rounding.

A total of 546 early latent syphilis cases were reported in 2018, compared to 426 cases reported in 2017 (Table 25). The majority of cases (76.6%) were reported among males. The rate of early latent syphilis cases was highest in the Kansas City HIV Care Region (11.5 per 100,000), followed by the Southeast HIV Care Region (9.3 per 100,000). Approximately one-third (35.2%) of all early latent syphilis cases were reported in the St. Louis HIV Care Region and 25.8% were reported in the Kansas City HIV Care Region. The rate of reported early latent syphilis cases was higher for blacks/African Americans compared to whites in all regions.

Figure 21. Reported early latent syphilis cases* and rates, by county, Missouri, 2018**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2017 DHSS population estimates.

Early latent syphilis cases were concentrated in metropolitan areas. While metropolitan areas continued to have high numbers of cases, many rural counties that previously did not report cases had cases to report in 2018 (Figure 21). There were 55 counties that did not report any early latent syphilis cases in 2018 which is fewer than the 70 counties that did not report any early latent syphilis cases in 2017. St. Louis City had the highest number of reported early latent syphilis cases (108). Dunklin County had the highest rate of reported early latent syphilis cases (63.1 per 100,000). This means that for every 100,000 persons living in Dunklin County, there were 63 reported with early latent syphilis in 2018.

Figure 22. Reported early latent syphilis cases, by race and sex and age group at diagnosis, Missouri, 2018

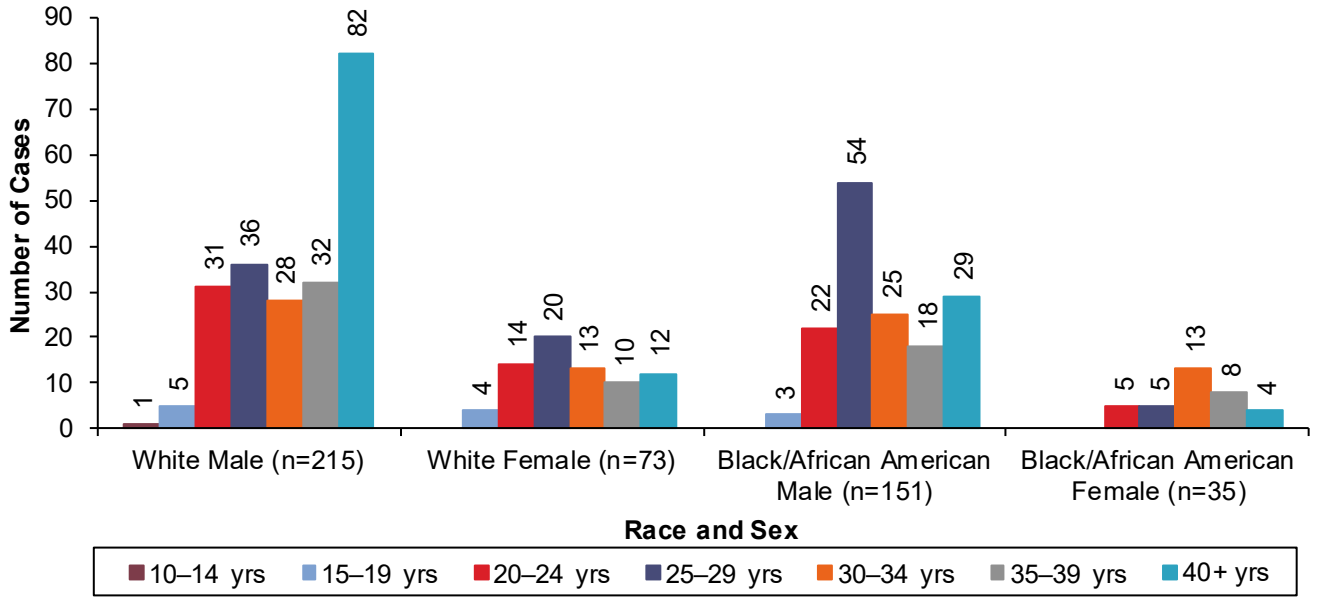
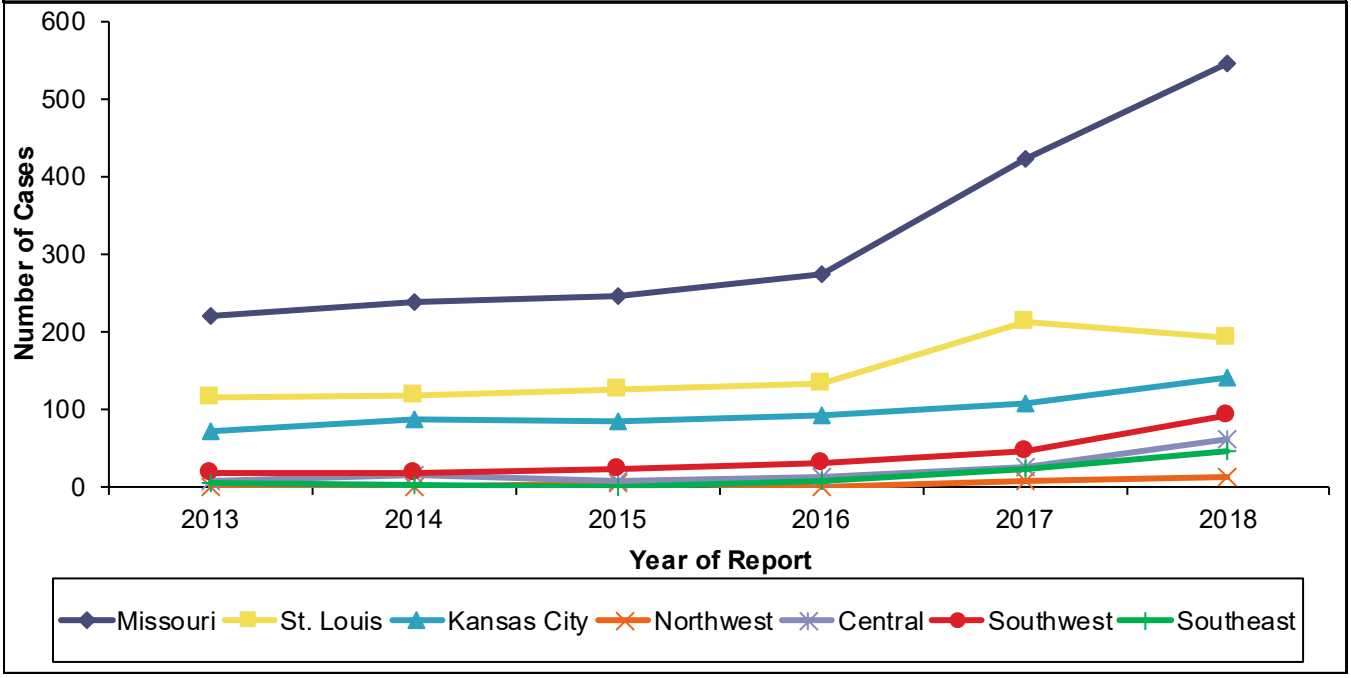


Figure 23. Reported early latent syphilis cases by HIV care region and year of report, Missouri, 2013-2018



The largest numbers of early latent syphilis cases were reported among white males (215) and black/African American males (151) (Figure 22). The number of reported cases increased among both males and females. From 2017 to 2018 the number of early latent syphilis cases among black/African American males slightly decreased from 156 to 151 cases. Among white males, the largest numbers of cases were reported among individuals 40 or more years of age at the time of diagnosis. Among black/African American males, cases were greatest among those 25 to 29 years of age.

The number of reported early latent syphilis cases in Missouri sharply increased from 2013 to 2016 and has sharply increase from 2016 to 2018 (Figure 23). The number of reported early latent syphilis cases increased from 2016 to 2017 in all HIV care regions except the St. Louis HIV Care Region.

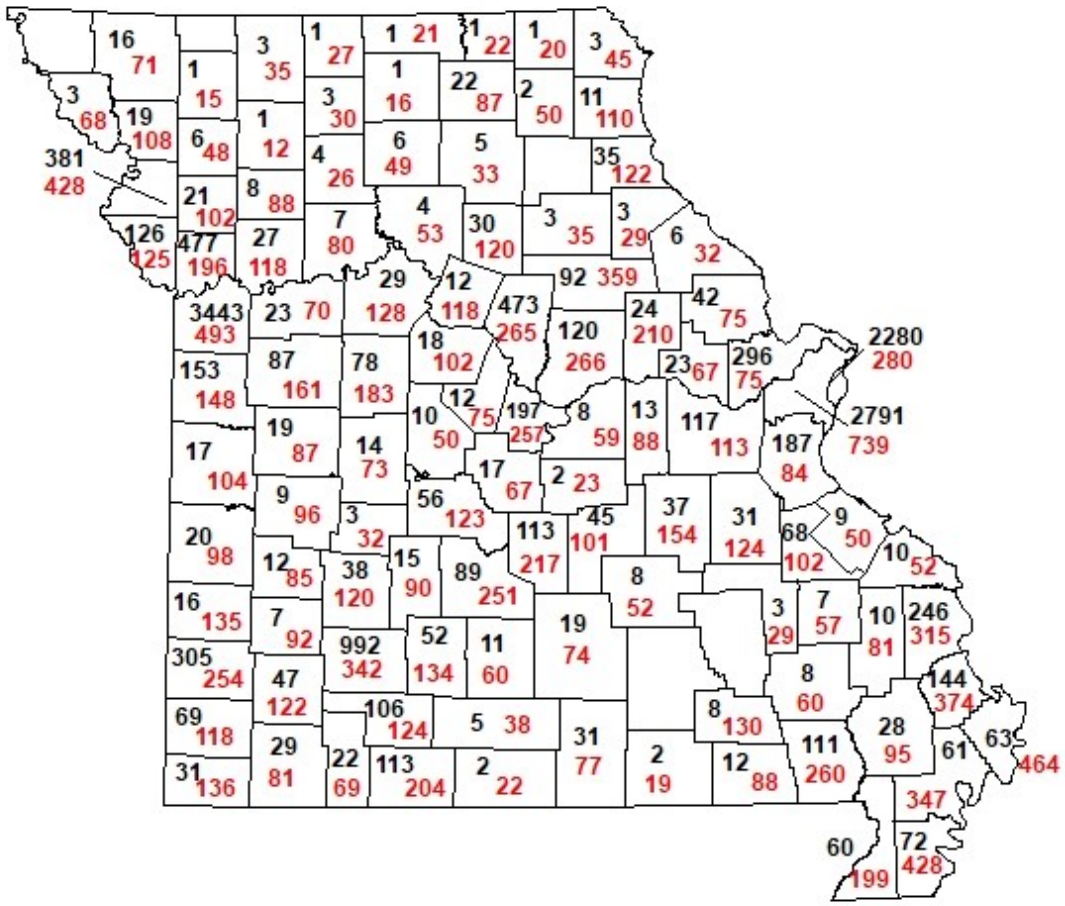
Table 26. Reported gonorrhea cases and rates, by sex, HIV care region and race*, Missouri, 2018

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	2,619	31.6%	109.5	2,880	42.3%	116.7	5,499	113.2
Black/African American	4,364	52.7%	1292.6	2,908	42.7%	781.2	7,272	1024.4
Other/Unknown*	1,304	15.7%	--	1,015	14.9%	--	2,320	--
Total	**8,287**	**100.0%**	**276.0**	**6,803**	**100.0%**	**218.7**	**15,091**	**246.8**
St. Louis HIV Care Region								
White	496	14.9%	66.1	439	18.2%	56.1	935	61.0
Black/African American	2,266	68.2%	1216.0	1,594	66.1%	711.5	3,860	940.6
Other/Unknown*	562	16.9%	--	379	15.7%	--	942	--
Total	**3,324**	**100.0%**	**324.3**	**2,412**	**100.0%**	**220.5**	**5,737**	**270.8**
Kansas City HIV Care Region								
White	704	29.3%	164.0	689	37.0%	153.8	1,393	158.8
Black/African American	1,366	56.8%	1527.8	922	49.5%	914.3	2,288	1202.6
Other/Unknown*	336	14.0%	--	253	13.6%	--	589	--
Total	**2,406**	**100.0%**	**403.7**	**1,864**	**100.0%**	**297.4**	**4,270**	**349.2**
Northwest HIV Care Region								
White	162	64.5%	164.4	160	79.2%	158.7	322	161.5
Black/African American	54	21.5%	970.2	14	6.9%	487.8	68	806.1
Other/Unknown*	35	13.9%	--	28	13.9%	--	63	--
Total	**251**	**100.0%**	**223.1**	**202**	**100.0%**	**181.7**	**453**	**202.5**
Central HIV Care Region								
White	345	49.0%	90.0	456	62.6%	116.8	801	103.5
Black/African American	238	33.8%	954.1	162	22.3%	797.9	400	884.0
Other/Unknown*	121	17.2%	--	110	15.1%	--	231	--
Total	**704**	**100.0%**	**159.6**	**728**	**100.0%**	**164.4**	**1,432**	**162.0**
Southwest HIV Care Region								
White	722	63.3%	140.9	840	78.4%	159.7	1,562	150.5
Black/African American	245	21.5%	1694.9	74	6.9%	759.5	319	1318.3
Other/Unknown*	173	15.2%	--	157	14.7%	--	330	--
Total	**1,140**	**100.0%**	**195.9**	**1,071**	**100.0%**	**181.8**	**2,211**	**188.8**
Southeast HIV Care Region								
White	190	41.1%	87.7	296	56.3%	133.6	486	110.9
Black/African American	195	42.2%	1154.5	142	27.0%	983.6	337	1075.7
Other/Unknown*	77	16.7%	--	88	16.7%	--	165	--
Total	**462**	**100.0%**	**187.8**	**526**	**100.0%**	**212.2**	**988**	**200.1**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2017 DHSS population estimates.
Note: Percentages may not total 100% due to rounding.

A total of 15,091 gonorrhea cases were reported in 2018 (Table 26). This represented a 15.3% increase in the number of reported cases compared to 2017 (13,086 cases). The majority of cases (54.9%) were reported among males. Of all reported gonorrhea cases, 38.0% were reported in the St. Louis HIV Care Region and 28.3% 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.

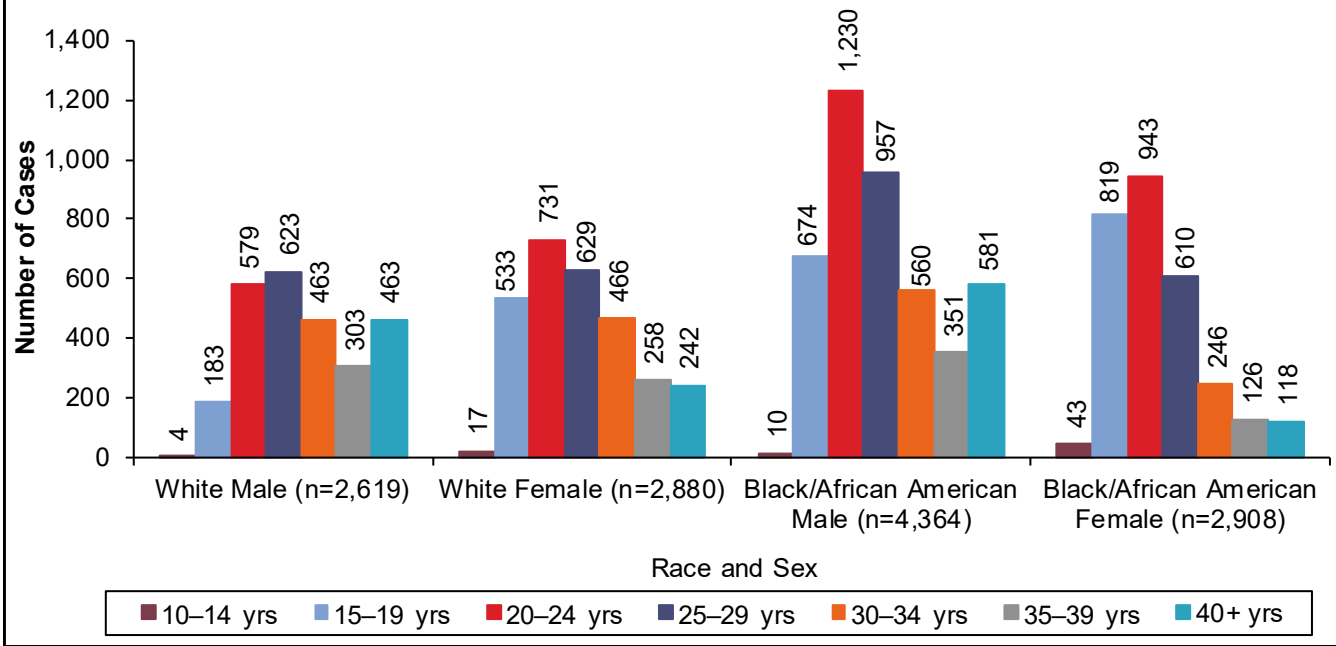
Figure 24. Reported gonorrhea cases* and rates, by county, Missouri, 2018**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2017 DHSS population estimates.

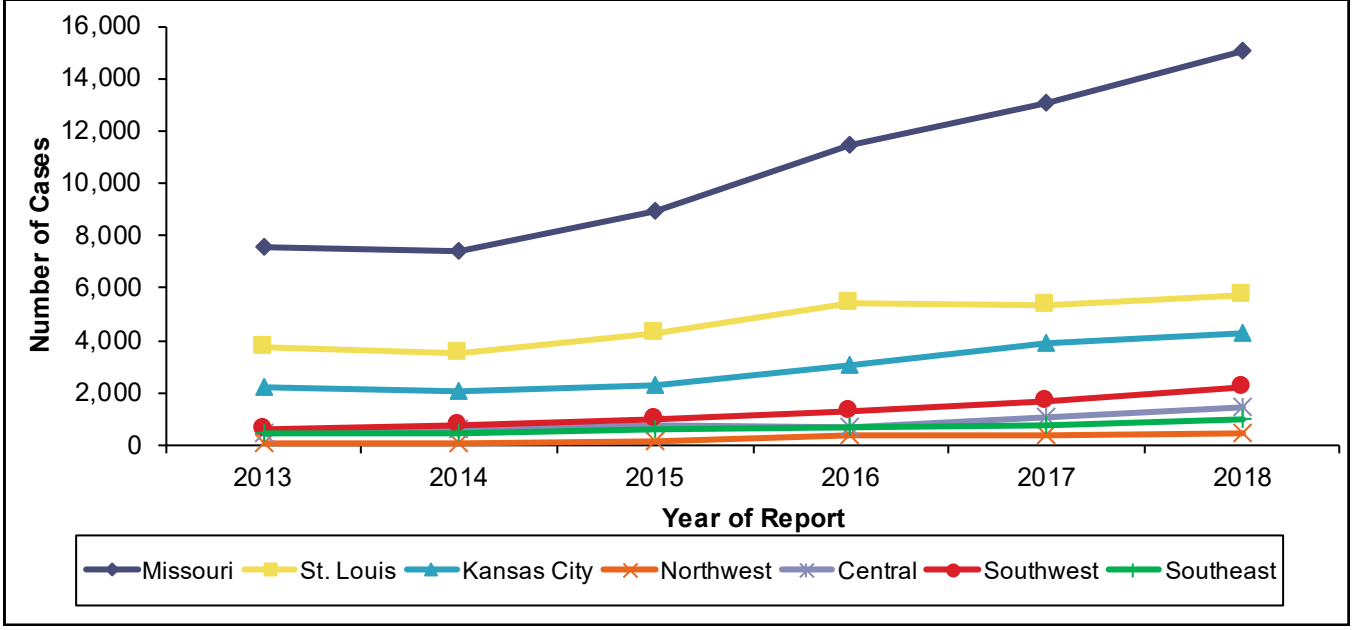
Gonorrhea cases reported in St. Louis City, St. Louis County, and Jackson County represented 65.0% of all reported cases in 2018 (Figure 24). There were five counties that did not report any gonorrhea cases in 2018. Jackson County had the highest number of reported gonorrhea cases (3,443). St. Louis City had the highest rate of reported gonorrhea cases at 738.8 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 739 reported with gonorrhea in 2018.

Figure 25. Reported gonorrhea cases, by race and sex and age group at diagnosis, Missouri, 2018



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

Figure 26. Reported gonorrhea cases by HIV care region and year of report, Missouri, 2013-2018



The largest numbers of gonorrhea cases were reported among black/African American males (4,364) and black/African American females (2,908) (Figure 25). The number of reported cases increased from 2017 to 2018 among all race/ethnicity and sex categories presented. Among all race/ethnicity and sex categories presented, the largest numbers of cases were reported among individuals 20 to 24 years of age at the time of diagnosis except in white males. A greater proportion of gonorrhea cases among white males (17.7%) and black/African American males (13.3%) was diagnosed among individuals 40 or more years of age compared to female cases.

The number of reported gonorrhea cases in Missouri decreased slightly from 2013 through 2014, and then increased through 2018 (Figure 26). The number of reported gonorrhea cases was higher in 2018 than 2017 in all HIV care regions.

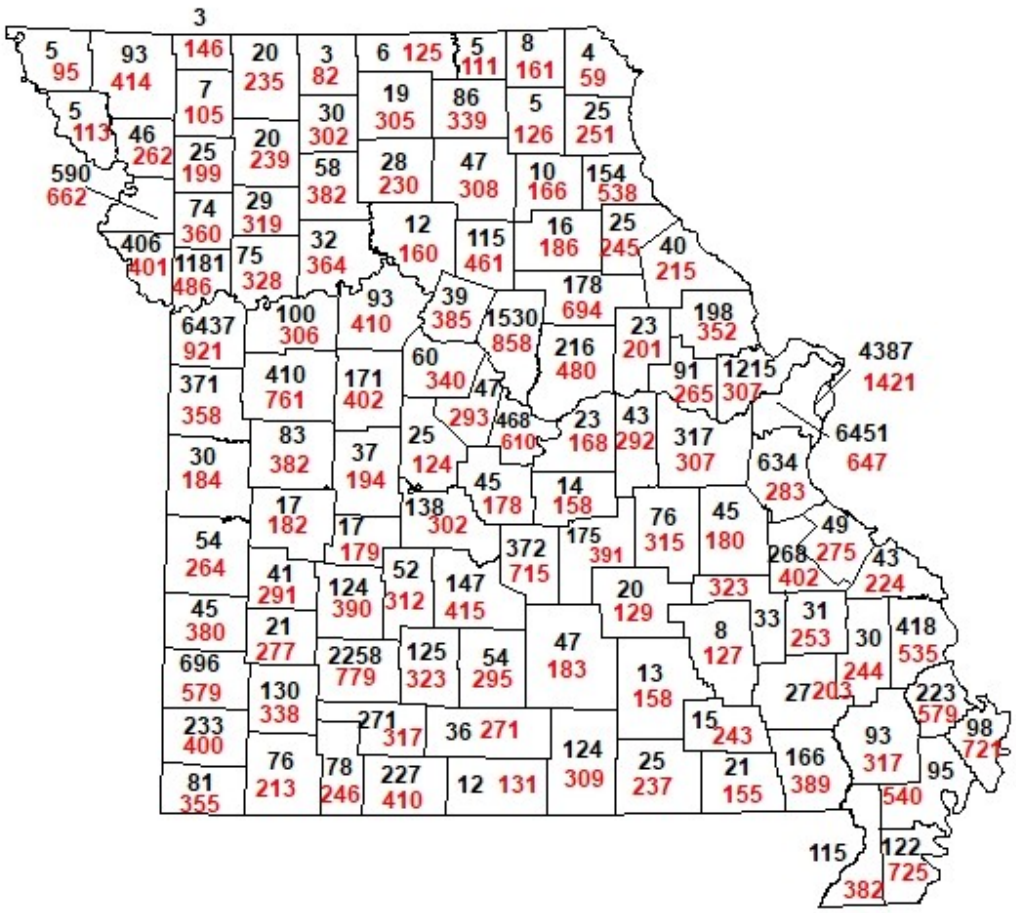
Table 27. Reported chlamydia cases and rates, by sex, HIV care region and race*, Missouri, 2018

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	4,430	37.1%	185.3	10,011	43.9%	405.6	14,441	297.2
Black/African American	5,141	43.1%	1522.8	7,972	35.0%	2141.6	13,113	1847.3
Other/Unknown*	2,370	19.8%	--	4,804	21.1%	--	7,174	--
Total	**11,941**	**100.0%**	**397.7**	**22,787**	**100.0%**	**732.4**	**34,728**	**568.1**
St. Louis HIV Care Region								
White	985	21.5%	131.2	2,064	23.7%	263.9	3,049	198.9
Black/African American	2,638	57.7%	1415.6	4,635	53.2%	2068.8	7,273	1772.2
Other/Unknown*	951	20.8%	--	2,020	23.2%	--	2,971	--
Total	**4,574**	**100.0%**	**446.3**	**8,719**	**100.0%**	**797.2**	**13,293**	**627.5**
Kansas City HIV Care Region								
White	890	29.0%	207.3	2,010	36.0%	448.7	2,900	330.6
Black/African American	1,502	49.0%	1680.0	2,259	40.5%	2240.2	3,761	1976.9
Other/Unknown*	674	22.0%	--	1,309	23.5%	--	1,983	--
Total	**3,066**	**100.0%**	**514.5**	**5,578**	**100.0%**	**889.9**	**8,644**	**706.9**
Northwest HIV Care Region								
White	198	61.1%	200.9	490	76.3%	486.1	688	345.2
Black/African American	73	22.5%	1311.5	50	7.8%	1742.2	123	1458.0
Other/Unknown*	53	16.4%	--	102	15.9%	--	155	--
Total	**324**	**100.0%**	**288.0**	**642**	**100.0%**	**577.6**	**966**	**431.9**
Central HIV Care Region								
White	693	50.3%	180.7	1,869	64.4%	478.9	2,562	331.1
Black/African American	427	31.0%	1711.8	537	18.5%	2644.9	964	2130.5
Other/Unknown*	258	18.7%	--	494	17.0%	--	752	--
Total	**1,378**	**100.0%**	**312.4**	**2,900**	**100.0%**	**654.9**	**4,278**	**484.0**
Southwest HIV Care Region								
White	1,345	67.6%	262.5	2,723	76.1%	517.8	4,068	391.9
Black/African American	316	15.9%	2186.1	221	6.2%	2268.3	537	2219.2
Other/Unknown*	330	16.6%	--	636	17.8%	--	966	--
Total	**1,991**	**100.0%**	**342.2**	**3,580**	**100.0%**	**607.8**	**5,571**	**475.8**
Southeast HIV Care Region								
White	319	52.5%	147.2	855	62.5%	386.0	1,174	267.9
Black/African American	185	30.4%	1095.3	270	19.7%	1870.2	455	1452.4
Other/Unknown*	104	17.1%	--	243	17.8%	--	347	--
Total	**608**	**100.0%**	**247.2**	**1,368**	**100.0%**	**551.9**	**1,976**	**400.1**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2017 DHSS population estimates.
Note: Percentages may not total 100% due to rounding.

A total of 34,728 chlamydia cases were reported in 2018 (Table 27). This represented a 6.3% increase in cases reported from 2017 (32,683 cases). The majority of cases (65.6%) were reported among females. The rate of chlamydia cases among females was highest in the Kansas City HIV Care Region (889.9 per 100,000), followed by the St. Louis HIV Care Region (797.2 per 100,000). Approximately thirty-eight percent (38.3%) of all chlamydia cases were reported in the St. Louis HIV Care Region and 24.9% were reported in the Kansas City HIV Care Region. The Southwest HIV Care 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.

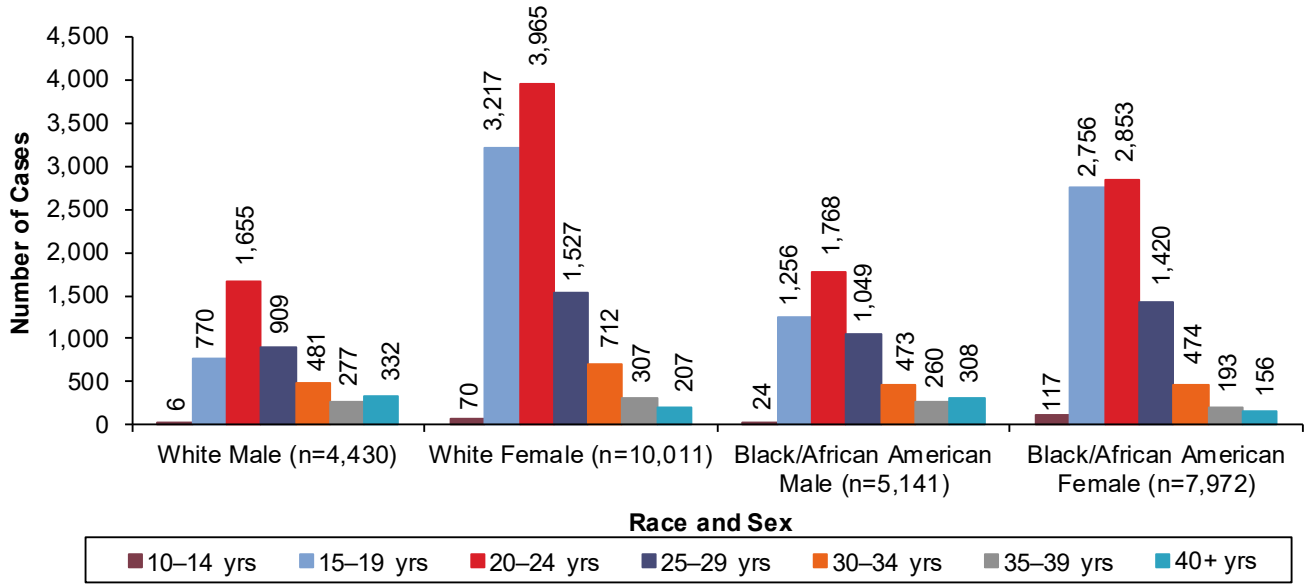
Figure 27. Reported chlamydia cases* and rates, by county, Missouri, 2018**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2017 DHSS population estimates.

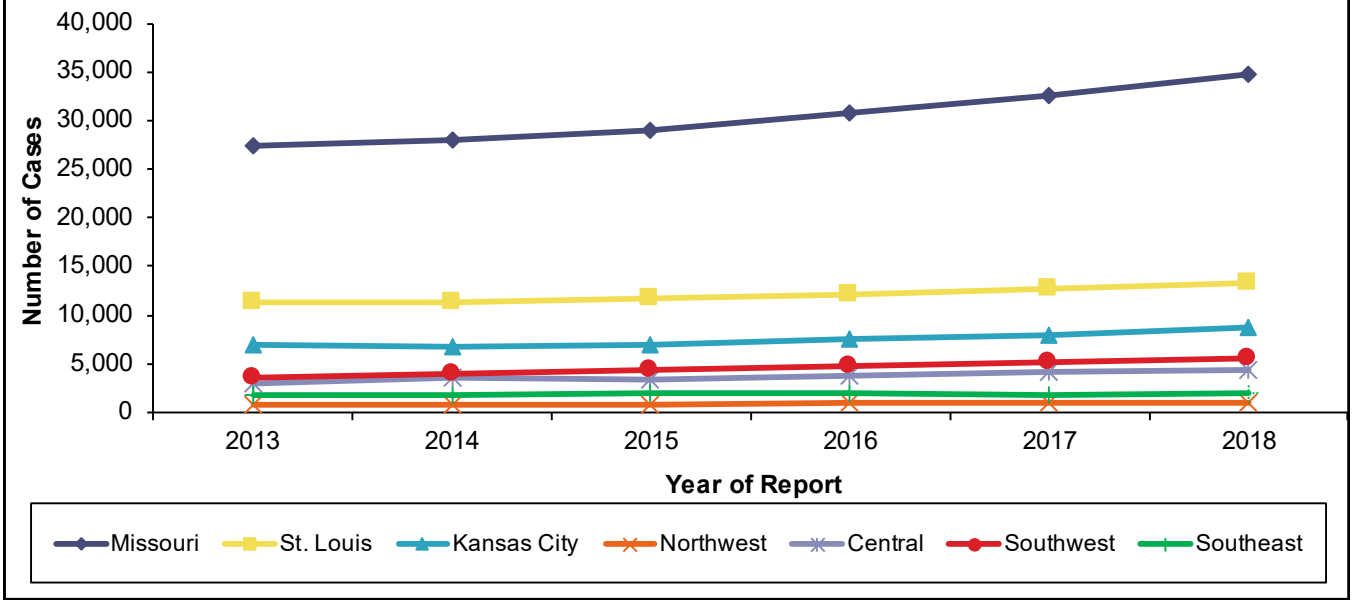
Chlamydia cases reported in St. Louis City, St. Louis County, and Jackson County represented 49.7% of all reported chlamydia cases in 2018 (Figure 27), although these areas represent only 32.8% of Missouri's general population. All counties reported at least one chlamydia case in 2018. St. Louis County had the highest number of reported cases in 2018 (6,451). St. Louis City had the highest rate of reported chlamydia cases at 1,421.5 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 1,421 reported with chlamydia in 2018.

Figure 28. Reported chlamydia cases, by race and sex and age group at diagnosis, Missouri, 2018



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

Figure 29. Reported chlamydia cases, by HIV care region and year of report, Missouri, 2013-2018



The largest numbers of chlamydia cases were reported among white females (10,011) and black/African American females (7,972) (Figure 28). The number of reported cases increased from 2017 to 2018 among all race/ethnicity and sex categories presented. Among all race/ethnicity and sex categories presented, the largest numbers of cases were reported among individuals 20 to 24 years of age at the time of diagnosis. The proportion of reported cases among individuals 15 to 19 years of age at the time of diagnosis was highest among white females (40.2%) and black/African American females (34.5%).

The number of reported chlamydia cases in Missouri increased each year from 2013 through 2018 (Figure 29). The number of reported chlamydia cases increased from 2017 to 2018 in all HIV care regions except for the Northwest HIV Care Region.

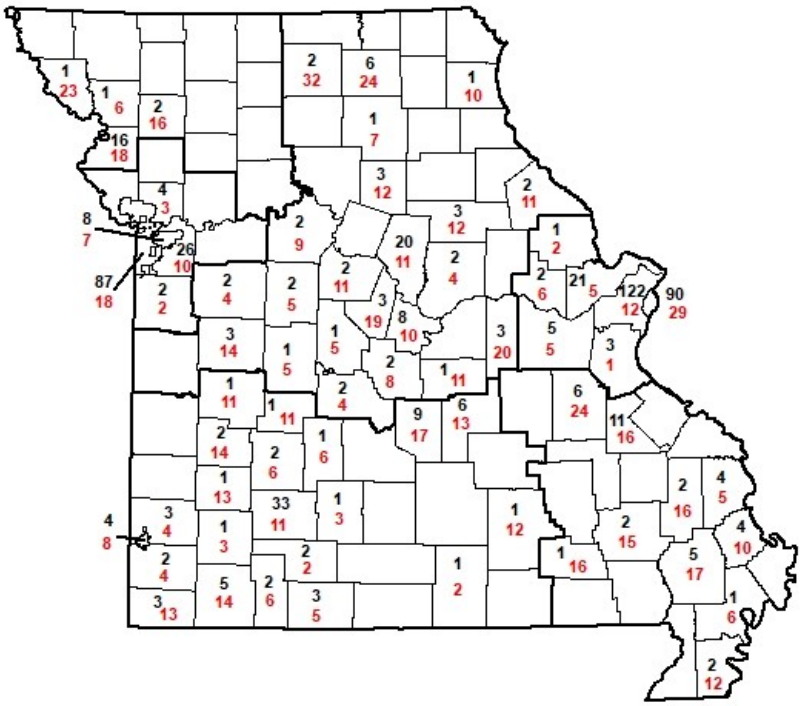
Table 28. Reported hepatitis B† cases and rates, by sex, HIV care region and race*, Missouri, 2018

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	78	28.3%	3.3	53	17.2%	2.1	131	2.7
Black/African American	52	18.8%	15.4	57	18.4%	15.3	109	15.4
Other/Unknown*	146	52.9%	--	199	64.4%	--	345	--
Total	**276**	**100.0%**	**9.2**	**309**	**100.0%**	**9.9**	**585**	**9.6**
St. Louis HIV Care Region								
White	19	16.7%	2.5	13	10.0%	1.7	32	2.1
Black/African American	29	25.4%	15.6	27	20.8%	12.1	56	13.6
Other/Unknown*	66	57.9%	--	90	69.2%	--	156	--
Total	**114**	**100.0%**	**11.1**	**130**	**100.0%**	**11.9**	**244**	**11.5**
Kansas City HIV Care Region								
White	10	18.5%	2.3	7	9.6%	1.6	17	1.9
Black/African American	14	25.9%	15.7	23	31.5%	22.8	37	19.4
Other/Unknown*	30	55.6%	--	43	58.9%	--	73	--
Total	**54**	**100.0%**	**9.1**	**73**	**100.0%**	**11.6**	**127**	**10.4**
Northwest HIV Care Region								
White	7	50.0%	7.1	0	0.0%	0.0	7	3.5
Black/African American	1	7.1%	18.0	0	0.0%	0.0	1	11.9
Other/Unknown*	6	42.9%	--	6	100.0%	--	12	--
Total	**14**	**100.0%**	**12.4**	**6**	**100.0%**	**5.4**	**20**	**8.9**
Central HIV Care Region								
White	12	35.3%	3.1	14	36.8%	3.6	26	3.4
Black/African American	5	14.7%	20.0	3	7.9%	14.8	8	17.7
Other/Unknown*	17	50.0%	--	21	55.3%	--	38	--
Total	**34**	**100.0%**	**7.7**	**38**	**100.0%**	**8.6**	**72**	**8.1**
Southwest HIV Care Region								
White	20	48.8%	3.9	10	23.3%	1.9	30	2.9
Black/African American	1	2.4%	6.9	2	4.7%	20.5	3	12.4
Other/Unknown*	20	48.8%	--	31	72.1%	--	51	--
Total	**41**	**100.0%**	**7.0**	**43**	**100.0%**	**7.3**	**84**	**7.2**
Southeast HIV Care Region								
White	10	52.6%	4.6	9	47.4%	4.1	19	4.3
Black/African American	2	10.5%	11.8	2	10.5%	13.9	4	12.8
Other/Unknown*	7	36.8%	--	8	42.1%	--	15	--
Total	**19**	**100.0%**	**7.7**	**19**	**100.0%**	**7.7**	**38**	**7.7**

†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 2017 DHSS population estimates.
Note: Percentages may not total 100% due to rounding.

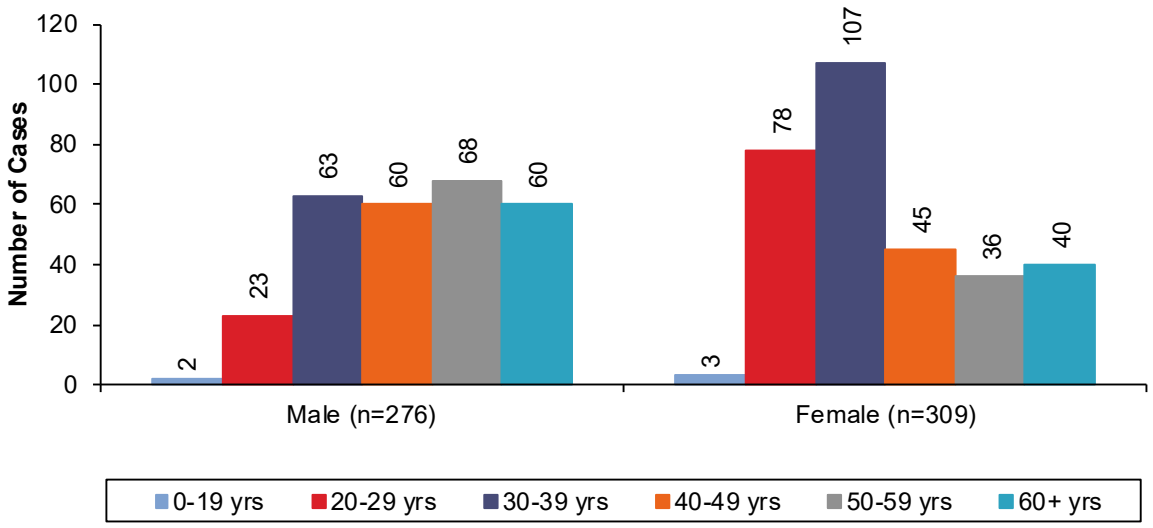
Of the 585 hepatitis B cases reported in 2018, 18 were reported with acute hepatitis B, 450 with chronic hepatitis B, and 117 with prenatal hepatitis B (Table 28). There were no perinatal hepatitis B cases reported in 2018. The number of reported hepatitis B cases in Missouri decreased by 9 cases from 2017 (594) to 2018 (585). The number of individuals reported with hepatitis B increased from 2017 to 2018 in the St. Louis HIV Care Region and Central HIV Region. The number of individuals reported with hepatitis B remained the same from 2017 to 2018 in the Southwest HIV Care Region, and the remaining three HIV care regions saw a decrease. The rate of reported hepatitis B cases was highest in the St. Louis HIV Care Region (11.5 per 100,000). Overall, 52.8% of reported cases were females, although variations 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 30. Reported hepatitis B cases* and rates, by jurisdiction, Missouri, 2018**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2017 DHSS population estimates.

Figure 31. Reported hepatitis B cases, by sex and age group at diagnosis, Missouri, 2018



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 30). There were 49 jurisdictions that did not report any hepatitis B cases in 2018.

There were differences in the age distribution of reported hepatitis B cases by sex (Figure 31). Among males, the largest numbers of reported cases were among individuals 50 to 59 years of age. The largest numbers of cases among females were individuals 30 to 39 years of age at diagnosis.

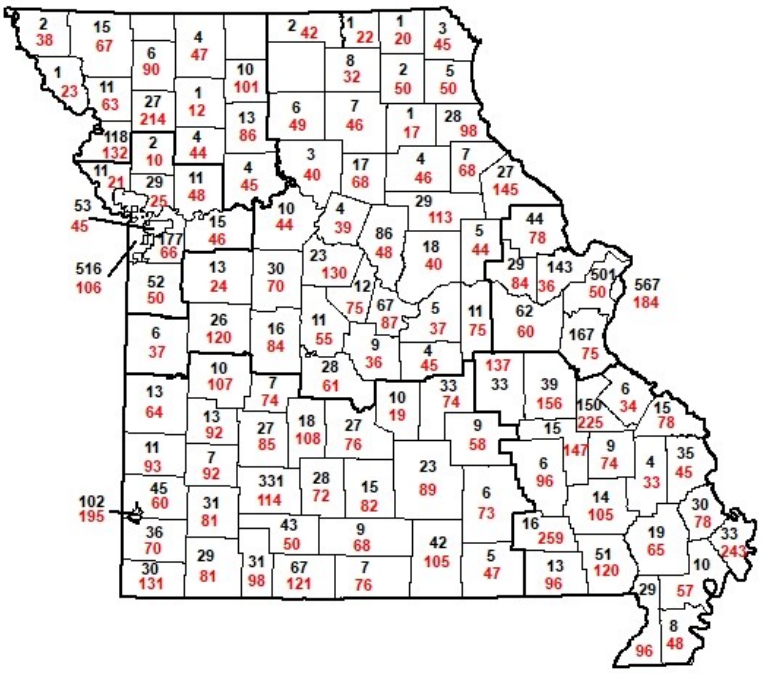
Table 29. Reported hepatitis C† cases and rates, by sex, HIV care region and race*, Missouri, 2018

	Male			Female			Total‡	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	1,336	45.2%	55.9	895	50.4%	36.3	2,231	45.9
Black/African American	446	15.1%	132.1	224	12.6%	60.2	670	94.4
Other/Unknown*	1,171	39.7%	--	658	37.0%	--	1,829	--
Total	**2,953**	**100.0%**	**98.4**	**1,777**	**100.0%**	**57.1**	**4,730**	**77.4**
St. Louis HIV Care Region								
White	291	31.0%	38.8	201	35.1%	25.7	492	32.1
Black/African American	269	28.6%	144.4	151	26.4%	67.4	420	102.3
Other/Unknown*	380	40.4%	--	221	38.6%	--	601	--
Total	**940**	**100.0%**	**91.7**	**573**	**100.0%**	**52.4**	**1,513**	**71.4**
Kansas City HIV Care Region								
White	228	41.1%	53.1	134	43.1%	29.9	362	41.3
Black/African American	98	17.7%	109.6	61	19.6%	60.5	159	83.6
Other/Unknown*	229	41.3%	--	116	37.3%	--	345	--
Total	**555**	**100.0%**	**93.1**	**311**	**100.0%**	**49.6**	**866**	**70.8**
Northwest HIV Care Region								
White	96	64.4%	97.4	52	77.6%	51.6	148	74.2
Black/African American	4	2.7%	71.9	2	3.0%	69.7	6	71.1
Other/Unknown*	49	32.9%	--	13	19.4%	--	62	--
Total	**149**	**100.0%**	**132.4**	**67**	**100.0%**	**60.3**	**216**	**96.6**
Central HIV Care Region								
White	157	46.6%	40.9	109	55.1%	27.9	266	34.4
Black/African American	22	6.5%	88.2	5	2.5%	24.6	27	59.7
Other/Unknown*	158	46.9%	--	84	42.4%	--	242	--
Total	**337**	**100.0%**	**76.4**	**198**	**100.0%**	**44.7**	**535**	**60.5**
Southwest HIV Care Region								
White	367	56.8%	71.6	272	64.9%	51.7	639	61.6
Black/African American	25	3.9%	173.0	1	0.2%	10.3	26	107.4
Other/Unknown*	254	39.3%	--	146	34.8%	--	400	--
Total	**646**	**100.0%**	**111.0**	**419**	**100.0%**	**71.1**	**1,065**	**91.0**
Southeast HIV Care Region								
White	197	60.4%	90.9	127	60.8%	57.3	324	73.9
Black/African American	28	8.6%	165.8	4	1.9%	27.7	32	102.1
Other/Unknown*	101	31.0%	--	78	37.3%	--	179	--
Total	**326**	**100.0%**	**132.5**	**209**	**100.0%**	**84.3**	**535**	**108.3**

†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 2017 DHSS population estimates.
Note: Percentages may not total 100% due to rounding.

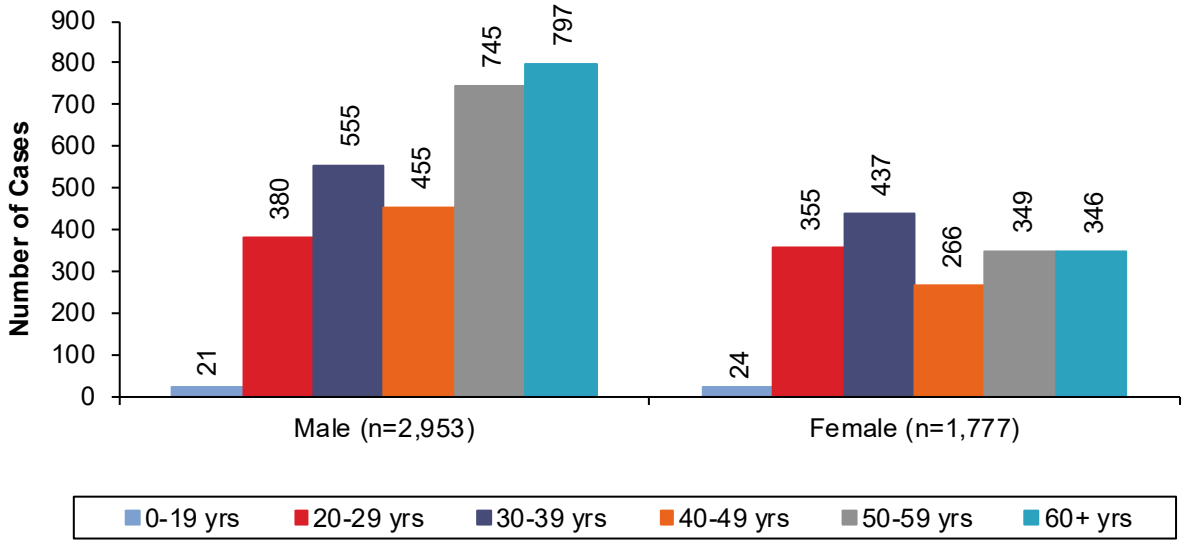
Of the 4,730 hepatitis C cases reported in 2018, 74 were reported with acute hepatitis C and 4656 with chronic hepatitis C. The number of reported hepatitis C cases in Missouri decreased by 216 cases from 2017 (4,946) to 2018 (4,730) (Table 29). However, the decrease is not likely due to a true decrease in morbidity but is more likely due to data collection methods. Please see the Technical Notes section for more information. The number of persons reported with hepatitis C decreased from 2017 to 2018 in the St. Louis, Northwest, and Southwest HIV Care Regions, whereas there was an increase in the Kansas City and Central HIV Care Regions. The Southeast HIV Care Region had the same number of cases in 2017 and 2018. Overall, the rate of reported hepatitis C cases was highest in the Southeast HIV Care Region (108.3 per 100,000). In Missouri overall, 62.4% of the reported cases were males. The large proportion of cases with unknown race/ethnicity information makes it difficult to interpret differences in reported infections by race/ethnicity.

Figure 32. Reported hepatitis C cases* and rates, by jurisdiction, Missouri, 2018**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2017 DHSS population estimates.

Figure 33. Reported hepatitis C cases, by sex and age group at diagnosis, Missouri, 2018



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

St. Louis City had the greatest number of reported hepatitis C cases with 567 (Figure 32). The second largest number of hepatitis C cases was reported in Kansas City (516). All but three counties reported at least one hepatitis C case in 2018.

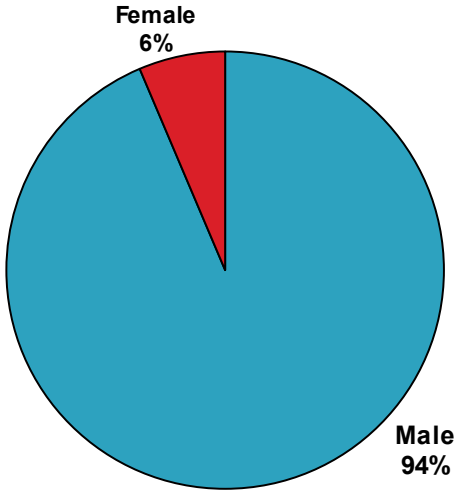
Among males, the largest numbers of reported hepatitis C cases were 60+ years of age. The largest numbers of reported hepatitis C cases were in the 30 to 39 years of age category for females. The second largest number of reported hepatitis C cases in males was in the 50 to 59 years category and in females, the 20 to 29 years category (Figure 33).

Table 30. HIV and STD co-infections, by HIV diagnosis year and type of co-infection, Missouri, 2018

Co-infection	Diagnosed with HIV Prior to 2018		Diagnosed with HIV in 2018		Total	
	N	%	N	%	N	%
Chlamydia	164	22.4%	24	16.6%	188	21.4%
Gonorrhea	220	30.1%	34	23.4%	254	29.0%
Syphilis*	166	22.7%	37	25.5%	203	23.1%
Chlamydia and Gonorrhea	100	13.7%	33	22.8%	133	15.2%
Chlamydia and Syphilis*	21	2.9%	7	4.8%	28	3.2%
Gonorrhea and Syphilis*	30	4.1%	6	4.1%	36	4.1%
Chlamydia, Gonorrhea, and Syphilis*	31	4.2%	4	2.8%	35	4.0%
Total	**732**	**100.0%**	**145**	**100.0%**	**877**	**100.0%**

*Represents early syphilis, which only includes diagnoses of primary, secondary, and early latent syphilis.
Note: Percentages may not total 100% due to rounding.

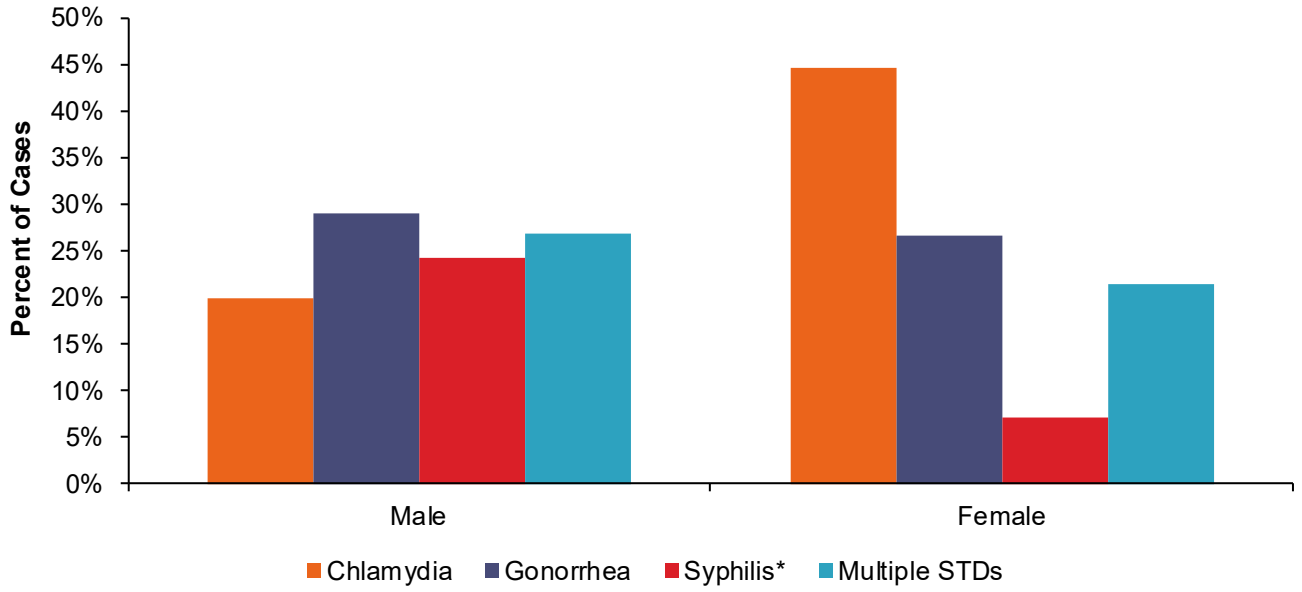
Figure 34. HIV and STD co-infections by sex, Missouri, 2018



Of the 13,109 individuals living with HIV disease, 877 were reported with an STD co-infection in 2018 (Table 30). The majority of those reported with an STD co-infection were diagnosed with HIV prior to 2018 (83.5%). The largest numbers of HIV co-infections were with gonorrhea alone and syphilis alone. The proportion of reported STD infections in 2018 that were living with HIV varied by infection type. Only 3.0% of gonorrhea cases and 1.1% of chlamydia cases reported in 2018 were among individuals living with HIV. Of the 1,352 early syphilis cases reported in 2018, 22.3% were among individuals living with HIV.

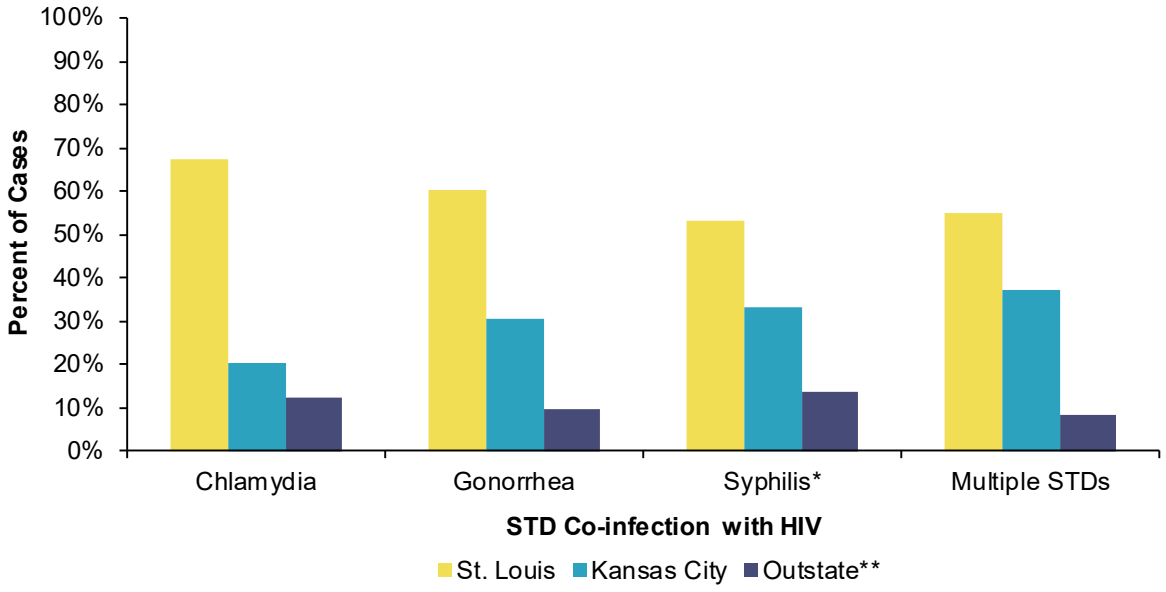
Of the 877 reported STD co-infection cases, 93.6% were among males (Figure 34).

Figure 35. HIV and STD co-infections, by sex and type of co-infection, Missouri, 2018



*Represents early syphilis, which only includes diagnoses of primary, secondary, and early latent syphilis.

Figure 36. HIV and STD co-infections, by HIV care region of STD diagnosis and type of co-infection, Missouri, 2018

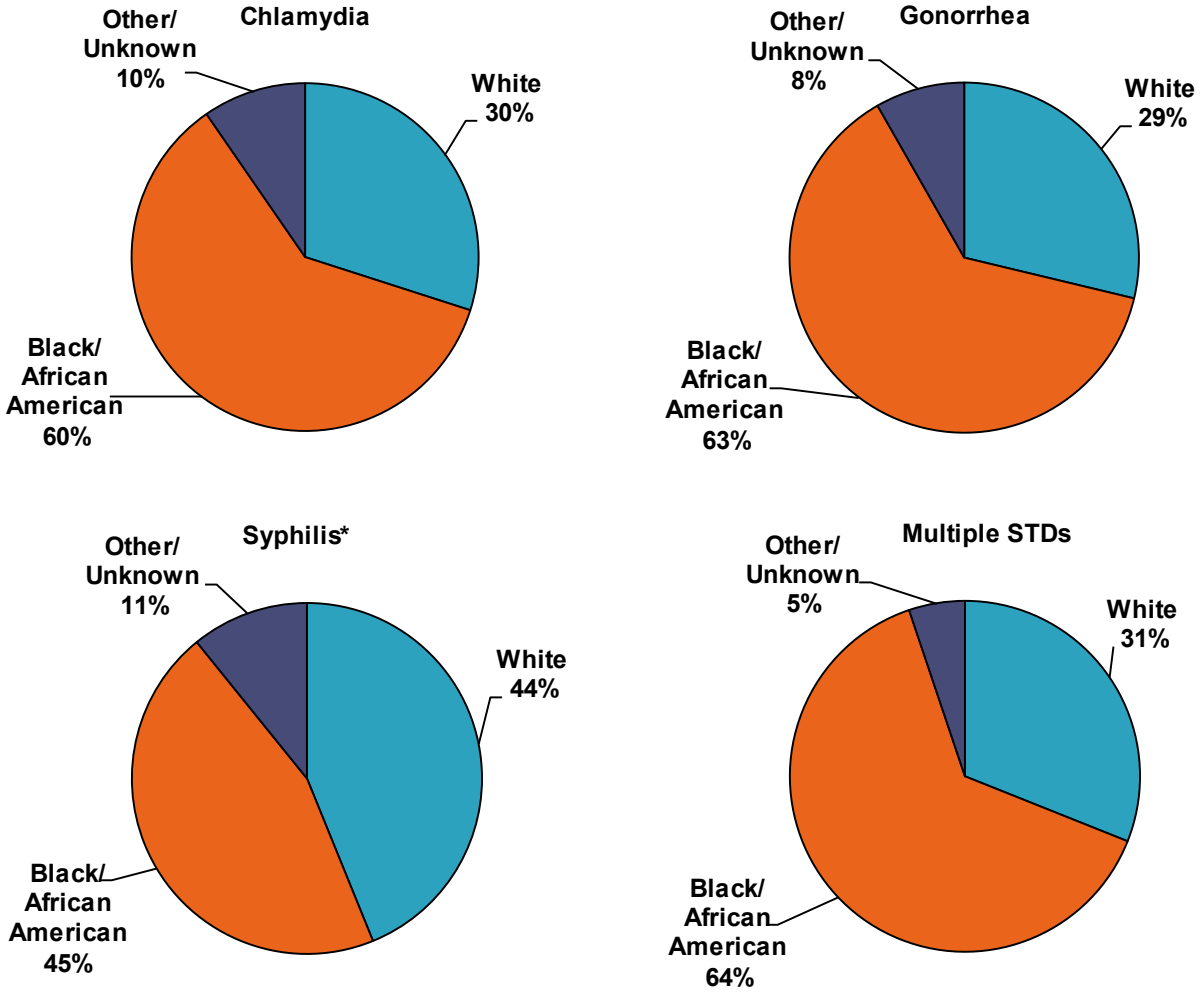


*Represents early syphilis, which only includes diagnoses of primary, secondary, and early latent syphilis.
**Includes those diagnosed in the Central, Northwest, Southeast, and Southwest HIV Care Regions.

There were differences in the distribution of STD co-infection types by sex (Figure 35). Among females living with HIV who were reported with an STD co-infection in 2018, 44.6% were co-infected with chlamydia, 26.8% with gonorrhea, 21.4% with multiple STDs, and 7.1% with early syphilis. Among males living with HIV and reported with an STD co-infection in 2018, 29.1% were co-infected with gonorrhea, 26.8% were co-infected with multiple STDs, 24.2% with early syphilis, and 19.9% with chlamydia.

Among all HIV and STD co-infection types, the greatest proportion of cases was diagnosed in the St. Louis HIV Care Region (Figure 36). Among those living with HIV who were reported with chlamydia in 2018, 67.6% were residents of the St. Louis HIV Care Region when diagnosed with chlamydia. The St. Louis HIV Care Region represented 60.2% of all living HIV cases reported with gonorrhea in 2018, 53.2% of those with early syphilis, and 54.7% of those with multiple STD co-infections. In St. Louis, STD co-infection with HIV was highest for chlamydia. In Kansas City, STD co-infection with HIV was highest for multiple STDs, and in Outstate, STD co-infection with HIV was highest for syphilis.

Figure 37. HIV and STD co-infections by race/ethnicity and type of co-infection, Missouri, 2018



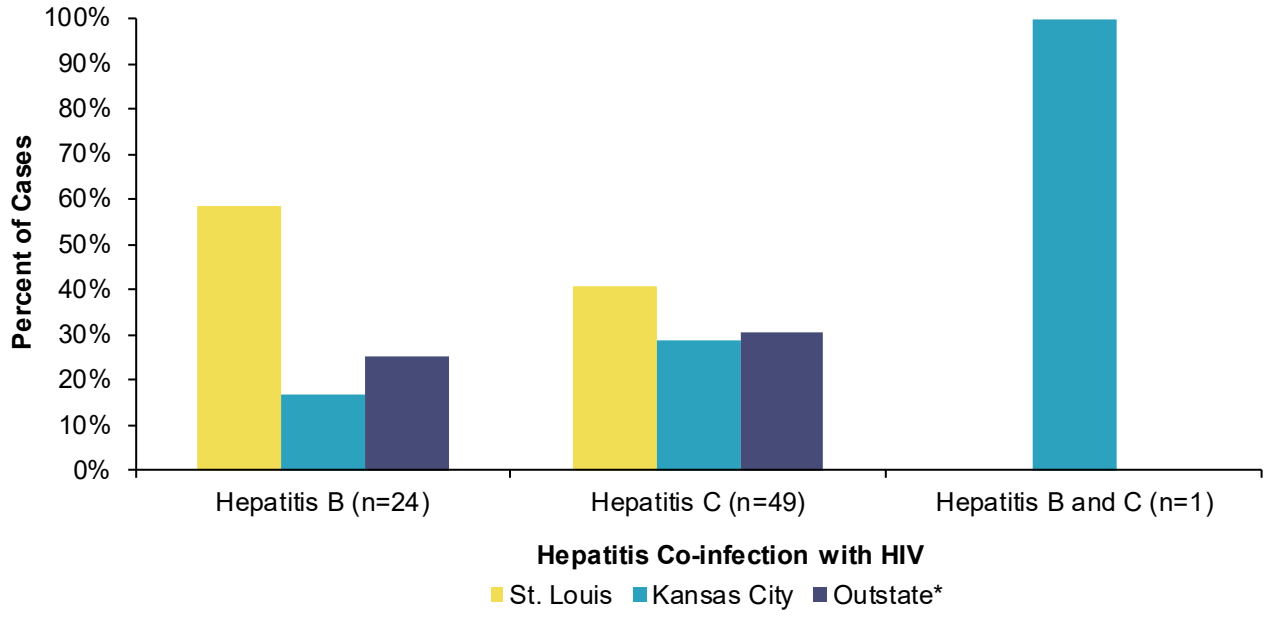
*Only includes diagnoses of primary, secondary, and early latent syphilis.

There were differences in the distribution of race/ethnicity among HIV and STD co-infections depending on the type of STD diagnosed (Figure 37). The proportion of co-infection cases attributed to blacks/African Americans was highest among those co-infected with multiple STDs (63.4%), followed by those co-infected with gonorrhea (63.0%). In all instances, people of color were disproportionately represented in the proportion of co-infections that were reported. Although blacks/African Americans represented only 46.0% of living HIV disease cases, they represented 58.6% of individuals diagnosed with an STD co-infection.

Table 31. HIV and hepatitis co-infections, by HIV diagnosis year and type of co-infection, Missouri, 2018

Co-infection	Diagnosed with HIV Prior to 2018 N	Diagnosed with HIV in 2018 N	Total Co-infections N
Acute Hepatitis B	0	0	0
Chronic Hepatitis B	17	6	23
Prenatal Hepatitis B	0	1	1
Perinatal Hepatitis B	0	0	0
Acute Hepatitis C	3	0	3
Chronic Hepatitis C	36	10	46
Chronic Hepatitis B & C	0	0	0
Total	**56**	**17**	**73**

Figure 38. HIV and hepatitis co-infections, by HIV care region of hepatitis diagnosis and type of co-infection, Missouri, 2018

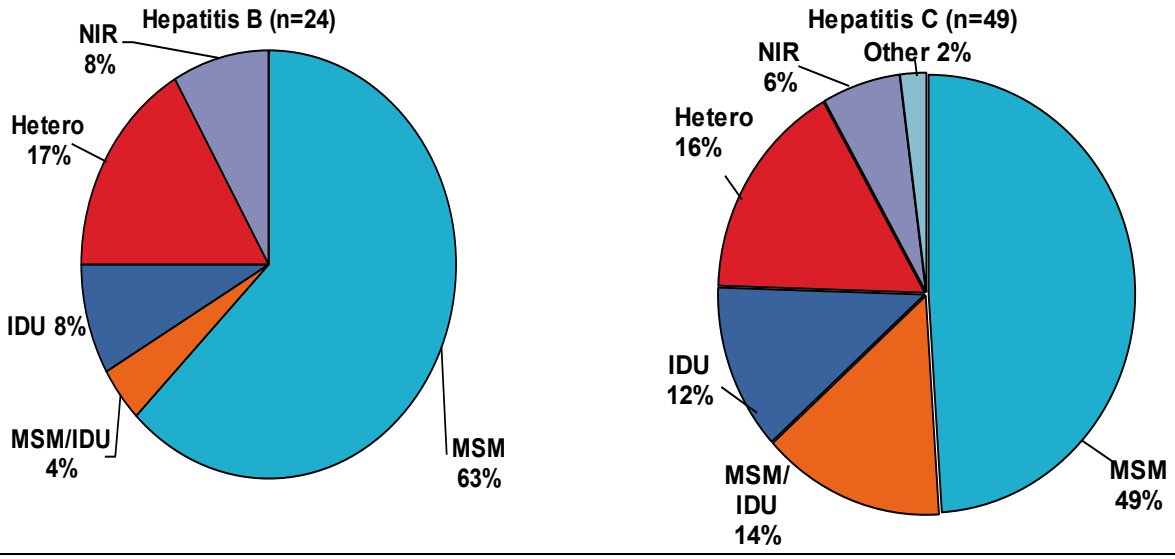


*Includes those diagnosed in the Central, Northwest, Southeast, and Southwest HIV Care Regions.

Of the 13,109 individuals living with HIV disease, 73 were reported with a hepatitis co-infection in 2018 (Table 31). The majority of those reported with a hepatitis co-infection were diagnosed with HIV prior to 2018 (76.7%). The largest number of HIV co-infections was with chronic hepatitis C. The proportion of reported hepatitis infections in 2018 that were living with HIV varied by infection type. Of the 450 chronic hepatitis B cases reported in 2018, 5.1% were among individuals living with HIV. Less than 1% of chronic hepatitis C cases reported in 2018 were among individuals living with HIV.

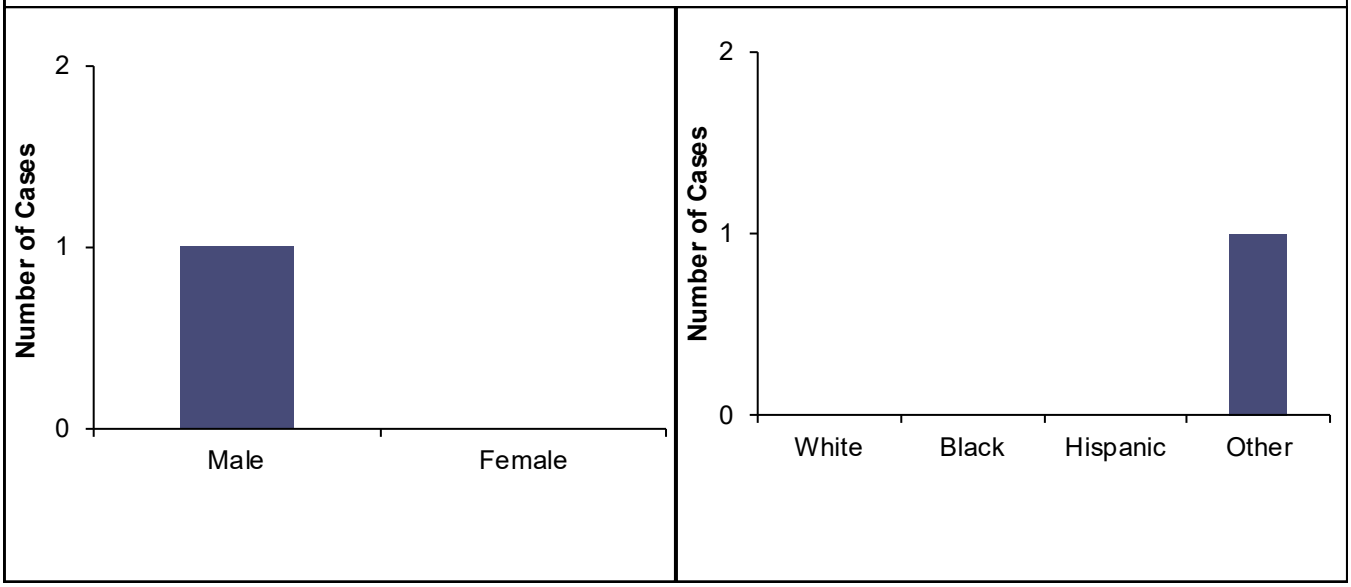
Among persons living with HIV disease that were reported with only a hepatitis B infection in 2018, the greatest proportion was residing in the St. Louis HIV Care Region (58.3%) at the time of the hepatitis diagnosis (Figure 38). Among HIV-positive persons reported with only a hepatitis C infection in 2018, the greatest proportion was residing in the St. Louis HIV Care Region (40.8%) at the time of the hepatitis diagnosis.

Figure 39. HIV and hepatitis co-infections by HIV exposure category and type of co-infection, Missouri, 2018



Among persons living with HIV disease and reported with only a hepatitis B infection in 2018, 63.0% were among MSM (Figure 39). Among hepatitis C co-infection cases, 49.0% were attributed to MSM, and 14.0% were attributed to MSM/IDU. There was one person living with HIV disease who was co-infected with both hepatitis B and C in 2018, and the risk was heterosexual contact.

Figure 40. HIV and TB disease co-infections by sex, by race, Missouri, 2018



Among the 13,109 persons living with HIV disease, one was reported to be diagnosed with TB disease in 2018. The person co-infected with TB disease in 2018 was among persons diagnosed with HIV disease prior to 2018. and was reported among persons 34 to 55 years of age. The co-infected person was designated as an Other race (Figure 40).

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Key Highlights: What are the HIV service utilization patterns of individuals with HIV disease in Missouri, and what are the number and characteristics of the individuals who know they are HIV positive but who are not in care?

Magnitude of the Problem

- Overall, 67.8% 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 2018).
- Persons enrolled in HIV medical case management were significantly more likely to have their primary care medical needs met. Of the 13,109 persons living with HIV disease in Missouri, 5,445 (42.2%) were enrolled in medical case management at some point in 2018. Ninety-five percent (95.5%) of individuals in case management had their primary care medical needs met in 2018.
- Persons living with HIV who were subcategorized as stage 3 (AIDS) cases in 2018 were more likely to have their medical needs met (73.5%) compared to persons subcategorized as HIV cases (62.1%). 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 HIV Care Region (72.6%) and lowest in the Kansas City HIV Care Region (64.3%).
- Among those enrolled in HIV medical case management, the proportion with a met need ranged from the lowest at 92.6% in the Northwest HIV Care Region to the highest at 96.7% in the Southwest HIV Care Region.
- For those not enrolled in HIV medical case management, the proportion with a met need ranged from 44.6% in the Southwest and Kansas City HIV Care Regions to 57.1% in the Northwest HIV Care Region.

Who

Sex

- Overall, there were minimal differences observed in unmet need by sex, 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 populations of color, although factors such as case management and diagnostic status influenced the relationship between race and unmet need.
- Among persons diagnosed in 2018 who were enrolled in case management, the likelihood of entering care was lower for Hispanics (3.7%) than other races/ethnicities, followed by whites (4.4%) and black/African Americans (4.7%).

Age

- There were differences in unmet need by current age among individuals enrolled in HIV medical case management. Unmet need was greatest among individuals 13 to 18 years of age (7.7%).
- There were differences in unmet need by current age among individuals not enrolled in HIV medical case management. Unmet need was greatest among individuals 19 to 24 years of age (60.0%).

Exposure Category

- Unmet need by exposure category varied depending upon enrollment in medical case management and current diagnosis status. Among those enrolled in case management, unmet need was greatest among IDU (5.4%).

Table 32. 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, 2018

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	1,611 (66.4%)	815 (33.6%)	693 (94.9%)	37 (5.1%)	918 (54.1%)	778 (45.9%)
Black/African American	2,504 (71.4%)	1,001 (28.6%)	1,725 (95.9%)	74 (4.1%)	779 (45.7%)	927 (54.3%)
Hispanic	106 (60.2%)	70 (39.8%)	70 (98.6%)	1 (1.4%)	36 (34.3%)	69 (65.7%)
Other/Unknown	92 (74.8%)	31 (25.2%)	65 (95.6%)	3 (4.4%)	27 (49.1%)	28 (50.9%)
Total	**4,313 (69.2%)**	**1,917 (30.8%)**	**2,553 (95.7%)**	**115 (4.3%)**	**1,760 (49.4%)**	**1,802 (50.6%)**
Kansas City Region						
White	1,203 (63.8%)	684 (36.2%)	577 (95.1%)	30 (4.9%)	626 (48.9%)	654 (51.1%)
Black/African American	1,011 (65.6%)	531 (34.4%)	712 (94.7%)	40 (5.3%)	299 (37.8%)	491 (62.2%)
Hispanic	164 (58.6%)	116 (41.4%)	96 (95.0%)	5 (5.0%)	68 (38.0%)	111 (62.0%)
Other/Unknown	77 (71.3%)	31 (28.7%)	37 (94.9%)	2 (5.1%)	40 (58.0%)	29 (42.0%)
Total	**2,455 (64.3%)**	**1,362 (35.7%)**	**1,422 (94.9%)**	**77 (5.1%)**	**1,033 (44.6%)**	**1,285 (55.4%)**
Northwest Region						
White	71 (74.7%)	24 (25.3%)	39 (92.9%)	3 (7.1%)	32 (60.4%)	21 (39.6%)
Black/African American	17 (68.0%)	8 (32.0%)	10 (90.9%)	1 (9.1%)	7 (50.0%)	7 (50.0%)
Hispanic	2 (50.0%)	2 (50.0%)	1 (100.0%)	0 (0.0%)	1 (33.3%)	2 (66.7%)
Other/Unknown	0 (N/A)	0 (N/A)	0 (N/A)	0 (N/A)	0 (N/A)	0 (N/A)
Total	**90 (72.6%)**	**34 (27.4%)**	**50 (92.6%)**	**4 (7.4%)**	**40 (57.1%)**	**30 (42.9%)**
Central Region						
White	331 (72.9%)	123 (27.1%)	192 (94.6%)	11 (5.4%)	139 (55.4%)	112 (44.6%)
Black/African American	101 (57.7%)	74 (42.3%)	68 (89.5%)	8 (10.5%)	33 (33.3%)	66 (66.7%)
Hispanic	19 (51.4%)	18 (48.6%)	14 (93.3%)	1 (6.7%)	5 (22.7%)	17 (77.3%)
Other/Unknown	6 (66.7%)	3 (33.3%)	4 (100.0%)	0 (0.0%)	2 (40.0%)	3 (60.0%)
Total	**457 (67.7%)**	**218 (32.3%)**	**278 (93.3%)**	**20 (6.7%)**	**179 (47.5%)**	**198 (52.5%)**
Southwest Region						
White	568 (72.6%)	214 (27.4%)	372 (97.1%)	11 (2.9%)	196 (49.1%)	203 (50.9%)
Black/African American	60 (51.7%)	56 (48.3%)	38 (97.4%)	1 (2.6%)	22 (28.6%)	55 (71.4%)
Hispanic	35 (59.3%)	24 (40.7%)	25 (96.2%)	1 (3.8%)	10 (30.3%)	23 (69.7%)
Other/Unknown	17 (58.6%)	12 (41.4%)	11 (84.6%)	2 (15.4%)	6 (37.5%)	10 (62.5%)
Total	**680 (69.0%)**	**306 (31.0%)**	**446 (96.7%)**	**15 (3.3%)**	**234 (44.6%)**	**291 (55.4%)**
Southeast Region						
White	166 (73.1%)	61 (26.9%)	111 (99.1%)	1 (0.9%)	55 (47.8%)	60 (52.2%)
Black/African American	69 (62.7%)	41 (37.3%)	44 (84.6%)	8 (15.4%)	25 (43.1%)	33 (56.9%)
Hispanic	6 (66.7%)	3 (33.3%)	2 (100.0%)	0 (0.0%)	4 (57.1%)	3 (42.9%)
Other/Unknown	3 (50.0%)	3 (50.0%)	3 (75.0%)	1 (25.0%)	0 (0.0%)	2 (100.0%)
Total	**244 (69.3%)**	**108 (30.7%)**	**160 (94.1%)**	**10 (5.9%)**	**84 (46.2%)**	**98 (53.8%)**
Statewide (MO)**						
White	4,106 (67.3%)	1,992 (32.7%)	2,077 (95.6%)	95 (4.4%)	2,029 (51.7%)	1,897 (48.3%)
Black/African American	4,095 (69.1%)	1,835 (30.9%)	2,785 (95.3%)	136 (4.7%)	1,310 (43.5%)	1,699 (56.5%)
Hispanic	340 (58.5%)	241 (41.5%)	211 (96.3%)	8 (3.7%)	129 (35.6%)	233 (64.4%)
Other/Unknown	201 (71.5%)	80 (28.5%)	125 (94.0%)	8 (6.0%)	76 (51.4%)	72 (48.6%)
Total	**8,742 (67.8%)**	**4,148 (32.2%)**	**5,198 (95.5%)**	**247 (4.5%)**	**3,544 (47.6%)**	**3,901 (52.4%)**

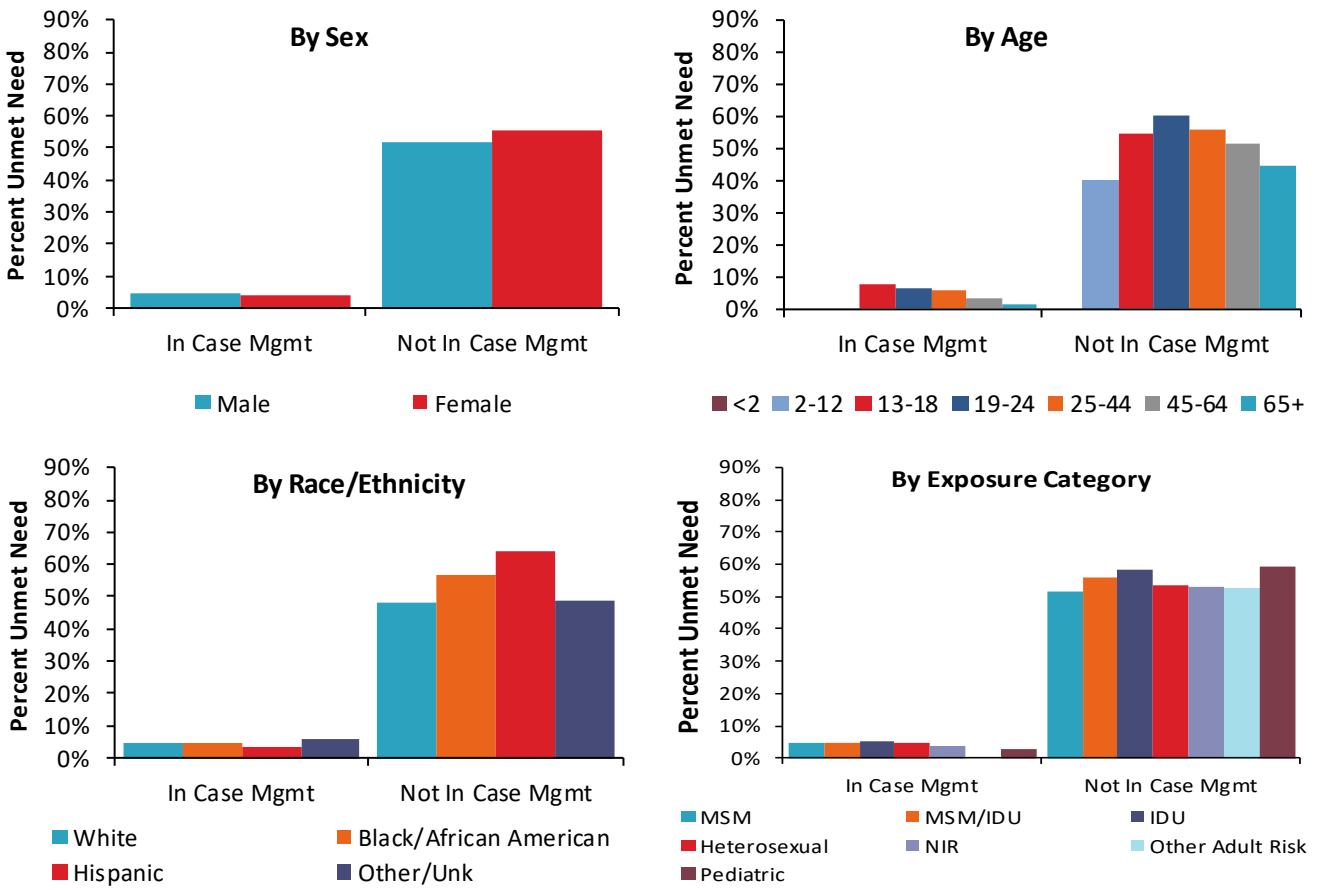
*Includes all individuals still living whose most recent diagnosis (i.e., HIV or stage 3 (AIDS)) occurred in the region. Does not reflect the number of individuals currently living in the region.
**Evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic 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 13,109 persons living with HIV at the end of 2018, 66.4% had evidence of met primary care medical needs (i.e., met need) in 2018 (Table 32). 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 2018 that was reported to DHSS. There were differences in the proportion of individuals with met needs depending on whether the individual was enrolled in HIV medical case management in 2018. A greater proportion of those enrolled in HIV medical case management had a met need (93.0%) in 2018 compared to those not enrolled (47.2%). 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 DHSS. 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 Southwest HIV Care Region (69.1%), and lowest in the Kansas City HIV Care Region (64.9%). The pattern was slightly different among 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 46.3% in the Kansas City HIV Care Regions to 52.6% in the Northwest HIV Care Region.

There were differences in the proportion of persons with a met need by race/ethnicity. Statewide, met need was lower among Hispanics (56.7%) 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 blacks/African Americans with a met need was lower in all HIV care regions compared to whites except for the Southeast HIV Care Region, and the proportion of Hispanics with a met need was also lower compared to whites in all HIV care regions.

Figure 41. Percent of individuals living with HIV having an unmet* primary medical care need in 2018, 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 41 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 minimal 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 19 to 24 years of age (60.1%). Those 2 to 12 years of age had the lowest proportion of unmet need. There were also differences in the proportion of individuals with unmet needs by current age among those enrolled in case management. Unmet need was greatest among 13 to 18 year olds (16.7%). There were differences in the proportion of individuals with unmet needs by race/ethnicity among those not enrolled in case management and among those enrolled in case management. Among those not enrolled in case management, unmet need was greatest among Hispanics (57.9%) and lowest among those of other or unknown race (47.6%) and whites (47.9%). Among those enrolled in case management, unmet need was greatest among blacks/African Americans (8.2%). There were differences in the proportion of individuals with unmet needs by exposure category among those not enrolled in case management and among those enrolled in case management. Among those not enrolled in case management, unmet need was greatest among those with IDU exposure (59.3%), followed by those with a pediatric exposure (56.6%). The proportion of unmet need was lowest among MSM (51.4%). Among those enrolled in case management, unmet need was greatest among those with no identified risk (8.3%), followed by IDU (7.0%).

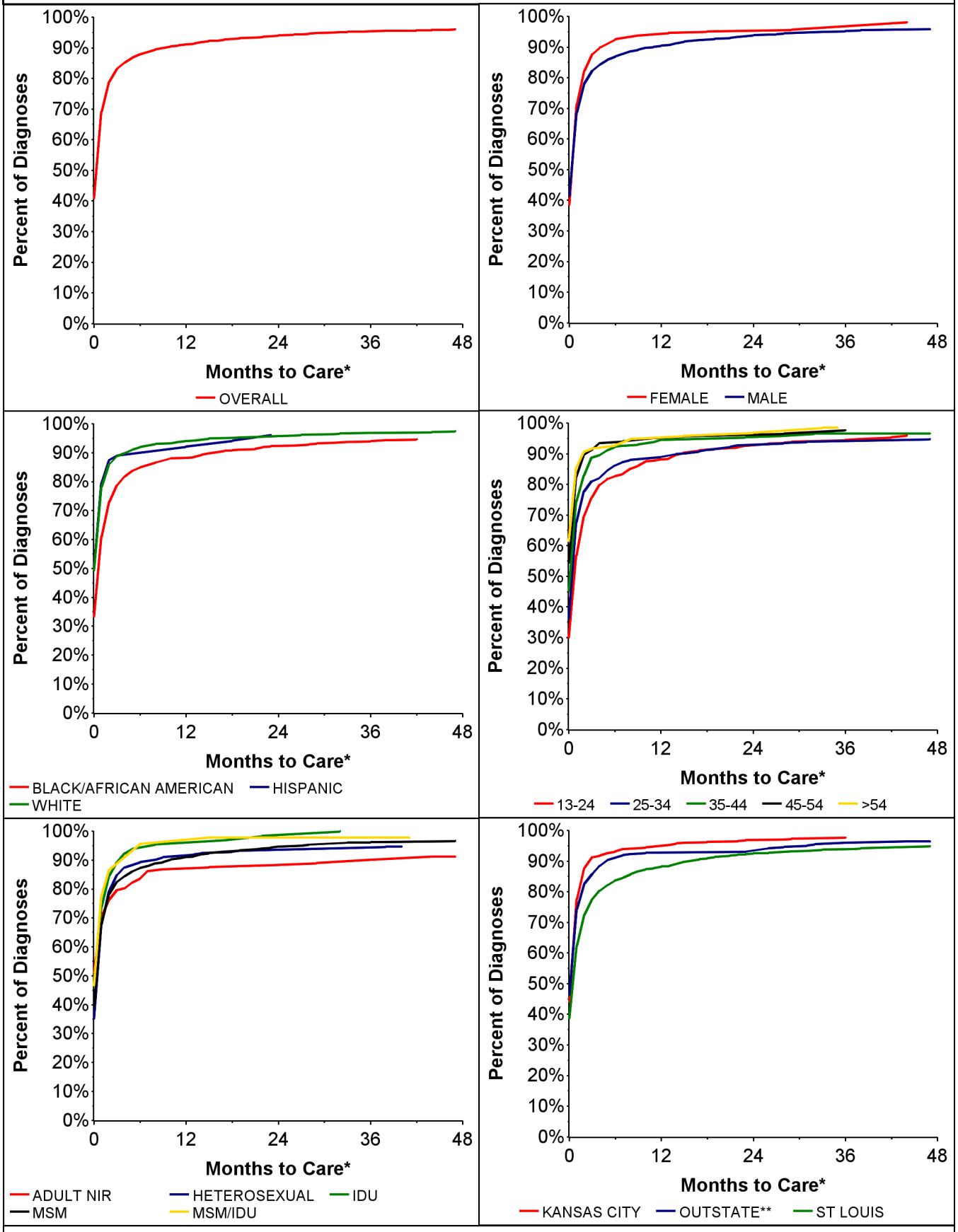
Table 33 examines the proportion of cases reported with unmet need based on current status (i.e., HIV or stage 3 (AIDS)) and selected characteristics. Overall, the proportion of those with an unmet need was greater for those classified as HIV cases compared to stage 3 (AIDS) cases. The same trend was observed regardless of whether individuals were enrolled in HIV medical case management.

Table 33. Percent of individuals living with HIV having an unmet* primary medical care need, by current status, enrollment in HIV case management, and selected characteristics, Missouri, 2018**

	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	38.4% (2,022)	27.2% (1,459)	6.1% (121)	3.4% (79)	58.0% (1,901)	45.3% (1,380)
Female	35.6% (414)	23.0% (253)	4.5% (25)	3.7% (22)	64.1% (389)	45.4% (231)
Race/Ethnicity						
White	36.6% (1,112)	28.7% (880)	5.3% (55)	3.5% (40)	52.7% (1,057)	43.8% (840)
Black/African American	38.6% (1,141)	23.3% (694)	6.0% (81)	3.5% (55)	66.0% (1,060)	45.6% (639)
Hispanic	45.0% (130)	38.0% (111)	5.9% (6)	1.7% (2)	66.3% (124)	62.3% (109)
Other/Unknown	37.6% (53)	19.3% (27)	7.3% (4)	5.1% (4)	57.0% (49)	37.1% (23)
Current Age‡						
<2	0.0% (0)	-- (0)	-- (0)	-- (0)	0.0% (0)	-- (0)
2-12	32.1% (9)	33.3% (1)	0.0% (0)	0.0% (0)	39.1% (9)	50.0% (1)
13-18	39.5% (15)	50.0% (3)	9.1% (1)	0.0% (0)	51.9% (14)	75.0% (3)
19-24	26.1% (104)	25.7% (19)	6.4% (16)	4.3% (2)	59.5% (88)	63.0% (17)
25-44	34.6% (1,032)	25.5% (441)	6.7% (94)	4.9% (44)	59.9% (938)	47.6% (397)
45-64	42.5% (1,123)	26.8% (1,108)	4.3% (34)	2.9% (53)	59.0% (1,089)	45.6% (1,055)
65+	45.3% (153)	26.6% (140)	1.6% (1)	1.4% (2)	55.1% (152)	36.5% (138)
Exposure Category						
MSM	36.6% (1,480)	27.4% (1,097)	6.0% (95)	3.3% (57)	56.3% (1,385)	45.9% (1,040)
MSM/IDU	34.3% (87)	27.5% (101)	5.8% (8)	4.0% (7)	67.5% (79)	48.7% (94)
IDU	47.0% (124)	26.6% (107)	7.7% (7)	4.3% (9)	67.6% (117)	50.3% (98)
Heterosexual Contact	35.5% (339)	23.6% (224)	5.3% (24)	4.0% (19)	62.3% (315)	43.6% (205)
No Indicated Risk (NIR)	44.5% (362)	23.7% (158)	4.7% (12)	2.8% (8)	62.6% (350)	38.8% (150)
Other Adult Risk	61.5% (8)	35.1% (13)	0.0% (0)	0.0% (0)	66.7% (8)	46.4% (13)
Pediatric	46.8% (36)	31.6% (12)	0.0% (0)	5.3% (1)	60.0% (36)	57.9% (11)
Total	**37.9% (2,436)**	**26.5% (1,712)**	**5.8% (146)**	**3.5% (101)**	**58.9% (2,290)**	**45.3% (1,611)**

*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, 2018.
Note: Rows with the percent marked '- -' indicates that there were no living persons in the selected category.

Figure 42. Length of time in months to enter care* after initial HIV diagnosis among persons diagnosed between 2015 and 2017, by selected characteristics, Missouri



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

Figure 42 examines the length of time until first entry into care among persons newly diagnosed with HIV disease between 2015 and 2017. Entry into care was measured as the receipt of a CD4 lymphocyte or viral load laboratory result by DHSS. Please note, 2018 diagnoses are not included in this analysis as not enough time has elapsed to accurately measure entry into care. Overall, 94% of persons recently diagnosed had entered care by one year after diagnosis. Within four years of initial diagnosis, 96% had entered care. There was a difference in the proportion of new diagnoses entering care between males and females. Among females, 94% entered care within 12 months of diagnosis while only 91% of males entered care within 12 months of diagnosis. There were differences in the proportion of new diagnoses entering care by race/ethnicity. Over time, a lower proportion of blacks/African Americans entered care compared to whites and Hispanics. At one year after diagnosis, only 88% of blacks/African Americans had entered care, compared to 92% of Hispanics and 94% 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 88% entered care within one year of diagnosis, compared to 95% of persons 55 years of age or older at the time of diagnosis. The proportion of individuals who entered care within one year of diagnosis increased as the age increased. There were differences over time in likelihood to enter care by exposure category. Among individuals with no identified risk, only 87% entered care within one year of diagnosis, compared to 95% of IDU. Among IDU, 100% entered care within 32 months of diagnosis. Differences in entry to care following diagnosis varied by HIV region of diagnosis. At one year after diagnosis, 95% of persons diagnosed in the Kansas City HIV Care Region, 93% of persons diagnosed in Outstate, and 88% 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.

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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 that population and then multiplying by 100,000 to get the rate per 100,000.

Case definition for stage 3 (AIDS)
All HIV-infected people six years of age and older who have fewer than 200 $CD4_+$ T cells per cubic millimeter of blood, all HIV-infected people between the ages of one and 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 being 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 cell
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)
A treatment protocol using a combination of antiretroviral drugs to suppress the HIV virus. These drugs consist of five basic classes depending on their method of suppression: reverse transcriptase (RT) inhibitors, protease inhibitors (PI), fusion inhibitors, entry inhibitors, and integrase inhibitors.

HIV case
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
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 and 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 use (IDU), men who have sex with men and practice injection drug use (MSM/IDU), hemophilia/coagulation disorder, and blood transfusion or tissue recipients.

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

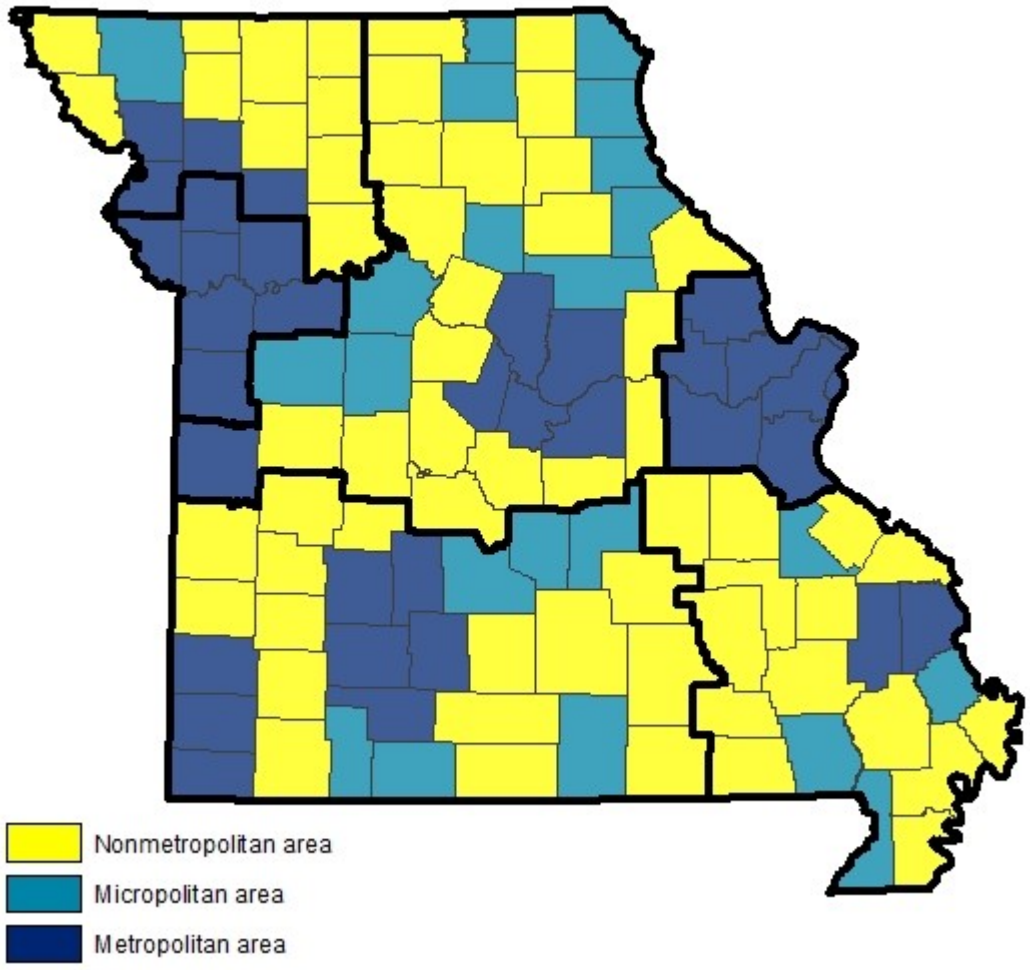
Disease	Organism
Acquired Immunodeficiency Syndrome (AIDS)	Human immunodeficiency virus
Chlamydial infections	Chlamydia trachomatis
Gonorrhea	Neisseria gonorrhoeae
Syphilis	Treponema pallidum

*Only includes infections detailed in the *Profiles*.

Stage 3 (AIDS) case
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/Geocorr12. 2013 Metropolitan Divisions.