2008 Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri

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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 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/AIDS epidemic in Missouri?
Describes the impact of the HIV/AIDS epidemic in Missouri.

Question 3: What are the indicators of HIV/AIDS 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 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/AIDS 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 2008 *Profiles* is intended to provide an updated summary of the epidemiology of HIV ,STDs, hepatitis, and unmet primary medical care needs among individuals living with HIV through 2008. 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 profile 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 Community Planning Group (CPG) operates on a five year planning cycle. The current prevention plan runs from 2006-2010. In 2010, a new comprehensive HIV prevention plan will be developed for 2011-2015. To best serve the CPG planning process, updates to the epidemiologic profile are designed to coincide with the CPG'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 profile. The current *Profiles* represents a comprehensive update to question 2 (What is the scope of the HIV/AIDS epidemic in Missouri?), a selective update to question 3 (What are the indicators of HIV/AIDS infection risk in Missouri?) of STD and hepatitis data, and a selective update to question 5 (What are the number and characteristics of the individuals who know they are HIV positive but who are not in care?). For data from the most recently completed comprehensive *Profiles*, please refer to the *2004 Epidemiologic Profile*, which can be accessed at http://www.dhss.mo.gov/HIV_STD_AIDS/2004EpidemiologicProfile.pdf.

Data Sources

HIV/AIDS Surveillance Data, eHARS

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

HIV Case Management Data, FACTORS

MDHSS participates in a cooperative agreement with Health Resources and Service Administration (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 FACTORS 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 case management enrolled individuals.

Hepatitis Surveillance Data, Missouri Health Surveillance Information Systems, MOHSIS

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

Population Estimates, Missouri Department of Health, Bureau of Health Informatics

MDHSS maintains population files for Missouri and its counties based on data provided by the U.S. Census Bureau in partnership with the Federal State Cooperative Program for Population Estimates. Census counts are produced every ten years, with the 2000 census representing the most recent census. Population estimates are produced for non-census year based on adjustments made to the most recent census counts. Due to the time required to compute these estimates, the most recent year's estimates are not available for use in the *Profiles*, and the previous year's population estimates are used instead.

STD Surveillance Data, STD*MIS

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

Technical Notes

HIV Disease, HIV case, AIDS case: HIV disease includes all individuals diagnosed with the HIV virus regardless of the stage of disease progression. All persons with HIV disease can be sub-classified as either an **AIDS case** (if they are in the later stages of the disease process and have met the case definition for AIDS), or an **HIV case** (if they are in the earlier stages of the disease process and have not met the AIDS case definition). In this report, the sub-classification of HIV or AIDS is based on an individual's status of disease progression as of December 31, 2008.

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

Reporting Delay: Delays exist between the time HIV infection is diagnosed and the time the infection is reported to MDHSS. As a result of reporting delays, case numbers for the most recent years of diagnosis may not be complete. Data from recent years should be considered provisional. The data presented in this report have not been adjusted for reporting delay. The data in this report represent all information reported to MDHSS through February 25, 2009.

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

Vital Status: Cases are presumed to be alive unless MDHSS has received notification of death. Current vital status information for cases is ascertained through routine matches with Missouri death certificates, reports of death from other states' surveillance programs, and routine site visits with major reporting sites.

Exposure Category: Despite possible existence of multiple methods through which HIV can be transmitted, cases are assigned a single most likely exposure category based on a hierarchy developed by the CDC. A limitation of the dataset is the large number of cases reported with an undetermined exposure category. Data on cases with missing exposure category information has 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/AIDS. Mobility may result in the same HIV infected person being counted in two or more different states. To help respond to potential duplication problems, the CDC initiated the Interstate Duplication Evaluation Project (IDEP), now called Routine Interstate Duplicate Review (RIDR) in 2002. RIDR compares patient records throughout the nation in order to identify duplicate cases. The states with duplicate cases contact one another to compare patient profiles in order to determine the state to which the case belongs, based on residence during the earliest date of diagnosis. Because of this process, the cumulative number of cases within Missouri may change, but the process has increased the accuracy of Missouri's data by reducing the chance that a case has been counted more than once nationally.

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

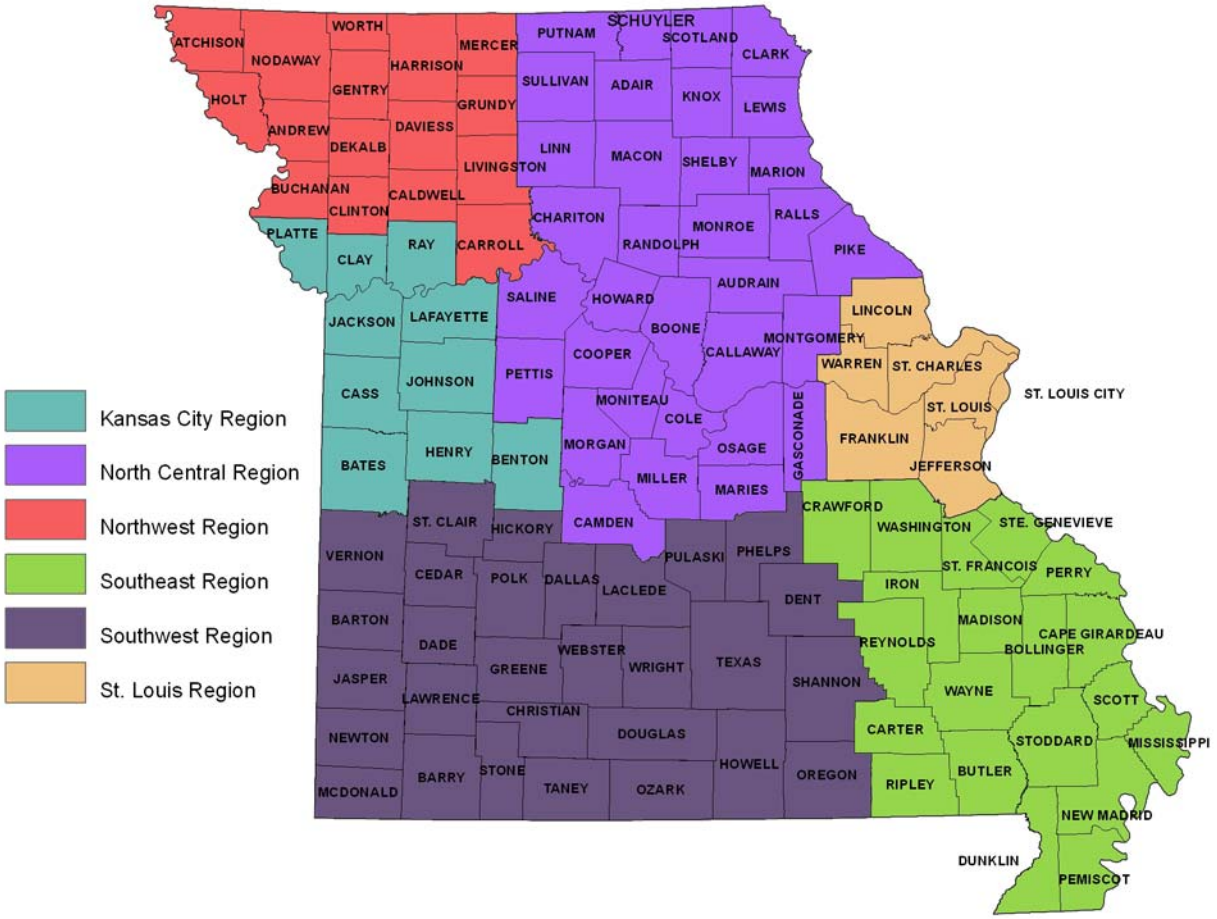
Glossary of Terms: A glossary of terms is located at the end of the profile. If the reader is unclear about any terms used in the *Profiles*, please feel free to contact MDHSS BHSH for additional information.

Race/Ethnicity: Race and ethnicity information has been collected under two different systems in the HIV/AIDS reporting system. Since many cases were reported under the old classification system, the use of the race and ethnicity categories from the old classification system will be maintained in this report. All cases identified with a Hispanic ethnicity will be reported in the *Profiles* as Hispanic, regardless of reported race information. In the text of this document, whenever cases are being discussed, the term "White" means White, not Hispanic, and "Black" means Black, 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".

Diagnoses in Correctional Facilities: For persons living in Missouri correctional facilities (which include state, county, and local facilities) at the time of their HIV/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/AIDS data for the six HIV regions of the state. This is based on the fact that these individuals, especially those in the state prison system, are often incarcerated in a different location than where they were residing (and were likely infected) prior to imprisonment. If included among the cases from the area where imprisoned at the time of diagnosis, it would distort the picture of the epidemic in that area. Individuals diagnosed at federal correctional facilities in Missouri are not included in any data presented.

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

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



Abbreviations

AIDS=Acquired Immunodeficiency Syndrome

BHSH=Bureau of HIV, STD, and Hepatitis

CDC=Centers for Disease Control and Prevention

CPG=Community Planning Group

eHARS=evaluation HIV/AIDS Reporting System

HIV=Human Immunodeficiency Virus

IDEP=Interstate Duplicate Evaluation Project

IDU=Injection drug use

HRSA=Health Resources and Services Administration

MDHSS=Missouri Department of Health and Senior Services

MSM=Men who have sex with men

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

MOHSIS=Missouri Health Surveillance Information Systems

NIR=No indicated risk

P&S=Primary and secondary

RIDR=Routine Interstate Duplicate Review

STD=Sexually Transmitted Disease

STD*MIS=Sexually Transmitted Disease Management Information System

MISSOURI STATE SUMMARY

Population Estimates, by HIV Region, Missouri, 2007							
	St. Louis Region	Kansas City Region	Northwest Region	North Central Region	Southwest Region	Southeast Region	Missouri Total
Sex							
Male	1,007,557	598,787	120,644	365,437	539,008	239,589	**2,871,022**
Female	1,080,388	628,058	121,136	372,508	557,750	247,553	**3,007,393**
Total	2,087,945	1,226,845	241,780	737,945	1,096,758	487,142	**5,878,415**
Race/Ethnicity							
White	1,572,428	951,956	226,477	668,014	1,016,638	445,861	**4,881,374**
Black	415,286	177,027	7,882	41,256	21,689	29,378	**692,518**
Hispanic	44,103	70,380	4,980	16,459	35,592	6,907	**178,421**
Asian	49,999	20,908	1,452	9,186	11,284	2,535	**95,364**
American Indian	6,129	6,574	989	3,030	11,555	2,461	**30,738**
Other/Unknown	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**
Total	2,087,945	1,226,845	241,780	737,945	1,096,758	487,142	**5,878,415**
Race/Ethnicity-Males							
White Male	768,078	466,079	111,738	328,003	496,864	218,437	**2,389,199**
Black Male	189,415	82,367	5,024	22,292	11,915	14,823	**325,836**
Hispanic Male	22,963	36,955	2,645	8,888	18,867	3,785	**94,103**
Asian Male	24,126	10,095	714	4,681	5,540	1,253	**46,409**
American Indian Male	2,975	3,291	523	1,573	5,822	1,291	**15,475**
Other/Unknown Male	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**
Total	1,007,557	598,787	120,644	365,437	539,008	239,589	**2,871,022**
Race/Ethnicity-Females							
White Female	804,350	485,877	114,739	340,011	519,774	227,424	**2,492,175**
Black Female	225,871	94,660	2,858	18,964	9,774	14,555	**366,682**
Hispanic Female	21,140	33,425	2,335	7,571	16,725	3,122	**84,318**
Asian Female	25,873	10,813	738	4,505	5,744	1,282	**48,955**
American Indian Female	3,154	3,283	466	1,457	5,733	1,170	**15,263**
Other/Unknown Female	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**
Total	1,080,388	628,058	121,136	372,508	557,750	247,553	**3,007,393**
Age							
<2	55,652	36,680	6,149	19,107	29,858	12,951	**160,397**
2-12	301,169	186,065	32,071	100,948	158,318	68,414	**846,985**
13-18	184,142	103,016	19,623	59,842	89,945	39,955	**496,523**
19-24	163,255	89,270	21,789	73,910	94,804	36,269	**479,297**
25-44	550,971	344,325	62,818	195,947	295,710	131,056	**1,580,827**
45-64	571,122	319,159	60,920	183,602	267,829	123,383	**1,526,015**
65+	261,634	148,330	38,410	104,589	160,294	75,114	**788,371**
Total	2,087,945	1,226,845	241,780	737,945	1,096,758	487,142	**5,878,415**

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

Magnitude of the Problem and General Trends

- From 1982 to 2008, there have been a total of 16,892 persons diagnosed with HIV disease in Missouri and reported to MDHSS. Of these individuals, 11,568 (68%) were subcategorized as AIDS cases, and the remaining 5,324 (32%) were subcategorized as HIV cases. Of the cumulative number of persons diagnosed with HIV disease, 10,834 (64%) were presumed to be living at the end of 2008.
- The annual number of persons newly diagnosed with HIV disease fluctuated between 1999 and 2008. In general, the number of new diagnoses reported each year from 2004 to 2008 was higher than the number reported between 1999 and 2003. In 2008, there were 588 persons newly diagnosed with HIV. However, this value has not been adjusted for reporting delays, and therefore is likely to increase.
- The number of persons living with HIV disease continued to increase every year, from 7,148 persons in 1999 to 10,834 persons in 2008. 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, as well as the largest numbers of cases, were found in these two areas.
- The rate of persons newly diagnosed who remained classified as HIV cases at the end of 2008 was highest in St. Louis City (31.1 per 100,000). The second highest rate was in Kansas City (18.7 per 100,000), followed by St. Louis County (8.9 per 100,000). The rate of persons newly diagnosed who were classified as AIDS cases at the end of 2008 was highest in Kansas City (12.4 per 100,000), and second highest in St. Louis City (11.1 per 100,000). St. Louis City also had the highest rate of individuals living with HIV disease.

Who

Sex

- Males represented the majority of persons newly diagnosed (82%) and living with (83%) HIV disease. The disproportionate impact of HIV disease on males has decreased over time. The rate of persons living with HIV disease was 5.3 times greater among males that females. Whereas the rate of new diagnoses in 2008 was only 4.6 times greater among males than females.

Race/Ethnicity

- HIV disease continues to disproportionately impact minorities. The rate of newly diagnosed HIV disease cases was 8.2 times greater among blacks than whites, and 2.9 times greater among Hispanics than whites. The disparity was even greater among black females. While black females represented only 12% of Missouri's female population, black females accounted for 69% of new female HIV diagnoses. It should be emphasized that race/ethnicity in itself is not a risk factor for HIV infection; however, among many racial/ethnic minority populations, social, economic, and cultural factors are associated with high rates of HIV risk behavior. These factors also may be barriers to receiving HIV prevention information or accessing HIV testing, diagnosis, and treatment.

Age

- The age of individuals living with HIV disease has increased over time. In 1999, the largest numbers of persons living with HIV disease were 35-39 years of age, whereas in 2008 persons 45-49 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 decreased. In 2008, the largest numbers of persons newly diagnosed with HIV disease were between 19-24 years of age, compared to 1999 when the largest numbers of new diagnoses were 35-39 years of age. The differences may be attributed to increased testing among younger individuals or due to a true increase the number of new infections.

Exposure Category

- The majority of new diagnoses continue to be attributed to men who have sex with men. Among females, heterosexual contact was the primary mode of transmission. In 2008, there were 3 persons newly diagnosed who acquired their infection through perinatal transmission.

Figure 1. HIV disease cases (living and deceased), by current HIV vs. AIDS status, Missouri, 1982—2008

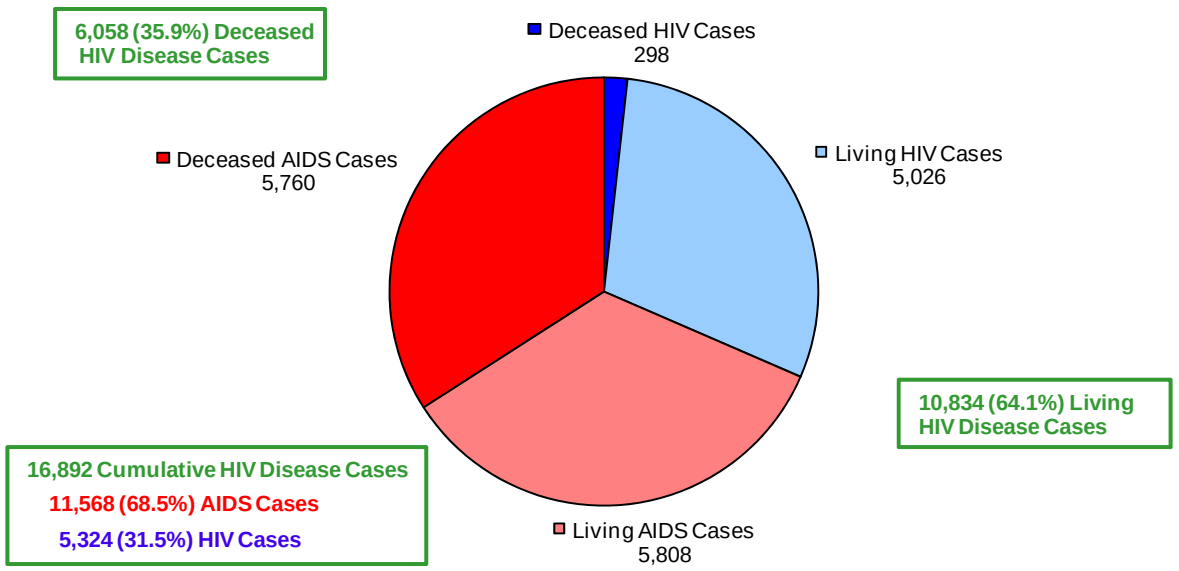
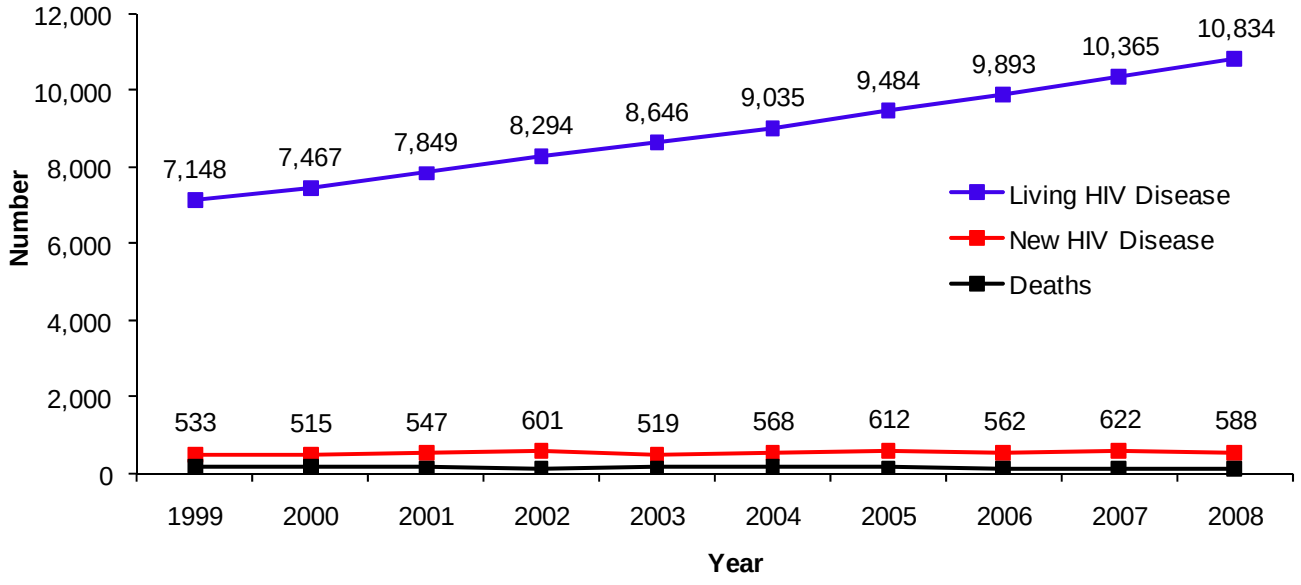


Figure 2. Living and new HIV disease cases and deaths by year*, Missouri, 1999—2008

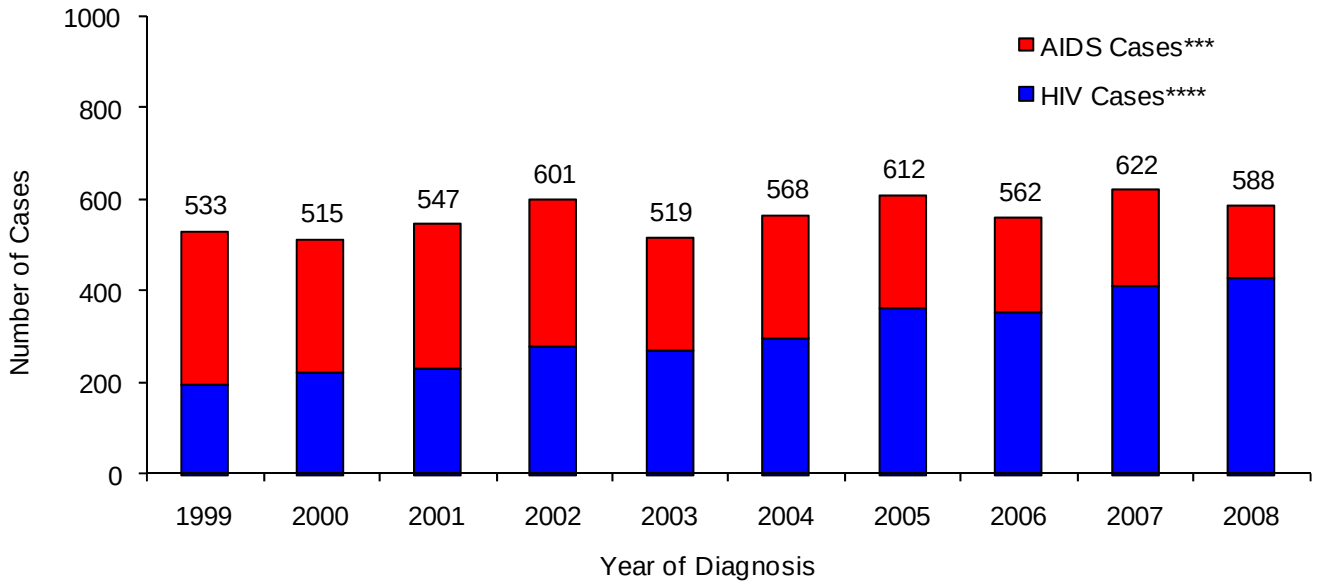


*For living HIV disease cases-the number of individuals living with HIV disease at the end of the year; For new HIV disease cases-the number of individuals newly diagnosed in the year, For HIV disease deaths-the number of individuals that died in the year.

From 1982 to 2008, there have been a total of 16,892 HIV disease cases diagnosed in Missouri and reported to MDHSS (Figure 1). Of the cumulative cases reported, 64% were still presumed to be living with HIV disease at the end of 2008. Among those living with HIV disease, 5,026 were classified as HIV cases at the end of 2008 and 5,808 were classified as AIDS cases.

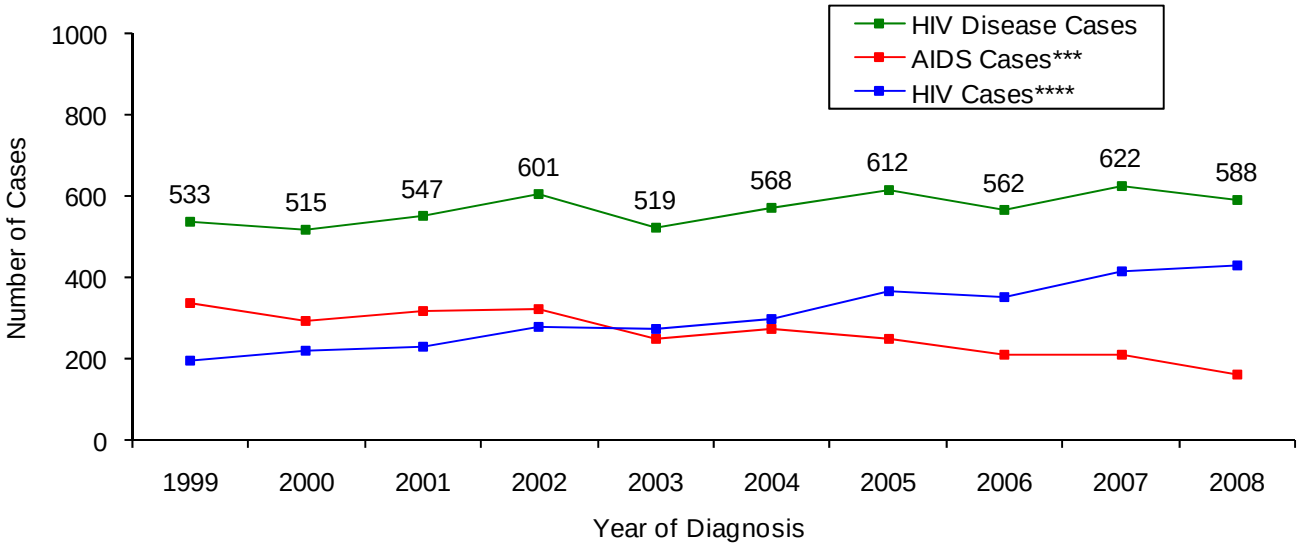
At the end of 2008, there were 10,834 persons living with HIV disease whose most recent diagnosis occurred in Missouri (Figure 2). The number of people living with HIV disease increased each year. There were 588 new HIV disease diagnoses in 2008. The number of new diagnoses from 2004 to 2008 has remained generally stable. The number of deaths among persons with HIV disease each year has remained generally steady. The lower number of deaths in 2008 was likely due to delays in death reporting.

Figure 3. HIV disease cases, by current status* and year of diagnosis, Missouri, 1999—2008**



*HIV case vs. AIDS case
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as an HIV case or an AIDS case, was documented by the Department).
***These cases were either: 1) initially reported as HIV cases and then later reclassified as AIDS cases because they subsequently met the AIDS case definition; or 2) initially reported as AIDS cases.
****These cases were initially reported as HIV cases and have remained HIV cases. They have not met the case definition for AIDS as of December 31, 2008.

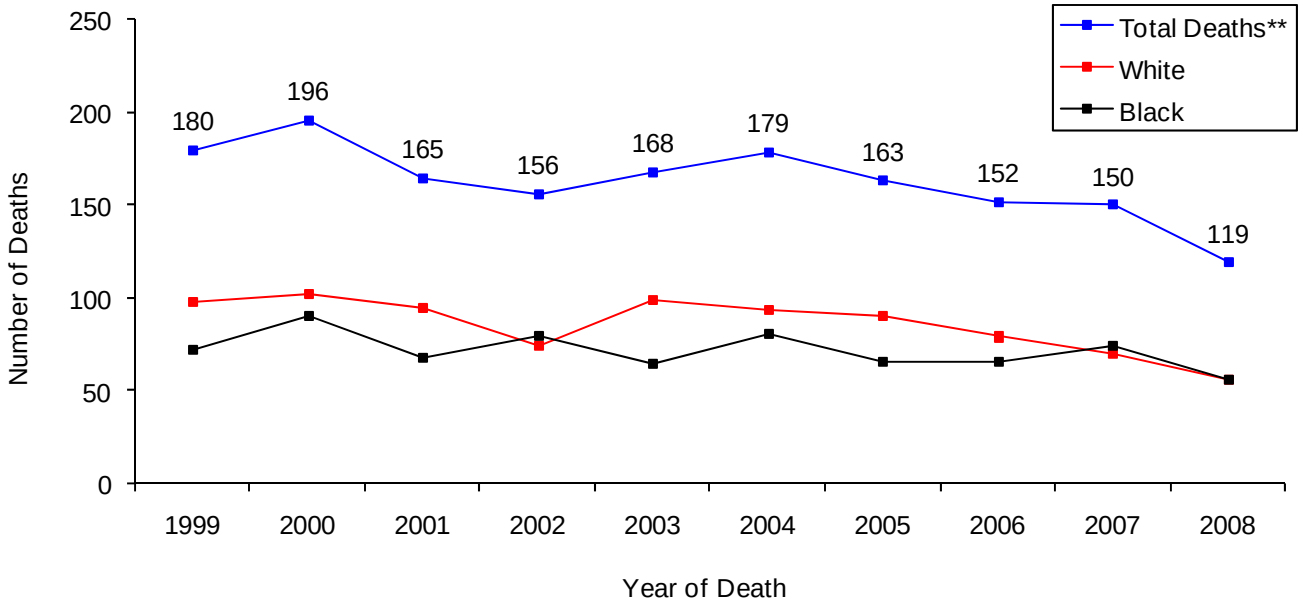
Figure 4. Reported HIV disease cases, by current status* and year of diagnosis, Missouri, 1999—2008**



*HIV case vs. AIDS case
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as an HIV case or an AIDS case, was documented by the Department).
***These cases were either: 1) initially reported as HIV cases and then later reclassified as AIDS cases because they subsequently met the AIDS case definition; or 2) initially reported as AIDS cases.
****These cases were initially reported as HIV cases and have remained HIV cases. They have not met the case definition for AIDS as of December 31, 2008.

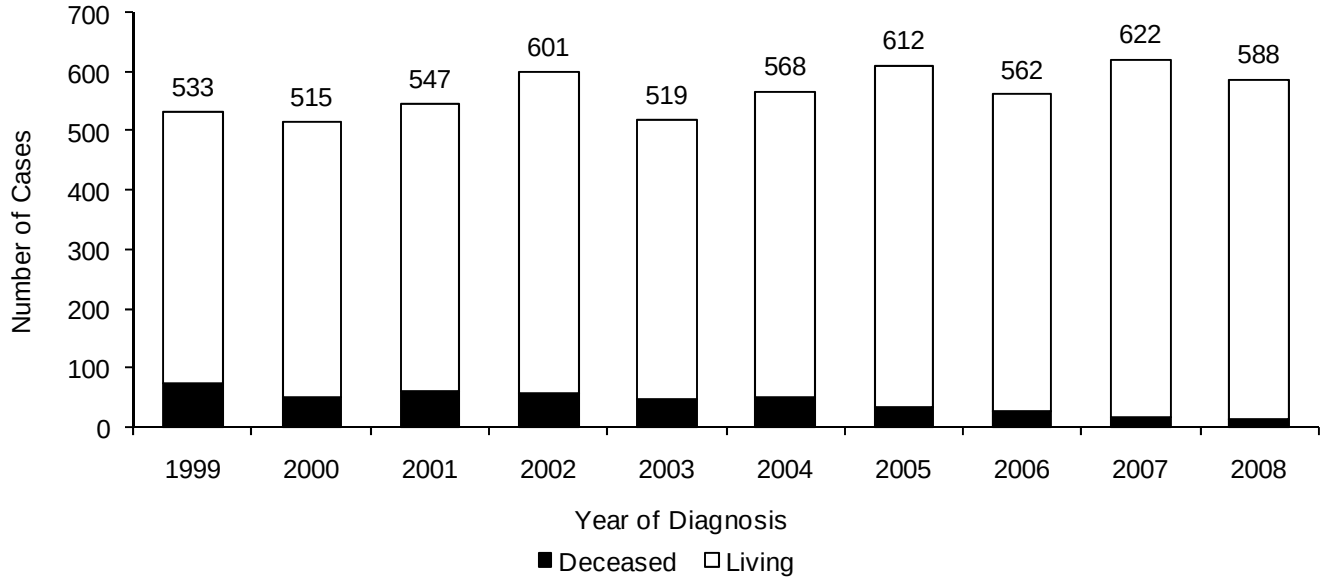
Between 1999 and 2008, the number of new HIV disease diagnoses has ranged from 515 cases in 2000, to 622 cases in 2007 (Figures 3 and 4). The number of new diagnoses from 2004 to 2008 was generally higher than from 1999 to 2003. However, from 2004 to 2008 the number of new diagnoses has been generally stable. Differences in the number of persons sub-classified as AIDS cases each year are due to the progression of the disease over time. For those diagnosed with HIV disease in 1999, a larger number are currently classified as AIDS cases compared to those diagnosed in 2008 because they have been living with the virus longer.

Figure 5. HIV disease deaths*, by selected race, by year of death, Missouri, 1999—2008**



*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, 2008, and reported by February 25, 2009.

Figure 6. Persons diagnosed with HIV disease by current vital status* and year of diagnosis, Missouri, 1999—2008**



*Vital status on December 31, 2008.
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as an HIV case or an AIDS case, was documented by the Department).

The number of deaths among persons with HIV disease has remained relatively stable, although a decrease in the number of deaths occurred from 2004-2008 (Figure 5) . The lower number of deaths in 2008 was likely due to delays in death reporting. The general decrease in the number of deaths over time is likely related to the use of highly active antiretroviral therapy (HAART).

Of the 533 persons diagnosed with HIV disease in 1999, 73 (14%) were deceased by the end of 2008 (Figure 6). Among the 588 cases first diagnosed in 2008, 12 (2%) were deceased at the end of 2008. 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, AIDS, and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and by current age, Missouri, 2008

	HIV*			AIDS**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	4,100	81.6%	142.8	4,942	85.1%	172.1	9,042	83.5%	314.9
Female	926	18.4%	30.8	866	14.9%	28.8	1,792	16.5%	59.6
Total	5,026	100.0%	85.5	5,808	100.0%	98.8	10,834	100.0%	184.3
Race/Ethnicity									
White	2,528	50.3%	51.8	3,085	53.1%	63.2	5,613	51.8%	115.0
Black	2,238	44.5%	323.2	2,476	42.6%	357.5	4,714	43.5%	680.7
Hispanic	183	3.6%	102.6	193	3.3%	108.2	376	3.5%	210.7
Asian	28	0.6%	29.4	17	0.3%	17.8	45	0.4%	47.2
American Indian	6	0.1%	19.5	17	0.3%	55.3	23	0.2%	74.8
Other/Unknown	43	0.9%	N/A	20	0.3%	N/A	63	0.6%	N/A
Total	5,026	100.0%	85.5	5,808	100.0%	98.8	10,834	100.0%	184.3
Race/Ethnicity-Males									
White Male	2,198	53.6%	92.0	2,801	56.7%	117.2	4,999	55.3%	209.2
Black Male	1,691	41.2%	519.0	1,928	39.0%	591.7	3,619	40.0%	1110.7
Hispanic Male	150	3.7%	159.4	168	3.4%	178.5	318	3.5%	337.9
Asian Male	22	0.5%	47.4	12	0.2%	25.9	34	0.4%	73.3
American Indian Male	6	0.1%	38.8	16	0.3%	103.4	22	0.2%	142.2
Other/Unknown Male	33	0.8%	N/A	17	0.3%	N/A	50	0.6%	N/A
Total	4,100	100.0%	142.8	4,942	100.0%	172.1	9,042	100.0%	314.9
Race/Ethnicity-Females									
White Female	330	35.6%	13.2	284	32.8%	11.4	614	34.3%	24.6
Black Female	547	59.1%	149.2	548	63.3%	149.4	1,095	61.1%	298.6
Hispanic Female	33	3.6%	39.1	25	2.9%	29.6	58	3.2%	68.8
Asian Female	6	0.6%	12.3	5	0.6%	10.2	11	0.6%	22.5
American Indian Female	0	0.0%	0.0	1	0.1%	6.6	1	0.1%	6.6
Other/Unknown Female	10	1.1%	N/A	3	0.3%	N/A	13	0.7%	N/A
Total	926	100.0%	30.8	866	100.0%	28.8	1,792	100.0%	59.6
Current Age‡									
<2	5	0.1%	3.1	0	0.0%	0.0	5	0.0%	3.1
2-12	30	0.6%	3.5	3	0.1%	0.4	33	0.3%	3.9
13-18	44	0.9%	8.9	19	0.3%	3.8	63	0.6%	12.7
19-24	310	6.2%	64.7	89	1.5%	18.6	399	3.7%	83.2
25-44	2,655	52.8%	168.0	2,488	42.8%	157.4	5,143	47.5%	325.3
45-64	1,849	36.8%	121.2	2,990	51.5%	195.9	4,839	44.7%	317.1
65+	133	2.6%	16.9	219	3.8%	27.8	352	3.2%	44.6
Total	5,026	100.0%	85.5	5,808	100.0%	98.8	10,834	100.0%	184.3

†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 2008.
**Cases classified as AIDS by December 31, 2008.
***The sum of HIV cases and AIDS cases.
****Per 100,000 population based on 2007 MDHSS estimates.
‡Based on age as of December 31, 2008.
Note: Percentages may not total due to rounding.

Table 2. Diagnosed HIV, AIDS, and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and current age, Missouri, 2008

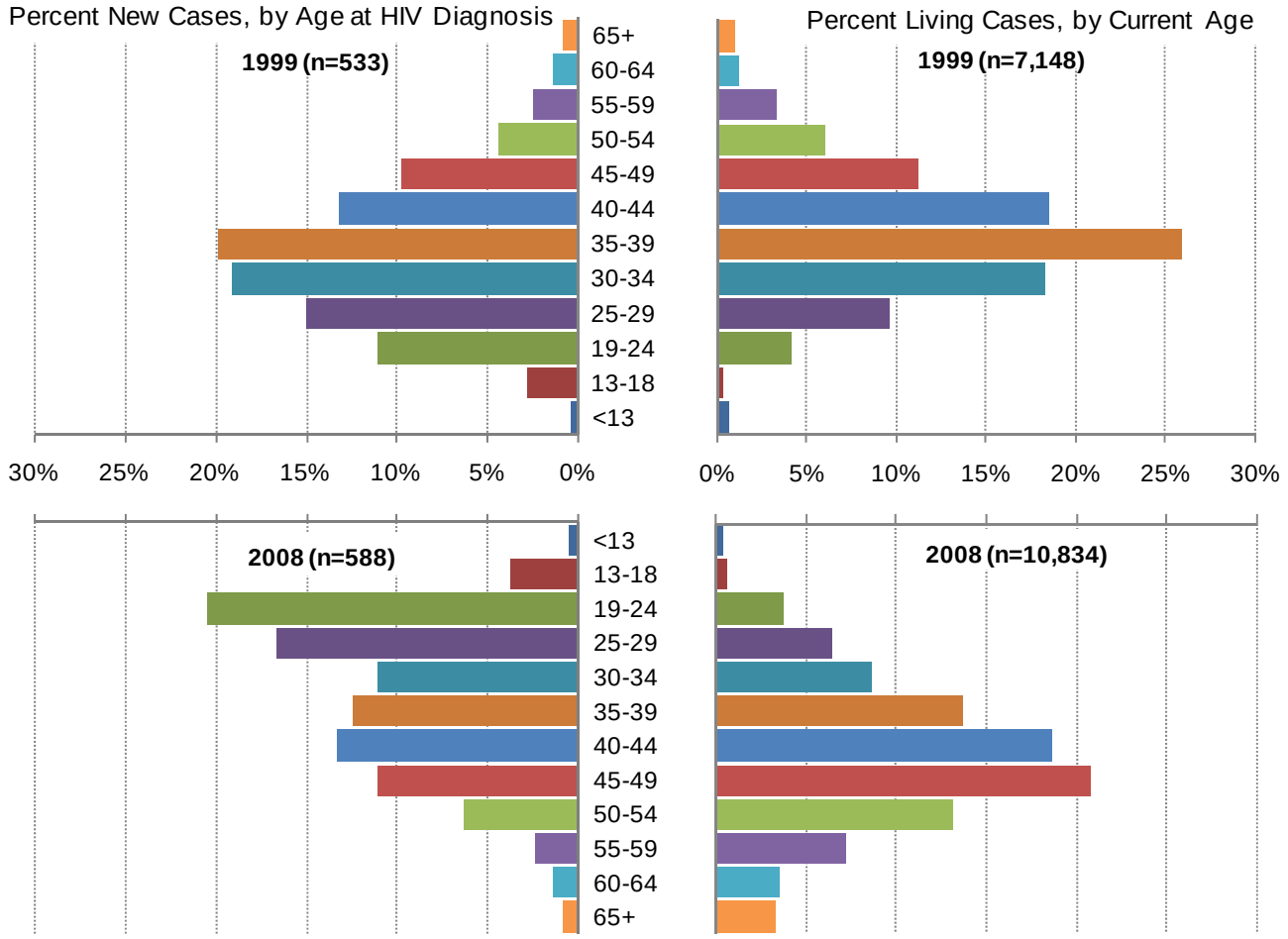
	HIV*			AIDS**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	352	82.1%	12.3	128	80.5%	4.5	480	81.6%	16.7
Female	77	17.9%	2.6	31	19.5%	1.0	108	18.4%	3.6
Total	429	100.0%	7.3	159	100.0%	2.7	588	100.0%	10.0
Race/Ethnicity									
White	191	44.5%	3.9	65	40.9%	1.3	256	43.5%	5.2
Black	212	49.4%	30.6	83	52.2%	12.0	295	50.2%	42.6
Hispanic	19	4.4%	10.6	8	5.0%	4.5	27	4.6%	15.1
Asian	4	0.9%	4.2	1	0.6%	1.0	5	0.9%	5.2
American Indian	0	0.0%	0.0	1	0.6%	3.3	1	0.2%	3.3
Other/Unknown	3	0.7%	N/A	1	0.6%	N/A	4	0.7%	N/A
Total	429	100.0%	7.3	159	100.0%	2.7	588	100.0%	10.0
Race/Ethnicity-Males									
White Male	170	48.3%	7.1	56	43.8%	2.3	226	47.1%	9.5
Black Male	159	45.2%	48.8	62	48.4%	19.0	221	46.0%	67.8
Hispanic Male	18	5.1%	19.1	7	5.5%	7.4	25	5.2%	26.6
Asian Male	4	1.1%	8.6	1	0.8%	2.2	5	1.0%	10.8
American Indian Male	0	0.0%	0.0	1	0.8%	6.5	1	0.2%	6.5
Other/Unknown Male	1	0.3%	N/A	1	0.8%	N/A	2	0.4%	N/A
Total	352	100.0%	12.3	128	100.0%	4.5	480	100.0%	16.7
Race/Ethnicity-Females									
White Female	21	27.3%	0.8	9	29.0%	0.4	30	27.8%	1.2
Black Female	53	68.8%	14.5	21	67.7%	5.7	74	68.5%	20.2
Hispanic Female	1	1.3%	1.2	1	3.2%	1.2	2	1.9%	2.4
Asian Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
American Indian Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Other/Unknown Female	2	2.6%	N/A	0	0.0%	N/A	2	1.9%	N/A
Total	77	100.0%	2.6	31	100.0%	1.0	108	100.0%	3.6
Current Age‡									
<2	3	0.7%	1.9	0	0.0%	0.0	3	0.5%	1.9
2-12	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
13-18	14	3.3%	2.8	1	0.6%	0.2	15	2.6%	3.0
19-24	99	23.1%	20.7	21	13.2%	4.4	120	20.4%	25.0
25-44	227	52.9%	14.4	88	55.3%	5.6	315	53.6%	19.9
45-64	85	19.8%	5.6	45	28.3%	2.9	130	22.1%	8.5
65+	1	0.2%	0.1	4	2.5%	0.5	5	0.9%	0.6
Total	429	100.0%	7.3	159	100.0%	2.7	588	100.0%	10.0

*HIV cases diagnosed during 2008 which remained HIV cases at the end of the year. Includes persons diagnosed in Missouri correctional facilities.
**AIDS cases initially diagnosed in 2008.
***The sum of newly diagnosed HIV cases and newly diagnosed AIDS cases. Does not include cases diagnosed prior to 2008 with HIV, which progressed to AIDS in 2008.
****Per 100,000 population based on 2007 MDHSS estimates.
‡Based on age as of December 31, 2008.
Note: Percentages may not total due to rounding.

Of the 10,834 persons living with HIV at the end of 2008, 83% were males (Table 1). The rate of those living with HIV disease was 5.3 times greater among males than females. Although whites represented the largest proportion of living HIV disease cases (52%), the rate of those living with HIV disease was 5.9 times greater among blacks than whites. The rate was 1.8 times greater among Hispanics than whites. Among males, the rate of living cases was 5.3 times greater for blacks than whites, and 1.6 times greater for Hispanics than whites. Among females, the rate of those living with HIV disease was 12.1 times greater among blacks than whites, and 2.8 times greater among Hispanics than whites.

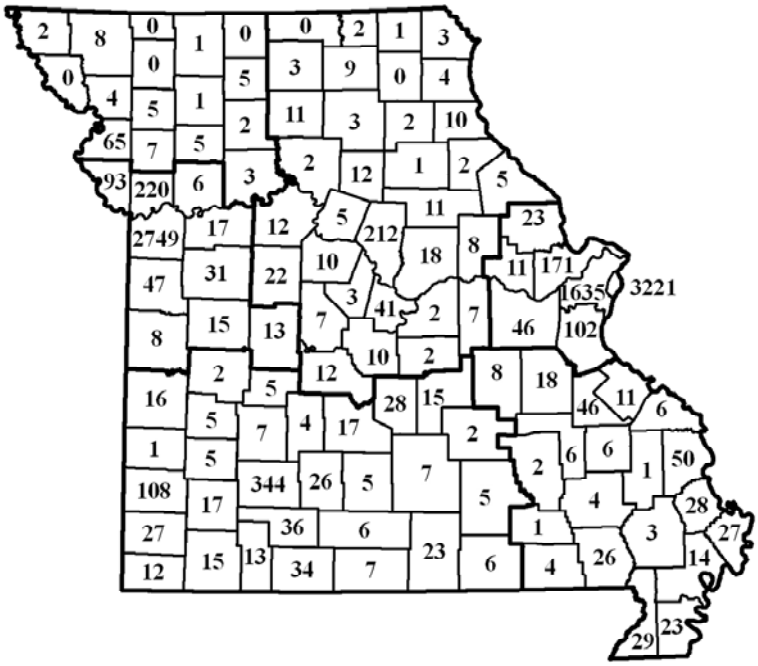
Of the 588 persons newly diagnosed with HIV disease in 2008, 27% were classified as AIDS cases by the end of 2008 (Table 2). The rate of new HIV disease diagnoses was 4.6 times greater among males than females. Females represented a greater proportion of the newly diagnosed AIDS cases (19%) compared to the newly diagnosed HIV cases (18%). A greater proportion of the new AIDS cases occurred among blacks and Hispanics compared to new HIV cases. The rate of new HIV disease cases was 8.2 times greater among blacks than whites, and 2.9 times greater in Hispanics than whites.

Figure 7. Distribution of new HIV disease cases by age at diagnosis and living HIV disease cases by current age in selected year, Missouri, 1999 and 2008



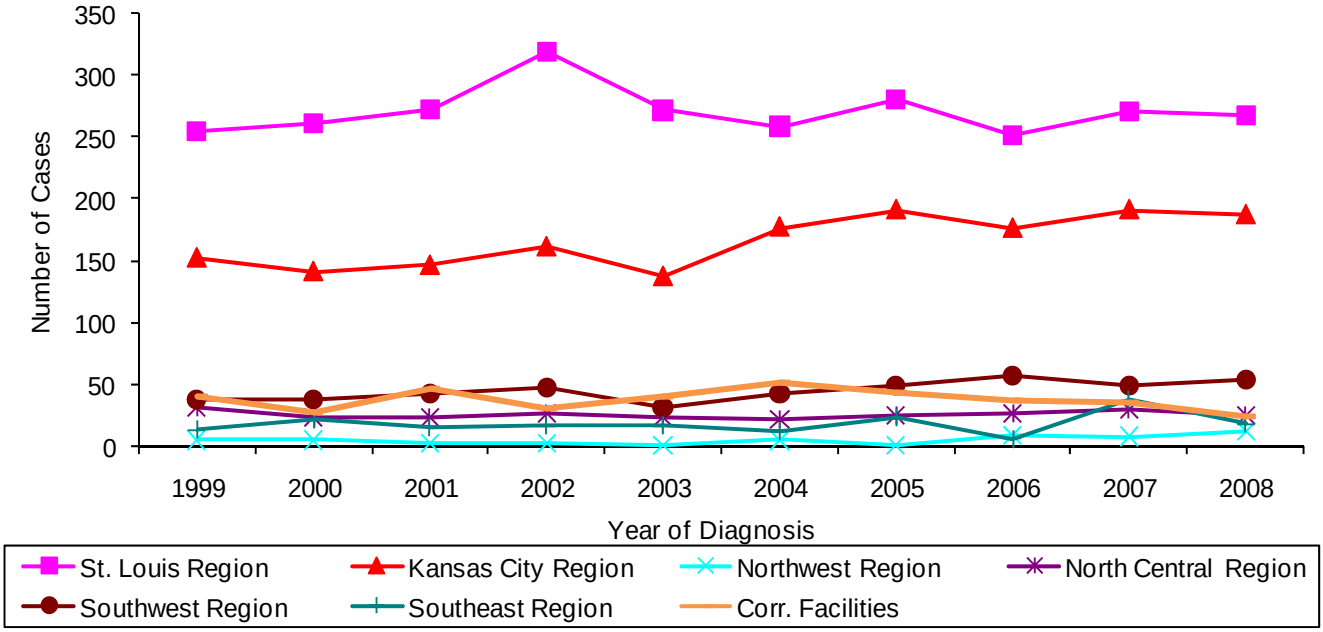
Changes have occurred in the distribution of the age at diagnosis among new HIV disease cases over time (Figure 7). In 1999, the greatest proportion of new diagnoses occurred among those ages 30-34 (19%) and 35-39 (20%). In 2008, the greatest proportion of new diagnoses occurred among those ages 19-24 (20%) and 25-29 (17%). Although the age of new diagnoses has decreased, the age of individuals living with HIV has increased over time. In 1999, the greatest proportion of living cases was between 35-39 years of age (26%). In 2008, the greatest proportion of living cases was between 45-49 years old (21%).

Figure 8. Number of persons living with HIV disease by county of residence* and HIV region at time of diagnosis, Missouri, 1982-2008



*Based on residence at time of most recent diagnosis of HIV or AIDS. Excludes persons diagnosed in Missouri correctional facilities (n=755).

Figure 9. Persons diagnosed with HIV disease by HIV region at time of diagnosis, Missouri, 1999-2008



The largest numbers of persons living with HIV disease in 2008 were most recently diagnosed in St. Louis City (3,221), Jackson County (2,749) and St. Louis County (1,635) (Figure 8). The St. Louis HIV region has represented the largest number of new HIV disease diagnoses in each year from 1999-2008 (Figure 9). The number of new diagnoses has remained fairly steady in all HIV regions with slight fluctuations, except the Kansas City and Southwest HIV regions. The number of new HIV disease diagnoses each year from 2004 to 2008 has been higher than from 1999 to 2003 in the Kansas City and Southwest HIV regions.

Table 3. New and living HIV and AIDS cases and rates, by geographic area, and by HIV region, Missouri, 2008

	HIV Cases						AIDS Cases					
	Diagnosed 2008*			Living with HIV			Diagnosed 2008**			Living with AIDS		
Location	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***
Geograhic Area												
St. Louis City†	109	25.4%	31.1	1,554	30.9%	443.0	39	24.5%	11.1	1,667	28.7%	475.3
St. Louis County†	89	20.7%	8.9	807	16.1%	81.1	15	9.4%	1.5	828	14.3%	83.2
Kansas City†	84	19.6%	18.7	1,068	21.2%	237.1	56	35.2%	12.4	1,410	24.3%	313.1
Outstate†	127	29.6%	3.1	1,223	24.3%	30.0	45	28.3%	1.1	1,522	26.2%	37.3
Missouri Correctional Facilities††	20	4.7%	N/A	374	7.4%	N/A	4	2.5%	N/A	381	6.6%	N/A
Total	429	100.0%	7.3	5,026	100.0%	85.5	159	100.0%	2.7	5,808	100.0%	98.8
HIV Region												
St. Louis HIV Region†	212	49.4%	10.2	2,527	50.3%	121.0	56	35.2%	2.7	2,682	46.2%	128.5
Kansas City HIV Region†	114	26.6%	9.3	1,336	26.6%	108.9	73	45.9%	6.0	1,863	32.1%	151.9
Northwest HIV Region†	9	2.1%	3.7	44	0.9%	18.2	3	1.9%	1.2	64	1.1%	26.5
North Central HIV Region†	18	4.2%	2.4	201	4.0%	27.2	7	4.4%	0.9	251	4.3%	34.0
Southwest HIV Region†	41	9.6%	3.7	396	7.9%	36.1	13	8.2%	1.2	402	6.9%	36.7
Southeast HIV Region†	15	3.5%	3.1	148	2.9%	30.4	3	1.9%	0.6	165	2.8%	33.9
Missouri Correctional Facilities††	20	4.7%	N/A	374	7.4%	N/A	4	2.5%	N/A	381	6.6%	N/A
MISSOURI	**429**	**100.0%**	**7.3**	**5,026**	**100.0%**	**85.5**	**159**	**100.0%**	**2.7**	**5,808**	**100.0%**	**98.8**

*HIV cases diagnosed and reported to the Department during 2008 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2008 that progressed to AIDS in 2008.
***Per 100,000 population based on 2007 MDHSS estimates.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

There were differences in the proportion of persons newly diagnosed with HIV disease that were either concurrently diagnosed with AIDS or progressed to AIDS at the end of 2008 by geographic area and HIV region (Table 3). In Kansas City, 40% of newly diagnosed HIV disease cases progressed to AIDS at the end of 2008. By comparison, the proportion was 26%, 26%, 17%, and 14% for St. Louis City, Outstate, Missouri correctional facilities, and St. Louis County, respectively. Similar trends were also seen among the HIV regions. In the Kansas City HIV region, 39% of newly diagnosed HIV disease cases progressed to AIDS at the end of 2008. Whereas the proportion was 28%, 25%, 24%, 21%, 17%, and 17% for the HIV regions of North Central, Northwest, Southwest, St. Louis, Southeast, and Missouri correctional facilities, respectively. The variation in the proportion of newly diagnosed individuals that progressed to AIDS by the end of 2008 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 HIV cases and living HIV and AIDS cases were greatest in St. Louis City (Table 3). The rate of new AIDS case diagnoses was highest in Kansas City. The rate of new HIV case diagnoses was 10.0 times higher in St. Louis City compared to Outstate, and 6.0 times higher in Kansas City than Outstate. The rate of new AIDS case diagnoses was 11.3 times higher in Kansas City compared to Outstate, and 10.1 times higher in St. Louis City than Outstate. This demonstrates the disproportionate impact of HIV disease on the major metropolitan areas in Missouri.

Table 4. Diagnosed HIV cases and rates, by selected race/ethnicity, by geographic area, Missouri, 2008

Area	White, Non-Hispanic			Black, Non-Hispanic			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis City†	35	32.1%	22.2	69	63.3%	39.5	3	2.8%	31.9	109	100.0%	31.1
St. Louis County†	31	34.8%	4.3	54	60.7%	24.6	4	4.5%	18.7	89	100.0%	8.9
Kansas City†	36	42.9%	14.2	42	50.0%	29.8	5	6.0%	11.8	84	100.0%	18.7
Outstate Missouri†	82	64.6%	2.2	36	28.3%	22.9	6	4.7%	5.7	127	100.0%	3.1
Missouri Correctional Facilities††	7	35.0%	N/A	11	55.0%	N/A	1	5.0%	N/A	20	100.0%	N/A
MISSOURI TOTAL	**191**	**44.5%**	**3.9**	**212**	**49.4%**	**30.6**	**19**	**4.4%**	**10.6**	**429**	**100.0%**	**7.3**

*Per 100,000 population based on 2007 MDHSS estimates.
**Includes cases in persons whose race/ethnicity is either unknown or not listed.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Row percentages are shown. Percentages may not total due to rounding.

Table 5. Diagnosed HIV cases and rates, by selected race/ethnicity, by HIV region, Missouri, 2008

Area	White, Non-Hispanic			Black, Non-Hispanic			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis HIV Region†	75	35.4%	4.8	127	59.9%	30.6	8	3.8%	18.1	212	100.0%	10.2
Kansas City HIV Region†	52	45.6%	5.5	54	47.4%	30.5	6	5.3%	8.5	114	100.0%	9.3
Northwest HIV Region†	8	88.9%	3.5	1	11.1%	12.7	0	0.0%	0.0	9	100.0%	3.7
North Central HIV Region†	10	55.6%	1.5	7	38.9%	17.0	1	5.6%	6.1	18	100.0%	2.4
Southwest HIV Region†	28	68.3%	2.8	8	19.5%	36.9	3	7.3%	8.4	41	100.0%	3.7
Southeast HIV Region†	11	73.3%	2.5	4	26.7%	13.6	0	0.0%	0.0	15	100.0%	3.1
Missouri Correctional Facilities††	7	35.0%	N/A	11	55.0%	N/A	1	5.0%	N/A	20	100.0%	N/A
MISSOURI TOTAL	**191**	**44.5%**	**3.9**	**212**	**49.4%**	**30.6**	**19**	**4.4%**	**10.6**	**429**	**100.0%**	**7.3**

*Per 100,000 population based on 2007 MDHSS estimates.
**Includes cases in persons whose race/ethnicity is either unknown or not listed.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Row percentages are shown. Percentages may not total due to rounding.

The proportion of new HIV cases diagnosed in 2008 by race/ethnicity varied by geographic area (Table 4). Whites comprised 65% of new HIV case diagnoses in 2008 in Outstate, but only 32% of new HIV cases in St. Louis City. Differences in the general population distribution of each of these geographic areas likely explain 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 was10.4 times greater in blacks than whites, and 2.6 times greater in Hispanics than whites. In comparison, the rate is only 1.8 times greater in blacks than whites, and 1.4 times greater in Hispanics than whites in St. Louis City. The rate of new HIV case diagnoses among Hispanics (11.8) was lower than the rate among whites (14.2) in Kansas City. This was the only geographic area where the rate of new HIV case diagnoses was lower for Hispanics compared to whites. However, the number of cases among Hispanics was small, and therefore the rates should be interpreted with caution.

Similar patterns observed for the geographic areas were also present by HIV region (Table 5). In the Northwest HIV region, whites represented 89% of new HIV case diagnoses. Whereas whites represented only 35% of new HIV cases in the St. Louis HIV region and Missouri correctional facilities. The rate of new HIV case diagnoses was 13.2 and 11.3 times higher for blacks than whites in the Southwest and North Central HIV regions, respectively. In contrast, the rate was only 6.4 and 5.5 times higher for blacks than whites in the St. Louis and Kansas City HIV regions, respectively. The rate of new diagnoses among Hispanics compared to whites was 3.8 times greater in the St. Louis HIV region, but only 1.5 times higher in the Kansas City HIV region.

Table 6. Newly diagnosed and living HIV and AIDS cases in men who have sex with men, by selected race/ethnicity, Missouri, 2008

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
White	95	46.8%	1616	57.6%	32	46.4%	2150	60.7%
Black	94	46.3%	1049	37.4%	33	47.8%	1256	35.5%
Hispanic	11	5.4%	109	3.9%	4	5.8%	104	2.9%
Other/Unknown	3	1.5%	31	1.1%	0	0.0%	33	0.9%
MISSOURI TOTAL* **	**203**	**100.0%**	**2,805**	**100.0%**	**69**	**100.0%**	**3,543**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2008 that progressed to AIDS in 2008.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 7. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by current age group, Missouri, 2008

	White		Black		Hispanic		Total*	
Age Group	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
13-18	0	0.0%	13	0.6%	0	0.0%	15	0.2%
19-24	47	1.2%	175	7.6%	7	3.3%	230	3.6%
25-44	1550	41.2%	1209	52.5%	127	59.6%	2919	46.0%
45-64	2015	53.5%	865	37.5%	74	34.7%	2979	46.9%
65+	154	4.1%	43	1.9%	5	2.3%	205	3.2%
MISSOURI TOTAL	**3,766**	**100.0%**	**2,305**	**100.0%**	**213**	**100.0%**	**6,348**	**100.0%**

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

The data presented for each exposure category for Tables 6-17 have not been adjusted to redistribute individuals with missing exposure category information. Therefore these data only represent those individuals with an exposure category reported to MDHSS. The total number of individuals in each exposure category is likely underestimated, especially among those newly diagnosed in 2008. These data are subject to change.

There were a total of 272 new HIV disease diagnoses attributed to men who have sex with men (MSM) in 2008 (Table 6). Blacks and whites represented a nearly equal proportion of both new HIV and new AIDS cases among MSM. In contrast, whites represented a larger proportion of MSM living with both HIV and AIDS compared to blacks. Of the newly diagnosed cases among MSM, 25% progressed to AIDS by the end of 2008. There were not significant differences in the proportion of newly diagnosed cases that progressed to AIDS by race/ethnicity. Both blacks and Hispanics represented a greater proportion of new HIV and AIDS cases compared to the proportion they represented among living cases.

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM (Table 7). Among white MSM living with HIV disease, the majority (54%) were between 45-64 years of age at the end of 2008. In contrast, only 38% and 35% of living black and Hispanic MSM with HIV disease were between 45-64 years of age. The majority of black and Hispanic MSM living with HIV disease were between 25-44 years of age at the end of 2008. Black MSM represented the largest number of individuals living with HIV who were less than 25 years of age at the end of 2008 (188).

Table 8. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2008

	White		Black		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	1,024	51.1%	929	46.3%	33	1.6%	2,005	31.6%
St. Louis County	534	52.6%	435	42.8%	38	3.7%	1,016	16.0%
Kansas City	922	57.8%	562	35.2%	91	5.7%	1,596	25.1%
Outstate	1,193	84.4%	162	11.5%	45	3.2%	1,414	22.3%
Missouri Correctional Facilities	93	29.3%	217	68.5%	6	1.9%	317	5.0%
MISSOURI TOTAL	**3,766**	**59.3%**	**2,305**	**36.3%**	**213**	**3.4%**	**6,348**	**100.0%**
HIV Region								
St. Louis Region	1,713	53.5%	1,386	43.3%	75	2.3%	3,203	50.5%
Kansas City Region	1,254	62.6%	615	30.7%	109	5.4%	2,003	31.6%
Northwest Region	49	92.5%	4	7.5%	0	0.0%	53	0.8%
North Central Region	185	77.4%	43	18.0%	9	3.8%	239	3.8%
Southwest Region	366	90.4%	22	5.4%	11	2.7%	405	6.4%
Southeast Region	106	82.8%	18	14.1%	3	2.3%	128	2.0%
Missouri Correctional Facilities	93	29.3%	217	68.5%	6	1.9%	317	5.0%
MISSOURI TOTAL	**3,766**	**59.3%**	**2,305**	**36.3%**	**213**	**3.4%**	**6,348**	**100.0%**

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

Of the 6,348 MSM living with HIV disease at the end of 2008, the largest proportion were diagnosed in St. Louis City (32%), followed by Kansas City (25%) (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, 84% of persons living with HIV disease attributed to MSM were white. Whereas only 29% of MSM 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 regions. The St. Louis HIV region represented 50% of all living cases among MSM and the Kansas City HIV region comprised 32%. The proportion of white living cases among MSM was highest in the Northwest HIV region and lowest in Missouri correctional facilities.

Table 9. Newly diagnosed and living HIV and AIDS cases in men who have sex with men and inject drugs, by selected race/ethnicity, Missouri, 2008

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
White	15	83.3%	143	65.3%	5	83.3%	250	61.3%
Black	3	16.7%	69	31.5%	0	0.0%	144	35.3%
Hispanic	0	0.0%	4	1.8%	1	16.7%	12	2.9%
Other/Unknown	0	0.0%	3	1.4%	0	0.0%	2	0.5%
MISSOURI TOTAL* **	**18**	**100.0%**	**219**	**100.0%**	**6**	**100.0%**	**408**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2008 that progressed to AIDS in 2008.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total 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, 2008

	White		Black		Hispanic		Total*	
Age Group	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****
13-18	0	0.0%	0	0.0%	0	0.0%	0	0.0%
19-24	4	1.0%	3	1.4%	0	0.0%	7	1.1%
25-44	159	40.5%	75	35.2%	10	62.5%	245	39.1%
45-64	224	57.0%	131	61.5%	6	37.5%	365	58.2%
65+	6	1.5%	4	1.9%	0	0.0%	10	1.6%
MISSOURI TOTAL	**393**	**100.0%**	**213**	**100.0%**	**16**	**100.0%**	**627**	**100.0%**

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

There were a total of 24 new HIV disease diagnoses attributed to men who have sex with men and inject drugs (MSM/IDU) in 2008 (Table 9). Whites represented the majority (83%) of both new HIV and new AIDS cases among MSM/IDU. Of the newly diagnosed cases, 25% progressed to AIDS by the end of 2008. Whites also represented the majority of living HIV and AIDS cases, 65% and 61%, respectively among MSM/IDU.

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM/IDU (Table 10). Among white and black MSM/IDU living with HIV disease, the majority, 57% and 62%, were between 45-64 years of age at the end of 2008. In contrast, only 38% of living Hispanic MSM/IDU with HIV disease were between 45-64 years of age. The majority of Hispanic MSM/IDU living with HIV disease were between 25-44 years of age at the end of 2008.

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 region, Missouri, 2008

	White		Black		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	54	41.2%	75	57.3%	1	0.8%	131	20.9%
St. Louis County	24	55.8%	19	44.2%	0	0.0%	43	6.9%
Kansas City	105	65.2%	43	26.7%	11	6.8%	161	25.7%
Outstate	170	87.2%	19	9.7%	4	2.1%	195	31.1%
Missouri Correctional Facilities	40	41.2%	57	58.8%	0	0.0%	97	15.5%
MISSOURI TOTAL	**393**	**62.7%**	**213**	**34.0%**	**16**	**2.6%**	**627**	**100.0%**
HIV Region								
St. Louis Region	90	48.1%	95	50.8%	1	0.5%	187	29.8%
Kansas City Region	147	69.7%	51	24.2%	11	5.2%	211	33.7%
Northwest Region	12	85.7%	1	7.1%	0	0.0%	14	2.2%
North Central Region	21	84.0%	2	8.0%	2	8.0%	25	4.0%
Southwest Region	63	88.7%	5	7.0%	2	2.8%	71	11.3%
Southeast Region	20	90.9%	2	9.1%	0	0.0%	22	3.5%
Missouri Correctional Facilities	40	41.2%	57	58.8%	0	0.0%	97	15.5%
MISSOURI TOTAL	**393**	**62.7%**	**213**	**34.0%**	**16**	**2.6%**	**627**	**100.0%**

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

Of the 627 MSM/IDU living with HIV disease at the end of 2008, the largest proportion were diagnosed in Outstate Missouri (31%), followed by Kansas City (26%) (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% of living cases attributed to MSM/IDU were white. Whereas only 41% of living cases diagnosed in St. Louis City and Missouri correctional facilities among MSM/IDU were white. The differences were likely due to variations in the general population of the geographic areas.

The Kansas City HIV region represented 34% of all living cases among MSM/IDU, and the St. Louis HIV region comprised 30%. The proportion of white living cases among MSM/IDU was highest in the Southeast HIV region (91%) and lowest in Missouri correctional facilities (41%).

Table 12. Newly diagnosed and living HIV and AIDS cases in injecting drug users, by selected race/ethnicity and sex, Missouri, 2008

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	1	14.3%	94	33.8%	2	28.6%	124	28.4%
Black Male	1	14.3%	84	30.2%	2	28.6%	154	35.3%
Hispanic Male	0	0.0%	5	1.8%	0	0.0%	12	2.8%
White Female	4	57.1%	54	19.4%	2	28.6%	60	13.8%
Black Female	1	14.3%	35	12.6%	1	14.3%	79	18.1%
Hispanic Female	0	0.0%	2	0.7%	0	0.0%	6	1.4%
MISSOURI TOTAL* **	**7**	**100.0%**	**278**	**100.0%**	**7**	**100.0%**	**436**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2008 that progressed to AIDS in 2008.
***Totals include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 13. Living HIV disease cases in injecting drug users, by selected race/ethnicity and sex, by current age group, Missouri, 2008

	White Males		Black Males		White Females		Black 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	3	1.4%	1	0.4%	5	4.4%	0	0.0%	10	1.4%
25-44	86	39.4%	70	29.4%	56	49.1%	49	43.0%	273	38.2%
45-64	121	55.5%	158	66.4%	53	46.5%	60	52.6%	407	57.0%
65+	8	3.7%	9	3.8%	0	0.0%	5	4.4%	24	3.4%
MISSOURI TOTAL	**218**	**100.0%**	**238**	**100.0%**	**114**	**100.0%**	**114**	**100.0%**	**714**	**100.0%**

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

There were a total of 14 new HIV disease diagnoses attributed to persons who inject drugs (IDU) in 2008 (Table 12). The small number of new cases diagnosed among IDU make patterns by race/ethnicity and sex difficult to interpret. Although based on a small number of cases, 50% of newly diagnosed cases progressed to AIDS by the end of 2008. Males represented approximately 67% of all living HIV disease cases among IDU. There were not significant differences in the proportion of living cases among IDU attributed to males between individuals classified as HIV cases versus AIDS cases. 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 AIDS cases. Among living IDU HIV cases, white males represented the largest proportion of cases (34%). In comparison, black males represented the largest proportion (35%) of living AIDS cases among IDU.

The distribution of living HIV disease cases by current age varied by race/ethnicity and sex among IDU (Table 13). Persons aged 45-64 represented the greatest proportion of living HIV disease cases among IDU in white males (56%), black males (66%) and black females (53%). However, among white female IDU, women 25-44 years of age represented the largest proportion of living HIV disease cases (49%).

Table 14. Living HIV disease cases in injecting drug users, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2008

	White		Black		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	26	15.9%	136	82.9%	1	0.6%	164	23.0%
St. Louis County	21	38.9%	31	57.4%	1	1.9%	54	7.6%
Kansas City	45	32.1%	81	57.9%	13	9.3%	140	19.6%
Outstate	186	79.8%	40	17.2%	6	2.6%	233	32.6%
Missouri Correctional Facilities	54	43.9%	64	52.0%	4	3.3%	123	17.2%
MISSOURI TOTAL	**332**	**46.5%**	**352**	**49.3%**	**25**	**3.5%**	**714**	**100.0%**
HIV Region								
St. Louis Region	79	31.5%	168	66.9%	2	0.8%	251	35.2%
Kansas City Region	84	43.3%	94	48.5%	15	7.7%	194	27.2%
Northwest Region	3	60.0%	2	40.0%	0	0.0%	5	0.7%
North Central Region	23	71.9%	9	28.1%	0	0.0%	32	4.5%
Southwest Region	67	84.8%	8	10.1%	3	3.8%	79	11.1%
Southeast Region	22	73.3%	7	23.3%	1	3.3%	30	4.2%
Missouri Correctional Facilities	54	43.9%	64	52.0%	4	3.3%	123	17.2%
MISSOURI TOTAL	**332**	**46.5%**	**352**	**49.3%**	**25**	**3.5%**	**714**	**100.0%**

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

Of the 714 IDU living with HIV disease at the end of 2008, the largest proportion were diagnosed in Outstate Missouri (33%), followed by St. Louis City (23%) (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, 80% of living cases attributed to IDU were white. Whereas only 16% 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. Blacks represented a larger proportion of living HIV disease cases among IDU (49%) compared to MSM (36%) and MSM/IDU (34%).

The St. Louis HIV region represented 35% of all living cases among IDU, and the Kansas City HIV region comprised 27%. The proportion of white living cases among IDU was highest in the Southwest HIV region (85%) and lowest in the St. Louis HIV region (32%).

Table 15. Newly diagnosed and living HIV and AIDS cases in heterosexual contacts, by selected race/ethnicity and sex, Missouri, 2008

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
White Male	1	4.8%	60	8.2%	0	0.0%	59	7.6%
Black Male	2	9.5%	127	17.4%	1	20.0%	154	19.9%
Hispanic Male	0	0.0%	1	0.1%	0	0.0%	8	1.0%
White Female	7	33.3%	200	27.5%	2	40.0%	184	23.8%
Black Female	11	52.4%	319	43.8%	2	40.0%	348	45.0%
Hispanic Female	0	0.0%	13	1.8%	0	0.0%	11	1.4%
MISSOURI TOTAL* **	**21**	**100.0%**	**728**	**100.0%**	**5**	**100.0%**	**774**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2008 that progressed to AIDS in 2008.
***Total includes cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 16. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity and sex, by current age group, Missouri, 2008

	White Males		Black Males		White Females		Black Females		Total*	
Age Group	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****
13-18	0	0.0%	0	0.0%	1	0.3%	2	0.3%	3	0.2%
19-24	0	0.0%	6	2.1%	6	1.6%	10	1.5%	23	1.5%
25-44	36	30.3%	154	54.8%	210	54.7%	450	67.5%	883	58.8%
45-64	67	56.3%	107	38.1%	149	38.8%	190	28.5%	530	35.3%
65+	16	13.4%	14	5.0%	18	4.7%	15	2.2%	63	4.2%
MISSOURI TOTAL	**119**	**100.0%**	**281**	**100.0%**	**384**	**100.0%**	**667**	**100.0%**	**1,502**	**100.0%**

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

There were a total of 26 new HIV disease diagnoses attributed to heterosexual contact in 2008 (Table 15). Black females represented the largest number of new HIV disease diagnoses among heterosexuals. The small number of newly diagnosed cases make patterns by race/ethnicity and sex difficult to interpret. Although based on a small number of cases, 19% of newly diagnosed cases progressed to AIDS by the end of 2008. Females represented 74% of living HIV cases and 71% of living AIDS cases among heterosexual contact cases. The distribution by race/ethnicity and sex among living heterosexual contact cases was similar between those classified as HIV cases and AIDS cases.

For all race/ethnicity and sex categories among heterosexual contact cases, except white males, the greatest proportion of living cases was between 25-44 years of age (Table 16). This was different than the distributions observed among the other exposure categories, where the majority of individuals were currently between 45-64 years of age. The difference could be related to the fact that heterosexual contact cases were diagnosed more recently, on average, compared to persons in other exposure categories, or that persons who attributed their infection to heterosexual contact were younger at the time of diagnosis than persons in other exposure categories.

Table 17. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2008

	White		Black		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	76	14.8%	424	82.7%	9	1.8%	513	34.2%
St. Louis County	67	24.6%	195	71.7%	5	1.8%	272	18.1%
Kansas City	54	29.8%	115	63.5%	9	5.0%	181	12.1%
Outstate	284	67.8%	120	28.6%	9	2.1%	419	27.9%
Missouri Correctional Facilities	22	18.8%	94	80.3%	1	0.9%	117	7.8%
MISSOURI TOTAL	**503**	**33.5%**	**948**	**63.1%**	**33**	**2.2%**	**1,502**	**100.0%**
HIV Region								
St. Louis Region	187	22.3%	627	74.6%	16	1.9%	840	55.9%
Kansas City Region	98	39.7%	135	54.7%	10	4.0%	247	16.4%
Northwest Region	8	66.7%	4	33.3%	0	0.0%	12	0.8%
North Central Region	56	64.4%	26	29.9%	3	3.4%	87	5.8%
Southwest Region	94	76.4%	25	20.3%	2	1.6%	123	8.2%
Southeast Region	38	50.0%	37	48.7%	1	1.3%	76	5.1%
Missouri Correctional Facilities	22	18.8%	94	80.3%	1	0.9%	117	7.8%
MISSOURI TOTAL	**503**	**33.5%**	**948**	**63.1%**	**33**	**2.2%**	**1,502**	**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 due to rounding.

Of the 1,502 living cases among heterosexual contacts at the end of 2008, the largest proportion were diagnosed in St. Louis City (34%); the next highest was Outstate Missouri (28%) (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, 68% of living cases attributed to heterosexual contact were white. Whereas only 15% 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 represented a larger proportion of living HIV disease cases among heterosexual contact cases (63%) compared to all other exposure categories, primarily due to the large number of black females reporting heterosexual contact as their primary mode of exposure.

The St. Louis HIV region represented 56% of all living cases among heterosexuals, and the Kansas City HIV region comprised 16%. The proportion of white living cases among heterosexuals was highest in the Southwest HIV region (76%) and lowest in Missouri correctional facilities (19%).

Table 18. Deaths* among HIV cases, by mode of transmission, by selected race and sex, Missouri, 1982—2008

	White Males		Black Males		White Females		Black Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	91	60.7%	49	51.0%	0	0.0%	0	0.0%	142	47.7%
MSM/IDU	25	16.7%	7	7.3%	0	0.0%	0	0.0%	33	11.1%
IDU	12	8.0%	10	10.4%	3	16.7%	12	46.2%	39	13.1%
Heterosexual Contact	1	0.7%	11	11.5%	8	44.4%	8	30.8%	29	9.7%
No Indicated Risk (NIR)	18	12.0%	18	18.8%	7	38.9%	5	19.2%	50	16.8%
MISSOURI TOTAL* **	**150**	**100.0%**	**96**	**100.0%**	**18**	**100.0%**	**26**	**100.0%**	**298**	**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 5 cases (1.7%) with a mode of transmission not indicated on the table, such as hemophilia/ coagulation disorder, blood transfusion or tissue recipient, etc. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 19. Deaths* among AIDS cases, by mode of transmission, by selected race and sex, Missouri, 1982—2008

	White Males		Black Males		White Females		Black Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	2,856	78.9%	1,036	71.2%	0	0.0%	0	0.0%	3,994	69.3%
MSM/IDU	358	9.9%	153	10.5%	0	0.0%	0	0.0%	524	9.1%
IDU	135	3.7%	136	9.3%	63	27.3%	80	26.9%	431	7.5%
Heterosexual Contact	54	1.5%	57	3.9%	120	51.9%	182	61.3%	419	7.3%
No Indicated Risk (NIR)	78	2.2%	53	3.6%	21	9.1%	15	5.1%	178	3.1%
MISSOURI TOTAL* **	**3,622**	**100.0%**	**1,456**	**100.0%**	**231**	**100.0%**	**297**	**100.0%**	**5,760**	**100.0%**

*May or may not be due to AIDS-related illnesses.
**Totals include cases in persons whose race/ethnicity is either unknown or not listed.
***Total (numbers and percentages) include 214 cases (3.7%) with a mode of transmission not indicated on the table, such as hemophilia/ coagulation disorder, blood transfusion or tissue recipient, etc. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

The number of deaths that have occurred among persons still classified as HIV cases at the time of death was small (298) in comparison to the number of deaths among persons classified as AIDS (5,760) (Tables 18 and 19). The majority of deaths among HIV cases have occurred among white males (50%) (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 among HIV cases have been attributed to MSM. Among white female HIV cases, the largest number of deaths occurred among cases attributed to heterosexual contact. Among black females the largest number of deaths occurred among cases attributed to IDU. There was a large proportion of HIV cases among individuals with no indicated risk, especially among white females. Similar patterns were observed for deaths among AIDS cases, except the largest number of deaths among black females was attributed to heterosexual contact, instead of IDU (Table 19). The proportion of deaths among those with no indicated risk among AIDS cases was smaller than among HIV cases, likely because there was more time to obtain exposure category information.

Table 20. Newly diagnosed and living HIV and AIDS cases with exposure category assignments for Missouri, 2008

Exposure category	HIV cases 2008*		HIV cases Living		AIDS cases 2008**		AIDS cases Living	
Adult/Adolescent								
Men who have sex with men	312	73.2%	3,335	67.1%	111	69.8%	3,863	66.9%
Men who have sex with men and inject drugs	28	6.6%	257	5.2%	9	5.7%	444	7.7%
Injecting drug use	16	3.8%	349	7.0%	17	10.7%	498	8.6%
Heterosexual contact	70	16.4%	1,005	20.2%	22	13.8%	922	16.0%
Hemophilia/coagulation disorder	0	0.0%	20	0.4%	0	0.0%	41	0.7%
Blood transfusion or tissue recipient	0	0.0%	2	0.0%	0	0.0%	9	0.2%
No indicated risk (NIR)	-----	-------	-----	-------	-----	-------	-----	-------
ADULT/ADOLESCENT SUBTOTAL	**426**	**100.0%**	**4,970 †**	**100.0%**	**159**	**100.0%**	**5,778 †**	**100.0%**
Pediatric (<13 years old)								
PEDIATRIC SUBTOTAL	**3**	**100.0%**	**56**	**100.0%**	**0**	**0.0%**	**30**	**100.0%**
TOTAL	**429**		**5,026**		**159**		**5,808**	

*HIV cases reported during 2008 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2008 that progressed to AIDS in 2008.
†Includes 2 cases with a confirmed "other" exposure category among persons living with HIV and 1 case among persons living with AIDS.
Note: Percentages may not total due to rounding.

The data in Table 20 have been adjusted to proportionately re-distribute individuals with no indicated risk factor based on sex and race/ethnicity to known exposure categories. These data do not reflect the true counts of persons reported in each exposure category. Among both new and living HIV and AIDS cases, MSM represented the greatest proportion of cases. The proportion of MSM cases was greater for new HIV and AIDS cases compared to the proportion among their respective living cases. This may indicate changes in how individuals are being infected over time. However, the observed pattern may also be related to the method used to re-distribute those with unknown risks. The method used to re-distribute new cases may weight those with no indicated risk more heavily to the MSM category. There were 3 new HIV cases diagnosed among children less than 13 years of age in 2008.

The majority of HIV disease cases diagnosed in 2008 (92%) and those living with HIV disease (92%) were residents of a metropolitan area at the time of diagnosis. For a list of counties that were classified as a metropolitan area refer to the Appendix. There were differences in the proportion of living HIV disease cases by sex based on the population of the area of residence. The proportion of males living with HIV disease decreased as the population of the area of residence decreased. Whereas 84% of living HIV disease cases in metropolitan areas occurred among males, only 73% of living cases in nonmetropolitan areas were among males. There were differences in the distribution of new and living HIV disease cases by race/ethnicity based on the population of the area of residence. For both new and living HIV disease cases, as the population of the area of residence became smaller, the proportion of cases that occurred among whites increased. For example, only 41% of new HIV disease diagnoses were among whites in metropolitan areas. But in nonmetropolitan areas whites comprised 88% of new diagnoses. There were also differences based on the population of area of residence in the distribution of new and living HIV disease cases by exposure category. As the population of the area of residence decreased, the proportion of cases attributed to IDU and heterosexual contact increased. Individuals 19-24 years of age made up a slightly greater proportion of new diagnoses in metropolitan areas (21%) compared to micropolitan (18%) and nonmetropolitan areas (12%). Among those living with HIV disease, the proportion of cases diagnosed between 25-44 years of age decreased as the population of the area of residence decreased. The proportion of living cases diagnosed between 45-64 years of age increased as the population of the area of residence decreased.

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 age at diagnosis, Missouri, 2008†

	Newly Diagnosed						Living					
	Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****		Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Sex												
Male	424	81.2%	15	88.2%	20	80.0%	7,795	83.8%	336	77.1%	252	73.0%
Female	98	18.8%	2	11.8%	5	20.0%	1,503	16.2%	100	22.9%	93	27.0%
Total	522	100.0%	17	100.0%	25	100.0%	9,298	100.0%	436	100.0%	345	100.0%
Race/Ethnicity												
White	216	41.4%	10	58.8%	22	88.0%	4,775	51.4%	321	73.6%	278	80.6%
Black	272	52.1%	6	35.3%	3	12.0%	4,063	43.7%	98	22.5%	54	15.7%
Hispanic	25	4.8%	1	5.9%	0	0.0%	338	3.6%	14	3.2%	10	2.9%
Other/Unknown	9	1.7%	0	0.0%	0	0.0%	122	1.3%	3	0.7%	3	0.9%
Total	522	100.0%	17	100.0%	25	100.0%	9,298	100.0%	436	100.0%	345	100.0%
Exposure Category												
Men who have sex with men	238	45.6%	8	47.1%	14	56.0%	5,684	61.1%	198	45.4%	149	43.2%
Men who have sex with men and inject drugs	18	3.4%	2	11.8%	1	4.0%	471	5.1%	36	8.3%	23	6.7%
Injecting drug use	10	1.9%	1	5.9%	3	12.0%	522	5.6%	36	8.3%	33	9.6%
Heterosexual contact	23	4.4%	0	0.0%	2	8.0%	1,218	13.1%	87	20.0%	80	23.2%
No Indicated Risk (NIR)	231	44.3%	5	29.4%	5	20.0%	1,279	13.8%	65	14.9%	45	13.0%
Other	0	0.0%	0	0.0%	0	0.0%	55	0.6%	6	1.4%	8	2.3%
Pediatric	2	0.4%	1	5.9%	0	0.0%	69	0.7%	8	1.8%	7	2.0%
Total	522	100.0%	17	100.0%	25	100.0%	9,298	100.0%	436	100.0%	345	100.0%
Age at Diagnosis												
<2	2	0.4%	1	5.9%	0	0.0%	43	0.5%	5	1.1%	4	1.2%
2-12	0	0.0%	0	0.0%	0	0.0%	19	0.2%	2	0.5%	3	0.9%
13-18	21	4.0%	0	0.0%	1	4.0%	220	2.4%	9	2.1%	8	2.3%
19-24	111	21.3%	3	17.6%	3	12.0%	1,119	12.0%	51	11.7%	35	10.1%
25-44	277	53.1%	10	58.8%	12	48.0%	6,432	69.2%	281	64.4%	214	62.0%
45-64	106	20.3%	3	17.6%	9	36.0%	1,405	15.1%	88	20.2%	76	22.0%
65+	5	1.0%	0	0.0%	0	0.0%	60	0.6%	0	0.0%	5	1.4%
Total	522	100.0%	17	100.0%	25	100.0%	9,298	100.0%	436	100.0%	345	100.0%

*Includes all individuals diagnosed with the HIV virus, regardless of current status (i.e., HIV or 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 2006 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 2006 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 2006 US Census estimates. See Appendix for map of included counties.

Figure 10. Length of time between HIV and AIDS diagnosis, by race/ethnicity, Missouri, 1999-2007

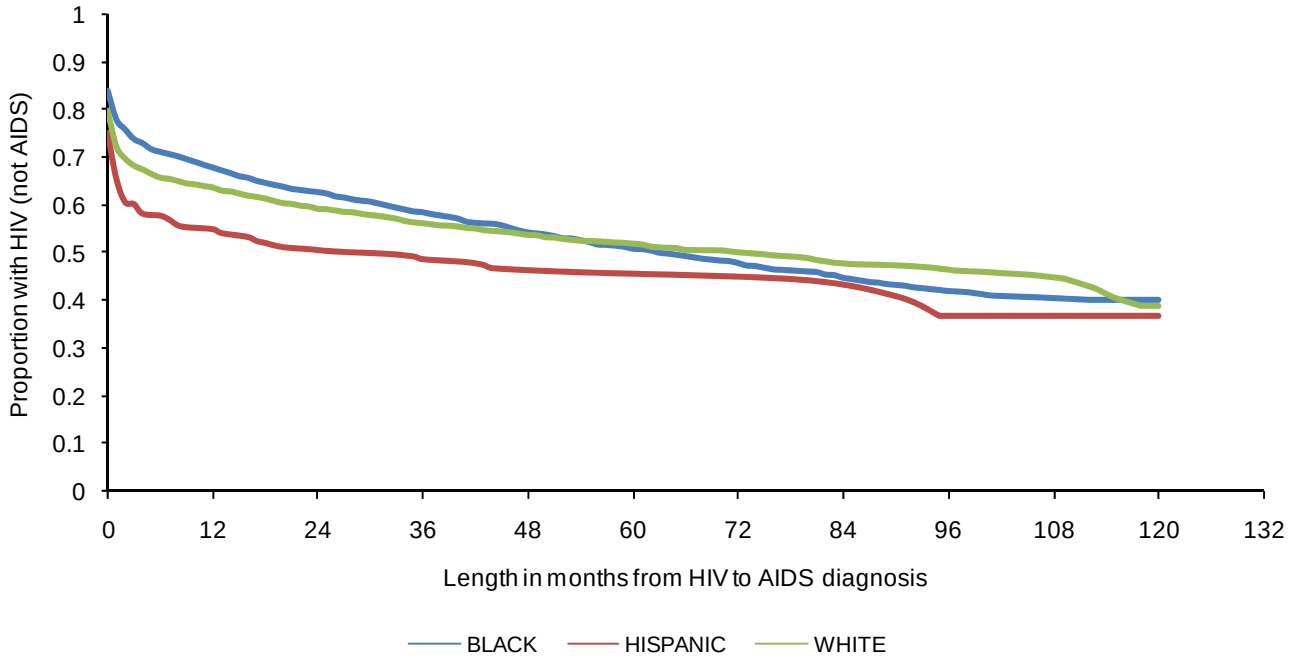
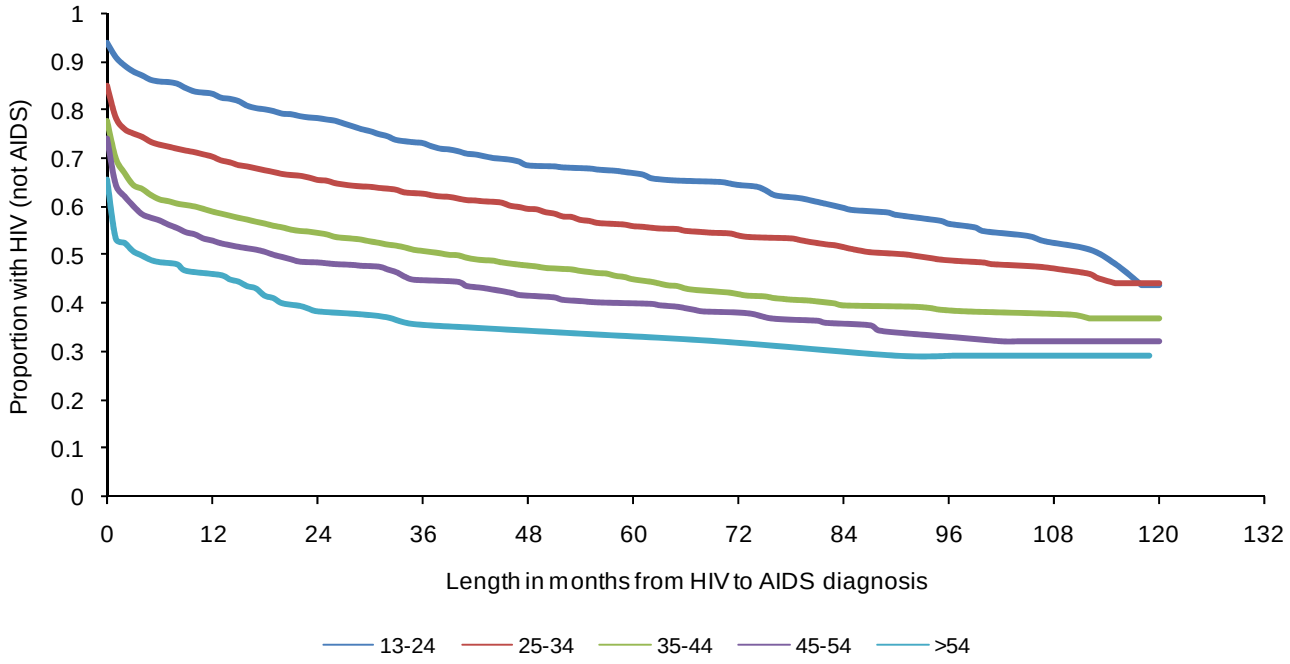


Figure 11. Length of time between HIV and AIDS diagnosis, by age at diagnosis*, Missouri, 1999-2007



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

A greater proportion of Hispanics progressed from HIV to AIDS within 12 months of their HIV diagnosis compared to whites and blacks (Figure 10). Around 84 months after the initial HIV diagnosis, the proportion of cases that progressed to AIDS was similar by race/ethnicity. It is important to note that for all curves displayed, data in the later months should be interpreted with caution as it is based on small numbers.

There were differences in the progression from HIV to AIDS by the age at HIV diagnosis (Figure 11). Over time, the proportion of cases that progressed to AIDS remained higher as the age at initial HIV diagnosis increased.

Figure 12. Length of time between HIV and AIDS diagnosis, by mode of transmission, Missouri, 1999-2007

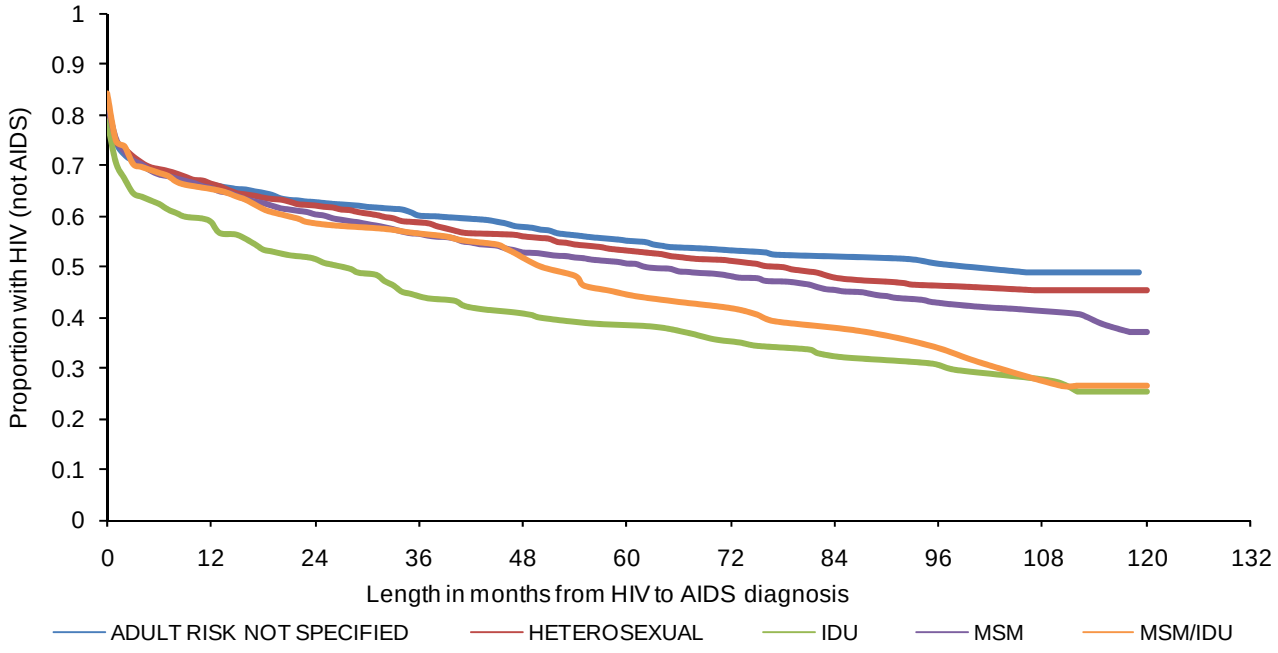
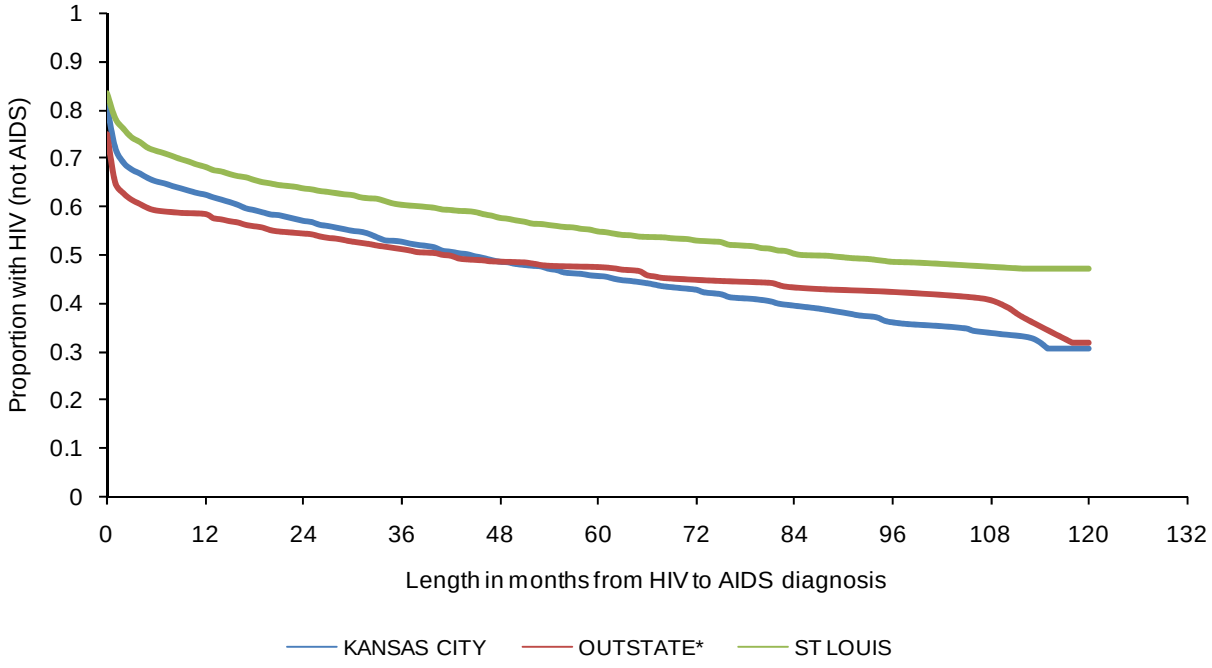


Figure 13. Length of time between HIV and AIDS diagnosis, by HIV region*, Missouri, 1999-2007



*Outstate includes the North Central, Northwest, Southeast, and Southwest HIV regions

A greater proportion of IDU progressed from HIV to AIDS within 12 months of their HIV diagnosis compared to individuals from all other exposure categories (Figure 12). Around 96 months after the initial HIV diagnosis, the proportion of cases that progressed to AIDS was similar for IDU and MSM/IDU.

There were differences in the progression from HIV to AIDS by HIV region (Figure 13). The proportion of individuals that progressed to AIDS over time was greater for the Kansas City HIV region and all Outstate HIV regions combined compared to the St. Louis HIV 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, 1999-2007

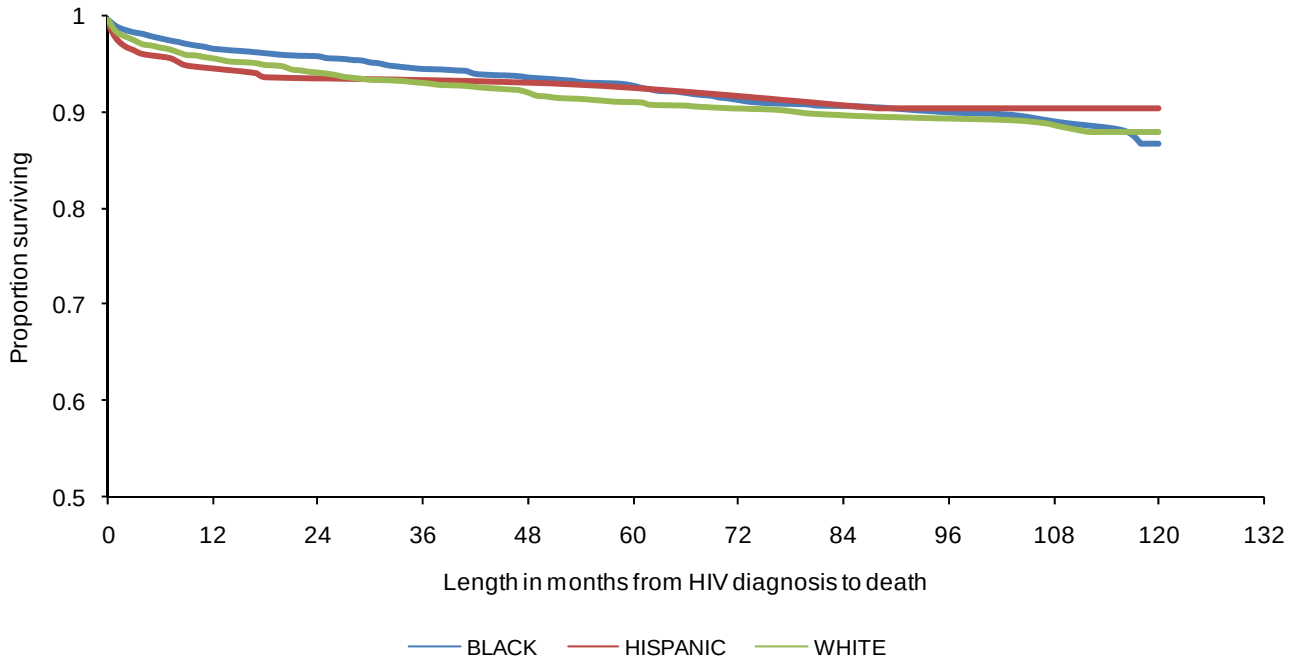
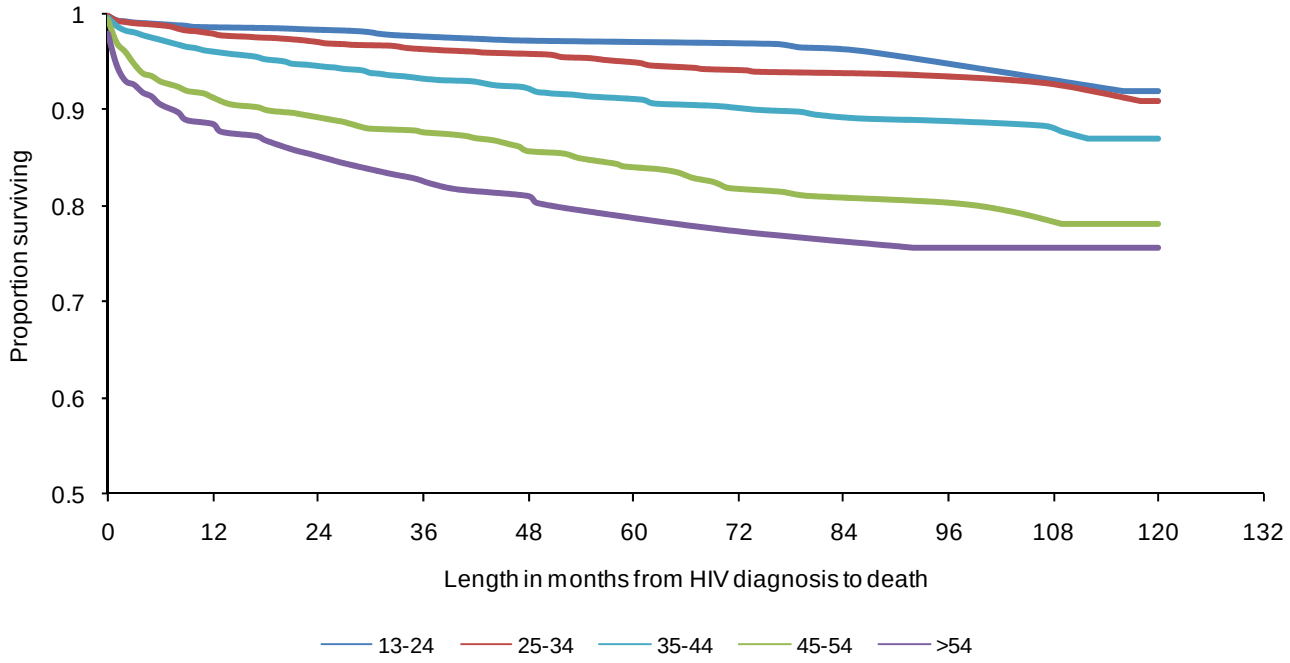


Figure 15. Length of time between HIV diagnosis and death, by age at diagnosis*, Missouri, 1999-2007



*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, greater than 90% of all individuals were still living.

There were differences in the length of time between HIV diagnosis and death by the age at HIV diagnosis (Figure 15). Over time, the proportion of cases that were deceased was higher as the age at initial HIV diagnosis increased. For example, 72 months following the initial diagnosis 97% of individuals diagnosed between 13-24 years of age were still living, compared to only 77% if individuals diagnosed at greater than 54 years of age.

Figure 16. Length of time between HIV diagnosis and death, by mode of transmission, Missouri, 1999-2007

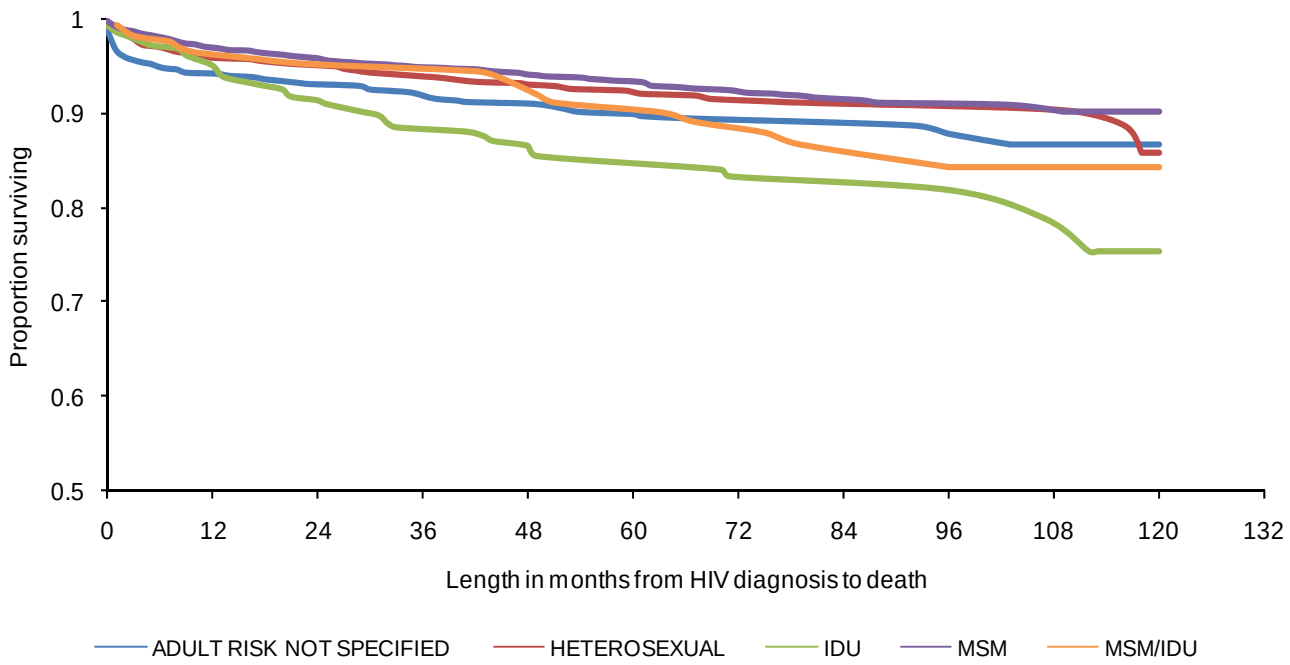
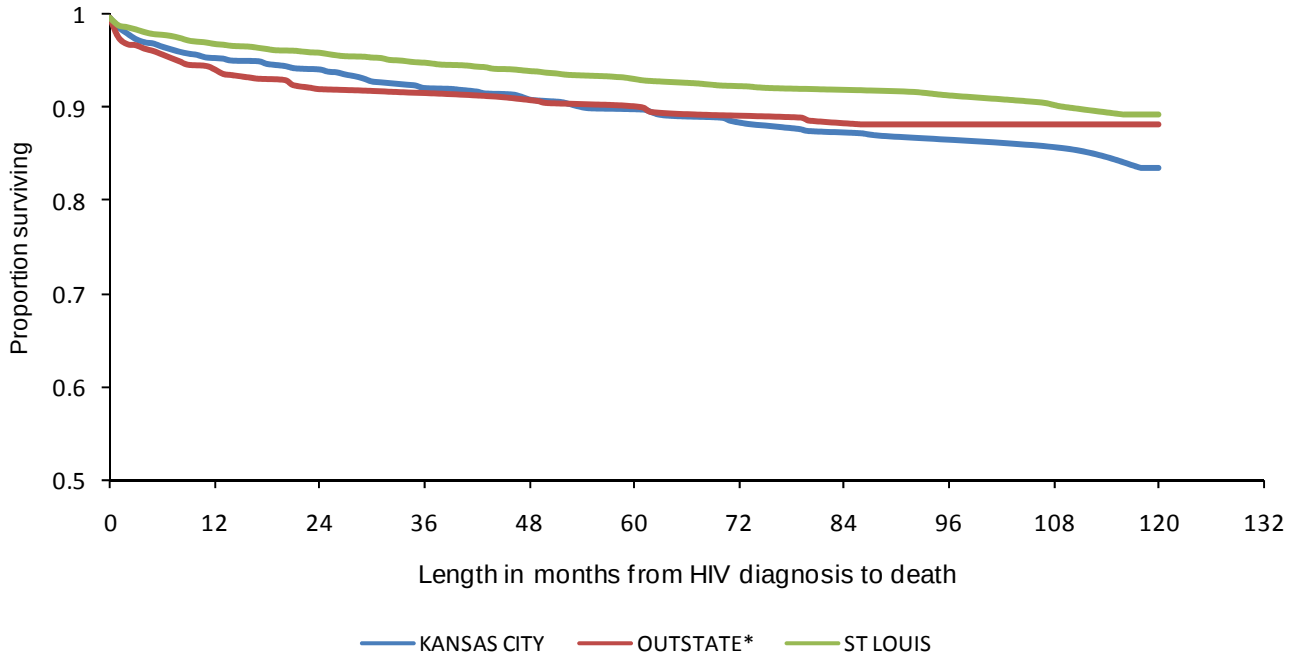


Figure 17. Length of time between HIV diagnosis and death, by HIV region*, Missouri, 1999-2007



*Outstate includes the North Central, Northwest, Southeast, and Southwest HIV regions

A greater proportion of IDU and those with no reported risk were deceased within 24 months of their HIV diagnosis compared to individuals from all other exposure categories (Figure 16). Differences in survival persisted over time.

There were slight differences in survival following HIV diagnosis by HIV region (Figure 17). At 24 months following the initial HIV diagnosis, the proportion still living was 96%, 94%, and 92% for the St. Louis HIV region, Kansas City HIV region, and all other Outstate HIV regions combined. Differences in survival among the regions increased over time.

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

Primary and Secondary (P&S) Syphilis

- The number of reported P&S syphilis cases decreased from 239 cases in 2007 to 224 cases in 2008. The decrease observed was due to a decline in reported cases from the Kansas City HIV region.
- The rate of reported cases was highest in St. Louis City (17 per 100,000).
- Blacks were disproportionately impacted, with a case rate 5.7 times greater than whites.
- Although the median age at diagnosis of P&S syphilis remains higher than chlamydia or gonorrhea, it has decreased over time. In 2003, the median age at P&S syphilis diagnosis was 40 years old, compared to 30 years old in 2008.

Early Latent Syphilis

- The number of early latent syphilis cases increased from 2007 (120 cases) to 2008 (145 cases). Similar trends were observed in all regions of the state, except for the Kansas City HIV region, where the number of early latent syphilis cases reported decreased from 2007 (51 cases) to 2008 (49 cases).
- The rate of reported cases in 2008 was highest in St. Louis City (11 per 100,000).
- Males represented the majority (74%) of reported early latent syphilis cases.
- The case rate was 6.1 times higher among blacks than whites.

Gonorrhea

- The number of reported gonorrhea cases decreased from 2007 (9,876) to 2008 (8,014 cases). Similar trends were observed in all regions of the state, except for the Southeast HIV region. In the Southeast HIV region, the number of gonorrhea cases reported from 2007 to 2008 increased by 33% from 339 to 451 cases.
- St. Louis City had the highest rate of reported gonorrhea cases at 539 per 100,000 persons.
- A larger proportion of reported gonorrhea cases were diagnosed between 15 and 19 years of age among black females (37%) compared to white females (29%), black males (21%), and white males (12%).

Chlamydia

- The number of reported chlamydia cases increased from 23,308 in 2007 to 24,817 in 2008. Similar trends were observed for all regions of the state, except the Northwest HIV region where the number of cases decreased slightly from 687 to 676 between 2007 and 2008.
- St. Louis City had the highest chlamydia rate in 2008 (1,226 per 100,000). Jackson County reported the second highest case rate of chlamydia (835 per 100,000).
- A larger proportion of reported chlamydia cases were diagnosed between 15 and 19 years old among black females (43%), compared to white females (39%), black males (29%), and white males (20%).

Hepatitis B

- The number of reported Hepatitis B cases increased by two from 2007 (508) to 2008 (510).
- Kansas City had the greatest number of reported Hepatitis B cases with 91 cases.
- Among females, the largest numbers of cases were 20-29 years of age, while among males the largest numbers of cases were 40-49 years old.

Hepatitis C

- The number of reported Hepatitis C cases in Missouri increased by 455 cases from 2007 (4,468) to 2008 (4,923).
- St. Louis County had the greatest number of reported Hepatitis C cases with 587 cases.
- Among females, the largest numbers of cases were 40-49 years of age, while among males the largest numbers of cases were 50-59 years old.

HIV and STD Co-infections

- There were 270 persons living with HIV who were reported with an STD in 2008.
- Of the 369 early syphilis cases reported in 2008, 30% were among individuals living with HIV. Only 1% of gonorrhea cases and less than 1% of chlamydia cases reported in 2008 were among individuals living with HIV.
- St. Louis residents represented 78% of all living HIV cases reported with chlamydia in 2008, 68% of those with gonorrhea, 65% of those with multiple STD co-morbidities, and 58% of those with early syphilis.
- Although blacks represented only 44% of living HIV disease cases, they represented 63% of individuals diagnosed with an STD co-morbidity.

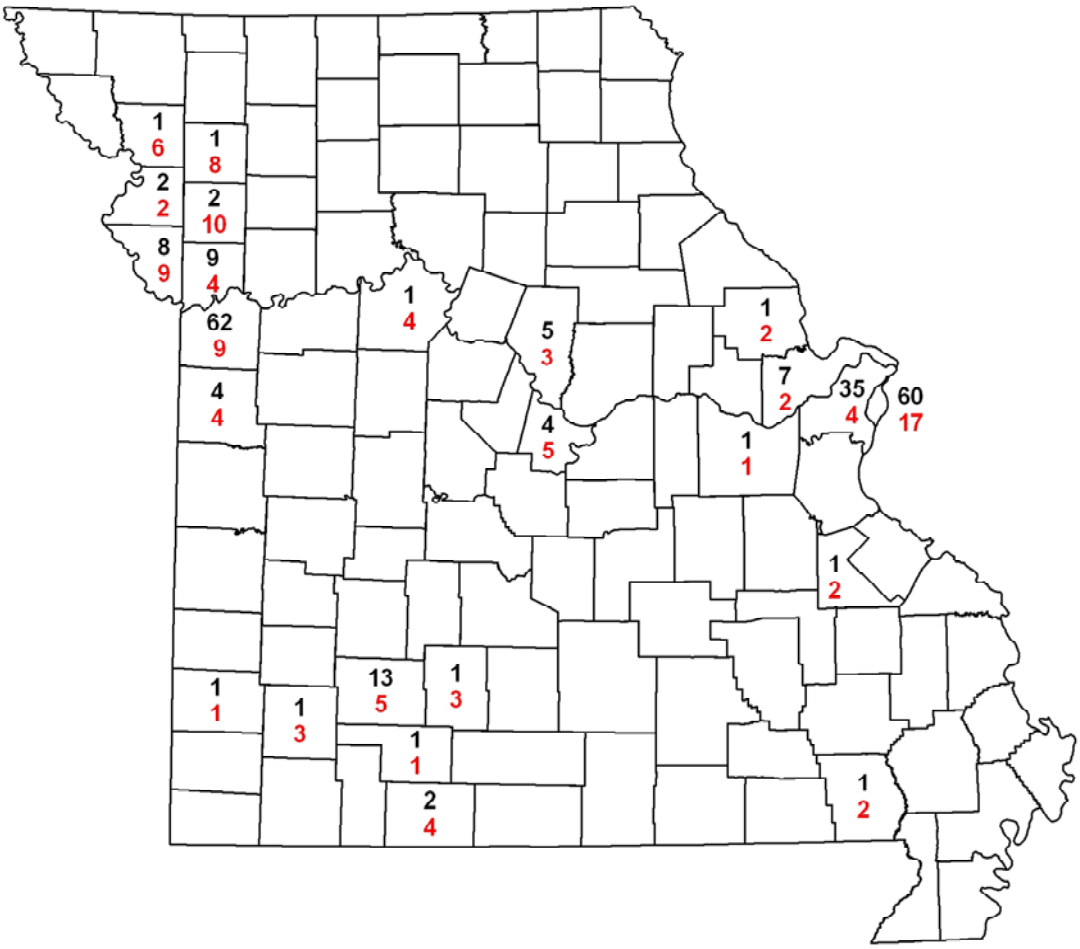
Table 22. Reported P&S syphilis cases and rates, by race*, by geographic region, by sex, Missouri, 2008

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	102	52.3%	4.3	12	41.4%	0.5	114	2.3
Black	76	39.0%	23.3	14	48.3%	3.8	90	13.0
Other/Unknown*	17	8.7%	--	3	10.3%	--	20	--
Total Cases	**195**	100.0%	6.8	**29**	100.0%	1.0	**224**	3.8
St. Louis Region								
White	35	38.5%	4.6	4	30.8%	0.5	39	2.5
Black	52	57.1%	27.5	9	69.2%	4.0	61	14.7
Other/Unknown*	4	4.4%	--	0	0.0%	--	4	--
Total Cases	**91**	100.0%	9.0	**13**	100.0%	1.2	**104**	5.0
Kansas City Region								
White	37	53.6%	7.9	6	42.9%	1.2	43	4.5
Black	21	30.4%	25.5	5	35.7%	5.3	26	14.7
Other/Unknown*	11	15.9%	--	3	21.4%	--	14	--
Total Cases	**69**	100.0%	11.5	**14**	100.0%	2.2	**83**	6.8
Northwest Region								
White	4	80.0%	3.6	1	100.0%	0.9	5	2.2
Black	1	20.0%	19.9	0	0.0%	0.0	1	12.7
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total Cases	**5**	100.0%	4.1	**1**	100.0%	0.8	**6**	2.5
North Central Region								
White	8	80.0%	2.4	0	--	0.0	8	1.2
Black	2	20.0%	9.0	0	--	0.0	2	4.8
Other/Unknown*	0	0.0%	--	0	--	--	0	--
Total Cases	**10**	100.0%	2.7	**0**	--	0.0	**10**	1.4
Southwest Region								
White	16	88.9%	3.2	1	100.0%	0.2	17	1.7
Black	0	0.0%	0.0	0	0.0%	0.0	0	0.0
Other/Unknown*	2	11.1%	--	0	0.0%	--	2	--
Total Cases	**18**	100.0%	3.3	**1**	100.0%	0.2	**19**	1.7
Southeast Region								
White	2	100.0%	0.9	0	--	0.0	2	0.4
Black	0	0.0%	0.0	0	--	0.0	0	0.0
Other/Unknown*	0	0.0%	--	0	--	--	0	--
Total Cases	**2**	100.0%	0.8	**0**	--	0.0	**2**	0.4

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2007 MDHSS population estimates.

There were a total of 224 primary and secondary (P&S) syphilis cases reported in 2008. The majority of cases (87%) were reported among males. Males represented a smaller proportion of the reported cases in the Kansas City HIV region (83%) than in the St. Louis HIV region (88%). The rate of P&S syphilis cases among males was highest in the Kansas City HIV region (11.5), followed by the St. Louis HIV region (9.0). Forty-six percent of all P&S syphilis cases were reported in the St. Louis HIV region and 37% were reported in the Kansas City HIV region. The Southwest HIV region had the third largest number of P&S syphilis cases reported. The rate of reported P&S syphilis cases was higher for blacks compared to whites in all regions that reported P&S syphilis cases among blacks.

Figure 18. Reported P&S syphilis cases* and rates, by county, Missouri, 2008**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2007 MDHSS population estimates.

P&S syphilis cases were concentrated in metropolitan areas (Figure 18). There were 91 counties that did not report any P&S syphilis cases in 2008. St. Louis City had the highest rate of reported P&S syphilis cases at 17 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 17 reported with P&S syphilis in 2008.

Figure 19. Reported P&S syphilis cases, by race and sex, by age group at diagnosis, Missouri, 2008

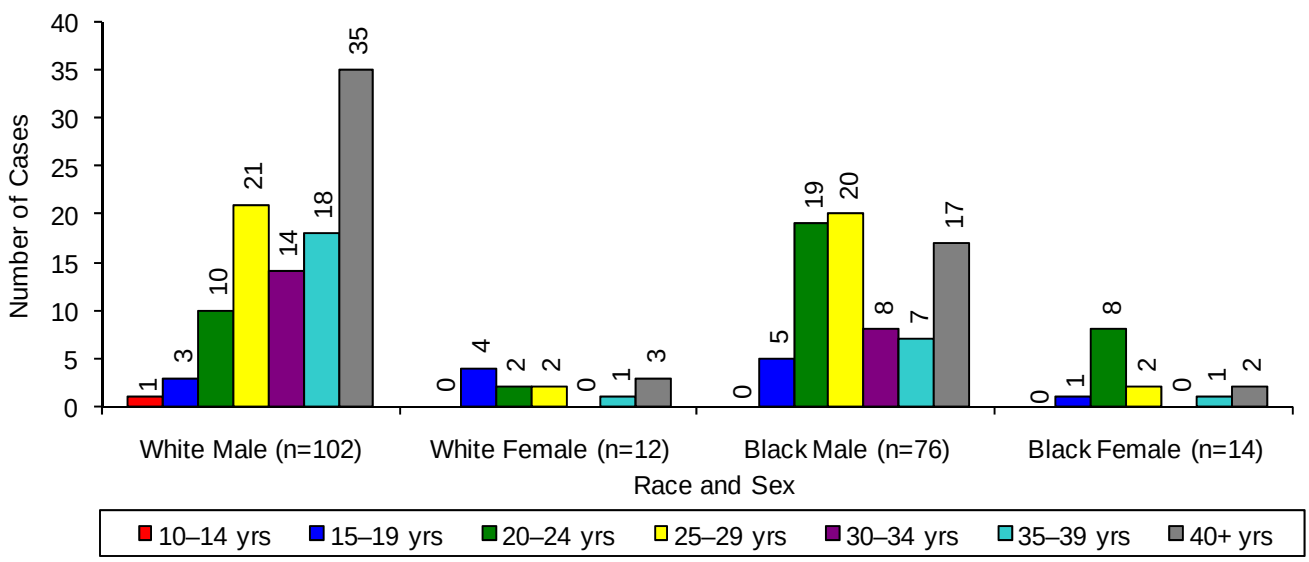
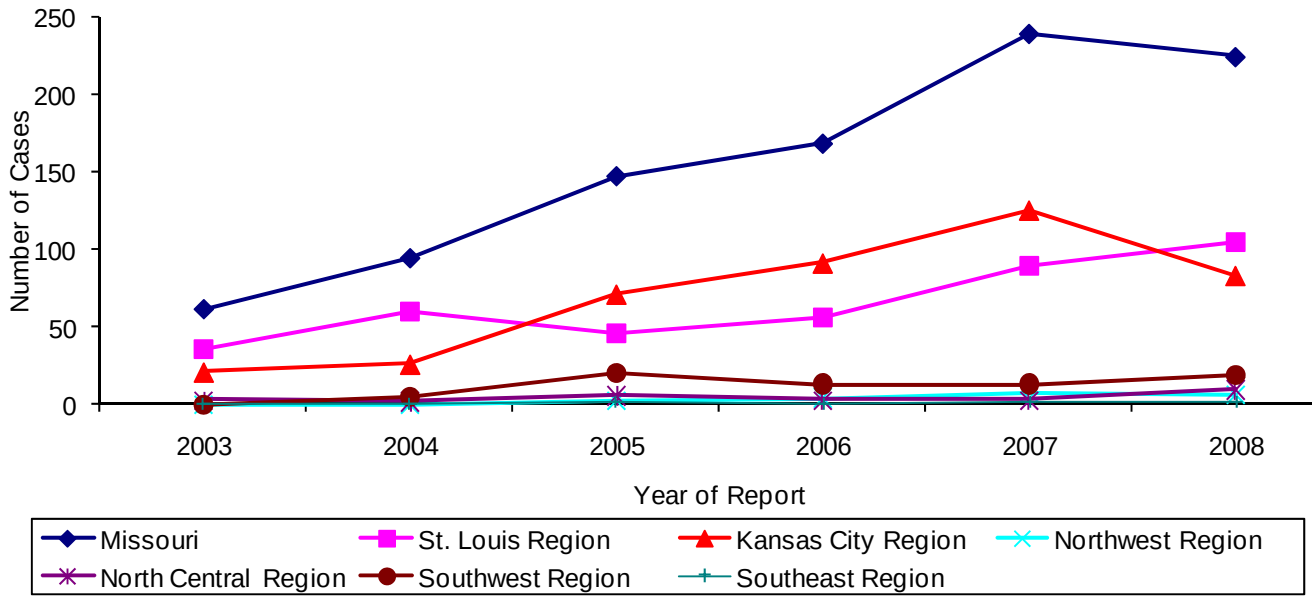


Figure 20. Reported P&S syphilis cases by geographic region and year of report, Missouri, 2003-2008



The largest numbers of P&S syphilis cases were reported among white males (102) and black males (76) (Figure 19). The number of reported cases increased from 2007 to 2008 among white males (78 to 102), decreased among black males (119 to 76), and remained the same among white and black females. There were differences in the distribution of reported cases by age at diagnosis among the race and sex categories. Among white males, the largest number of cases was reported among individuals 40 or more years of age at the time of diagnosis. Among black males the largest number of cases was reported among 25-29 year olds, followed by individuals 20-24 years of age.

The number of reported P&S syphilis cases in Missouri increased from 2003 to 2007 and then decreased in 2008 (Figure 20). Similar trends were observed in the Kansas City HIV region. The number of reported P&S syphilis cases was higher in 2008 than 2007 in the St. Louis, Southwest, and North Central HIV regions. The number of reported cases remained approximately the same from 2007 to 2008 in the Northwest and Southeast HIV regions.

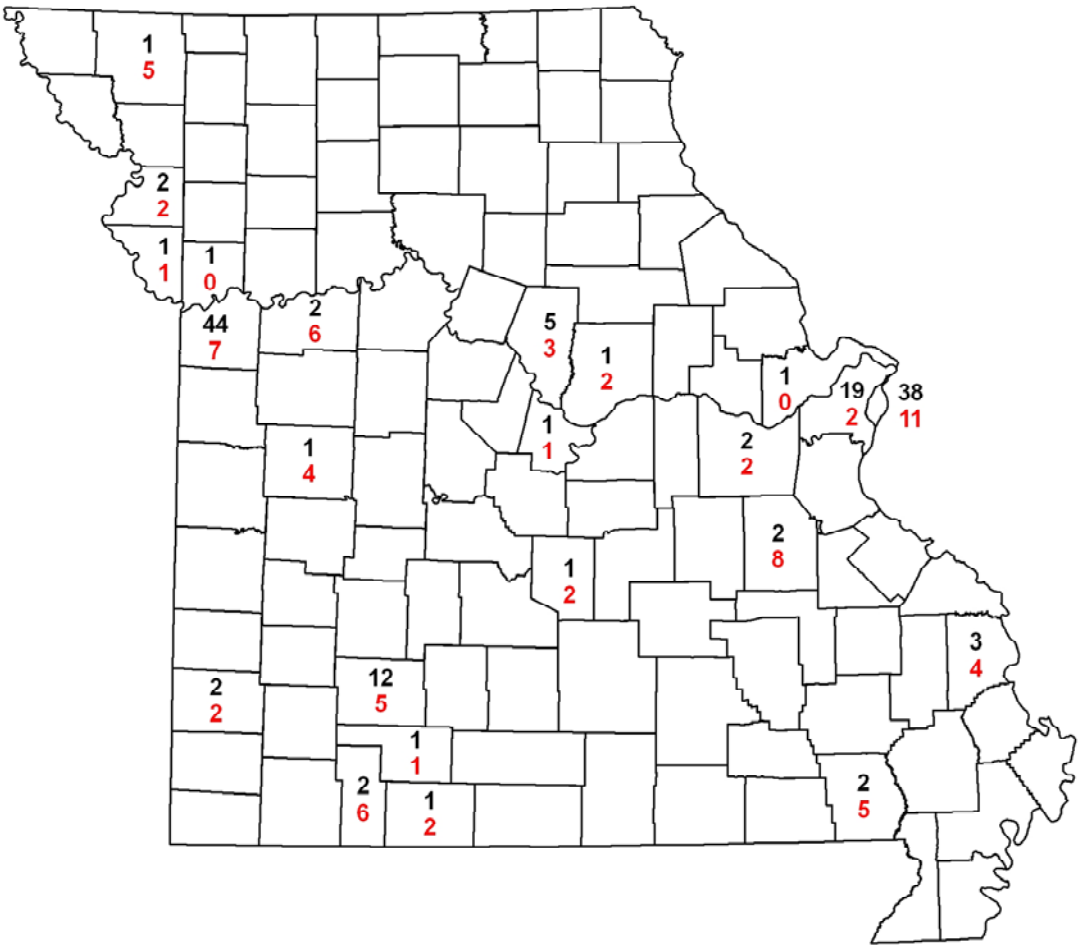
Table 23. Reported early latent syphilis cases and rates, by race*, by geographic region, by sex, Missouri, 2008

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	56	51.9%	2.3	15	40.5%	0.6	71	1.5
Black	47	43.5%	14.4	17	45.9%	4.6	64	9.2
Other/Unknown*	5	4.6%	--	5	13.5%	--	10	--
Total Cases	**108**	100.0%	3.8	**37**	100.0%	1.2	**145**	2.5
St. Louis Region								
White	18	36.0%	2.3	2	20.0%	0.2	20	1.3
Black	30	60.0%	15.8	8	80.0%	3.5	38	9.2
Other/Unknown*	2	4.0%	--	0	0.0%	--	2	--
Total Cases	**50**	100.0%	5.0	**10**	100.0%	0.9	**60**	2.9
Kansas City Region								
White	13	43.3%	2.8	7	36.8%	1.4	20	2.1
Black	14	46.7%	17.0	7	36.8%	7.4	21	11.9
Other/Unknown*	3	10.0%	--	5	26.3%	--	8	--
Total Cases	**30**	100.0%	5.0	**19**	100.0%	3.0	**49**	4.0
Northwest Region								
White	2	100.0%	1.8	1	100.0%	0.9	3	1.3
Black	0	0.0%	0.0	0	0.0%	0.0	0	0.0
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total Cases	**2**	100.0%	1.7	**1**	100.0%	0.8	**3**	1.2
North Central Region								
White	6	100.0%	1.8	0	0.0%	0.0	6	0.9
Black	0	0.0%	0.0	1	100.0%	5.3	1	2.4
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total Cases	**6**	100.0%	1.6	**1**	100.0%	0.3	**7**	0.9
Southwest Region								
White	14	87.5%	2.8	3	100.0%	0.6	17	1.7
Black	2	12.5%	16.8	0	0.0%	0.0	2	9.2
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total Cases	**16**	100.0%	3.0	**3**	100.0%	0.5	**19**	1.7
Southeast Region								
White	3	75.0%	1.4	2	66.7%	0.9	5	1.1
Black	1	25.0%	6.7	1	33.3%	6.9	2	6.8
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total Cases	**4**	**100.0%**	**1.7**	**3**	**100.0%**	1.2	**7**	**1.4**

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2007 MDHSS population estimates.

There were a total of 145 early latent syphilis cases reported in 2008. The majority of cases (74%) were reported among males. Males represented a smaller proportion of the reported cases in the Kansas City HIV region (61%) than in the St. Louis HIV region (83%). The rate of early latent syphilis cases among all cases was highest in the Kansas City HIV region (4.0), followed by the St. Louis HIV region (2.9). Forty-one percent of all early latent syphilis cases were reported in the St. Louis HIV region and 34% were reported in the Kansas City HIV region. The Southwest HIV region had the third largest number of early latent syphilis cases reported. The rate of reported early latent syphilis cases was higher for blacks compared to whites in all regions that reported cases among blacks.

Figure 21. Reported early latent syphilis cases* and rates, by county, Missouri, 2008**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2007 MDHSS population estimates.

Early latent syphilis cases were concentrated in metropolitan areas (Figure 21). There were 92 counties that did not report any early latent syphilis cases in 2008. St. Louis City had the highest rate of reported early latent syphilis cases at 11 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 11 reported with early latent syphilis in 2008.

Figure 22. Reported early latent syphilis cases, by race and sex, by age group at diagnosis, Missouri, 2008

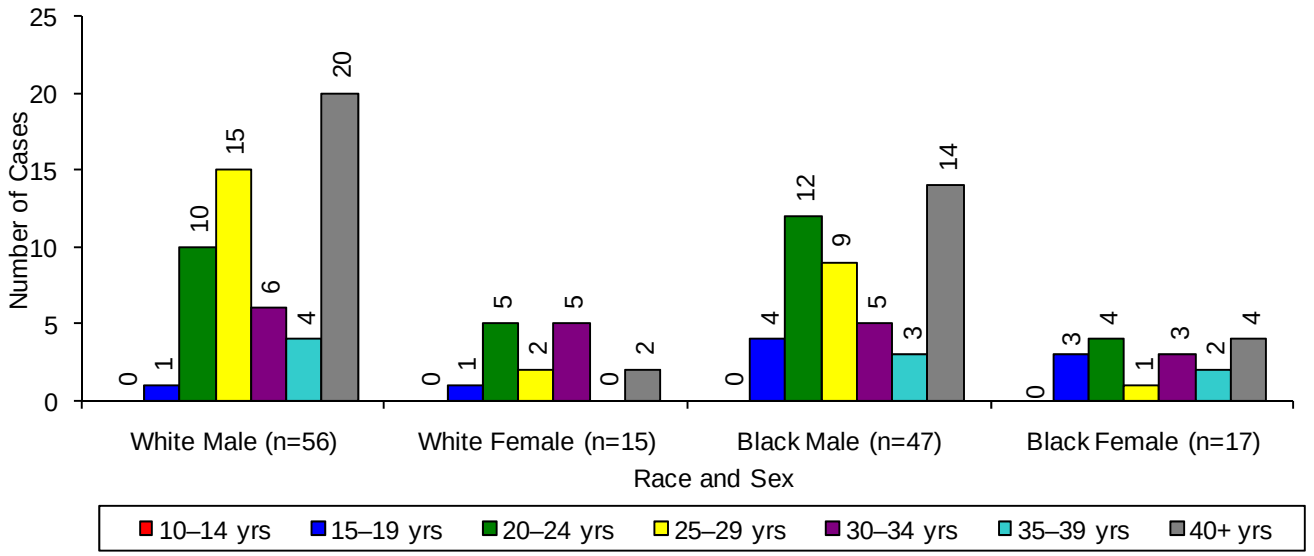
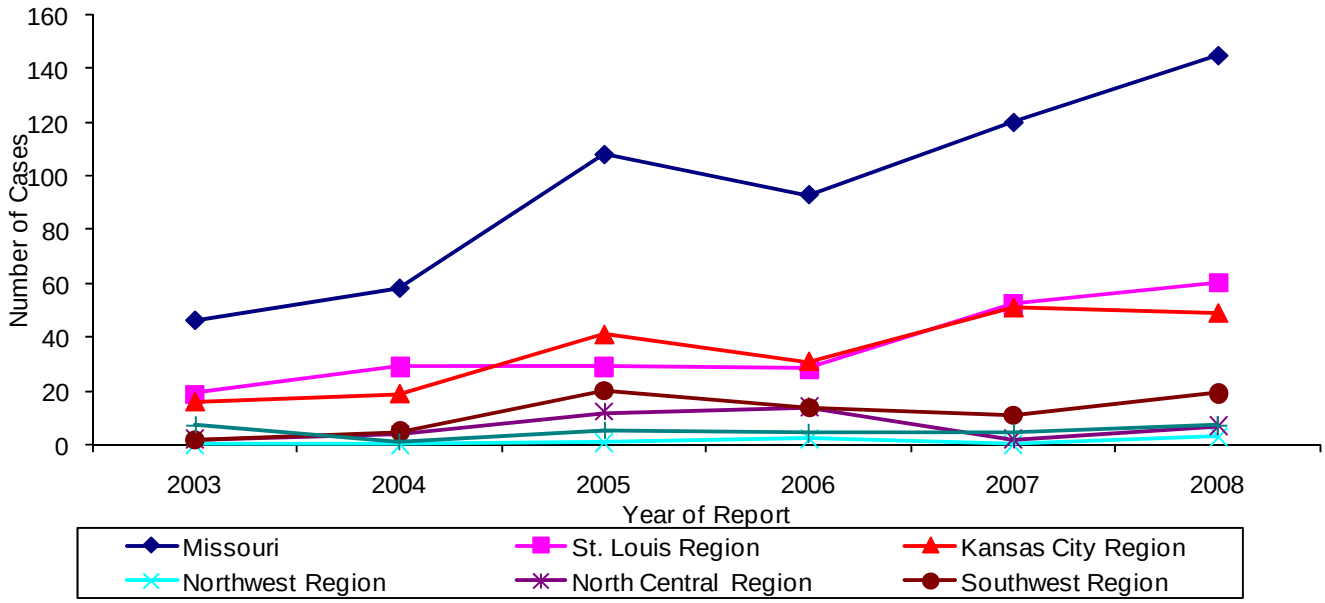


Figure 23. Reported early latent syphilis cases by geographic region and year of report, Missouri, 2003-2008



The largest numbers of early latent syphilis cases were reported among white males (56) and black males (47) (Figure 22). The number of reported cases increased from 2007 to 2008 among white males (38 to 56), white females (9 to 15) and black females (15 to 17), and remained the same among black males. Among both white and black males, the largest number of cases was reported among individuals 40 or more years of age at the time of diagnosis. Among white females, the largest number of cases was equally divided between individuals 20-24 and 30-34 years of age. The distribution of reported early latent syphilis cases by age at diagnosis was more evenly distributed among black females.

The number of reported early latent syphilis cases in Missouri increased from 2003 to 2008 (Figure 23). Similar trends were observed in the St. Louis HIV region. The number of reported early latent syphilis cases generally increased from 2003 to 2007 in the Kansas City HIV region, and then decreased in 2008. In the remaining HIV regions, the number of reported early latent syphilis remained relatively stable, with slight fluctuations, between 2003 and 2008.

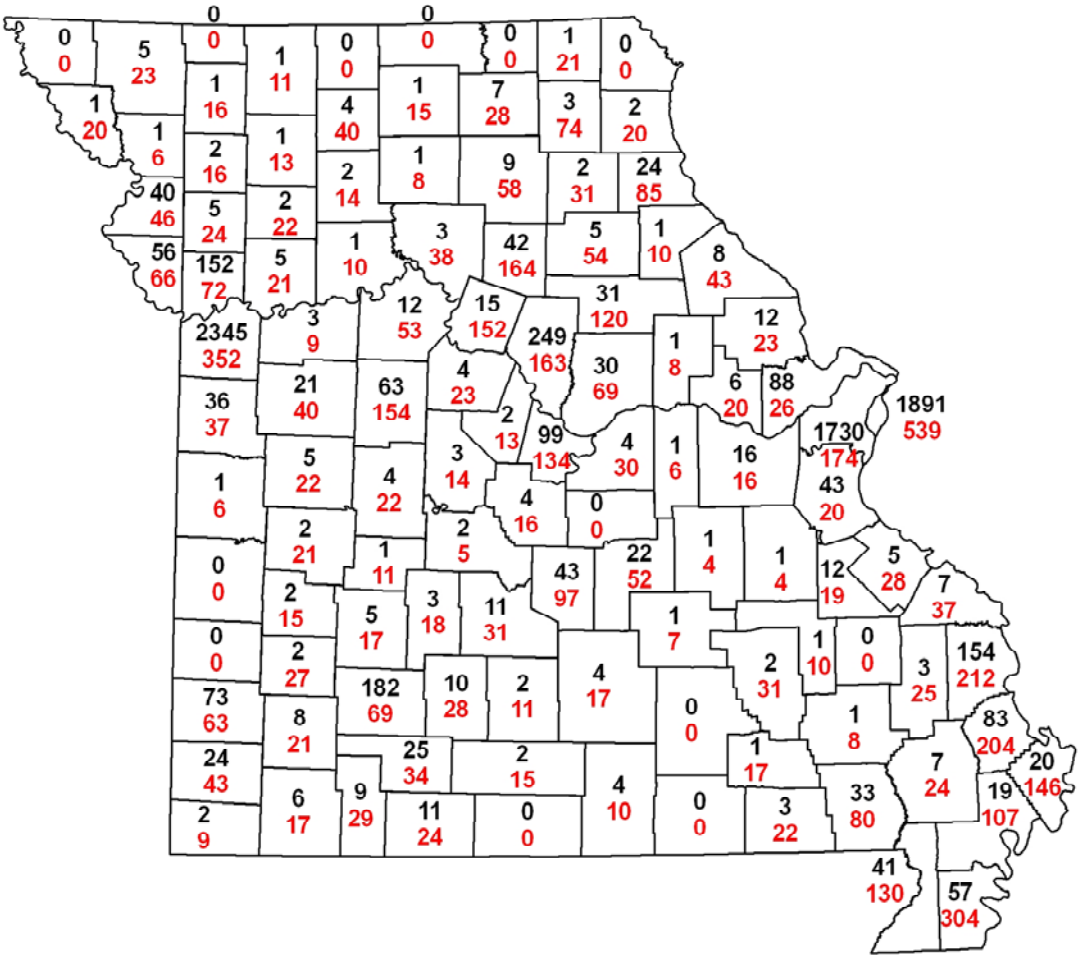
Table 24. Reported gonorrhea cases and rates, by race*, by geographic region, by sex, Missouri, 2008

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	356	10.3%	14.9	1,052	23.2%	42.2	1,408	28.8
Black	2,567	73.9%	787.8	2,630	57.9%	717.2	5,197	750.4
Other/Unknown*	549	15.8%	--	860	18.9%	--	1,409	--
Total Cases	**3,472**	100.0%	120.9	**4,542**	100.0%	151.0	**8,014**	136.3
St. Louis Region								
White	86	4.9%	11.2	163	8.0%	20.3	249	15.8
Black	1,361	77.9%	718.5	1,391	68.2%	615.8	2,752	662.7
Other/Unknown*	300	17.2%	--	485	23.8%	--	785	--
Total Cases	**1,747**	100.0%	173.4	**2,039**	100.0%	188.7	**3,786**	181.3
Kansas City Region								
White	105	9.3%	22.5	308	20.5%	63.4	413	43.4
Black	887	78.6%	1076.9	987	65.8%	1042.7	1,874	1058.6
Other/Unknown*	137	12.1%	--	204	13.6%	--	341	--
Total Cases	**1,129**	100.0%	188.5	**1,499**	100.0%	238.7	**2,628**	214.2
Northwest Region								
White	7	31.8%	6.3	29	65.9%	25.3	36	15.9
Black	9	40.9%	179.1	8	18.2%	279.9	17	215.7
Other/Unknown*	6	27.3%	--	7	15.9%	--	13	--
Total Cases	**22**	100.0%	18.2	**44**	100.0%	36.3	**66**	27.3
North Central Region								
White	58	24.6%	17.7	224	57.0%	65.9	282	42.2
Black	142	60.2%	637.0	122	31.0%	643.3	264	639.9
Other/Unknown*	36	15.3%	--	47	12.0%	--	83	--
Total Cases	**236**	100.0%	64.6	**393**	100.0%	105.5	**629**	85.2
Southwest Region								
White	66	44.0%	13.3	208	68.4%	40.0	274	27.0
Black	48	32.0%	402.9	21	6.9%	214.9	69	318.1
Other/Unknown*	36	24.0%	--	75	24.7%	--	111	--
Total Cases	**150**	100.0%	27.8	**304**	100.0%	54.5	**454**	41.4
Southeast Region								
White	34	18.1%	15.6	120	45.6%	52.8	154	34.5
Black	120	63.8%	809.6	101	38.4%	693.9	221	752.3
Other/Unknown*	34	18.1%	--	42	16.0%	--	76	--
Total Cases	**188**	100.0%	78.5	**263**	100.0%	106.2	**451**	92.6

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2007 MDHSS population estimates.

There were a total of 8,014 gonorrhea cases reported in 2008. The majority of cases (57%) were reported among females. The proportion of gonorrhea cases reported among females varied by HIV region. The St. Louis HIV region reported the lowest proportion of female cases (54%), followed by the Kansas City (57%), Southeast (58%), North Central (62%), Northwest (67%) and Southwest (67%) HIV regions. The rate of gonorrhea cases among females was highest in the Kansas City HIV region (238.7), followed by the St. Louis HIV region (188.7). Forty-seven percent of all gonorrhea cases were reported in the St. Louis HIV region and 33% were reported in the Kansas City HIV region. The North Central HIV region had the third largest number of gonorrhea cases reported. The rate of reported gonorrhea cases was higher for blacks compared to whites in all regions.

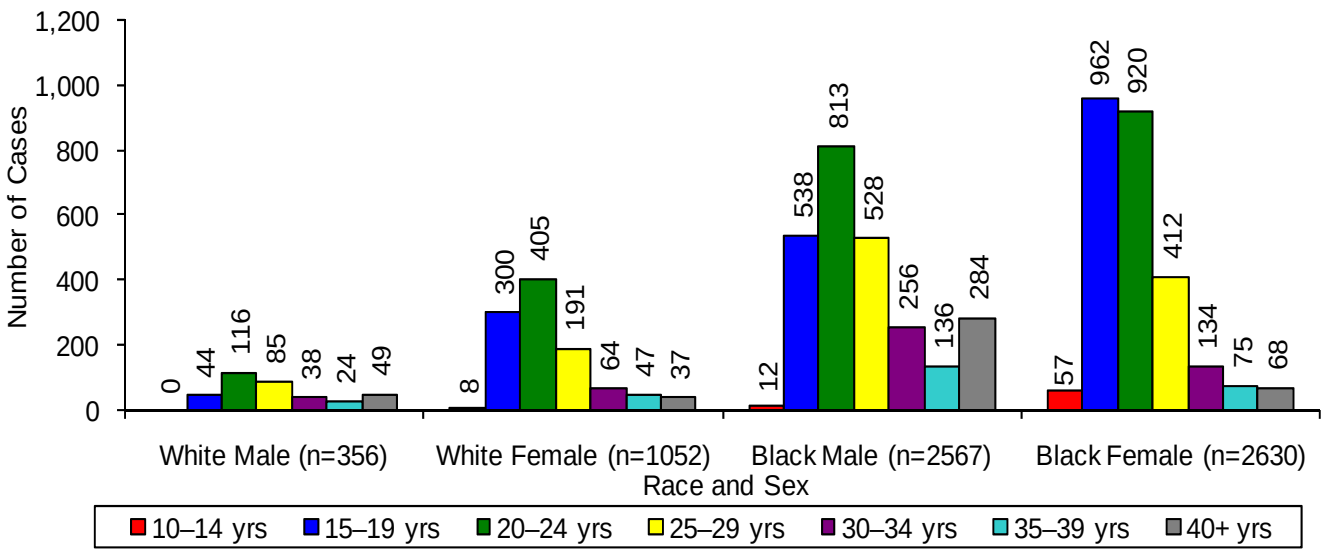
Figure 24. Reported gonorrhea cases* and rates, by county, Missouri, 2008**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2007 MDHSS population estimates.

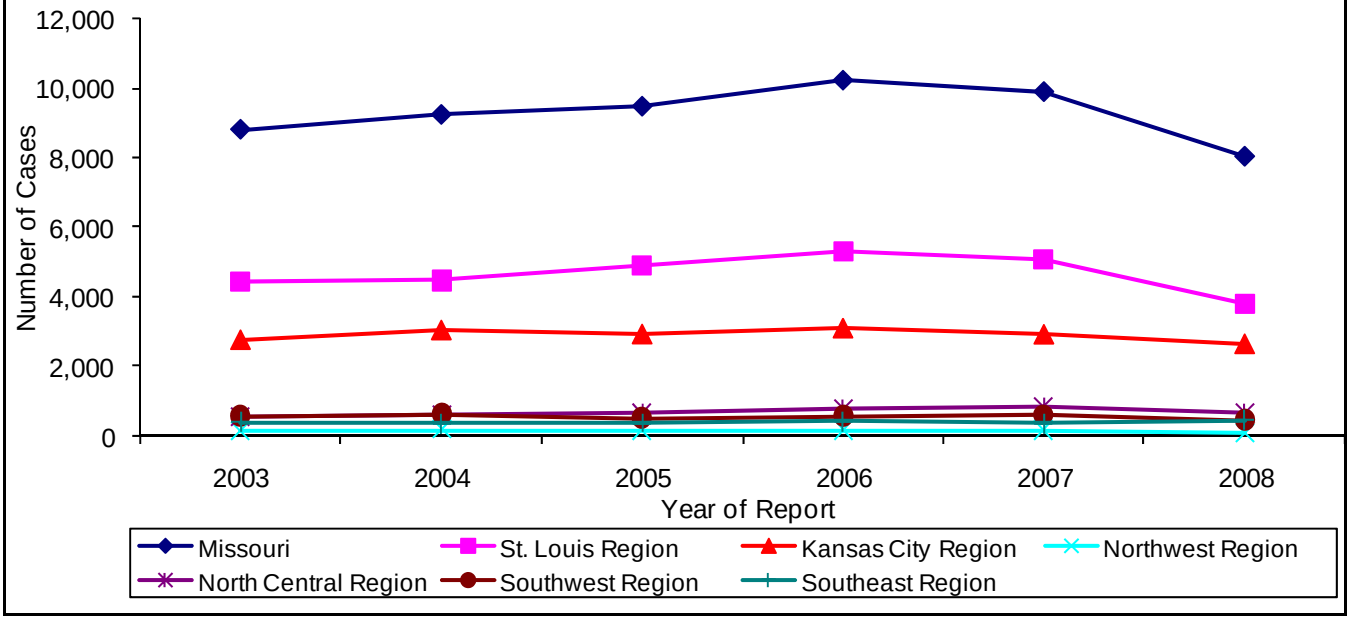
Gonorrhea cases reported in St. Louis City, St. Louis County, and Jackson County represented 74% of all reported cases in 2008 (Figure 24). There were 13 counties that did not report any gonorrhea cases in 2008. St. Louis City had the highest rate of reported gonorrhea cases at 539 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 539 reported with gonorrhea in 2008.

Figure 25. Reported gonorrhea cases, by race and sex, by age group at diagnosis, Missouri, 2008



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

Figure 26. Reported gonorrhea cases by geographic region and year of report, Missouri, 2003-2008



The largest numbers of gonorrhea cases were reported among black females (2,630) and black males (2,567) (Figure 25). The number of reported cases decreased from 2007 to 2008 among all race/ethnicity and sex categories presented. Among white and black males and white females, the largest number of cases was reported among individuals 20-24 years of age at the time of diagnosis. Among black females, the largest number of cases was reported among 15-19 year olds, followed closely by 20-24 year olds. A greater proportion of gonorrhea cases among black males were diagnosed among individuals 40 or more years of age (11%) compared to the other race/ethnicity and sex categories presented.

The number of reported gonorrhea cases in Missouri increased from 2003 to 2006 and then decreased through 2008 (Figure 26). The decrease observed may be due to the increased use of injectable antibiotics in recent years, which ensures patients receive treatment. The change to a new class of antibiotics, to which gonorrhea is not known to be resistant, may also explain the observed decrease. The number of reported gonorrhea cases was lower in 2008 compared to 2003 in the Kansas City, St. Louis, Northwest, and Southwest HIV regions. In the North Central HIV region, the number of reported gonorrhea cases in 2008 (629) was higher than in 2003 (537). However, the number of reported cases in 2008 was lower in the North Central HIV region than in 2007. The Southeast HIV region was the only region where the number of reported gonorrhea cases increased from 2007 to 2008 (339 to 451).

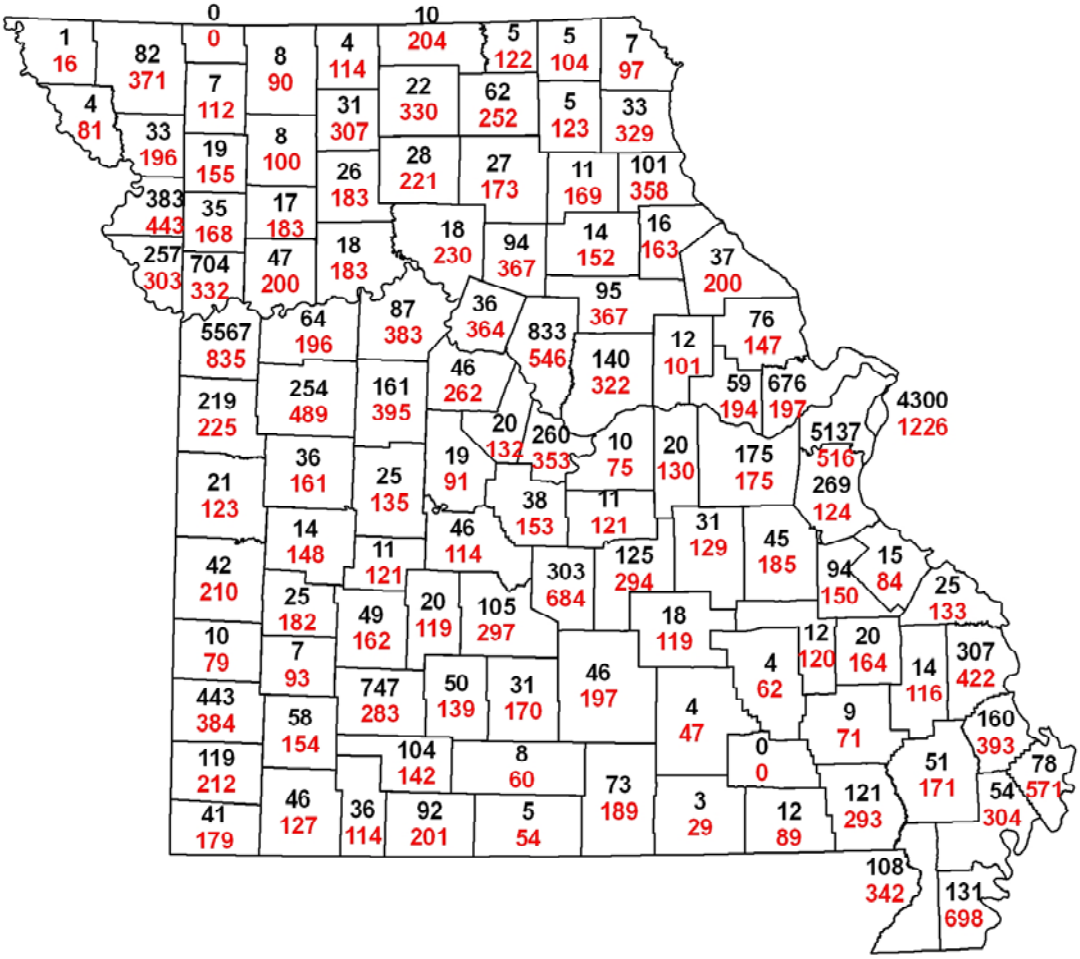
Table 25. Reported chlamydia cases and rates, by race*, by geographic region, by sex, Missouri, 2008

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	1,357	20.3%	56.8	5,593	30.9%	224.4	6,950	142.4
Black	3,801	56.7%	1166.5	7,272	40.1%	1983.2	11,073	1598.9
Other/Unknown*	1,543	23.0%	--	5,251	29.0%	--	6,794	--
Total Cases	**6,701**	100.0%	233.4	**18,116**	100.0%	602.4	**24,817**	422.2
St. Louis Region								
White	293	9.5%	38.1	901	11.9%	112.0	1,194	75.9
Black	2,038	66.0%	1075.9	4,009	52.7%	1774.9	6,047	1456.1
Other/Unknown*	759	24.6%	--	2,692	35.4%	--	3,451	--
Total Cases	**3,090**	100.0%	306.7	**7,602**	100.0%	703.6	**10,692**	512.1
Kansas City Region								
White	351	17.1%	75.3	1,389	27.0%	285.9	1,740	182.8
Black	1,285	62.7%	1560.1	2,398	46.6%	2533.3	3,683	2080.5
Other/Unknown*	414	20.2%	--	1,357	26.4%	--	1,771	--
Total Cases	**2,050**	100.0%	342.4	**5,144**	100.0%	819.0	**7,194**	586.4
Northwest Region								
White	90	52.6%	80.5	353	69.9%	307.7	443	195.6
Black	40	23.4%	796.2	62	12.3%	2169.3	102	1294.1
Other/Unknown*	41	24.0%	--	90	17.8%	--	131	--
Total Cases	**171**	100.0%	141.7	**505**	100.0%	416.9	**676**	279.6
North Central Region								
White	248	41.7%	75.6	1,032	59.5%	303.5	1,280	191.6
Black	233	39.2%	1045.2	384	22.1%	2024.9	617	1495.5
Other/Unknown*	114	19.2%	--	318	18.3%	--	432	--
Total Cases	**595**	100.0%	162.8	**1,734**	100.0%	465.5	**2,329**	315.6
Southwest Region								
White	290	55.7%	58.4	1,433	67.8%	275.7	1,723	169.5
Black	82	15.7%	688.2	122	5.8%	1248.2	204	940.6
Other/Unknown*	149	28.6%	--	559	26.4%	--	708	--
Total Cases	**521**	100.0%	96.7	**2,114**	100.0%	379.0	**2,635**	240.3
Southeast Region								
White	85	31.0%	38.9	485	47.7%	213.3	570	127.8
Black	123	44.9%	829.8	297	29.2%	2040.5	420	1429.6
Other/Unknown*	66	24.1%	--	235	23.1%	--	301	--
Total Cases	**274**	100.0%	114.4	**1,017**	100.0%	410.8	**1,291**	265.0

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2007 MDHSS population estimates.

There were a total of 24,817 chlamydia cases reported in 2008. The majority of cases (73%) were reported among females. The proportion of chlamydia cases reported among females varied by HIV region. The Southwest HIV region reported the highest proportion of female cases (80%), followed by the Southeast (79%), Northwest (75%), North Central (74%), Kansas City (72%) and St. Louis (71%) HIV regions. The rate of chlamydia cases among females was highest in the Kansas City HIV region (819.0), followed by the St. Louis HIV region (703.6). Forty-three percent of all chlamydia cases were reported in the St. Louis HIV region and 29% were reported in the Kansas City HIV region. The Southwest HIV region had the third largest number of chlamydia cases reported. The rate of reported chlamydia cases was higher for blacks compared to whites in all regions.

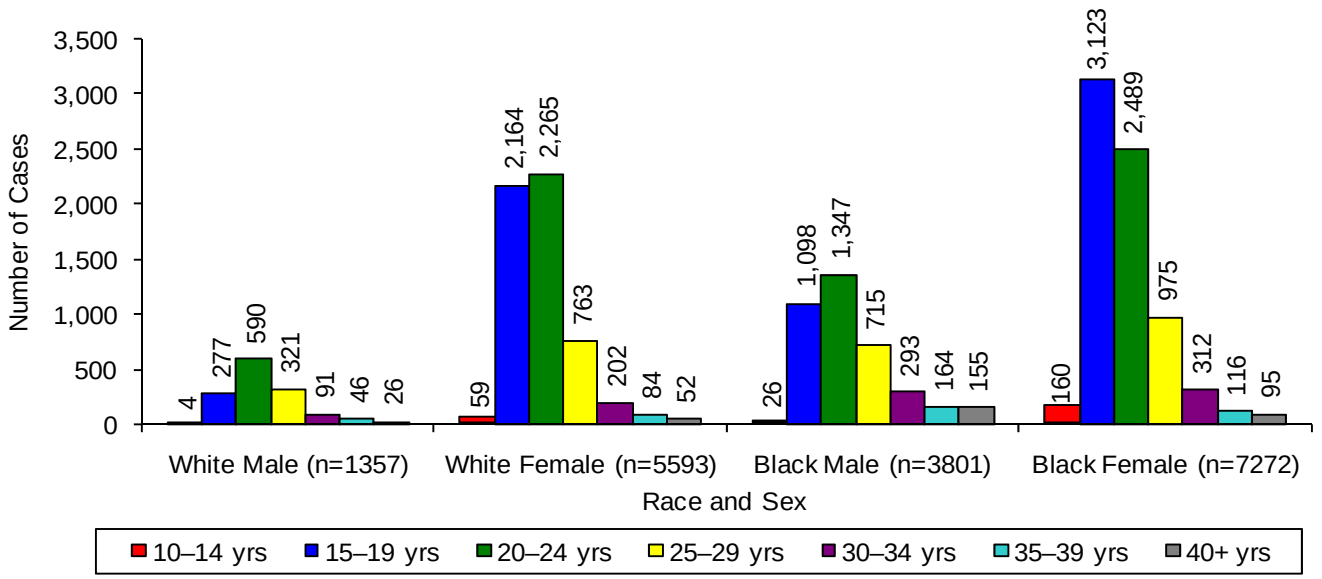
Figure 27. Reported chlamydia cases* and rates, by county, Missouri, 2008**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2007 MDHSS population estimates.

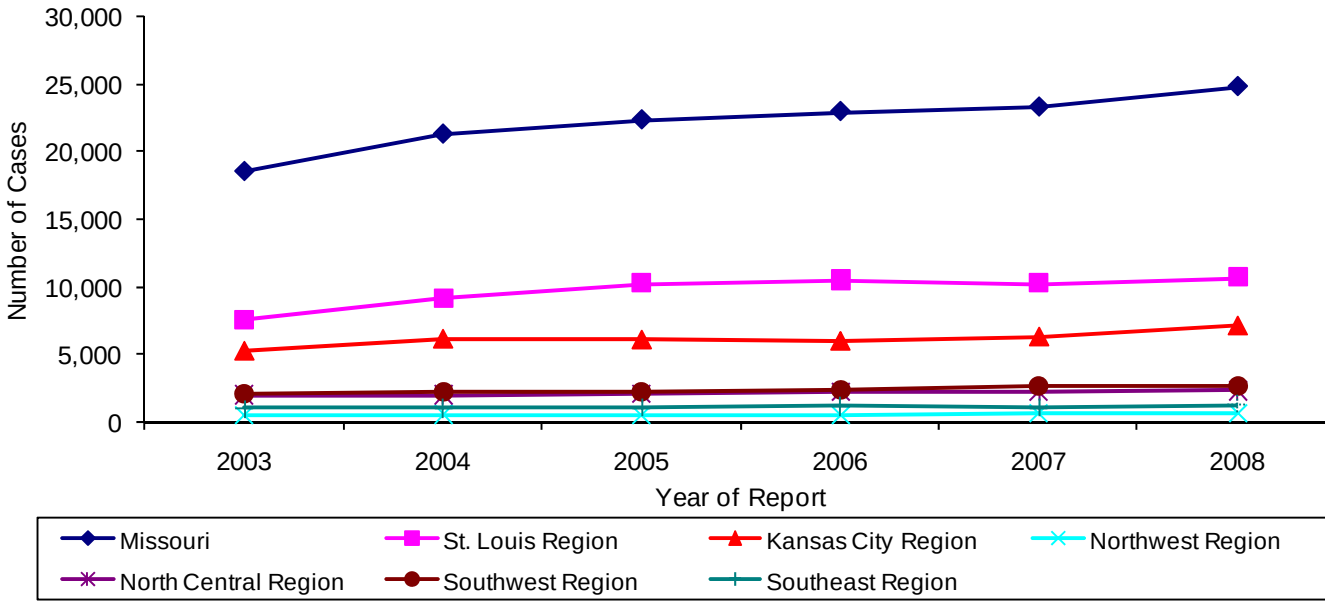
Chlamydia cases reported in St. Louis City, St. Louis County, and Jackson County represented 60% of all reported cases in 2008 (Figure 27), although these areas represent only 34% of Missouri's general population. There were only 2 counties, Carter and Worth, that did not report any chlamydia cases in 2008. St. Louis City had the highest rate of reported chlamydia cases at 1,226 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 1,226 reported with chlamydia in 2008.

Figure 28. Reported chlamydia cases, by race and sex, by age group at diagnosis, Missouri, 2008



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

Figure 29. Reported chlamydia cases by geographic region and year of report, Missouri, 2003-2008



The largest numbers of chlamydia cases were reported among black females (7,272) and white females (5,593) (Figure 28). The number of reported cases increased from 2007 to 2008 among all race/ethnicity and sex categories presented. The number of cases increased from 1,320 to 1,357 among white males, from 5,571 to 5,593 among white females, from 3,559 to 3,801 among black, and from 6,975 to 7,272 among black females. Among white and black males and white females, the largest number of cases was reported among individuals 20-24 years of age at the time of diagnosis. Among black females, the largest number of cases was reported among 15-19 year olds.

The number of reported chlamydia cases in Missouri increased by from 2003 to 2008 (Figure 29). Similar trends were observed for all HIV regions. Although the number of reported chlamydia cases decreased slightly in the Northwest HIV region from 687 to 676 between 2007 and 2008.

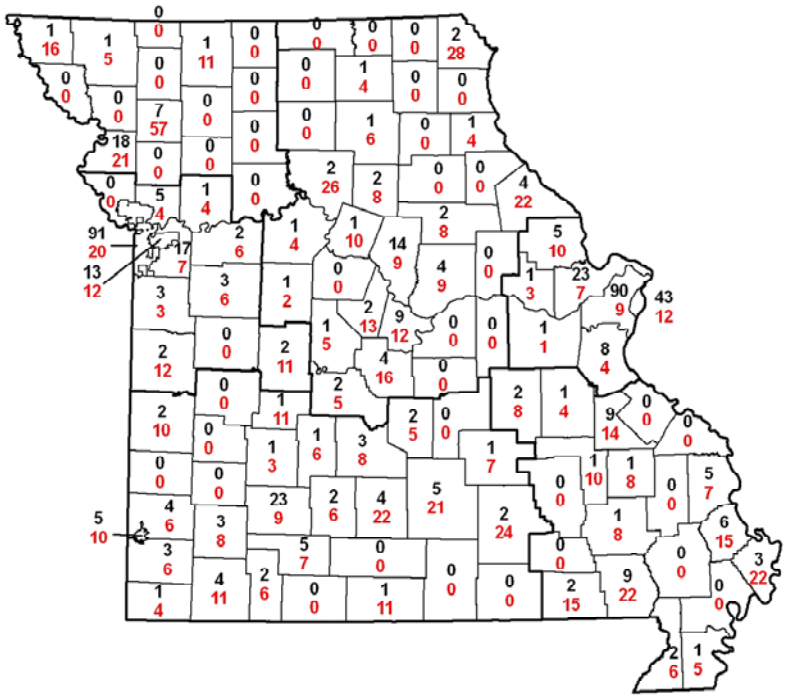
Table 26. Reported Hepatitis B† cases and rates, by race*, by geographic region, by sex, Missouri, 2008

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	77	32.0%	3.2	54	20.1%	2.2	131	2.7
Black	29	12.0%	8.9	29	10.8%	7.9	58	8.4
Other/Unknown*	135	56.0%	--	186	69.1%	--	321	--
Total Cases	**241**	100.0%	8.4	**269**	100.0%	8.9	**510**	8.7
St. Louis Region								
White	16	18.6%	2.1	13	15.3%	1.6	29	1.8
Black	15	17.4%	7.9	10	11.8%	4.4	25	6.0
Other/Unknown*	55	64.0%	--	62	72.9%	--	117	--
Total Cases	**86**	100.0%	8.5	**85**	100.0%	7.9	**171**	8.2
Kansas City Region								
White	16	27.6%	3.4	4	4.9%	0.8	20	2.1
Black	10	17.2%	12.1	16	19.8%	16.9	26	14.7
Other/Unknown*	32	55.2%	--	61	75.3%	--	93	--
Total Cases	**58**	100.0%	9.7	**81**	100.0%	12.9	**139**	11.3
Northwest Region								
White	3	16.7%	2.7	1	10.0%	0.9	4	1.8
Black	0	0.0%	0.0	0	0.0%	0.0	0	0.0
Other/Unknown*	15	83.3%	--	9	90.0%	--	24	--
Total Cases	**18**	100.0%	14.9	**10**	100.0%	8.3	**28**	11.6
North Central Region								
White	6	35.3%	1.8	16	43.2%	4.7	22	3.3
Black	2	11.8%	9.0	2	5.4%	10.5	4	9.7
Other/Unknown*	9	52.9%	--	19	51.4%	--	28	--
Total Cases	**17**	100.0%	4.7	**37**	100.0%	9.9	**54**	7.3
Southwest Region								
White	23	60.5%	4.6	11	29.7%	2.1	34	3.3
Black	1	2.6%	8.4	0	0.0%	0.0	1	4.6
Other/Unknown*	14	36.8%	--	26	70.3%	--	40	--
Total Cases	**38**	100.0%	7.0	**37**	100.0%	6.6	**75**	6.8
Southeast Region								
White	13	54.2%	6.0	9	47.4%	4.0	22	4.9
Black	1	4.2%	6.7	1	5.3%	6.9	2	6.8
Other/Unknown*	10	41.7%	--	9	47.4%	--	19	--
Total Cases	**24**	100.0%	10.0	**19**	100.0%	7.7	**43**	8.8

†Includes confirmed and probable case classifications of Hepatitis B Acute, Hepatitis B Chronic, and Hepatitis B Prenatal.
*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2007 MDHSS population estimates.

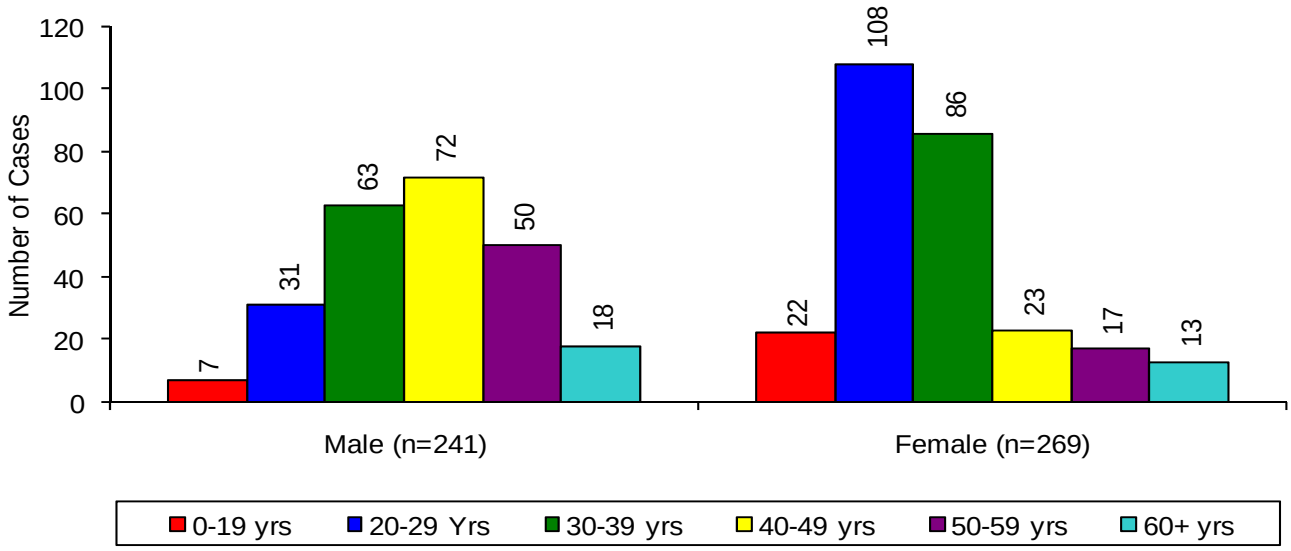
Of the 510 Hepatitis B cases reported in 2008, 38 were reported with acute Hepatitis B, 328 with chronic Hepatitis B, and 144 with prenatal Hepatitis B. The number of reported Hepatitis B cases in Missouri increased by two cases from 2007 (508) to 2008 (510) (Table 26). Among the HIV regions, the number of persons reported with Hepatitis B decreased from 2007 to 2008 in the Kansas City (192 to 139) and North Central (60 to 54) HIV regions, but increased in the St. Louis (137 to 171), Northwest (17 to 28), Southwest (62 to 75), and Southeast (40 to 43) HIV regions. Overall, the rate of reported Hepatitis B cases was highest in the Northwest HIV region (11.6 per 100,000). Overall, 53% of reported cases were females, although variation in the ratio of male to female cases existed among the HIV regions. The large proportion of cases with unknown race information makes it difficult to interpret differences in reported infections by race.

Figure 30. Reported Hepatitis B cases* and rates, by county, Missouri, 2008**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2007 MDHSS population estimates.

Figure 31. Reported Hepatitis B cases, by sex and by age group at diagnosis, Missouri, 2008



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

Kansas City had the greatest number of reported Hepatitis B cases (91), followed by St. Louis County (90) (Figure 30). There were 44 jurisdictions that did not report any Hepatitis B cases in 2008.

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 between 40-49 years of age. The largest numbers of cases were 20 -29 years of age at diagnosis among females.

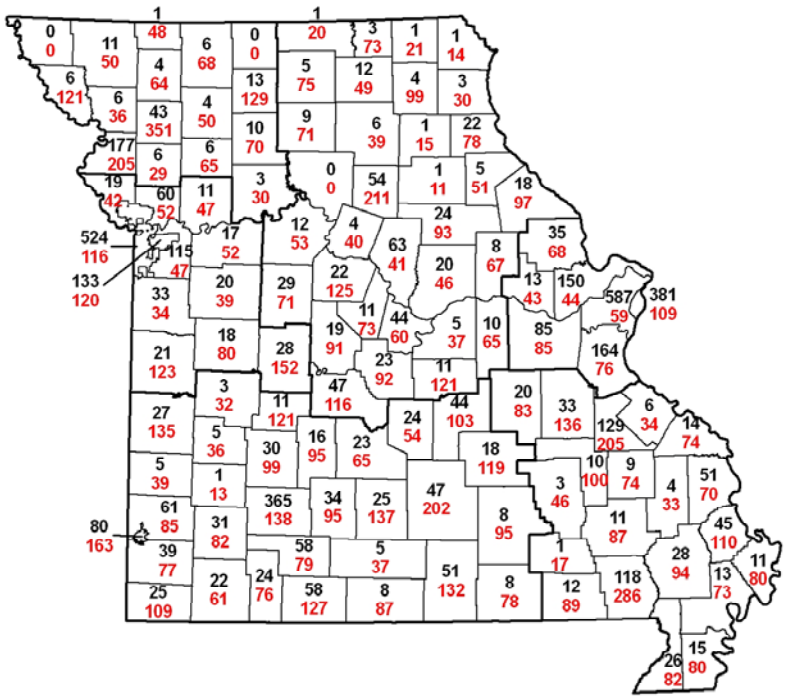
Table 27. Reported Hepatitis C† cases and rates, by race*, by geographic region, by sex, Missouri, 2008

	Male			Female			Total‡	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	1,068	36.2%	44.7	762	38.7%	30.6	1,831	37.5
Black	228	7.7%	70.0	132	6.7%	36.0	360	52.0
Other/Unknown*	1,656	56.1%	--	1,076	54.6%	--	2,732	--
Total Cases	**2,952**	100.0%	102.8	**1,970**	100.0%	65.5	**4,923**	83.7
St. Louis Region								
White	198	23.2%	25.8	139	24.7%	17.3	337	21.4
Black	104	12.2%	54.9	47	8.4%	20.8	151	36.4
Other/Unknown*	551	64.6%	--	376	66.9%	--	927	--
Total Cases	**853**	100.0%	84.7	**562**	100.0%	52.0	**1,415**	67.8
Kansas City Region								
White	212	35.9%	45.5	148	36.3%	30.5	360	37.8
Black	92	15.6%	111.7	70	17.2%	73.9	162	91.5
Other/Unknown*	287	48.6%	--	190	46.6%	--	477	--
Total Cases	**591**	100.0%	98.7	**408**	100.0%	65.0	**999**	81.4
Northwest Region								
White	58	29.3%	51.9	33	33.7%	28.8	91	40.2
Black	6	3.0%	119.4	2	2.0%	70.0	8	101.5
Other/Unknown*	134	67.7%	--	63	64.3%	--	197	--
Total Cases	**198**	100.0%	164.1	**98**	100.0%	80.9	**296**	122.4
North Central Region								
White	150	47.8%	45.7	103	56.0%	30.3	253	37.9
Black	6	1.9%	26.9	2	1.1%	10.5	8	19.4
Other/Unknown*	158	50.3%	--	79	42.9%	--	237	--
Total Cases	**314**	100.0%	85.9	**184**	100.0%	49.4	**498**	67.5
Southwest Region								
White	333	52.0%	67.0	261	50.8%	50.2	595	58.5
Black	9	1.4%	75.5	9	1.8%	92.1	18	83.0
Other/Unknown*	299	46.6%	--	244	47.5%	--	543	--
Total Cases	**641**	100.0%	118.9	**514**	100.0%	92.2	**1,156**	105.4
Southeast Region								
White	117	33.0%	53.6	78	38.2%	34.3	195	43.7
Black	11	3.1%	74.2	2	1.0%	13.7	13	44.3
Other/Unknown*	227	63.9%	--	124	60.8%	--	351	--
Total Cases	**355**	100.0%	148.2	**204**	100.0%	82.4	**559**	114.8

†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 2007 MDHSS population estimates.

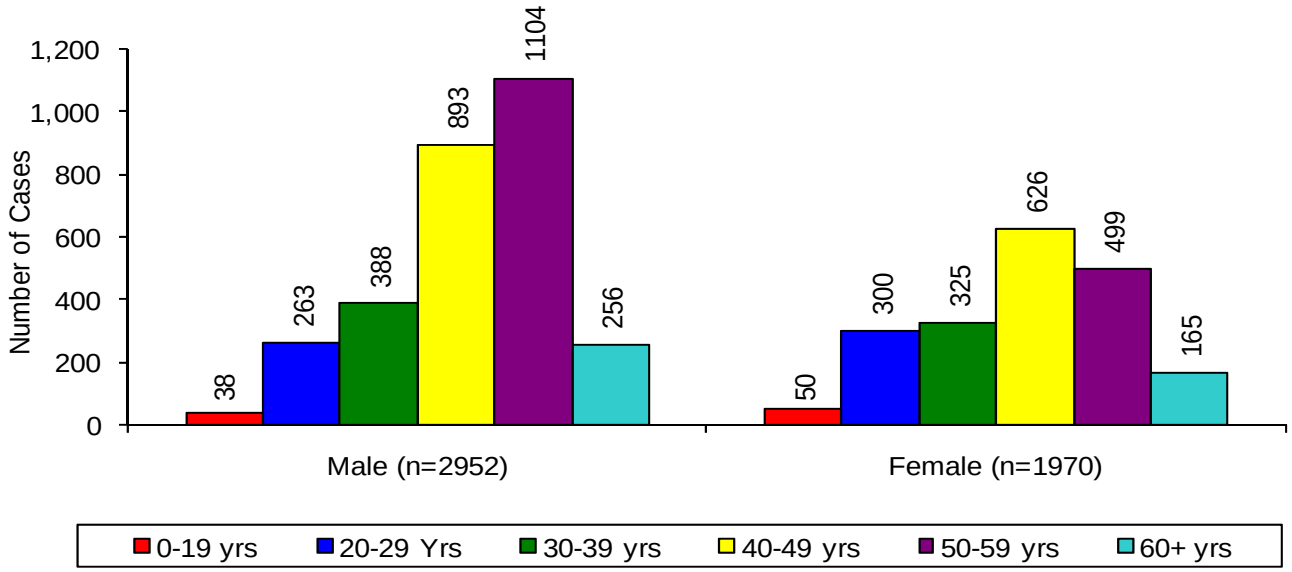
Of the 4,923 Hepatitis C cases reported in 2008, two were reported with acute Hepatitis C, and 4,921 with chronic Hepatitis C. The number of reported Hepatitis C cases in Missouri increased by 455 cases from 2007 (4,468) to 2008 (4,923) (Table 27). Among the HIV regions, the number of persons reported with Hepatitis C decreased from 2007 to 2008 in the North Central (597 to 498) and Southeast (636 to 559) HIV regions, but increased in the St. Louis (1,012 to 1,415), Kansas City (916 to 999), Northwest (174 to 296), and Southwest (1,133 to 1,156) HIV regions. Overall, the rate of reported Hepatitis C cases was highest in the Northwest HIV region (122.4 per 100,000). In Missouri overall, 60% of the reported cases were males. The large proportion of cases with unknown race information makes it difficult to interpret differences in reported infections by race.

Figure 32. Reported Hepatitis C cases* and rates, by county, Missouri, 2008**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2007 MDHSS population estimates.

Figure 33. Reported Hepatitis C cases, by sex and by age group at diagnosis, Missouri, 2008



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

St. Louis County had the greatest number of reported Hepatitis C cases with 587 cases (Figure 32). The second largest number of Hepatitis C cases occurred in Kansas City (524). There were 3 counties that did not report any Hepatitis C cases in 2008.

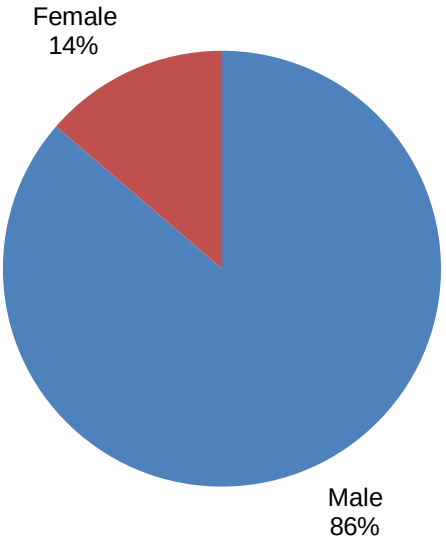
There were differences in the age distribution of reported Hepatitis C cases by sex (Figure 33). Among males, the largest numbers of reported cases were between 50-59 years of age. The largest numbers of cases were 40 -49 years of age at diagnosis among females.

Table 28. HIV and STD co-infections, Missouri, 2008

Co-infection	Diagnosed with HIV Prior to 2008 N	Diagnosed with HIV Prior to 2008 %	Diagnosed with HIV in 2008 N	Diagnosed with HIV in 2008 %	Total N	Total %
Chlamydia	46	23.5%	14	18.9%	60	22.2%
Gonorrhea	58	29.6%	22	29.7%	80	29.6%
Syphilis*	67	34.2%	29	39.2%	96	35.6%
Chlamydia and Gonorrhea	14	7.1%	6	8.1%	20	7.4%
Chlamydia and Syphilis*	1	0.5%	2	2.7%	3	1.1%
Gonorrhea and Syphilis*	8	4.1%	1	1.4%	9	3.3%
Chlamydia, Gonorrhea, and Syphilis*	2	1.0%	0	0.0%	2	0.7%
Total	**196**	**100.0%**	**74**	**100.0%**	**270**	**100.0%**

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

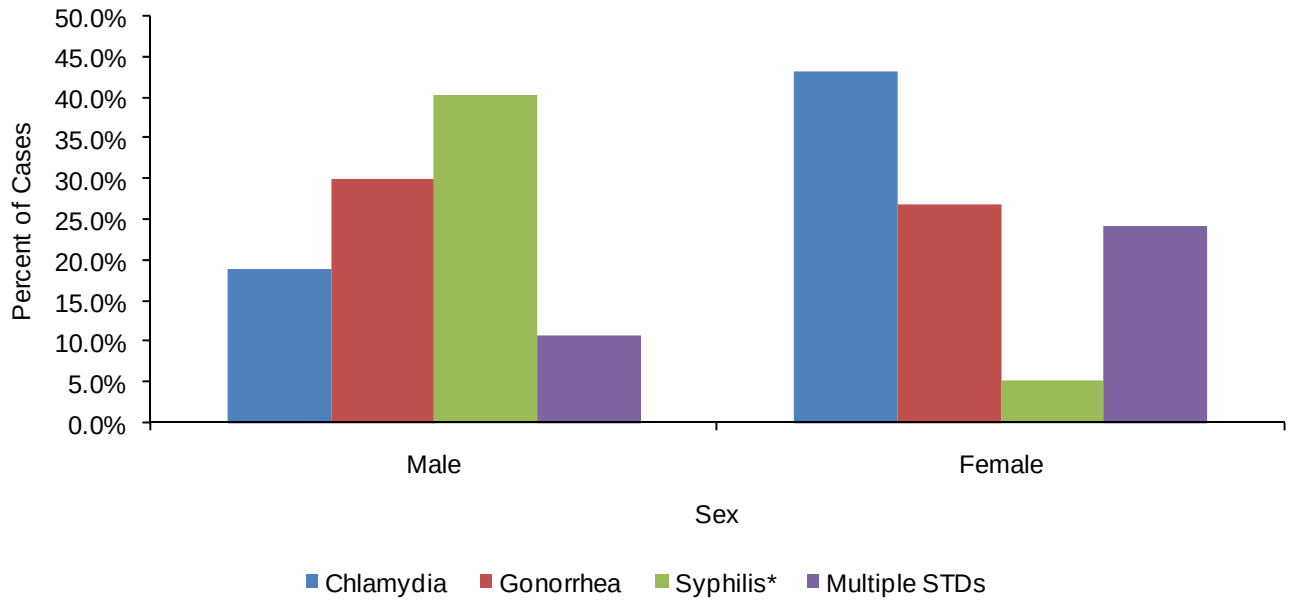
Figure 34. HIV and STD co-infections by sex, Missouri, 2008



Of the 10,834 individuals living with HIV disease, 270 were reported with an STD co-morbidity in 2008 (Table 28). The majority of those reported with an STD co-morbidity were diagnosed with HIV prior to 2008 (73%). However, the proportion of newly diagnosed cases with an STD diagnosed in the same year was greater (12%) than the proportion of living cases diagnosed with an STD in 2008 (2%). There were not significant differences in the type of STD co-morbidity diagnosed based on when the individual was diagnosed with HIV. The largest number of co-morbidities was between HIV and early syphilis, followed by HIV and gonorrhea. The proportion of reported STD infections in 2008 that were living with HIV varied by infection type. Of the 369 early syphilis cases reported in 2008, 30% were among individuals living with HIV. Only 1% of gonorrhea cases and less than 1% of chlamydia cases reported in 2008 were among individuals living with HIV.

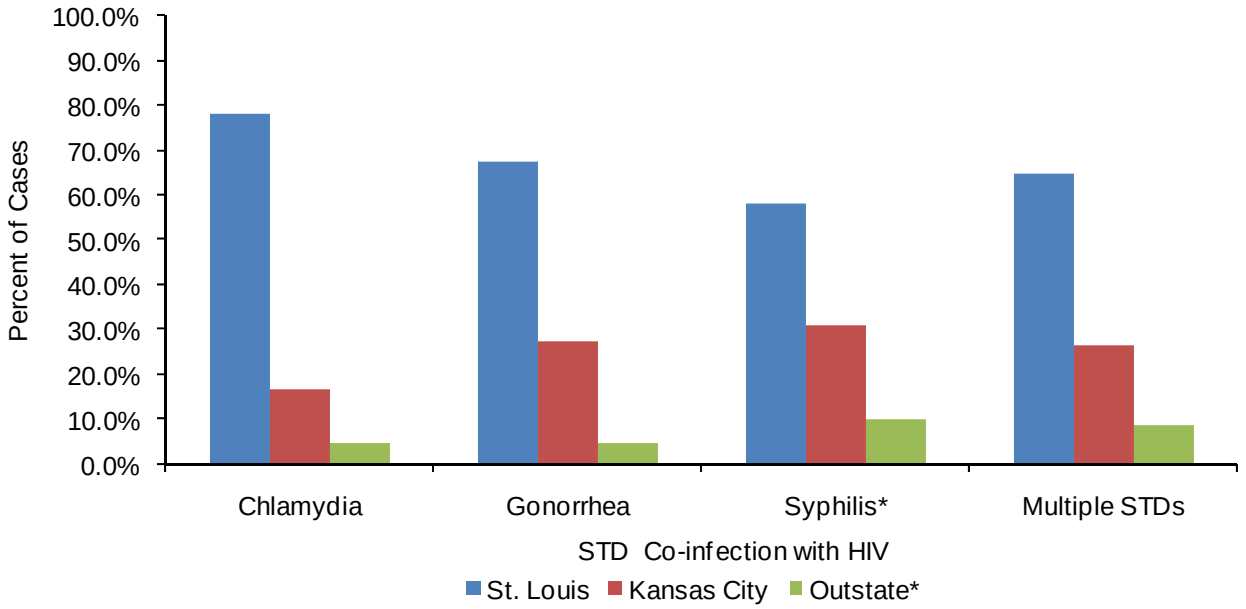
Of the 270 reported STD co-morbidity cases, 86% were among males (Figure 34). Males represented a slightly higher proportion of the STD co-morbidity cases (86%) compared to all males living with HIV disease (84%).

Figure 35. HIV and STD co-infections by sex and type of co-infection, Missouri, 2008



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

Figure 36. HIV and STD co-infections by geographic region of STD diagnosis, Missouri, 2008

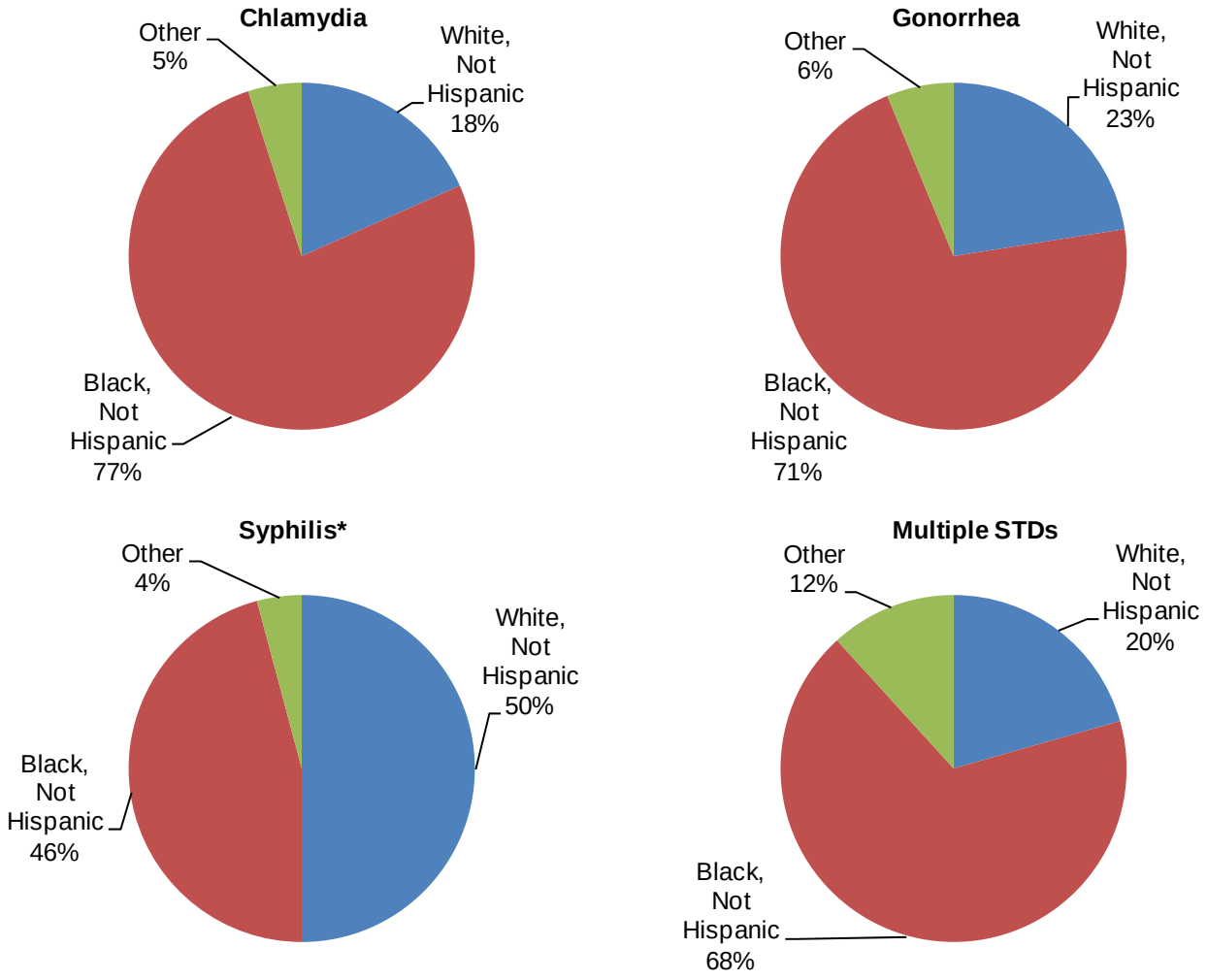


*Includes those diagnosed in the North Central, Northwest, Southeast, and Southwest regions.

There were differences in the distribution of STD co-morbidity types by sex (Figure 35). Among females living with HIV that were reported with a STD co-morbidity in 2008, 43% were co-infected with chlamydia, 27% with gonorrhea, 24% with multiple STDs, and 5% with early syphilis. In contrast, among males living with HIV reported with a STD co-morbidity in 2008, only 19% were co-infected with chlamydia, 30% with gonorrhea, 11% with multiple STDs, and 40% with early syphilis.

Among all HIV and STD co-morbidity types, the greatest proportion of cases was diagnosed in the St. Louis HIV region (Figure 36). Among those living with HIV that were reported with chlamydia in 2008, 78% were residents of the St. Louis HIV region when diagnosed with chlamydia. The St. Louis HIV region represented 68% of all living HIV cases reported with gonorrhea in 2008, 58% of those with early syphilis, and 65% of those with multiple STD co-morbidities. There were differences in the distribution of cases by region for the different co-morbidity types. For example, a greater proportion of early syphilis co-morbidity cases were diagnosed in the Kansas City HIV region (31%) and the Outstate HIV regions (10%) compared to other co-morbidity types diagnosed in these areas.

Figure 37. HIV and STD co-infections by race/ethnicity and type of co-infection, Missouri, 2008



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

There were differences in the distribution of race/ethnicity among HIV and STD co-morbidities depending on the type of STD diagnosed (Figure 37). The proportion of co-morbidity cases attributed to blacks was highest among those co-infected with chlamydia (77%), followed by those with gonorrhea co-infections (71%). In all instances minorities were disproportionately represented in the proportion of co-morbidities that were reported. Although blacks represented only 44% of living HIV disease cases, they represented 63% of individuals diagnosed with an STD co-morbidity.

Key Highlights: 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, 58% 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 2008).
- Persons enrolled in HIV medical case management were significantly more likely to have their primary care medical needs met. Of the 10,834 persons living with HIV disease in Missouri, 3,798 (35%) were enrolled in medical case management. Ninety-eight percent of individuals in case management had their primary care medical needs met in 2008.
- Persons living with HIV who were subcategorized as AIDS cases in 2008 were more likely to have their medical needs met (67%) compared to persons subcategorized as HIV cases (48%). 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 AIDS) were important factors influencing unmet need.

Where

- Overall, the proportion of individuals with a met need was greatest in the North Central HIV region (65%), and lowest in the St. Louis HIV region (52%).
- Among those in enrolled in HIV medical case management, the proportion with a met need ranged from 95% in the Southeast HIV region to 100% in the Northwest HIV region.
- For those not enrolled in HIV medical case management, the proportion with a met need ranged from 29% in the Southeast HIV region to 51% in the Northwest HIV region.

Who

Sex

- Overall, there were not significant 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 AIDS).

Race/Ethnicity

- Among individuals not enrolled in HIV medical case management, there were differences in the proportion of persons with an unmet primary medical care need by race/ethnicity. Regardless of current diagnostic status, unmet need was greater for Hispanics than for blacks, and greater for blacks than whites. The disparity in unmet need between blacks and Hispanics was greater among persons classified as AIDS cases compared to those classified as HIV cases.
- There were not significant differences in unmet need by race/ethnicity among persons enrolled in HIV medical case management.

Age

- There were not differences in unmet need by current age among individuals enrolled in HIV medical case management, regardless of diagnostic status.
- There were differences in unmet need by current age among individuals not enrolled in HIV medical case management. Trends were similar among persons classified as HIV and AIDS cases. Among persons currently 19 years of age or greater, unmet need increased with increasing age.

Exposure Category

- There were not significant differences in unmet need by exposure category among individuals enrolled in HIV medical case management, regardless of diagnostic status. Among individuals in HIV medical case management, MSM represented the largest number of persons with unmet need (53). However, this group also represented the largest number of individuals enrolled in case management (2,137).
- There were differences in unmet need by exposure category among individuals not enrolled in HIV medical case management. Different trends in unmet need were observed based on the current diagnostic status of the individual. Among persons classified as HIV cases, unmet need was greatest among adults who became infected through the receipt of clotting factors, contaminated blood products or occupational exposure. However, the number of persons in this exposure category overall was small. Persons whose infection was attributed to heterosexual contact had the second highest proportion of unmet need among HIV cases. Among HIV cases, unmet need was lowest among persons infected at less than 13 years of age. Among persons classified as AIDS cases, unmet need was greatest among injecting drug users, and lowest among persons with no indicated risk.

Table 29. The impact of HIV case management on access to primary medical care by region* and race/ethnicity among individuals living with HIV disease as of December 31, 2008

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	1,204 (52.0%)	1,113 (48.0%)	635 (98.1%)	12 (1.9%)	569 (34.1%)	1,101 (65.9%)
Black	1,430 (52.8%)	1,278 (47.2%)	982 (96.7%)	33 (3.3%)	448 (26.5%)	1,245 (73.5%)
Hispanic	57 (48.7%)	60 (51.3%)	40 (95.2%)	2 (4.8%)	17 (22.7%)	58 (77.3%)
Other/Unk.	29 (43.3%)	38 (56.7%)	13 (100.0%)	0 (0.0%)	16 (29.6%)	38 (70.4%)
Total	**2,720 (52.2%)**	**2,489 (47.8%)**	**1,670 (97.3%)**	**47 (2.7%)**	**1,050 (30.1%)**	**2,442 (69.9%)**
Kansas City Region						
White	1,158 (65.7%)	604 (34.3%)	548 (97.9%)	12 (2.1%)	610 (50.7%)	592 (49.3%)
Black	750 (62.1%)	458 (37.9%)	488 (97.8%)	11 (2.2%)	262 (37.0%)	447 (63.0%)
Hispanic	103 (54.8%)	85 (45.2%)	74 (98.7%)	1 (1.3%)	29 (25.7%)	84 (74.3%)
Other/Unk.	25 (61.0%)	16 (39.0%)	15 (100.0%)	0 (0.0%)	10 (38.5%)	16 (61.5%)
Total	**2,036 (63.6%)**	**1,163 (36.4%)**	**1,125 (97.9%)**	**24 (2.1%)**	**911 (44.4%)**	**1,139 (55.6%)**
Northwest Region						
White	55 (62.5%)	33 (37.5%)	24 (100.0%)	0 (0.0%)	31 (48.4%)	33 (51.6%)
Black	11 (73.3%)	4 (26.7%)	4 (100.0%)	0 (0.0%)	7 (63.6%)	4 (36.4%)
Hispanic	1 (33.3%)	2 (66.7%)	0 (N/A)	0 (N/A)	1 (33.3%)	2 (66.7%)
Other/Unk.	2 (100.0%)	0 (0.0%)	0 (N/A)	0 (N/A)	2 (100.0%)	0 (0.0%)
Total	**69 (63.9%)**	**39 (36.1%)**	**28 (100.0%)**	**0 (0.0%)**	**41 (51.3%)**	**39 (48.8%)**
North Central Region						
White	208 (66.2%)	106 (33.8%)	119 (99.2%)	1 (0.8%)	89 (45.9%)	105 (54.1%)
Black	68 (60.2%)	45 (39.8%)	37 (94.9%)	2 (5.1%)	31 (41.9%)	43 (58.1%)
Hispanic	15 (71.4%)	6 (28.6%)	8 (100.0%)	0 (0.0%)	7 (53.8%)	6 (46.2%)
Other/Unk.	2 (50.0%)	2 (50.0%)	1 (100.0%)	0 (0.0%)	1 (33.3%)	2 (66.7%)
Total	**293 (64.8%)**	**159 (35.2%)**	**165 (98.2%)**	**3 (1.8%)**	**128 (45.1%)**	**156 (54.9%)**
Southwest Region						
White	436 (64.6%)	239 (35.4%)	313 (98.4%)	5 (1.6%)	123 (34.5%)	234 (65.5%)
Black	52 (61.9%)	32 (38.1%)	41 (100.0%)	0 (0.0%)	11 (25.6%)	32 (74.4%)
Hispanic	18 (66.7%)	9 (33.3%)	15 (100.0%)	0 (0.0%)	3 (25.0%)	9 (75.0%)
Other/Unk.	4 (33.3%)	8 (66.7%)	2 (100.0%)	0 (0.0%)	2 (20.0%)	8 (80.0%)
Total	**510 (63.9%)**	**288 (36.1%)**	**371 (98.7%)**	**5 (1.3%)**	**139 (32.9%)**	**283 (67.1%)**
Southeast Region						
White	127 (58.3%)	91 (41.7%)	91 (92.9%)	7 (7.1%)	36 (30.0%)	84 (70.0%)
Black	54 (62.1%)	33 (37.9%)	43 (97.7%)	1 (2.3%)	11 (25.6%)	32 (74.4%)
Hispanic	4 (66.7%)	2 (33.3%)	2 (100.0%)	0 (0.0%)	2 (50.0%)	2 (50.0%)
Other/Unk.	1 (50.0%)	1 (50.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)
Total	**186 (59.4%)**	**127 (40.6%)**	**137 (94.5%)**	**8 (5.5%)**	**49 (29.2%)**	**119 (70.8%)**
Statewide (MO)****						
White	3,330 (59.3%)	2,283 (40.7%)	1,800 (97.9%)	38 (2.1%)	1,530 (40.5%)	2,245 (59.5%)
Black	2,674 (56.7%)	2,040 (43.3%)	1,733 (97.2%)	50 (2.8%)	941 (32.1%)	1,990 (67.9%)
Hispanic	205 (54.5%)	171 (45.5%)	141 (97.9%)	3 (2.1%)	64 (27.6%)	168 (72.4%)
Other/Unk.	64 (48.9%)	67 (51.1%)	33 (100.0%)	0 (0.0%)	31 (31.6%)	67 (68.4%)
Total	**6,273 (57.9%)**	**4,561 (42.1%)**	**3,707 (97.6%)**	**91 (2.4%)**	**2,566 (36.5%)**	**4,470 (63.5%)**

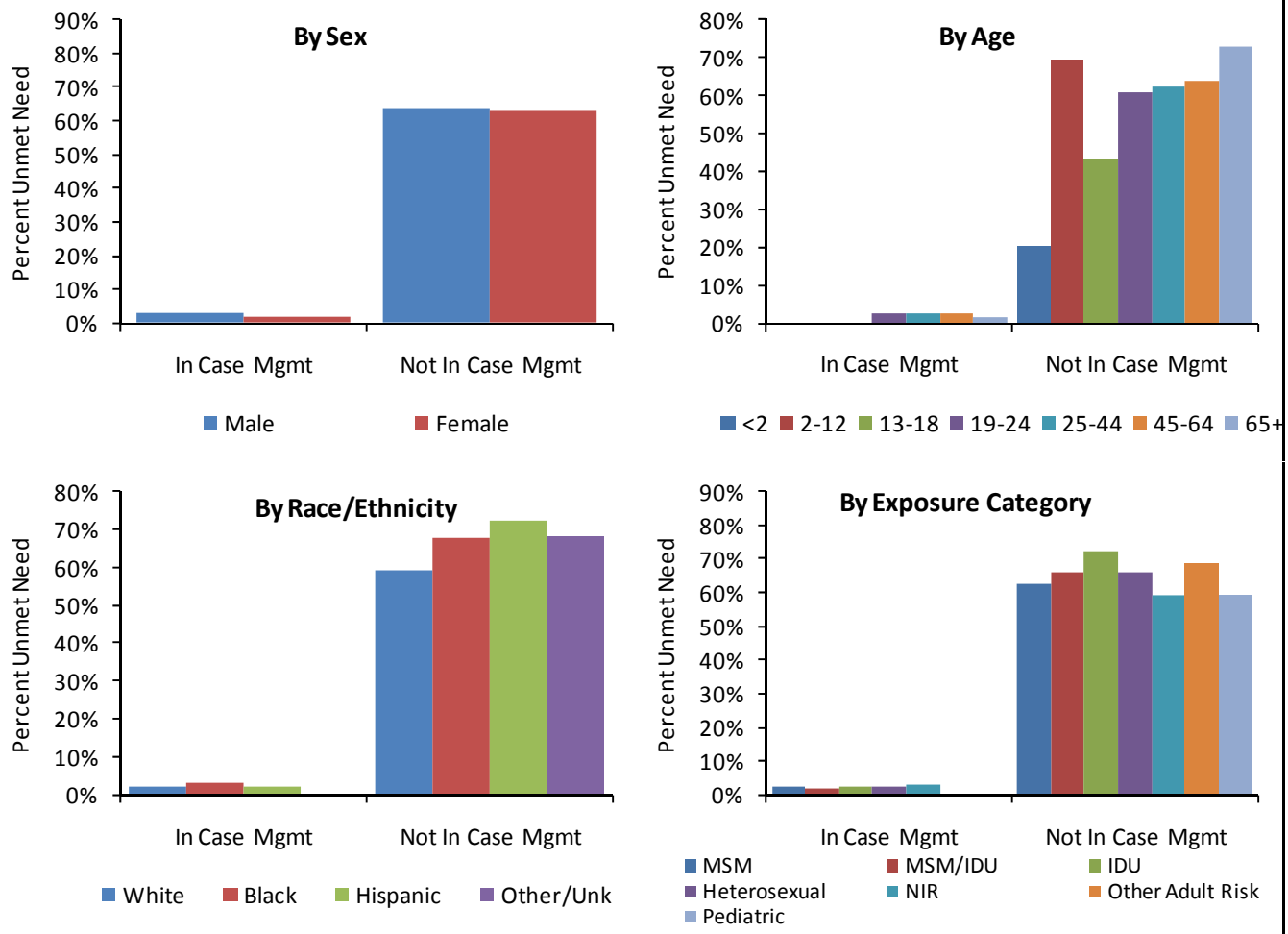
*Includes all individual still living whose most recent diagnosis (i.e., HIV or AIDS) occurred in the region. Does not reflect the number of individuals currently living in the region.
**Evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection 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 includes living individuals whose most recent diagnosis occurred in a correctional facility or is unknown.

Of the 10,834 persons living with HIV at the end of 2008, 58% had evidence of met primary care medical needs (i.e., met need) in 2008 (Table 29). 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 2008 that was reported to MDHSS. There were differences in the proportion of individuals with met needs depending on whether the individual was enrolled in HIV medical case management in 2008. A significantly greater proportion of those enrolled in HIV medical case management had a met need (98%) in 2008 compared to those not enrolled (37%). Several factors may contribute to the differences observed. First, case management assists clients to locate and access medical care by referral. Second, case management clients receive health education and counseling to understand the nature of routine medical care. Third, case management assists clients in identifying appropriate payer sources to fund routine medical care. Finally, it is possible that those not enrolled in case management were less likely to be currently living in Missouri, and therefore indicators of primary medical care would not be reported to MDHSS. The data were presented based on individuals whose most recent diagnosis occurred in Missouri, not those known to be currently living in Missouri, as accurate data on current residence is difficult to collect.

There were differences in the proportion of individuals with a met need by HIV region. It is important to note that data presented by HIV region represent those who currently have a met need that were most recently diagnosed with HIV or AIDS in the selected HIV 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 North Central HIV region (65%), and lowest in the St. Louis HIV region (52%). The pattern was slightly different between the regions depending on whether individuals were enrolled in HIV medical case management. Among those enrolled in HIV medical case management, the proportion with a met need ranged from 95% in the Southeast HIV region to 100% in the Northwest HIV region. For those not enrolled in HIV medical case management, the proportion with a met need ranged from 29% in the Southeast HIV region to 51% in the Northwest HIV region.

There were differences in the proportion of persons with a met need by race/ethnicity. Overall statewide, met need was greatest among whites (60%), followed by blacks (57%), Hispanics (55%), and then those of another race or unknown race (49%). Within each region and depending on whether the individuals were enrolled in HIV medical case management, the patterns by race/ethnicity varied slightly. For example, in the St. Louis HIV region overall, the proportion of individuals with a met need was approximately the same for whites (52%) and blacks (53%). However, in the St. Louis HIV region among those not enrolled in case management, the proportion of those with a met need was greater for whites (34%) than blacks (27%).

Figure 38. Percent of individuals living with HIV having an unmet* primary medical care need in 2008 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 38 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 not 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 persons greater than 65 or more years of age (73%) and persons currently 2 to 12 years of age (70%). Children less than 2 years of age and those currently 13-18 years of age had the lowest proportion of unmet need. There were not differences in the proportion of individuals with unmet needs by current age among those enrolled in case management. There were differences in the proportion of individuals with unmet needs by race/ethnicity among those not enrolled in case management, but were not differences among those enrolled in case management. Among those not enrolled in case management, unmet need was greatest among Hispanics (72%) and lowest among whites (59%). There were differences in the proportion of individuals with unmet need by exposure category among those not in case management, but were not differences among those enrolled in case management. For individuals not enrolled in case management, unmet need was greatest among IDU (72%) and lowest among pediatric cases (59%), and those with no indicated risk (NIR) (59%). The lower proportion of unmet need among those with no indicated risk may be related to the fact that these cases were more recently diagnosed. It is recommended that new diagnoses have a CD4 lymphocyte and viral load test completed, which indicates a met need, but those newly diagnosed may not feel comfortable reporting risk information to their new provider, or medical providers may not have had as many opportunities to obtain this information.

Table 30 examines the proportion of cases reported with unmet need based on current status (i.e., HIV or AIDS) and selected characteristics. Overall, the proportion of those with an unmet need was greater for those classified as HIV cases compared to AIDS cases. The same trend was observed regardless of whether individuals were enrolled in HIV medical case management. Unmet need was greater for males than females regardless of current status and whether enrolled in case management.

Table 30. Percent of individuals living with HIV having an unmet* primary medical care need in 2008 by current status, enrollment in HIV case management, and selected characteristics**

	Total Population		Enrolled in Case Management		Not Enrolled in Case Management	
	HIV Cases with Unmet Need* % (N)	AIDS Cases with Unmet Need* % (N)	HIV Cases with Unmet Need* % (N)	AIDS Cases with Unmet Need* % (N)	HIV Cases with Unmet Need* % (N)	AIDS Cases with Unmet Need* % (N)
Sex						
Male	54.8% (2,246)	34.4% (1,702)	3.9% (40)	1.9% (36)	71.7% (2,206)	55.3% (1,666)
Female	42.0% (389)	25.9% (224)	3.1% (12)	0.7% (3)	70.5% (377)	53.5% (221)
Race/Ethnicity						
White	49.4% (1,248)	33.5% (1,035)	3.2% (22)	1.4% (16)	66.4% (1,226)	52.8% (1,019)
Black	55.2% (1,236)	32.5% (804)	4.2% (28)	2.0% (22)	76.6% (1,208)	57.7% (782)
Hispanic	54.6% (100)	36.8% (71)	3.6% (2)	1.1% (1)	77.2% (98)	66.7% (70)
Other/Unknown	66.2% (51)	29.6% (16)	0.0% (0)	0.0% (0)	81.0% (51)	45.7% (16)
Current Age‡						
<2	20.0% (1)	-- (0)	-- (0)	-- (0)	20.0% (1)	-- (0)
2-12	50.0% (15)	33.3% (1)	0.0% (0)	0.0% (0)	71.4% (15)	50.0% (1)
13-18	22.7% (10)	15.8% (3)	0.0% (0)	0.0% (0)	45.5% (10)	37.5% (3)
19-24	41.3% (128)	9.0% (8)	3.8% (5)	0.0% (0)	68.7% (123)	22.2% (8)
25-44	51.0% (1,355)	29.2% (727)	4.2% (33)	1.3% (15)	70.4% (1,322)	51.9% (712)
45-64	55.8% (1,031)	35.9% (1,072)	3.1% (14)	2.0% (23)	73.2% (1,017)	57.1% (1,049)
65+	71.4% (95)	52.5% (115)	0.0% (0)	2.0% (1)	80.5% (95)	67.5% (114)
Exposure Category						
Men who have sex with men	53.7% (1,506)	33.6% (1,191)	4.0% (29)	1.7% (24)	71.1% (1,477)	54.7% (1,167)
Men who have sex with men and inject drugs	46.1% (101)	37.3% (152)	3.4% (3)	1.2% (2)	74.2% (98)	62.0% (150)
Injecting drug use	57.6% (160)	40.4% (176)	4.4% (3)	1.6% (3)	74.8% (157)	70.3% (173)
Heterosexual contact	49.7% (362)	29.6% (229)	3.0% (8)	1.4% (5)	77.1% (354)	54.4% (224)
No indicated risk (NIR)	51.0% (468)	25.7% (146)	3.8% (9)	2.2% (5)	67.7% (459)	41.8% (141)
Other Adult Risk	63.6% (14)	49.0% (24)	0.0% (0)	0.0% (0)	82.4% (14)	63.2% (24)
Pediatric	42.9% (24)	26.7% (8)	0.0% (0)	0.0% (0)	63.2% (24)	50.0% (8)
Total	**52.4% (2,635)**	**33.2% (1,926)**	**3.7% (52)**	**1.6% (39)**	**71.5% (2,583)**	**55.1% (1,887)**

*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. AIDS case.
‡Based on age as of December 31, 2008.
Note: Rows with the percent marked '- -' indicates that there were no living persons in the selected category.

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Glossary

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

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

Case definition for AIDS
All HIV-infected people who have fewer than 200 $CD4^+$ T cells per cubic millimeter of blood (healthy adults usually have 800 to 1,200, with 1,000 the average). In addition, the definition includes 26 clinical conditions that affect people with advanced HIV disease. Most of these conditions are opportunistic infections that generally do not affect healthy people.

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

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

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

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

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

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

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

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

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

Modes of transmission
Also referred to as **exposure categories**, this term refers to the way in which an individual acquired the HIV virus. The most common modes of transmission are: men who have sex with men (MSM), heterosexual contact,

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

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

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

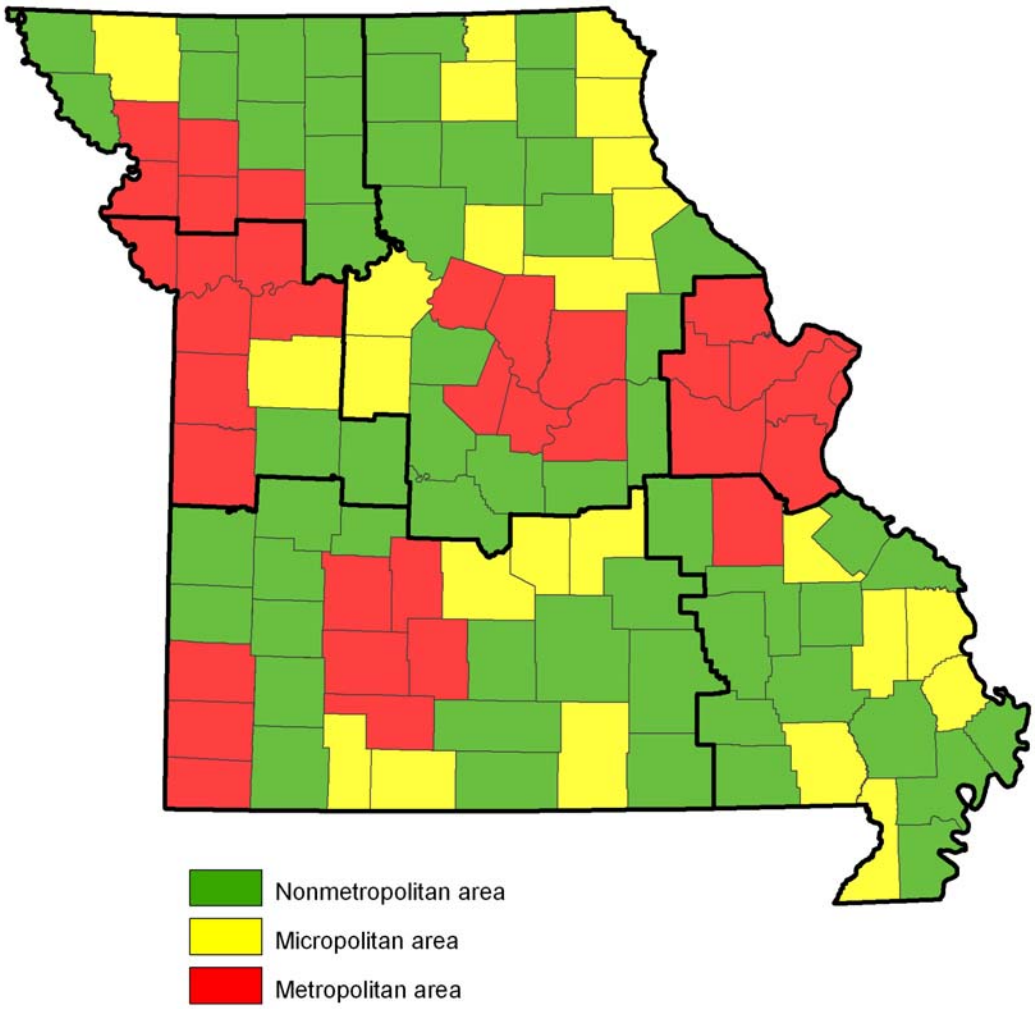
Sexually Transmitted Infections
Sexually transmitted infections (STIs), commonly called **sexually transmitted diseases (STDs)** and once called venereal diseases, are among the most common infectious diseases in the United States today. They are a group of infections that are predominantly transmitted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

Sexually Transmitted Infections and the Organisms Responsible

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

Appendix

Metropolitan, micropolitan, and nonmetropolitan areas by county



Source: Missouri Census Data Center, MABLE/Geocorr2K. 2006 Metropolitan Divisions.