

# State of Mississippi

## 2010 STD/HIV Epidemiologic Profile

**Mississippi State Department of Health, STD/HIV Office**

**[www.healthymss.com/std](http://www.healthymss.com/std)**

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## Executive Summary

At the end of 2010, there were people living with HIV disease in every county in Mississippi, with numbers increasing each year. The total number of people living with HIV disease at the end of 2010 was 9,292 of which forty seven percent (47%) were living with AIDS. The decline in deaths due to HIV disease over the last five years can be attributed to the advent of highly active antiretroviral therapy (HAART) in 1996.

HIV disease is distributed disproportionately in Mississippi. Most new HIV disease cases were diagnosed in the West Central Public Health District (District V), the home of metropolitan Jackson, where thirty nine percent (39%) of all persons currently living with HIV disease in Mississippi resided. In 2010, the prevalence of HIV disease in District V was 565.8 per 100,000 persons. The Delta-Hills Public Health District (District III) had the second highest prevalence rate (443.9 per 100,000 persons) followed by the Coastal Plains Public Health District (District IX) with a prevalence of 278.1 per 100,000 persons.

African Americans continue to be disproportionately affected by HIV disease. Although African Americans comprise thirty eight percent (38%) of Mississippi's population, they accounted for more than three-fourths, or 78% of all newly diagnosed cases in 2010. The HIV disease diagnoses rate of African Americans in 2010 was nearly eight times that of Whites. Since 2007, the proportion of HIV disease diagnosis among women in Mississippi has steadily decreased, and in 2010, women represented twenty-four percent (23.9%) of newly diagnosed HIV disease cases. There has been significant reduction of HIV infection among infants due to effective treatment of pregnant women who are infected with HIV to prevent paternal transmission. This significant advancement in HIV prevention effort is attributed to advances and effectiveness of HIV/AIDS treatment and therapies, as well as, statewide perinatal case management.

Forty-five percent (44.6%) of males and females reported No Identified Risk (NIR) as their mode of exposure. Forty one percent (41.2%) reported male to male sexual activity and eight percent (7.6%) reported heterosexual contact. Individuals between the ages of 15 and 29 have been hardest hit by HIV. Since 2006, 15-29 year olds were the only age group to see an increase in the number of cases reported (a 24% increase). This increase is attributed to African American men who have sex with men (MSM). In 2010, sixty-eight percent (67.8%) of 15-29 year olds diagnosed with HIV reported MSM as their risk factor.

Data from the Behavioral Risk Factor Surveillance System (BRFSS) conducted in 2010 suggested that, in Mississippi, nearly half of the population that was surveyed (44.4%) reported never having a blood test for HIV. Among Mississippi high school students that were surveyed in the Youth Risk Behavior Factor Surveillance System (YRBS), more than half (61%) have had sexual intercourse while 13% had sexual intercourse for the first time before the age of 13.

Counseling and testing are essential and important components of HIV/AIDS prevention. Testing data collected in 2010 by the Mississippi State Department of Health Laboratory suggests that the majority of persons tested for HIV/AIDS were African Americans (68%)

followed by Whites at 27%. Sixty- seven percent (67%) of individuals tested were female and 50% of females were between the ages of 15-24.

### **STD/HIV Office Structure**

Acquired Immunodeficiency Syndrome (AIDS) has been reportable in Mississippi since 1983 and Human Immunodeficiency Virus (HIV) since 1988. In 1995, the Division of Sexually Transmitted Disease (STD)/Human Immunodeficiency Virus (HIV) was formed by the merger of two separate programs. The Division’s primary mission is to reduce the number of newly diagnosed STDs including HIV infection and AIDS in Mississippi. The division consists of three branches: Surveillance, Prevention and Education, and Care and Services.

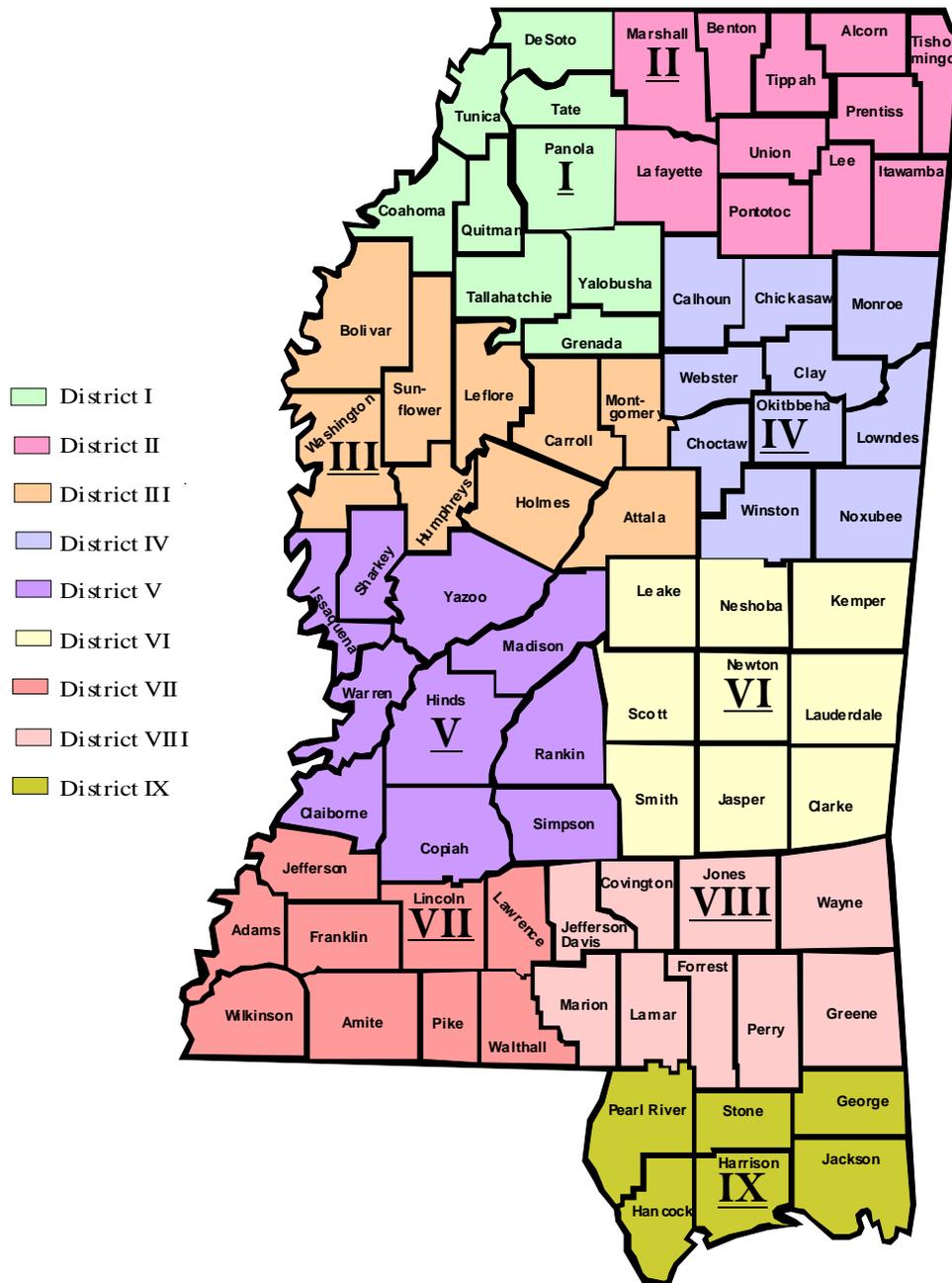
The STD/HIV Office is located within the Mississippi State Department of Health (MSDH) Office of Communicable Diseases (OCD) as the STD/HIV Office. The vision of the Office is to be “leader among southern states to implement evidence-based practices in STD/HIV surveillance, prevention and treatment; and be a role model for the delivery of fair and equitable partner services and the evaluation of STD/HIV prevention and treatment strategies to acquire public trust and respect.” To accomplish this, the Office creates an empowered organization focusing energies in an integrated and cooperative effort.

The Surveillance Branch provides ongoing systematic collection, analysis, evaluation and dissemination of data describing STDs and HIV disease. The Education Branch is responsible for planning, implementing and evaluating interventions designed to reach high priority target populations. The Evaluation Branch manages federal funding provided for Community-Based Organizations (CBOs) throughout the state. The STD/HIV Office manages funds received through provision of Part B of the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act. Federal funds are used to provide life-sustaining therapies for people living with HIV disease.

The Office consists of the Organizational Management Team, Surveillance Branch, Education Branch, Policy Branch, District Services, Epidemiology and Research Branch, and Ryan White Part B Program HIV Care and Services.

## Geographic guide to Mississippi Public Health Districts

### Mississippi State Department of Health Public Health Districts



## Mississippi Demographics

### Mississippi's Population

According to 2010 Census data estimates, Mississippi's population was 2,967,297. Mississippi has 82 counties and is divided into 9 public health districts. In 2010, the population ranged from 1,406 in Issaquena County to 245,285 in Hinds County. Mississippi is considered rural, with approximately 55% of its population residing in rural areas.<sup>1</sup> There are five counties with population sizes greater than 100,000; Jackson, Rankin, DeSoto, Harrison, and Hinds Counties. Table 1 below shows that District VII has the smallest population and District V has the largest population in the state.

**Table 1: Distribution of Population by Public Health District, Mississippi-2010**

Public Health District	2010 Population Estimate
District I	319,959
District II	360,784
District III	216,708
District IV	246,970
District V	631,821
District VI	244,467
District VII	174,795
District VIII	304,893
District IX	466,900
Statewide	2,967,297

### Race

In 2010, the racial and ethnic composition of the state was estimated to be 59.1% white, 37% African-American, 0.9% Asian, and 0.5% American Indian or Alaska Native. Hispanic or Latinos of any race represented 2.7% of the population.

### Age and Gender

In 2010, the median age of Mississippi residents was 36 years. Individuals under the age of 18 represented 25.5% of the population and 12.8% of the population was 65 years or older. There were more females than males in 2010, (51.4% compared to 48.5%).

### Poverty, Income, and Education

Mississippi has the highest percentage of residents living in poverty nationwide<sup>2</sup>. Statewide, 22.4% of Mississippians lived below the poverty level in 2010 compared to 15.3% nationwide; 17.8% of families in Mississippi lived below the poverty level compared to 11.7% of families nationwide.<sup>3</sup> The median household income was \$36,851 and the median family income was \$45,484. Of the residents aged 25 and older, 81% graduated high school or higher, 22.5%

completed some college, and 27.8% obtained an associate's degree or higher.<sup>4</sup> Similar to the nation, Mississippi's unemployment rate rose significantly during 2008 and early 2010. Since then, unemployment in the state has begun to decrease, with the December 2010 rate at 10.2%.<sup>5</sup>

### **Health Insurance**

In 2008-2009, only 42% of residents had insurance through their employers, lower than the national average of 49%. More Mississippians are on Medicaid, compared to other states, with 22% receiving Medicaid benefits. The national average is 16%. Mississippi is similar to the national average of Medicare coverage (13% of Mississippians compared to the national average of 12%).

When compared to children from other states, Mississippi's children are less likely to have coverage through an employer and have higher proportions that are uninsured or receive coverage from Medicaid. Forty-four percent of children ages 0-18 receive benefits through Medicaid, compared to 33% nationally and 12% were uninsured, compared to 10% nationally.<sup>6</sup>

### **Health Indicators**

In 2010, United Health Foundation's America's Health Rankings report, Mississippi ranked 50<sup>th</sup> in overall health. Mississippi was among the bottom five states in 11 of the 22 measures. Some of Mississippi's challenges include high prevalence of obesity, high percentage of children who live in poverty, high rate of preventable hospitalizations, and high infant mortality rates.<sup>7</sup>

## **Introduction to STDs and HIV in Mississippi**

### **HIV Surveillance in Mississippi**

The Surveillance Branch provides ongoing systematic collection and evaluation of data describing STDs and HIV disease. HIV is a class 1 reportable disease requiring any provider, including laboratories and insurance companies, to report confirmed cases of HIV within 24 hours of confirmation. All providers are required to report all confirmed HIV positive tests, persons with an AIDS defining illness, or anyone suspected of having an HIV infection to the MSDH STD/HIV Surveillance Branch. Information about potential new cases comes from a variety of sources including hospitals, physicians in non-hospital based practices, public and private clinics, laboratories, routine matching to other registries (e.g. TB registry, death certificates), and active surveillance. The reports are received by phone calls only. MSDH staff is required to make initial contact with HIV positive individuals within 7 days of receipt of information to offer post test counseling, conduct risk ascertainment, offer partner services, and initiate linkage to care. In conjunction with post test counseling during the first session, the client is asked to provide a second specimen for HIV testing for additional confirmation by the Mississippi Public Health Laboratory and Serologic Testing Algorithm for Recent Seroconversion (STARHS).

### **Indirect Indicators of HIV/AIDS Infection Risk**

People at greatest risk of HIV infection are generally people who engage in high-risk behaviors and live in communities where HIV prevalence is high. This section examines the trends and characteristics of populations which engage in high-risk behaviors that make them vulnerable to HIV infection.

### **Youth Risk Behaviors**

Studies show that alcohol and drug use are directly related to earlier initiation of sex and an increase in risky sexual behaviors, such as having unprotected sex. The combination of alcohol, sex, and drugs increases the chances of unintended pregnancies and exposures to sexually transmitted diseases.

#### *Alcohol and Drug Use*

According to the Youth Risk Behavior Surveillance System (YRBS), in 2009, 70% of Mississippi high school students had at least one alcoholic drink. Thirty-five (35%) have used marijuana, 5.3% have used ecstasy, and 2.8% have used methamphetamines. Eighteen percent (18%) were offered, sold, or given an illegal drug by someone on school property, during the 12 months before the survey.

#### *Sexual Behaviors That Result in HIV Infection, Other Sexually Transmitted Diseases, and Unintended Pregnancies:*

Among Mississippi high school students that were surveyed, more than half (61%) have had sexual intercourse and 13% had sexual intercourse for the first time before the age of 13. Almost one-quarter (24%) of the students had sex with four or more people during their lifetime. Nearly half (45%) of students had sexual intercourse with at least one person during the three months prior to the survey. Before the last sexual intercourse, nearly one in five (19%) of high school

students drank alcohol or used drugs and 82% of high school students did not use birth control pills or Depo-Provera to prevent pregnancy. In addition, one in three students (34%) did not use a condom during the last sexual intercourse. Among the respondents, 83% were taught about HIV or AIDS infection in school.

### **Teen Pregnancy and Birth**

Increases in teen pregnancy and birth rates do not directly indicate an increase in HIV infection rates; rather, they suggest an increase in unprotected sex. Teen pregnancy and birth are significant contributors to negative social outcomes in teen mothers and their children. Only about half (50%) of teen mothers receive a high school diploma by age 22, compared to nearly 90% of women who had not given birth during adolescence.<sup>8</sup> Children born to teenage mothers are more likely to have lower school achievement and drop out of high school, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult.<sup>9</sup>

In 2009, Mississippi's teen pregnancy rate ranked 1<sup>st</sup> in the nation among 15-19 year olds, with a rate of 73 per 1,000 females. Though the rate declined to 62.7 per 1,000 females between the ages of 15-19 in 2010, it remains above the national average. Teenage pregnancy rates among 15—19 year olds varied by public health district, ranging from 52.8 in District IV to 87.6 in District III in 2010. The counties with the highest teenage pregnancy rates per 1,000 among 15-19 year olds include Tunica (125.7), Quitman (116.8), and Yazoo County (58.1).<sup>10</sup>

Mississippi also had the highest teen birth rate among 15-19 year olds in 2009, with a rate of 64.1 per 1,000. However, the teen birth rate declined in 2010 to 55 per 1,000 females. By public health district, teen birth rates among 15-19 year old ranged from a high of 76.6 in District III to a low of 44.4 in District IV.<sup>10</sup>

### **Sex Education in Mississippi**

Previously, state laws did not require Mississippi to teach sex education in public schools; however, schools that opt to teach sex education were required to teach an abstinence only until marriage curriculum. The curriculum teaches abstinence until marriage as the best way to prevent unplanned pregnancies and sexually transmitted diseases. Considering the high rates of teenage pregnancies and sexually transmitted diseases that remain in Mississippi, evidence suggests that abstinence only until marriage programs are ineffective and that a more comprehensive approach to sex education provides young people with medically sound information to make informed decisions related to sex.<sup>11</sup>

As of February 2011, House Bill 999 requires each local school board to adopt a sex education policy by June 30, 2012, in which either an abstinence-only or an abstinence-plus curriculum

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will be implemented.<sup>12</sup> The Mississippi State University's Social Science Research Center surveyed parents and/or guardians of children attending Mississippi public schools to assess their attitudes and beliefs on implementing sex education in the schools. As a result, most parents (92%) are for sex education in Mississippi schools at an age appropriate grade level. The majority of parents (61%) believe that sex education classes should begin when children are in the 5<sup>th</sup> -7<sup>th</sup> grades and boys and girls should be separated during these classes. However, according to 61% of parents, parental permission should be required for a student to attend sex education classes. The topics parents strongly support to be included in the curriculum are discussions and teachings on the transmission and prevention of HIV, AIDS, and STDs and teaching what to do if someone is raped or sexually assaulted. Other topics include: how to deal with peer pressure to have sex, benefits of abstinence until marriage, date rape, and how to talk with a boyfriend or girlfriend about not having sex.

### **Adult Risk Behaviors**

Based on CDC recommendations, persons with high risk behaviors that increase their chances of acquiring HIV should be tested for HIV at least once a year.<sup>13</sup> High risk behaviors include: having unprotected sex with men who have sex with men, multiple partners, and/or anonymous partners; injecting drugs or steroids with used injection equipment; having sex in exchange for money or drugs; and being diagnosed with or treated for hepatitis, tuberculosis, or a sexually transmitted disease.

The 2010 Behavioral Risk Factor Surveillance Survey asked respondents if they have ever been tested for HIV and whether they had participated in high risk behaviors. As a result, more than half (55.6 %) of respondents between the ages of 18 and 64 reported that they had never been tested. More Whites (63.1 %) reported never being tested than blacks (44.7%). Among white respondents, 66.9 % of males and 59.4% of females had never been tested. For blacks, nearly half (47.9%) of males and 41.8% of females had never been tested. When asked about high risk behaviors, black respondents were more likely to engage in high risk behaviors than Whites (8.4 percent compared to 2.8 percent). The rate of high risk behaviors was higher among black males (9.6 %), followed by black females (7.3 %), white males (3.4%), and then white females (2.3 %).

### **Other Indirect Indicators**

#### **Sexually Transmitted Diseases**

Individuals who are infected with STDs are at least two to five times more likely than uninfected individuals to acquire HIV infection if they are exposed to the virus through sexual contact. In addition, if an HIV-infected individual is also infected with another STD, that person is more likely to transmit HIV through sexual contact than other HIV-infected persons.<sup>14</sup>

## **Chlamydia**

### **Clinical Features**

A sexually transmitted bacterial infection causing urethritis in males and cervicitis in females. Urethritis in men presents as scant to moderate mucopurulent urethral discharge, urethral itching, and dysuria. Cervicitis presents as a mucopurulent endocervical discharge, often with endocervical bleeding. The most significant complications in women are pelvic inflammatory disease and chronic infections, both of which increase the risk of ectopic pregnancy and infertility. Perinatal transmission of chlamydia occurs when an infant is exposed to the infected cervix during birth resulting in chlamydial pneumonia or conjunctivitis. Asymptomatic infection may be found in 1%-25% of sexually active men. Up to 70% of sexually active women with chlamydial infections may also be asymptomatic.

### **Infectious Agent**

*Chlamydia trachomatis*, an obligate intracellular bacteria. Immunotypes D through K have been identified in 35-50% of nongonococcal urethritis.

### **Reservoir**

Humans.

### **Transmission**

Transmitted primarily through sexual contact.

### **Incubation**

Incubation period is poorly defined, ranging from 7 to 14 days or longer.

### **Period of Communicability**

Unknown.

### **Methods of Control**

Prevention and control of chlamydia are based on behavior change, effective treatment, and mechanical barriers. Condoms and diaphragms provide some degree of protection from transmission or acquisition of chlamydia. Effective treatment of the infected patient and their partners, from 60 days prior to the onset of symptoms, is recommended.

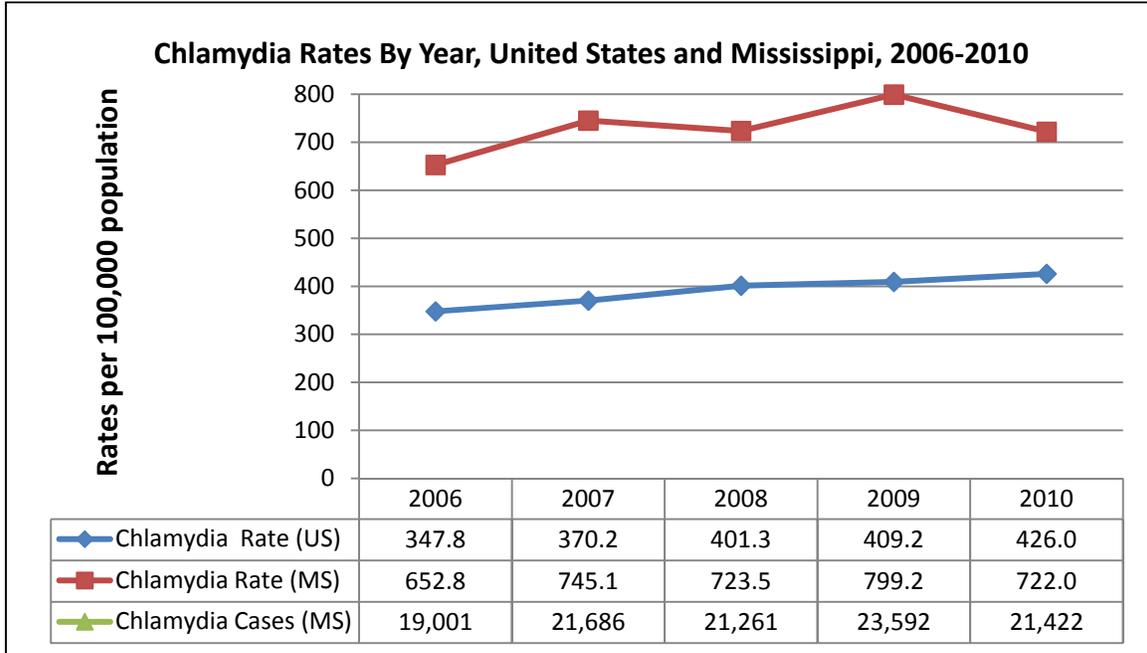
### **Reporting Classification**

Class 2.

### **Epidemiology**

Nationally and in Mississippi, chlamydia is the most frequently reported bacterial STD. Since 2006, the case rate in Mississippi has been higher than the US case rate (Figure 1). From 2007 to 2009, Mississippi ranked 1<sup>st</sup> in the nation in chlamydia case rates, but moved to 2<sup>nd</sup> in the nation in 2010. From 2006 to 2010, the number of chlamydia cases increased 12.7% (from 19,001 to 21,422) and the rate of chlamydia infections increased from 652.8 to 722 per 100,000 (Figure 1). However, from 2009 to 2010, the number of reported chlamydia cases decreased by 9.6% (from 23,592 to 21,422).

**Figure 1**

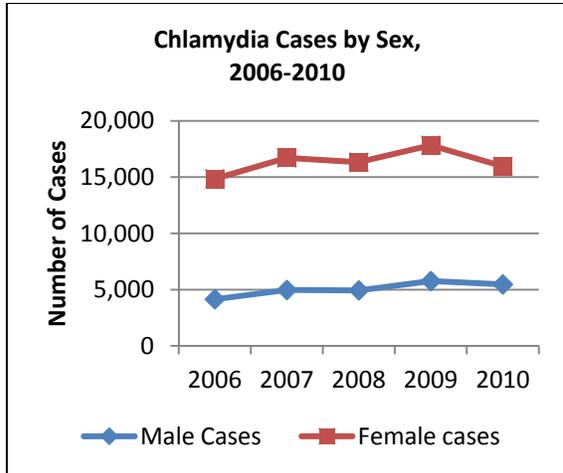


Note: The number of cases represents the number of people infected with chlamydia; whereas the rate represents the number of people infected with chlamydia per 100,000 population in Mississippi. For example, the number of people infected with chlamydia in 2010 was 21,422, which represents the number of chlamydia infections. In 2010, the case rate was 722. This means for every 100,000 people living in Mississippi, 722 were infected with chlamydia. Unless specified, case rates in this document represent the number of cases per 100,000 population.

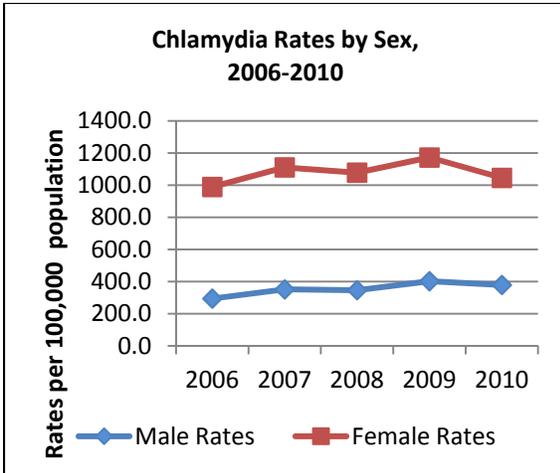
**By Sex**

Between 2006- 2010, the number of male and female chlamydia cases increased by 31.6% and 7.4%, respectively. For the past 5 years, females have had a higher number of reported chlamydia cases and rates than males. This may be attributed to chlamydia screenings that target females, specifically in family planning and prenatal clinics. In 2006, the rate of chlamydia infections for females was 3.3 times the rate for males, and in 2010, the rate slightly reduced to 2.75 the rate of males. Despite the increases in chlamydia over time, chlamydia cases and rates declined in both sexes from 2009 to 2010 (Figures 2 and 3).

**Figure 2**



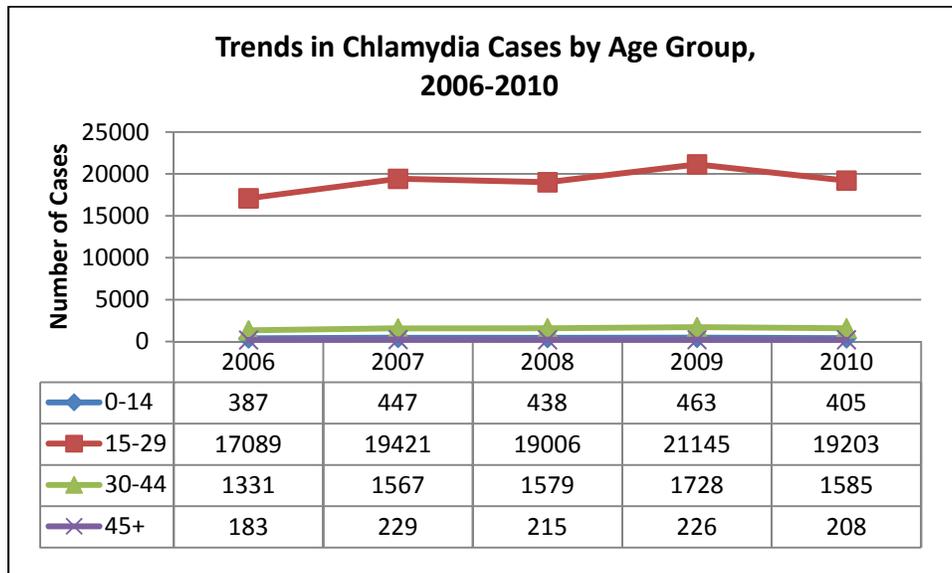
**Figure 3**



**By Age Group**

Figure 4 shows that each year, chlamydia cases have been stable in all age groups, except for in 15-29 year olds, in which the number of cases have varied over time. Chlamydia has predominantly been reported among persons 15-29 years of age, followed by persons 30-44 years of age. From 2006 -2010, there was an increase in chlamydia cases for all age groups. However, there was a decline in the number of reported chlamydia cases in each age group from 2009 to 2010.

**Figure 4**

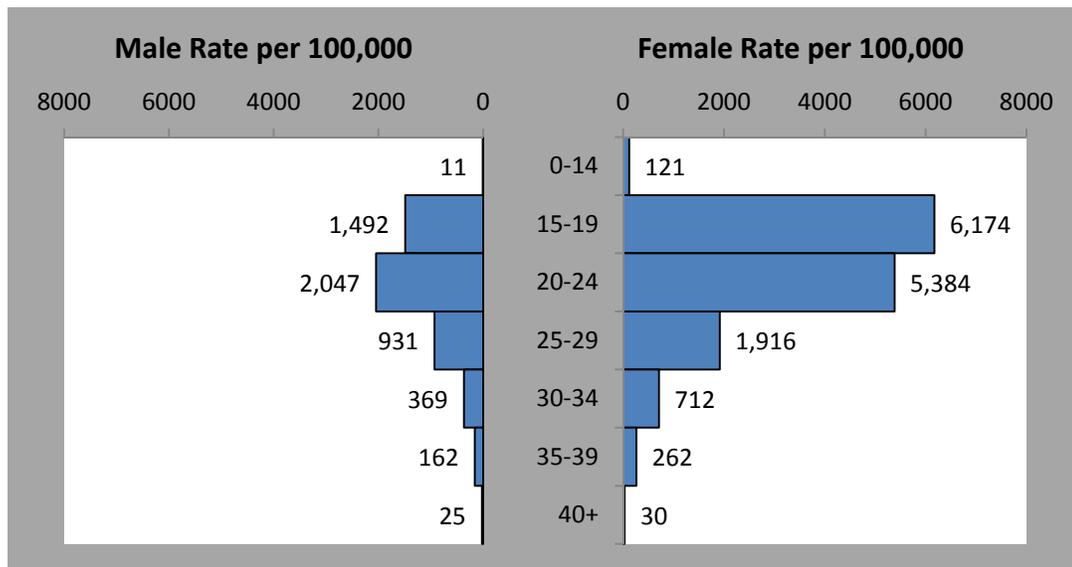


### By Age and Sex

In every age group, females had a higher rate of chlamydia infections than males. In 2010, females aged 15-19 and 20-24 had the highest rates of chlamydia (6,174 and 5,384, respectively). Likewise, these age groups accounted for the highest rates of chlamydia in males (1,492 and 2,047). The rate of chlamydia infection in women aged 15-19 was 4 times that of men in the same age group (6,174 vs.1,492). For females, the lowest chlamydia rates were among persons aged 40 and above followed by those aged 0-14. The lowest rates for males were among persons aged 0-14 followed by persons aged 40 and above (Figure 5).

**Figure 5**

**Chlamydia Rate by Age and Sex, 2010**



### By Race/Ethnicity

Since 2006, trends in chlamydia cases have varied among African Americans but remained stable among Whites (Figures 6 and 7). Chlamydia infections reflect severe disparities, as African Americans have consistently been impacted the most. By the end of 2010, African Americans represented 66% of chlamydia infections, compared to 12% of Whites and 1% of Hispanics (Appendix C). In 2010, rates for African Americans were 9 times higher than Whites (1278 vs. 144) and 4 times higher than Hispanics (1278 vs. 320). Although Whites had a higher percentage of chlamydia infections than Hispanics; Hispanics had a higher case rate (320 vs. 144). Additional details concerning chlamydia by race in 2010 can be found in Appendix C.

Figure 6

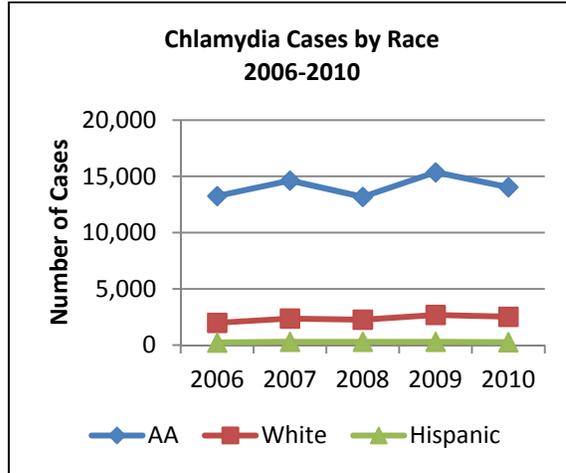
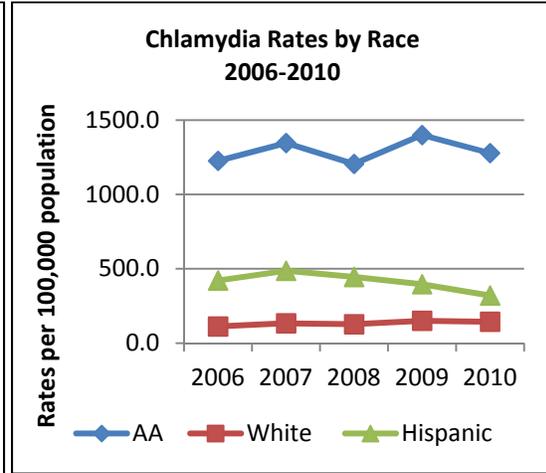


Figure 7



In 2010, chlamydia was reported in every county within the state (Map 1). The five counties with the highest number of chlamydia cases were Hinds County (2,916), Harrison County (1,096), Forrest County (852), Washington County (768), and De Soto county (749). The five counties with the lowest number of chlamydia cases were Issaquena County (11), Benton County (23), Tishomingo County (33), Choctaw County (35), and Webster County (38).



## **Gonorrhea**

### **Clinical Features**

A bacterial infection associated primarily with infection of the urogenital tract producing symptoms of discharge and dysuria. Other less common sites of infection include: pharynx, rectum, conjunctiva, and blood.

Complications associated with gonorrhea infection in men include epididymitis, penile lymphangitis, penile edema, and urethral strictures. The primary complication associated with gonorrhea infection in women is pelvic inflammatory disease, which produces symptoms of lower abdominal pain, cervical discharge, and cervical motion pain. Asymptomatic infections do occur. Pregnant women infected with gonorrhea may transmit the infection to their infants during a vaginal delivery. Infected infants can develop conjunctivitis leading to blindness if not rapidly and adequately treated. Septicemia can also occur in infected infants.

### **Infectious Agent**

*Neisseria gonorrhoeae*, an intracellular gram-negative diplococcus.

### **Reservoir**

Humans.

### **Transmission**

Gonorrhea is transmitted primarily by sexual contact, but transmission from the infected cervix to an infant during birth occurs.

### **Incubation**

In men, the incubation period is primarily 2-5 days, but may be 10 days or longer. In women, it is more unpredictable, but most develop symptoms less than 10 days after exposure.

### **Period of Communicability**

In untreated individuals, communicability can last for months; but if an effective treatment is provided communicability ends within hours.

### **Methods of Control**

Prevention and control of gonorrhea are based on education, effective treatment, and mechanical barriers. Condoms and diaphragms provide some degree of protection from transmission or acquisition of gonorrhea. Effective treatment of the infected patient and their partners from 60 days prior to the onset of symptoms is recommended.

### **Reporting Classification**

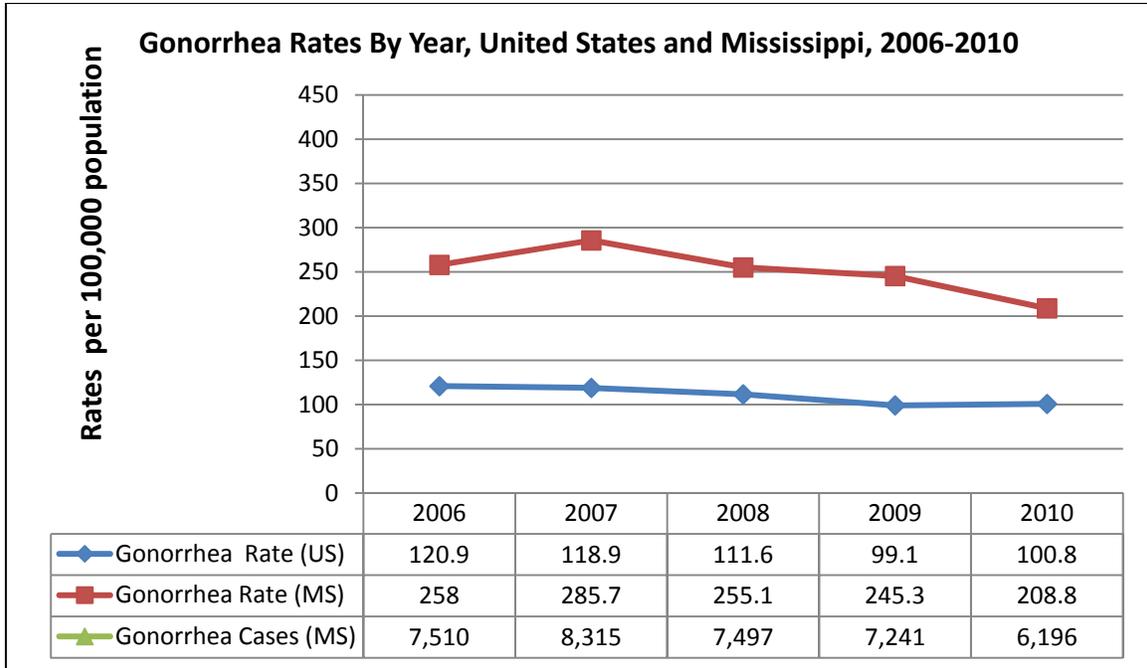
Class 2.

### **Epidemiology and Trends**

Nationally and in Mississippi, gonorrhea is the second most commonly reportable notifiable disease. In 2010, Mississippi led the nation in gonorrhea case rates, with a rate of 209. There was an increase in the number and rates of gonorrhea infections between 2006 and 2007, but since then, the numbers and rates have declined. From 2006 to 2010, the number of gonorrhea

infections decreased by 17.4% (from 7,510 to 6,196) and the rate of infection decreased from 258 to 209. Refer to Figure 8 below.

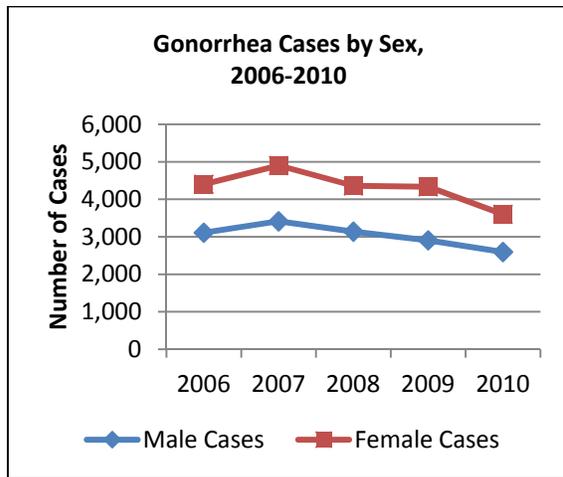
**Figure 8**



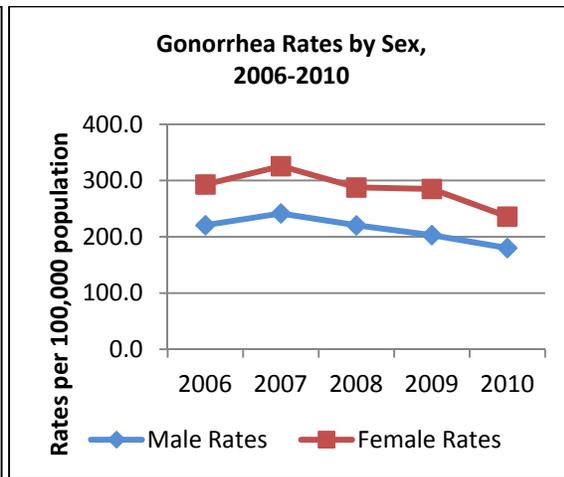
**By Sex**

Below, Figures 9 and 10 show the trends in gonorrhea cases and rates by gender from 2006-2010. The trend for gonorrhea infections and rates in both males and females increased from 2006 to 2007, but since that time, decreases have been observed. From 2006 to 2010, female gonorrhea infections decreased by 18% (from 4,400 to 3,601) and male gonorrhea infections decreased by 16.5% (from 3,110 to 2,595). Each year, more gonorrhea infections occurred among females than males. For the past five years, the differences in gonorrhea case rates between males and females has been consistent, as the rate of infection among females has been 1.3 times higher than that of males. In 2010, female gonorrhea infections were 58% compared to 42% for males (Appendix C).

**Figure 9**



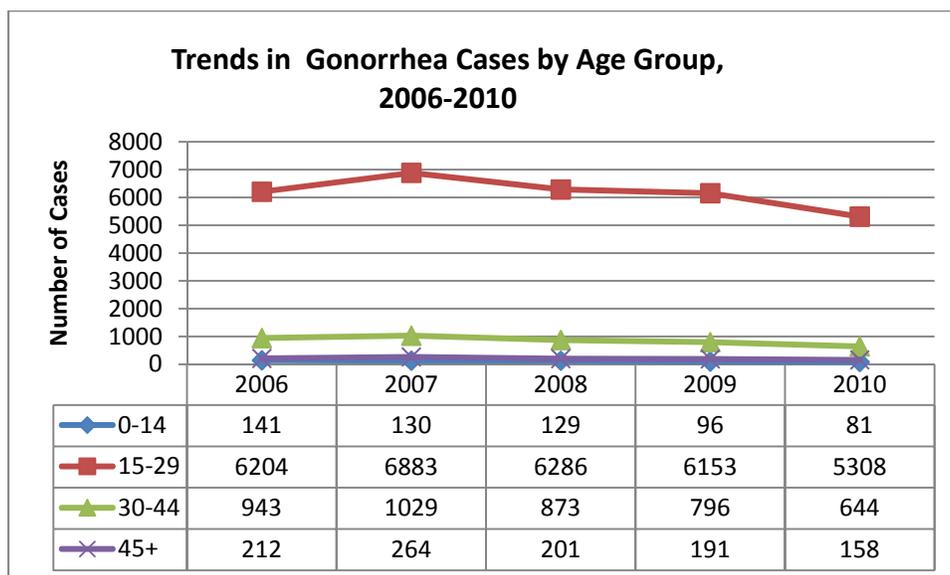
**Figure 10**



**By Age Group**

Though there was a decrease in gonorrhea infections for all age groups over the past 5 years, gonorrhea infections have remained relatively stable in each age group. Since 2006, gonorrhea has predominantly been found in persons aged 15-29 (Figure 11). During this time period, the decrease was higher among persons 0-14 years of age (43%) and lower among persons aged 15-29 years of age (14%). In 2010, the majority of gonorrhea infections occurred among 15-29 year olds (86%), followed by 30-44 year olds (10%), 45 year olds and above (3%), and 0-14 year olds (1%) (Appendix C).

**Figure 11**

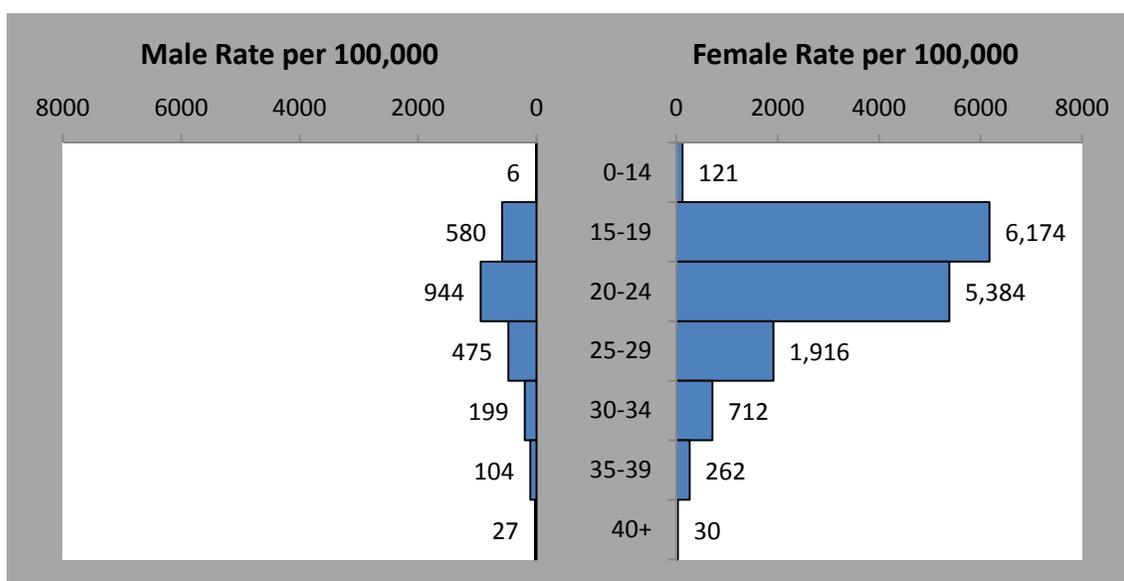


### By Age and Sex

As shown in Figure 12, in 2010, the highest rates of gonorrhea were among females aged 15-19 and 20-24 (6,174 and 5,384). The rate of gonorrhea for females aged 15-19 was nearly 11 times the rate of males in the same age group (6,174 vs. 580). The rate among females aged 20-24 was roughly 6 times the rate of males in the same age group. The rate of gonorrhea infections were similar for males and females aged 40 and above (27 and 30, respectively).

**Gonorrhea Rates by Age and Sex, 2010**

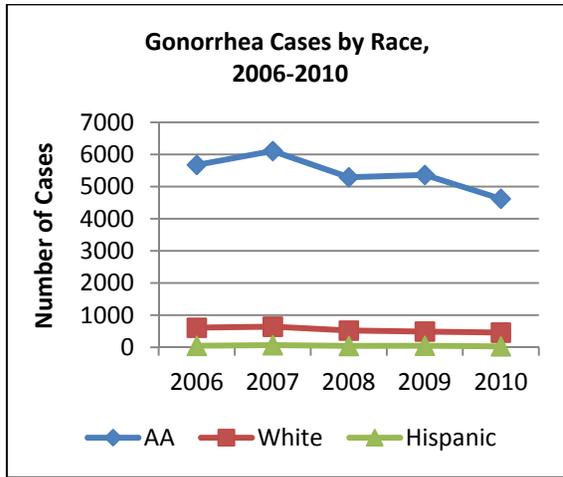
**Figure 12**



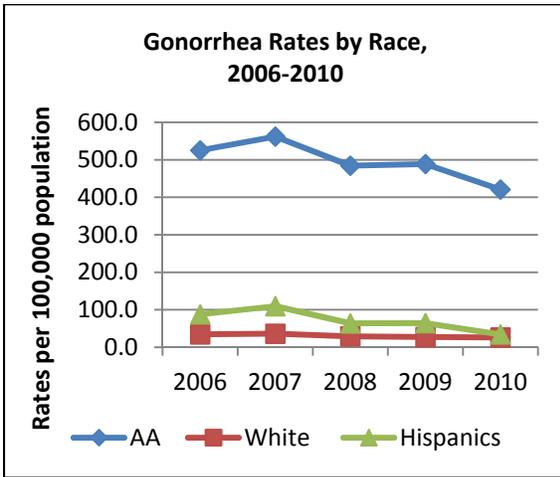
### By Race/Ethnicity

Gonorrhea infections reflect significant racial disparities. Of the 6,196 gonorrhea infections reported in 2010, 75% were among African Americans, 7.3% were among Whites, and less than 1% was among Hispanics (Appendix C). The rate of gonorrhea infections among African Americans was 16 times higher than Whites (421 vs. 26) and 12 times higher than Hispanics (421 vs. 34). African American females comprised 41% of gonorrhea infections, followed by 33% of African American males, 5% of white females, 2% of white males, and less than 1% of Hispanic males and females (Appendix C). Additional details concerning gonorrhea by race in 2010 can be found in Appendix C. Please refer to Figures 13 and 14 below.

**Figure 13**



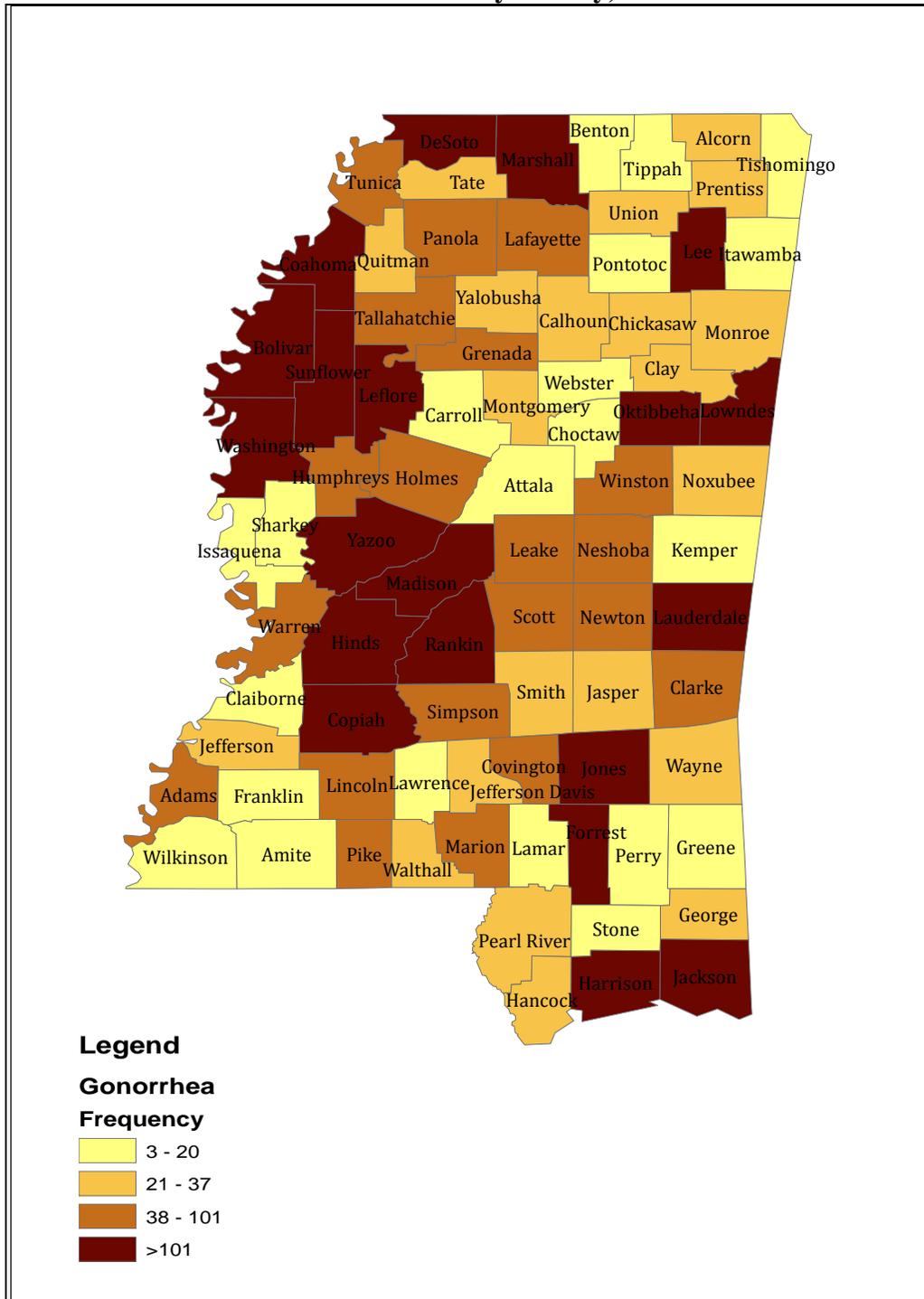
**Figure 14**



In 2010, all Mississippi counties reported at least one case of gonorrhea (Map 2). The five counties with the highest gonorrhea cases were Hinds County (1102), Washington County (364), Harrison County (310), Lauderdale County (250), and Forrest County (243). Counties with the lowest number of cases include Tishomingo County (3), Carroll County (5), Choctaw County (5), Webster County (5), and Issaquena County and Kemper County (6).

## Map 2

### Gonorrhea Cases by County, 2010



## Syphilis

### Clinical Features

Syphilis is a bacterial infection that has three stages: primary, secondary, and tertiary. The primary lesion (chancre) is a painless indurated ulcer that develops at the site of initial infection, usually on the external genitalia. Even without treatment, this lesion resolves in 4-6 weeks. Secondary syphilis may then develop and is characterized by a generalized symmetrical maculopapular rash that often involves the soles and palms. It may be accompanied by generalized lymphadenopathy, fever, malaise, sore throat, headache and arthralgia. Clinical manifestations of secondary syphilis usually resolve without treatment in weeks to months. Tertiary syphilis will develop years later in 15-40% if untreated, primarily as cardiovascular or neurosyphilis, or as skin, bone, visceral or mucosal surface gummas. Latent syphilis, a period of seroreactivity without clinical disease, is classified as early (infection acquired within the preceding year) or late (infection of more than a year's duration).

Fetal transmission occurs transplacentally in untreated women with early syphilis, resulting in congenital syphilis. Congenital syphilis can lead to abortions, stillbirths or death shortly after birth. An infected infant may be asymptomatic for the first few weeks of life; however, late manifestations may occur resulting in CNS involvement or other conditions such as Hutchinsonian teeth, saddle nose, periostitis, interstitial keratitis or deafness.

### Infectious Agent

*Treponema pallidum*, a spirochaete.

### Reservoir

Humans.

### Transmission

Syphilis is transmitted primarily by sexual contact with an infected individual with early syphilis (the first year of infection), especially during primary and secondary syphilis. If untreated, infection of the fetus occurs during the pregnancy of an infected woman, resulting in congenital syphilis. Transmission can also result from a blood transfusion if the donor is in the early stages of infection.

### Incubation

The average incubation period for syphilis before clinical manifestations is 3 weeks but ranges from 3 – 90 days.

### Period of Communicability

In untreated individuals, communicability can last for up to two years. Syphilis is most communicable during the primary and secondary stages. Maternal-fetal transmission is more likely in early syphilis, but may occur at any stage.

### Methods of Control

Mechanical barriers, early detection, and effective treatment of the patient and their partners are effective methods in prevention and control of syphilis. MSDH performs contact investigation and treatment for each reported case of syphilis.

## Reporting Classification

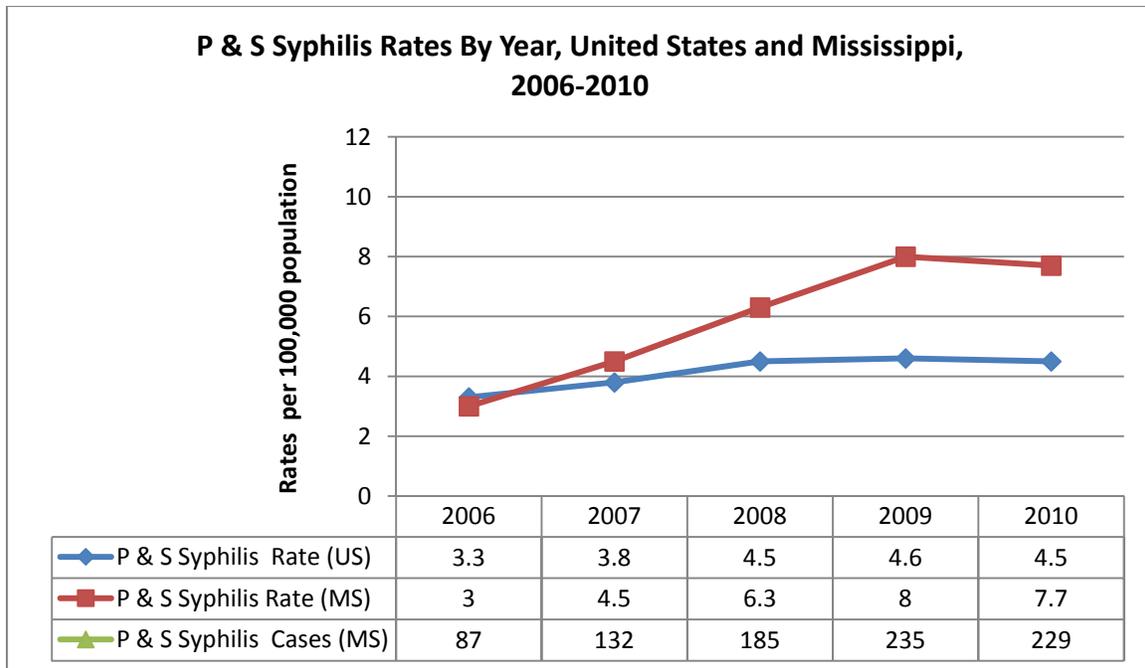
Class 1.

## Epidemiology and Trends

### Primary and Secondary Syphilis

In 2010, Mississippi ranked 3<sup>rd</sup> nationally in primary and secondary syphilis (P&S) case rates. Mississippi's rate is nearly twice the national rate (8 and 5, respectively). Between 2006 -2010, P& S syphilis infections increased 163%, from 87 cases to 229 cases (case rate of 3 versus 8). However, from 2009 to 2010, there was a slight decrease in cases by 2.5%, from 235 cases to 229 cases (Figure 15).

**Figure 15**



### By Sex

From 2006 to 2010, reported P&S syphilis increased in both males and females; however, the increase was larger for males. The gap between male and female P&S syphilis cases continues to widen as the number and case rates for males exceed those of females (Figures 16 and 17). Contributing to the increase in males is an increase in syphilis among MSM. In 2006, the proportion of males with P&S syphilis was 59% and by 2010 it increased to 70%. In contrast, the proportion of females with P&S syphilis decreased from 41% in 2006 to 30% in 2010. Since 2006, the male case rate for P&S syphilis infections has increased each year, except for in 2010, when there was a slight decrease in rates. The female case rate decreased slightly from 4.8 in 2009 to 4.5 population in 2010. The rate of male infections was 2.5 times the rate of female infections in 2010.

Figure 16

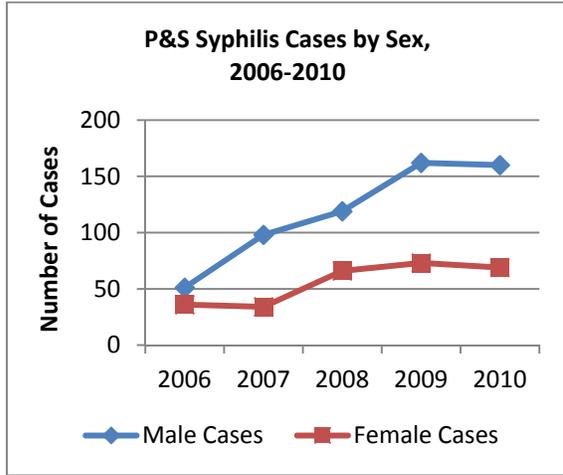
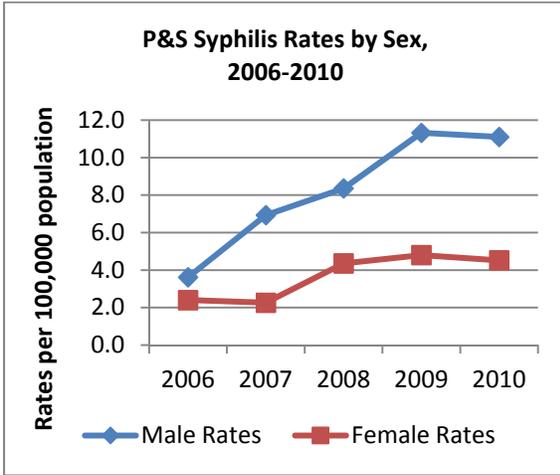


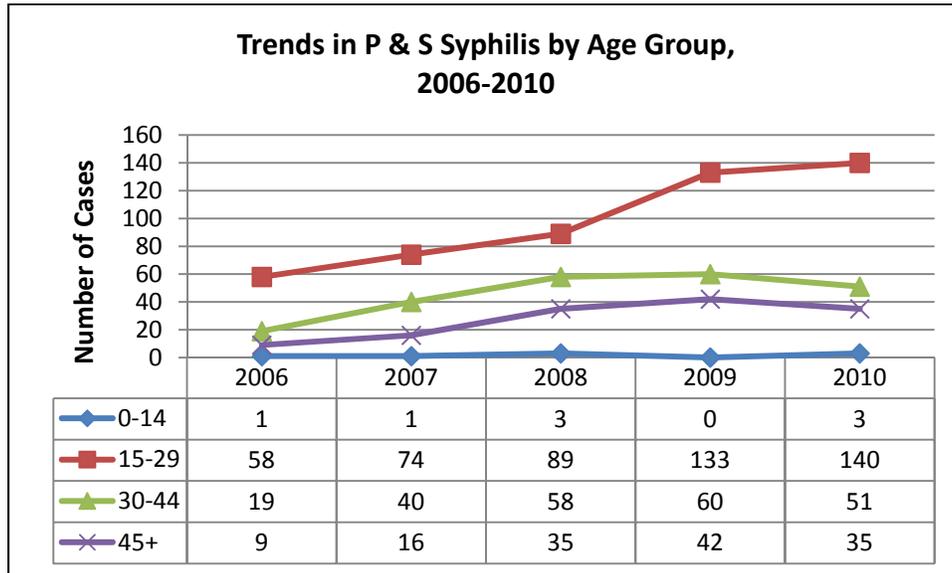
Figure 17



### By Age Group

Each year since 2006, P&S syphilis infections have increased in all age groups with the exception of 2010, when P&S syphilis infections decreased in persons aged 30-44 and 45 years and older from 2009. In 2010, the majority of persons reporting primary and secondary syphilis were teenagers and young adults between the ages of 15-29 (61.1%), while 22% of P & S syphilis cases were reported in adults ages 30-44 and 15% were in older adults ages 45 and above (Figure 18).

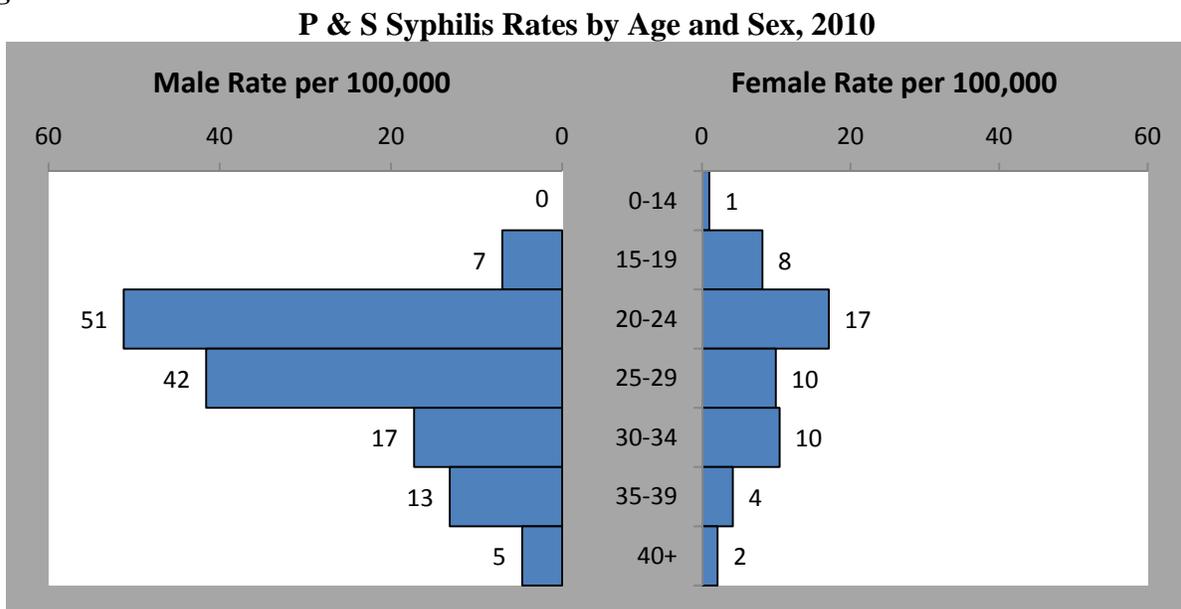
**Figure 18**



**By Age and Sex**

In 2010, the age group with the highest primary and secondary syphilis rates was 20-24 year olds for both males (51) and females (17). The syphilis rate for males aged 20-24 were 3 times the rate of females in the same age group. Among men, the age group with the second highest rate for P&S syphilis was 25-29 year olds followed by 30-34 year olds. Among women, the age groups with the second highest syphilis rate were 30-34 year olds followed by 25-29 year olds (Figure 19).

**Figure 19**



## By Race/Ethnicity

From 2006-2010, there was an increase in case rates for African Americans and Whites. Reported P&S syphilis cases among African Americans peaked in 2009 with 198 cases. There were increased reported cases in Whites, with a peak of 35 cases that occurred in 2008. Increases were most notable among Whites, as the number of cases increased 277% during the past five years (from 9 to 34 cases), compared to an increase of 157% (from 75 to 193 cases) among African Americans. Despite the higher increase among Whites, there was continuous reporting of syphilis cases among the African Americans continue to report more syphilis infections, and as a result, the gap in case rates between these two racial groups remains wide. In 2010, the case rate for African Americans was 9 times that of Whites and 14.6 times that of Hispanics (17.5, 1.9, and 1.2, respectively) (Figures 20 and 21). In 2010, most infections were reported among African Americans, followed by Whites (15%) and Hispanics (<1%). (Appendix C).

Figure 20

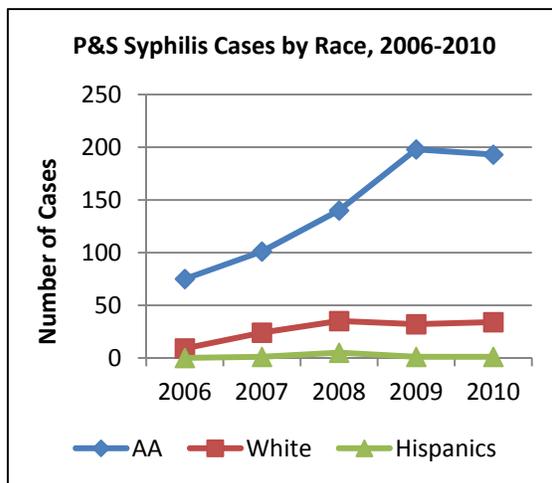
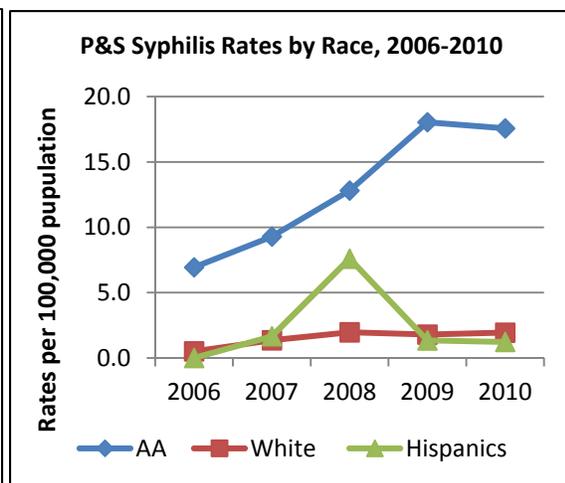


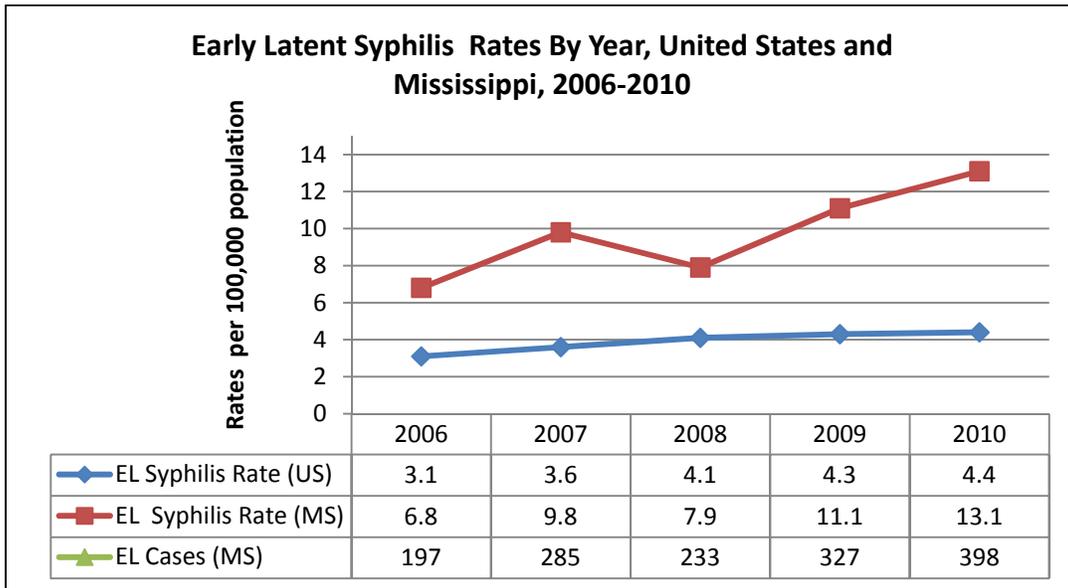
Figure 21



## Early Latent Syphilis

In 2010, Mississippi ranked 2<sup>nd</sup> nationally in early latent syphilis (ELS) case rates, with a rate of 13.1, which was 3 times higher than the national rate. For the past 5 years, the ELS case rate in Mississippi has been higher than the national case rate. From 2006- 2010, the number of early latent syphilis infections increased 102 %, from 197 cases to 398 cases (Figure 22).

Figure 22



**By Sex**

Among males and females, ELS infections increased each year from 2006 to 2010, except for in 2008, when a decrease was observed. Each year, the number and rate of ELS syphilis infections among males has exceeded that of females. In 2010, males accounted for more than half (57%) of early latent syphilis cases and the male to female ratio was 1.4 (Figure 23). The ELS rate for males increased from 9 in 2006 to 16 in 2010. Among females, ELS infections increased from 5 in 2006 to 11 in 2010 (Figure 24).

Figure 23

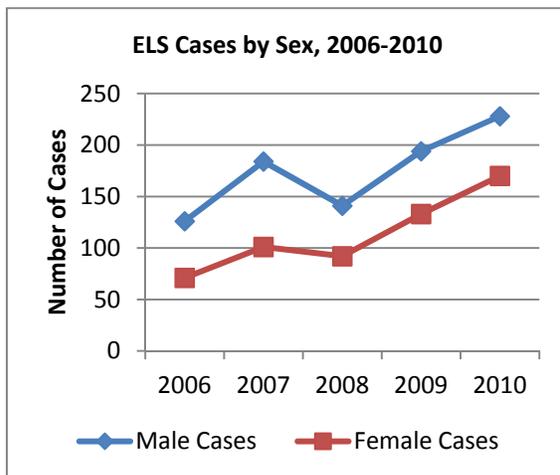
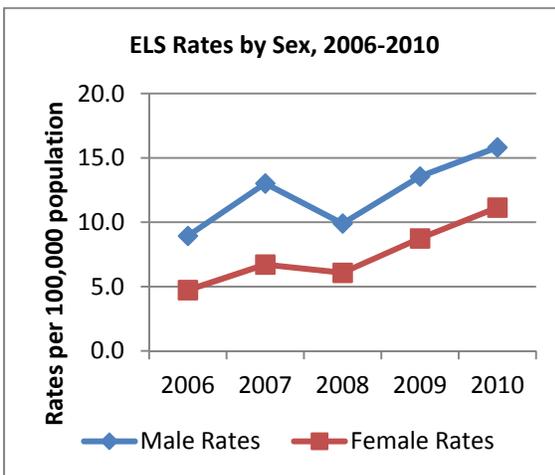


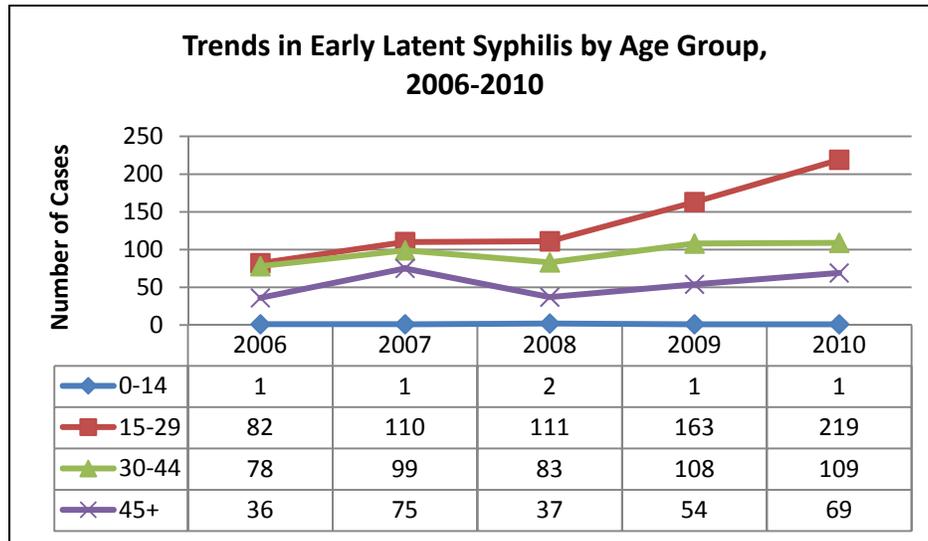
Figure 24



## By Age Group

Overall, trends in ELS cases have varied for all age groups, with the exception of children between the ages of 0-14 who have remained consistent since 2006. Since 2006, it has been reported that teenagers and young adults between the ages of 15-29 show the highest increase (167%) of ELS infections when compared to other age groups (Figure 25). By the end of 2010, the majority of persons (55%) with ELS were between the ages of 15-29, followed by persons in the age groups 30-44 (27.3%), 45 and above (17%), and 0-14 (<1%). (Appendix C).

**Figure 25**

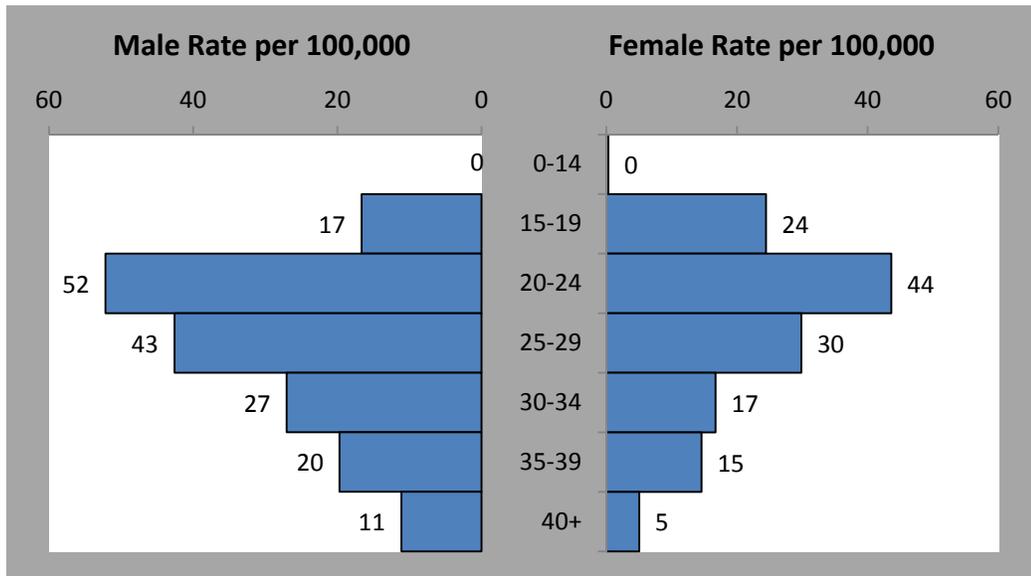


## By Age and Sex

In 2010, the age group with the highest syphilis rate for both men (52) and women (44) were 20-24 year olds. The second highest syphilis rate was found in men and women aged 25-29 year olds (Figure 26). Among men, persons aged 40 and above had the second lowest rate of ELS infections; although, they accounted for 30% of all ELS infections in 2010 (Appendix C)

**Figure 26**

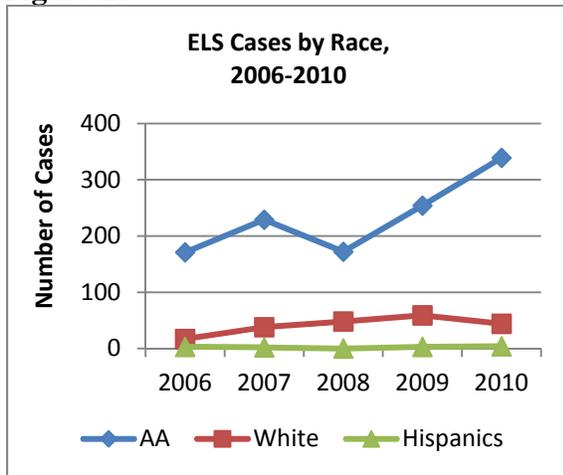
**Early Latent Syphilis Rates by Age and Sex, 2010**



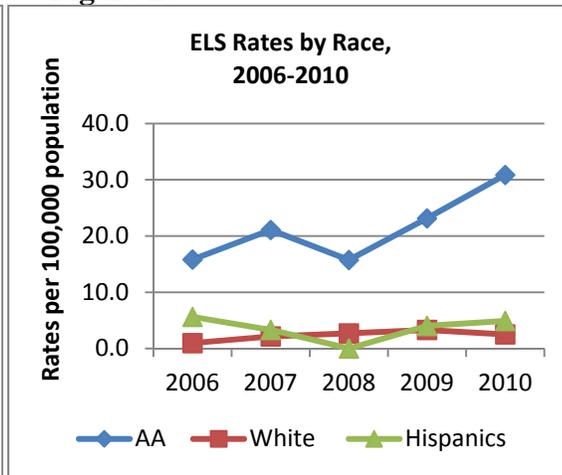
**By Race/Ethnicity**

Figures 27 and 28 illustrate that African Americans are disproportionately affected by early latent syphilis. The disparity between early latent syphilis infections among African Americans and Whites has increased since 2006. Overall, ELS cases have remained stable in Whites since 2006. Yet, for African Americans the rate has increased from 16 in 2006 to 31 in 2010. In 2010, African Americans represented 85% of early latent syphilis cases, Whites accounted for nearly 11 %, and Hispanics accounted for only 1%. Half (50%) of the early syphilis cases were among African American men, followed by 35% African American women, 5% white men and women, and less than 1% of Hispanic men and women. (Appendix C). The case rate for African American males was 16 times that of white males (38.4 compared to 2.4).

**Figure 27**



**Figure 28**



Not all counties in Mississippi had reports of total early syphilis cases in 2010 (Map 3). Of the 82 counties in Mississippi, 46 counties reported P&S syphilis and 52 counties reported ELS. The majority of P& S syphilis cases were reported in Hinds County (58) followed by Harrison County (45), Forrest County and Jackson County (12), and Yazoo County (10). The five counties with the highest number of ELS cases include Hinds County (115), Harrison County (40), Forrest County (29), Rankin County (19), and Yazoo County (17). When combining primary, secondary, and early latent syphilis cases, Hinds County reported 173 cases, followed by Harrison County (85), Forrest County (41), Yazoo County (27), and Jackson County (25).



## **2010 HIV and STD Co-infections**

According to CDC, STD infections increase the likelihood of transmitting and acquiring HIV. STDs such as chlamydia and gonorrhea increase the concentration of cells in genital secretions, resulting in increased risk of acquiring HIV. Also, studies show that people who are co-infected with HIV and other STDs are likely to shed HIV in their genital secretions, resulting in increased risk of transmitting HIV.<sup>15</sup>

### **HIV and Chlamydia**

In 2010, 1% percent (84/9,292) of people living with HIV were co-infected with chlamydia. Of those infected, 56% were females and 44% were males. Most infections occurred among African Americans (91%), compared to 7 % Whites. Those with the highest proportion of HIV and chlamydia infections were persons between the ages of 15-29 (70%), followed by those aged 30-44 (19%), and 45-59 (8%). The 0-14 and 60 and older age category comprised only 1 % of co-infections.

### **HIV and Gonorrhea**

In 2010, .63% of people living with HIV were co-infected with gonorrhea. Most infections (73%) occurred in men, while 27% occurred in women. African Americans represented 93% of infections, compared to 6% of infections among Whites. The majority of HIV and gonorrhea infections occurred in persons aged 15-29 (66 %), followed by those aged 30-44 (66%), and 45-59 (10%).

### **HIV and P&S Syphilis**

According to the CDC, increases in syphilis infections among MSM (including men having sex with both men and women) have been characterized by high rates of HIV co-infection and high-risk sexual behaviors.<sup>16</sup> Of the people living with HIV, 30 were also co-infected with P & S syphilis (.32%) in 2010. Of those infected, 95% were males and 5 % were females. African Americans accounted for 76% of infections and Whites accounted for 24% of infections. The highest percentage of HIV and P& S syphilis co-infections occurred among persons between the ages of 15-29 (67.5 %), followed by those aged 30-44 (27%), then persons aged 45-59 (5.5%).

### **HIV and Early Latent Syphilis**

Of the people living with HIV, 62 reported early latent syphilis infection (.67%) in 2010. Most infections were reported among males (93.5%). African Americans comprised 92% and Whites represented 8 % of infections. The age group that accounted for the most HIV and early syphilis cases were persons aged 15-29 (56%), followed by persons aged 30-44 (32%), and persons aged 45-59 (11%).

## **HIV Disease**

### **Clinical Features**

The clinical spectrum of human immunodeficiency virus (HIV) infection varies from asymptomatic infections to advanced immunodeficiency with opportunistic complications. One half to two thirds of recently infected individuals have manifestations of an infectious mononucleosis-like syndrome in the acute stage. Fever, sweats, malaise, myalgia, anorexia, nausea, diarrhea, and non-exudative pharyngitis are prominent symptoms in this stage. Constitutional symptoms of fatigue and wasting may occur in the early months or years before opportunistic disease is diagnosed. Over time, HIV can weaken the immune system, lowering the total CD4 count and leading to opportunistic infections and the diagnosis of Acquired Immunodeficiency syndrome (AIDS).

### **Infectious Agent**

Human immunodeficiency virus is a retrovirus with two known types, HIV-1 and HIV-2. These two types are serologically distinct and have a different geographical distribution, with HIV-1 being primarily responsible for the global pandemic and the more pathogenic of the two.

### **Reservoir**

Humans.

### **Transmission**

HIV infection can be transmitted from person to person during sexual contact, by blood product transfusion, sharing contaminated needles or infected tissue or organ transplant. Transmission by contact with body secretions like urine, saliva, tears or bronchial secretions has not been recorded. Without appropriate prenatal treatment, 15-30% of infants born to HIV positive mothers are infected. Breast feeding is also a known cause of mother to infant transmission of HIV.

### **Incubation**

The period from the time of infection to the development of AIDS ranges from 1 year up to 15 years or longer. The availability of effective anti-HIV therapy has greatly reduced the development of AIDS in the U.S.

### **Period of Communicability**

Individuals become infectious shortly after infection and remain infectious throughout the course of their lives.

### **Methods of Control**

Abstinence is the only sure way to avoid sexual HIV transmission; otherwise mutual monogamy with partners known to be uninfected and the use of latex condoms are known to reduce the risk of infection. Confidential HIV testing and counseling and testing of contacts, prenatal prevention by counseling and testing all pregnant women, and early diagnosis and treatment with appropriate anti-retroviral therapy can reduce transmission. Post-exposure prophylaxis for health care workers exposed to blood or body fluids suspected to contain HIV is an important worksite preventive measure. MSDH performs contact investigation, counseling and testing for each reported case of HIV infection.

## Reporting Classification

Class 1.

## Epidemiology and Trends

### HIV in the United States

The HIV/AIDS epidemic was first recognized in the United States in 1981. Since that time, all states and U.S. dependent areas have conducted AIDS surveillance by using a standardized, confidential name-based reporting system. Because successful treatment delays the progression of HIV infection to AIDS, AIDS surveillance data alone are insufficient to monitor trends in HIV incidence or to meet federal, state, or local data needs for planning and allocating resources for HIV prevention and care programs. AIDS trends do, however, continue to provide important information about where care and treatment resources are most needed.

An integrated national HIV/AIDS surveillance system has enhanced the ability to monitor and characterize populations affected by the HIV epidemic and provide information on the entire population of HIV-infected persons who have been tested confidentially. In order to acquire high-quality HIV data, CDC recommended that all states and U.S. dependent areas adopt confidential name-based public health disease surveillance systems to report cases of HIV infection. As of April 2008, all jurisdictions provide confidential, name based reporting for both HIV infection and AIDS to CDC.<sup>17</sup>

CDC estimates that more than one million people are living with HIV in the United States. One in five (21%) of those people living with HIV is unaware of their infection.<sup>17</sup> Despite increases in the total number of people living with HIV in the US in recent years, the annual number of new HIV infections has remained relatively stable. In 2009, the estimated rate of diagnoses of HIV infection in the 40 states with mature reporting systems was 17.4 per 100,000 population.

### Routine Interstate Duplicate Review (RIDR) Reports

At the end of December 2001, the national HIV case surveillance system contained 990,175 cases of HIV infection, all stages; of these, 44,945 (4.5%) were identified as duplicate reports.<sup>18</sup> To achieve greater accuracy of local and national case counts and patient's residence at the time of diagnosis, CDC prepares a Routine Interstate Duplicate Review (RIDR) report that is sent to each jurisdiction with potentially duplicative cases. At the end of June 2008, the national system contained 1,384,197 case reports of HIV infection, stage 1, 2, or unknown; of these 5,947 (0.43%) had been identified by RIDR activities as duplicate reports.<sup>19</sup> The RIDR report's primary purpose is to ensure that diagnoses of HIV infection are counted only once at the national level, and secondarily to more accurately reflect state of residence at diagnosis at state and national levels.

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RIDR reports contain lists of pairs of potential duplicate case reports that are identified by querying the national HIV infection case report data set for cases where *last\_name\_sndx*, date of birth, and sex at birth are the same. Through discussions with others, corresponding states determine whether each pair represents one person and, if so, that person’s residence at the time of diagnosis of HIV infection, stage 1, 2, or unknown and/or at the time of diagnosis of HIV infection, Stage 3(AIDS).<sup>20</sup> Communication with other jurisdictions in accordance with RIDR procedures minimizes over counting of diagnoses; changes to case residency as a result of RIDR report processing are reflected in future HIV data transmissions to CDC.

CDC generates RIDR reports twice per year (one with cases newly reported to state health departments from January through June; another with cases reported from July through December). All jurisdictions are expected to process their RIDR reports completely—including entry of their findings into eHARS— before the next round of RIDR (a minimum of 6 months).

### **HIV Incidence in Mississippi**

Each year, Mississippi compiles an annual summary of sexually transmitted diseases, including HIV disease, by county and district and by race, gender, and age group. Mississippi participates in RIDR twice a year, and as a result, the number of cases that have been previously reported using earlier year end data may be different once RIDR reports are completed. The numbers represented in this profile may not signify numbers reported in the past. The cases summarized in this document represent HIV cases reported among residents of Mississippi, as of November 2011. Table 1 demonstrates a comparison of the number of cases reported, based on year end data and cases in eHARS (HIV AIDS Reporting System), as of November 2011.

**Table 1**

<b>Year</b>	<b># Cases Reported (based on year end data)</b>	<b># Cases Reported (based on eHARS data in Nov 2011)</b>	<b>Difference in the # of Cases</b>
<b>2001</b>	568	491	77
<b>2002</b>	623	565	58
<b>2003</b>	625	539	86
<b>2004</b>	607	525	82
<b>2005</b>	577	487	90
<b>2006</b>	599	512	87
<b>2007</b>	611	558	53
<b>2008</b>	606	549	57
<b>2009</b>	610	550	60
<b>2010</b>	550	502	48

According to the 2010 National HIV Surveillance Report, among 46 states with a mature reporting system, Mississippi had the 7<sup>th</sup> highest rate of HIV diagnosis (Table 2).

**Table 2**

<b>HIV infection, by area of residence, 2010-United States (includes areas with confidential named based reporting since 2007)</b>				
<b>Area of residence</b>	<b>No.</b>	<b>Estimated No.</b>	<b>Rate</b>	<b>Rank</b>
● Florida	5,251	5,782	31.2	1
● Louisiana	1,178	1,279	28.5	2
● New York	4,313	5,321	27.2	3
● Georgia	1,843	2,581	26.3	4
● New Jersey	1,315	2,207	25.3	5
● South Carolina	815	914	20.0	6
● <b>Mississippi</b>	<b>504</b>	<b>564</b>	<b>19.1</b>	<b>7</b>
● Texas	4,250	4,651	18.8	8
● Delaware	141	161	18.2	9
● North Carolina	1,504	1,669	17.8	10

Source:  
Centers for Disease Control and Prevention. *HIV Surveillance Report, 2010*; vol. 22. Published March 2012.  
Accessed Apr 2012.

Among all metropolitan statistical areas in the United States, the Jackson, MS MSA had the third highest rate of AIDS diagnoses in 2010 (Table 3).

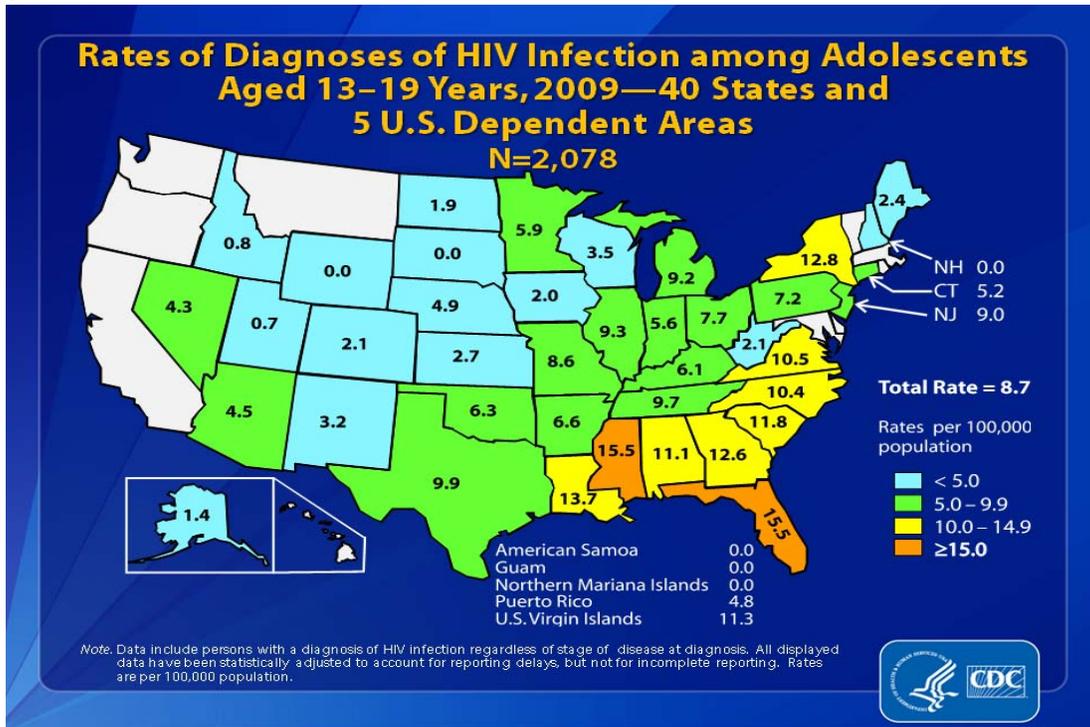
**Table 3**

AIDS Diagnosis, 2010, by metropolitan statistical area of residence—United States and Puerto Rico				
Area of residence	No.	Estimated No.	Rate	Rank
Baton Rouge, LA	245	265	33.7	1
Miami, FL	1,436	1,681	30.3	2
<b>Jackson, MS</b>	<b>134</b>	<b>158</b>	<b>29.2</b>	<b>3</b>
Baltimore-Towson, MD	514	721	26.8	4
New Orleans-Metairie-Kenner, LA	279	311	26.2	5
Columbia, SC	164	191	25.6	6
Washington, DC-VA-MD-WV	928	1,377	25.1	7
New York, NY-NJ-PA	2,986	4,318	22.6	8
Memphis, TN-MS-AR	234	276	21.1	9
Orlando, FL	364	422	20.3	10

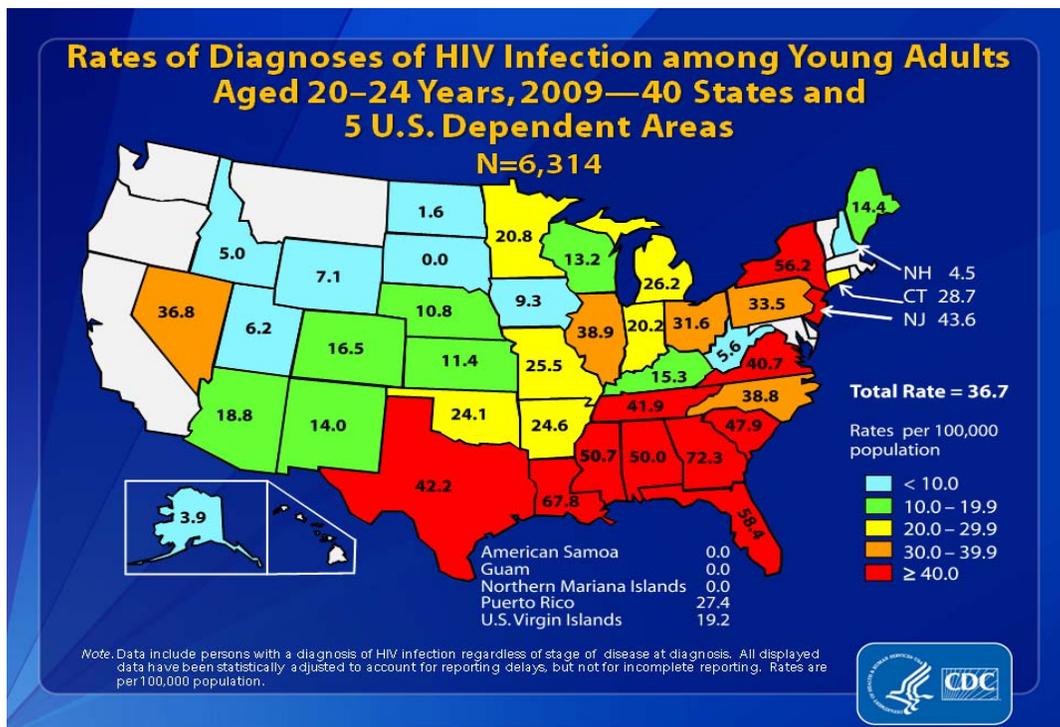
Source:  
Centers for Disease Control and Prevention. *HIV Surveillance Report, 2010*; vol. 22. Published March 2012. Accessed Apr 2012.

When assessing rates of infection among certain age groups, Mississippi tied with Florida for the highest rate of infection among 13-19 year olds and had the fifth highest rate of infection among 20-24 year olds in 2009 (Maps 4 and 5) .

Map 4

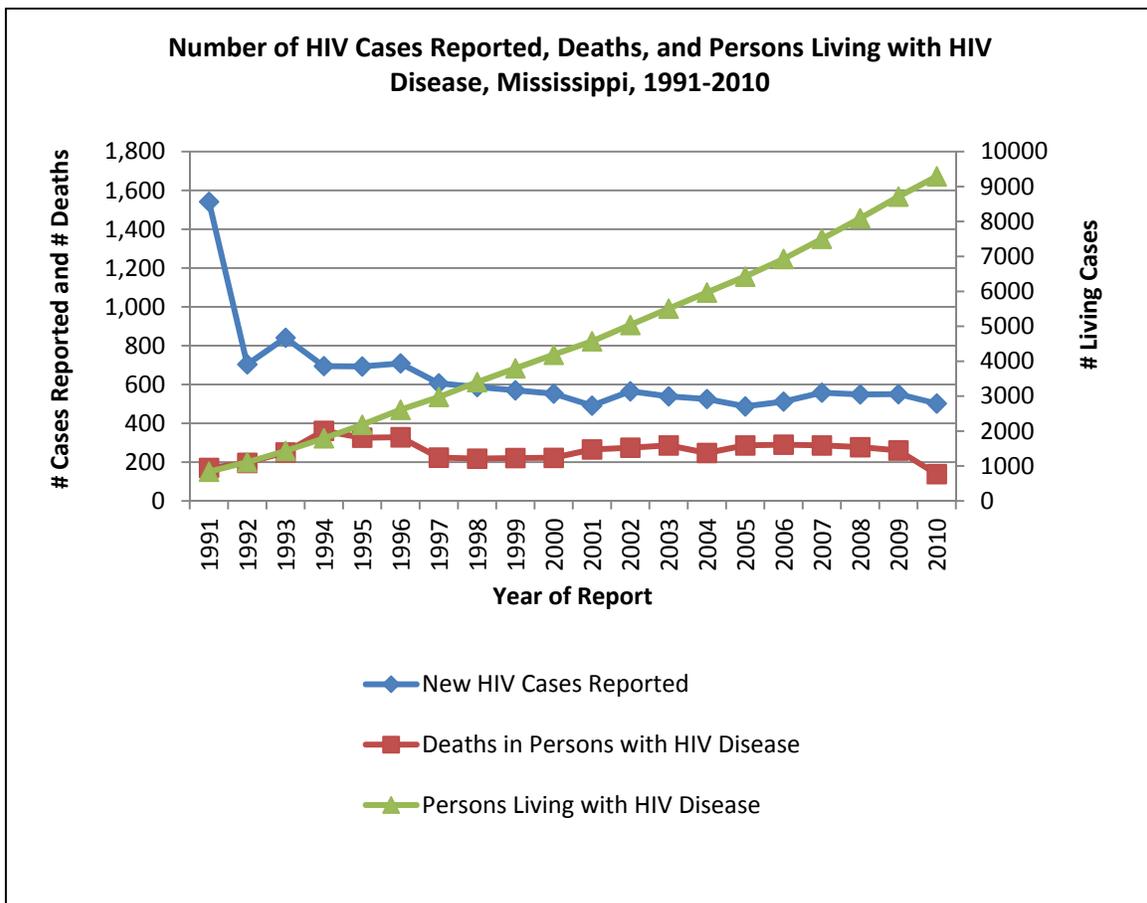


Map 5



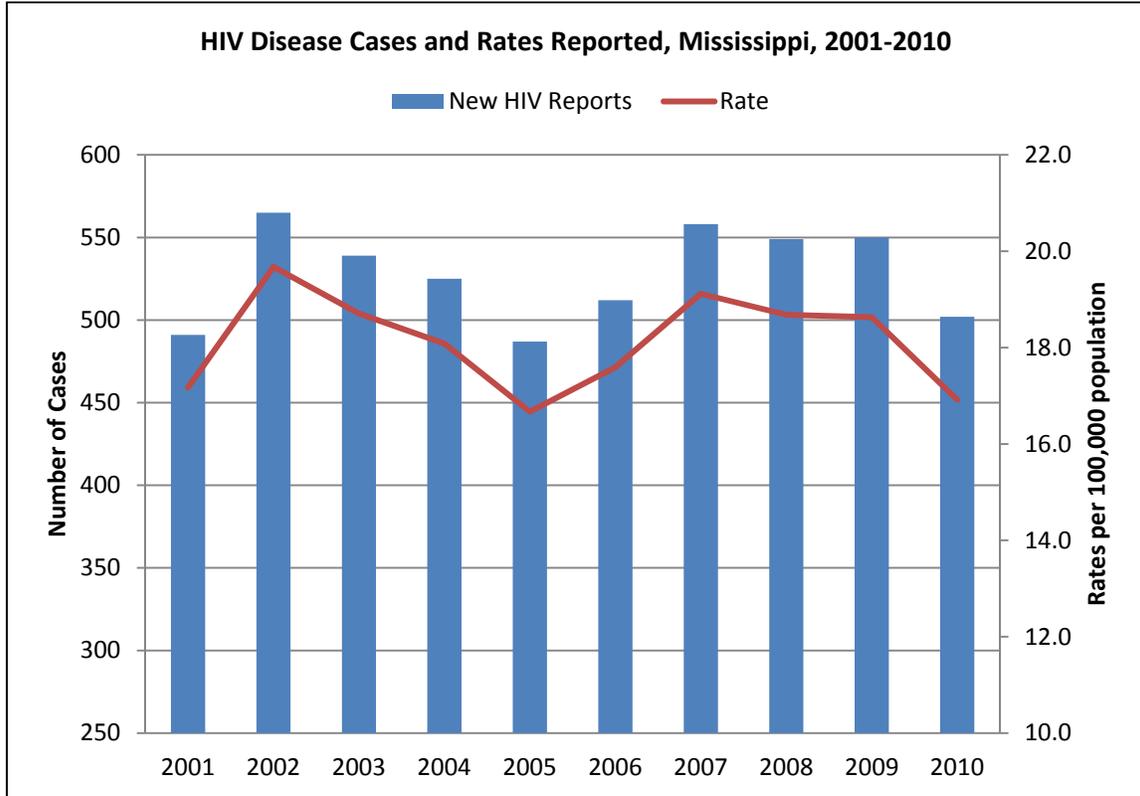
Over the past two decades, the number of persons living with HIV disease in Mississippi has increased, annually. In 1991, there was a peak in new cases reported due to the implementation of HIV reporting; however, a sharp downward trend is observed soon after, and since 2006, there has been an average of 534 cases reported. A peak in the number of deaths was observed in 1994, but has remained fairly stable over the past ten years. The small decrease in deaths during 2010 is possibly due to the lag time in deaths reported from other states and national death databases (Figure 29).

**Figure 29**



Over the past ten years, the average number of new cases reported in Mississippi is over five hundred cases annually. Although there was an increase in cases reported from 2005-2007, cases remained steady until 2009. From 2009-2010, there was a nine percent decrease (from 550 to 502 cases). From 2006 to 2010, the case rate has decreased from 17.6 to 16.9.

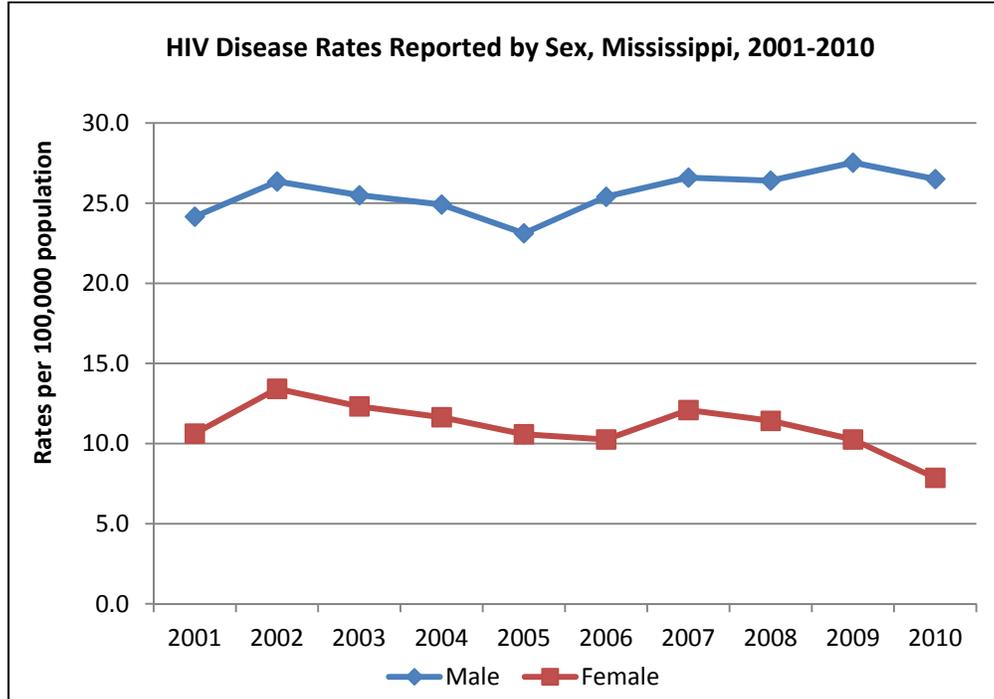
**Figure 30**



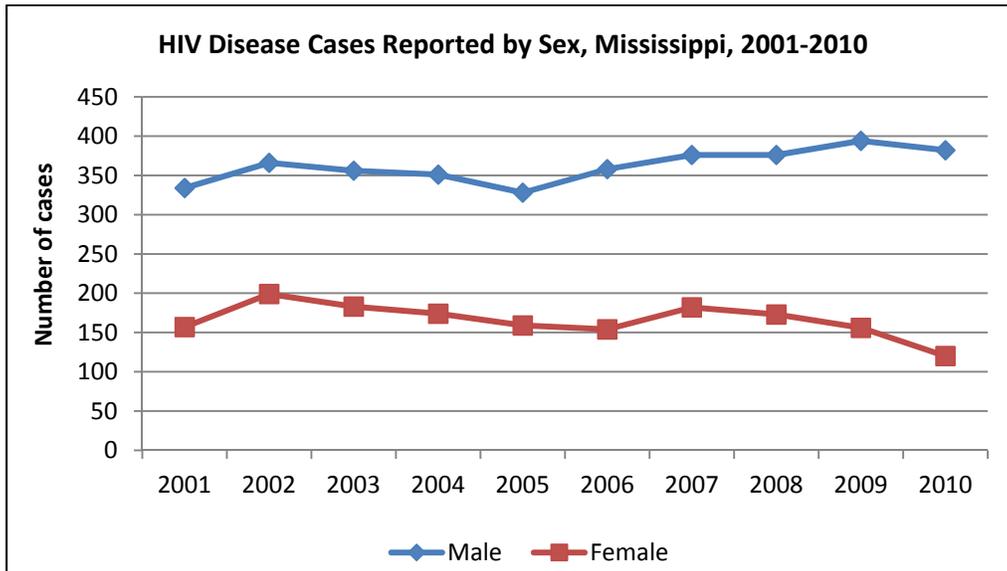
Males have higher rates of HIV infection than females. Trends show that men are twice as likely to be infected with HIV. Since 2005, male cases have increased 16% (from 328 to 382 cases) and the rate for males increased from 23.1 to 26.5. In 2010, males represented 76% of all reported cases. The rate among females has decreased slightly over the past ten years, from 10.6 to 7.9. Additionally, there was a 24% decrease in cases (from 157 to 120 cases) (see Figures 31 and 32).

African Americans are most significantly impacted by HIV disease. The rates among African Americans decreased from 36.5 to 36.0, from 2001-2010, even though there was a 4% increase in cases reported (380 to 394 cases). African Americans make up 37% of Mississippi's population, but represented 78.5% of cases reported in 2010 (see Figure 33).

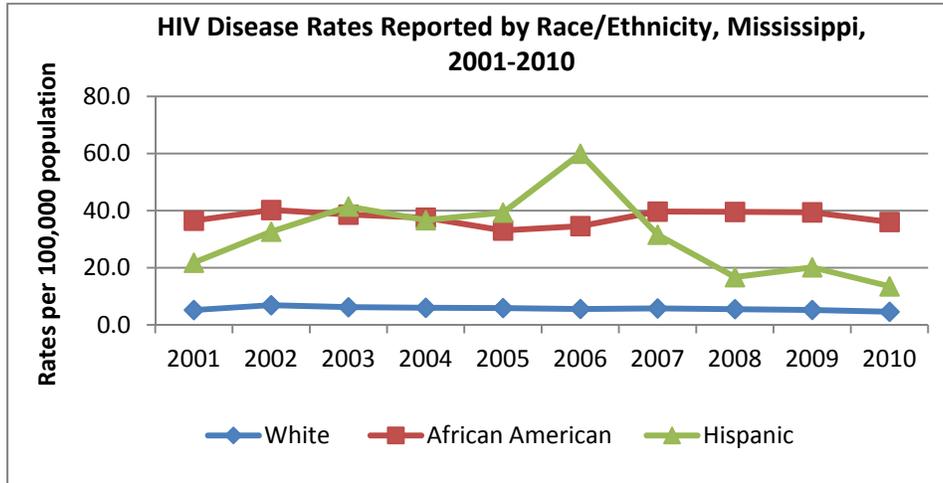
**Figure 31**



**Figure 32**

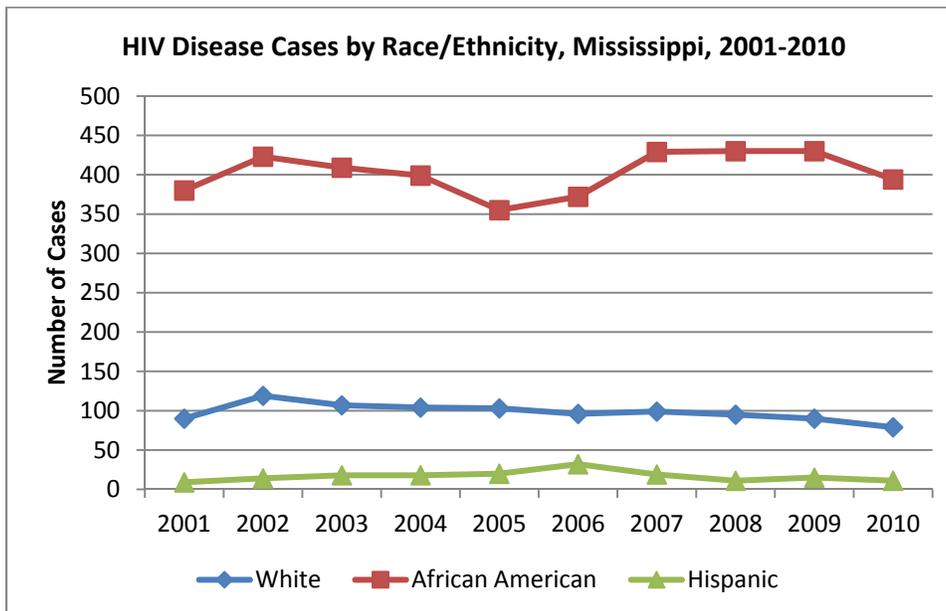


**Figure 33**

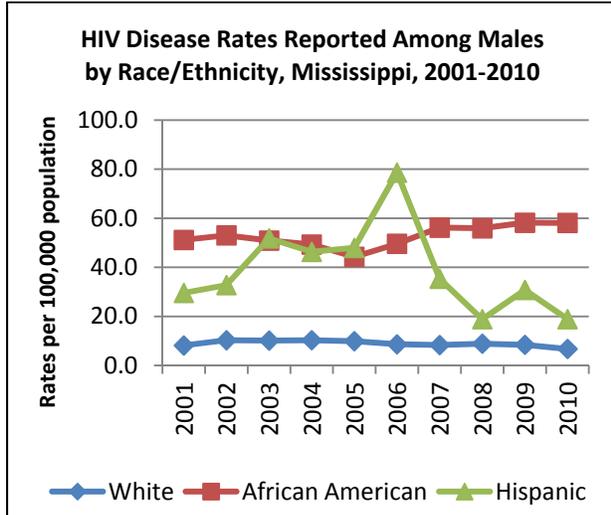


The second highest rates were reported among Hispanics, but had fewer cases than Whites each year. From 2005-2006, there was a spike in the rate among Hispanics, due to the impact of Hurricane Katrina which resulted in the displacement of Hispanics from affected areas. Overall, there has been a decrease in the rate among Hispanics and fewer than 25 cases were reported each year. From 2001 to 2010, the rate among Whites dropped slightly (from 5.2, 90 cases to 4.6, 79 cases) and in 2010, Whites represented 16% of cases. Refer to Figure 34, 35, and 36.

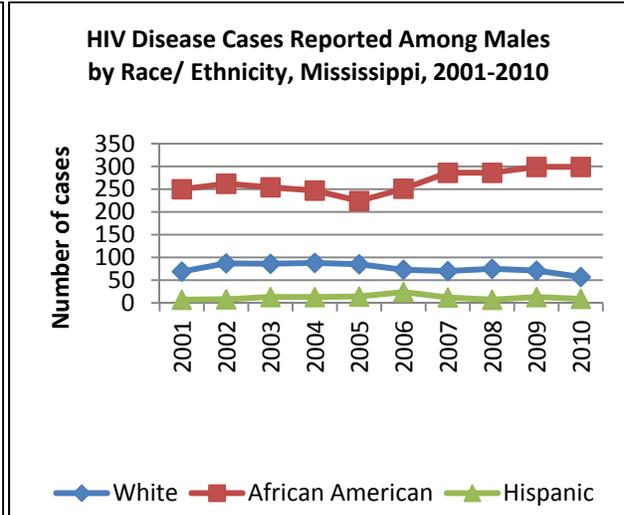
**Figure 34**



**Figure 35**



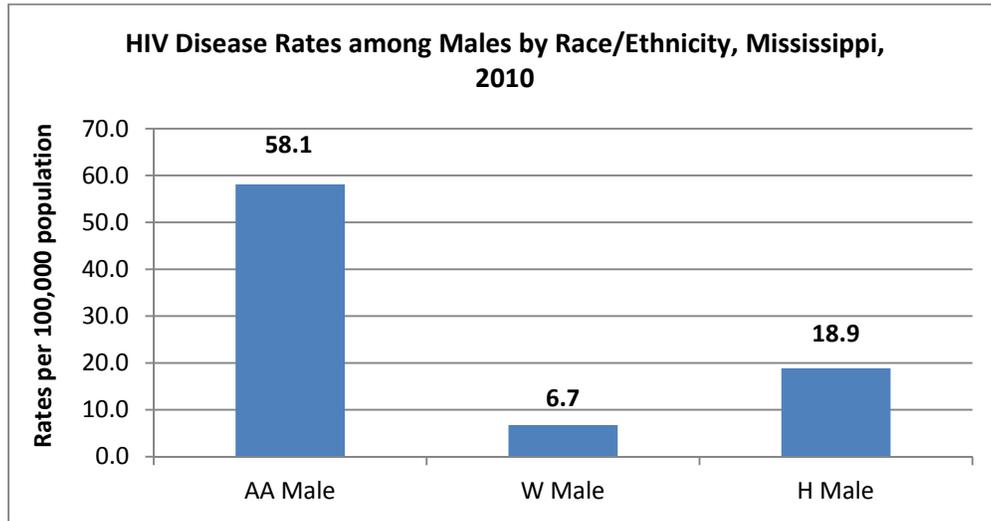
**Figure 36**



African American men have the highest rate of HIV infection and number of cases reported. There was a gradual decrease in cases in African American men until 2005, when cases started to increase. From 2005-2010, there was a 33.5% increase in cases (from 224 to 299 cases) and the rate increased from 44.3 to 58.1. In 2010, African American men had rates nearly nine times higher than white men (58.1 vs. 6.7) and three times higher than Hispanic men (58.1 vs. 18.9) (see Figure 37). African American men represented 60% of cases reported in 2010 and are the only group to experience an increase in cases over the ten year period (2001-2010).

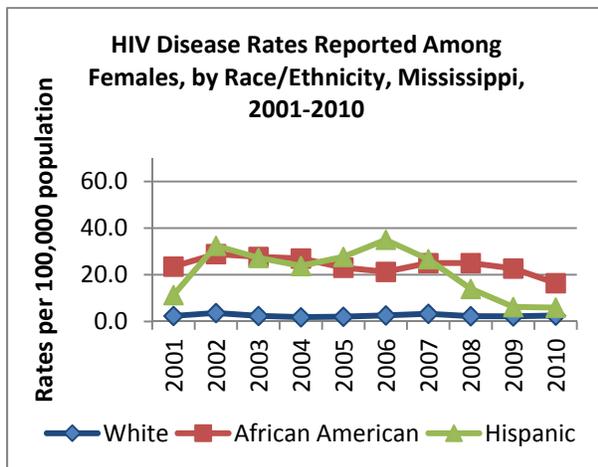
The diagnosis rate among Hispanic males was 2.8 times higher than White males, although White males had a higher number of cases. From 2001-2006, there was an increase in the cases and rates among Hispanics males, due to the impact of Hurricane Katrina which resulted in the displacement of Hispanics from affected areas. Since 2006, there has been a decline in the case rate and Hispanic men represented only 2% of cases reported in 2010.

**Figure 37**

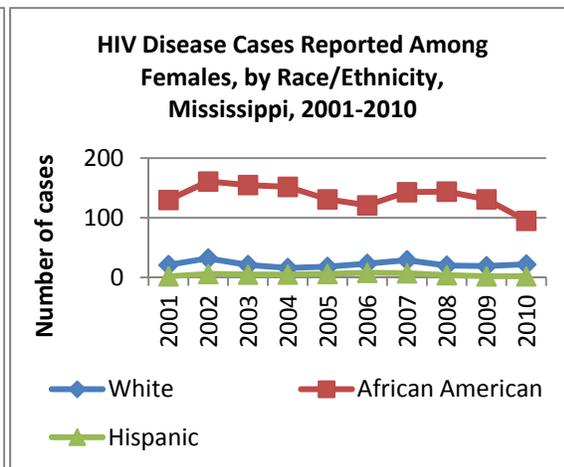


White males experienced a higher number of cases from 2002-2006. Since then, there has been a decrease in the number of cases. From 2009-2010, there was a 20% drop in cases (from 71 to 57 cases) and White males represented 11% of cases reported in 2010. Refer to Figures 38 and 39.

**Figure 38**



**Figure 39**

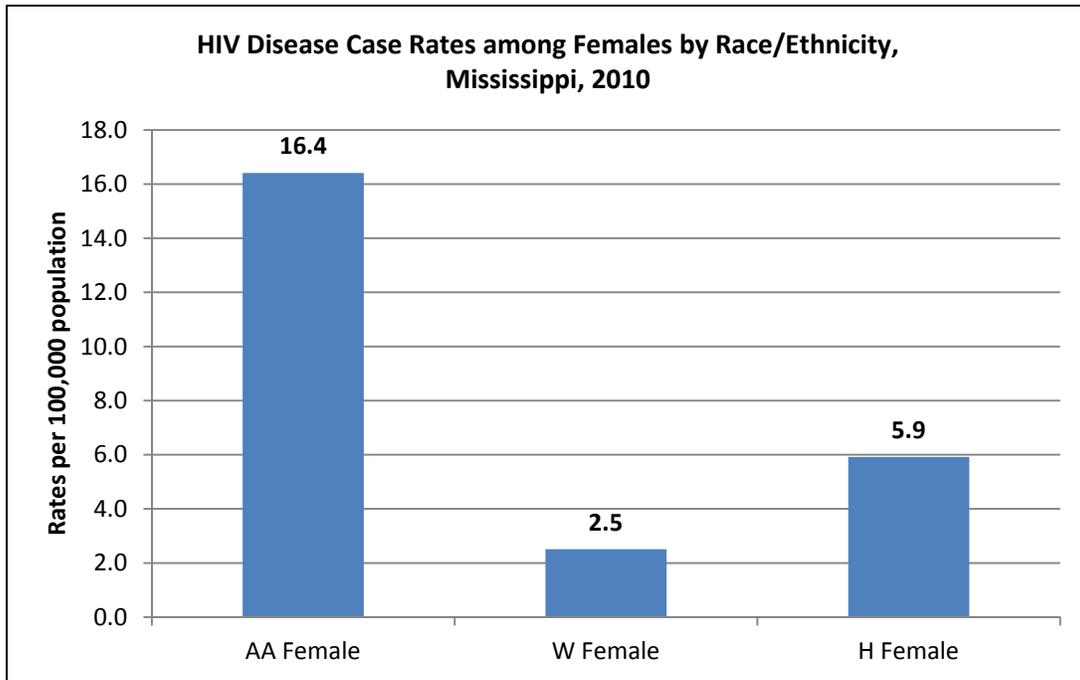


Among females, African Americans have the highest burden of disease (Figure 40). Over the past five years, cases peaked in 2007 and 2008. Since then, cases have decreased 34% (from 144 to 95 cases). In 2010, African American females had rates nearly seven times higher than White females (16.4 vs. 2.5) and nearly three times higher than Hispanic females (16.4 vs. 5.9).

The diagnosis rate among Hispanic females was 3.4 times higher than white females (5.9 vs. 2.5), although the number of cases is higher among Whites. Although the number of cases reported among Hispanic females has been less than ten each year, Hispanic females had rates higher than African American females in 2002, 2005- 2007.

Over the past decade, rates among Whites have remained stable. Cases among white females peaked in 2002 and again in 2007, but have since decreased 24%.

**Figure 40**

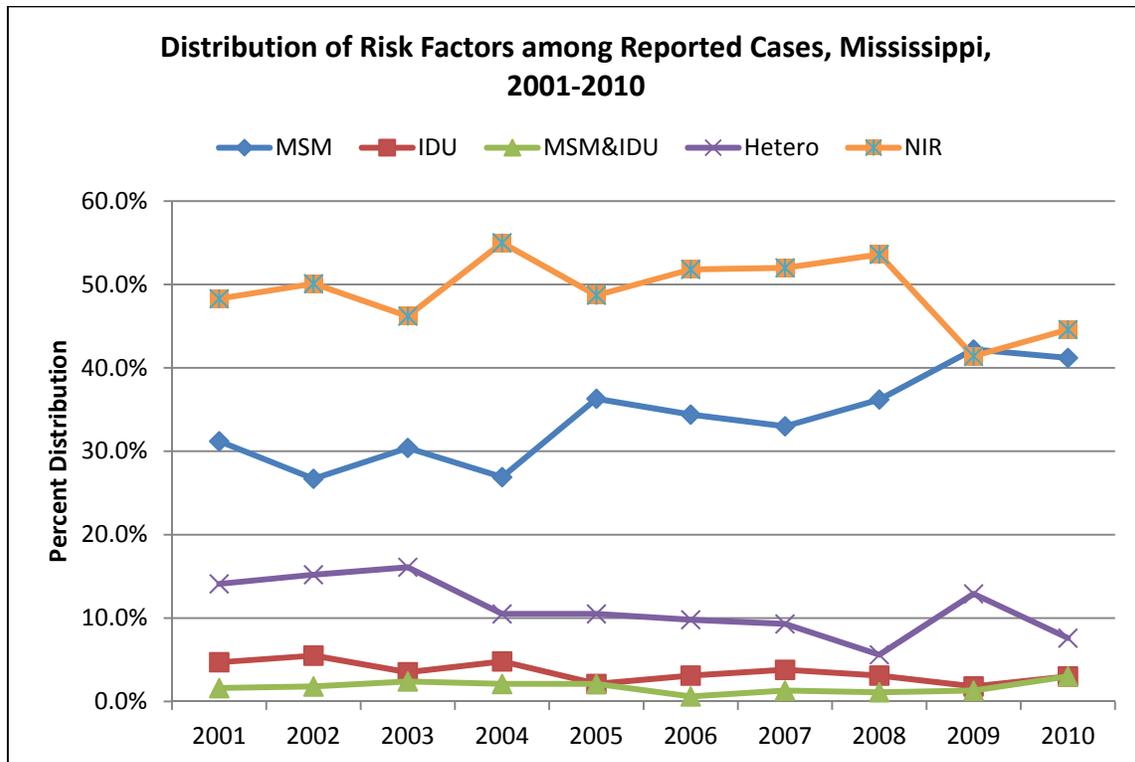


*Transmission category* is the term for the classification of cases that summarizes a person’s possible HIV risk factors; the summary classification results from selecting from the presumed hierarchical order of probability, the one risk factor most likely to have been responsible for transmission. For surveillance purposes, a diagnosis of HIV infection or AIDS is counted only once in the hierarchy of transmission categories. Persons with more than one reported risk factor for HIV infection are classified in the transmission category listed first in the hierarchy. The exception is men who report sexual contact with other men and injection drug use; this group belongs to a separate transmission category.

Persons whose transmission category is classified as male-to-male sexual contact (MSM) include men who report sexual contact with other men (i.e., homosexual contact) and men who report sexual contact with both men and women (i.e., bisexual contact). Persons whose transmission category is classified as heterosexual contact (hetero) are persons who report specific heterosexual contact with a person known to have, or to be at high risk for, HIV infection (e.g., an injection drug user). Cases in persons with no reported exposure to HIV through any of the routes listed in the hierarchy of transmission categories are classified as “no risk factor reported or identified” or (NIR).

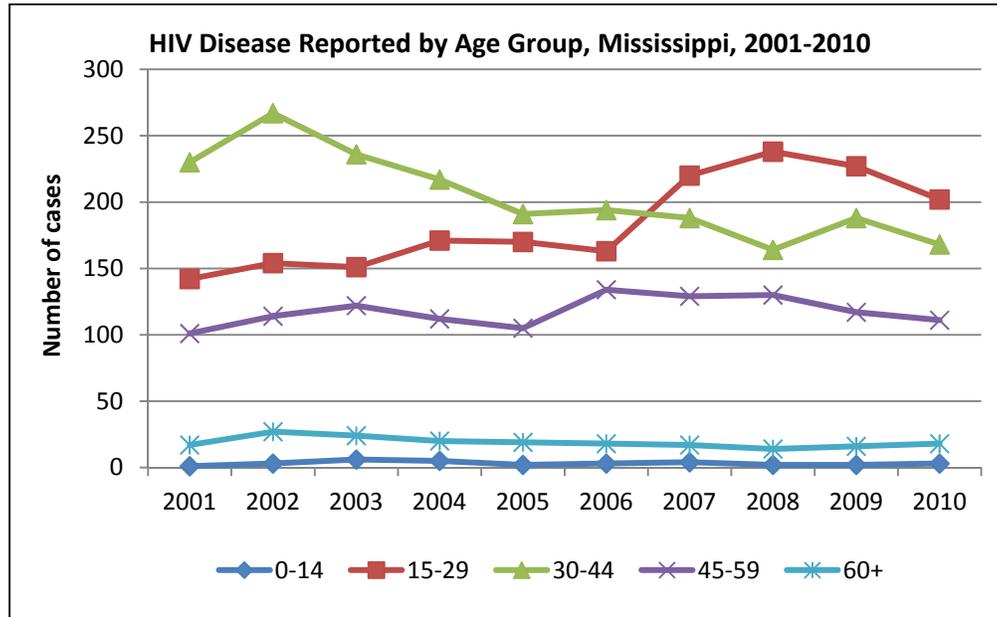
Those with NIR continue to be the largest category reported by those infected with HIV (Figure 41). Since 2008, there has only been a slight dip in the proportion of cases reported that have no risk identified (from 53.6% to 44.6%). In the meantime, those who reported as MSM increased from 31.2% to 41.2%, during 2001-2010. MSM/IDU has increased slightly (from 1.6% to 3.0%) and both heterosexual sex and IDU categories have decreased. Refer to Figure 41.

**Figure 41**



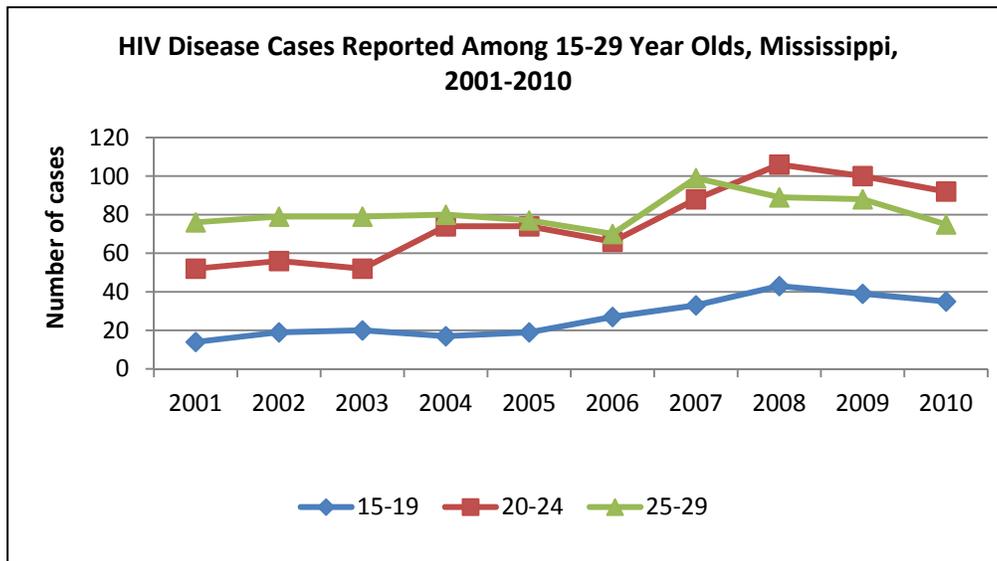
Although there has been a 27% decline in reported cases among 30-44 year olds, they represented the highest reported cases from 2001-2006, until the shift in cases to younger people. Cases among 15-29 year olds have increased 24% since 2006 (from 163 to 202 cases). Cases among other age groups have remained stable. In 2010, 15-29 year olds represented 40% of cases, 30-44 year olds represented 33% of cases, and 45-59 year olds represented 22% of cases (Figure 42).

**Figure 42**



The increase among 15-29 year olds has primarily been driven by 15-24 year olds. From 2001-2010, cases among 15-19 year olds have nearly tripled, and cases among 20-24 year olds nearly doubled. Despite a huge spike in cases from 2006 to 2007, cases among 25-29 year olds have since decreased back to where they first were in 2001 (Figure 43).

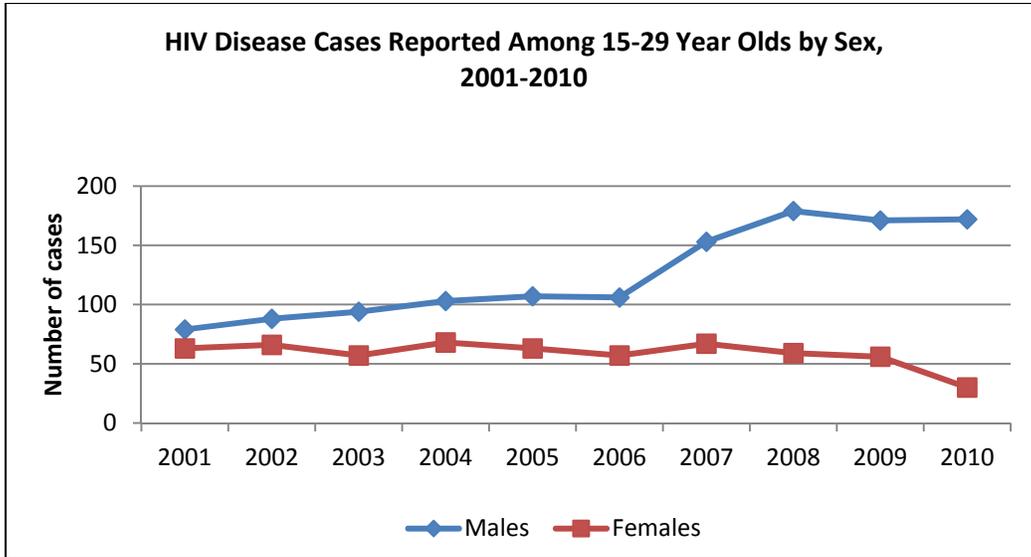
**Figure 43**



Males have driven the increase among 15-29 year olds. Since 2006, cases among males have increased 62% (from 106 to 172 cases) and during the same time, cases among females were

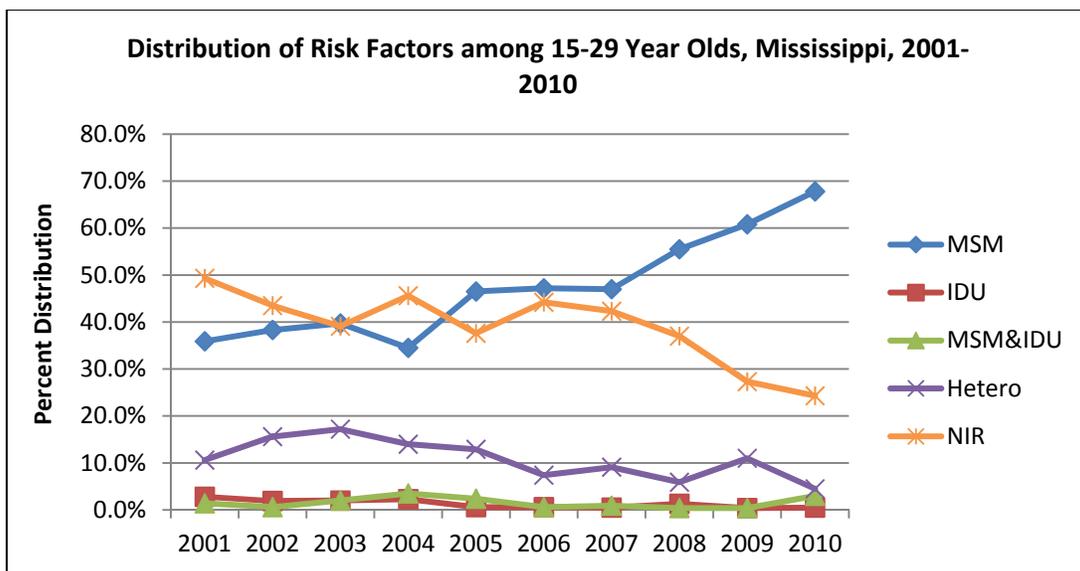
nearly cut in half (47% decrease). Males represented 85% of all cases reported among 15-29 year olds in 2010 (Figure 44).

**Figure 44**



Over the past decade, the proportion of 15-29 year olds who reported MSM has increased from 35.9% to 67.8%. During the same time frame, the number of NIRs has decreased. This may be attributed to more teens and young men who are comfortable with identifying as having sex with other men. The proportion of 15-29 year olds who reported heterosexual sex decreased from 10.6% in 2001 to 4.5% in 2010. Injection drug use (IDU) and MSM combined with IDU (MSM/IDU) have stayed below 5% during the entire time frame (Figure 45).

**Figure 45**



In Mississippi, young African American men between the ages of 15-29 account for a disproportionate number of recent HIV infections, especially those who identify as MSM. African American men between the ages of 15-29 accounted for 29% of all cases reported in 2010 and African American MSM between the ages of 15-29 represented 23% of all cases reported in 2010.

In November 2007, the MSDH reported to the CDC an increase in the number of young Black MSM who were diagnosed with HIV infection at a sexually transmitted disease (STD) clinic in Jackson, Mississippi. MSDH and CDC conducted a survey of 29 young black MSM in Hinds, Madison, and Rankin Counties who were diagnosed with HIV infection from January 2006--April 2008 to characterize risk behavior and HIV testing behavior. The findings were summarized in the February 2009 issue of the Morbidity and Mortality Weekly Report (MMWR).<sup>21</sup>

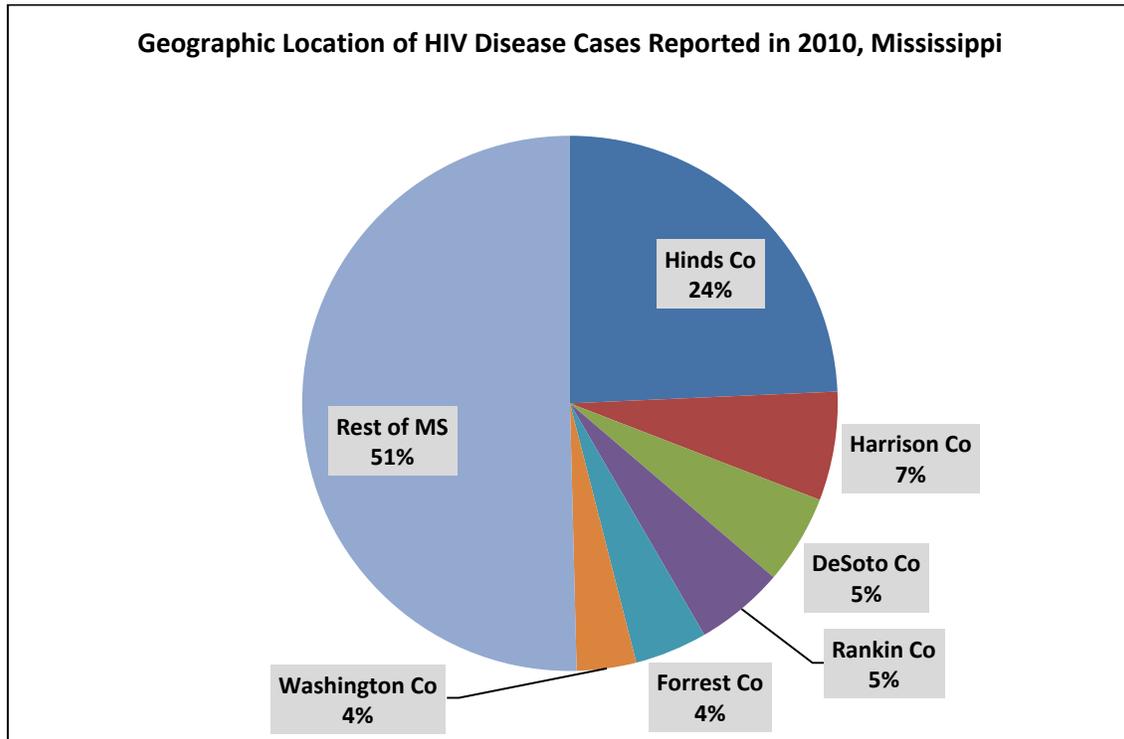
Results showed that during the 12 months before receiving their HIV infection diagnosis, 20 (69%) of the 29 participants had unprotected anal intercourse, but only three (10%) of the 29 thought they were likely or very likely to acquire HIV infection in their lifetimes. In addition, six (21%) of those surveyed reported having no HIV test during the 2 years before their first positive HIV test, and five (17%) reported having one test. At the time of their first positive HIV test, three of the 29 thought they were likely or very likely to acquire HIV infection during their lifetime; 15 (52%) thought acquiring HIV infection was unlikely or very unlikely.

Eleven (38%) of those surveyed reported having no HIV test or only one HIV test during the 2 years before HIV diagnosis. Current CDC guidelines recommend HIV testing at least once each year for sexually active MSM.<sup>22</sup> Findings from this investigation show the need for increased awareness about HIV transmission and recommended testing guidelines for those at risk.

There was at least one report of HIV disease from all counties within Mississippi, but six counties represented nearly half of all cases. These counties include Hinds County (24%), Harrison County (7%), DeSoto County (5%), Rankin County (5%), Forrest County (4%), and Washington County (4%). These counties are largely populated and have population sizes greater than 100,000, with the exception of Washington and Forrest Counties (Map 6 and Figure 46).



**Figure 46**



### **HIV Prevalence in the United States (Persons Living with HIV disease)**

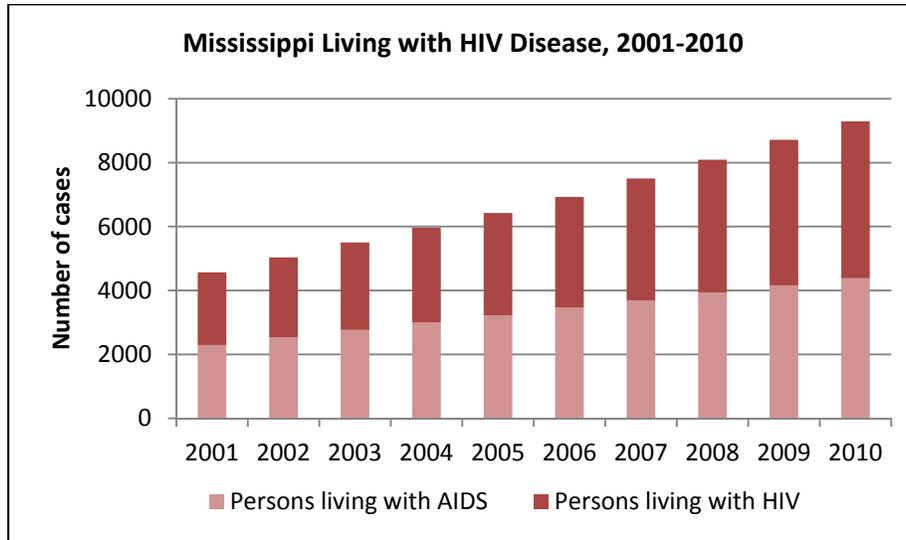
The Centers for Disease Control and Prevention (CDC) estimates that approximately 1.1 million persons are living with HIV in the United States; however, one in five, or 21% were unaware of their infection.<sup>23-24</sup> This number is expected to continue to increase over time, as antiretroviral treatments prolong the lives of those who are infected and more people become infected with HIV than die from the disease each year. As the number of people living with HIV—or HIV prevalence—grows, so does the opportunity for HIV transmission to others.

### **HIV Prevalence in Mississippi**

As of December 31, 2010, there were 9,292 Mississippians living with HIV disease. Not all of these individuals have been diagnosed in Mississippi, but currently reside in the state. Since 2001, there has been a gradual increase in the number of individuals living with HIV. As of 2010, the number of individuals living with HIV has doubled 2001's reported cases (from 4,570

to 9,292). Figure 47 shows that in recent years, the proportion is greater among persons living with HIV and in 2010, 47% (4,385) of living cases had progressed to AIDS.

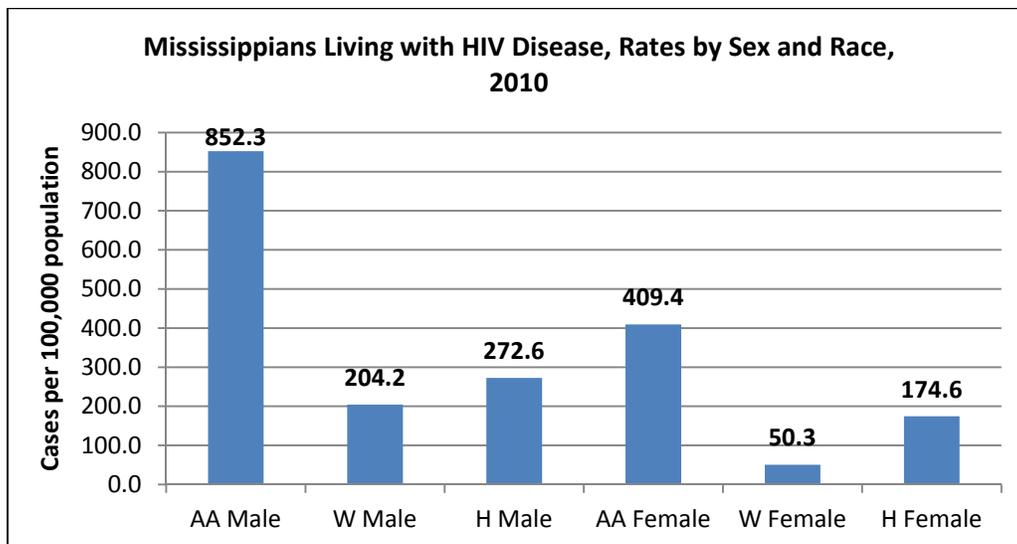
**Figure 47**



In 2010, among those living with HIV in Mississippi, African American men had the highest rates. African American men had rates 4.1 times higher than white males, and 3.1 times higher than Hispanic men (Figure 48).

Among females, African Americans had the highest rates of living cases. Their rates were 8.1 times higher than white women and 2.3 times higher than Hispanic women.

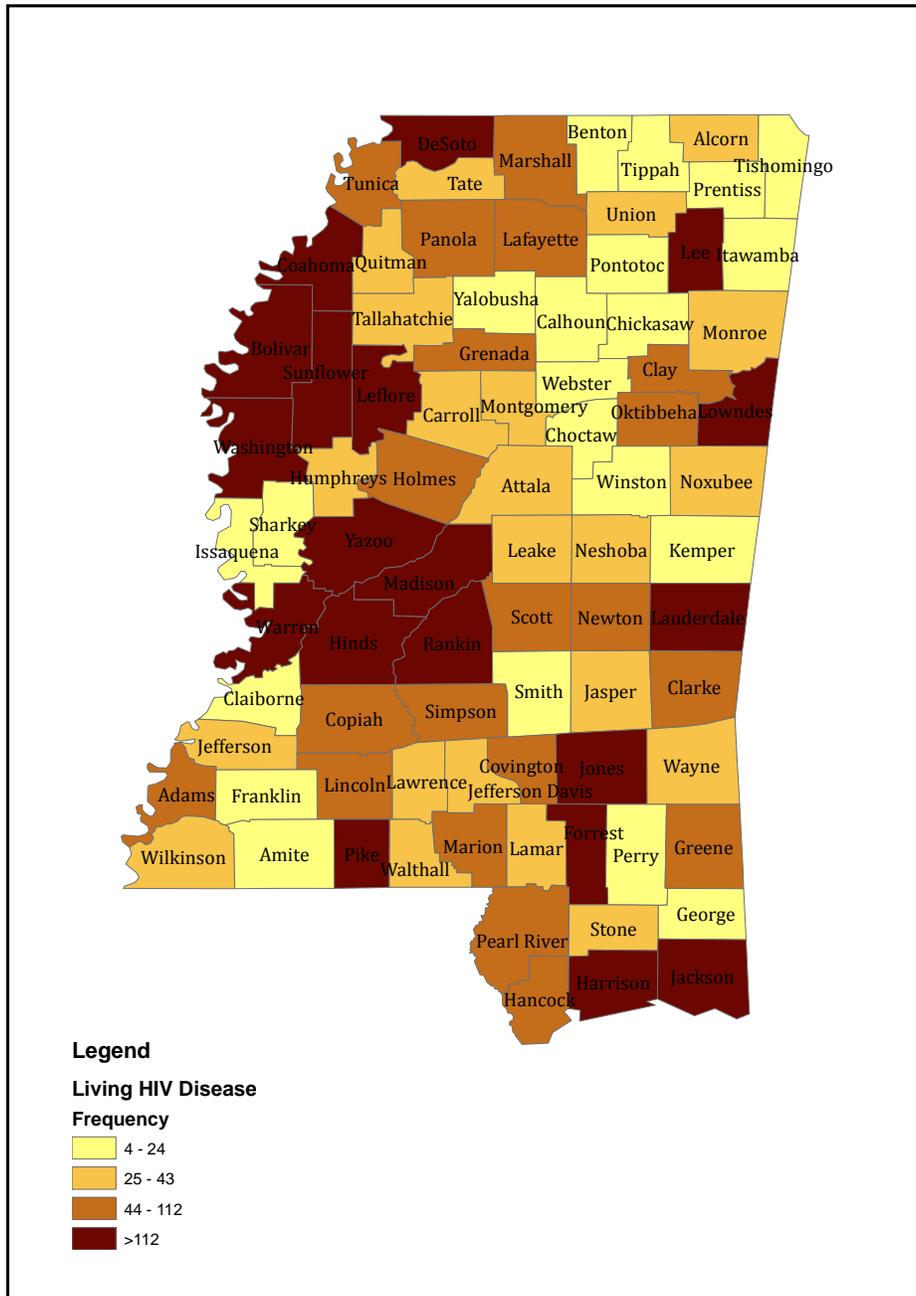
**Figure 48**



Map 7 shows that there is someone living with HIV disease in every county within the state. Hinds, Harrison, Rankin, Forrest, and Jackson Counties have the highest number of residents who are living with the disease.

**Map 7**

**Mississippians Living with HIV Disease by county  
(As of 12/31/2010)**



**Table 4****Persons Living with HIV Disease and Cumulative Cases Reported in Mississippi through December 31, 2010**

	Persons Living with HIV Disease as of 12/31/2010		Cumulative HIV Disease Diagnosis as of 12/31/2010	
	Cases	Percent	Cases	Percent
<b>Gender</b>				
Male	6366	68.5%	9830	71.1%
Female	2926	31.5%	3999	28.9%
<b>Race/Ethnicity</b>				
American Indian/Alaska Native	14	0.2%	20	0.1%
African American	6756	72.7%	10046	72.6%
Asian/Pacific Islander	19	0.2%	23	0.2%
Hispanic/Latino	189	2.0%	220	1.6%
White	2167	23.3%	3345	24.2%
Multi-race	108	1.2%	127	0.9%
Unknown	39	0.4%	47	0.3%
<b>Age Group</b>				
0-14	31	0.3%	135	1.0%
15-29	1103	11.9%	4472	32.3%
30-44	3560	38.3%	4576	33.1%
45+	4598	49.5%	2915	21.1%
<b>Transmission Category</b>				
MSM	3267	35.2%	4862	35.2%
IDU	597	6.4%	959	6.9%
MSM/IDU	389	4.2%	557	4.0%
Hetero	1570	16.9%	2411	17.4%
Other	28	0.3%	125	0.9%
NIR	3330	35.8%	4774	34.5%
Pediatric	111	1.2%	141	1.0%
<b>Public Health District</b>				
I	761	8.2%	1019	7.4%
II	505	5.4%	655	4.7%
III	962	10.4%	1485	10.7%
IV	425	4.6%	670	4.8%
V	3575	38.5%	5556	40.2%
VI	559	6.0%	886	6.4%
VII	465	5.0%	670	4.8%
VIII	848	9.1%	1144	8.3%
IX	1189	12.8%	1739	12.6%
<b>Total</b>	<b>9292</b>	<b>100.0%</b>	<b>13829</b>	<b>100.0%</b>

## **Summary of Living Cases and Cumulative Cases (All Cases Ever Reported)**

(Cumulative cases refer to the total number of cases ever reported to the health department)

- Males represent 68.5% of living cases and 71.1% of all cases ever reported.
- African Americans represent 72.7% of living cases and 72.6% of all cases ever reported; followed by Whites, who represent 23.3% of living cases and 24.2% of all cases ever reported.
- Mississippians are living longer with HIV. Individuals 45 years and older represented half (49.5%) of all living cases but 21.1% of cases ever reported; followed by 30-44 year olds who represent 38.3% of living cases and 33.1% of all cases ever reported.
- 35.2% of Mississippians living with HIV attribute their infection to MSM, and 35.2% of all cases ever reported MSM; followed by heterosexual sex (16.9% of living cases and 17.4% of all cases reported)
- District V has the highest number of individuals living with HIV (38.5%), followed by District IX (12.8%)
- District V has the highest number of cases ever reported (40.2%), followed by District IX (12.6%)

## **Perinatal HIV Disease Surveillance**

Perinatal HIV/AIDS surveillance program collects information on HIV-infected pregnant mothers, infants perinatally exposed to HIV, and HIV-infected children. Perinatal HIV Incidence surveillance is intended to report new cases of perinatal exposures and HIV-infection among children. Between January 1, 2006, and December 31, 2010, an estimated 346 infants were born to women with HIV infection in Mississippi. There were 4 cases of perinatal HIV during this period. Two additional HIV pediatric cases were diagnosed in Mississippi, but were originally from outside of the United States.

Some women are unaware of their HIV status during pregnancy, which may lead to an underestimate of the number of births to HIV infected mothers. Perinatal surveillance data include only those women who have had a positive result from a confirmatory HIV test and their infants.

## **Effective Prevention of Mother to Child Transmission**

Preventing HIV infection in the intrapartum period (period extends from the beginning of contractions that cause cervical dilation to the first 1 to 4 hours after delivery of the newborn and placenta) is critical. Diagnosing and treating HIV infections in women of child bearing age is one way Mississippi is preventing perinatal HIV transmission.

The Mississippi State Department of Health (MSDH) and local health departments work closely with The University of Mississippi Medical Center Pediatric Infectious Disease Department. Mississippi has low perinatal infections due to being actively aggressive and involved in getting HIV (+) mothers in for care. Mothers who cannot make appointments are provided transportation through Ryan White funding, and are contacted by hospital staff if an appointment is missed.

UMC Pediatrics’ staff also follows up with local health departments in the county where the patient resides.

### **Recommended HIV Testing Schedule for Infants Born to Mothers Infected with HIV**

HIV infection can be reasonably excluded in children <18 months of age if there are at least two negative HIV tests by PCR, when one negative test is after 1 month of age and another is performed after 4 months of age.

The recommended HIV testing schedule followed by the CDC for infants with perinatal HIV exposure is a test at 14 to 21 days, then at 1 to 2 months, and again at 4 to 6 months using a virologic HIV test.<sup>25</sup> These tests detect HIV antibodies in the blood. UMC Pediatrics’ staff provides care and follow up for most infants, whom either are born in or move to Mississippi, that have been perinatally exposed to HIV by their infected Mothers. Infants seen at this clinic are tested using a more in-depth approach beyond what is recommended by the CDC. UMC Pediatrics staff tests infants earlier and more frequently, Table 5 gives a breakdown of the schedule UMC uses.

**Table 5**

#### **University of Mississippi Medical Center Pediatric Infectious Disease Testing Schedule**

<b>Test Type</b>	<b>Age</b>
<b>DNA PCR</b>	48 hours
<b>DNA PCR</b>	2 weeks
<b>DNA PCR and RNA PCR</b>	1 Month
<b>DNA PCR</b>	3 Months
<b>DNA PCR and RNA PCR</b>	6 Months
<b>DNA PCR and RNA PCR</b>	18 Months

### **Late Diagnosis of HIV Infection in the United States**

Late diagnosis of HIV infection is common. Among persons with newly diagnosed HIV in 2008, 33% developed AIDS within 1 year of initial HIV diagnosis.<sup>26</sup> These persons likely were infected an average of 10 years before diagnosis. During this period, they missed opportunities to obtain medical care and to prevent unwitting transmission of HIV to others. Persons with a late diagnosis of HIV infection also are at greater risk for short-term mortality than those who receive

an HIV diagnosis earlier in the course of infection. Initiation of care soon after diagnosis is recommended, yet a meta-analysis of 28 studies from multiple U.S. regions found that 28% of persons did not enter care within 4 months of HIV diagnosis.<sup>27</sup> In addition, an estimated 41% of HIV-infected persons did not average at least two care visits in a year, as recommended by the U.S. Department of Health and Human Services.<sup>28</sup>

### **Late Diagnosis of HIV Infection in Mississippi**

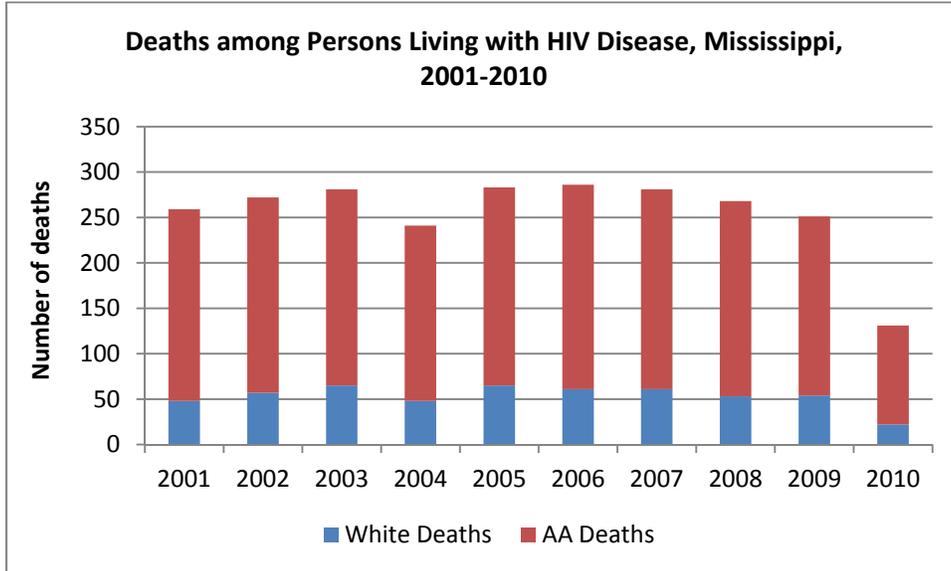
Among persons newly diagnosed with HIV in 2009, 41% developed AIDS within 1 year of initial HIV diagnosis. Among those who developed AIDS within 1 year of initial infection, 79% were males, 74% were African American, 26% were between the ages of 15-29, 34% were 30-44 years old, and 39% were over the age of 44. Thirty-seven percent (37%) were residents of Public Health District V and 15% were residents of Public Health District VIII.

### **Deaths among Persons with HIV Disease in Mississippi**

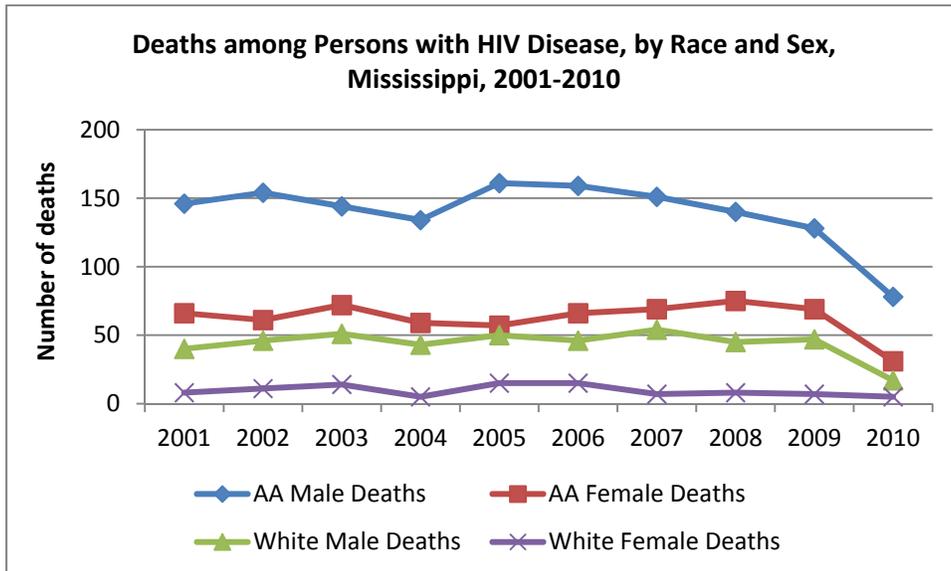
Each year, data are collected on the number of deaths among persons living with HIV disease. Death data are obtained from vital records and national death data. While individuals may die from HIV-related illnesses, others may die from other causes, such as heart disease, motor vehicle accidents, or diabetes. The information in Tables 49 and 50 summarizes deaths among individuals infected with HIV from 2001 to 2010.

Since 2001, there has been over 250 deaths each year, with the exception of 2004, when 247 deaths were reported, and in 2010. The low number of deaths reported in 2010 is due to reporting delays and do not represent an adequate picture of HIV related deaths. African Americans have the highest number of deaths each year, reporting nearly 80% of deaths annually. When considering race and gender, African American men have the highest number of deaths, followed by African American females, White males, and White females. White females reported 15 or fewer deaths each year.

**Figure 49**



**Figure 50**



In 2010, there were 138 deaths reported. The table below gives a breakdown of 2010 deaths. Deaths were among older individuals; 31.9% were among 40-49 year olds and 37.6% were among individuals 50 and older. There were more deaths among males (73.2%), African Americans (79%), and residents of Public Health District V (35.5%).

**Table 6****Deaths among Persons with HIV Disease in Mississippi, 2010**

	<b>Number</b>	<b>Percent</b>
<b>Age at time of death</b>		
20-24	2	1.4%
25-29	8	5.8%
30-34	16	11.6%
35-39	16	11.6%
40-44	25	18.1%
45-49	19	13.8%
50-54	17	12.3%
55-59	17	12.3%
60+	18	13.0%
<b>Gender</b>		
Male	101	73.2%
Female	37	26.8%
<b>Race</b>		
AA	109	79.0%
White	22	15.9%
Other	7	5.1%
<b>PHDist</b>		
I	15	10.9%
II	3	2.2%
III	13	9.4%
IV	8	5.8%
V	49	35.5%
VI	5	3.6%
VII	8	5.8%
VIII	19	13.8%
IX	18	13.0%

**Disease Intervention Specialists**

Disease Intervention Specialists (DIS) are trained public health professionals whose main role is to identify, locate, counsel, and motivate people with sexually transmitted disease and their contacts in a confidential and ethical manner. The DIS are directly involved in each program component which includes: Surveillance, Disease Intervention, Health Care Provider visits, client referrals, venipuncture and other specimen collections, STD counseling, community screenings, educational presentations, laboratory visits, and other epidemiologic duties. DIS are responsible for providing timely disease management, investigation, and case management, and Partner Services to control the spread of STDs in communities.

Statewide, DIS were assigned 592 total early syphilis (TES) cases in 2010. Of these cases, 1,396 partners were initiated from the interviews, with an average of 2.4 contacts per TES case. More than half (60%) of the partners initiated from the interviews were examined. The majority (68%) of the partners who were examined received preventive medical prescriptions. Twenty-seven percent (27%) of the partners initiated were not examined, mainly due to the inability to be located (64%).

In 2010, 651 HIV/AIDS cases were assigned to DIS, of which 93% of cases were interviewed. DIS initiated 1,192 partners from the interviews, with an average of 2 contacts per HIV case. Of the total partners initiated from interviews, 519 (43.6%) of the new partners were notified. Of the new partners notified, 78% tested negative for HIV, 9% tested as newly positive for HIV, and 12% were not tested. Nearly 1 in 3 (33.4%) of the partners initiated were not notified, mainly because they were unable to be located (51.6%).

## **HIV Prevention**

### **The National HIV/AIDS Strategy (NHAS)**

On July 13, 2010 the White House released the National HIV/AIDS Strategy (NHAS). This ambitious plan is the nation's first-ever comprehensive coordinated HIV/AIDS roadmap with clear and measurable targets to be achieved by 2015.

### **Vision for the National HIV/AIDS Strategy**

The United States will become a place where new HIV infections are rare and when they do occur, every person regardless of age, sex, race/ethnicity, sexual orientation, gender identity or socio-economic circumstance, will have unfettered access to high quality, life-extending care, free from stigma and discrimination.

### **Goals for the National HIV/AIDS Strategy**

The NHAS has three primary goals: 1) reducing the number of people who become infected with HIV, 2) increasing access to care and optimizing health outcomes for people living with HIV and 3) reducing HIV-related health disparities.

The NHAS states that more must be done to ensure that new prevention methods are identified and that prevention resources are more strategically utilized. Further, the NHAS recognizes the importance of getting people with HIV into care early after infection to protect their health and reduce their potential of transmitting the virus to others. HIV disproportionately affects people who have less access to prevention and treatment services and, as a result, often have poorer health outcomes. Therefore, the NHAS advocates adopting community-level approaches to reduce HIV infection in high-risk communities and reduce stigma and discrimination against people living with HIV.<sup>29</sup>

The ultimate NHAS goal is to inform all HIV positive persons of their status and bring them into care in order to improve their health status, prolong their lives, and slow the spread of the epidemic in the US through enhanced prevention efforts. To ensure success, the NHAS requires the Federal government and State, tribal and local governments to increase collaboration, efficiency, and innovation. Therefore, to the extent possible, Ryan White HIV/AIDS program activities should strive to support the three primary goals of the NHAS.

**Introduction to Policy and Education Branches**

The Mississippi State Department of Health STD/HIV Office Policy Branch is responsible for overseeing behavioral intervention implementation through collaboration, coordination and contractual agreement with community –based organizations (CBOs) and AIDS Service Organizations (ASOs), and health education and risk reduction through educational events, community mobilization, and Community Planning for HIV Prevention in the state.

In 2010, the Policy Branch funded the following interventions in prioritized populations and counties:

**Table 7**

**2010 SUB-GRANTEES at a Glance**

INTERVENTION	INTERVENTION & TARGET POPULATION	HEALTH DISTRICT
NIA Intervention	AA Men	District 5: Hinds, Madison, & Rankin
CLEAR	People 16 and older living with HIV/AIDS or at high-risk for HIV	District 5 Hinds
RAPP (Real AIDS Prevention Project)	AA Heterosexual Women	District 5 Hinds
Basic Community Outreach	AA Youth, Young AA women and Men	District 9 All Counties
NIA	AA Men	District 5 Hinds Madison Rankin
CLEAR	People 16 and older living with HIV/AIDS or at high-risk for HIV	District 8 Forrest

NIA	AA Men	District 3 Washington Bolivar Sunflower
AIDS Hotline	All Mississippians	District 9; All Counties

In 2010, the Education Branch provided trainings to Mississippians working in community settings, churches, CBOs, ASOs, healthcare settings, as well as the public health field. Trainings were provided in various locations throughout the state to relieve travel burden and address the needs in the public health districts. Trainings offered were as follows:

**Table 8**

**2010 Education Branch Training Schedule**

Courses	Months Offered	Public Health District
STD/HIV Instructor	February, March, April, September, October & December	Districts V, IX, III & VII
Fundamentals of HIV Prevention Counseling	March, May, & August	Districts V, IX, & III
Fundamentals of HIV Prevention Counseling	March, May, & August	Districts V, IX, & III
HIV Prevention Counseling: Addressing Issues of Youth	July	District V
HIV Prevention Counseling: Addressing Issues of Clients Who Test Positive	May & August	District V
Comprehensive Risk Counseling Services	September	District V
Partner Counseling and Referral Services (PCRS)	October	District V
Community Planning Training	January & September	District V

Additional trainings through Capacity Building Assistance (CBA) providers were offered to build skills, knowledge, cultural and linguistically appropriate services to enhance and strengthen STD/HIV Office staff, CBO, ASOs, and public health providers' delivery of prevention efforts and services to individuals at-risk of acquisition of HIV, as well as affected, or infected by HIV.

**Training consisted of:**

- CLEAR
- Bridging Theory and Practice
- Strategies for setting Prioritized populations

The Prevention and Education Branch conducted and collaboratively provided HIV Awareness trainings and street and community outreach through staff, CBOs, ASOs, trained community leaders, and members of the Mississippi Community Planning Group (MSCPG). Over 34,526 pamphlets, 209,159 male condoms and 11,468 female condoms were disseminated to residence of the state. Prevention and Education Branch staff attended multiple health fairs, community presentation, and public health forums to provide educational information, prevention messages, condoms, testing, and referral/linkage to care services.

The Mississippi Community Planning Group selects prioritized populations based on epidemiological data reported from the MSDH STD/HIV Office. The prioritized populations and geographical locations for 2011 are defined by Mississippi Community Planning Group (MSCPG) for HIV Prevention as follows:

**Table 9**  
**2011 Target Population and Prioritized Public Health District**

<b>Rank</b>	<b>2011 Prioritized Target Populations</b>	<b>2011 Prioritized Counties</b>	<b>2011 Prioritized Public Health Districts</b>
1	Persons living with HIV/AIDS (PLWHA)	Jackson Metro Area: Hinds, Madison, Rankin	Public Health District V
2	African American Males (ages 13-44)	MS Gulf Coast: Harrison, Jackson	Public Health District IX
3	African American MSM (ages 13-44)	MS Delta: Coahoma, Attala, Carroll, Sunflower, Washington	Public Health District III
4	African American Females (ages 13-44)	Coahoma, Desoto, Tunica	Public Health District I
5	Caucasian MSM (ages 25-64)	Clarke	Public Health District VI
6	Hispanics	Benton	Public Health District II
7	Correctional Facilities and Detention Centers	Forrest, Jones	Public Health District VIII
8	Substance Users		

**Table 10**

<b>2011 Prioritized Counties</b>	<b>Mississippians Living with HIV (2010)</b>
Claiborne, Hinds, Madison, and Rankin	3,185
Harrison and Jackson	1,011
Attala, Carroll, Sunflower, and Washington	585
Coahoma, Desoto, and Tunica	502
Kemper, Lauderdale, and Clarke	321
Lafayette, Lee, and Benton	277
Forrest and Jones	560

Table 11 identifies the Prevention Policy and the Education Branches funded the following interventions in 2011:

**Table 11**

<b>INTERVENTION</b>	<b>TARGET POPULATION</b>	<b>HEALTH DISTRICT</b>
NIA	African American Heterosexual Males	District V
CLEAR	People 16 and older Living with HIV/AIDS Or at high-risk for HIV	District V Hinds
Basic Community Outreach		District IX All Counties
NIA	AA Men	District V Hinds Madison Rankin
CLEAR	People 16 and older Living with HIV/AIDS Or at high-risk for HIV	District VIII Forrest
NIA	AA Men	District III Washington Bolivar Sunflower
AIDS Hotline		District IX All Counties

**Table 12****2011 Prevention and Education Branch Training Schedule**

Courses	Months Offered	Public Health District
STD/HIV Instructor	February, March, June, September, October & December	Districts III, V, VII, & IX
Fundamentals of HIV Prevention Counseling	February, May & August	Districts III, V, IX
HIV Prevention Counseling: Addressing Issues of Youth	April & September	District V & VIII
Comprehensive Risk Counseling Services	March & July	District V & VIII
Partner Counseling and Referral Services (PCRS)	April and August	District V
Community Planning Training	March and September	District V
Fundamentals of Waived Rapid Testing and Prevention Counseling	March & June	District V

Additional 2011 trainings through Capacity Building Assistance (CBA) providers were offered to build skills, knowledge, cultural and linguistically appropriate services and interventions to enhance and strengthen Prevention and Education Branch staff, CBO, ASOs, and public health providers deliver of prevention efforts and services to individuals at-risk of acquisition for, affected, or infected by HIV.

**Training consisted of:**

- CLEAR
- NIA
- CRCS
- Personalized Cognitive Counseling
- Cultural Competency for LGBT and Transgender Populations

Community and street outreach remains a key strategy in our efforts to prevent the acquisition and transmission of HIV/STDs. All sub-grantee agreements mandate that the funded agency is to conduct at least 40 presentations to high-risk populations reaching at least 1,000 individuals each

funding cycle. Additionally, staff from both the Prevention Policy and Education Branches attend and conduct events, community presentations, and outreach activities to provide educational information, prevention messages, condoms, testing, and referral/linkage to care services. Promotion of National Awareness Days provides opportunities to host and collaborate with CBOs and ASOs to reach high risk populations, reduce stigma associated with the disease, provide community-based targeted testing, and referrals for intervention activities.

### **Statewide Community Planning**

The Mississippi Community Planning Group (MSCPG) for HIV Prevention is a required component of the Cooperative Agreement Programs for HIV Prevention funded by the Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) and implemented by the Mississippi State Department of Health (MSDH). The responsibility and mission of the MSCPG is to develop, in collaboration with the Mississippi State Department of Health, a Comprehensive HIV Prevention Plan for the State of Mississippi. The Plan, which details HIV prevention activities/interventions and supportive services and the populations targeted for services due to the highest incidence of HIV disease and/or sexually transmitted diseases, provides direction for the MSDH in its application for CDC Cooperative Agreement Programs funds for implementation HIV prevention programs.

### **Information Hotline**

The MSDH STD/HIV Program enters into a sub-grant agreement with a CBO/ASO to provide a 24 hour HIV/STD hotline for the entire state. All educational material advertises the hotline. Book marks advertising the hotline are disseminated at health fairs, presentations and community events.

### **Expanded Testing- Rapid HIV Testing**

As previously mentioned, 21.4% of persons living with HIV are unaware of their status. Although, African Americans represent 37% of Mississippi's population, they comprised 72.7% of persons living with HIV and 78.5% of newly reported HIV cases in 2010. To increase awareness of HIV infection, the CDC established the Expanded Testing Initiative (ETI). Under the ETI, three programs were launched: *PS 07-768 Expanded and Integrated Human Immunodeficiency Virus (HIV) Testing for Populations Disproportionately Affected by HIV, Primarily African American*, followed by *PS10-10138: Expanded Human Immunodeficiency Virus (HIV) Testing for Disproportionately Affected Populations (2010-2011)*, which was incorporated into *PS12-1201: Comprehensive Human Immunodeficiency Virus (HIV) Prevention Programs for Health Departments (2012-2017)*.<sup>30</sup>

CDC has provided funding to these programs to offer free HIV screenings in various clinical and nonclinical settings. As of December 31, 2011, the Expanded Testing program in Mississippi has

15 participating sites that offer rapid HIV tests, free of charge, to all their patients/clients (See Map 8 below). These sites include local emergency rooms, community health centers, mental health community centers, and homeless clinics. In the future, MSDH will branch out to correctional institutions, college health centers, and community based organizations.

In Mississippi, testing is performed at the point-of-care-site in which whole blood is collected by pricking the finger. The test usually takes 20 minutes to perform and protocols are in place to ensure confidentiality and post test counseling. Mississippi only offers confidential HIV testing, requiring the testing center to record the person's name, social security number, risk factors, and other specified variables. If the test is negative, further testing is not needed. If the test is positive, a confirmatory test by a licensed laboratory must be performed to confirm that a person is HIV positive.

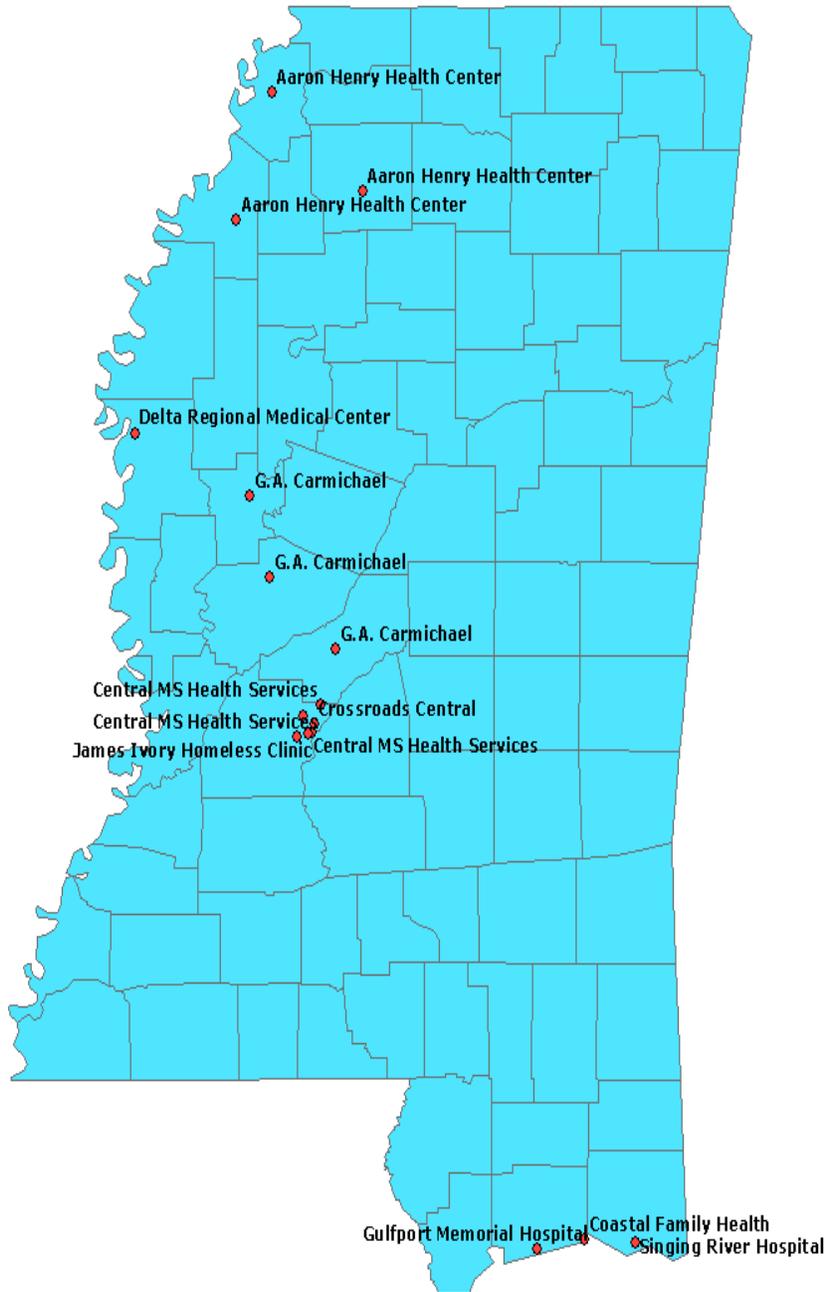
The rapid test ensures that high risk persons receive HIV testing and that newly diagnosed persons are linked to medical care and prevention services. DIS counsel newly diagnosed HIV positive persons about their status and a form is completed to document the counseling session. DIS refer HIV positive persons to social workers who will then provide additional resources.

### **The Benefits**

- People living with HIV can receive effective treatment, resulting in improved health and extended life, if their HIV status is diagnosed sooner. Currently, many people (up to 65% in one study) learn of their HIV infection only after they have developed HIV related symptoms.
- Most people, after finding out their positive HIV status, adopt behaviors which will reduce possible HIV transmission to others.
- Routine HIV testing will reduce the stigma associated with taking an HIV test.

# Map 8

## Expanded Testing Sites



## **HIV Care and Services Program**

### **About the Ryan White HIV/AIDS Program**

The Ryan White Program works with cities, states, and local community-based organization to provide HIV-related services to more than half a million people each year. The program is for those who do not have sufficient health care coverage or financial resources for coping with HIV disease. Ryan White fills gaps in care not covered by other sources.

The majority of Ryan White funds support primary medical care and essential support services. A smaller, but equally critical portion, fund technical assistance, clinical training, and research on innovative models of care.

The Ryan White legislation created a number of programs, called Parts, to meet needs for different communities and populations affected by HIV/AIDS. Each is described below.

**Part A** provides emergency assistance to Eligible Metropolitan Areas and Transitional Grant Areas that are most severely affected by the HIV/AIDS epidemic.

**Part B** provides grants to all 50 States, the District of Columbia, Puerto Rico, Guam, the U.S. Virgin Islands, and 5 U.S. Pacific Territories or Associated Jurisdictions.

**Part C** provides comprehensive primary health care in an outpatient setting for people living with HIV disease.

**Part D** provides family-centered care involving outpatient or ambulatory care for women, infants, children, and youth with HIV/AIDS.

**Part F** provides funds for a variety of programs:

**The Special Projects of National Significance Program** grants fund innovative models of care and supports the development of effective delivery systems for HIV care.

**The AIDS Education and Training Centers Program** supports a network of 11 regional centers and several National centers that conduct targeted, multidisciplinary education and training programs for health care providers treating people living with HIV/AIDS.

**The Dental Programs** provide additional funding for oral health care for people with HIV.

**The Minority AIDS Initiative** provides funding to evaluate and address the disproportionate impact of HIV/AIDS on African Americans and other minorities.

Ryan White is administered by the U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), HIV/AIDS Bureau (HAB). Federal funds are awarded to agencies located around the country, which in turn deliver care to eligible individuals under funding categories called Parts, as outlined below. First authorized in 1990, the Ryan White HIV/AIDS Program is currently funded at \$2.1 billion.<sup>31</sup>

## Ryan White Funding in Mississippi

### <sup>32</sup>Ryan White Program Funding Received by Mississippi Grantees, FY 2009

Program	Fiscal Year 2009
<b>EMAs/TGAs: Part A</b>	\$0
<b>States and Territories: Part B</b>	\$6,409,650
<b>ADAP (Part B) and ADAP Supplemental</b>	\$7,610,703
<b>Emerging Communities: Part B</b>	\$285,111
<b>Early Intervention: Part C</b>	\$3,219,681
<b>Capacity Building: Part C</b>	\$0
<b>Women, Infants, Youth, Families: Part D</b>	\$1,035,223
<b>Oral Health Programs: Part F</b>	\$284,032
<b>AETC: Part F</b>	\$0
<b>MAI Part A</b>	\$0
<b>MAI Part B</b>	\$0
<b>MAI AETCs</b>	\$0
<b>SPNS: Part F</b>	\$148,656
<b>Total</b>	<b>\$18,993,056</b>

Notes: Oral Health includes the Dental Reimbursement Program and the Community Dental Partnership Grant Program. Minority AIDS Initiative funding from Parts C and D is included in Part C and D totals. States with no direct AIDS Education and Training Center (AETC) funding are covered by an AETC local performance site.

The Mississippi State Department of Health participates in Part B of the Ryan White Program. AIDS Drug Assistance Program (ADAP) and not funded by Ryan White by Part B.

#### ***AIDS Drug Assistance Program (ADAP)***

The AIDS Drug Assistance Program (ADAP) is authorized under Part B of the CARE Act. The ADAP program is a state-administered program that provides HIV/AIDS medications to low-income individuals living with HIV disease who have little or no coverage from private or third party insurance. In addition to providing medications for HIV treatment, Part B funds for ADAP are used for the prevention and treatment of opportunistic infections.

In 2010, the Mississippi AIDS Drug Assistance Program (ADAP) provided medications to 1,471 people, of which twenty-seven percent (390) were newly enrolled clients. Table 13 gives a demographic breakdown of ADAP clients in Mississippi. Most Mississippi ADAP clients served in 2010 were African American (76%), male (70%), and between the ages of 25-44 years of age (55%).

**Table 13: Demographic Characteristics of ADAP Clients: Mississippi, 2010**

<b>Demographic Category</b>	<b># of clients</b>	<b>% of Clients</b>
<b>Race/Ethnicity</b>		
White	311	21%
African American	1,117	76%
Hispanic	39	2.6%
American Indian	1	<1%
Pacific Islander	1	<1%
<b>Gender</b>		
Male	1036	70%
Female	433	29%
Transgender	2	0.1%
<b>Age (yrs)</b>		
Under 2	1	< 1%
2-12	5	< 1%
13-24	121	8%
25-44	804	55%
45-64	524	36%
65 +	16	1%

**Housing Opportunities for People with AIDS (HOPWA)**

The HOPWA program was established by HUD to address the specific needs of persons living with HIV/AIDS and their families. HOPWA makes grants to local communities, states, and nonprofit organizations for projects that benefit low income persons medically diagnosed with HIV/AIDS and their families.

Through the Mississippi HOPWA program, 968 individuals received housing assistance in 2010. Table 14 gives a demographic breakdown of HOPWA clients in Mississippi. Among HOPWA clients served in 2010, 82% were African American, 63% were male, and 51% were between the ages of 25 and 44.

**Table 14: Demographic Characteristics of HOPWA Clients: Mississippi, 2010**

<b>Demographic Category</b>	<b># of clients</b>	<b>% of Clients</b>
<b>Race/Ethnicity</b>		
White	170	18%
African American	793	82%
Other	5	< 1%
<b>Gender</b>		
Male	614	63%
Female	354	37%

Transgender	0	0%
<b>Age (yrs)</b>		
Under 2	0	0%
2-12	1	< 1%
13-24	58	6%
25-44	496	51%
45-64	404	42%
65 +	9	1%

## Special Programs/Projects

### MS Medical Monitoring Project

#### *Background and Methods*

The Medical Monitoring Project is a CDC-funded HIV surveillance program created to learn more about persons living with HIV/AIDS. A multi-stage sampling methodology involves sampling of the state, the HIV treatment facility, and the patient levels. A sample of 400 patients is drawn from a pool which includes all patients who received HIV care at any of the participating facilities between January 1 and April 30 of a given year. Those 400 patients are then contacted by MMP staff and given the opportunity to participate in the project. A 30-45 minute in-person survey is administered to patients who agree to participate. The interview is followed by a thorough medical record abstraction. Patients who participate in the project are given a \$25 Wal-Mart gift card for their time. The results reported here were tabulated from the 2009 interview data, which means that each patient had at least one HIV-related doctor's visit between January 1, 2009 and April 30, 2009 and were interviewed between May 1, 2009 and April 30, 2010. A total of 214 interviews were administered.

#### *Results*

##### *Demographics (Table 15 & Figure 51)*

The majority of participants were Black, non-Hispanic males (48.4%) and Black, non-Hispanic females (32.9%). White, non-Hispanics made up 15.5% of the total interviewed. Patients 45-54 years of age made up 34.1% of those interviewed, while 35-44 year olds made up 30.3%. Additionally, 23.8% were 18-34 years old, and 11.7% were 55 or older. Medicaid (43.5%) was the largest category of reported medical coverage in the past 12 months, followed by Medicare (29.4%), Private Insurance (14.0%) and Ryan White (2.8%). It is also worth noting that 29.0% of patients interviewed reported having no health coverage in the past 12 months.

##### *Labs (Figures 52 & 53)*

When asked their lowest CD4 ever, 86 participants (53 males and 33 females) either responded that they didn't know or they refused to answer. Aside from the "Don't Know" and "Refused" responses, most men reported their lowest CD4 as 0-49 (20) or 200-349 (20), while most women reported theirs as 0-49 (12). When asked their highest viral load ever, most men (69) and most women (38) reported that they didn't know, or they refused to answer. Aside from the "Don't

Know” and “Refused” responses, most men (18) reported their highest viral load as “>100,000”, while most women (18) reported that they had never had a detectable viral load.

#### *Substance Abuse and Antiretroviral (ARV) History (Figures 54 & 55)*

Among the 214 participants, 21.5% had used non-injection drugs in the past 12 months, and 53.3% had used alcohol in the past 12 months. Among those who reported non-injection drug use in the past 12 months, the majority (82.6%) had used marijuana, followed by crack (30.4%), cocaine (10.9%) and ecstasy (6.5%).

Among those interviewed, 83.6% are currently taking ARVs, while 9.4% have never taken ARVs. Additionally, 7.0% have taken ARVs in the past, but are not currently.

#### *Unmet Needs (Table 16)*

Participants were asked whether or not they had received several different services during the past 12 months. For those who responded that they HAD NOT received them, they were then asked whether or not they needed those particular services. The percentages reported here are calculated by dividing the number who reported that they needed a service by the number who did not receive that service. The most highly reported unmet need was for dental services (50.9%), followed by public benefits (39.0%), transportation (13.0%), case management (11.9%) and meal/food services (11.6%). The main reason participants reported for not receiving dental, transportation, case management and meal/food services was that they didn’t know where to go or whom to call. The main reason reported for participants not receiving public benefits was that they were in the process of getting the service or they were ineligible/denied.

#### *Sexual Behavior*

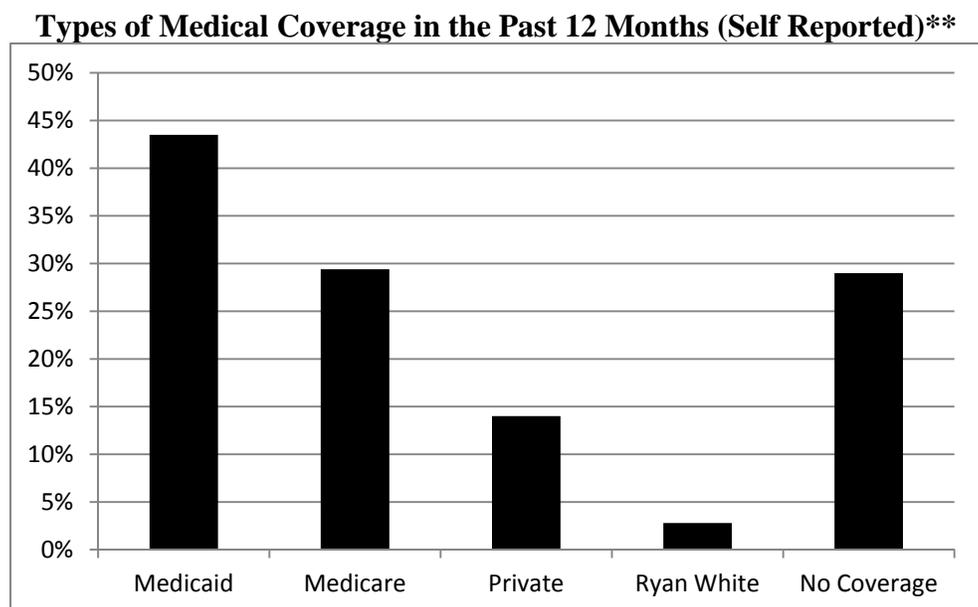
In the past 12 months, 164 (76.6%) participants reported having oral, vaginal or anal sex. Among these were 32 males who reported having oral or anal sex with at least 1 other male, 37 males who reported having oral, anal or vaginal sex with at least 1 female, and 45 females who reported having oral, anal or vaginal sex with at least 1 male. Among participants reporting oral, vaginal or anal sex in the past 12 months, 6 (18.8%) males reported having unprotected oral or anal sex with at least 1 male, 8 (21.6%) males reported having unprotected oral, anal or vaginal sex with at least 1 female, and 14 (31.1%) females reported having unprotected oral, anal or vaginal sex with at least 1 male.

**Table 15**

<b>Patient Demographic Information</b>			
<b>Race/Ethnicity at the Time of Interview by Gender*</b>			
	Male n=128	Female n=82	Total n=213
White, non-Hispanic	9.4%	5.6%	15.5%
Black, non-Hispanic	48.4%	32.9%	82.2%
Hispanic	1.9%	0%	1.9%
<b>Age at the Time of Interview by Gender</b>			
	Male n=129	Female n=82	Total n=214
18-34	14.5%	9.3%	23.8%
35-44	16.8%	12.6%	30.3%
45-54	22.4%	11.2%	34.1%
55+	6.7%	5.4%	11.7%

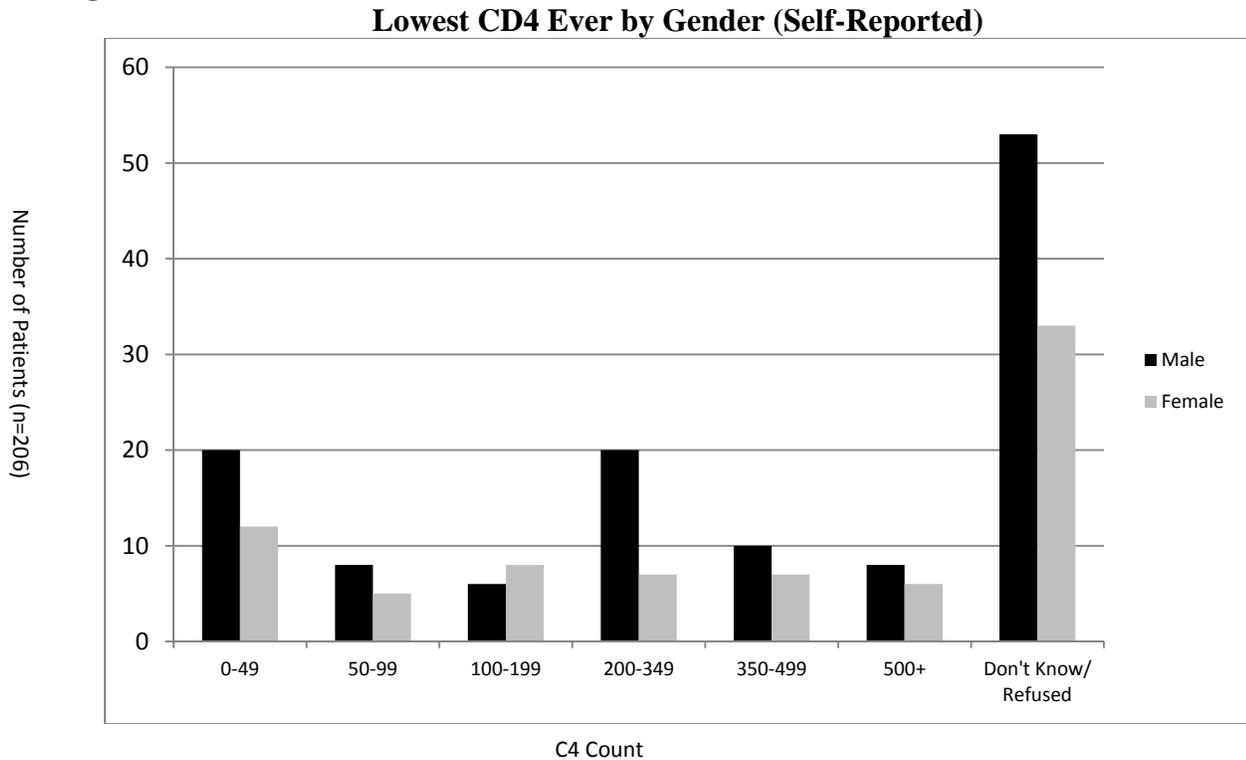
*\*Participants who refused to report race are excluded from the table.*

**Figure 51**

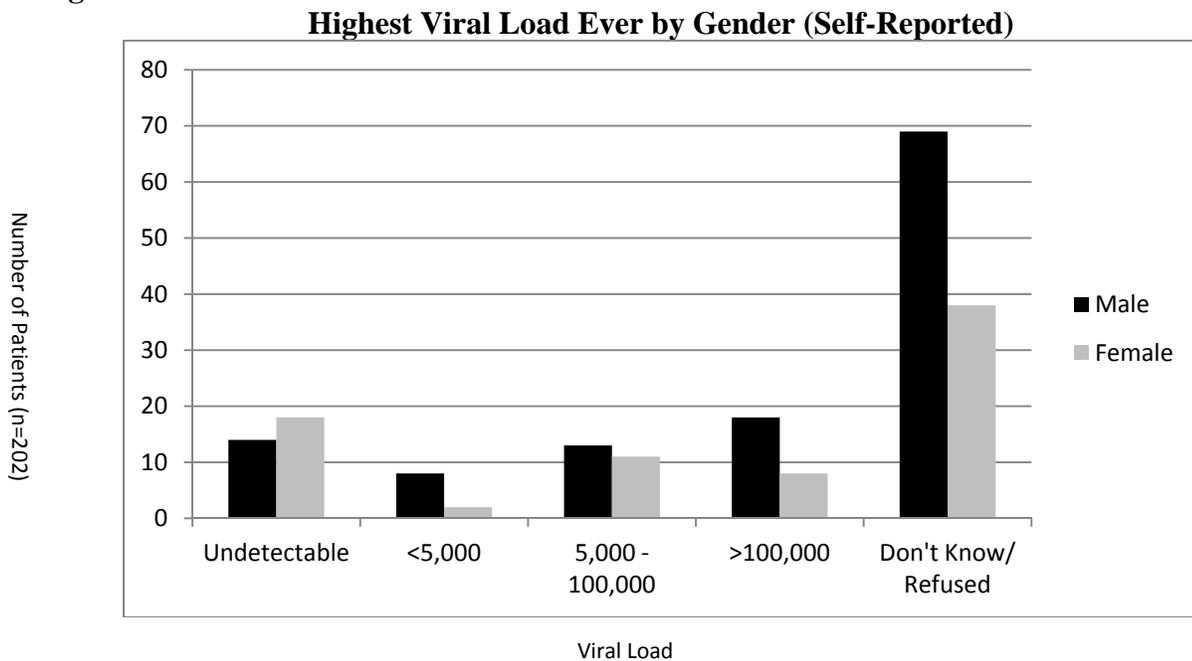


*\*\*Participants may have responded with multiple types of medical coverage*

**Figure 52**

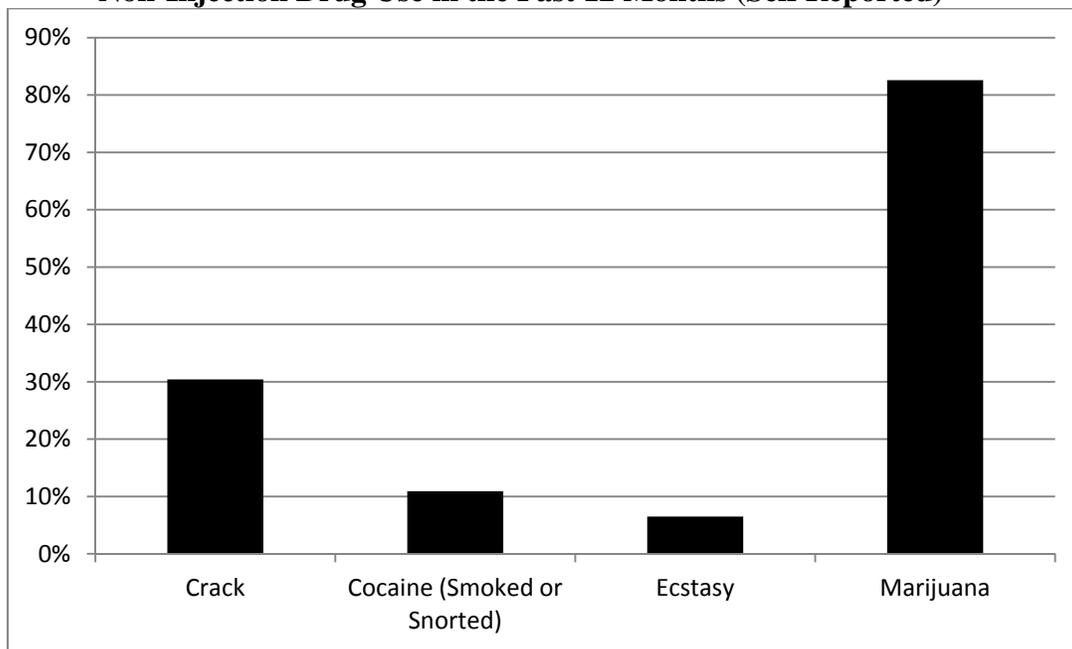


**Figure 53**



**Figure 54**

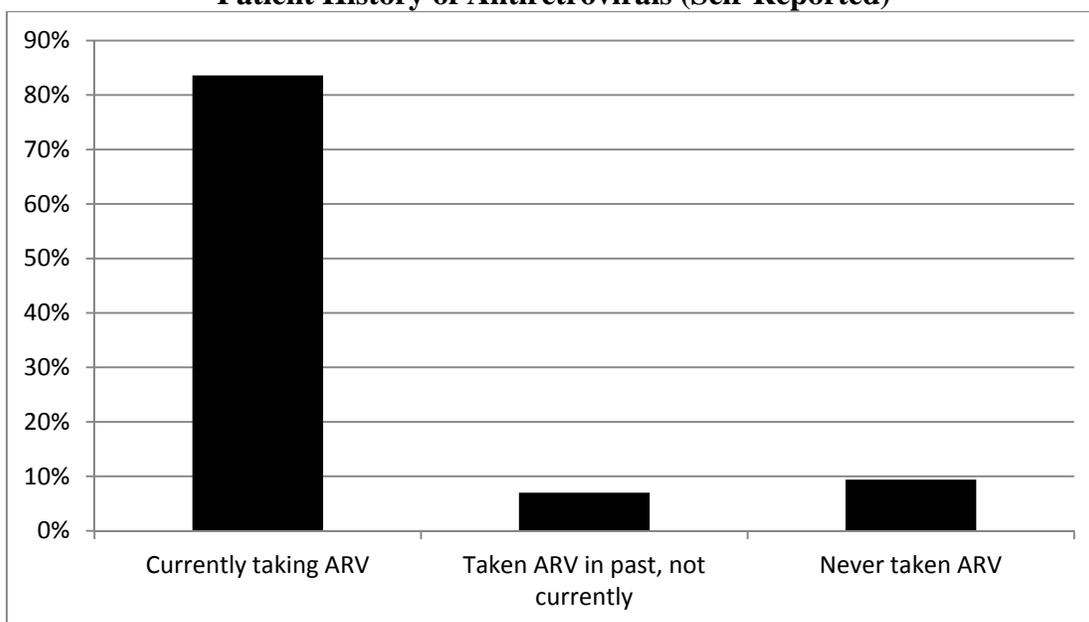
**Non-Injection Drug Use in the Past 12 Months (Self Reported)\*\*\***



*\*\*\*Percentages are of those patients who reported using non-injection drugs in the past 12 months.*

**Figure 55**

**Patient History of Antiretrovirals (Self-Reported)**



**Table 16**

<b>Unmet Needs for Services in the Past 12 Months</b>	
<b>SERVICES</b>	<b>NEEDED BUT NOT RECEIVED</b>
Dental Services	60 (50.9%)
Public Benefits	39 (39.0%)
Transportation	21 (13.0%)
Case Management	14 (11.9%)
Meal/Food Services	21 (11.6%)

**Syphilis Elimination Effort**

In October 1999, the Centers for Disease Control and Prevention (CDC), in collaboration with federal, state, local, and non-governmental partners, launched the National Plan to Eliminate Syphilis called the Syphilis Elimination Effort (SEE). In the plan, CDC identified key strategies needed for successful elimination of syphilis from the United States: expanded surveillance and outbreak response activities, rapid screening and treatment in and out of medical settings, expanded laboratory services, strengthened community involvement and agency partnerships, and enhanced health promotion.

The Mississippi State Department of Health, STD/HIV Office’s main goal for the SEE project is to promote syphilis awareness events in communities affected the most with syphilis to eliminate this epidemic. The SEE events provide education, testing/treatment, and incentives to those who participate. The SEE program strives to entice as many individuals as possible to participate in our events in order to test, identify infected individuals and their partners, and provide treatment.

The 2010 SEE project events began in January and events are currently being held. The 2010 SEE project events have been held in Harrison, Hinds, Washington, and Forrest counties. These counties accounted for the highest numbers of primary and secondary syphilis cases in Mississippi in 2009. There have been approximately 800 participants in the 15 events that have been held beginning January 15, 2010 -June 12, 2010. Approximately 400 individuals were tested and there were three syphilis cases identified. One of the cases was a new syphilis case and the other two were previous syphilis cases. The participants ranged in age from 13-70.

The Disease Intervention Specialist (DIS) Supervisors in each of the four counties identified community-based organizations in their communities that portrayed great services to collaborate with and to execute the goals of the SEE project. Organizations chosen for the grant were sororities, fraternities, and education related community-based organizations. Some of the organizations that have participated in the SEE project from January to June included:

- Kappa Alpha Psi, Inc. - Washington County

- EnviroCare Crisis Center, Inc. - Washington County
- Building Bridges - Hinds County
- Delta Sigma Theta, Inc. - Forrest County
- Gulf Coast Youth Rites of Passage Program - Harrison County

Participants held events including:

- Tail-Gate Screenings - Hinds County
- Together we can SEE (Syphilis Elimination Effort) - Forrest County
- Community Block Parties - Forrest County
- Teen Summit/Dance - Forrest County
- Delta GEMS Annual Sleepover - Forrest County
- Osceola McCarty Youth Development Health Awareness - Forrest County
- Nelson Street Neighborhood Screening: - Washington County
- Greenville High School Health Awareness Day - Washington County
- South Delta Public Housing Health Initiative - Washington County
- Peace of Mind Health Screenings in the Park - Harrison County
- Night Club Health Screening - Harrison County

### **STD/HIV Presentations and Publications**

The STD/HIV Office, in collaboration with the CDC and academic institutions in and out of state, participated in numerous presentations at national and international meetings, as well as publications in major journals. The summary below provides a list of all presentations and publications submitted in 2010.

#### **Publications**

##### **Peer-Reviewed Original Articles**

Howard EJ, Xu F, Taylor SN, Stoner BP, Mena L, Nsuami MJ, Powell S, Lillis R, Martin DH. (2011). Screening methods for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections in sexually transmitted infection clinics: what do patients prefer. *Sexually Transmitted Diseases*. 87(2):149-51.

Kissinger P, Mena L, Levison J, Clark R, Gatski M, Henderson H, Schmidt N, Rosenthal S, Myers L, Martin D. (2010). A randomized treatment trial: Single versus 7 day dose of metronidazole for the treatment of *Trichomonas vaginalis* among HIV-infected women. *Journal of Acquired Immunodeficiency Syndrome*. 55(5):565-571.

Cornelius DC, Mena L, Lushbaugh WB, Meade JC. (2010). Genetic relatedness of *Trichomonas vaginalis* reference and clinical isolates. *American Journal Tropical Medicine*. 83:1283-6.

Oster A, Dorell C, Mena L, Thomas P, Toledo C, Heffelfinger J. HIV Risk Among Young African American Men Who Have Sex With Men: A Case–Control Study in Mississippi. *American Journal of Public Health*. 2010; e1–e7.

Gatski M, Mena L, Levison J, Clark R, Henderson H, Schmidt N, Rosenthal S, Martin D, Kissinger P. (2010). Patient-delivered partner treatment & trichomonas vaginalis repeat infection among HIV-infected women. *Sexually Transmitted Infections*.37:502-505.

Fulop T, Olivier J, Meador RS, Hall J, Islam J, Mena L, Henderson H, Schmidt DW. (2010). Screening for chronic kidney disease in the ambulatory HIV population. *Clinical Nephrology*. 73:(3):190-196.

### **Published Abstracts and Presentations in National and International Meetings**

"HIV & Syphilis prevalence and socio-demographic and behavioral correlates among migrant men who have sex with men (MSM) in Beijing, China.," American Public Health Association, Denver, CO November 6, 2010

"Longitudinal predictability of sexual attitudes on subsequent behavior among unmarried youth in China," American Public Health Association, Denver, CO November 6, 2010

"Characterization of Male Patients at a Sexually Transmitted Disease Clinic in Mississippi Receiving a Rectal *Neisseria gonorrhoea* Culture," Infectious Diseases Society of America, Philadelphia, PA October 28, 2010

"Predictors of Frequent HIV Testing Among Young African American Men Who Have Sex With Men in Mississippi," Infectious Diseases Society of America, Vancouver, BC October 21, 2010

"Prevalence and Risk Factors for Infection with Herpes Simplex Virus Type-1 and Type-2 Among African American Women Who Have Sex with Women In Mississippi," Infectious Diseases Society of America, Vancouver, BC October 21, 2010

"Genetic and Clinical Characterization of *Trichomonas vaginalis* Isolates among African American Women Who Have Sex with Women," Interscience Conference on Antimicrobial Agents & Chemotherapy, Boston, MA September 12, 2010

"A Mixed Methods Study Examining Sexual Risk Behaviors, STI and HIV Outcomes, and Sexual Concurrency among African American Women Who Have Sex with Women in Jackson, Mississippi," Eighteenth International AIDS Conference, Vienna	July 18, 2010
"Prevalence of drug resistance among persons with newly diagnosed HIV infection in Mississippi, United States, 2005-2008," Eighteenth International AIDS Conference, Vienna	July 18, 2010
"Trends in Childbearing Behaviors of HIV Positive Mothers in Mississippi, 1991-2008," Vienna, Eighteenth International AIDS Conference	July 18, 2010
"The Emergence of the Mississippi 0006 TB Strain and its Effects on the Hinds County Population," University of MS Medical Center Research Day, Jackson, MS	April 1, 2010
"A Randomized Treatment Trial: Single versus 7 Day Dose of Metronidazole (MTZ) for the Treatment of <i>Trichomonas vaginalis</i> among HIV-Infected Women," National STD Prevention Conference, Atlanta, GA	March 8, 2010
"Characteristics of Repeat Infections of <i>Chlamydia trachomatis</i> Among Mississippians, 2004-2008," National STD Prevention Conference, Atlanta, GA	March 8, 2010
"Epidemiological Characterization of Syphilis Cases in Men at an Urban STD Clinic in Mississippi, Jan. 2004- Dec. 2008," National STD Prevention Conference, Atlanta, GA	March 8, 2010
"Screening and Partner Management of <i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i> Infections in STD Clinics: What do Patients Prefer?," National STD Prevention Conference, Atlanta, GA	March 8, 2010
"Technology Usage Among STD Clinic Patients in New Orleans, LA and Jackson, MS," National STD Prevention Conference, Atlanta, GA	March 8, 2010
"Utility of self-reported symptoms and risk behaviors in identifying STD patients suitable for "testing-only" visits," National STD Prevention Conference, Atlanta, GA	March 8, 2010

"Phylogenetic analysis shows insularity of Mississippi young black men who have Sex with men with respect to HIV transmission," Retrovirals & Opportunistic Infections Conference, San Francisco, CA

February 16, 2010

## Appendix A: Glossary

**ADAP (AIDS Drug Assistance Program):** Administered by States and authorized under Part B of the CARE Act, provides FDA-approved medications to low-income individuals with HIV disease who have limited or no coverage from private insurance or Medicaid. ADAP funds may also be used to purchase insurance for uninsured CARE Act clients as long as the insurance costs do not exceed the cost of drugs through ADAP and the drugs available through the insurance program at least match those offered through ADAP.

**AETC (AIDS Education and Training Center):** Regional centers providing education and training for primary care professionals and other AIDS-related personnel. AETCs are authorized under Part F of the CARE Act and administered by the HRSA HIV/AIDS Bureau's Division of Training and Technical Assistance (DTTA).

**AHRQ (Agency for Healthcare Research and Quality):** Federal agency within HHS that supports research designed to improve the outcomes and quality of health care, reduce its costs, address patient safety and medical errors, and broaden access to effective services.

**AIDS (Acquired Immunodeficiency Syndrome):** A disease caused by the human immunodeficiency virus.

**Antiretroviral:** A substance that fights against a retrovirus, such as HIV. (See Retrovirus)

**ASO (AIDS service organization):** An organization that provides primary medical care and/or support services to populations infected with and affected by HIV disease.

**Capacity:** Core competencies that substantially contribute to an organization's ability to deliver effective HIV/AIDS primary medical care and health-related support services. Capacity development activities should increase access to the HIV/AIDS service system and reduce disparities in care among underserved PLWH in the EMA.

**CARE Act (Ryan White Comprehensive AIDS Resources Emergency Act):** Federal legislation created to address the unmet health care and service needs of people living with HIV Disease (PLWH) disease and their families. It was enacted in 1990 and reauthorized in 1996 and 2000.

**CADR (CARE Act Data Report):** A provider-based report generating aggregate client, provider, and service data for all CARE Act programs. Reports information on all clients who receive at least one service during the reporting period. Replaces the Annual Administrative Report (AAR) used for Part A and Part B data reports.

**CBO (community-based organization):** An organization that provides services to locally defined populations, which may or may not include populations infected with or affected by HIV disease.

**CDC (Centers for Disease Control and Prevention):** Federal agency within HHS that administers disease prevention programs including HIV/AIDS prevention.

**CD4 or CD4+ Cells:** Also known as "helper" T-cells, these cells are responsible for coordinating much of the immune response. HIV's preferred targets are cells that have a docking

molecule called "cluster designation 4" (CD4) on their surfaces. Cells with this molecule are known as CD4-positive (CD4+) cells. Destruction of CD4+ lymphocytes is the major cause of the immunodeficiency observed in AIDS, and decreasing CD4 levels appear to be the best indicator for developing opportunistic infections.

**CD4 Cell Count:** The number of T-helper lymphocytes per cubic millimeter of blood. The CD4 count is a good predictor of immunity. As CD4 cell count declines, the risk of developing opportunistic infections increases. The normal adult range for CD4 cell counts is 500 to 1500 per cubic millimeter of blood. (The normal range for infants is considerably higher and slowly declines to adult values by age 6 years.) CD4 counts should be rechecked at least every 6 to 12 months if CD4 counts are greater than 500/mm<sup>3</sup>. If the count is lower, testing every 3 months is advised. (In children with HIV infection, CD4 values should be checked every 3 months.) A CD4 count of 200 or less is an AIDS-defining condition.

**CMS (Centers for Medicare and Medicaid Services):** Federal agency within HHS that administers the Medicaid, Medicare, State Child Health Insurance Program (SCHIP), and the Health Insurance Portability and Accountability Act (HIPAA).

**Co-morbidity:** A disease or condition, such as mental illness or substance abuse, co-existing with HIV disease.

**Community Forum or Public Meeting:** A small-group method of collecting information from community members in which a community meeting is used to provide a directed but highly interactive discussion. Similar to but less formal than a focus group, it usually includes a larger group; participants are often self-selected (i.e., not randomly selected to attend).

**Comprehensive Planning:** The process of determining the organization and delivery of HIV services. This strategy is used by planning bodies to improve decision-making about services and maintain a continuum of care for PLWH.

**Community Health Centers:** Federally-funded by HRSA's Bureau of Primary Health Care, centers provide family-oriented primary and preventive health care services for people living in rural and urban medically underserved communities.

**Consortium/HIV Care Consortium:** A regional or statewide planning entity established by many State grantees under Part B of the CARE Act to plan and sometimes administer Part B services. An association of health care and support service agencies serving PLWH under Part B of the CARE Act.

**Continuum of Care:** An approach that helps communities plan for and provide a full range of emergency and long-term service resources to address the various needs of PLWH.

**Eligible Metropolitan Area (EMA):** Geographic areas highly-impacted by HIV/AIDS that are eligible to receive Part A CARE Act funds.

**EIA (Enzyme-Linked Immunosorbent Assay):** The most common test used to detect the presence of HIV antibodies in the blood, which indicate ongoing HIV infection. A positive ELISA test result must be confirmed by another test called a Western Blot.

**Epidemiologic Profile:** A description of the current status, distribution, and impact of an infectious disease or other health-related condition in a specified geographic area.

**Genotypic Assay:** A test that analyzes a sample of the HIV virus from the patient's blood to identify actual mutations in the virus which are associated with resistance to specific drugs.

**Grantee:** The recipient of CARE Act funds responsible for administering the award.

**HAART (Highly Active Antiretroviral Therapy):** HIV treatment using multiple antiretroviral drugs to reduce viral load to undetectable levels and maintain/increase CD4 levels.

**Health Insurance Continuity Program (HICP):** A program primarily under Part B of the CARE Act that makes premium payments, co-payments, deductibles, and/or risk pool payments on behalf of a client to purchase/maintain health insurance coverage.

**High-Risk Insurance Pool:** A State health insurance program that provides coverage for individuals who are denied coverage due to a pre-existing condition or who have health conditions that would normally prevent them from purchasing coverage in the private market.

**HIV/AIDS Dental Reimbursement Program:** The program within the HRSA HIV/AIDS Bureau's Division of Community Based Programs that assists with uncompensated costs incurred in providing oral health treatment to PLWH.

**HIV Disease:** Any signs, symptoms, or other adverse health effects due to the human immunodeficiency virus.

**HOPWA (Housing Opportunities for People With AIDS):** A program administered by the U.S. Department of Housing and Urban Development (HUD) that provides funding to support housing for PLWH and their families.

**HRSA (Health Resources and Services Administration):** The agency of the U.S. Department of Health and Human Services that administers various primary care programs for the medically underserved, including the Ryan White CARE Act.

**IDU (Injection Drug User):** A person who uses a drug (eg, heroin, cocaine) that is administered with a needle and syringe.

**Lead Agency:** The agency within a Part B consortium that is responsible for contract administration; also called a fiscal agent (an incorporated consortium sometimes serves as the lead agency)

**Multiply Diagnosed:** A person having multiple morbidities (e.g., substance abuse and HIV infection) (see co-morbidity).

**Needs Assessment:** A process of collecting information about the needs of PLWH (both those receiving care and those not in care), identifying current resources (CARE Act and other) available to meet those needs, and determining what gaps in care exist.

**Opportunistic Infection (OI) or Opportunistic Condition:** An infection or cancer that occurs in persons with weak immune systems due to HIV, cancer, or immunosuppressive drugs such as

corticosteroids or chemotherapy. Kaposi's Sarcoma (KS), pneumocystis pneumonia (PCP), toxoplasmosis, and cytomegalovirus (CMV) are all examples of opportunistic infections.

**Part A:** The part of the CARE Act that provides emergency assistance to localities (EMAs) disproportionately affected by the HIV/AIDS epidemic.

**Part B:** The part of the CARE Act that provides funds to States and territories for primary health care (including HIV treatments through the AIDS Drug Assistance Program, ADAP) and support services that enhance access to care to PLWH and their families.

**Part C:** The part of the CARE Act that supports outpatient primary medical care and early intervention services to PLWH through grants to public and private non-profit organizations. Part C also funds capacity development and planning grants to prepare programs to provide EIS services.

**Part D:** The part of the CARE Act that supports coordinated services and access to research for children, youth, and women with HIV disease and their families.

**PACTG (Pediatric AIDS Clinical Trials Group):** Body that evaluates treatments for HIV-infected children and adolescents and develops new approaches for the interruption of mother-to-infant transmission.

**PCR (Polymerase Chain Reaction):** A laboratory process that selects a DNA segment from a mixture of DNA chains and rapidly replicates it to create a sample of a piece of DNA. For HIV, this is called RT-PCR, which is a laboratory technique that can detect and quantify the amount of HIV (viral load) in a person's blood or lymph nodes. PCR is also used for the diagnosis of HIV infection in exposed infants.

**Phenotypic Assay:** A procedure whereby sample DNA of a patient's HIV is tested against various antiretroviral drugs to see if the virus is susceptible or resistant to these drug(s).

**Planning Council:** A planning body appointed or established by the Chief Elected Official of an EMA whose basic function is to assess needs, establish a plan for the delivery of HIV care in the EMA, and establish priorities for the use of Part A CARE Act funds.

**Planning Process:** Steps taken and methods used to collect information, analyze and interpret it, set priorities, and prepare a plan for rational decision making.

### **PLWH (People Living with HIV Disease)**

**Priority Setting:** The process used to establish priorities among service categories, to ensure consistency with locally identified needs, and to address how best to meet each priority.

**Prophylaxis:** Treatment to prevent the onset of a particular disease (primary prophylaxis) or recurrence of symptoms in an existing infection that has previously been brought under control (secondary prophylaxis).

**Protease:** An enzyme that triggers the breakdown of proteins. HIV's protease enzyme breaks apart long strands of viral protein into separate proteins constituting the viral core and the enzymes it contains. HIV protease acts as new virus particles are budding off a cell membrane.

**Protease Inhibitor:** A drug that binds to and blocks HIV protease from working, thus preventing the production of new functional viral particles.

**Quality:** The degree to which a health or social service meets or exceeds established professional standards and user expectations.

**Retrovirus:** A type of virus that, when not infecting a cell, stores its genetic information on a single-stranded RNA molecule instead of the more usual double-stranded DNA. HIV is an example of a retrovirus. After a retrovirus penetrates a cell, it constructs a DNA version of its genes using a special enzyme, reverse transcriptase. This DNA then becomes part of the cell's genetic material.

**Reverse Transcriptase:** A uniquely viral enzyme that constructs DNA from an RNA template, which is an essential step in the life cycle of a retrovirus such as HIV. The RNA-based genes of HIV and other retroviruses must be converted to DNA if they are to integrate into the cellular genome. (See Retrovirus)

**RT-PCR (Reverse Transcriptase Polymerase Chain Reaction):** A laboratory technique that can detect and quantify the amount of HIV (viral load) in a person's blood or lymph nodes.

**Salvage Therapy:** A treatment effort for people who are not responding to, or cannot tolerate the preferred, recommended treatments for a particular condition. In the context of HIV infection, drug treatments that are used or studied in individuals who have failed one or more HIV drug regimens. In this case, failed refers to the inability to achieve or sustain low viral load levels.

**Seroconversion:** The development of detectable antibodies to HIV in the blood as a result of infection. It normally takes several weeks to several months for antibodies to the virus to develop after HIV transmission. When antibodies to HIV appear in the blood, a person will test positive in the standard ELISA test for HIV.

**Seroprevalence:** The number of persons in a defined population who test HIV-positive based on HIV testing of blood specimens. (Seroprevalence is often presented either as a percent of the total specimens tested or as a rate per 100,000 persons tested.)

**Service Gaps:** All the service needs of all PLWH except for the need for primary health care for individuals who know their status but are not in care. Service gaps include additional need for primary health care for those already receiving primary medical care ("in care").

**SPNS (Special Projects of National Significance):** A health services demonstration, research, and evaluation program funded under Part F of the CARE Act to identify innovative models of HIV care. SPNS projects are awarded competitively.

**STD (Sexually Transmitted Disease)**

**TA (Technical Assistance):** The delivery of practical program and technical support to the CARE Act community. TA is to assist grantees, planning bodies, and affected communities in designing, implementing, and evaluating CARE Act-supported planning and primary care service delivery systems.

**Target Population:** A population to be reached through some action or intervention; may refer to groups with specific demographic or geographic characteristics.

**Transmission Category:** A grouping of disease exposure and infection routes; in relation to HIV disease, exposure groupings include, for example, men who have sex with men, injection drug use, heterosexual sex.

**Unmet Need:** The unmet need for primary health services among individuals who know their HIV status but are not receiving primary health care.

**Viral Load:** In relation to HIV, the quantity of HIV RNA in the blood. Viral load is used as a predictor of disease progression. Viral load test results are expressed as the number of copies per milliliter of blood plasma.

**Western Blot:** A test for detecting the specific antibodies to HIV in a person's blood. It is commonly used to verify positive EIA tests. A Western Blot test is more reliable than the EIA, but it is more difficult and more costly to perform. All positive HIV antibody tests should be confirmed with a Western Blot test.

**Wild Type Virus:** HIV that has not been exposed to antiviral drugs and therefore has not accumulated mutations conferring drug resistance.

## **Appendix B: Data Sources**

### ***HIV/AIDS Surveillance***

AIDS is a reportable condition in all states and territories. AIDS cases have been reportable since the early 1980's and cases have been defined according to the prevailing CDC surveillance case definition (last revised in 2008). The AIDS Surveillance system was established to monitor incidence and the demographic profile of AIDS, describe the modes of HIV transmission among persons diagnosed with AIDS, guide the development and implementation of public health intervention and prevention programs, and assist in the assessment of the efficacy of public health interventions. AIDS surveillance data are also used to allocate Ryan White Care Act Part A and B funding. States and local health departments actively solicit disease reports from health care providers and laboratories. Standardized case report forms are used; these forms collect socio-demographic information, mode of exposure, laboratory and clinical information, vital status, and referrals for treatment of services.

Reporting of HIV infections to local health authorities is an integral part of AIDS surveillance activities and it has been recommended by the CDC and other professional organizations since the virus was identified and a test for HIV was licensed. Mississippi initiated confidential HIV name based reporting in 1988. As part of ongoing active HIV surveillance, state and local health departments educate providers on their reporting responsibilities, establish active surveillance sites, liaise with laboratories conducting HIV testing including any test that may be indicative of HIV infection (i.e. EIA and Western Blot testing, IFA, PCR, CD+4, Nucleic Acid Tests) and investigate HIV cases of epidemiological importance. Currently, all states are federally mandated to conduct name based HIV reporting to receive funding, although some are still not in full compliance.

### ***Ryan White CARE Act Data Report (CADR)***

The CADR is an annual data report form used to collect information from grantees and service providers funded under Titles Part A-E of the Ryan White CARE Act. The CADR provides basic information that can be helpful as grantees plan and implement changes in their CARE Act service systems to better address the needs of communities serving people living with HIV/AIDS. The CADR collects aggregate unduplicated demographic information (sex, race, age, HIV Exposure Category, etc.) on total counts of clients served by each provider as well as health insurance coverage and utilization data about medical and support services.

### **Behavioral Surveys:**

#### ***Behavioral Risk Factor Surveillance System (BRFSS)***

The BRFSS is a state-based random digit-dialed telephone survey that monitors state-level prevalence of the major behavioral risks among adults associated with premature morbidity and mortality. Each month, a sample of households are contacted and one person in the household who is 18 years or older is randomly selected for an interview. Multiple attempts are made to contact the sampled household. A Spanish translation of the interview is available. Respondents

to the BRFSS questionnaire are asked a variety of questions about their personal health behaviors and health experiences. Since 1994, the BRFSS questionnaire has asked questions related to HIV/AIDS of respondents aged 18-49 years. In Mississippi, HIV/AIDS and sexual activity questions administered are part of the Core Questionnaire. These questions include: perceived risk of getting an HIV infection; use of HIV testing; reasons for testing; if tested, the type of place where tested, receipt of post-HIV test counseling; attitudes towards condoms; and attitudes about when to initiate HIV/AIDS education in school.

### ***Youth Risk Behavior Surveillance System (YRBSS)***

The YRBSS was developed by the CDC in collaboration with representatives from 71 state and local departments of education and health, 19 other federal agencies, and national education and health organizations. The Youth Risk Behavior Surveillance System was designed to focus the nation on behaviors among youth related to the leading causes of mortality and morbidity among both youth and adults and to assess how these risk behaviors change over time. The YRBSS measures behaviors that fall into six categories: (1) behaviors that result in unintentional injuries and violence; (2) tobacco use; (3) alcohol and drug use; (4) Sexual behaviors that result in HIV infection, other sexually transmitted diseases, and unintended pregnancies; (5) dietary behaviors; and (6) physical activity.

### **Communicable Disease Surveillance:**

#### ***STD Surveillance***

The Mississippi State Department of Health, Office of STD/HIV conducts statewide surveillance to determine the number of reported cases of STDs and to monitor trends. Other services include partner counseling and referral services for examination and treatment. In Mississippi, chlamydia, gonorrhea, syphilis, and chancroid are reportable sexually transmitted diseases.

Chlamydia is the most frequently reported of all reportable diseases, followed by gonorrhea. Mississippi does not collect risk factor data for all STDs, however; demographic information (age, race, gender) and STD disease history are collected. However, Mississippi collects risk factor data for syphilis, and STD surveillance data can serve as a marker for changes in HIV disease trends.

#### ***TB Registry***

The Mississippi State Department of Health, Office of Communicable Disease's Tuberculosis Office conducts statewide surveillance of cases of tuberculosis (TB). All TB cases diagnosed in Mississippi are reported using the CDC Report of Verified Case of Tuberculosis (RVCT) form. Surveillance information and laboratory reports are maintained in the Communicable Disease Case Information System (CDCIS). Surveillance data are analyzed to monitor statewide trends, including HIV/TB co-infection. Each quarter, TB registry data is matched with HIV/AIDS surveillance data.

## **Population Data:**

### ***U.S. Bureau of the Census***

The Census Bureau collects and provides information about the people and economy of the United States every ten years. The Census Bureau's Web site (<http://www.census.gov>) includes data on demographic characteristics, family structure, educational attainment, income level, housing status, and the proportion of people who live at or below the poverty level. Summaries of the most requested information for states and counties are provided, as well as analytical reports on population changes, age, race, family structure, and apportionment. State- and county-specific data are easily accessible, and links to other Web sites with census information are included. The Mississippi-specific Census data used in these profiles are based on 2010 population estimate data. It should be noted; though, that census data for Latinos, significantly understates their presence in Mississippi.

### ***Mississippi State Department of Health, Office of Vital Statistics***

The Mississippi State Department of Health, Office of Vital Statistics provides information from birth and death certificates, marriage records and the annual statistical publication for the State of Mississippi. The annual statistical publication summarizes a wide range of information, including population data and analytical reports on population changes. Other topics include age and race data, birth, death, marriage, divorce, and adoption data.

Appendix C

Mississippi STD's by Race, Sex, and Age, 2010

<b>Race/Ethnicity</b>	<b>Chlamydia</b>			<b><u>Gonorrhea</u></b>			<b><u>P &amp; S Syphilis</u></b>			<b><u>EL Syphilis</u></b>		
	<b>No.</b>	<b>%</b>	<b>Rate</b>	<b>No.</b>	<b>%</b>	<b>Rate</b>	<b>No.</b>	<b>%</b>	<b>Rate</b>	<b>No.</b>	<b>%</b>	<b>Rate</b>
White	2,519	12.0	143.6	458	7.0	26.1	34	15.0	1.9	44	11.0	2.5
*AA	14,040	65.5	1,278.2	4,621	75.0	420.7	193	84.0	17.5	339	85.0	30.8
Hispanic	261	1.0	320.3	28	0.5	34.4	1	0.4	1.2	4	1.0	4.9
Other	195	0.9	NA	39	0.6	NA	0	0.0	0.0	3	0.8	NA
Unknown	4,407	21.0	NA	1,050	17.0	NA	1	0.4	NA	8	2.0	NA
<b>Sex and Race</b>												
<b>Males</b>	5,465	26.0	379.18	2,595	42.0	180	160	70.0	11.1	228	57.0	15.8
White Males	615	3.0	71.19	136	2.0	15.7	23	10.0	2.6	21	5.0	2.4
*AA Males	3,899	18.0	754.07	2,070	33.0	400	135	59.0	26.1	199	50.0	38.4
Hispanic Males	84	0.4	176.1	8	0.1	16.7	1	0.4	2	1	0.2	2
Other Males	40	0.2	NA	13	0.2	NA	0	0.0	NA	3	0.7	NA
Unknown Males	827	4.0	NA	368	6.0	NA	1	0.4	NA	4	1.0	NA
<b>Females</b>	15,957	74.0	1,045.63	3,601	58.0	235.9	69	30.0	4.5	170	43.0	11.1
White Females	1,904	9.0	213.7	322	5.0	36.1	11	5.0	1.2	23	6.0	2.5
*AA Females	10,141	47.0	1,744.45	2,551	41.0	438.8	58	25.0	9.9	140	35.0	24.1
Hispanic Females	177	0.8	523.6	20	0.3	59	0	0.0	0.0	3	0.7	9
Other Females	155	0.7	NA	26	0.4	NA	0	0.0	0.0	0.0	0.0	0.0
Unknown Females	3,580	16.7	NA	682	11.0	NA	0	0.0	0.0	4	1.0	NA
<b>Age</b>												
0-14	405	2.0	64.8	81	1.0	13	3	1.0	0.5	1	0.0	0
15-19	8,524	40.0	3,794.8	2,114	34.0	941.1	17	7.0	7.5	46	11.5	20.4
20-24	7,836	36.5	3,715.6	2,197	35.0	1041.7	72	31.0	34.1	101	25.0	47.8
25-29	2,843	13.0	1,428.0	997	16.0	500.7	51	22.0	25.6	72	18.0	36.1
30-34	1,022	5.0	543.1	395	6.0	209.9	26	11.0	13.8	41	10.0	21.7
35-39	400	2.0	213.4	166	3.0	88.5	16	7.0	8.5	32	8.0	17.1

40+	371	2.0	27.8	241	4.0	18.1	44	19.0	3.3	105	26.0	7.8
Unknown	21	0.0	NA	5	0.0	NA	0	0.0	0.0	0	0.0	0.0
<b>Total</b>	<b>21,422</b>	<b>100</b>	<b>721.9</b>	<b>6,196</b>	<b>100</b>	<b>208.8</b>	<b>229</b>	<b>100</b>	<b>7.7</b>	<b>398</b>	<b>100</b>	<b>13.4</b>

\*African American

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