HIV/STD Integrated Epidemiological Profile, 2018
State of Alabama

Alabama Department of Public Health
STD Division
HIV Surveillance Branch

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EXECUTIVE SUMMARY

One point one million (1,100,000) people in the United States are living with HIV infection. The Centers for Disease Control and Prevention (CDC) estimate that 14% of these people are unaware of their infection. Between 1982 and 2017, a total of 21,302 cases of HIV infection were reported to the Alabama Department of Public Health (ADPH). At the end of 2017, 66% (14,054) were known to be living with HIV infection in Alabama. An additional 2,777 Alabama residents are likely infected and unaware of their positive HIV status. During 2017, 657 newly diagnosed HIV infections were reported in Alabama. The HIV epidemic in Alabama is classified as one of moderate magnitude when compared to the experience of other states.

According to the 2017 U.S. Census estimates, the United States Census Bureau reported 4,874,747 persons reside in Alabama. The majority of residents (51.7%) were between the ages of 25 and 64 years, 31.8% were younger than 25 years, and 16.5% were 65 or older (median age = 39.7 years). The largest number of newly diagnosed HIV infections in Alabama occurred among teenagers and young adults aged 20 to 29 years during 2017, with 44.4% of new diagnoses occurring in this age group. In contrast, the majority of persons living with HIV infection (i.e., prevalent cases) were 50 years or older during 2017. Males accounted for more than three-quarters (79.1%) of newly diagnosed cases in 2017, with African American males representing about half (50.2%) of all new HIV infections. White males represented another 23.7% of 2017 newly diagnosed HIV infections; African American females followed closely representing 15.5%.

New infections are disproportionately occurring in Alabama's African American population. Although African Americans comprised only 26.8% of the state's population in 2017, they represented 65.8% of newly diagnosed HIV infections. The rate of HIV diagnosed among African Americans (33.4 per 100,000) was nearly six times higher than among Whites (5.8 per 100,000). The rate of newly diagnosed HIV infections in African American males (54.9 per 100,000) was more than five times higher than White males (10.0 per 100,000). Sixty-three percent of males diagnosed with HIV in 2017 were African American. A similar trend was seen among females, with 74.5% of new diagnoses in females occurring in African Americans. The rate of newly diagnosed HIV infections in African American females (14.8 per 100,000) was 8 times higher than White females (1.8 per 100,000) and nearly 1.5 times the rate among White males.

Alabama's population can be divided into 3 geographical groupings: major urban centers (>200,000 population), minor urban centers (100,000-200,000 population), and rural areas (<100,000 population). Major urban centers include Jefferson, Madison, Mobile, and Montgomery Counties. In 2017, these major urban centers represented 26.7% (1,299,798) of the state's total population and 55.8% (11,877) of cumulative HIV cases reported to ADPH. Alabama is considered primarily rural with 55 of its 67 counties located outside of the state's major and minor urban population centers (Figure 1).

Figure 1. Alabama Public Health District Map

Following the 2010 census, Alabama ranked 42nd nationally in per capita income with 23% of the population living in poverty. Alabama's agricultural Black Belt region (Bullock, Butler, Choctaw, Crenshaw, Dallas, Greene, Hale, Lowndes, Macon, Marengo, Perry, Pickens, Sumter, and Wilcox counties) has the highest poverty and unemployment rates in the state. Strikingly, the region also encounters disproportionately high rates of HIV infection. Though only representing 4.6% of Alabama's total population, the rate of newly diagnosed HIV infections in the Black Belt region was 12.7 per 100,000 residents in 2017. Statewide, the rate of new diagnoses per 100,000 persons was highest in Montgomery (31.8), Tuscaloosa (22.6), Jefferson (22.1), and Mobile (20.3) counties.

HIV clinics and service organizations apply to ADPH for Ryan White funding to provide defined core service priorities and support services, with appropriate justification based on United States Health Resources and Services Administration (HRSA) guidelines. Funding decisions are made using a formula based on Alabama's current service utilization, unmet need, and data provided in the HIV Integrated Epidemiologic Profile. Social workers, case managers, and clinicians employed in Ryan White funded HIV clinics and service organizations are responsible for coordinating direct care and service delivery. The majority of HIV care providers and services are located in Alabama's major urban centers. However, alternate care and services are offered at satellite clinics located in many rural areas across the state.

People living with HIV infection are experiencing increased longevity due primarily to positive HIV and AIDS treatment outcomes. Alabama's AIDS Drug Assistance Program (ADAP) provides continuous access to life-saving treatment and care for low income, uninsured, and underinsured people living with HIV (PLWH). Alabama's Insurance Assistance Program (AIAP) was launched in 2015, providing cost-effective health insurance to eligible PLWH. ADAP is comprised of two main components: 1) full-pay prescription medication and 2) the purchase of cost-effective insurance coverage through AIAP on behalf of eligible individuals. Premium, co-payment, and out of pocket expense assistance is also provided for eligible individuals receiving coverage through the Medicare Part D Client Assistance Program (MEDCAP). These ADAP categories are intended to reduce the morbidity and mortality experienced by PLWH, while also helping PLWH achieve and maintain viral suppression, thus decreasing the risk of HIV transmission to non-infected individuals. The Ryan White HIV/AIDS Program (RWHAP) Part B funding is intended to provide seamless care and support across the HIV care continuum. The percentage of ADAP clients served by each program category as of December 31, 2018 is: ADAP-37%; AIAP-60%; and MEDCAP-3%; ADAP full-pay prescription program (n=1,199)—37%; AIAP (n=1,958)—60%; MEDCAP (n=83)—3%.

The ADAP plays an integral role in the achievement of the National HIV/AIDS Strategy (NHAS) updated goals for 2020, which include: 1) reducing new HIV infections; 2) increasing access to care and improving health outcomes; and 3) reducing HIV-related disparities and health inequities. ADAP has a measurable impact on multiple bars of the HIV care continuum, most notably retention in care and viral load suppression. Being virally suppressed improves the health of PLWH and enhances their lifespan, while also significantly reducing the risk of transmitting HIV to others. PLWH who adhere to antiretroviral therapy (ART) and have suppressed viral loads can reduce the risk of sexual transmission of HIV by 96 percent. ADAP clients achieve optimal health outcomes at a higher rate than all PLWH in Alabama. In fact, ADAP, AIAP and MEDCAP clients have already surpassed the NHAS 2020 goal of 80 percent viral suppression, compared to only 54 percent of all PLWH in Alabama. MEDCAP clients are close to achieving the NHAS 2020 goal for 90 percent (continuous) retention in HIV medical care, while 84 percent of AIAP clients and 69 percent of ADAP

clients were continuously retained in HIV medical care during the preceding 12 months, compared to only 56 percent of all PLWH in Alabama (which includes ADAP, AIAP, and MEDCAP clients).

The HIV epidemic affects persons in all gender, age, race, ethnicity, and socioeconomic groups in every county in Alabama. However, the effect has not been the same for all groups. With the number of deaths among people diagnosed with HIV continuing to decline and the number of people living with HIV continuing to increase, the importance of identifying populations most affected and at risk for HIV infection is paramount. Alabama must be diligent in planning effective HIV prevention and care efforts with the allocation of limited resources.

INTRODUCTION

The HIV Integrated Epidemiologic Profile provides information about the current HIV epidemic in Alabama. This profile describes the socio-demographic, economic, and geographic characteristics of people living with HIV and at risk for HIV infection in Alabama. The profile is a resource for guiding prevention and intervention strategies as well as service delivery efforts. The profile is also utilized to justify and obtain funding for the implementation of prevention and service programs and to improve and evaluate HIV-related programs and policies in Alabama.

The profile is divided into five key sections:
I.   SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE GENERAL POPULATION
II.   SCOPE OF THE HIV EPIDEMIC
III.   INDICATORS OF RISK FOR HIV INFECTION
IV.   PATTERNS OF UTILIZATION OF HIV SERVICES
V.   CHARACTERISTICS OF HIV POSITIVE PERSONS WHO ARE NOT IN CARE

I.   SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE GENERAL POPULATION

A. HIGHLIGHTS

Population

The U.S. Census Bureau estimated 4,874,747 persons resided in Alabama in 2017. Alabama is composed of 67 counties, ranging in population from (Greene County) 8,330 to 659,197 (Jefferson County). Alabama is considered largely rural with 55 of 67 counties having a population < 100,000. However, Alabama does have four major urban centers located in Jefferson, Madison, Montgomery and Mobile Counties and one large metropolitan statistical area that represents 23.6% (1,149 ,807) of Alabama's total population and includes seven adjacent counties (Bibb, Blount, Chilton, Jefferson, St. Clair, Shelby and Walker Counties).

Public Health Structure

Alabama is divided into eight geographically distinct public health districts (PHDs) with the two most populous counties representing single PHDs (Figure 1). The remaining PHDs encompass ten to twelve counties each. Four of Alabama's 19 Black Belt counties comprise Southwestern Public Health District. Each district has authority to provide core public health services to the community including HIV counseling and testing, sexually transmitted disease (STD) screening and treatment, maternal and child health, vaccine preventable immunizations, family planning, home health services, and adult health clinics.

Demographic Composition
The 2017 U.S. Census Bureau estimates 65.6% of Alabama residents are White, not Hispanic (Table 1). Non-Hispanic African Americans compose about one-quarter (26.5%) of the population in Alabama. The remainder of the population identified themselves as Hispanic (4.3%), Asian (1.4%), or Native American (<1%). The racial and ethnic distribution is the same when assessed by gender.

Table 1. Population Distribution by Race/Ethnicity and Sex, Alabama 2017

Race/Ethnicity	Males N=2,359,836	%	Females N=2,514,911	%	Total Population N=4,874,747	%
White, not Hispanic	1,562,485	66.2%	1,634,367	65.0%	3,196,852	65.6%
African American, not Hispanic	601,438	25.5%	691,389	27.5%	1,292,827	26.5%
Hispanic	112,400	4.8%	98,658	3.9%	211,058	4.3%
Native American	13,489	0.6%	13,858	0.6%	27,347	0.6%
Asian	32,547	1.4%	37,116	1.5%	69,663	1.4%

Source: 2017 United States Census Bureau.
Note: Percentages may not sum 100% due to rounding.

More than one-half (51.7%) of Alabama residents are between the ages of 25 and 64 years (Table 2). Twenty-five percent are 25 to 44 years and 26.4% are 45 to 64 years. Nearly one-third of residents (31.8%) are younger than 25 years with 15 to 24 year olds representing 13.3%, 5 to 14 year olds representing 12.5%, and children less than 5 years old representing 6.0% of the state's population. The remainder of Alabama residents is age 65 years or older (16.5%). The female to male ratio in Alabama is 1:1.

Table 2. Population Distribution by Age Group and Sex, Alabama 2017

Age Group (years)	Males N=2,359,836	%	Females N=2,514,911	%	Total Population N=4,874,747	%
<5	149,374	6.3 %	144,180	5.7 %	293,544	6.0%
5-14	311,004	13.2 %	298,740	11.9 %	609,744	12.5%
15-24	328,101	13.9 %	320,303	12.7 %	648,404	13.3%
25-44	602,451	25.5 %	629,646	25.0 %	1,232,097	25.3%
45-64	618,899	26.2 %	668,278	26.6 %	1,287,177	26.4%
≥65	350,007	14.8 %	453,764	18.0 %	803,771	16.5%

Source: 2017 United States Census Bureau.
 Note: Percentages may not sum 100% due to rounding.

Poverty, Income, and Education
According to the 2017 Alabama Poverty Data Sheet, Alabama is the sixth most poverty stricken state in the nation. Eighteen percent of individuals residing in Alabama live below the federal poverty level (Table 3). Another 14% of all families and 37% of families with a female head of household and no husband present have incomes below the poverty level. One-quarter (26%) of children less than 18 years and 10% of the elderly aged 65 years and older live below the federal poverty level. Average personal income in Alabama is $25,746 and the median household income is $46,472.

Table 3. Socioeconomic Characteristics of Population, Alabama and United States 2015

Characteristic	Alabama	United States
Income		
Average Per Capita Income	$25,746	$31,777
Median Household Income	$46,472	$57,652
Federal Poverty Level		
Individuals	18.0%	14.6%
Families	13.6%	10.5%
Female HOH†, no husband present	36.5%	28.8%
Federal Poverty Level by Age Group (years)		
<18	26.0%	20.3%
18-64	16.9%	13.7%
≥65	10.4%	9.3%

Source: 2017 American Community Survey Estimates, United States Census Bureau.
Note: Percentages may not sum 100% due to rounding. †HOH – Head of Household

The latest educational data is from the 2017 American Community Survey. The most common level of education attained in Alabama among people aged 25 years and older is a high school diploma or its equivalent (31%, Table 4). While 22% of Alabama residents age 25 years and older report some college experience, only 15% successfully obtain a bachelor's degree or higher. Ten percent of residents age 25 years and older fail to graduate high school with 5% reporting less than a ninth grade education. Assessing Alabama's four most populous counties (Jefferson, Madison, Mobile, and Montgomery Counties), with populations ranging from 229,363 in Montgomery County to 658,466 in Jefferson County, shows roughly the same education distribution.

Table 4. Educational Attainment (Age ≥25 Years) for Counties of >200,000 Population, Alabama 2017

Education	Jefferson N=658,466	Madison N=334,811	Mobile N=412,992	Montgomery N=229,363	Alabama N=4,779,736
Less than 9th Grade	3.0%	3.0%	3.6%	4.4%	4.7%
9th to 12th Grade, No Diploma	7.6%	6.2%	10.1%	9.9%	10.0%
High School Diploma or Equivalent	26.8%	21.1%	32.6%	25.6%	30.9%
Some College	22.6%	20.8%	22.3%	21.3%	21.7%
Associate's Degree	8.1%	8.4%	8.3%	6.6%	8.2%
Bachelor's Degree	19.4%	25.2%	15.2%	19.4%	15.4%
Graduate or Professional Degree	12.5%	15.4%	7.8%	12.9%	9.1%

Source: 2017 American Community Survey Estimates, United States Census Bureau.
Note: Percentages may not sum 100% due to rounding.

B. DEMOGRAPHICS

The 2017 U.S. Census Bureau estimates the population of Alabama is 4,874,747 persons (Table 2). The female to male ratio is 1:1, and the majority of the population is between 25 and 64 years old (51.7%). The proportion of women age 65 years or older (56.5%) was significantly higher than that of their male counterparts (43.5%, Table 2). The 2000 U.S. Census expanded the collection of race and ethnicity information to allow persons the opportunity to report belonging to more than one race, as well as to report Hispanic ethnicity. Despite this expansion, the 2017 U.S. Census estimates that 65.6% of Alabama's population reported themselves as White, not Hispanic (Table 1). African Americans comprised 26.5% of the population while Hispanics, Native Americans, and Asians constituting 7.9% of the total population.

Alabama is divided into eight PHDs for the purpose of public health planning and disease intervention (Figure 1). The Northern Public Health District has the largest combined population with 1,069,615 residents while Northeastern District has the second largest population with 805,776 residents. The Jefferson County Health District has the fourth largest population with 659,197. The Southeastern Health District has the smallest population with only 378,339 residents and is part of the agricultural Black Belt region.

According to 2010 U.S. Census statistics, the distribution of race/ethnicity varies in Alabama's four major urban centers, defined as counties with populations >200,000 (Table 6). In Madison County, 64.7% of the population reported themselves as White, not Hispanic, compared with 57% in Mobile County, 49.9% in Jefferson County, and 33.9% in Montgomery County. Montgomery County reports the highest percentage of African American, not Hispanics (58.6%), followed by Jefferson County (43.4%), Mobile County (36.0%), and Madison County (24.9%). Madison County reports the highest Hispanic population (4.9%).

Table 5. Population Distribution by Race/Ethnicity for Counties of >200,000 Population, Alabama 2017

Race/Ethnicity	Jefferson N=659,197	Madison N=361,046	Mobile N=413,955	Montgomery N=226,646	Alabama N=4,874,747
White, not Hispanic	49.9%	64.7%	57.0%	33.9%	65.6%
Black, not Hispanic	43.4%	24.9%	36.0%	58.6%	26.8%
Hispanic	3.9%	4.9%	2.9%	3.5%	4.3%
Other	2.8%	5.5%	4.1%	4.0%	3.3%

Source: 2017 U.S. Census Estimate.
Note: Percentages may not sum 100% due to rounding.

C. SOCIOECONOMIC STATUS

Alabama is the sixth most poverty stricken state in the nation with 17% of Alabama residents living below the federal poverty level (Table 3). In 2008, the rate of Alabamians living below the poverty level decreased with age, with the highest proportion of persons living below the poverty level being less than 25 years old and the lowest proportion being 65 or older (Table 7). Analyses of Alabama's four most populous counties mirror this trend with Mobile and Montgomery Counties displaying the highest poverty rates in persons less than 25 years old. In each of the four most populous counties and statewide, more women than men live below federal poverty level in all age groups.

Table 6. Percentage of People Living Below Poverty Level by Age Group and Sex for Counties of >200,000 Population, Alabama 2017

Age Group	Jefferson n=644,957		Madison n=344,172		Mobile n=404,708		Montgomery n=220,184		Alabama n=4,729,116	
(Years)	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<25	4.0%	4.1%	3.3%	3.3%	4.6%	4.9%	5.2%	5.3%	4.1%	4.3%
25-44	1.6%	2.8%	1.3%	2.2%	1.5%	3.0%	1.8%	3.8%	1.6%	2.8%
45-64	1.6%	2.1%	1.0%	1.3%	1.5%	2.2%	1.4%	2.0%	1.5%	2.0%
65+	0.5%	1.0%	0.4%	0.8%	0.5%	1.1%	0.5%	1.0%	0.5%	1.1%

Source: 2017 American Community Survey Estimates, United States Census Bureau.
Note: Rate per 100,000 persons.

A 2017 population survey found 16% of males and 13% of females aged 19-24 years in Alabama do not have health insurance coverage (Table 8). Of those insured, 58% of men and 58% of women receive health insurance coverage through their employer. Eleven percent of men and fourteen percent of

women are insured by Medicaid. Another 7% of men and women receive other public health insurance. State percentages of employer health insurance coverage status were similar to the national average.

Table 7. Distribution of Adults (Aged 19-64 years) by Health Insurance Coverage and Sex, Alabama 2017, United States 2017

Health Insurance Coverage	Alabama		United States	
	Males	**Females**	**Males**	**Females**
Employer	58%	58%	61%	60%
Individual	†NSD	†NSD	†NSD	†NSD
Medicaid	11%	14%	13%	17%
Non-Group	8%	9%	8%	9%
Other Public	7%	7%	4%	4%
Uninsured	16%	13%	14%	11%

Source: Kaiser Family Foundation, 2017.
Note: Percentages may not sum 100% due to rounding.

Forty-six percent of Alabamians were covered under an employer health insurance (Table 9). Another 21% were insured via Medicaid, 16% were insured by Medicare, and 10% of Alabamians were uninsured.

Table 8. Distribution of Health Insurance Coverage, Alabama 2017, United States 2017

Health Insurance Coverage	Alabama	United States
Employer	46%	49%
Individual	†NSD	†NSD
Medicaid	21%	21%
Medicare	16%	14%
Non-Group	6%	7%
Other Public	†NSD	1%
Uninsured	10%	9%

Source: Kaiser Family Foundation, 2017.
Note: Percentages may not sum 100% due to rounding. †NSD – No Statistical Data

II. SCOPE OF THE HIV EPIDEMIC
A. HIGHLIGHTS
The HIV epidemic affects persons in all gender, age, race, ethnicity, and socioeconomic groups and in every county in Alabama. However, the effect has not been the same for all groups. At the beginning of the epidemic, the majority of HIV infections occurred in White men who have sex with men (MSM). Recent trends suggest a shift in the HIV epidemic toward African Americans and high-risk heterosexual activity. With the number of deaths among people diagnosed with HIV continuing to decline and the number of people living with HIV continuing to increase, the importance of identifying populations most affected and at risk for HIV infection is paramount. Alabama must be diligent in planning effective HIV prevention, care efforts, and re-engagement initiatives with the allocation of limited resources. This section provides detailed information about demographics, risk characteristics, and trends of HIV infections diagnosed among Alabama residents diagnosed through 2017.

B. OVERALL HIV TRENDS
The state of Alabama continues to experience an HIV epidemic of moderate magnitude when compared to other states. A cumulative total of 21,294 HIV infections have been diagnosed among Alabama residents since reporting began in 1982, with 14,054 HIV positive individuals currently living

in Alabama (Figure 2) as of December 31, 2017. During 2017, 657 newly diagnosed HIV infections were reported among Alabama residents.

Figure 2. Persons Living with HIV/AIDS, Alabama 2008-2017
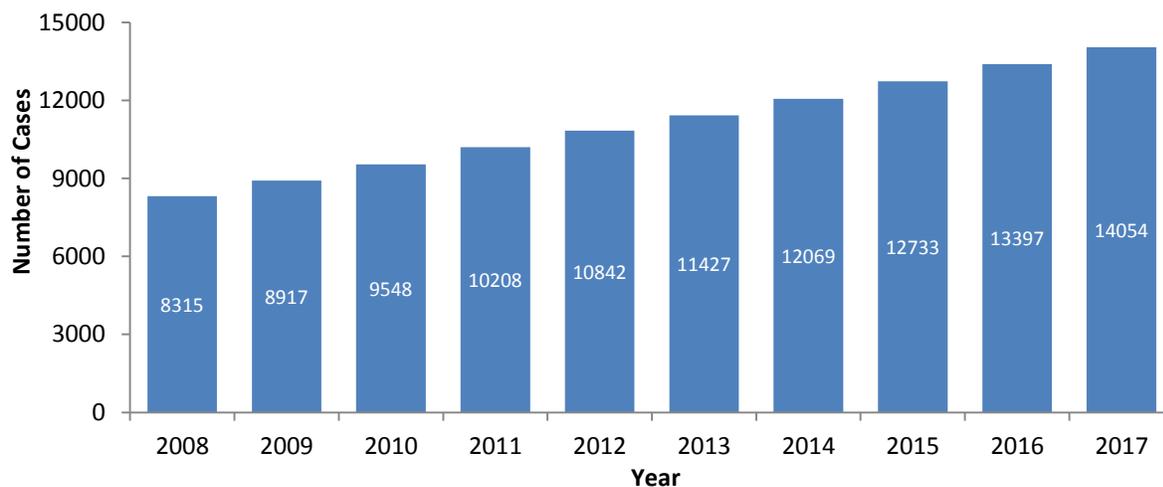
Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Persons living with HIV/AIDS include persons living as of December 31st for the year reported.

African Americans continue to be disproportionately affected by HIV. Although only 26.5% of the state's population is African American, 65.8% of newly diagnosed HIV cases and 63.7% of all persons living with HIV were African American during 2017 (Table 9). Only 28.2% of newly diagnosed cases and 28.0% of all persons living with HIV were White during 2017, despite Whites comprising 65.6% of Alabama's population.

Over two thirds (67.7%) of newly diagnosed HIV infections in 2017 occurred among adults in their twenties and thirties – 44.4% and 23.3%, respectively (Table 9). However, the majority of persons living with HIV infection (i.e., prevalent cases) were 40 years or older (66.6%).

In 2017, over half of the newly diagnosed cases (53.1%) and 46.5% of the prevalent cases reported male-to-male sexual activity as the primary risk factor for infection. Imputed risk estimates 68.0% of newly diagnosed cases and 56.7% of prevalent cases occurring in adults and adolescents ≥ 13 years may have been due to male-to-male sexual activity. Heterosexual contact was the second leading risk factor for HIV infection, representing 23.9% of newly diagnosed cases and 30% of prevalent cases. Imputed risk estimates 24.7% of newly diagnosed cases and 30.3% of prevalent cases occurring in adults and adolescents ≥ 13 years may have been due to heterosexual contact.

Fifty-nine percent and 61.8% of all 2017 newly diagnosed and prevalent HIV cases resided in the Jefferson, East Central, and Mobile Public Heath Districts, where the larger cities of Birmingham, Montgomery, and Mobile are located (Table 9).

Table 9. Characteristics of Newly Diagnosed and Prevalent HIV Cases, Alabama 2017

Characteristic	Newly Diagnosed Cases		Prevalent Cases	
	Number (%)	Rate	Number (%)	Rate
Gender				
Male	520 (79.1)	22.0	10252 (73.0)	434.4
Female	137 (20.9)	5.4	3793 (27.0)	152.5
Race/Ethnicity				
Black, Not Hispanic	432 (65.8)	33.4	8951(63.7)	692.4
White, Not Hispanic	185 (28.2)	5.8	3936 (28.0)	123.1
Multiple Races	16 (2.4)	21.5	627 (4.5)	853.3
Hispanic	21 (3.2)	9.9	431 (3.1)	204.2
Other/Unknown	3 (0.5)	-	100 (0.7)	-
Age Group (years)				
<13	2 (0.3)	-	33 (0.3)	4.4
13-19	36 (5.5)	8.2	45 (0.3)	10.2
20-29	292 (44.4)	43.7	1728 (12.3)	258.8
30-39	153 (23.3)	25.3	2884 (20.5)	477.3
40-49	82 (12.5)	13.6	3148 (22.4)	521.7
≥50	92 (14.0)	5.2	6207 (44.2)	349.3
Reported Risk Factor				
Men who have Sex with Men (MSM)	349 (53.1)	N/A	6525 (46.5)	N/A
Heterosexual Contact	157 (23.9)	N/A	4215 (30.0)	N/A
Injection Drug Use (IDU)	15 (2.3)	N/A	765 (5.5)	N/A
MSM/IDU	17(2.6)	N/A	471 (3.4)	N/A
Perinatal Exposure	1 (0.2)	-	84 (0.6)	N/A
Transfusion/Hemophilia	-	-	4 (<0.1)	N/A
Undetermined	118 (18.0)	N/A	1941 (13.8)	N/A
Imputed Risk among Cases ≥13 years				
MSM	446 (68.0)	N/A	7955 (56.7)	N/A
Heterosexual Contact	162 (24.7)	N/A	4248 (30.3)	N/A
IDU	25 (3.8)	N/A	1106 (7.9)	N/A
MSM/IDU	21 (3.3)	N/A	574 (4.1)	N/A
Other Confirmed Risk	2 (0.3)	-	154 (1.1)	N/A
Public Health District (PHD)				
Northern	84 (13.3)	8.6	1571 (11.5)	146.9
Northeastern	48 (7.6)	6.5	1075 (7.9)	133.4
Jefferson	146 (23.0)	22.4	3756 (27.5)	569.8
East Central	143 (22.6)	20.3	2794 (20.4)	395.3
West Central	61 (9.6)	21.3	837 (6.1)	192.7
Southwestern	26 (4.1)	6.8	788 (5.8)	193.7
Southeastern	41 (6.5)	10.8	933 (6.8)	246.6
Mobile	84 (13.3)	20.3	1900 (13.9)	459.0
Unknown	23 (3.5)	-	26 (0.2)	-
Total	657 (100)	13.5	14045 (100)	288.1

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Imputed risk estimated utilizing multiple imputation methodology among cases ≥13 years. Newly diagnosed age group represents age at diagnosis. Prevalent age group represents current age. Percentages may not sum 100% due to rounding. Rates per 100,000 persons calculated using US Census Bureau 2014 population estimates. Rates only calculated for variables with ≥ 5 cases. Case counts less than 12 (and accompanying rates and trends) are considered statistically unreliable and should be interpreted with extreme caution.

Five of Alabama's six most populous counties (Jefferson, Mobile, Montgomery, Madison, and Tuscaloosa) consistently report the highest number of new HIV cases each year (Table 10). Each of these counties is considered a major urban county with more than 200,000 residents combined. In 2017, these counties accounted for 59.4% of newly diagnosed infections annually. Jefferson County, with a population > 650,000, averaged 22.2% of newly diagnosed HIV infections in 2017.

Table 10. Top Five Counties with the Highest Frequency of Newly Diagnosed HIV Cases, Alabama 2013 – 2017

County	2013 No.	2013 Rate	2014 No.	2014 Rate	2015 No.	2015 Rate	2016 No.	2016 Rate	2017 No.	2017 Rate
Jefferson	167	25.3	157	23.8	135	20.4	139	21.1	146	22.1
Madison	41	11.8	39	11.1	44	12.5	46	12.9	41	11.5
Mobile	91	22.0	102	24.6	81	19.5	92	22.2	84	20.2
Montgomery	69	30.4	100	44.2	98	43.3	92	40.6	72	31.8
Tuscaloosa	46	22.9	33	16.3	38	18.6	43	20.9	47	22.8
Statewide	634	13.1	678	14.0	667	13.7	670	13.8	657	13.5

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: All rates are per 100,000 county populations, calculated from the 2010 United States Census report (i.e., 2013 estimate for 2013, 2014 estimate for 2014, 2015 estimate for 2015, 2016 estimate for 2016, and 2017 estimate for 2017).

The annual the rate of new HIV infections per 100,000 residents is often highest in Alabama's rural counties (Table 11). Rates of HIV infection are only calculated for counties with more than five cases. In fact, Jefferson and Montgomery Counties are the only non-rural counties ranked among the top five, with Montgomery consistently ranking in each of the past five years. The high rates seen in Alabama's rural counties indicate a need for increased HIV prevention efforts focused in rural areas.

Table 11. Annual Top Five County Highest Rates of Newly Diagnosed HIV Cases, Alabama 2013-2017

County	2013 Cases	2013 Rate	2014 Cases	2014 Rate	2015 Cases	2015 Rate	2016 Cases	2016 Rate	2017 Cases	2017 Rate
Bullock	3	-	12	111.5	8	74.8	1	9.7	2	-
Chambers	5	-	12	35.2	11	32.2	2	5.9	6	17.8
Clay	3	-	4	29.5	3	-	1	7.4	2	-
Conecuh	4	-	3	23.7	3	-	5	40.3	2	-
Dallas	14	33.3	8	19.2	5	-	2	5.0	7	17.9
Hale	4	-	8	52.7	0	-	1	6.7	2	-
Jefferson	167	25.3	157	23.8	135	20.4	139	21.1	146	22.1
Lowndes	5	-	2	18.9	1	-	4	38.6	3	-
Mobile	91	22.0	102	24.6	81	19.5	92	22.2	84	20.3
Montgomery	69	30.4	100	44.2	98	43.3	92	40.6	72	31.8
Perry	2	-	0	-	2	-	0	-	1	-
Tuscaloosa	46	22.9	33	16.3	38	18.6	43	20.9	47	22.6
Statewide	634	13.1	678	14.0	667	13.7	670	13.8	657	13.5

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Rates per 100,000 persons calculated using US Census Bureau 2017 population estimates. Rates only calculated for counties with ≥ 5 cases. The highest five rates per year are highlighted in gray. Case counts less than 12 (and accompanying rates and trends) are considered statistically unreliable and should be interpreted with extreme caution. All rates are per 100,000 county populations, calculated from the 2010 United States Census report (i.e., 2013 estimate for 2013, 2014 estimate for 2014, 2015 estimate for 2015, 2016 estimate for 2016, and 2017 estimate for 2017).

HIV BY RACE, ETHNICITY, AND BIRTH SEX

The HIV epidemic continues to disproportionately affect Blacks in Alabama. In 2017, the rate of HIV diagnosis among both Black males and Black females was 5.5 and 8.2 times that of White males and White females, respectively (Table 12).

Table 12. Newly Diagnosed HIV Cases by Race, Ethnicity, and Birth Sex, Alabama 2017

	Males		Females		Total	
Race/Ethnicity	Number (%)	Rate	Number (%)	Rate	Number (%)	Rate
Black, Not Hispanic	330 (63.5)	54.9	102 (74.5)	14.8	432 (65.8)	33.4
White, Not Hispanic	156 (30.0)	10.0	29 (21.2)	1.8	185 (28.2)	5.8
Multiple Races	14 (2.7)	38.6	2 (1.5)	-	16 (2.4)	21.5
Hispanic	17 (3.3)	15.1	4 (2.9)	-	21 (3.2)	9.9
Other/Unknown	3 (0.6)	-	0 (-)	-	3(-)	-
Total	520 (100)	22.0	137 (100)	5.4	657 (100)	13.5

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: All rates are per 100,000 populations, calculated using race/ethnicity reported in the 2040 United States Census Estimates. Rates only calculated for race/ethnicity with ≥ 5 cases. Case counts less than 12 (and accompanying rates and trends) are considered statistically unreliable and should be interpreted with extreme caution. Percentages may not sum 100% due to rounding.

Black males continue to have the highest number of newly diagnosed HIV infections each year, averaging over one-half (52%) of all cases over the past five years (Figure 3). The number of newly diagnosed HIV infections among White males and Black females remained closely the same for the past four years with that of White males being slightly greater, averaging 140 cases over that time period.

Figure 3. Trends in Newly Diagnosed HIV Cases by Race and Sex, 2008-2017
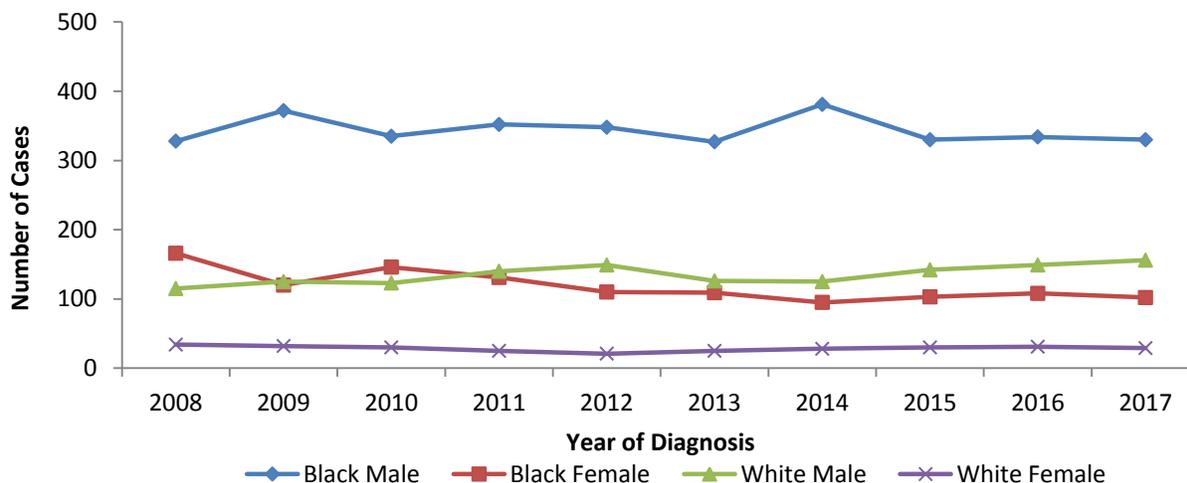
Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.

HIV by Age Group

In 2017, the data showed that nearly one-half (47%) of all newly diagnosed HIV infections were young adults in their twenties with a decline with subsequent age groups (Table 13). Men experienced a sharper decline than women. Nearly 50% of males were diagnosed during their twenties, compared to 28.5% of females. Almost 22.7% of men were 40 or older at diagnosis, compared to 40.8% of women.

Table 13. Newly Diagnosed HIV Cases by Age Group and Sex, Alabama 2017

Age Group (years)	Males (N=520), Number (%)	Females (N=137), Number (%)	Total (N=657), Number (%)
0-12	2(0.4)	0 (-)	2(0.3)
13-19	32 (6.2)	4 (2.9)	36 (5.5)
20-29	253 (48.7)	39 (28.5)	296 (45.1)
30-39	115 (22.1)	38 (27.7)	153 (23.3)
40-49	51 (9.8)	31 (22.6)	82 (12.5)
≥50	67 (12.9)	25 (18.9)	92 (14.0)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.

HIV by Mode of Exposure

During 2017, the majority (55.7%) of newly diagnosed cases reported MSM (alone or in combination with intravenous drug use (IDU) as the primary mode of exposure (Table 14). Data were statistically adjusted to account for missing transmission category. An estimated 1 in 5 (20.3%) MSM living with HIV in Alabama are unaware of their infection and, thus, are not receiving regular medical care to manage the disease.

Table 14. Newly Diagnosed HIV Cases by Mode of Exposure and Race/Ethnicity, Alabama 2017

Mode of Exposure	Black, Not Hispanic Number (%)	White, Not Hispanic Number (%)	Multiple Races, Number (%)	Hispanic, Number (%)	Total, Number (%)
MSM	285 (66.3.)	131 (71.1)	13 (83.1)	13 (61.4)	446 (68.0)
Heterosexual Sex	130 (30.0)	25 (13.4)	2 (14.4)	5 (25.7)	162 (24.7)
IDU	9 (2.0)	14 (7.7)	-	2 (8.1)	25 (3.8)
MSM/IDU	6 (1.3)	15 (7.9)	-	1 (4.8)	21 (3.3)
Total	432 (100)	185 (100)	16 (100)	21 (100)	657 (100)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.

Note: Imputed risk was estimated utilizing multiple imputation methodology among cases ≥13 years and did not assign risk for 8 cases, therefore, n=670 for Table 16. Percentages may not sum 100% due to rounding.

Over the past 10 years, newly diagnosed HIV infections among MSM have increased, while the number of new cases reported among heterosexuals has decreased (Figure 4). However, it is important to note that the steady rise of HIV among MSM is not isolated. Many HIV positive MSM do not identify as being gay or bisexual, but identify as heterosexual. While recent trends indicate an increased need for HIV treatment and prevention efforts among MSM, statewide efforts should continue to target all individuals, regardless of sexual orientation.

Figure 4. Trends in Newly Diagnosed HIV Cases by Mode of Exposure, Alabama 2008-2017
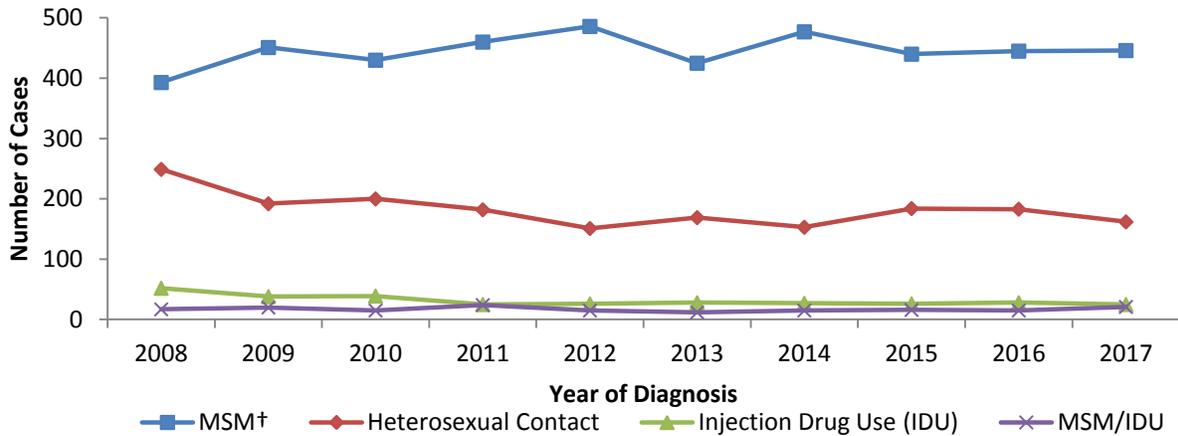
Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Multiple imputation methodology was used to estimate unknown risk among cases ≥13 years. †MSM - Men who have Sex with Men.

HIGH RISK TARGET GROUPS

In stratifying the 2017 data by age, young adults in their twenties emerged as the most affected age group (Table 13 and Figure 5). The next most affected age group was those in their thirties.
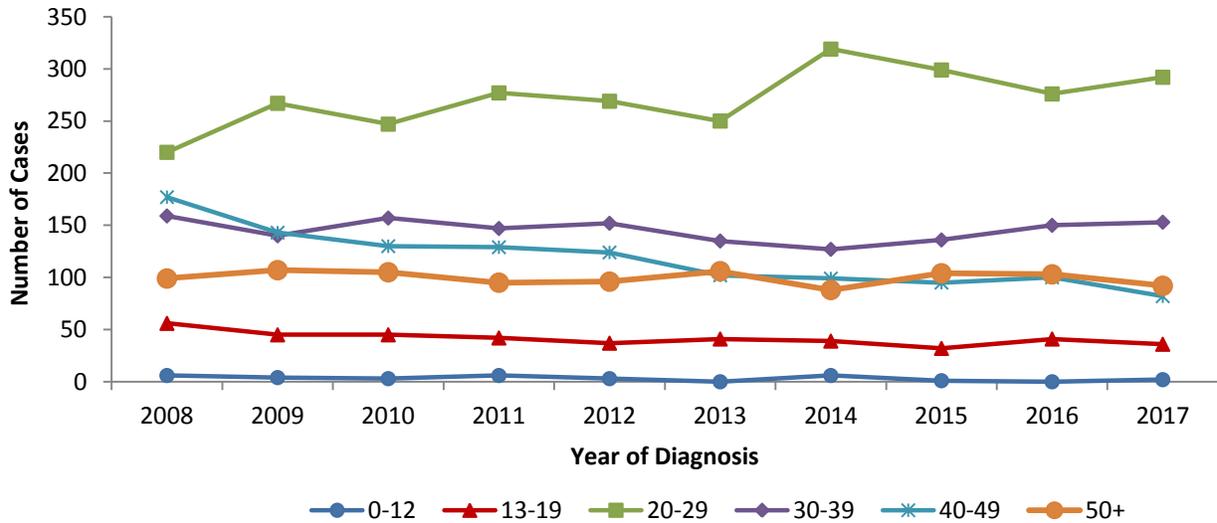
Figure 5. Trends in Newly Diagnosed HIV Cases by Age Group, Alabama 2008-2017

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.

Young adults (20-29 years) are twice as likely to be infected with HIV as the average Alabama resident and represent over 44.4% of all newly diagnosed cases (Table 13), although this age group accounts for only 13.7% of Alabama's population. In contrast, the majority (53%) of persons living with HIV infection in Alabama as of December 31, 2017 are age 45 or older due to the availability of and adherence to effective antiretroviral therapies. Without early, primary prevention education, the alarming rate of new infections among adolescents and young adults can be expected to significantly increase the total number of persons living with HIV infection in Alabama, as HIV positive individuals are becoming infected at a younger age and living longer.

Table 15. HIV Infection Rates by Age Group, Alabama 2017

Age Group (Years)	Newly Diagnosed, 2017		Persons Living with HIV, 2017	
	Number (%)	Rate	Number (%)	Rate
0-12	2 (0.3)	-	33 (0.2)	4.4
13-19	36 (5.5)	8.2	45 (0.3)	10.2
20-29	292 (44.4)	43.7	1728 (12.3)	258.8
30-39	153 (23.3)	25.3	2884 (20.5)	477.3
40-49	82 (12.5)	13.6	3148 (22.4)	521.7
≥50	92 (14.0)	5.2	6207 (44.2)	349.3
Statewide Total	657 (100)	13.5	12156 (100)	288.1

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Newly diagnosed age groups are age at diagnosis. Prevalent age groups are current age. Rates per 100,000 Alabama residents in each age group reported in United States Census Bureau, 2014 Population Estimates. Percentages may not sum 100% due to rounding.
Black males represent the majority (66%) of newly diagnosed HIV infections among adolescents and young adults age 15-29 years (Table 8). They have over 10 times the risk of becoming infected as the average Alabama resident, and 9 times the risk of infection as their white counterparts (Tables 7 and 8). The infection rate among prevalent Black males aged 15-29 years is 10 times that of their White counterparts.

Table 16. HIV Infection Rates among Adolescents and Young Adults (20-29 Years) by Race, Alabama 2017

Race and Birth Sex	Newly Diagnosed, 2017		Persons Living with HIV, 2017	
	Number (%)	Rate	Number (%)	Rate
Black, Not Hispanic				
Males	170 (83.3)	168.6	1074 (82.9)	1064.8
Females	34 (16.7)	31.8	222 (17.1)	207.4
White, Not Hispanic				
Males	64 (95.5)	31.5	272 (87.7)	134.1
Females	3 (4.5)	1.5	38 (12.3)	19.1
Total				
Males	253 (86.6)	75.7	1447 (83.7)	433.1
Females	39 (13.4)	11.7	281 (16.3)	84.2

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Newly diagnosed age groups are age at diagnosis. Prevalent age groups are current age. Rates per 100,000 Alabama residents in each race and sex group reported in United States Census Bureau, 2017 Population Estimates. Percentages may not sum 100% due to rounding.

Sex with another male is the predominant risk factor reported among newly diagnosed HIV cases in young adult Black males (Figure 6). It is imperative to note that many young Black MSM do not identify as being gay or bisexual and only report as exclusively engaging in heterosexual sex with women. Therefore, increased HIV infection rates in young women can be expected to follow. Effective HIV prevention efforts must target young adult Black men, regardless of sexual orientation.

Figure 6. Trends in Newly Diagnosed HIV Cases among Black Males (Age 20-29 Years) by Mode of Exposure, Alabama 2008-2017
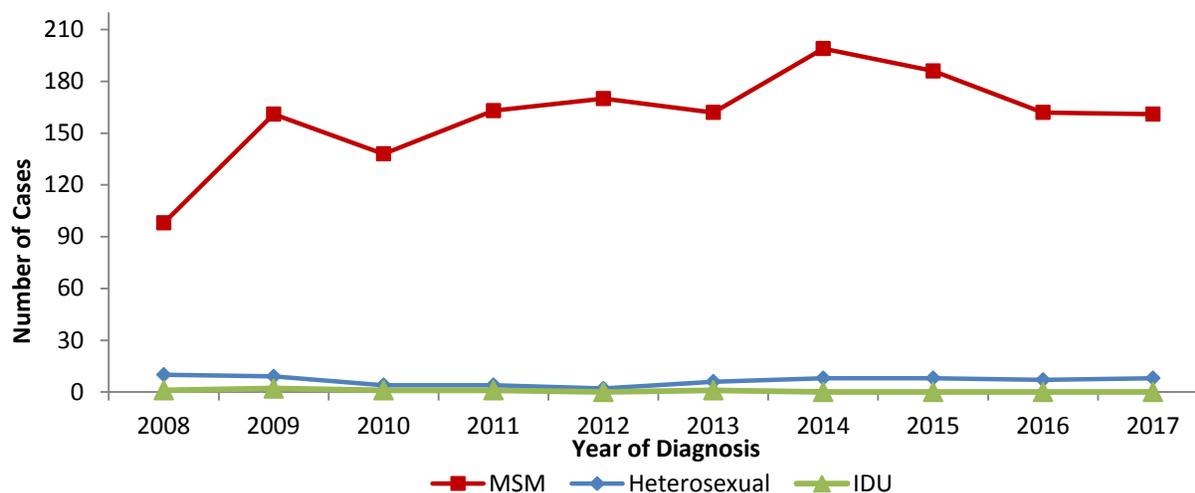

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Multiple imputation methodology was used to estimate unknown risk among cases ≥13 years. MSM - Men who have Sex with Men, IDU - Intravenous Drug Use. MSM includes any MSM (i.e., MSM alone and in combination with IDU).

HIV Treatment Cascade

Guidance from the National HIV Surveillance System (NHSS) was used to create Alabama's HIV Treatment Cascade Graph (Figure 7). During 2017, 84% of the 657 newly diagnosed HIV infections were linked to care within 3 months of diagnosis (Figure 7). Of the 14,054 persons living with HIV in Alabama as of December 31, 2017, 73% were retained in care and 62% achieved viral suppression (≤200 copies/mL) during 2017. Being virally suppressed—which means that HIV is under control at a level that keeps people healthy and reduces the risk of transmitting the virus to others—not only improves a person with HIV's health and enhances their lifespan, but it also significantly reduces their risk of transmitting HIV to partners. People living with HIV who adhere to antiretroviral therapy (ART) and have suppressed viral loads can reduce the risk of sexual transmission of HIV by 96%.

Figure 7. HIV Treatment Cascade: Persons Living with HIV Infection in Alabama, 2017
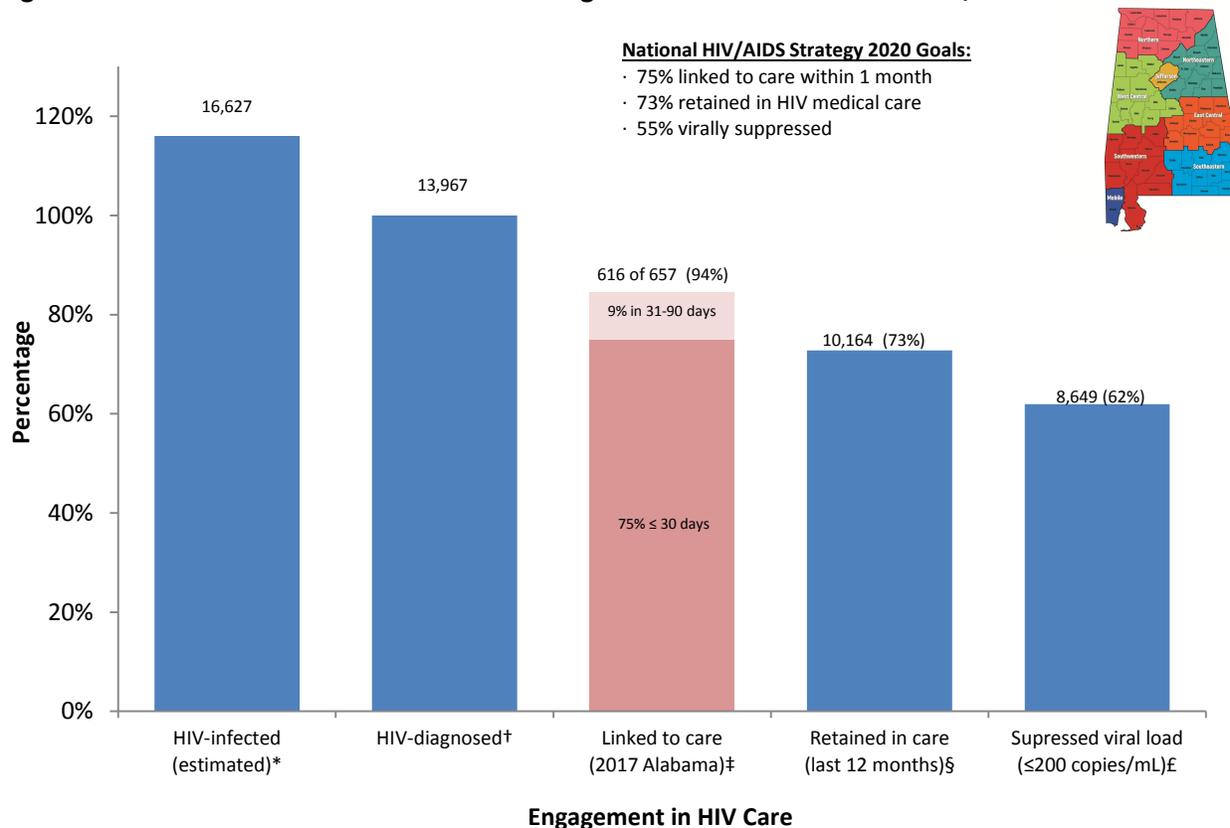
*Estimated by applying Alabama's HIV-prevalence estimate (84.0%) to the number of persons diagnosed with HIV infection through December 31, 2015 and alive as of December 31, 2017 (i.e., 84% of persons aged ≥13 years living with HIV infection in Alabama are aware of their infection and 16%, or 1 in 7 HIV-positive individuals, are unaware of their infection).

†Defined as persons diagnosed with HIV infection through December 31, 2015 and alive as of December 31, 2017.

‡Calculated as the percentage of persons linked to care, evidenced by ≥1 CD4 and/or viral load test(s) within 90 days of diagnosis, among those newly diagnosed with HIV infection during 2017.

§Calculated as the percentage of persons accessing care during 2017, evidenced by ≥2 CD4 and/or viral load tests collected at least 90 days apart, among those diagnosed with HIV through December 31, 2015 and alive as of December 31, 2017.

£Calculated as the percentage of persons who had suppressed viral load (≤200 copies/mL) during 2016, among those diagnosed with HIV through December 31, 2015 and alive as of December 31, 2017.

HIV/AIDS Mortality

Since 2008, the number of deaths has averaged 235 per year. Newly diagnosed HIV infections have dropped slightly over the past ten years. At the end of 2017, 14,054 persons were known to be living with HIV infection in Alabama. This reflects a 4.7% increase in PLWH from 2016.

Figure 8. Persons Living with HIV, Newly Diagnosed HIV, and Deaths, Alabama 1982-2017
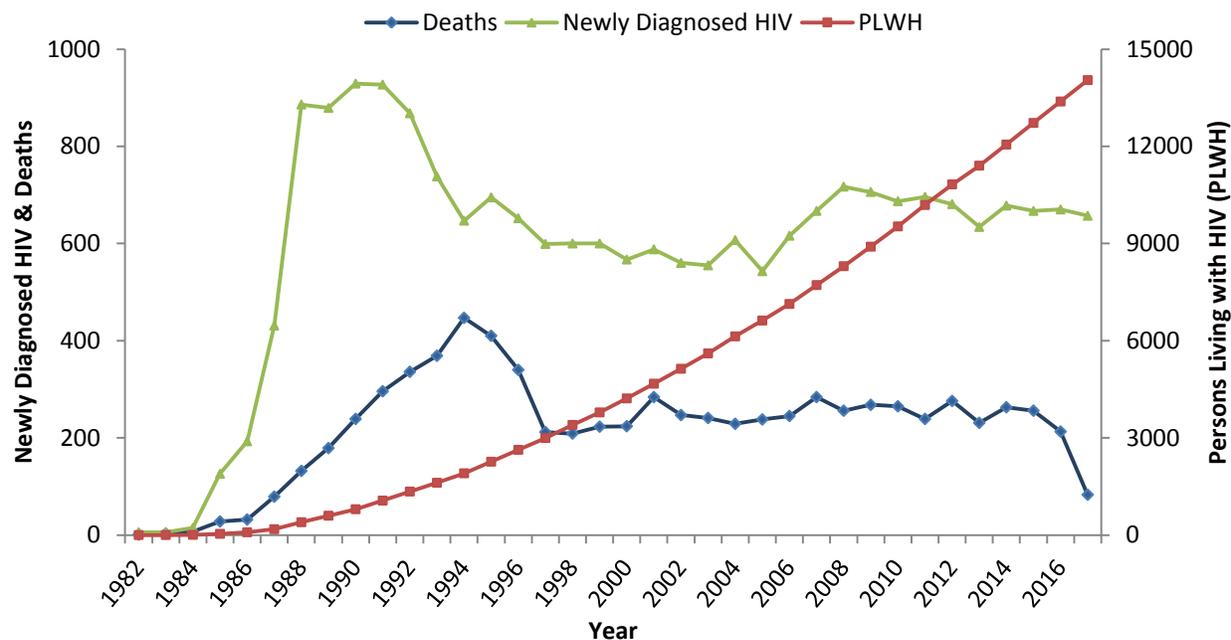
Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: PLWH include persons living with HIV infection (non-AIDS) and Stage 3 (AIDS) as of December 31st for the year reported.

Table 17. Framework Utilized to Calculate Unmet Need as Determined by HRSA/HAB

HIV Population Size	Data Source	Number
A. PLWA as of December 31, 2017	eHARS	6,214
B. PLWH as of December 31, 2017	eHARS	7,840
HIV Care Patterns	**Data Source**	**Number (%)**
C. Percent PLWA receiving specified services during 2017	CD4/VL reported in eHARS	4,931 (79.4)
D. Percent PLWH receiving specified services during 2017	CD4/VL reported in eHARS	5,037 (64.2)
Unmet Need Calculations		**Unmet Need**
Unmet Need = [A*(1-C)] + [B*(1-D)]		
= [6,214*(1-0.794)] + [7,840*(1-0.642)]		4,089 (29.1)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, HIV Surveillance Branch.
Note: Specified services include any of the following three components of HIV primary medical care during the 11-month time frame from January 1, 2017 through November 30, 2017: VL testing, CD4 count, or provision of anti-retroviral therapy (ART).
Abbreviations: eHARS - Enhanced HIV/AIDS Reporting System; HAB – HIV/AIDS Bureau; HRSA – Health Resources and Services Administration; PLWA - persons living with AIDS; PLWH - persons living with HIV, non-AIDS; VL – viral load.
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III. INDICATORS OF RISK FOR HIV INFECTION

A. HEALTH INDICATORS

America's Health Rankings reports Alabama ranked 46th nationally in overall health in 2015. Alabama ranked 45th in public health efforts to manage and control sexually transmitted diseases and 47th for health care coverage. The percentage of mothers receiving prenatal care within the first trimester was 84%, ranking Alabama 28th nationally. However, Alabama ranked 10th in funding from the CDC, which is indicative of proactive implementation of preventive and educational programs aimed at improving the health of at-risk populations within the state.

The Alabama Youth Risk Behavior Survey indicates nearly one-half (46%) of high school students (grades 9-12) have had sexual intercourse as of 2015 (Table 18). Moreover, 49% of sexually active high school students did not use a condom during their last sexual intercourse and 84% of all high school students reported they were never tested for HIV infection. The Alabama School Health Profile states that 68% of high schools have policies for HIV-positive students and staff addressing attendance, confidentiality, and procedures to protect against discrimination, and 21% of high schools have a gay/straight alliance or similar club.

Table 18. High School Youth Risk Behavior Surveillance Survey, Alabama 2015

Sexual Behavior Question	Male Number (%)	Female Number (%)	Total Number (%)
Ever had sexual intercourse	639 (49.5)	670 (43.6)	1313 (46.3)
Had sexual intercourse for the first time before age 13 years	641 (10.4)	672 (3.8)	1318 (6.9)
Had sexual intercourse with four or more persons (during their life)	637 (19.5)	671 (11.7)	1312 (15.4)
Had sexual intercourse with at least one person (during the 3 months before the survey)	637 (34.8)	673 (34.9)	1315 (34.9)
Drank alcohol or used drugs before last sexual intercourse (in sexually active students)	201 (22.4)	207 (17.0)	409 (19.7)
Did not use a condom during last sexual intercourse (in sexually active students)	204 (41.1)	200 (57.2)	406 (49.1)
Did not use birth control pills before last sexual intercourse to prevent pregnancy (in sexually active students)	201 (87.1)	204 (75.7)	407 (81.2)
Did not use an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon) before last sexual intercourse (to prevent pregnancy, among students who were currently sexually active)	407 (97.9)	204 (97.1)	407 (97.9)
Did not use a shot (e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing) before last sexual intercourse (to prevent pregnancy, among students who were currently sexually active)	201 (95.7)	204 (88.1)	407 (91.3)
Did not use birth control pills; an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon); or a shot(e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing) before last sexual intercourse (to prevent pregnancy, among students who were currently sexually active)	201 (81.6)	204 (61.0)	407 (70.4)
Did not use both a condom during last sexual intercourse and birth control pills; an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon); or a shot (e.g., Depo-Provera), patch (e.g., OrthoEvra), or birth control ring (e.g., NuvaRing) before last sexual intercourse (to prevent pregnancy, among students who were currently sexually active)	200 (93.7)	199 (90.1)	401 (91.4)
Did not use any method to prevent pregnancy during last sexual intercourse (among students who were currently sexually active)	201 (17.0)	204 (18.5)	18.5 (17.7)
Were never tested for human immunodeficiency virus (HIV) (not counting tests done if they donated blood)	760 (87.2)	726 (81.5)	1493 (84.2)

Source: Youth Risk Behavior Surveillance Survey (YRBSS), Alabama 2015.
Note: Percentages may not sum 100% due to rounding.

B. SEXUALLY TRANSMITTED DISEASES

Sexually Transmitted Disease (STD) surveillance data provides a surrogate indicator of high-risk sexual behavior. While an increase in STD occurrences does not directly indicate HIV infections are increasing, these surrogate markers point toward an increase in unprotected sex, a known risk factor for HIV infection. Table 19 compares the STD cases in males and females during 2016 and 2017 and Table 20 depicts STD cases by public health district.

Table 19. Sexually Transmitted Disease Morbidity Comparison by Sex, Alabama 2016 & 2017

Sex	Chlamydia		Gonorrhea		P&S Syphilis		EL Syphilis		Other Syphilis	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Male	7,538	8,392	4,161	5,969	249	282	181	244	129	166
Female	19,176	20,082	4,072	5,445	64	55	63	69	74	75
Unknown	146	87	44	41	0	0	0	0	0	0
Total	26,890	28,561	8,277	11,455	313	337	244	313	203	241

Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Calendar Year 2017.

Table 20. Sexually Transmitted Disease Cases by Public Health District (PHD), Alabama 2017

PHD†	Chlamydia (N=28,561), Number (%)	Gonorrhea (N=11,455), Number (%)	P&S Syphilis (N=337), Number (%)	EL Syphilis (N=313), Number (%)	Late Latent Syphilis (N=241), Number (%)
Northern	4430 (15.5)	1593 (13.9)	76 (22.6)	82 (26.2)	37 (15.4)
Northeastern	3310 (11.6)	1245 (10.9)	28 (8.3)	36 (11.5)	26 (10.8)
Jefferson	5224 (18.3)	2483 (21.7))	38 (11.3)	26 (8.3)	20 (8.3)
East Central	5178 (18.1)	2173 (19.0)	61 (18.1)	90 (28.8)	48 (19.9)
Southeastern	2464 (8.6)	940 (8.2)	38 (11.3)	20 (6.4)	25 (10.4)
Southwestern	1968 (6.9)	678 (5.9)	24 (7.1)	14 (4.5)	17 (7.1)
West Central	3119 (10.9)	1083 (9.5)	31 (9.2)	27 (8.6)	15 (6.2)
Mobile	2867 (10.0)	1260 (11.0)	41 (12.2)	18 (5.8)	53 (22.0)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Calendar Year 2017.

Chlamydia

The incidence of chlamydia is 2.4 times higher in women than men and 3.0 times higher in African Americans than Whites (Table 21). Reported cases of chlamydia have increased each year since 2015 (Figure 9). In 2017, 28,561 cases of chlamydia were reported in Alabama residents, an increase of 11.6% from 2015 (Figure 9).

Table 21. Chlamydia Diagnosis† by Race, Ethnicity and Sex, Alabama 2017

Race	Male (N=8392, Number (%)	Female (N=20,082), Number (%)	Total (N=28,561) Number (%)
White, not Hispanic	1038 (12.4)	2978 (14.8)	4017 (14.1)
Black, not Hispanic	4091 (48.7)	8039 (40.0)	12132 (42.5)
Hispanic	115 (1.4)	454 (2.3)	569 (2.0)
Multi-Race	29 (<1)	101 (<1)	130 (<1)
Other/Unknown	3118 (37.2)	8509 (42.4)	11673 (40.9)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.
Note: Percentages may not sum 100% due to rounding.

Figure 9. Chlamydia Cases by Year of Diagnosis, Alabama 2015-2017
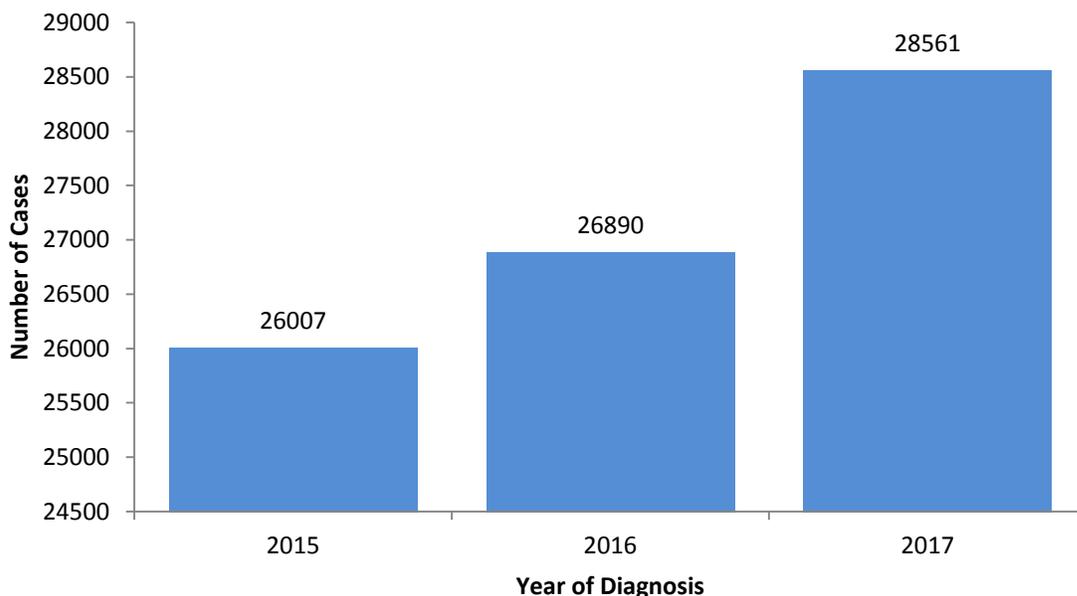
Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.

Gonorrhea

The incidence of gonorrhea is nearly identical in women and men, and 3.9 times higher in African Americans than Whites (Table 22). Overall, reported cases of gonorrhea has increased from 2015 to 2017 (Figure 10). In 2017, 11,455 cases of gonorrhea were reported in Alabama residents, an increase of 63.7% from 2015 (Figure 10).

Table 22. Gonorrhea Diagnosis† by Race/Ethnicity and Sex, Alabama 2017

Race	Male (N=5,969), Number (%)	Female (N=5,445), Number (%)	Total (N=11,455), Number (%)
White, not Hispanic	601 (10.1)	838 (15.4)	1439 (12.6)
Black, not Hispanic	3022 (50.6)	2629 (48.3)	5651 (49.3)
Hispanic	48 (<1.0)	62 (1.1)	110 (<1.0)
Multi-Race	20 (<1.0)	44 (<1.0)	64 (<1.0)
Other/Unknown	2278 (38.2)	1872 (34.4)	4169 (36.4)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.
Note: Percentages may not sum 100% due to rounding.

Figure 10. Gonorrhea Cases by Year of Diagnosis, Alabama 2015-2017
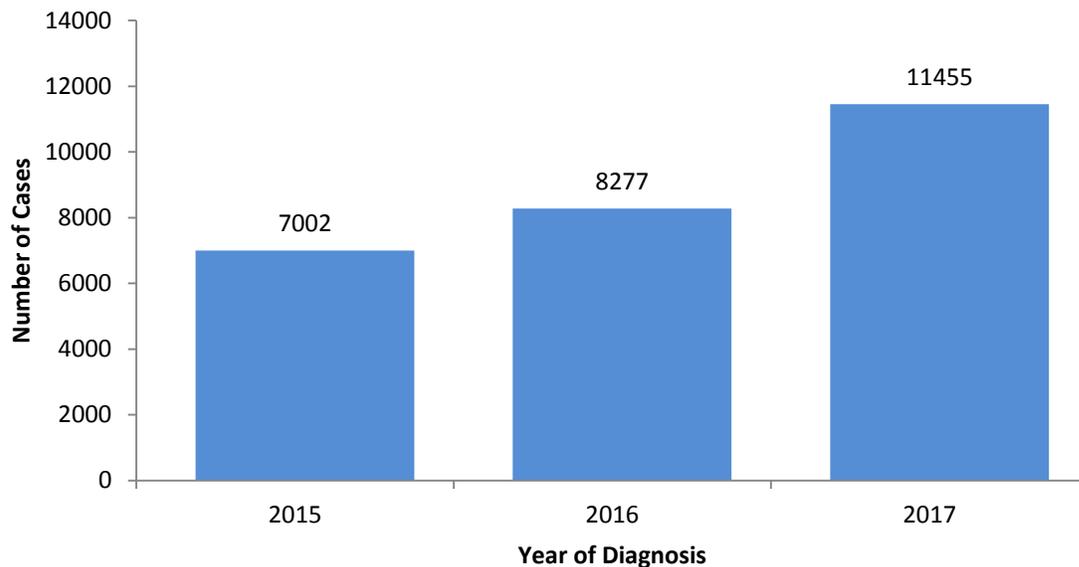
Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.

P&S Syphilis

The incidence of P&S syphilis is 5.0 times higher in men than women and 1.7 times higher in African Americans than Whites (Table 23). Overall, reported cases of P&S Syphilis have increased from 2015 to 2017 (Figure 10). In 2017, 337 cases of syphilis were reported in Alabama residents representing an increase of 12.2% from 2015 (Table 20).

Table 23. P&S Syphilis Diagnosis† by Race/Ethnicity and Sex, Alabama 2017

Race	Male (N=282), Number (%)	Female (N=55), Number (%)	Total (N=337), Number (%)
White, not Hispanic	98 (34.8)	19 (34.5)	117 (34.7)
Black, not Hispanic	171 (60.6)	33 (60.0)	204 (60.5)
Hispanic	8 (2.8)	1 (1.8)	9 (2.79)
Multi-Race	3 (1.1)	- (-)	3 (<1.0.)
Other/Unknown	2 (<1.0)	2 (3.6)	4 (1.2)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.
Note: Percentages may not sum 100% due to rounding.

Figure 11. P&S Syphilis Cases, Alabama 2015-2017
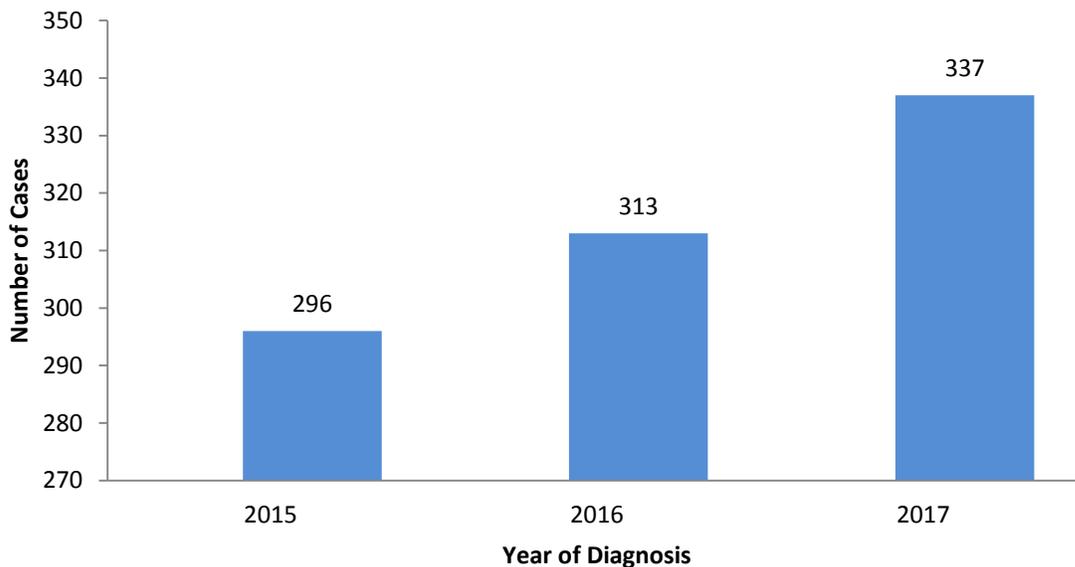
Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.

Table 24. P&S Syphilis Diagnosis† by Risk Category, Alabama 2015-2017

Risk Category	2015 (N=296), Number (%)	2016 (N=313), Number (%)	2017 (N=337), Number (%)
Bisexual Men	15 (5.1)	18 (5.8)	19 (5.6)
MSM	126 (42.6)	122 (39.0)	138 (40.9)
Men Who Have Sex w/Women Only	43 (14.5)	49 (15.70)	51 (15.1)
Men Unknown Sexual Behavior	70 (23.6)	60 (19.2)	74 (2.00)
Women Who Have Sex w/Men Only	42 (14.2)	64 (20.4)	55 (16.3)

Source: Alabama Department of Public Health, Division of STD Prevention and Control, updated STD Morbidity Diagnosis Year 2017.
Note: Percentages may not sum 100% due to rounding.

IV. <u>PATTERNS OF UTILIZATION OF HIV SERVICES</u>

In 1990, Congress enacted the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act to provide funding for states, territories, and eligible metropolitan areas (EMAs) to offer primary care and support services to uninsured HIV-positive individuals lacking financial resources for their care. In Alabama, HIV-positive individuals can receive care through Alabama's AIDS Drug Assistance Program (ADAP) and the Medicare D cost assistance plan (MEDCAP). The Alabama Department of Public Health oversees Alabama's Ryan White Part B program which funds medical and social services including Case Management and ADAP.

V. CHARACTERISTICS OF HIV POSITIVE PERSONS WHO ARE NOT IN CARE
A. MEASURING UNMET NEED

The Alabama Department of Public Health (ADPH) has been conducting HIV and AIDS case surveillance since the beginning of the HIV epidemic, with confidential, name-based reporting beginning in 1987. In June 2011, all positive HIV tests, CD4 results, and viral loads became reportable to ADPH under Alabama Public Health Law. Prior to the rule change, only HIV-positive Western Blots, CD4 cell counts <200 per µl or <20%, and AIDS defining diseases were reportable, making an accurate estimate of unmet need within Alabama's HIV infected community difficult to obtain. To provide an estimate of unmet need, data acquired through Alabama's HIV AIDS Disease Information System (HADIS) Patient Reengagement Form was utilized.

Unmet Need Calculation as Determined by HRSA

The Health Resources and Services Administration (HRSA) defines a framework for determining unmet need in its "Practical Guide to Measuring Unmet Need for HIV-Related Primary Medical Care." Unmet need is defined as no evidence of three HIV primary medical care components during a 12-month time period: (1) viral load (VL) testing, (2) CD4 count, or (3) provision of anti-retroviral therapy (ART). However, a second objective is to collect unmet service need to assist in the service planning and funding allocation decision-making process.

ADPH collaborates with Alabama's Ryan White Grantee to provide an annual HIV Epidemiologic Profile to document trends in the HIV epidemic in Alabama. ADPH utilizes the annual Epidemiologic Profile to make projections regarding funding and service needs for HIV-positive residents.

Assessment of Unmet Need

Common challenges to getting HIV-positive individuals into care include denial, fear of discrimination, lack of insurance, inadequate income, transient populations without a permanent residence, lack of transportation to services, and inability to accept responsibilities of care, medicines, and medical visits. To aid in reducing many of these challenges, ADPH established the Enhanced Referral Tracking System (ERTS) in 2005. In 2016, ERTS was incorporated into the HADIS Patient Reengagement Form.

The HADIS Patient Reengagement Form focuses on early treatment of newly identified HIV-positive individuals to ensure access to HIV care and services. HIV Coordinators successfully linked 74% of newly diagnosed HIV clients into care in 2017 (Table 25). African Americans represent 63% of patient re-engagement clients while Whites represent 27%. Seventy-nine percent of patient re-engagement clients are men. A similar client distribution is observed when assessing Alabama by PHD (Figure 13). During 2017, East Central District (Autauga, Bullock, Chambers, Coosa, Elmore, Lee, Lowndes, Macon, Montgomery, Russell, and Tallapoosa Counties) had the highest number of reengagement cases investigated (132), while Southwestern District (Baldwin, Choctaw, Clarke, Conecuh, Dallas, Escambia, Marengo, Monroe, Washington, and Wilcox Counties) had the least (33).

Table 25. Distribution of Patient Re-engagement† Clients by Sex and Race, Alabama 2017

Patient Re-engagement † Client Demographics	In Care (N=819), Number (%)
Sex	
Male	645 (78.8%)
Female	160 (19.5%)
Unknown	14(1.7%)
Race	
African American	513 (62.6%)
White	221 (27%)
Other/Unknown	85 (10.4%)

Source: Alabama Department of Public Health, Division of HIV/AIDS Prevention and Care
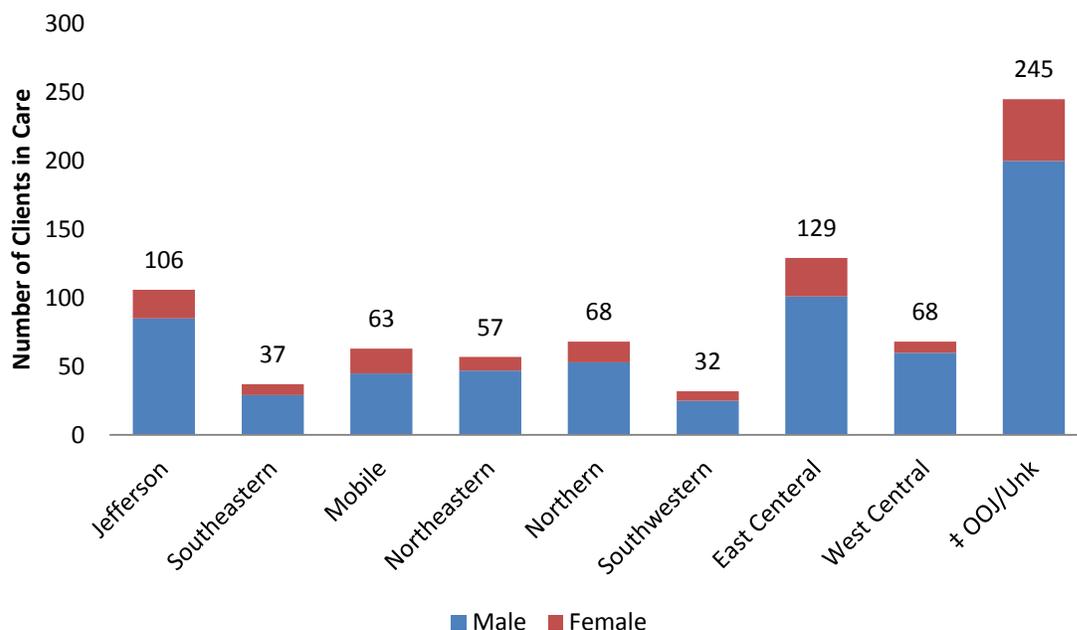†HADIS – HIV/AIDS Disease Information System

Figure 12. Patient Re-engagement Clients in Care (N=819) by Race and Public Health District, 2017
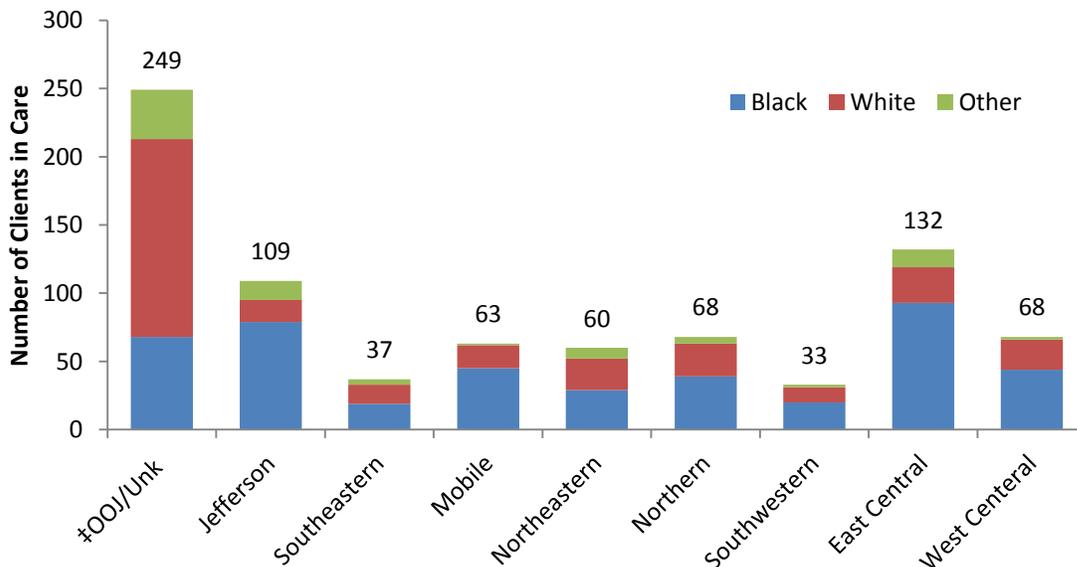
Source: Alabama Department of Public Health, Division of HIV/AIDS Prevention and Care
†HADIS – HIV/AIDS Disease Information System, ‡OOJ/Unk – Out of Jurisdiction/Unknown

Figure 13. [†] Patient Re-engagement Clients in Care (N=819) by Sex and Public Health District, Alabama 2017

Source: Alabama Department of Public Health, Division of HIV/AIDS Prevention and Care
†HADIS – HIV/AIDS Disease Information System, ‡OOJ/Unk – Out of Jurisdiction/Unknown

B. EXPANDED HIV TESTING

In October 2010, Alabama received funding from the CDC to implement an expanded HIV testing initiative, Expanded Counseling and Testing Services (CTS). The goal of Expanded CTS is to launch HIV testing in primary care centers, UAB Hospital's emergency department (UAB ED), and select Historically Black Colleges and Universities (HBCUs). A second goal is to increase HIV testing services offered by community-based organizations. The Expanded CTS initiative aims to identify HIV-positive individuals and refer them for care early in disease progression. Surveillance data guides the initiative by identifying locations where HIV testing sites would be most beneficial to populations disproportionately affected by HIV, including African Americans, Hispanics, MSM, and injection drug users.

HIV Testing Experience

The Division of HIV/AIDS Prevention and Care partners with the Division of STD Control to accomplish HIV Counseling, Testing, Referral, and Partner Notification (CTRPN) services. HIV Managers collaborate with STD field staff in managing patient re-engagement services and coordinating community activities related to HIV prevention through education, outreach, and referral service focusing on early treatment access for newly identified HIV positive individuals. Health department nurses perform HIV pre-test counseling, obtain clinical specimens, and provide results and post-test counseling to HIV-negative clients. STD Disease Intervention Specialists follow up with HIV-positive clients providing post-test counseling, making referrals for social and medical services, and performing partner notification. Disease Intervention Specialists also follow up with HIV-negative clients considered high-risk.

Additionally, ADPH provides technical assistance to HIV screening programs throughout the state. The HIV Counseling and Testing program provides training to sites applying for funded HIV testing services. Staff members participate in protocol development, process planning, and pre- and post-test counseling

training. Educational materials are provided and state/federal laws and regulations are reviewed. Updated HIV information is provided during routine audits. The ADPH Bureau of Clinical Laboratories (BCL) performs all confirmatory HIV testing.

BCL performed 118,236 HIV tests in 2017 compared to 130,553 tests in 2011, reflecting a decrease of 9.4%. The majority of positive HIV 1/2 Ag/Ab screenings were submitted by Hospitals, Clinics, PMD, and Community Based Organizations and STD Clinics (Table 26).

Table 26. HIV Counseling and Testing Data by Clinic Type, Alabama 2018

Clinic Type	Reactive (count)	Reactive (%)	Non-Reactive (count)	Non-Reactive (%)	Total
Health Department †	16	0.2%	7082	99.8%	7098
STD Clinic	184	1.1%	17140	98.9%	17324
Drug Treatment Centers	2	2.3%	86	97.7%	88
Family Planning Clinic	34	0.2%	16740	99.8%	16774
Prenatal/Maternity Clinic	0	0	32	100%	32
TB Clinic	1	0.21%	485	99.8%	486
Community/Primary Health	2	0.4%	506	99.6%	508
Prison/Jail	8	0.8%	966	99.2%	974
Hospital, Clinic, PMD, CBO	293	1.2%	24453	98.8%	24746
Total	540	0.8%	67490	99.2%	68030

Source: Alabama Department of Public Health, HIV/AIDS Prevention and Care Division, calendar year 2019.
Note: Percentages may not sum 100% due to rounding. † Except STD, TB, FP, Mat.

Of the 972 individuals with HIV-positive Western Blots, 68% (663/972) were African American and 31% (297/972) were White (Table 27). Of all HIV tests performed by BCL, 47% (55,593/118,236) were African American and 39% (46,232/118236) were White.

Table 27. HIV Counseling and Testing Data by Race, 2017

HIV 1/2 Ag/Ab Screening Results	Reactive (Frequency, Rate)	Non-Reactive (Frequency, Rate)
African American	663(53.0)	54,930(4,389.8)
White	297(9.1)	45,935(1,402.4)
Other/Unknown	12(4.7)	1,950(770.7)

Source: Alabama Department of Public Health, HIV/AIDS Prevention and Care Division.
Note: Percentages may not sum 100% due to rounding. Rates per 100,000 persons in racial/ethnic group, calculated using 2017 United States Census estimates from the American Community Survey.

CONCLUSION

The Integrated Epidemiologic Profile provides guidance for HIV prevention and control efforts by identifying target populations infected with HIV and at risk of HIV infection. Alabama's HIV-positive population is growing, partially due to awareness via expanded rapid testing and opt-out routine testing and partially due to effective treatment options increasing the longevity of people living with HIV. The African American community bears the brunt of the disease, making up 63.7% of prevalent HIV cases and 65.8% of newly diagnosed HIV infections in Alabama. Recent trends suggest a shift in the epidemic from men who have sex with men toward heterosexual contact.

Despite the many challenges facing Alabama in regards to its health status and the increasing trends in new HIV infections, opportunities to improve access to care and services for Alabamians living with HIV infection exist. Expanding access to screening and prevention services may decrease new infection rates throughout Alabama. Improved access to HIV services can be sustained through collaborative partnerships with Community-based Organizations, Primary Care Clinics, and Community Health Centers as well as through state and national policy changes.

HIV/AIDS Integrated Epidemiological Profile

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DATA SOURCES

Data was compiled from a variety of sources. Anyone citing or interpreting data should acknowledge all data sources have strengths and limitations.

Alabama's HIV/AIDS Disease Information System (HADIS)

The ADPH HIV/AIDS Disease Information System (HADIS) provides significant data in determining the demographics and geographical location of HIV positive Alabama residents aware of their HIV status and not in care. HADIS also contains counseling and testing data for CDC-funded test kits.

America's Health Rankings

The United Health Foundation partners with the American Public Health Association and Partnership for Prevention to publish America's Health Rankings, which provide the longest running state-by-state analysis of the nation's health.

Auburn University at Montgomery (AUM) Center for Demographic Research

The Auburn University at Montgomery (AUM) Center for Demographic Research conducts high quality research on population topics and provides demographic data, research results, and guidance to Alabama's citizens, businesses, non-profit organizations, and public agencies.

Birth and Death Data

The ADPH Center for Health Statistics receives information on all births and deaths occurring in Alabama. Birth certificates include demographic information about the newborn and parents, including insurance status, prenatal care, prenatal risk factors, maternal morbidity, mode of delivery, pregnancy history, and clinical characteristics of the newborn. Death certificates include demographics, underlying cause of death, and contribution of selected factors to death. The data can be used to determine the number of deaths related to HIV across the state or in a specific area. Deaths resulting from AIDS or whose underlying cause was HIV infection may be under reported on a death certificate. Clinical information related to HIV status may be missing.

Direct Care Update Report

The ADPH HIV/AIDS Direct Care and Services Branch oversees Alabama's Ryan White Part B program activities, including medical and social services, medical and non-medical case management, and Alabama's AIDS Drug Assistance Program (ADAP). Alabama's HIV care and service providers apply for Ryan White funding through the ADPH to provide defined core medical and support services to the HIV positive patient population. ADAP's goal is to reduce associated morbidity and mortality among HIV infected persons by delaying the progression of HIV disease through prevention and treatment.

HIV Surveillance Data

The Alabama Department of Public Health (ADPH) has been collecting confidential AIDS and HIV information since 1982 and 1987, respectively. Standardized case report forms are used to collect socio-demographic information, mode of exposure, laboratory and clinical information and vital statistics. HIV data may underestimate the number of recently infected individuals as many people have not been tested and are unaware of their status. In addition, newly diagnosed cases may be reported to the health department at any point during the clinical spectrum of disease. Therefore, HIV surveillance data provides an estimate of the number of persons known to be infected with HIV.

Kaiser Family Foundation
The Kaiser Family Foundation is a non-profit, private operating foundation focusing on the major health care issues facing the United States, as well as the nation's role in global health policy. The Foundation serves as a non-partisan source of facts, information, and analysis for policymakers, the media, the health care community, and the public. The Foundation provides free, up-to-date, and easy-to-use health data for all 50 states. The Foundation is not associated with Kaiser Permanente or Kaiser Industries.

Sexually Transmitted Disease (STD) Case Reporting
The ADPH Division of STD Control conducts statewide surveillance to determine the number of reported STD cases and monitor trends. Services provided include partner counseling and notification, referral services for examination, treatment, and social services. STD data are widely available at the state and local level and serve as a surrogate marker for unsafe sexual practices and demonstrate the prevalence of changes in specific behaviors because of shorter incubation periods between exposure and infection. Chancroid, Chlamydia, gonorrhea, HIV, and syphilis are reportable STDs in Alabama. Certain STDs (e.g., ulcerative STDs) can facilitate the transmission or acquisition of HIV infection. Changes in STD trends may indicate changes in characteristics of persons who delay testing, or who are not tested at all.

United States Census Bureau
The Census Bureau collects and provides information about the people and economy of the United States. The Census Bureau's website (http://www.census.gov/) includes data on demographic characteristics of the population, family structure, educational attainment, income level, housing status, and the proportion of persons who live at or below the federal poverty level. State and county-specific data (e.g. reports on population changes) are easily accessible, and links to other websites with census information are included.

Youth Risk Behavior Surveillance Survey (YRBSS)
The Youth Risk Behavior Surveillance Survey (YRBSS) is a self-administered questionnaire given every two years to a representative sample of high school students (grades 9 to 12) at state and local levels. In Alabama, the survey is administered at the state level and includes questions related to sexual behavior and drug use. The YRBSS is a standardized questionnaire, so comparisons can be made across participating jurisdictions. Jurisdictions have the ability to add questions of local interest. A limitation of the YRBSS project is the potential for under or over reporting as the survey relies upon self-reported information. Another limitation is data are representative only of adolescents enrolled in school and cannot be generalized to all adolescents. A third limitation significant to HIV risk factor assessment is that the survey does not include questions about homosexual or bisexual behavior.