

ALABAMA DEPARTMENT OF PUBLIC HEALTH

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# INTRODUCTION

## **Background**

In 1982, the Alabama Department of Public Health (ADPH) initiated AIDS case surveillance. Confidential name-based HIV reporting began in 1987 when Alabama's Public Health Laws were amended requiring all facilities (public and private), including laboratories and hospitals, to report all cases of HIV infection. In 2011, all tests indicative of HIV infection, including CD4 results and viral loads (detectable and undetectable), became reportable under Alabama's Notifiable Disease Rules were again amended to require mandatory reporting of all perinatal HIV exposures occurring among infants less than 18 months of age, effective December 31, 2014. Between 1982 and 2019, a total of 22,302 cases of HIV infection in Alabama residents have been reported to ADPH.

### Surveillance Methods

The HIV Surveillance Program is responsible for identifying and collecting data on individuals diagnosed with HIV in accordance with Alabama laws. Document-based surveillance methods are used to allow for longitudinal monitoring of cases. The HIV Surveillance Program creates a record for every individual with a diagnosis of HIV/AIDS residing in Alabama. These records are regularly updated based on additional information obtained through routine laboratory testing, inter- and intra-state deduplication efforts, and death ascertainment. There are two methods of surveillance employed by the HIV Surveillance Program in monitoring HIV in Alabama: passive and active surveillance.

**Passive surveillance** occurs when health care providers and testing laboratories report notifiable HIV tests/diagnoses to the HIV Surveillance Program. The majority of HIV cases reported in Alabama are identified through passive surveillance.

**Active surveillance** requires local health departments to contact health care providers and laboratories requesting information on patients receiving care for HIV. The surveillance data collected is provided to agencies such as the Centers for Disease Control and Prevention (CDC), local health departments, healthcare providers, and community-based organizations (CBO) to assist in targeting prevention, care, and other services.

#### **Abbreviations**

AIDS: Acquired Immunodeficiency Syndrome CDC: Centers for Disease Control and Prevention eHARS: enhanced HIV/AIDS Reporting System HAART: Highly Active Antiretroviral Therapy

HIV: Human Immunodeficiency Virus

IDU: Injection Drug Use

MSM: Men who have sex with men

MMS + IDU: Male-to-Male Sex and Injection Drug Use

PWH: Persons with HIV

PWID: Persons Who Inject Drugs

#### **Definitions**

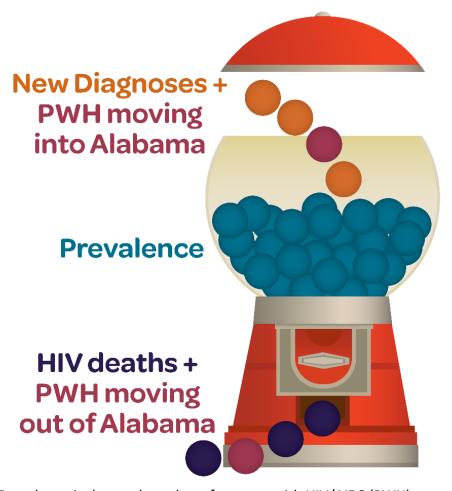
**Cumulative Cases:** Cumulative data encompasses all cases of HIV ever reported in Alabama, including deceased individuals and those that have moved out of Alabama.

**Finalized Data:** These data have been validated and reviewed for quality assurance, and therefore, are not subject to significant change.

**HIV/AIDS Case Definition:** Per CDC's revised guidelines from 2014, HIV infection can be designated stage 0 if there is a negative HIV test within 6 months of the first HIV diagnosis. A case can be classified as stage 3 HIV infection if a stage 3 defining opportunistic illness has been diagnosed or immunologic criteria based on a CD4 T-lymphocyte test has been met. For anyone age 6 years through adult, a CD4 T-lymphocyte count less than 200 cells/ $\mu$ L or a CD4 percentage less than 14% is classified as stage 3 HIV infection. This surveillance report continues to use the term AIDS for stage 3 HIV infections.

**Incidence:** Incidence is the number of cases newly diagnosed in Alabama within a specified period of time. In Alabama's HIV/AIDS Surveillance, estimates of HIV/AIDS incidence are based upon the sum of new HIV cases and new AIDS cases not diagnosed as HIV infections in any prior calendar years or in any other jurisdictions. Cases of HIV/AIDS can be counted as incident/emergent cases only in the year they were first diagnosed. Persons who were newly diagnosed as HIV and diagnosed as AIDS in the same calendar year are counted as incident HIV to avoid double counting.

**Preliminary Data:** These data have neither been fully validated nor reviewed for quality assurance, and therefore, may be subject to significant change. Changes in the data can occur as a result of reporting delays, duplication review, and case validation among other things.



**Prevalence:** Prevalence is the total number of persons with HIV/AIDS (PWH) currently living in Alabama. In Alabama's HIV/AIDS Surveillance, estimates of prevalence are based upon the total number of living HIV and AIDS cases regardless of the date of infection. Prevalence is often affected by migration, immigration, and deaths in the state of Alabama. In Alabama, HIV prevalence continues to increase because the number of new diagnoses is larger than the number of deaths. Prevalence estimates are critical for program planning and resource allocation efforts as they reflect the needs of HIV/AIDS care and treatment services for PWH in an area.

#### DIAGNOSIS VS REPORT

Alabama tracks HIV cases by the year they were diagnosed and by the year they were reported.

- Year of diagnosis is the year a person is first diagnosed with HIV/AIDS.
- Year of report is the year a person's case is first reported to ADPH and entered into the enhanced HIV/AIDS Reporting System (eHARS).

The year of diagnosis and the year of report may be different for each case because there are specific requirements set by CDC for when an HIV/AIDS case is considered reportable, even though the person has been diagnosed. There are many criteria that determine whether or not a case is reportable. For more information on criteria for reportable cases, review CDC's Revised Surveillance Case Definition for HIV Infection (2014).

The following are examples of how HIV cases are diagnosed and reported:

#### Example 1:

In December 2019 a patient tested positive for HIV at a local hospital and met the reporting requirements for HIV. The hospital nurse reported the HIV case to the local health department in January 2020. The new HIV case was entered into the HIV/AIDS Reporting System database in January 2020. In this scenario, the year of diagnosis is 2019, and the year of report is 2020.

#### Example 2:

A person with HIV moves to Alabama in February 2019 and visits a doctor in order to receive care and treatment. The patient reports a history of HIV in Georgia. The physician in Alabama orders a viral load test on the patient and the result is an undetectable viral load. The patient is currently not reportable because the case does not meet CDC's case definition for a reportable disease. In September 2019, the physician orders another viral load test and the result is a detectable viral load. The case is then reported to the county health department as a new diagnosis for Alabama. The case is entered in the HIV/AIDS Reporting System database in October 2019. After surveillance staff follows up on the patient's report of previous history in Georgia, it is determined the patient's first date of diagnosis is March 2006. In this scenario, the year of report is 2019, and the year of diagnosis is 2006. However, once it is determined that the first diagnosis took place in Georgia, the patient is no longer a part of the Alabama new diagnosis case count. They are, however, a part of the Alabama prevalent case count.

### **Summary**

Although Alabama is considered a moderate morbidity state, the number and longevity of persons with HIV continues to increase. Following the introduction and widespread utilization of highly active antiretroviral therapy (HAART) in 1995, the number of deaths among people diagnosed with HIV significantly declined (Figure 3). At the end of 2019, 14,345 persons with HIV infection were known to be living in Alabama. An update in surveillance (eHARS database) data with current address information accounting for persons with HIV or AIDS (PWHA) patients, who have moved from Alabama, reflects a correction in the graphic representation of Figure 3. An estimated 1 in 5 people with HIV in Alabama are unaware of their infection and, subsequently, are not receiving regular medical care to manage the disease. Taking the prevalence estimate into consideration, an additional 2,869 Alabama residents may be infected and unaware of their positive HIV status.

In 2019, there were 635 new HIV cases of HIV diagnosed in Alabama. Jefferson County accounted for 20% of all new cases within the state. The HIV epidemic affects persons in all gender, age, racial, ethnic, and socioeconomic groups and in every county in Alabama. However, the effect has not been the same for all groups. Disparities remain with gay, bisexual, and other men who have sex with men (MSM), and young adults. Among all risk groups, MSM accounted for the largest proportion (41.6%) of incident HIV/AIDS cases in Alabama in 2019. Racial and ethnic minorities also bear a disproportionate

# **FAST FACTS**

- 14,345 Alabamians have HIV
- **6,432** progressed to Stage 3 (AIDS)
- **635** were newly diagnosed in 2019
- 499 new diagnoses were male
- **456** new diagnoses were Black
- 316 people with HIV died in 2019
- 264 new diagnoses were MSM
- 256 new diagnoses were 20-29 years old

burden of HIV. Non-Hispanic Blacks had the highest incidence of HIV in 2019 with 35.1 new infections per 100,000 individuals. Additionally, young adults between 20-29 years old were the age group most affected, accounting for 40.3% of new HIV diagnoses. As the number of persons with HIV increases and the number of deaths continues to decline, the importance of identifying populations most affected and at risk for HIV infection is paramount. Alabama must be diligent in planning effective HIV treatment and prevention efforts with the allocation of limited resources. This report provides demographics, risk characteristics, and trends of HIV infections diagnosed among Alabama residents through 2019.

# **Population Update**

Table 1. Alabama Population Change 2010-2019 by County

Table 1. Alabam	'			, ,	2010-2019			
	2010	)	201	19	% Ch	ange		
County	Count	%	Count	%	Count	%		
Autauga	54,613	1.1%	55,869	1.1%	1,256	2.3%		
Baldwin	183,223	3.8%	223,234	4.6%	40,011	21.8%		
Barbour	27,341	0.6%	24,686	0.5%	-2,655	-9.7%		
Bibb	22,883	0.5%	22,394	0.5%	-489	-2.1%		
Blount	57,352	1.2%	57,826	1.2%	474	0.8%		
Bullock	10,881	0.2%	10,101	0.2%	-780	-7.2%		
Butler	20,944	0.4%	19,448	0.4%	-1,496	-7.1%		
Calhoun	118,448	2.5%	113,605	2.3%	-4,843	-4.1%		
Chambers	34,110	0.7%	33,254	0.7%	-856	-2.5%		
Cherokee	25,968	0.5%	26,196	0.5%	228	0.9%		
Chilton	43,700	0.9%	44,428	0.9%	728	1.7%		
Choctaw	13,849	0.3%	12,589	0.3%	-1,260	-9.1%		
Clarke	25,786	0.5%	23,622	0.5%	-2,164	-8.4%		
Clay	13,886	0.3%	13,235	0.3%	-651	-4.7%		
Cleburne	14,969	0.3%	14,910	0.3%	-59	-0.4%		
Coffee	50,182	1.0%	52,342	1.1%	2,160	4.3%		
Colbert	54,506	1.1%	55,241	1.1%	735	1.3%		
Conecuh	13,218	0.3%	12,067	0.2%	-1,151	-8.7%		
Coosa	11,563	0.2%	10,663	0.2%	-900	-7.8%		
Covington	37,790	0.8%	37,049	0.8%	-741	-2.0%		
Crenshaw	13,867	0.3%	13,772	0.3%	-95	-0.7%		
Cullman	80,449	1.7%	83,768	1.7%	3,319	4.1%		
Dale	50,341	1.1%	49,172	1.0%	-1,169	-2.3%		
Dallas	43,840	0.9%	37,196	0.8%	-6,644	-15.2%		
DeKalb	71,106	1.5%	71,513	1.5%	407	0.6%		
Elmore	79,512	1.7%	81,209	1.7%	1,697	2.1%		
Escambia	38,314	0.8%	36,633	0.7%	-1,681	-4.4%		
Etowah	104,498	2.2%	102,268	2.1%	-2,230	-2.1%		
Fayette	17,250	0.4%	16,302	0.3%	-948	-5.5%		
Franklin	31,757	0.7%	31,362	0.6%	-395	-1.2%		
Geneva	26,793	0.6%	26,271	0.5%	-522	-1.9%		
Greene	8,991	0.2%	8,111	0.2%	-880	-9.8%		
Hale	15,732	0.3%	14,651	0.3%	-1,081	-6.9%		

	201/		201	10	2010-	
Country	2010	1	20:		% Ch	
County	Count	%	Count	%	Count	%
Henry	17,290	0.4%	17,205	0.4%	-85	-0.5%
Houston	101,793	2.1%	105,882	2.2%	4,089	4.0%
Jackson	53,159	1.1%	51,626	1.1%	-1,533	-2.9%
Jefferson	658,514	13.8%	658,573	13.4%	59	0.0%
Lamar	14,499	0.3%	13,805	0.3%	-694	-4.8%
Lauderdale	92,723	1.9%	92,729	1.9%	6	0.0%
Lawrence	34,309	0.7%	32,924	0.7%	-1,385	-4.0%
Lee	140,850	2.9%	164,542	3.4%	23,692	16.8%
Limestone	83,227	1.7%	98,915	2.0%	15,688	18.8%
Lowndes	11,278	0.2%	9,726	0.2%	-1,552	-13.8%
Macon	21,541	0.5%	18,068	0.4%	-3,473	-16.1%
Madison	336,204	7.0%	372,909	7.6%	36,705	10.9%
Marengo	20,941	0.4%	18,863	0.4%	-2,078	-9.9%
Marion	30,814	0.6%	29,709	0.6%	-1,105	-3.6%
Marshall	93,188	1.9%	96,774	2.0%	3,586	3.8%
Mobile	413,290	8.6%	413,210	8.4%	-80	0.0%
Monroe	23,004	0.5%	20,733	0.4%	-2,271	-9.9%
Montgomery	229,805	4.8%	226,486	4.6%	-3,319	-1.4%
Morgan	119,553	2.5%	119,679	2.4%	126	0.1%
Perry	10,534	0.2%	8,923	0.2%	-1,611	-15.3%
Pickens	19,703	0.4%	19,930	0.4%	227	1.2%
Pike	32,958	0.7%	33,114	0.7%	156	0.5%
Randolph	22,931	0.5%	22,722	0.5%	-209	-0.9%
Russell	53,246	1.1%	57,961	1.2%	4,715	8.9%
Shelby	195,844	4.1%	217,702	4.4%	21,858	11.2%
St. Clair	83,811	1.8%	89,512	1.8%	5,701	6.8%
Sumter	13,747	0.3%	12,427	0.3%	-1,320	-9.6%
Talladega	82,039	1.7%	79,978	1.6%	-2,061	-2.5%
Tallapoosa	41,490	0.9%	40,367	0.8%	-1,123	-2.7%
Tuscaloosa	195,039	4.1%	209,355	4.3%	14,316	7.3%
Walker	66,992	1.4%	63,521	1.3%	-3,471	-5.2%
Washington	17,599	0.4%	16,326	0.3%	-1,273	-7.2%
Wilcox	11,582	0.2%	10,373	0.2%	-1,209	-10.4%
Winston	24,411	0.5%	23,629	0.5%	-782	-3.2%
Total	4,874,747	-	4,903,185	-	28,438	0.6%

Source: U.S. Census Bureau, Population Division. Annual Estimates of the Resident Population: April 1, 2010-2019.

Alabama's population has experienced limited growth over the last ten years. The state's population grew by only 28,438 individuals from 2010 to 2019 according to the U.S. Census Bureau's estimates, a growth rate of only 0.6%. The two most populous counties in Alabama,

Jefferson (+59) and Mobile (-80) experienced no significant population changes. Only four counties experienced population growth greater than 10% - Baldwin, Lee, Limestone, Madison, and Shelby. Of these, Baldwin (+21.8%) and Lee (16.8%) had the greatest population growth. Forty-four of Alabama's 67 counties experienced a decrease in population between 2010 and 2019, with Macon (-16.1%) and Dallas (-15.2%) experiencing the largest decreases.

# Statewide Overview

The state of Alabama continues to experience an HIV epidemic of moderate magnitude when compared to other states. A cumulative total of 22,302 HIV infections have been diagnosed among Alabama residents since reporting began in 1982, with 14,345 HIV positive individuals currently living in Alabama as of December 31, 2019. During 2019, 635 newly diagnosed HIV infections were reported among Alabama residents. HIV prevalence is greatest in Alabama's most populous counties as highlighted in Figure 1 below.

Figure 1. Prevalent HIV in Alabama by County, 2019



# 2019 HIV/AIDS in Alabama

The proportion of persons with HIV (non-AIDS) compared to Stage 3 (AIDS) infection has remained relatively stable over the past ten years, noting that there was an adjustment for current address in 2014. This trend is largely due to the introduction of effective drug treatments and therapies which are able to delay the progression to Stage 3 (AIDS) diagnoses and death. At the end of 2019, 6,432 (45%) known HIV positive individuals were reported to be diagnosed with Stage 3 (AIDS) diagnoses in Alabama.

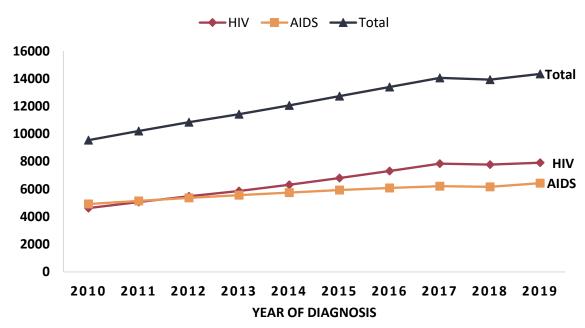


Figure 2. Persons with HIV (non-AIDS) and AIDS, Alabama 2010-2019

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31st for the year reported.

The number and longevity of persons with HIV in Alabama continues to increase. Following the introduction of HAART in 1995, the number of deaths among people diagnosed with HIV significantly declined (Figure 3). At the end of 2019, there were 14,345 persons with HIV infection residing in Alabama. An update in surveillance data with current address information accounting for people with HIV or AIDS, who have moved from Alabama reflects a correction in the graphic representation of Figure 3.

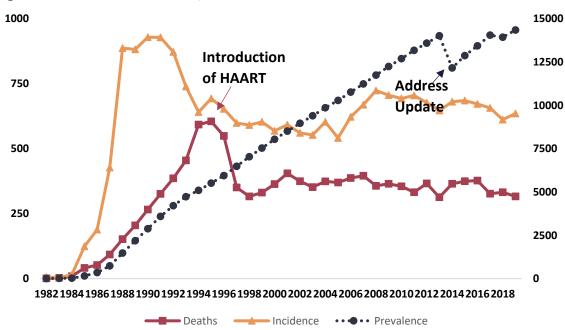


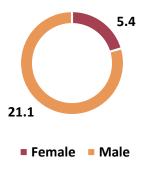
Figure 3. HIV/AIDS Death Count, 1982-2019

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31st for the year reported.

## HIV By Birth Sex, Race, and Ethnicity

Nearly 80% of new HIV diagnoses occur in males. Males are four times more likely to acquire HIV than females. The rate of new HIV infection among females is 5.4 per 100,000 individuals, wherease the rate among males is 21.1 per 100,000 individuals (Figure 4).

Figure 4. HIV/AIDS Incidence Rates per 100,000 Individuals by Sex, 2019



The HIV epidemic continues to disproportionately affect Blacks in Alabama. Blacks are more than seven times more likely to be diagnosed with HIV than Whites and five times more likely to be diagnosed with HIV than Hispanics. Blacks comprise only 26.5% of Alabama's total population. However, they account for 71.8% of new HIV cases in Alabama in 2019 and 63.5% of all PWH in Alabama.

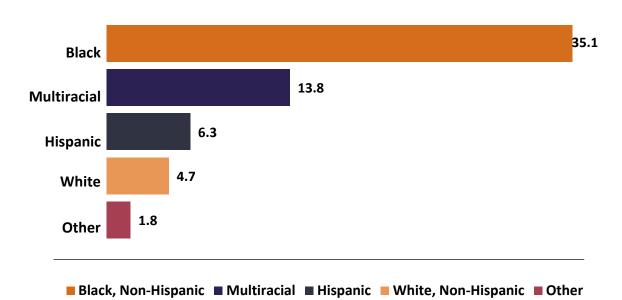


Figure 5. Rate of New HIV Diagnoses by Race/Ethnicity, 2019

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31st for the year reported.

In 2019, the rate of HIV diagnoses among Black males was eight times that of White males, while that of Black females was nine times that of White females (Figure 6, Table 2). The newly diagnosed HIV rate among blacks (35.1) in 2019 is nearly three times that of the total state rate (13).

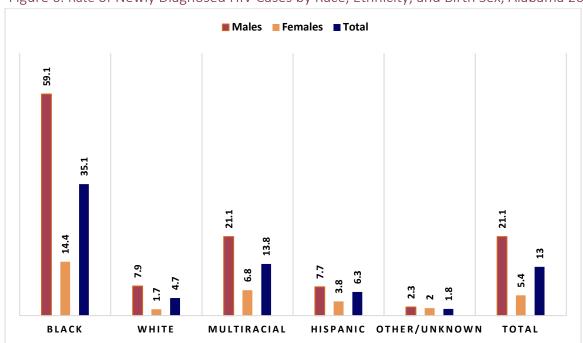


Figure 6. Rate of Newly Diagnosed HIV Cases by Race, Ethnicity, and Birth Sex, Alabama 2019

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31st for the year reported.

Black males continue to have the highest number of newly diagnosed HIV infections each year, averaging over one-half (56%) of all cases over the past five years. The number of newly diagnosed HIV infections among White males and Black females remained closely the same for the past five years with White males experiencing slightly greater numbers, averaging 135 new cases per year.

Table 2. Rate of Newly Diagnosed HIV Cases by Race, Ethnicity, and Birth Sex, 2019

Race/Ethnicity	Males	Females	Total
Black, Not Hispanic	59.1	14.4	35.1
White, Not Hispanic	7.9	1.7	4.7
Multiple Races	21.1	6.8	13.8
Hispanic	7.7	3.8	6.3
Other/Unknown	2.3	2.0	1.8
Total	21.1	<i>5.4</i>	13

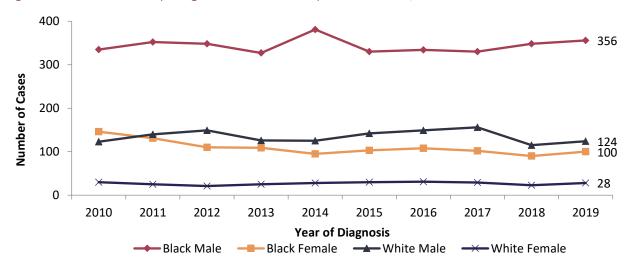


Figure 7. Trends in Newly Diagnosed HIV Cases by Race and Sex, 2010-2019

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31<sup>st</sup> for the year reported.

While Blacks are the most frequently noted group among newly diagnosed (71.8%, n=456), prevalent (63.5%, n=9,111) and cumulative (63.8%, n=14,219) cases of HIV, the next most frequent group identifies as White: 23.9% (n=152) of newly diagnosed; 27.4% (n=3,923) prevalent; and 29.4% (n=6,549) of cumulative cases. Without proper intervention, the rate of new infections among Blacks will continue to increase. Effective HIV treatment and prevention programs must focus on these individuals to prevent future HIV infections.

## HIV by Age Group

In 2019, young adults in their twenties reflected the age group with the highest percentage (40.3%) of new HIV infections (Figure 8). Adults forty and over accounted for twenty-nine percent of all new cases. However, examination of the prevalent population reveals the converse. Young adults in their twenties only account for eleven percent of prevalent HIV cases while adults over fifty account for more than 46% of prevalent cases.

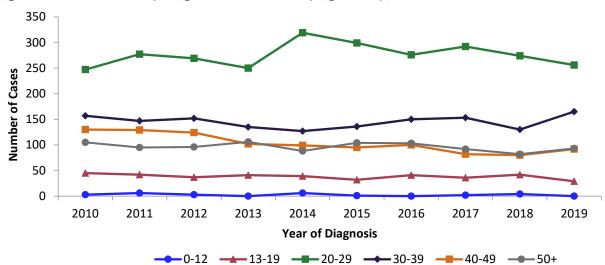
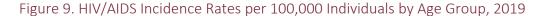
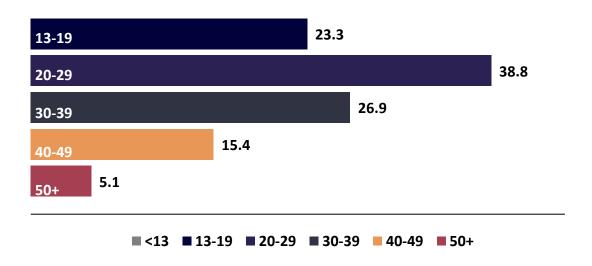


Figure 8. Trends in Newly Diagnosed HIV Cases by Age Group, 2010-2019

Source: Alabama Department of Public Health, Office of HIV Prevention & Care, HIV Surveillance Branch.

Rates of new HIV infection per 100,000 population show that young adults aged 20-29 years experienced the highest rate of new diagnoses (38.8) followed by adults age 30-39 years (26.9) and adolescents 13-19 years (23.3). Prior to 2005, the majority of new HIV cases were reported among adults in their thirties. This shift in Alabama's newly diagnosed HIV population calls for increased prevention efforts targeting the younger population.

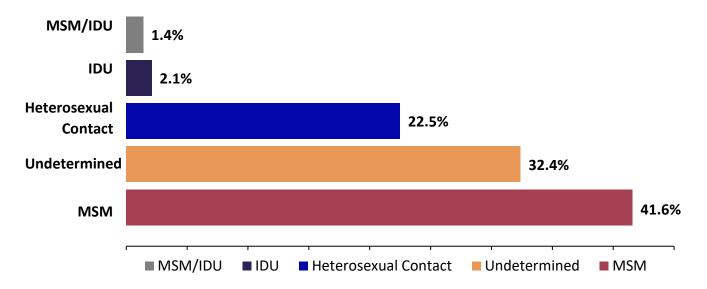




### HIV by Mode of Exposure

During 2019, the majority (41.6%) of newly diagnosed cases reported MSM (alone or in combination with intravenous drug use [IDU]) as the primary mode of exposure (Figure 10). Data were statistically adjusted to account for missing transmission category by multiple imputation methods. An estimated 1 in 5 MSM with HIV in Alabama are unaware of their infection and, thus, are not receiving regular medical care to manage the disease. Multiple imputation estimation suggests that as many as 449 HIV infections occurred among MSM and combined MSM/IDU in 2019 (Figure 11).

Figure 10. HIV/AIDS Incidence by Transmission Category, 2019



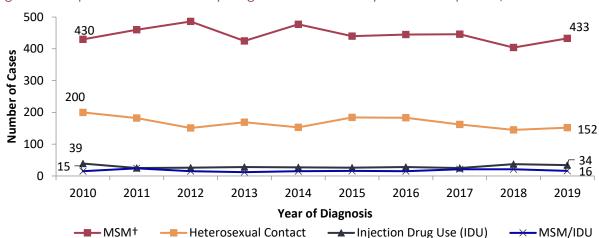


Figure 11. Imputed Trends in Newly Diagnosed HIV Cases by Mode of Exposure, 2010-2019

Source: Alabama Department of Public Health, Office of HIV Prevention & Care, HIV Surveillance Branch.

Note: Multiple imputation methodology was used to estimate unknown risk among cases ≥13 years. †MSM - Men who have Sex with Men.

While Blacks are disproportionately affected by HIV, the predominant mode of exposure across all races and ethnicities is male-to-male sexual contact. Over the past 10 years, newly diagnosed HIV infections among MSM have remained consistent while the number of new cases reported among heterosexuals has slightly decreased. However, it is important to note that the consistently high rate of HIV among MSM is not isolated. Many HIV positive MSM do not identify as being gay or bisexual but identify as heterosexual. While historical 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.

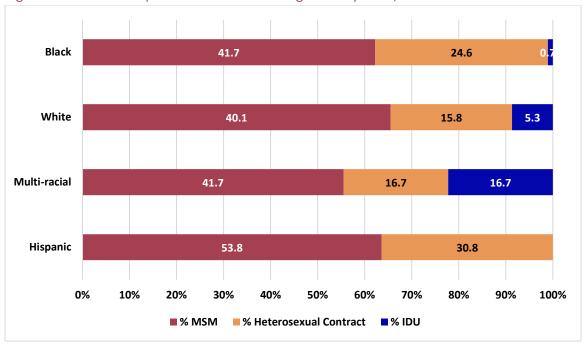


Figure 12. Mode of Exposure for New HIV Diagnoses by Race, 2019

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31st for the year reported.

# **High Risk Target Groups**

As previously discussed, the Alabama population is experiencing a shift in the age distribution of newly diagnosed HIV infections as young adults age 20-29 years are now the most affected age group (Table 3) whereas earlier in the epidemic, older age groups were disproportionately affected.

Table 3. Newly Diagnosed HIV Cases by Age Group, Alabama 2019

Characteristic	Newly	Newly diagnosed		nt Cases	Cumulat	tive Cases
Age Range	Cases	% of Total	Cases	% of Total	Cases	% of Total
<13	0	0	21	0.2	160	0.7
13-19	29	4.6	55	0.4	1117	5
20-29	256	40.3	1560	10.9	8009	35.9
30-39	165	26	3017	21	6793	30.5
40-49	92	14.5	3030	21.1	3893	17.5
≥50	93	14.6	6662	46.4	2330	10.5
Total	635	100	14,345	100	22,302	100

Black males represent the majority (56%) of newly diagnosed HIV infections. The 2019 newly diagnosed and prevalent HIV rates among Black males is nearly eight times that of their white counterparts, and rates of diagnoses among Black females is more than twice that of White females.

Table 4. HIV Infection Rates Among Adolescents and Young Adults (20-29 Years) by Race, 2019

	Newly Diagno	sed, 2019		Prevalent HIV, 2019				
Race & Sex	Number	%	Rate	Number	%	Rate		
Black	202			1195				
Males	165	81.7	166.7	997	83.4	1007.5		
Females	37	18.3	35.2	198	16.6	188.5		
White	42							
Males	39	92.9	19.5	235	91.8	117.2		
Females	3	7.1	1.5	21	8.2	10.7		
Total	256			1560				
Males	213	83.2	64.5	1323	84.8	400.9		
Females	43	16.8	13	237	15.2	71.8		

Source: Alabama Department of Public Health, Office of HIV Prevention and Care Prevention and Care, HIV Surveillance Branch. Persons with HIV (non-AIDS) and AIDS includes persons living as of December 31st for the year reported.

Young adults (20-29 years) are twice as likely to be infected with HIV as the average Alabama resident and represent 40.3% of all newly diagnosed cases, although this age group accounts for only 13% of Alabama's population. In contrast, the majority (68.7%) of persons with HIV infection in Alabama as of December 31, 2019 were age 40 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 with HIV infection in Alabama, as HIV positive individuals are becoming infected at a younger age and living longer.

Table 5. HIV/AIDS Diagnoses and Case Rates in Highest Burdened Counties, 2015-2019

	20	015	20	016	20	017	20	018	20	019
County	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Houston	17	16.3	20	19	18	17.3	15	14.3	19	17.9
Jefferson	135	20.4	139	21.1	146	22.1	138	20.9	128	19.4
Mobile	81	19.5	92	22.2	84	20.2	79	19.1	106	25.7
Montgomery	98	43.3	92	40.6	72	31.8	82	36.2	79	34.9
Tuscaloosa	38	18.6	43	20.9	47	22.8	35	16.8	41	19.6
Statewide	667	13.7	670	13.8	<i>657</i>	13.5	612	12.6	<i>635</i>	13

Figure 13 and Table 5 show that of the top five counties with the highest rates of new diagnoses, Montgomery County is the most heavily burdened. However, the overall rate of new diagnoses for the state of Alabama has decreased over the last five years. Houston, Mobile, and Tuscaloosa Counties have all experienced increases in HIV incidence with Mobile experiencing the largest increase at 31.8%. The steady decline in rates in Jefferson and Montgomery Counties indicates there are lessons to be learned regarding which strategies may be replicable in other areas.

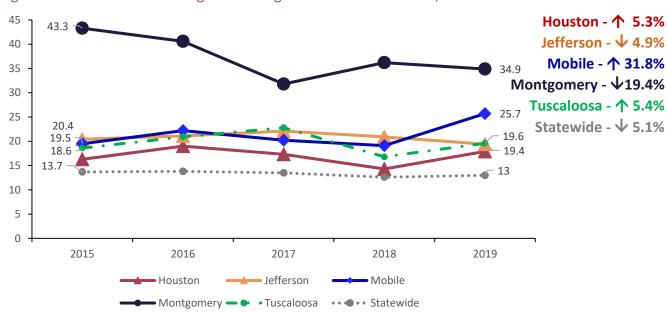


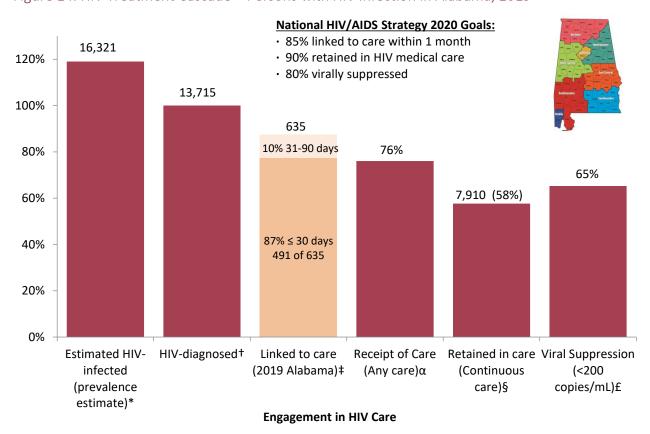
Figure 13. Rate of New HIV Diagnoses in Highest Burdened Counties, 2015-2019

Table 4. Persons newly diagnosed with HIV, by year of diagnosis and selected demographic characteristics, 2015-2019

	, 3				•								′				
			2015			2016				)17			018		201		_
CHARACTERISTIC		N	%	Rate	N		%	Rate	N	%	Rate	N	%	Rate	N	%	Rat
GENDER																	
	Male	541	79	23.0	523		77.8	22.2	520	79.1	22	490	80.1	20.7	499	78.6	21.:
	Female	144	21	5.7	149		22.2	5.9	137	20.9	5.4	122	19.9	4.8	136	21.4	5.4
SUBTOTAL		685	100	-	672		100	-	657	100	-	612	100	-	635	100	-
RACE/ETHNICITY																	
	Black, Non-Hispanic	446	65.1	34.7	448		66.7	34.8	432	65.8	33.4	438	71.6	33.8	456	71.8	35.
	White, Non-Hispanic	185	27	5.8	182		27.1	5.7	185	28.2	5.8	138	22.5	4.3	152	23.9	4.7
	Multi-racial	22	3.2	31.1	20		3	27.6	16	2.4	21.5	20	3.3	23.7	12	1.9	13.
	Hispanic	26	3.8	12.8	19		2.8	9.3	21	3.2	9.9	14	2.3	6.4	13	2.1	6.3
	Other/Unknown	6	0.9	-	3		0.5	-	3	0.5	-	2	0.3	1.1	2	0.3	1.8
SUBTOTAL		685	100	-	672		100	-	657	100	-	612	100	-	635	100	-
AGE AT DIAGNOSIS																	
	<13	0	0	0	0		0	0	2	0.3	-	4	0.7	-	-	-	-
	13-19	30	4.4	6.8	43		6.4	9.7	36	5.5	8.2	42	6.9	8.2	29	4.6	23.
	20-29	301	43.9	45	273		40.6	41	292	44.4	43.7	274	44.8	43.7	256	40.3	38.
	30-39	138	20.1	22.8	151		22.5	24.9	153	23.3	25.3	130	21.2	25.3	165	26	26.
	40-49	97	14.2	15.8	101		15	16.6	82	12.5	13.6	80	13.1	13.6	92	14.5	15.
	≥50	119	17.4	6.8	104		15.5	5.9	92	14	5.2	82	13.4	5.2	93	14.7	5.1
SUBTOTAL		685	100	-	672		100	-	657	100	-	612	100	-	635	100.1	_
TRANSMISSION																	
CATEGORY																	
	MSM	449	65.5	_	358		53.3	-	349	53.1	_	308	50.3	_	264	41.6	_
	Heterosexual Contact	195	28.4	-	177		26.3	-	157	23.9	-	142	23.2	-	143	22.5	_
	IDU	27	3.9	-	16		2.4	-	15	2.2	-	11	1.8	-	13	2.1	_
	MSM/IDU	13	1.9	-	8		1.2	_	17	2.6	-	6	1	-	9	1.4	-
	Perinatal Exposure	-	-	-	-		-	-	1	0.2	-	3	0.5	-	-	-	-
	Transfusion/Hemophilia	_	_	_	_		_	_	-	-	_	-	-	-	-	_	_
	Undetermined	250	36.5	-	113		16.8	_	118	18	-	142	23.2	-	206	32.4	-
SUBTOTAL	Ondetermined	685	100	14.1	672		100	13.8	657	100	13.5	612	100	13.5	635	100	_
305101712	Public Health District (PHD)		100		072		100	13.0	037	100	13.3	012	100	13.3	033	100	
EAST CENTRAL	rubile freattif bistrict (Ffib)	,							143	22.6	20.3	146	23.9	20.7	159	25	22.4
JEFFERSON									146	23	22.4	138	22.5	20.7	128	20.2	19.
MOBILE									84	13.3	20.3	79	12.9	19.1	106	16.7	25.
NORTHEASTERN									48	7.6	6.5	47	7.7	5.8	39	6.1	4.8
NORTHERN									84	13.3	8.6	69	11.3	6.5	80	12.6	7.3
SOUTHEASTERN									41	6.5	10.8	47	7.7	12.4	45	7.1	11.
SOUTHEASTERN									26	4.1	6.8	32	5.2	7.9	23	3.6	5.6
													5.2		23		
UNKNOWN									23	3.5	-	-	100	- 12.5	-	-	- 12
SUBTOTAL TOTAL									657	100	13.5	612	100	13.5	635	100	13

# **HIV Treatment Cascade**

Figure 14. HIV Treatment Cascade – Persons with HIV Infection in Alabama, 2019



Alabama utilizes the National HIV Surveillance System diagnosis-based HIV care continuum methodology (i.e., the number of people with diagnosed HIV is the denominator utilized for receipt of care, retained in care, and viral suppression). The prevalence estimate is shown in the first step as a percentage above 100 and is not utilized as the denominator for other steps in the care continuum.

\* Prevalence includes both people whose infection has been diagnosed and those who are unaware of their infection (i.e., not yet diagnosed). Prevalence is estimated by applying Alabama's HIV-prevalence estimate (80.9%) to the number of persons diagnosed with HIV infection by the end of 2018 and living as of December 31, 2019 (i.e., 80.9% of persons aged ≥13 years with HIV infection in Alabama are aware of their infection and 19.1%, or approximately 1 in 5 HIV-positive individuals, are unaware of their infection). Source of Alabama's prevalence estimate: HIV Surveillance Report, Estimated HIV Incidence and Prevalence in the United states 2015-2019, Table 13. 2019 (most recent year available).

† HIV-Diagnosed measures the percentage of the total number of people with HIV whose infection has been diagnosed. HIV-diagnosed is defined as the number of persons diagnosed with HIV infection by the end of 2018 and living as of December 31, 2019 (i.e., a person must be with HIV for at least 12 months to measure progress along the HIV care continuum).

‡ Linked to care is calculated differently from other steps in the continuum and cannot be directly compared to other steps. Linked to care is calculated as the percentage of people receiving a diagnosis of HIV in a given calendar year (during 2019) who had ≥1 CD4 and/or viral load test within 30 days (1 month) of diagnosis. Although linked to care within 90 days (3 months) is no longer considered successful linkage to care, it is depicted for a historical comparison.

 $\alpha$  Receipt of medical care is defined as  $\geq$ 1 test (CD4 or viral load). Receipt of care is calculated as the percentage of persons with HIV who accessed <u>any</u> care during 2019, evidenced by  $\geq$ 1 CD4, viral load, and/or HIV genotype test collected during 2019.

§ Retained in care is defined as ≥2 tests (CD4 or viral load) performed at least 3 months apart. Retention in care is calculated as the percentage of persons with HIV who accessed <u>continuous</u> care during 2019, evidenced by ≥2 CD4, viral load, and/or HIV genotype tests collected at least 90 days apart during 2019.

£ Viral suppression is defined as <200 copies/mL on the most recent viral load test in 2019. Viral suppression is calculated as the percentage of persons with HIV who had a suppressed viral load (<200 copies/mL) at the **last** viral load collected during 2019.

Guidance from the National HIV Surveillance System (NHSS) was used to create Alabama's HIV Treatment Cascade Graph (Figure 14). During 2019, 87% of the 635 newly diagnosed HIV infections were linked to care within 3 months of diagnosis. Of the 13,715 persons diagnosed with HIV infection through December 31, 2018 and living as of December 31, 2019, 58% were retained in care and 65% achieved viral suppression (≤200 copies/mL) during 2019. 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, it also significantly reduces their risk of transmitting HIV to partners. People with HIV who adhere to antiretroviral therapy (ART) and have suppressed viral loads can reduce the risk of sexual transmission of HIV by 96%.

# **HIV Unmet Need**

Alabama's Notifiable Disease Rules were updated in June 2011 to require reporting of all HIV infections, including asymptomatic infections, AIDS, CD4 counts, and viral loads. The update requires all private and public laboratories to report CD4 counts and viral loads (detectable and undetectable). Before the update, measuring Alabama's unmet need had limitations as HIV viral loads, CD4 cell counts ≥200 copies per µl or ≥20%, and other tests indicative of HIV infection and HIV management were not reportable. Alabama's unmet need is now considered an accurate reflection of persons with HIV who are not receiving adequate care. According to the Health Resources and Services Administration (HRSA) and HIV/AIDS Bureau (HAB), Unmet Need for HIV primary medical care is defined as no evidence of any of the following three components of HIV primary medical care during a specified 12-month time frame: viral load testing, CD4 count, or provision of anti-retroviral therapy (ART).

Using the HRSA/HAB Unmet Need Framework and HIV surveillance data collected in eHARS, Alabama's estimated Unmet Need during 2019 was 3,381. Of the 14,345 persons diagnosed with HIV in Alabama and living as of December 31, 2019, 23.6% did not access HIV primary medical care during 2019.

Table 5. Framework Utilized to Calculate Unmet Need as Determined by HRSA/HAB

HIV Po	oulation Size	Data Source	Number
A.	PWA as of December 31, 2019	eHARS	6,432
В.	PWH as of December 31, 2019	eHARS	7,913
HIV Car	e Patterns	Data Source	Number (%)
C.	Percent PWA receiving specified services during 2019	CD4/VL reported in eHARS	5,411 (84.1)
D.	Percent PWH receiving specified services during 2019	CD4/VL reported in eHARS	5,551(70.2)
Unmet	Need Calculations		Unmet Need
	Unmet Need = $[A^*(1-C)] + [B^*(1-D)]$		
	= [6,432*(1-0.841)] + [7,913*(1-0.702)]		3,381 (23.6)

Source: Alabama Department of Public Health, Office of HIV Prevention & Care, HIV Surveillance Branch.

Note: Specified services include any of the following three components of HIV primary medical care during the 12-month time frame from January 1, 2019 through December 31, 2019: 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; PWA - persons with AIDS; PWH - persons with HIV, non-AIDS; VL – viral load.

### HIV Prevention: Know. Manage. Live.

While no single strategy exists to effectively control the HIV epidemic, new antiretroviral therapies (ART) are available to increase the longevity of HIV positive persons while simultaneously decreasing the likelihood of infecting others. "Treatment as Prevention" which refers to using ART to decrease the risk of HIV transmission, has emerged as a highly effective HIV prevention and care strategy. Alabama's "Know. Manage. Live." campaign is an HIV awareness, prevention, and care strategy focused on HIV testing, treatment, and prevention that identifies individuals infected with HIV, links these individuals into care, and ensures retention in care by increasing access to HIV care providers and antiretroviral medications to effectively suppress viral load. People with HIV who adhere to ART and have suppressed viral loads can reduce the risk of sexual transmission of HIV by 96%.

Ongoing and expanded involvement from community leaders representing Blacks, young adults and adolescents, MSM, and other at-risk groups is needed to stop the spread of HIV and encourage all individuals to learn the facts about HIV, get tested, and take action to protect themselves and their partners. Additional information about Alabama's "Know. Manage. Live." Campaign and locations offering free and confidential HIV testing services are available at <a href="http://www.alabamapublichealth.gov/hiv/">http://www.alabamapublichealth.gov/hiv/</a>.

# Appendix A:

2019 Finalized Data Summary

Finalized 2019 Data by Characteristic

Characteristic	*New	*Newly Diagnosed βPrevalent Cases €Cumul				ılative Cases	
Race/Ethnicity	Cases	% of Total	Cases	% of Total	Cases	% of Total	
Black	456	71.8	9111	63.5	14219	63.8	
White	152	23.9	3923	27.3	6549	29.4	
Hispanic	13	2.0	469	3.3	499	2.2	
Multi-race	12	1.9	750	5.2	908	4.1	
Other/Unknown	2	0.3	92	0.6	127	0.6	
Total	635	100.0	14345	100.0	22302	100.0	
Birth Sex	Cases	% of Total	Cases	% of Total	Cases	% of Total	
Male	499	78.6	10475	73.0	16828	75.5	
Female	136	21.4	3870	27.0	5474	24.5	
Total	635	100.0	14345	100.0	22302	100.0	
§Age (Years)	Cases	% of Total	Cases	% of Total	Cases	% of Total	
<13	0	0.0	21	0.1	160	0.7	
13-19	29	4.6	55	0.4	1117	5.0	
20-24	0	0.0	0	0.0	0	0.0	
25-29	256	40.3	1560	10.9	8009	35.9	
30-39	165	26.0	3017	21.0	6793	30.5	
40-49	92	14.5	3030	21.1	3893	17.5	
≥50	93	14.6	6662	46.4	2330	10.4	
Total	635	100.0	14345	100.0	22302	100.0	
Adult/Adolescent Exposure (≥13 years)	Cases	% of Total	Cases	% of Total	Cases	% of Total	
Men who have Sex with Men (MSM)	264	41.6	6640	46.6	9976	45.1	
<sup>¥</sup> Heterosexual Exposure	143	22.5	4294	30.2	6075	27.4	
Injection Drug Users (IDU)	13	2.0	748	5.3	1901	8.6	
MSM/IDU	9	1.4	465	3.3	1173	5.3	
Hemophilia/Coagulation Disorder	0	0.0	14	0.1	77	0.3	
Mother with HIV Infection	0	0.0	4	0.0	4	0.0	
Transfusion/Transplant Recipient	0	0.0	4	0.0	32	0.1	
Risk Not Reported/Unknown	206	32.4	2068	14.5	2904	13.1	
Subtotal (add pediatric cases to total)	635	100	14237	100	22142	100.0	
Pediatric Exposure (<13 years)	Cases	% of Total	Cases	% of Total	Cases	% of Total	
Mother with HIV Infection	0	0	103	96.3	138	86.3	
Hemophilia/Coagulation Disorder	0	0	0	0.0	7	4.4	
Transfusion/Transplant Recipient	0	0	0	0.0	1	0.6	
Risk Not Reported/Unknown	0	0	4	3.7	14	8.8	
Subtotal	0	0	107	100.0	160	100	

2019 Finalized Data by County and Public Health District

*Public Health District	•	Newly Diagnosed			Prevalent	Cu	mulative
NORTHERN	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total
Colbert	-	-	-	61	3.8	95	4.3
Cullman	-	-	-	70	4.3	109	5.0
Franklin	-	-	-	21	1.3	23	1.0
Jackson	-	-	-	40	2.5	50	2.3
Lauderdale	8	10.0	8.6	94	5.8	136	6.2
Lawrence	-	-	-	24	1.5	46	2.1
Limestone	6	7.5	6.4	122	7.5	175	8.0
Madison	47	58.8	13.0	860	53.1	1148	52.2
Marion	-	-	-	39	2.4	37	1.7
Marshall	9	11.3	9.4	124	7.7	147	6.7
Morgan	-	-	-	155	9.6	219	10.0
Winston	-	-	-	10	0.6	14	0.6
Subtotal (unknowns excluded)	80	100	7.5	1620	100	2199	100
EAST CENTRAL	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total
Autauga	7	4.4	12.6	105	3.7	183	3.9
Bullock	-	-	-	54	1.9	84	1.8
Chambers	14	8.8	41.5	122	4.4	211	4.5
Coosa	2			17	0.6	26	0.6
Elmore	12	7.5	14.7	202	7.2	249	5.3
Lee	19	11.9	11.8	321	11.5	443	9.5
Lowndes	-	-	-	49	1.7	93	2.0
Macon	8	5.0	42.7	104	3.7	179	3.8
Montgomery	79	49.7	34.9	1529	54.6	2795	59.9
Russell	8	5.0	14.0	217	7.7	301	6.5
Tallapoosa	5	3.1	12.3	81	2.9	101	2.2
Subtotal	159	100	22.5	2801	100	4665	100
WEST CENTRAL	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total
Bibb	-	-	-	45	4.5	45	3.2
Chilton	-	-	-	66	6.6	66	4.7
Fayette	-	-	-	13	1.3	26	1.9
Greene	-	-	-	30	3.0	53	3.8
Hale	-	-	-	62	6.2	75	5.3
Lamar	-	-	-	19	1.9	19	1.4
Perry	-	-	-	26	2.6	39	2.8
Pickens	-	-	-	59	5.9	61	4.4
Sumter	5	9.1	39.4	39	3.9	67	4.8
Tuscaloosa	41	74.5	19.7	549	55.1	820	58.5
Walker	-	-	-	88	8.8	131	9.3
Subtotal	55	100	12.7	996	100	1402	100

2019 Finalized Data by County and Public Health District (Continued)

\*Public Health District\*\* Newly Diagnosed\*\* Prevalent\*\*

Public Health District	٨	lewly Diagnosed		P	revalent	Cumulative			
JEFFERSON	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total		
Jefferson	128	100	19.4	3818	100	6037	100		
Subtotal	128	100	19.4	3818	100	6037	100		
NORTHEASTERN	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total		
Blount	-	-	-	39	3.0	91	6.2		
Calhoun	9	23.1	7.8	265	20.4	359	24.4		
Cherokee	-	-	-	27	2.1	54	3.7		
Clay	-	-	-	21	1.6	39	2.7		
DeKalb	6	15.4	0.0	63	4.8	41	2.8		
Cleburne	-	-	-	17	1.3	20	1.4		
Etowah	6	15.4	5.8	198	15.2	256	17.4		
Randolph	-	-	-	17	1.3	37	2.5		
Shelby	10	25.6	4.7	339	26.1	256	17.4		
St. Clair	-	-	-	122	9.4	59	4.0		
Talladega	-	-	-	193	14.8	258	17.6		
Total	39	100	4.8	1301	100.0	1470	100.0		
SOUTHEASTERN	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total		
Barbour	-	-	-	102	9.7	157	10.2		
Butler	-	-	-	56	5.3	86	5.6		
Coffee	8	17.8	15.4	84	8.0	137	8.9		
Covington	-	-	-	51	4.9	82	5.3		
Crenshaw	-	-	-	26	2.5	39	2.5		
Dale	8	17.8	16.3	138	13.2	247	16.1		
Geneva	-	-	-	42	4.0	53	3.5		
Henry	-	-	-	42	4.0	60	3.9		
Houston	19	42.2	18.2	385	36.8	512	33.4		
Pike	-	-	-	121	11.6	162	10.6		
Total	45	100	11.9	1047	100	1535	100		
SOUTHWESTERN	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total		
Baldwin	14	60.9	6.6	350	45.4	520	42.1		
Choctaw	-	-	-	28	3.6	40	3.2		
Clarke	-	-	-	40	5.2	53	4.3		
Conecuh	-	-	-	30	3.9	75	6.1		
Dallas	-	-	-	146	18.9	269	21.8		
Escambia	-	-	-	75	9.7	96	7.8		
Marengo	-	-	-	27	3.5	49	4.0		
Monroe	-	-	-	35	4.5	64	5.2		
Washington	-	-	-	15	1.9	30	2.4		
Wilcox	-	-	-	25	3.2	39	3.2		
Subtotal (unknowns excluded)	23	100	5.7	771	100	1235	100		

#### 2019 Finalized Data by County and Public Health District (Continued)

	<b>Newly Diagnosed</b>			Prevalent		Cumulative	
MOBILE	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total
Mobile	106	100	25.6	1963	100	3524	100
Subtotal	106	100	25.6	1963	100	3524	100
STATE TOTAL	Cases	% of Total	Rate	Cases	% of Total	Cases	% of Total
Alabama	635	100	13.1	14345	100	22302	100
<sup>£</sup> Total (unknowns included here)	635	100	13.1	14345	100	22302	100

<sup>\*</sup>Newly diagnosed HIV includes newly diagnosed HIV infections during the year of interest.

 $<sup>^{\</sup>beta}$ Prevalent HIV includes all persons with HIV as of December 31, 2019.

<sup>€</sup>Cumulative HIV includes all diagnosed HIV (living and deceased) as of December 31, 2019.

<sup>&</sup>lt;sup>£</sup>Totals include unknown case counts.

<sup>&</sup>lt;sup>¥</sup>Females with no risk factor reported are reclassified as heterosexual exposure.

<sup>§</sup>Age among newly diagnosed and cumulative cases is age at diagnosis. Prevalent age is current age among cases living as of December 31, 2019.

<sup>&</sup>lt;sup>¤</sup>Public Health District represents residence at diagnosis among newly diagnosed and cumulative cases and current residence among prevalent cases.

<sup>-</sup>To protect the privacy of persons with HIV in Alabama, the OHPC reserves the right to only release total numbers of HIV cases by county if the cumulative number of reported cases is five or more.