

# **Ending the HIV Epidemic in Mississippi: Epidemiologic Profile**

**2018**



# ENDING THE HIV EPIDEMIC IN MISSISSIPPI: EPIDEMIOLOGIC PROFILE

## Acknowledgements

This first edition of the “Ending the HIV Epidemic in Mississippi: Epidemiologic Profile” includes data available through July 2019. The Mississippi State Department of Health (MSDH) produced this report in collaboration with the University of Washington. This work is funded by the Centers for Disease Control and Prevention. We thank the medical providers caring for people with HIV/AIDS and the clinics and patients participating in epidemiologic projects. Their cooperation with public health department HIV/AIDS control efforts permits the collection of data included in this report – data which are used for further prevention and planning efforts. We also wish to acknowledge the outstanding assistance of staff who reviewed this report, and thank former STD/HIV Office Director Kendra Johnson for her work on this report. Finally, we thank the Mississippi HIV Planning Council (MHPC) and Mississippi EHE Task Force for their input on this report and their work to improve HIV prevention and care efforts for all Mississippians.

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## Technical Notes

### HIV/AIDS Reporting Requirements

Detailed requirements for reporting of communicable diseases including HIV/AIDS are described in the “Rules and Regulations Governing Reportable Diseases” ([www.msdh.ms.gov/msdhsite/\\_static/resources/1719.pdf](http://www.msdh.ms.gov/msdhsite/_static/resources/1719.pdf)) and the “Mississippi Reportable Diseases List” ([https://msdh.ms.gov/msdhsite/\\_static/resources/877.pdf](https://msdh.ms.gov/msdhsite/_static/resources/877.pdf)).

**Mississippi health care providers** are required to report all individuals who test positive for HIV, regardless of the date of the individual’s initial diagnosis, to the health department. Providers are also required to report new diagnoses of AIDS in a person previously diagnosed with HIV. Local health department officials forward case reports to the Mississippi State Department of Health. Names are never sent to the federal government.

**Laboratories** are required to report all positive HIV screening tests, p24 antigen detection, HIV viral culture, and HIV nucleic acid detection, all HIV viral load tests (detectable or not), and all CD4 counts in the setting of HIV. If the laboratory cannot distinguish tests, such as CD4 counts, due to HIV versus other diseases (such as cancer), the CD4 counts should be reported and the health department will investigate. However, laboratory reporting does not relieve health care providers of their duty to report, as some critical information necessary for surveillance and follow-up is not available to laboratories.

For further information about HIV/AIDS reporting requirements, please call your local health department or the Mississippi State Department of Health at 877-978-6453.

### Standard HIV/AIDS Definitions & Data Processing

This report uses standard HIV surveillance definitions that are used in nationwide reports. These allow for comparability with other jurisdictions and provide consistency over time. Detailed information about how HIV data is collected and how populations are defined can be found on the page “Terms, Definitions, and Calculations Used in CDC HIV Surveillance Publications” on the CDC webpage (<https://www.cdc.gov/hiv/statistics/surveillance/terms.html>).

### Data Used in this Report

This report uses data from January 1, 2018 through December 31, 2018. Because HIV surveillance data are dynamic and are often updated with new data, this report uses a dataset that was “closed” on December 31, 2019 to allow for changes to the 2018 data that may have occurred after December 31, 2018. However, we still anticipate that some past estimates may change. These changes may include data on characteristics of people living with HIV, laboratory results, and causes of death. Health departments may also change their definitions for defining outcomes, including new HIV diagnoses. These changes can affect current calculations of estimates from prior years. Thus, differences between annual Epidemiology Reports for estimates for a given year are expected.

### Reporting Small Numbers in Data Tables

This report conforms to the standards specified in CDC re-release agreements. These agreements are signed between CDC and all state/local HIV surveillance programs in order to ensure confidentiality of personally identifiable information. In general, the data in this document is presented at a county-level and does not require suppression of small numbers. In tables with multi-way stratification, counts below 6 are suppressed. These standards ensure that a reader of the document cannot infer information about an individual based on partial knowledge of a person's characteristics.

### Reporting Race and Ethnicity in Data Tables

In this report, race and ethnicity are mutually exclusive categories. Throughout this report, when we categorize individuals by race (e.g., Black, Asian), these are individuals who did not report Hispanic or Latinx ethnicity.

### Population Sizes of Men Who Have Sex with Men (MSM) in Mississippi

To determine the population size of MSM in Mississippi, we used a previously-published methodology (Grey et al., *JMIR Public Health Surveill* 2016). This method has been used by CDC to estimate state-specific rates of syphilis among MSM (de Voux et al., *MMWR* 2017). We received updated estimates (2014-2017) from Dr. Grey for this profile.

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# Definitions

- AIDS:** The late stage of HIV that is characterized by a severely damaged immune system due to the virus. A person is considered to have AIDS if their CD4+ T-cell count falls below 200 cells per cubic millimeter of blood or if they develop one or more opportunistic illness (OI).
- CD4 COUNT:** A measure of the number of CD4+ T cells in the blood, normal range is between 500-1,500 CD4+ T-cells per mm<sup>3</sup> of blood. HIV virus infects and kills CD4+ T cells, decreasing the strength of the immune system at fighting various infections and eventually leading the individual to develop AIDS (CD4 < 200 cells/mm<sup>3</sup> or an OI). Through effective HIV treatment, CD4 count can rise to more normal levels.
- CISGENDER:** Individuals whose current gender identity is the same as the sex they were assigned at birth.
- EPIDEMIOLOGY:** The branch of public health that deals with the incidence, determinants, distribution, and possible control of diseases and other factors relating to health.
- GENDER:** The range of identities possible outside of the socially established categories of male and female. (See note, pg 10)
- GENDER NONBINARY:** Individuals who do not identify their gender as man or woman. Other terms to describe this identity include genderqueer, agender, bigender, gender creative, etc.
- GENDER NONCONFORMING:** The state of one's physical appearance or behaviors not aligning with societal expectations of their gender (a feminine boy, a masculine girl, etc.).
- HIV:** Human immunodeficiency virus (HIV) is the virus that causes AIDS. HIV puts people at higher risk for some types of infection and other medical problems by targeting the cells that help the body fight infection. Contact with specific bodily fluids - most commonly through condomless sex or sharing of injection drug equipment - allows the virus to spread between individuals.
- HIV CLUSTER DETECTION:** The use of routing HIV surveillance data to identify and respond to potential outbreaks of HIV transmission in a community. Currently it consists of two activities: molecular cluster detection and time-space cluster detection.
- HIV VIRAL LOAD:** The amount of HIV viral RNA is in the bloodstream. Higher amounts of HIV viral load have been linked to faster HIV progression and poorer outcomes. Through taking antiretroviral therapy (ART) medication, individuals can reach viral suppression, which is the presence of less than 200 copies of HIV per milliliter of blood. People with suppressed viral loads cannot transmit HIV sexually.
- IDU (INJECTION DRUG USE):** A transmission category used to describe persons who have injected non-prescription drugs.
- INCIDENCE OR INCIDENT DIAGNOSES:** Theoretically refers to newly acquired HIV in a time period, but the exact time of acquisition of HIV is often unknown, so incident diagnoses are used as a proxy. Incidence diagnoses exclude individuals first diagnosed with HIV outside of Mississippi.
- LATE HIV DIAGNOSIS:** Diagnosis of AIDS within 12 months of HIV diagnosis. This is a proxy for the frequency of HIV testing. Someone who is diagnosed with AIDS within 12 months of their HIV diagnosis was likely living with HIV for several years (or decades) without being tested for HIV.
- MSA (METROPOLITAN STATISTICAL AREA):** A core geographic area containing a substantial population nucleus, together with adjacent communities having a high degree of social and economic integration with that core.
- MSM (Men who have sex with men):** An epidemiologic term defined as a man who has had at least one male sexual partner. Depending on the source and use of data, this may be defined as in the past 1 year, 5 years, since 1977, or during a man's lifetime. While this primarily includes MSM who identify as gay or bisexual, it also encompasses non-gay identified MSM.
- MSM/IDU:** Men who have sex with men who also report injecting non-prescription drugs
- NIR/NRR (NO IDENTIFIED RISK / NO RISK REPORTED):** Individuals diagnosed with HIV who do not have complete risk factor information. This information may be incomplete because the individual died, declined to be interviewed, were lost to follow-up, or who were interviewed but there was no risk factor identified.
- PERINATAL:** persons who acquired HIV through perinatal transmission but aged 13 years and older at time of diagnosis of HIV. Prevalence data and tables of death data includes persons who acquired HIV through perinatal transmission but aged 13 years and older during the specified year or at death.
- PLWH (People living with HIV):** People who have been confirmed to have HIV who are presumed living in a jurisdiction at a certain point or period of time.
- PrEP (Pre-Exposure Prophylaxis):** A course of HIV drugs taken by people without HIV to prevent HIV acquisition, which, when taken correctly, eliminates the risk of acquiring HIV through sexual transmission.
- PWID (People who inject drugs):** Defined as an individual who has used a syringe to inject drugs that were not prescribed to them, or drugs that were prescribed but are used in a different way than as prescribed (e.g. to get high). This is primarily based on current injection drug use (IDU) but can also be based on recent or lifetime IDU.
- SEX:** The various biological traits - such as hormone levels, anatomic structures, and genetic factors (e.g. chromosomes) - that are characteristic of sex-determined males and females. Refers to sex assigned at birth in this report. This is independent of gender.
- SURVEILLANCE:** The continuous collection, analysis, and distribution of data regarding a health-related event.
- TRANSGENDER:** Individuals whose current gender identity differs from the sex they were assigned at birth.
- VIRAL SUPPRESSION:** The presence of less than 200 copies of HIV per milliliter of blood. People with suppressed viral loads cannot transmit HIV sexually.

# Executive Summary

This “Ending the HIV Epidemic in Mississippi: Epidemiologic Profile” is the first HIV epidemiologic profile published by the Mississippi State Department of Health (MSDH) since 2017, and represents the first Ending the HIV Epidemic (EHE) profile. This profile represents a collaborative effort between MSDH and the University of Washington, an organization with whom the MSDH has had an ongoing partnership since 2014.

In 2019, the US federal government launched the EHE initiative, which aims to reduce the number of new HIV transmissions by 75% by 2025 and by 90% by 2030. The EHE identified 48 counties and 7 states that are “geographic hotspots” of HIV; Mississippi is one of those 7 states. Catalyzed by that effort, MSDH is committed to developing annual reports (Epidemiologic Profiles) that provide a comprehensive summary of the HIV epidemic in Mississippi and provide a description of progress made toward meeting local and national EHE goals. In this first report, we provide a summary of Mississippi’s HIV epidemic in 2018, which will serve as the “baseline” year for which all progress toward EHE goals will be measured. In subsequent years, we will continue to provide a snapshot of the HIV epidemic for the current year and describe the progress that has been made toward achieving EHE goals since 2018.

## ENDING THE HIV EPIDEMIC IN MISSISSIPPI

Mississippi has a goal of reducing the number of HIV transmissions by 50% by 2025. To achieve this, MSDH and its community partners have developed an EHE plan detailing the activities that will be undertaken in the next five years, following the four federal pillars of the EHE initiative: Test, Treat, Prevent, and Respond. The “Mississippi Ending the HIV Epidemic Dashboard” section of this report (page 4) tracks progress toward EHE goals and the “Monitoring and Evaluation of Progress Towards EHE Goals” section (page 27) provides details on the metrics used to monitor progress toward these goals.

## MISSISSIPPI’S HIV EPIDEMIC IN 2018

The complete summary of Mississippi’s HIV epidemic in 2018 is detailed in “Mississippi State 2018 HIV/AIDS Narrative & Data Tables” (page 8). Here we provide a brief summary of those data and notable trends.

### SUMMARY OF MISSISSIPPI’S HIV EPIDEMIC IN 2018

**New HIV Diagnosis:** In 2018 there were 476 individuals diagnosed with HIV. The rate of new HIV diagnosis in 2018 was 16 per 100,000 Mississippians, which represents a 12% increase from the 2017 rate. About 78% of people diagnosed with HIV were men, 58% were less than 35 years old, and 74% were Black.

**Linkage to HIV Care:** Among individuals diagnosed with HIV in 2018, approximately 32% were linked to HIV care within 7 days and 64% were linked to HIV care in 30 days.

**People living with HIV (“Prevalent HIV”):** There were 10,325 individuals living with HIV in Mississippi in 2018, which equates to a prevalence of 346 people living with HIV per 100,000 Mississippians. About 71% of these individuals were male, 77% were over 35 years old, 73% were Black, and 62% resided in an urban area.

**Receipt of HIV Care and Viral Suppression:** Among individuals living with HIV, only 64% received medical care in 2018 and only 44% were virally suppressed.

**Mortality:** In 2018, 190 individuals living with HIV in Mississippi died, representing a mortality rate of 1,828 deaths per 100,000 people living with HIV in 2018. This is a 23% decline in the mortality rate since 2014.

## NOTABLE TRENDS IN MISSISSIPPI'S HIV EPIDEMIC IN 2018

There is a disproportionate burden of HIV on Black individuals. 74% of new HIV diagnoses in 2018 were among Black individuals, who represent 39% of the population in Mississippi. Black individuals have a 6-fold higher rate of new HIV diagnosis compared to White individuals, and the prevalence of HIV is 5.5-fold higher among Black individuals compared to White individuals.

Men who have sex with men (MSM), particularly young Black MSM, are at high risk of HIV. The rate of HIV among MSM in Mississippi is 83-fold higher than the rate of HIV among the general population of Mississippians. Overall, 18% of all new HIV diagnoses in Mississippi were among Black MSM less than 25 years old, who represent <1% of the population in Mississippi.

Women are often diagnosed with HIV late and women living with HIV have a high mortality rate. Approximately 37% of women were diagnosed with AIDS within one year of their HIV diagnosis (i.e., were considered "late" HIV diagnoses) compared to 26% of men. Women living with HIV died at a rate that was 3.7-times higher than the general population of women in Mississippi, after adjusting for age.

Young people and people who reside in rural communities are being linked to HIV care more slowly than other populations. Only 24% of individuals less than 35 years of age who were newly diagnosed with HIV were linked to care within 7 days, compared to 44% of those 35 years and older. Among people who reside in rural counties, only 49% were linked to care within 30 days compared to 80% of individuals who reside in urban counties.

There are disparities in viral suppression by race and ethnicity. In 2018, viral suppression was lower among Hispanic PLWH (35%), but relatively similar between Black PLWH (44%) and White PLWH (43%). However, among individuals who had a viral load measured in 2018, viral suppression was lower among both Black (80%) and Hispanic PLWH (78%) compared to White PLWH (88%).

Data is missing for HIV acquisition risk for the majority of women diagnosed with HIV in 2018. Eighty-seven percent of women diagnosed with HIV in 2018 were categorized as not having an identified HIV risk (NIR) or not reporting an HIV risk (NRR), meaning that the woman did not know their acquisition risk, was unwilling to disclose their acquisition risk, or the health department was unable to contact them. This means that the mode of transmission (i.e., primary risk factor for acquiring HIV) for the majority of women is unknown.

# MISSISSIPPI ENDING THE HIV EPIDEMIC DASHBOARD

GOALS*	MISSISSIPPI DATA		2025 GOALS		CURRENT TREND**
	2018†	20xx††	MS	NATIONAL	
<b>NUMBER OF NEW HIV DIAGNOSES</b>	476 cases	---cases	↓ 50%	↓ 75%	--
<b>PILLAR 1: HIV TESTING</b>					
Knowledge of HIV Status	83%	--%	90%	95%	--
Late HIV diagnosis	29%	--%	<20%	--	--
<b>PILLAR 2: TREATMENT AND CARE</b>					
Linkage to care within 7 days	32%	--%	65%	--	--
Linkage to care within 30 days	64%	--%	95%	95%	--
Viral suppression within 6 months	41%	--%	90%	95%	--
Receipt of HIV care	64%	--%	75%	95%	--
Viral suppression	44%	--%	70%	95%	--
Re-engagement in HIV care	15-30%	--%	75%	--	--
HIV/AIDS standardized mortality ratio	2.0	--	1.75	--	--
<b>PILLAR 3: PREVENTION OF HIV</b>					
Knowledge of PrEP	42%	--%	95%	--	--
Screening for PrEP	12%	--%	85%	--	--
Uptake of PrEP	13%	--%	50%	50%	--
Retention on PrEP at 4 months	--	--%	75%	--	--
<b>PILLAR 4: RESPOND TO CLUSTERS</b>					
Cluster surveillance within 14 days‡	71%	--%	85%	85%	--
Completion of genotype sequencing‡	16%	--%	70%	--	--
Response to transmission clusters	-- <sup>Y</sup>	--%	65%	--	--
PrEP uptake in cluster	-- <sup>Y</sup>	--%	75%	--	--
Re-linkage to care in cluster	-- <sup>Y</sup>	--%	75%	--	--

## TECHNICAL NOTES TO THE DASHBOARD

\*The definitions for each metric used to monitor progress toward the EHE Pillars are found on the following pages:

- Overall Goal: Page 29
- Pillar 1: Page 32
- Pillar 2: Page 37-38
- Pillar 3: Page 49-50
- Pillar 4: Page 54-55

\*\*Each year this column will be populated with a check mark, up arrow, or X to indicate whether or not MSDH is on target to meet the goal. A star will be used to indicate if the local goal was met but the national goal was not

†2018 will serve as the baseline year for the dashboard

††Each year this column will be populated with the data for the most recent year

‡These are process metrics and may be removed in subsequent dashboards as the processes for molecular surveillance become more routinized

γ There were no priority clusters identified in 2018

Key:



Goal met



On pace to meet goal



Not on pace to meet goal



Local goal was met, but the national goal was not



# OVERVIEW OF MISSISSIPPI STATE

# Overview of Mississippi State, 2018

Many of Mississippi's poor health outcomes are due to social determinants of health. Social determinants of health are the conditions in which people are born, work, grow, and age. They are pivotal to individual health and community well-being, and their impact is just as great as biological health factors. These circumstances are shaped by the distribution of wealth, power, and resources at the national, state, and local levels. They include: food security, public transportation, workplace safety, affordable housing, violence and crime, systemic racism, education, and job opportunity and income. The MSDH jurisdictional plan to End HIV in Mississippi (available at: [https://msdh.ms.gov/msdhsite/\\_static/14,0,150.html](https://msdh.ms.gov/msdhsite/_static/14,0,150.html)) provides an in-depth situational analysis of Mississippi, people living in Mississippi, and the social determinants of health in Mississippi that contribute to HIV prevention and care. Below is a summary of the demographics of Mississippi's population and a brief summary of some of these social determinants of health.

## DEMOGRAPHICS OF THE POPULATION

The estimated population size of Mississippi is 2,976,146, which represents a 0.3% increase in the population size since 2010. Approximately 51.5% of Mississippians are female, 26.7% are under 20 years of age and 16.4% are over age 65. Nearly 60% of people living in Mississippi are White, 38% are Black, and 3.4% are Hispanic or Latinx. Less than 2% of the population reports being either American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, or Asian.

## POVERTY AND INSURANCE

The latest American Community Survey from the United States (US) Census shows that 19.6% of Mississippians are in poverty, which is the highest poverty rate in the US. About 83% of Mississippians have graduated high school and 22% have a Bachelor's degree or higher; this is the third lowest and lowest in the US, respectively. The median household income in Mississippi is \$43,567, which is the second lowest in the US and is about \$20,000 lower than the US median household income. Among people under age 65, 15.4% do not have health insurance.

## URBANICITY

Mississippi is a predominantly rural state, with 54% of the population residing in a rural community, and approximately 77% residing outside the Jackson MSA. There are limited areas with public transportation mostly located in Central and South MS. The average client that resides in rural MS has to drive at least two hours one way to get Prevention and Care services.



# MISSISSIPPI STATE 2018 HIV/AIDS NARRATIVE & DATA TABLES

# Narrative Summary

## 2018 HIV Epidemic in Mississippi

### NEW HIV DIAGNOSES

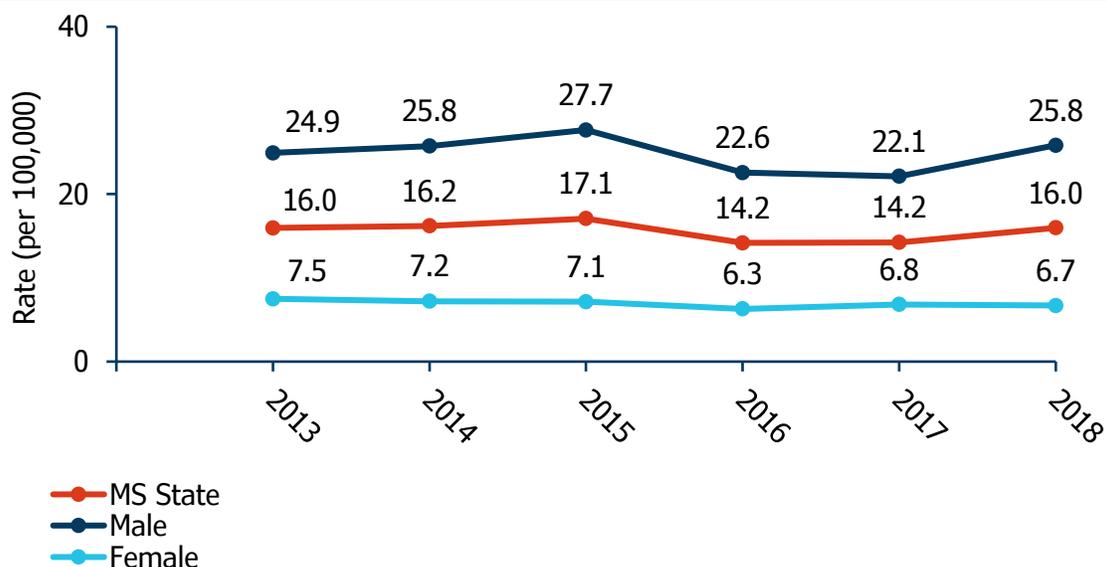
In 2018, there were 476 individuals newly diagnosed with HIV in Mississippi, which represents a rate of 16.0 diagnoses per 100,000 Mississippi residents. (TABLE 1). This represents a 12% increase in the rate from 2017. In the United States and 6 dependent areas, the overall rate of new HIV diagnoses in 2018 was 11.5 per 100,000 (CDC, HIV Surveillance Report, 2018).

### SEX AT BIRTH

Throughout the report we refer to “men” and “women” in terms of sex at birth. (For clarification on how sex and gender are reported, please see section titled: “HIV among Transgender, Non-Binary, Genderqueer, and Gender Non-Conforming Individuals” on page 10). In 2018, 78% percent of new HIV diagnoses were among men, and men had a nearly 4-fold higher rate of new HIV diagnosis than women. The rate of new HIV diagnosis among men increased 17% between 2017 and 2018. The rate of new HIV diagnosis among women has declined by 11% since 2013 (TABLE 1, FIGURE 1).

Among women who were newly diagnosed with HIV in 2018 (N=103), 65% were over 35 years of age and 76%

Figure 1: Rate of new HIV diagnosis by sex at birth, MS State, 2013-2018



were Black. The rate of new HIV diagnosis among Black women was 5 times higher than the rate among White women. The mode of transmission (i.e., primary risk factor for acquiring HIV) for the majority of women is unknown; 87% percent of women diagnosed with HIV were categorized as not having an identified HIV risk (NIR) or not reporting an HIV risk (NRR, **TABLE 3**). Using CDC methodology to re-categorize the NIR/NRR transmission categories, most women are categorized as having HIV acquisition associated with heterosexual contact.

Among men who were newly diagnosed with HIV in 2018 (N=373), 65% were less than 35 years of age and 73% were Black. The rate of new HIV diagnosis among Black men was 6 times higher than the rate among White men, and nearly 5 times higher among Hispanic men than among White men. Sixty-one percent of men newly diagnosed with HIV were categorized as men who have sex with men (MSM), and 34% of men were categorized as NIR or NRR (**TABLE 3**). After using CDC methodology to re-categorize the NIR/NRR transmission categories, most of these men are categorized as MSM.

### HIV AMONG TRANSGENDER, NON-BINARY, GENDERQUEER AND GENDER NON-CONFORMING INDIVIDUALS

The Mississippi State Department of Health (MSDH) is continuously working to improve data collection and reporting for individuals whose gender identity does not align with their sex at birth. In 2018, there were <5 people newly diagnosed with HIV who were reported to be transgender, non-binary, genderqueer, or gender non-conforming. Throughout this report we have included these individuals in the table according to their sex at birth. We chose not to separately report the data for these individuals in the tables for two reasons. First, we believe that reporting the data on this small number of individuals may violate their privacy, since it may be possible to identify someone based on the data that are reported about them. Second, we do not believe this number is accurate, and likely represents a large underestimate. Data on gender identity for individuals who are newly diagnosed with HIV are not systematically collected by MSDH. By separating out these <5 people in a table, we feel that we are knowingly reporting this inaccuracy and it will appear as if HIV is not a public health crisis among transgender, non-binary, genderqueer, and gender non-conforming individuals. As part of the EHE plan, the MSDH is committed to improving the data collection and data quality for gender identity to more accurately report on the burden of HIV in this community.

#### AGE

Nearly 60% of new HIV diagnoses in 2018 were among individuals who were less than 35 years old. Individuals aged 25-34 experienced the highest rate of new HIV diagnosis in 2018 (37 per 100,000). This represents a nearly 12% increase in the rate of new HIV diagnosis in this age group since 2013. The rate of new HIV diagnosis among individuals aged 15-24 has declined by 13% since 2013 (**FIGURE 2**).

Among individuals less than 35 years old who were newly diagnosed with HIV in 2018 (N=276), 216 (78%) were Black, 41 (15%) were White, 14 (5%) were Hispanic, and 5 (2%) were “Other” race (American Indian/Alaska Native, Asian, multiple race, or unknown race, **TABLE 4**).

#### RACE/ETHNICITY

Seventy-four percent of new HIV diagnoses in 2018 were among Black individuals, and Black individuals have a nearly 6-fold higher rate of new HIV diagnoses compared to White individuals (31.6 per 100,000 vs. 5.5 per 100,000) (**TABLE 1**). The rate of new HIV diagnosis among Black individuals has remained relatively constant since 2013 (**FIGURE 3**). There has been a substantial increase in the rate of new HIV diagnosis among Hispanic populations – from 5.5 per 100,000 in 2016 to 23.4 per 100,000 in 2018 – though the absolute number of Hispanic individuals diagnosed with HIV remains small (23 new cases in 2018).

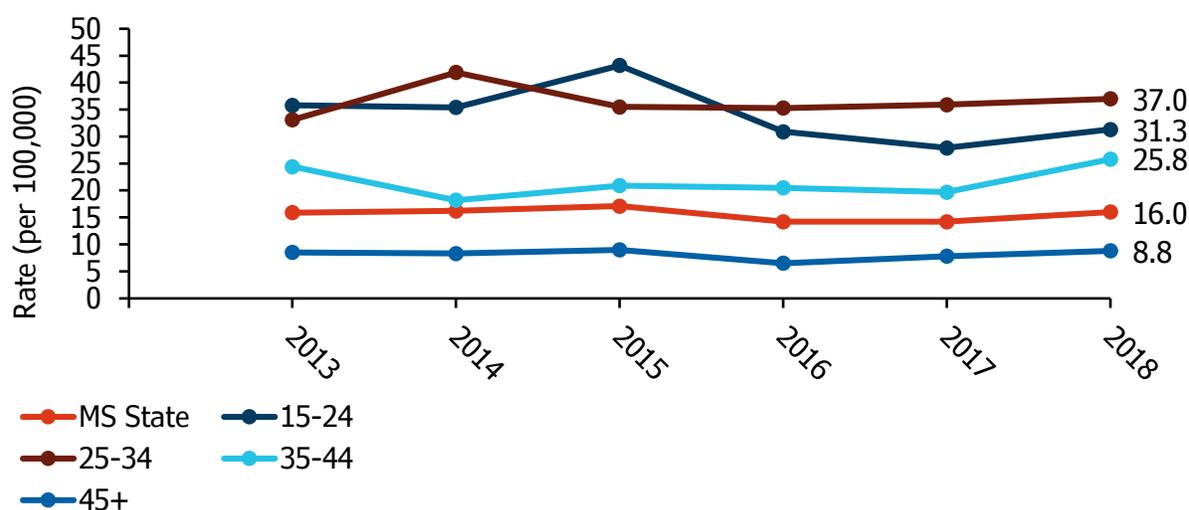
Among Black individuals newly diagnosed with HIV in 2018 (N=353), 22% were women, 62% were less than 35

years of age, and 47% were MSM. Black MSM represent 36% (169 individuals) of all people newly diagnosed with HIV in 2018 (N=476). Of 169 Black MSM, 84% were less than 35 years old and 50% were less than 25 years old. Among Black men who were not MSM, 41% were less than 35 years old. Overall, 18% (84 of 476) of all new HIV diagnoses in MS were among Black MSM less than 25 years old (TABLES 3, 4, 5).

Among White individuals newly diagnosed with HIV in 2018 (N=92), 24% were women, 45% were less than 35 years old, and 45% were MSM. Of 41 White MSM diagnosed with HIV in 2018, 63% were less than 35 years old. Among White men who were not MSM, 30% were less than 35 years old (TABLES 3, 4, 5).

Among Hispanic individuals newly diagnosed with HIV in 2018 (N=23), 4% were women, 61% were less than 35 years old, and 52% were MSM. Of 12 Hispanic MSM diagnosed with HIV in 2018, 75% were less than 35 years old. Among Hispanic men who were not MSM, 45% were less than 35 years old (TABLES 3, 4, 5).

**Figure 2: Rate of new HIV diagnosis by age, MS State, 2013-2018**



### TRANSMISSION CATEGORY

Approximately 46% of individuals newly diagnosed with HIV had no identified or reported risk for HIV acquisition (N=218). These individuals are not categorized into a transmission category.

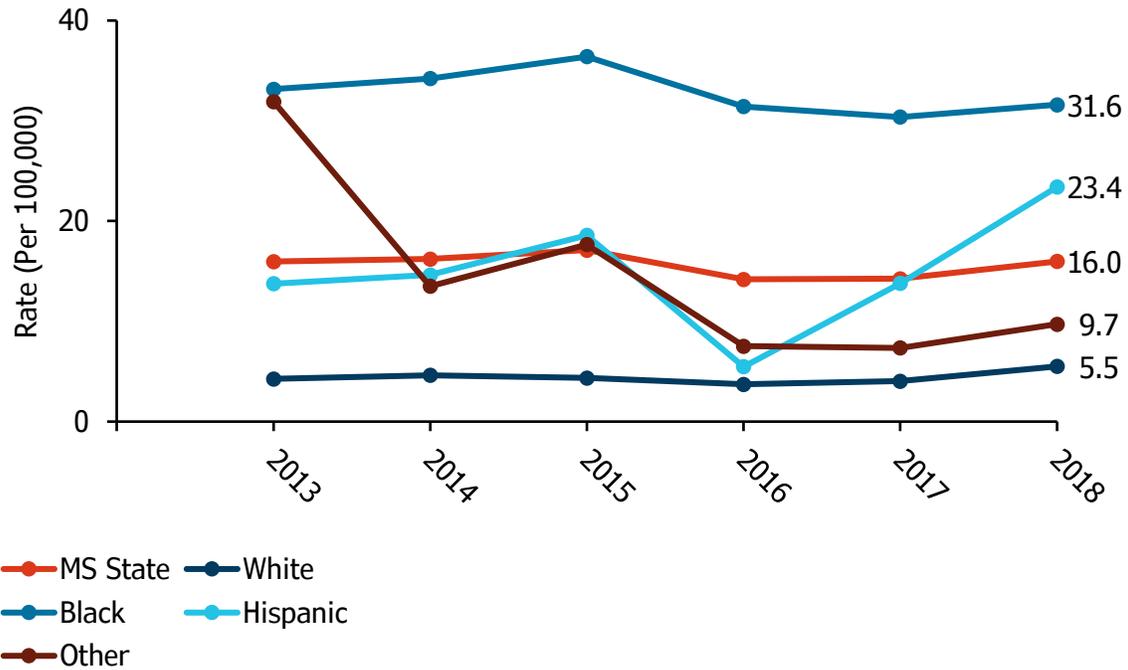
Of all individuals newly diagnosed with HIV in 2018, 48% were MSM, despite MSM representing only 1% of the population in Mississippi (Grey et al., *JMIR Public Health Surveill* 2016). Over time, men who were not categorized as MSM have made up an increasing percentage of new HIV diagnoses (23% in 2013 vs 30% in 2018; FIGURE 4). Of individuals who had an identified risk or reported risk in 2018 (N=258), MSM accounted for 88% of all new HIV diagnoses in 2018. The rate of HIV among MSM in Mississippi is 1,332 per 100,000, which is 83-fold higher than the rate of HIV among the general population of Mississippians. There were <5 individuals diagnosed with HIV in 2018 who reported injection drug use (IDU) and 27 individuals (5%) categorized as heterosexual (TABLE 1).

Using methodology developed by CDC, individuals who were not categorized into a transmission category were “assigned” a category based on information from individuals who were categorized into a transmission category. Using those data, 68% of individuals newly diagnosed with HIV in 2018 were MSM, 28% were categorized as having HIV acquisition associated with heterosexual contact, 3% were categorized as IDU, 1% were categorized as MSM/IDU, and <1% were categorized as perinatal.

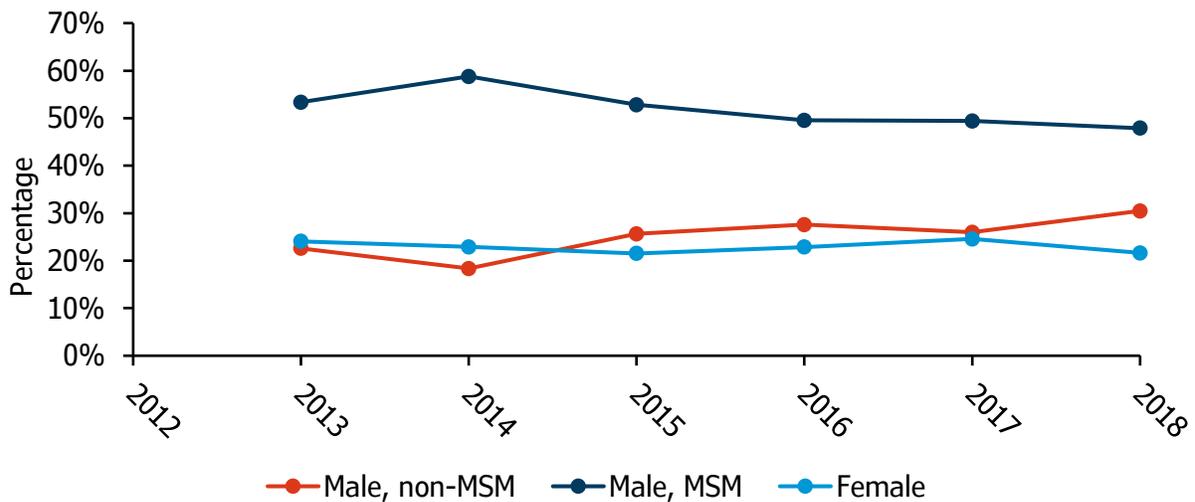
**COUNTY AND MSA RESIDENCE**

More than half of individuals diagnosed with HIV in 2018 resided in a rural county at the time of HIV diagnosis, with 71% living outside the Jackson MSA. The rate of new HIV diagnosis was slightly higher in urban counties (16.6 per 100,000) than rural counties (15.4 per 100,000) and substantially higher among individuals in the Jackson MSA (25.0 per 100,000) compared to individuals not living in the Jackson MSA (13.9 per 100,000) (TABLE 1).

**Figure 3: Rate of new HIV diagnosis by race/ethnicity, MS State, 2013-2018**



**Figure 4: Distribution of new HIV diagnoses by birth sex and gender of sex partners (for men only), MS State, 2013-2018**



The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

<sup>a</sup> Includes all male birth sex individuals who are not categorized as MSM.

<sup>b</sup> Includes individual(s) in the MSM/IDU transmission category.

## INITIAL LINKAGE TO CARE FOR INDIVIDUALS DIAGNOSED WITH HIV

Of the 476 individuals diagnosed with HIV in 2018, 32% were linked to HIV care within 7 days of their HIV diagnosis, and 64% were linked to HIV care within 30 days of their HIV diagnosis (**TABLE 1**).

**LINKAGE TO CARE IN 7 DAYS (TABLE 1):** Among individuals less than 35 years of age, only 24% were linked to care within 7 days compared to 44% of those 35 years and older. Women were slightly more likely to link to care within 7 days compared to men (38% vs. 31%). Hispanic individuals were more likely to link to care in 7 days (48% linked in 7 days) compared to White individuals (35% linked in 7 days) or Black individuals (30% linked in 7 days). MSM were less likely to link to care within 7 days (27% linked in 7 days) compared to individuals in other transmission categories. Individuals residing in an urban county were more likely to be linked to care in 7 days compared to those in a rural county (39% vs. 26%) and those living in the Jackson MSA were more likely to be linked to care in 7 days than those not living in the Jackson MSA (38% vs. 30%).

**LINKAGE TO CARE IN 30 DAYS (TABLE 1):** Among individuals less than 35 years of age, 60% were linked to care within 30 days compared to 69% of those 35 years and older. Approximately 63% of men and 66% of women were linked to care within 30 days. Only 56% of Hispanic individuals linked to care within 30 days, compared to 63% of Black individuals and 71% of White individuals. The percent of MSM who linked to care within 30 days (62%) was lower than for heterosexuals (70% linked in 30 days) but similar to those categorized as “Other” transmission category (64% linked in 30 days). Less than 50% of individuals living in a rural county were linked to care within 30 days, compared to 80% of those living in an urban county. For those living in the Jackson MSA, 70% were linked to care within 30 days. The comparable percent for those living outside the Jackson MSA was 61%.

## PEOPLE LIVING WITH HIV

In 2018 there were 10,325 individuals living with HIV in Mississippi which represents a prevalence of 346 people living with HIV per 100,000 Mississippians (**TABLE 2**). In the United States and 6 dependent areas in 2018, the prevalence of HIV was 375 per 100,000 population.

### BIRTH SEX

Most (71%) individuals living with HIV in Mississippi are men, and 29% are women. Among women living with HIV in Mississippi (N=3,030), 18% are less than 35 years of age and 81% are Black. Approximately 40% of women living with HIV reside in a rural county and 64% live outside the Jackson MSA. Among men living with HIV in Mississippi (N=7,295), 26% are less than 35 years of age and 70% are Black. Approximately 37% of men living with HIV reside in a rural county and 67% reside outside the Jackson MSA (**TABLES 2, 6, 8**).

### AGE

Approximately 23% of people living with HIV in Mississippi are less than 35 years old. There were 2,405 individuals aged 13-34 living with HIV in 2018. Of these individuals, 84% were Black and 11% were White. Approximately 38% of PLWH less than 35 years old reside in a rural county and 66% reside outside the Jackson MSA; this is a similar proportion as all PLWH (**TABLES 2, 8**).

### RACE/ETHNICITY

Of 10,325 PLWH in 2018, approximately 73% were Black, 21% were White, and 3% were Hispanic. The prevalence of HIV is 5.5-fold higher among Black individuals compared to White individuals (652 per 100,000 vs. 119 per 100,000). The prevalence of HIV is 3-fold higher among Hispanic individuals compared to White individuals (344 per 100,000 vs. 119 per 100,000, **TABLE 2**).

Among Black PLWH (N=7,499), 33% are women, 27% are aged 13-34, 39% reside in a rural county, and 62% reside outside the Jackson MSA (**TABLES 7, 8**).

Among White PLWH (N=2,136), 19% are women, 12% are aged 13-34, and 32% reside in a rural county, and 78% reside outside the Jackson MSA (**TABLES 7, 8**).

Among Hispanic PLWH (N=338), 22% are women, 23% are aged 13-34, and 48% reside in a rural county, and 81% reside outside the Jackson MSA (**TABLES 7, 8**).

Among PLWH who are categorized as "Other" race (combined due to small numbers; includes American Indian/Alaska Native, Asian, Native Hawaiian/Other Pacific Islander, multi-race/unknown/other; N=325), 28% are women and 17% are aged 13-34. Seventeen percent of Asian PLWH, 85% of American Indian/Alaska Native PLWH, and 38% of individuals who are multiracial/unknown race/other race reside in a rural county (**TABLES 7, 8**).

### TRANSMISSION CATEGORY

Forty-one percent of PLWH in Mississippi in 2018 were categorized as MSM, 8% were categorized as IDU or MSM/IDU, 19% were categorized as heterosexual contact, and 31% had no identified risk or no risk reported (**TABLE 2**).

### COUNTY AND MSA RESIDENCE

Of all PLWH in Mississippi, 6,397 (62%) resided in an urban county and 3,928 (38%) resided in a rural county. This is different than the general population of Mississippi, where 45% of the general population of Mississippi resides in an urban county and 55% resides in a rural county. Approximately 34% of PLWH in Mississippi reside in the Jackson MSA and 66% reside outside the Jackson MSA. The distribution of sex, age, and transmission category of PLWH is similar between rural and urban areas. Hispanic PLWH are more likely to reside in rural areas and outside the Jackson MSA compared to PLWH of other races/ethnicities (**TABLE 8**).

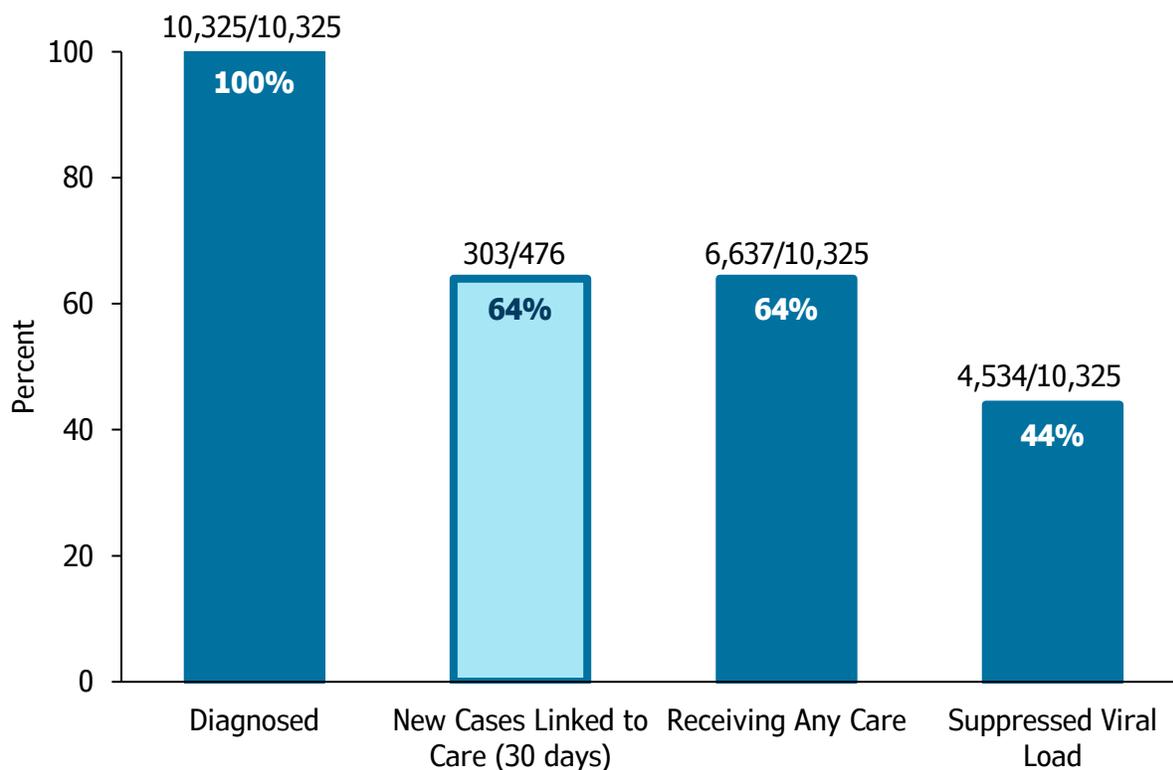
## CARE CONTINUUM

Of 10,325 people living with HIV in 2018, 6,637 (64%) received any care (as indicated by a CD4, genotype or viral load test) in 2018 and 4,534 (44%) were virally suppressed (**FIGURE 5**). Among individuals who had a viral load test done in 2018, 82% were virally suppressed (**TABLE 2**). (People who had a viral load test in 2018 by definition received any care; thus viral suppression rates are higher when comparing the population who had a viral load test done to the overall population of PLWH).

**Receipt of HIV Care:** Receipt of HIV care was similar by sex at birth and whether or not someone resided in an urban or rural county. Approximately 68% of people aged 13-24 had an HIV care visit in 2018, which was higher than individuals of any other age group. Only 50% of individuals who were at least 45 years old had an HIV care visit in 2018. Among Black PLWH, 67% received HIV care in 2018 compared to 58% of White PLWH and 51% of Hispanic PLWH (**TABLE 2**).

**Viral Suppression:** There were no differences in viral suppression by sex at birth. Among all PLWH aged 13-24, 50% were virally suppressed, which was higher than any other age group. However, when limiting the population to those who had a viral load test, PLWH aged 13-24 had the lowest viral suppression (73%) compared to the other age groups. When comparing race/ethnicity categories, viral suppression was highest among people of "Other/Multiple" race at 58%, and lowest among individuals who were Hispanic (viral suppression=35%). Approximately 44% of Black PLWH were virally suppressed compared to 43% of White PLWH and 35% of Hispanic PLWH. When limiting the population to individuals who had a viral load test in 2018, viral suppression was the lowest (approximately 80%) among Black PLWH, Hispanic PLWH, and American Indian/Alaska Native PLWH. Viral suppression was similar among PLWH who resided in urban or rural areas, but those who resided in the Jackson MSA had a lower viral suppression (40%) compared to those who did not reside in the Jackson MSA (46%) (**TABLE 2**).

**Figure 5: MS State 2018 HIV Care Continuum**



## AIDS AND DEATH

### AIDS DIAGNOSIS AND LATE HIV DIAGNOSIS

There were 235 individuals diagnosed with AIDS in 2018. Sixty-eight percent were women, and 54% were individuals less than 35 years old. Eighty percent of individuals diagnosed with AIDS were Black and 46% resided in a rural community.

Of individuals newly diagnosed with HIV in 2017\* (n=427), 124 (29%) were diagnosed with AIDS within one year of their HIV diagnosis (i.e., were considered “Late Diagnoses”) (TABLE 9). The percentage of women who were diagnosed with AIDS within one year of HIV diagnoses was 37%, which was higher than the percentage for men (26%). The percentage of individuals diagnosed with AIDS within one year of HIV diagnosis was similar by race/ethnicity and residence. Individuals who were at least 35 years old were more likely to be diagnosed with AIDS within 12 months of their HIV diagnosis than those younger than 35. A lower percentage of MSM were diagnosed with AIDS within 12 months of HIV diagnosis (23%) compared to those with a transmission category of heterosexual contact (33%) or those categorized as NIR/NRR (37%).

### DEATHS

There were 190 PLWH who died in 2018, which is a rate of 18.4 per 1,000 people living with HIV in Mississippi per year. About one-third of individuals who died were women, about one-quarter were less than 45 years old, and 76% were Black. Individuals over age 65 had the highest case fatality rate (46.6 per 1,000 PLWH). The standard mortality ratio (SMR) is a measure of the rate of death relative to the general population of Mississippians. In 2018, the overall SMR was 2.0, indicating that PLWH died at a rate that was 2.0-times higher than the rate among the general population of Mississippians, adjusting for sex at birth and age. Women living with HIV died at a rate that was 3.7-times higher than the general population of women in Mississippi, after adjusting for age. Individuals aged 35-44 who were living with HIV died at a rate that was 4.5 times higher than the general population of Mississippians aged 35-44, adjusting for sex. These data are not available by race, urbanicity, or transmission category (TABLE 10).

\*To calculate late HIV diagnosis, we examined the number of individuals who were diagnosed with HIV in 2017 who were subsequently diagnosed with HIV within one year (i.e., in 2018)

**TABLE 1: PEOPLE NEWLY DIAGNOSED WITH HIV AND LINKED TO CARE BY DEMOGRAPHIC CHARACTERISTICS AND TRANSMISSION CATEGORY, MISSISSIPPI, 2018**

	PEOPLE NEWLY DIAGNOSED WITH HIV			LINKED TO CARE IN 7 DAYS		LINKED TO CARE IN 30 DAYS	
	NO.	COL %	RATE <sup>1</sup>	NO.	ROW %	NO.	ROW %
<b>TOTAL</b>	476	100%	16.0	153	32%	303	64%
<b>SEX AT BIRTH</b>							
Male	373	78%	25.8	114	31%	235	63%
Female	103	22%	6.7	39	38%	68	66%
<b>AGE AT HIV DIAGNOSIS</b>							
<13	0	0%	0.0	0	0%	0	0%
13-24	129	27%	26.3	31	24%	78	60%
25-34	146	31%	37.0	35	24%	87	60%
35-44	94	20%	25.8	37	40%	65	70%
45-54	63	13%	25.5	30	48%	43	68%
55-64	34	7%	17.1	14	41%	22	65%
65+	10	2%	8.1	6	60%	8	80%
<b>RACE/ETHNICITY</b>							
Black	353	74%	31.6	107	30%	221	63%
White	92	19%	5.5	32	35%	65	71%
Hispanic	23	5%	23.4	11	48%	13	56%
Asian	2	<1%	6.3	<5	—	<5	—
AI/AN	1	<1%	6.7	<5	—	<5	—
NHOPI	0	0%	—	0	—	0	—
Multiple	3	1%	—	<5	—	<5	—
Unknown	2	<1%	—	0	—	0	—
<b>COUNTY OF RESIDENCE</b>							
Urban County	224	47%	16.6	88	39%	180	80%
Rural County	252	53%	15.4	65	26%	123	49%
<b>MSA OF RESIDENCE</b>							
Jackson MSA	138	29%	25.0	53	38%	97	70%
Not Jackson MSA	338	71%	13.9	100	30%	206	61%
<b>TRANSMISSION CATEGORY</b>							
MSM	227	48%	—	61	27%	141	62%
IDU	2	<1%	—	<5	—	<5	—
MSM/IDU	1	<1%	—	<5	—	<5	—
Heterosexual	27	5%	—	10	37%	19	70%
NIR/NRR <sup>2</sup>	218	46%	—	80	37%	141	64%
Other <sup>3</sup>	1	<1%	—	0	—	0	—

<sup>1</sup> Per 100,000 population<sup>2</sup> Includes cases with risk factor not reported or not identified exposure.<sup>3</sup> Includes cases with hemophilia, blood transfusion or perinatal exposure

Abbreviations: AI/AN = American Indian or Alaska Native, NHOPI = Native Hawaiian/Pacific Islander, MSA = metropolitan statistical area, MSM = men who have sex with men, IDU = injection drug use, No. = number, col = column

The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

**TABLE 2: RECEIPT OF HIV CARE AND VIRAL SUPPRESSION BY DEMOGRAPHIC CHARACTERISTICS AND TRANSMISSION CATEGORY, MISSISSIPPI, 2018**

	NO. OF PLWH		NO. OF PLWH WITH A >= 1 CARE VISIT IN 2018 <sup>1</sup>		VIRALLY SUPPRESSED		
	NO.	COL %	NO.	ROW %	AMONG ALL PLWH <sup>2</sup>		% AMONG THOSE WHO RECEIVED A TEST <sup>3</sup>
					NO.	ROW %	ROW %
<b>TOTAL</b>	10325	100%	6637	64%	4534	44%	82%
<b>SEX AT BIRTH</b>							
Male	7295	71%	4588	63%	3213	44%	83%
Female	3030	29%	2049	68%	1321	44%	80%
<b>CURRENT AGE</b>							
<13	0	0%	0	—	0	—	—
13-24	507	5%	369	68%	254	50%	73%
25-34	1898	18%	1310	60%	861	45%	76%
35-44	2264	22%	1485	56%	997	44%	79%
45-54	2983	29%	1830	50%	1258	42%	84%
55-64	2046	20%	1279	51%	919	45%	88%
65+	627	6%	364	44%	245	39%	89%
<b>RACE/ETHNICITY</b>							
Black	7499	73%	5003	67%	3318	44%	80%
White	2136	21%	1232	58%	925	43%	88%
Hispanic	338	3%	171	51%	119	35%	78%
Asian	23	<1%	11	48%	9	39%	90%
AI/AN	13	<1%	6	46%	<5	—	80%
NHOPI	1	<1%	<5	—	<5	—	—
Multiple	272	2%	215	79%	157	58%	88%
Unknown	43	<1%	<5	—	<5	—	100%
<b>COUNTY OF RESIDENCE</b>							
Urban	6397	62%	3977	62%	2737	43%	81%
Rural	3928	38%	2660	68%	1797	46%	82%
<b>MSA OF RESIDENCE</b>							
Jackson MSA	3500	34%	2252	64%	1417	40%	79%
Not Jackson MSA	6825	66%	4385	64%	3117	46%	82%
<b>TRANSMISSION CATEGORY</b>							
MSM	4276	41%	2870	67%	2044	48%	83%
IDU	465	5%	229	49%	163	35%	83%
MSM/IDU	330	3%	162	49%	116	35%	84%
Heterosexual	1997	19%	1410	71%	951	48%	82%
NIR/NRR	3166	31%	1909	60%	1227	39%	80%
Other <sup>4</sup>	91	1%	57	63%	33	36%	67%

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019.

<sup>1</sup>Number of persons w/ >= 1 care visit that included either a viral load, CD4 or HIV-1 genotype lab in 2018.

<sup>2</sup>Number and percentage of those virally suppressed among all individuals who were newly diagnosed with HIV in 2018.

<sup>3</sup>Percentage of those virally suppressed among those that have received >=1 test in 2018.

<sup>4</sup>Includes cases with hemophilia, blood transfusion or who were exposed perinatally but were aged >13 (N=71) at most recent year.

Abbreviations: PLWH = People Living with HIV, AI/AN = American Indian or Alaska Native, NHOPI = Native Hawaiian or Other Pacific Islander, MSA = metropolitan statistical area, MSM = men who have sex with men, IDU = injection drug use, NIR = no identified risk, NRR = no reported risk, No. = number, col = column.

The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

TABLE 3. PEOPLE NEWLY DIAGNOSED WITH HIV BY SEX AT BIRTH, MISSISSIPPI, 2018

	FEMALE			MALE		
	NO.	COL %	RATE <sup>1</sup>	NO.	COL %	RATE <sup>1</sup>
<b>TOTAL</b>	103	100%	6.7	373	100%	25.8
<b>AGE AT HIV DIAGNOSIS</b>						
<13	0	0%	0.0	0	0%	0.0
13-24	12	12%	5.0	118	32%	47.0
25-34	24	23%	12.1	122	33%	62.5
35-44	33	32%	17.6	60	16%	33.8
45-54	20	19%	10.5	43	11%	24.2
55-64	11	11%	5.4	23	6%	12.6
65+	<5	—	—	7	2%	3.4
<b>RACE/ETHNICITY</b>						
Black	78	76%	13.2	275	73%	52.4
White	22	21%	2.5	70	19%	8.5
Hispanic	<5	—	2.3	22	6%	40.2
Other/Multiple <sup>2</sup>	<5	—	—	6	2%	—
<b>TRANSMISSION CATEGORY</b>						
MSM	0	0%	—	227	61%	—
IDU	<5	—	—	<5	—	—
MSM/IDU	0	0%	—	<5	—	—
Heterosexual	11	11%	—	16	4%	—
Perinatal	<5	—	—	0	0%	—
NIR/NRR	90	87%	—	128	34%	—

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019.

<sup>1</sup> Per 100,000 population

<sup>2</sup> Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multiple and unknown race categories.

The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

Abbreviations: AI/AN = American Indian or Alaska Native, NHOPI = Native Hawaiian or Other Pacific Islander, MSA = metropolitan statistical area, MSM = men who have sex with men, NIR = no identified risk, NRR = no reported risk, IDU = injection drug use, No. = number, col = column

**TABLE 4. PEOPLE NEWLY DIAGNOSED WITH HIV BY AGE AND RACE/ETHNICITY, MISSISSIPPI, 2018**

	BLACK		WHITE		HISPANIC		OTHER <sup>1</sup>	
	No.	COL %	No.	COL %	No.	COL %	No.	COL %
<b>TOTAL</b>	353	100%	92	100%	23	100%	8	100%
<b>AGE AT HIV DIAGNOSIS</b>								
13-24	112	32%	13	14%	3	13%	2	33%
25-34	104	30%	28	31%	11	48%	3	33%
35-44	66	19%	22	24%	5	22%	0	0%
45-54	42	12%	15	16%	3	13%	3	33%
55-64	21	6%	12	13%	1	4%	0	0%
65+	8	2%	2	2%	0	0%	0	0%
<b>TRANSMISSION CATEGORY</b>								
MSM	169	47%	41	45%	12	52%	5	67%
IDU	2	<1%	0	0%	0	0%	0	0%
MSM/IDU	0	0%	1	1%	0	0%	0	0%
Heterosexual	19	5%	5	5%	3	13%	0	0%
Perinatal	1	<1%	0	0%	0	0%	0	0%
NIR	81	23%	22	24%	5	22%	3	33%
NRR	81	23%	23	25%	3	13%	0	0%

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

<sup>1</sup>Includes American Indian/Alaska Native, Asian, multiple races, and unknown race.

Abbreviations: MSM = men who have sex with men, NIR = no identified risk, NRR = no reported risk, IDU = injection drug use, No. = number, col = column

The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

TABLE 5. PEOPLE NEWLY DIAGNOSED WITH HIV BY RACE/ETHNICITY, AGE, AND MSM TRANSMISSION CATEGORY, MISSISSIPPI, 2018

TRANSMISSION CATEGORY	AGE AT HIV DIAGNOSIS	RACE/ETHNICITY							
		BLACK		WHITE		HISPANIC		OTHER <sup>1</sup>	
		NO.	COL %	NO.	COL %	NO.	COL %	NO.	COL %
	<b>TOTAL</b>	169	100%	41	100%	12	100%	5	100%
<b>MSM</b>	<b>13-24</b>	84	50%	9	22%	3	25%	1	20%
	<b>25-34</b>	57	34%	17	41%	6	50%	2	40%
	<b>35-44</b>	19	11%	9	22%	3	25%	0	0%
	<b>45-54</b>	6	3%	4	10%	0	0%	2	40%
	<b>55-64</b>	3	2%	2	5%	0	0%	0	0%
	<b>65+</b>	0	0%	0	0%	0	0%	0	0%
	<b>TOTAL</b>	184	100%	50	100%	11	100%	3	100%
<b>Non-MSM</b>	<b>13-24</b>	28	15%	4	8%	0	0%	1	50%
	<b>25-34</b>	47	26%	11	22%	5	45%	1	50%
	<b>35-44</b>	47	26%	13	26%	2	18%	0	0%
	<b>45-54</b>	36	19%	11	22%	3	27%	1	0%
	<b>55-64</b>	18	10%	9	18%	1	9%	0	0%
	<b>65+</b>	8	4%	2	4%	0	0%	0	0%
	<b>TOTAL</b>	184	100%	50	100%	11	100%	3	100%

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

<sup>1</sup>Includes American Indian/Alaska Native, Asian, and multiple race categories.

Abbreviations: MSM = men who have sex with men, No. = number, col = column

The terms "male" and "female" refer to sex at birth and may not reflect individuals' current gender identity. We do not present data by gender identity in this report, as described on page 10.

**TABLE 6: PEOPLE LIVING WITH HIV BY AGE, RACE/ETHNICITY, AND SEX AT BIRTH, MISSISSIPPI, 2018**

	FEMALE		MALE	
	No.	COL %	No.	COL %
<b>TOTAL</b>	3030	100%	7295	100%
<b>CURRENT AGE</b>				
<13	0	0%	0	0%
13 -24	104	3%	403	5%
25-34	437	14%	1461	20%
35-44	837	28%	1427	20%
45-54	937	31%	2046	28%
55-64	545	18%	1501	21%
65+	170	6%	457	6%
<b>RACE/ETHNICITY</b>				
Black	2444	81%	5055	70%
White	413	14%	1723	24%
Hispanic	73	2%	265	4%
Asian	7	<1%	16	<1%
AI/AN	8	<1%	5	<1%
Other/Multiple <sup>1</sup>	74	2%	199	3%
Unknown	11	<1%	32	<1%

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

The terms "male" and "female" refer to sex at birth and may not reflect individuals' current gender identity. We do not present data by gender identity in this report, as described on page 10.

Abbreviations: AI/AN: American Indian/Alaska Native, No. = number, col = column

<sup>1</sup> Includes Native Hawaiian/Pacific Islander, multiple and unknown race categories.

The terms "male" and "female" refer to sex at birth and may not reflect individuals' current gender identity. We do not present data by gender identity in this report, as described on page 10.

**TABLE 7: PEOPLE LIVING WITH HIV BY AGE AND RACE/ETHNICITY, MISSISSIPPI, 2018**

	BLACK		WHITE		HISPANIC		OTHER <sup>1</sup>	
	NO.	COL %	NO.	COL %	NO.	COL %	NO.	COL %
<b>TOTAL</b>	7499	100%	2136	100%	338	100%	352	100%
<b>CURRENT AGE</b>								
<13	0	0%	0	0%	0	0%	0	0%
13 -24	444	6%	45	2%	9	2%	10	3%
25-34	1570	21%	208	10%	69	20%	51	14%
35-44	1702	23%	372	18%	113	33%	77	22%
45-54	2095	28%	694	32%	96	28%	98	28%
55-64	1295	17%	619	29%	42	12%	89	25%
65+	393	5%	198	9%	9	3%	27	8%

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

<sup>1</sup> Includes AI/AN, Asian, NHOPI, multiple and unknown race categories.

Abbreviations: AI/AN = American Indian or Alaska Native, NHOPI = Native Hawaiian or Other Pacific Islander, No. = number, col = column

**TABLE 8: PEOPLE LIVING WITH HIV BY CURRENT RESIDENCE (COUNTY AND MSA), MISSISSIPPI, 2018**

	URBAN		RURAL		JACKSON MSA		NOT JACKSON MSA		
	NO.	ROW %	NO.	ROW %	NO.	ROW %	NO.	ROW %	
<b>TOTAL</b>	6397	62%	3928	38%	3500	34%	6825	66%	
<b>SEX AT BIRTH</b>									
Male	4576	63%	2719	37%	2408	33%	4887	67%	
Female	1821	60%	1209	40%	1092	36%	1938	64%	
<b>CURRENT AGE</b>									
<13	0	0%	0	0%	0	0%	0	0%	
13-24	318	63%	189	37%	167	33%	340	67%	
25-34	1180	62%	718	38%	666	35%	1232	65%	
35-44	1382	61%	882	39%	767	34%	1497	66%	
45-54	1865	62%	1118	38%	1025	34%	1958	66%	
55-64	1256	61%	790	39%	650	32%	1396	68%	
65+	396	63%	231	37%	225	36%	402	64%	
<b>RACE/ETHNICITY</b>									
Black	4562	61%	2937	39%	2857	38%	4642	62%	
Hispanic	175	52%	163	48%	64	19%	274	81%	
White	1442	68%	694	32%	466	22%	1670	78%	
Other/Multiple <sup>1</sup>	181	59%	128	41%	91	30%	218	70%	
Unknown	37	86%	6	14%	22	51%	21	49%	
<b>TRANSMISSION CATEGORY</b>									
MSM	2724	64%	1552	36%	1334	31%	2942	69%	
Heterosexual	1149	58%	848	42%	667	33%	1330	67%	
MSM/IDU	222	67%	108	33%	82	25%	248	75%	
IDU	279	60%	186	40%	146	31%	319	69%	
NIR/NRR	1969	62%	1197	38%	1235	39%	1931	61%	
Other	54	59%	37	41%	36	40%	55	60%	

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

<sup>1</sup>Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific islander, and multiple races.

Abbreviations: MSA = metropolitan statistical area, MSM = men who have sex with men, NIR = no identified risk, NRR = no reported risk, IDU = injection drug use, No. = number, col = column

The terms "male" and "female" refer to sex at birth and may not reflect individuals' current gender identity. We do not present data by gender identity in this report, as described on page 10.

**TABLE 9: NEW AIDS CASES AND LATE DIAGNOSES BY DEMOGRAPHIC CHARACTERISTICS AND TRANSMISSION CATEGORY, MISSISSIPPI, 2018**

	NEW AIDS CASES		LATE DIAGNOSES <sup>1</sup>	
	NO.	COL %	NO.	ROW % <sup>2</sup>
<b>TOTAL</b>	235	100%	124	29%
<b>SEX AT BIRTH</b>				
Male	159	68%	85	26%
Female	76	32%	39	37%
<b>AGE AT HIV DIAGNOSIS</b>				
<13	0	0%	0	0%
13-24	55	23%	18	15%
25-34	67	29%	29	20%
35-44	54	23%	29	40%
45-54	38	16%	27	45%
55-64	15	6%	17	63%
65+	6	3%	<5	—
<b>RACE/ETHNICITY</b>				
Black	187	80%	102	30%
White	35	15%	18	26%
Hispanic	10	4%	<5	—
Other/Multiple <sup>3</sup>	3	1%	—	—
<b>COUNTY OF RESIDENCE</b>				
Urban	107	46%	54	30%
Rural	128	54%	70	28%
<b>MSA OF RESIDENCE</b>				
Jackson MSA	70	30%	35	26%
Not Jackson MSA	165	70%	89	30%
<b>TRANSMISSION CATEGORY</b>				
MSM	87	37%	49	23%
IDU	5	2%	<5	—
MSM/IDU	5	2%	0	—
Heterosexual	27	13%	29	33%
Blood/pediatric	1	<1%	<5	—
NIR/NRR	110	45%	46	37%

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

<sup>1</sup> Late HIV diagnoses = AIDS diagnoses within 12 months of HIV diagnoses

<sup>2</sup> Percentage of 2017 incident cases

<sup>3</sup> Includes American Indian/Alaska Native, Asian, multiple race and unknown race categories

Abbreviations: MSA = metropolitan statistical area, MSM = men who have sex with men, NIR = no identified risk, NRR = no reported risk, IDU = injection drug use, No. = number, col = column

The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

**TABLE 10. DEATHS AMONG PEOPLE LIVING WITH HIV (ANY CAUSE), MISSISSIPPI, 2018**

	<b>NO.</b>	<b>COL %</b>	<b>CASE FATALITY RATE<sup>1</sup></b>	<b>STANDARDIZED MORTALITY RATIO<sup>2</sup></b>
<b>TOTAL</b>	190	100%	18.4	2.0
<b>SEX AT BIRTH</b>				
Male	124	65%	16.9	1.7
Female	66	35%	21.9	3.7
<b>AGE AT THE TIME OF DEATH</b>				
25-34	16	8%	7.6	3.5
35-44	33	17%	14.5	4.5
45-54	53	29%	19.2	2.9
55-64	57	30%	27.9	1.8
65+	31	16%	46.6	0.9
<b>RACE/ETHNICITY</b>				
Black	144	76%	18.5	—
Hispanic	3	2%	11.5	—
White	35	18%	24.4	—
Other/Multiple <sup>3</sup>	8	4%	17.6	—
<b>COUNTY OF RESIDENCE</b>				
Urban	91	48%	16.2	—
Rural	99	52%	20.9	—
<b>MSA OF RESIDENCE</b>				
Jackson MSA	73	38%	20.9	—
Not Jackson MSA	117	62%	17.1	—
<b>TRANSMISSION CATEGORY</b>				
MSM	50	26%	11.4	—
Heterosexual	36	19%	18.6	—
MSM/IDU	6	3%	25.3	—
IDU	11	6%	29.2	—
Hemophilia/blood transfusion	1	1%	8.4	—
NIR/NRR	86	45%	26.2	—

Table based on HIV surveillance data reported to the MS State Department of Health as of 12/31/2019

n/a Statistic cannot be calculated due to no available population estimate

<sup>1</sup> Per 1,000 people living with HIV in 2018

<sup>2</sup> Standardized mortality ratio (SMR) is calculated as the mortality rate among PLWH divided by the mortality rate among the general Mississippi population, adjusted for age and sex (e.g., 2.0 indicates that PLWH will die twice as fast as someone without HIV of the same age and sex). The SMR is only available for sex at birth and age

<sup>3</sup> Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multiple and unknown race.

Abbreviations: MSA = metropolitan statistical area, MSM = men who have sex with men, IDU = injection drug use, NIR = no identified risk, No. = number, col = column

The terms “male” and “female” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.



# MONITORING AND EVALUATION OF PROGRESS TOWARD EHE GOALS

# Introduction

## MONITORING PROGRESS TOWARD THE GOALS OF THE ENDING THE HIV EPIDEMIC

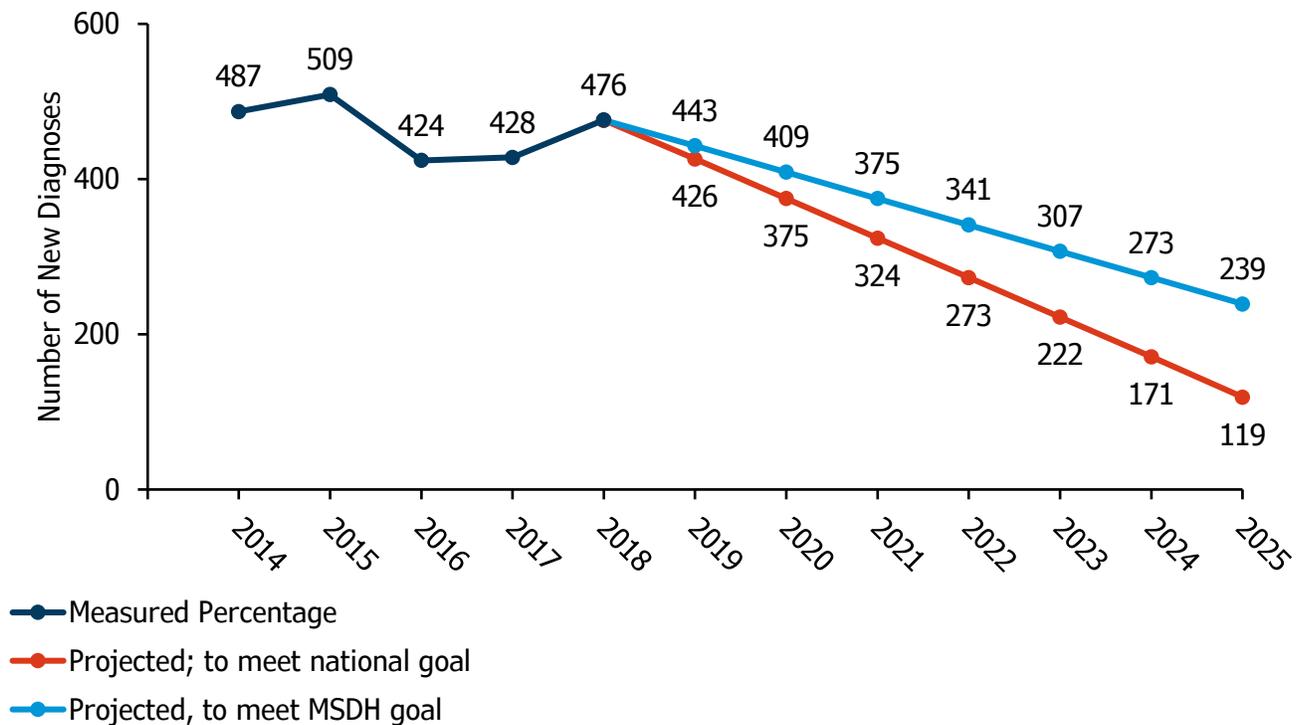
In 2019, the US federal government launched a new national initiative to end the HIV epidemic in the US. The Ending the HIV Epidemic: A Plan for America (EHE) initiative aims to reduce the number of new HIV transmissions by 75% by 2025 and by 90% by 2030. The EHE identified 48 counties and 7 states that are “geographic hotspots” of HIV; Mississippi is one of those 7 states. EHE focuses on four key strategies to end HIV in the US: Diagnose, Treat, Prevent, and Respond. In this section, we present the metrics used to monitor progress toward achieving the goals of these EHE pillars:

1. Diagnose all individuals with HIV as early as possible
2. Treat people with HIV rapidly and effectively to reach sustained viral suppression
3. Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs)
4. Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them

# Overall EHE Goal: Reduce New HIV Diagnoses

METRIC DETAILS	
<b>NUMBER OF NEW HIV DIAGNOSES</b>	<b>DEFINITION:</b> THE NUMBER OF PEOPLE WHO ARE IDENTIFIED AS HAVING HIV (EITHER VIA LABORATORY TESTING OR PHYSICIAN REPORT) IN MISSISSIPPI WHO HAVE NOT BEEN DIAGNOSED PREVIOUSLY IN ANOTHER JURISDICTION.
	<b>CALCULATION:</b> NO CALCULATION REQUIRED (SEE DEFINITION ABOVE).
	<b>MSDH GOAL:</b> REDUCE THE NUMBER OF INDIVIDUALS NEWLY DIAGNOSED WITH HIV BY 50% BY 2025.

**Figure 1: Trend in the number of individuals newly diagnosed with HIV, 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



## NEW HIV DIAGNOSES

### HOW THIS RELATES TO EHE

The overall goal of the EHE is to reduce the number of individuals who acquire HIV. The number of individuals newly diagnosed with HIV is the central metric for measuring new HIV transmissions in a region. Changes to this metric reflect the overall success or failure of the EHE program. One limitation to this metric is that an increase in the number of individuals newly diagnosed with HIV may reflect increases in HIV testing and identification of individuals living with HIV rather than true increases in HIV transmission. CDC has methods to estimate the number of individuals who acquire HIV in a given year; this is monitored and reported by CDC as the “number of new HIV infections”. Another limitation of this metric is that it is sensitive to changes in population size (i.e., if people move out of an area, the number of new diagnoses may decline because there are fewer people).

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

The number of individuals diagnosed with HIV in MS has remained relatively stable in recent years (**FIGURE 1**). In 2018, there were 476 individuals newly diagnosed with HIV in Mississippi, which represents a change of less than 1% since 2013. Fewer than 240 individuals are to be diagnosed with HIV in 2025 in order to meet MS’s goal of reducing the number of HIV transmissions by 50% by 2025. To meet the national goal of a 50% reduction in the number of new HIV diagnoses by 2025, there would need to be fewer than 120 individuals diagnosed with HIV in MS in 2025. Detailed descriptions of the characteristics of individuals diagnosed with HIV in MS in 2018 are available in **TABLE 1** on page 17.

# Pillar 1: Diagnose All Individuals with HIV as Early as Possible

## INTRODUCTION TO PILLAR 1

Pillar 1 of the Ending the Epidemic Initiative is "Diagnose." A critical component of reducing HIV transmission is ensuring that all people know their HIV status and that people who acquire HIV learn their status as quickly as possible. Once a person is aware of their status, they can make informed health decisions and prevent transmission of HIV to their partners and their community. The key to achieving this is testing; activities that lead to an increase in HIV testing will allow more individuals to learn their HIV status and will decrease the amount of time between when a person acquires HIV and when they become aware of it.

The metrics that MSDH is using to monitor progress in Pillar 1 are "Knowledge of HIV Status" and "Late Diagnoses." A proportion of people living with HIV are unaware of their status, and "Knowledge of HIV Status" uses a CDC modelling technique to estimate the size of this population. Late diagnoses represent a situation where someone has lived many years without knowing their status and develops AIDS within 12 months of their HIV diagnoses. The goal of the EHE initiative is to use testing to reduce the number of people who are "late diagnoses," indicating that PLWH are able to engage in treatment before HIV can have a negative effect on their health or be transmitted to others.

### ACTIVITIES IN THE NEXT YEAR TO ACHIEVE MSDH AND NATIONAL PILLAR 1 EHE GOALS

MSDH is undertaking the following activities to diagnose all individuals with HIV as early as possible:

- Disseminate educational presentation on opt-out HIV testing, perinatal screening and Mississippi reporting requirements and protocols
- Create tool kit to use with clinics with common implementation challenges, tried solutions and snapshots of success for implementation of routine opt-out HIV screening
- Send a provider letter to all Medicaid providers in MS regarding opt-out HIV testing recommendations and information on PrEP
- Increase the number of community agencies providing routine opt-out testing, including Mississippi Department of Corrections sites, Mississippi Department of Mental Health, and additional community services
- Work with Latino/a and Transgender community leaders to better understand facilitators of and barriers to increased testing and linkage to care
- Pilot a project to adapt clinic electronic health records to include HIV testing guidelines

### PILLAR 1 METRIC DETAILS

<p><b>KNOWLEDGE OF HIV STATUS</b></p>	<p><b>DEFINITION:</b> PERCENTAGE OF PEOPLE LIVING WITH HIV WHO ARE AWARE OF THEIR HIV STATUS</p> <p><b>CALCULATION:</b> ESTIMATED USING CDC'S CD4-DEPLETION MODEL, WHICH RELATES INDIVIDUALS' FIRST CD4 TEST RESULTS TO THE AMOUNT OF TIME BETWEEN ACQUISITION OF HIV AND HIV DIAGNOSIS (Song et al., <i>J Acquir Immune Defic Syndr</i> 2017).</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF INDIVIDUALS AWARE OF THEIR HIV STATUS TO <b>90%</b> BY 2025</p>
<p><b>LATE HIV DIAGNOSIS</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF INDIVIDUALS WHO ARE DIAGNOSED WITH AIDS WITHIN 12 MONTHS OF THEIR HIV DIAGNOSIS</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE NEWLY DIAGNOSED WITH HIV IN A GIVEN YEAR WHO WERE DIAGNOSED WITH AIDS WITHIN 12 MONTHS, DIVIDED BY THE TOTAL NUMBER OF PEOPLE DIAGNOSED WITH HIV IN THAT YEAR.</p> <p><b>MSDH GOAL:</b> DECREASE THE PERCENTAGE OF INDIVIDUALS WHO ARE DIAGNOSED WITH HIV LATE, TO <b>&lt;20%</b> AMONG BOTH MALES AND FEMALES BY 2025</p>

### KNOWLEDGE OF HIV STATUS

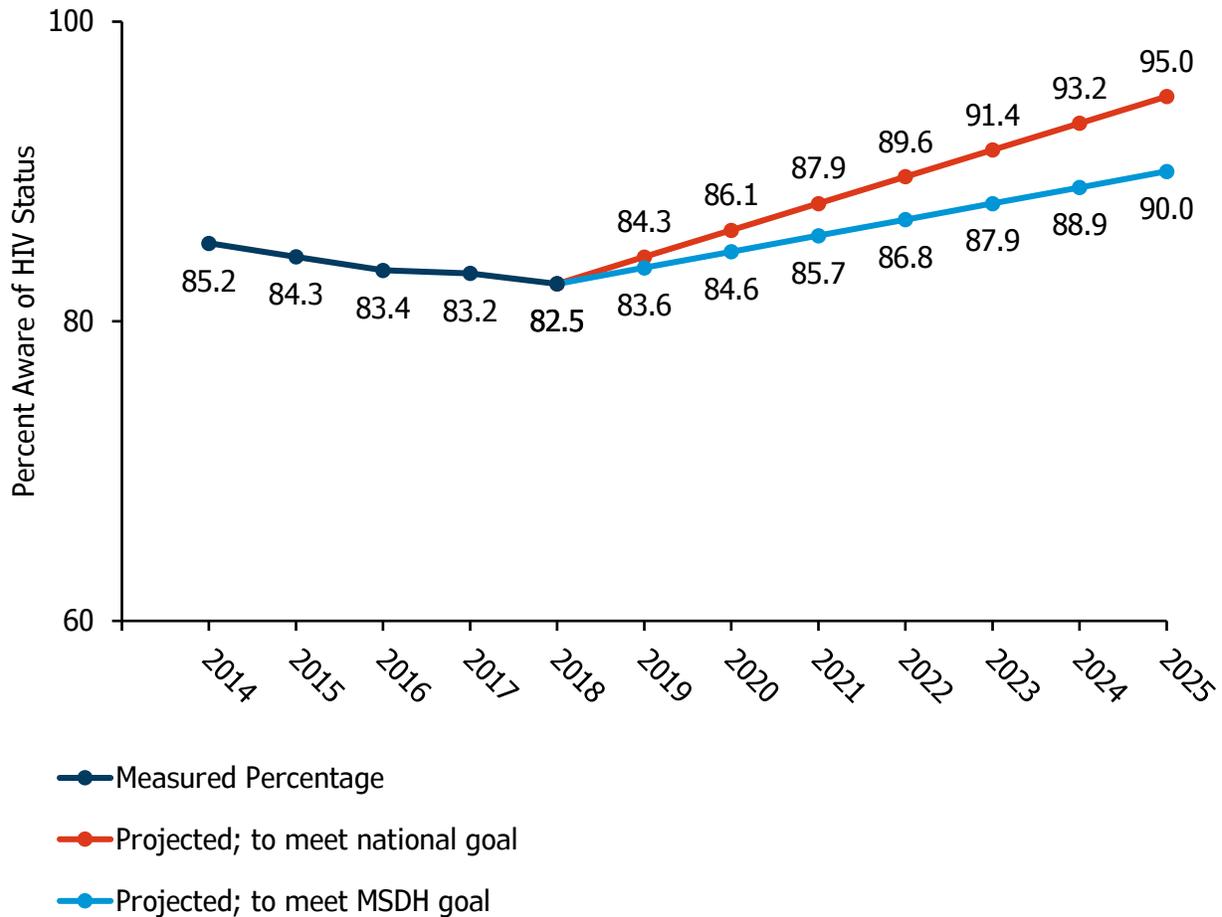
**HOW THIS RELATES TO THE EHE INITIATIVE**

Activities that lead to an increase in HIV testing will allow more individuals to learn their HIV status, which then provides an opportunity to start HIV treatment.

**SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS**

The percentage of individuals living with HIV in MS who are aware of their HIV status has remained relatively stable in recent years (**FIGURE 1**). In 2018, an estimated 83% of Mississippians living with HIV were aware of their HIV status. By 2025, MSDH aims to increase this percentage to 90%.

**Figure 1. Percent of people living with HIV who are aware of their HIV status in MS, 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



## LATE HIV DIAGNOSIS

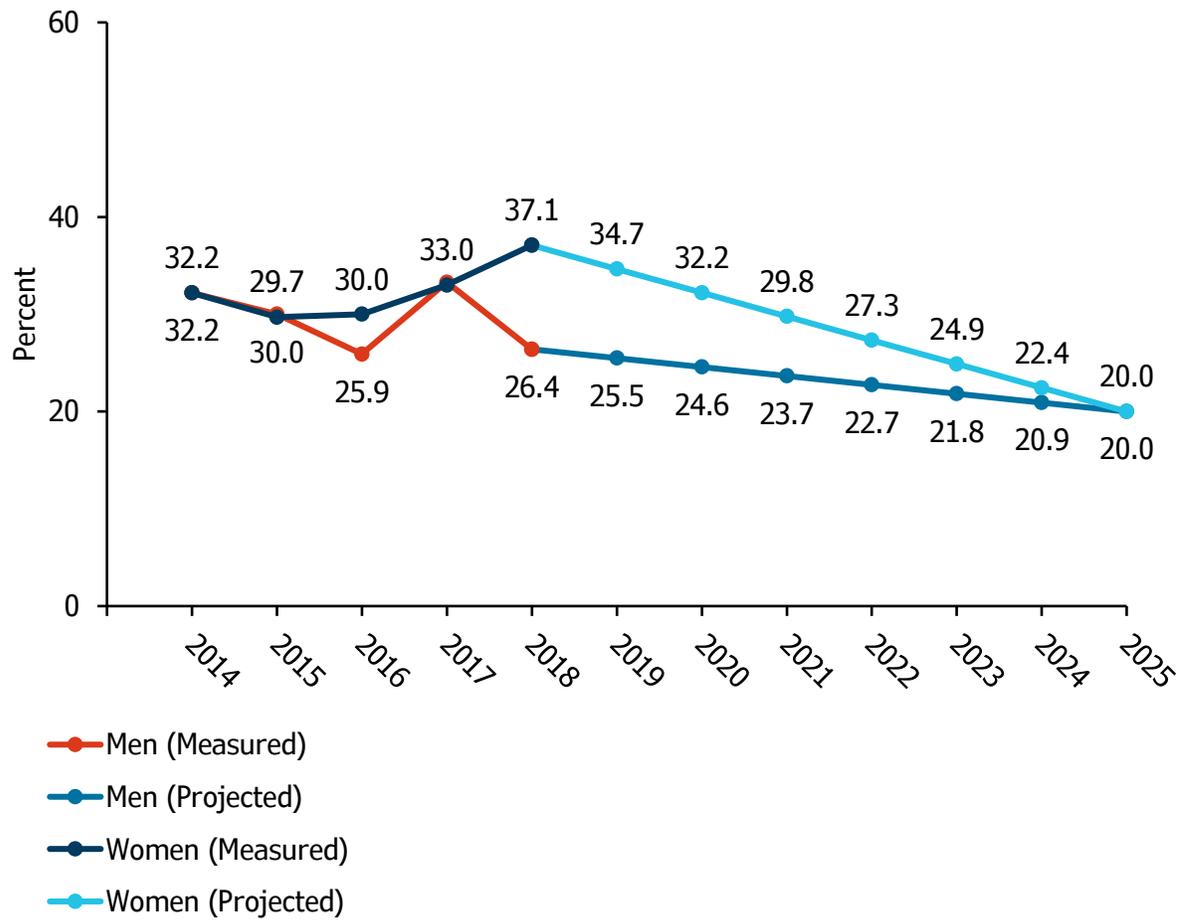
### HOW THIS RELATES TO EHE

A late HIV diagnosis suggests that many years have elapsed between when a person acquired HIV and when they were first diagnosed with HIV. Activities that promote more frequent HIV testing will allow people to learn their status earlier and receive HIV treatment sooner.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

Between 2014 and 2018, the percentage of individuals categorized as late HIV diagnosis declined slightly, from 32% in 2014 to 29% in 2018. In 2018, the percentage of women categorized as late HIV diagnoses (37%) was substantially higher than the percentage of men categorized as late HIV diagnoses (26%, **FIGURE 2**). MSDH aims to reduce the percentage of late HIV diagnoses to less than 20% by 2025 for both men and women.

**Figure 2. Percent of late HIV diagnosis (AIDS Diagnoses within 12 months of HIV Diagnosis) in MS by sex at birth<sup>a</sup>, 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



<sup>a</sup>The terms “men” and “women” refer to sex at birth and may not reflect individuals’ current gender identity. We do not present data by gender identity in this report, as described on page 10.

**Table 1: Publicly Funded HIV Tests in Mississippi, 2014-2018**

YEAR	NUMBER OF PUBLICLY-FUNDED HIV TESTS	NUMBER OF FUNDED TESTING SITES	NUMBER OF INDIVIDUALS DIAGNOSED VIA PUBLICLY-FUNDED TESTING	PERCENT OF PUBLICLY-FUNDED HIV TESTS THAT WERE POSITIVE	PERCENT OF ALL NEW HIV DIAGNOSES THAT WERE DIAGNOSED BY PUBLICLY FUNDED TESTING <sup>1</sup>
2014	26,415	151	254	0.97%	49%
2015	77,298	159	693	0.89%	51%
2016	63,734	148	468	0.71%	39%
2017	57,093	149	397	0.69%	38%
2018	51,519	149	372	0.72%	36%

<sup>1</sup>The number of individuals newly diagnosed with HIV via publicly funded HIV testing divided by the number of new HIV diagnoses in MS that year.

### SPECIAL SECTION: PUBLICLY FUNDED HIV TESTING

MSDH provides funding for organizations to conduct publicly funded HIV testing. Although these data are not used specifically for the purposes of monitoring progress toward Pillar 1 of the EHE, they are used by MSDH to evaluate funded HIV testing activities. The number of funded testing sites remained relatively stable between 2014 and 2018. During that time frame, approximately 70% of funded testing sites were MSDH clinics, with the remainder being contracted testing sites.

Between 2014 and 2018, the total number of publicly funded HIV tests increased from 26,415 tests to 51,519 tests (**TABLE 1, ABOVE**). Although the total number of publicly funded HIV tests declined between 2016 and 2018 (from 63,734 to 51,519), the percentage of publicly funded HIV tests that were positive remained relatively stable.

In 2018, about one-third of all new HIV diagnoses in MS were diagnosed via publicly funded HIV testing, which is lower than that observed in the previous five years. Given that the percent of publicly-funded HIV tests that were positive has remained relatively stable in the past five years, the decline could be attributable to more HIV diagnoses occurring in facilities whose HIV testing programs are not publicly funded.

# Pillar 2: Treat HIV Rapidly and Effectively to Reach Sustained Viral Suppression

## INTRODUCTION TO PILLAR 2

Pillar 2 of Ending the Epidemic is "Treat." Following diagnosis, it is critical that all people living with HIV begin treatment as quickly as possible. With successful treatment, PLWH will achieve viral suppression, where no virus or only a very small amount of virus can be detected in their blood. In this state, PLWH can live healthy normal lives and cannot transmit HIV to a sexual partner.

The metrics that MSDH is using to monitor progress in Pillar 2 are "Linkage to Care within 7 Days," "Linkage to Care within 30 Days," "Viral Suppression Within 6 Months," "Receipt of HIV Care," "Viral Suppression," "Re-Engagement in HIV Care", and "HIV/AIDS Standardized Mortality Ratio." The linkage to care metrics and "Viral Suppression Within 6 months" focus on newly diagnosed PLWH getting access to treatment as soon as possible. "Receipt of HIV Care" and "Viral Suppression" measure the ability of all PLWH to consistently access and receive successful HIV treatment. "Re-Engagement in HIV Care" measures how well people who lose access to care are able to return, and "HIV/AIDS Standardized Mortality Ratio" is a measure of how long PLWH are living; the goal of MSDH is for PLWH to live as long as people who do not have HIV.

### ACTIVITIES IN THE NEXT YEAR TO ACHIEVE MSDH AND NATIONAL PILLAR 2 EHE GOALS

MSDH is undertaking the following activities to treat HIV rapidly and effectively to reach sustained viral suppression.

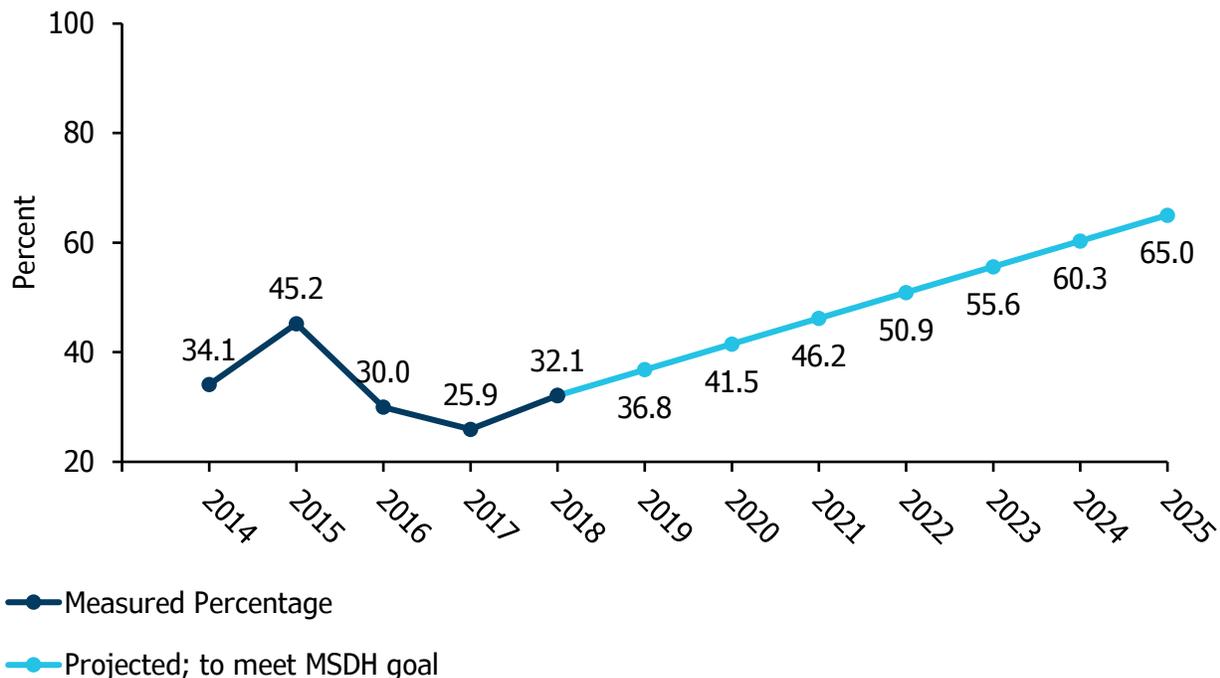
- Investigate the feasibility of implementing rapid-start programs in jails in highly impacted counties
- Monitor timeliness of laboratory reporting and entry of labs into surveillance systems. Provide technical assistance to providers with reporting delays
- Hold community discussions regarding re-engagement in care to learn the community’s concerns and increase health department credibility
- Hire dedicated Re-engagement to Care Coordinator to lead re-engagement activities
- Work with HRSA and other partners to identify creative solutions to ongoing transportation challenges, especially in rural areas
- Implement health literacy campaign designed to educate people with HIV and the public on how ART adherence leads to viral suppression and no risk of sexual transmission
- Research and implement a training program for all staff at subgrantee and contracted agencies to receive baseline training on trauma-informed care, culturally competent care and racial and implicit bias in healthcare delivery

#### PILLAR 2 METRIC DETAILS

<p><b>LINKAGE TO CARE WITHIN 7 DAYS</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF ALL INDIVIDUALS WHO WERE NEWLY DIAGNOSED WITH HIV WHO WERE LINKED TO HIV CARE WITHIN 7 DAYS OF HIV DIAGNOSIS</p> <p><b>CALCULATION:</b> THE NUMBER OF NEW HIV DIAGNOSES IN A GIVEN YEAR THAT HAD A VIRAL LOAD OR CD4 LAB WITHIN 7 DAYS OF INITIAL HIV DIAGNOSIS DIVIDED BY THE TOTAL NUMBER OF PEOPLE NEWLY DIAGNOSED WITH HIV IN A GIVEN YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF NEWLY DIAGNOSED INDIVIDUALS LINKED TO CARE WITHIN 7 DAYS TO <b>65%</b> BY 2025</p>
<p><b>LINKAGE TO CARE WITHIN 30 DAYS</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF ALL INDIVIDUALS WHO WERE NEWLY DIAGNOSED WITH HIV WHO WERE LINKED TO HIV CARE WITHIN 30 DAYS OF HIV DIAGNOSIS</p> <p><b>CALCULATION:</b> THE NUMBER OF NEW HIV DIAGNOSES IN A GIVEN YEAR THAT HAD A VIRAL LOAD OR CD4 WITHIN 30 DAYS OF INITIAL HIV DIAGNOSIS DIVIDED BY THE TOTAL NUMBER OF NEW HIV DIAGNOSES IN A GIVEN YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF NEWLY DIAGNOSED INDIVIDUALS LINKED TO CARE WITHIN 30 DAYS TO <b>95%</b> BY 2025</p>
<p><b>VIRAL SUPPRESSION WITHIN 6 MONTHS</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF ALL INDIVIDUALS NEWLY DIAGNOSED WITH HIV WHO HAD A VIRAL LOAD &lt;200 COPIES/ML WITHIN 6 MONTHS OF THEIR INITIAL HIV DIAGNOSIS</p> <p><b>CALCULATION:</b> THE NUMBER OF NEW HIV DIAGNOSES IN A GIVEN YEAR WITH A VIRAL LOAD &lt;200 COPIES/ML WITHIN 6 MONTHS OF INITIAL DIAGNOSIS DIVIDED BY THE TOTAL NUMBER OF NEW HIV DIAGNOSES IN A GIVEN YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF NEWLY DIAGNOSED INDIVIDUALS WITH A VIRAL LOAD &lt;200 COPIES/ML (WITHIN 6 MO. OF INITIAL DIAGNOSIS) TO <b>90%</b> BY 2025</p>
<p><b>RECEIPT OF HIV CARE</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF ALL INDIVIDUALS LIVING WITH HIV WHO HAD AT LEAST ONE VIRAL LOAD, CD4 OR HIV-1 GENOTYPE LAB IN THE PAST 12 MONTHS</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE LIVING WITH HIV IN A GIVEN YEAR WHO HAD A VIRAL LOAD, CD4 OR HIV-1 GENOTYPE LAB IN THE PAST 12 MONTHS DIVIDED BY THE TOTAL NUMBER OF PEOPLE LIVING WITH HIV IN MISSISSIPPI IN A GIVEN YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENT OF ALL PEOPLE LIVING WITH HIV WHO HAD AT LEAST ONE VIRAL LOAD OR CD4 LAB IN THE PAST 12 MONTHS TO <b>75%</b> BY 2025</p>

PILLAR 2 METRIC DETAILS (CONT.)	
<b>VIRAL SUPPRESSION</b>	<p><b>DEFINITION:</b> THE PERCENTAGE OF ALL PEOPLE LIVING WITH HIV WHO HAD A SUPPRESSED VIRAL LOAD IN A GIVEN YEAR</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE LIVING WITH HIV IN A GIVEN YEAR WHO HAD A VIRAL LOAD &lt;200 COPIES/ML IN THAT YEAR DIVIDED BY THE NUMBER OF PEOPLE LIVING WITH HIV IN MS IN A GIVEN YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF ALL INDIVIDUALS WITH A SUPPRESSED VIRAL LOAD AMONG TO <b>70%</b> BY 2025</p>
<b>RE-ENGAGEMENT IN HIV CARE</b>	<p><b>DEFINITION:</b> THE PERCENTAGE OF ALL INDIVIDUALS CONFIRMED TO BE OUT-OF-CARE WHO HAD A SUPPRESSED VIRAL LOAD WITHIN 6 MONTHS OF OUTREACH BY MSDH</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE LIVING WITH HV WHO WERE VIRALLY SUPPRESSED WITHIN 6 MONTHS OF OUTREACH BY MSDH DIVIDED BY THE NUMBER OF PEOPLE LIVING WITH HIV CONFIRMED TO BE OUT-OF-CARE IN A GIVEN YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF ALL INDIVIDUALS WITH A SUPPRESSED VIRAL LOAD AMONG THOSE CONFIRMED TO BE OUT-OF-CARE (W/IN 6 MO. OF OUTREACH BY MSDH) TO <b>75%</b> BY 2025</p>
<b>HIV/AIDS STANDARDIZED MORTALITY RATIO</b>	<p><b>DEFINITION:</b> THIS STANDARDIZED MORTALITY RATIO (SMR) REPRESENTS THE AGE- AND SEX- ADJUSTED MORTALITY RATE AMONG PEOPLE LIVING WITH HIV RELATIVE TO THE GENERAL POPULATION OF MISSISSIPPIANS (E.G., 2.0 INDICATES THAT A PERSON LIVING WITH HIV WILL DIE AT A RATE THAT IS 2.0 TIMES HIGHER THAN SOMEONE WITHOUT HIV OF THE SAME AGE AND SEX)</p> <p><b>CALCULATION:</b> THE MORTALITY RATE AMONG PEOPLE LIVING WITH HIV DIVIDED BY THE MORTALITY RATE AMONG THE GENERAL MISSISSIPPI POPULATION, ADJUSTED FOR AGE AND SEX</p> <p><b>MSDH GOAL:</b> DECREASE THE STANDARD MORTALITY RATIO OF PEOPLE LIVING WITH HIV RELATIVE TO THE GENERAL POPULATION <b>BY 25%</b> BY 2025</p>

**Figure 1a. Trends in the percent of Individuals newly diagnosed with HIV who were linked to care within 7 days of diagnosis, 2014-2018, and estimated trend needed to achieve the MSDH EHE goal**



## LINKAGE TO CARE WITHIN 7 DAYS

### HOW THIS RELATES TO THE EHE INITIATIVE

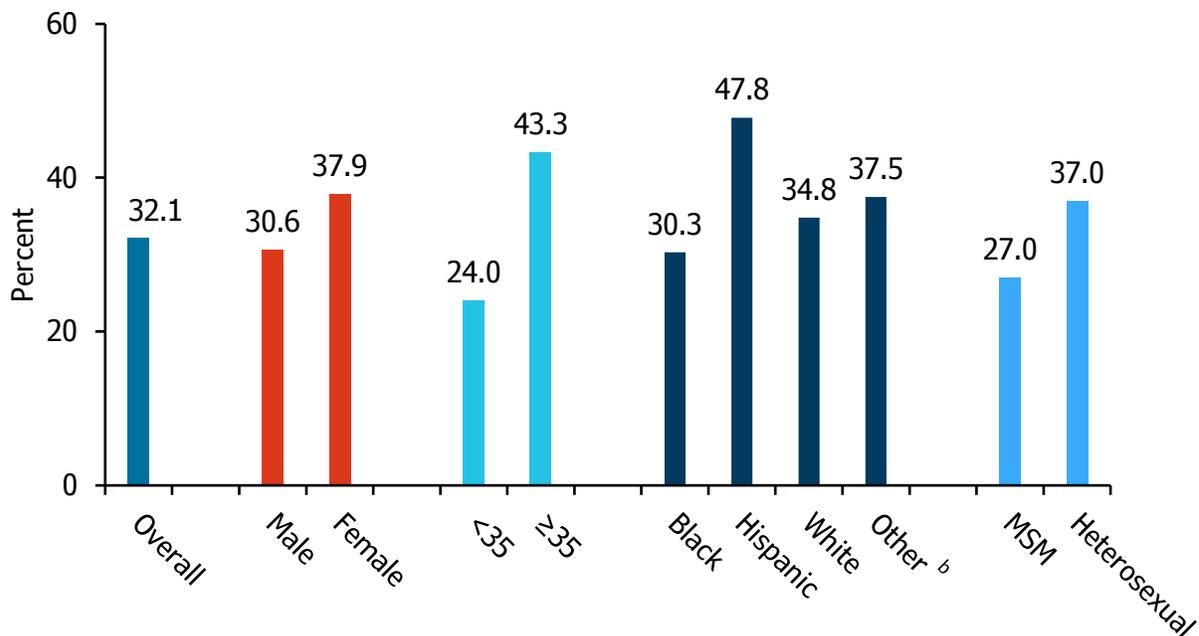
Initiatives that rapidly connect newly HIV-diagnosed individuals to care within a 7-day period allows for an earlier initiation of antiretroviral therapy and linkage to ongoing HIV care, ultimately improving the health of the individual and reducing the risk of HIV transmission. This metric also aligns with MSDH activities to promote initiation of ART on the same day that a person is diagnosed with HIV (also known as “same-day ART start” or “rapid ART initiation”).

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

The percentage of individuals newly diagnosed with HIV who were linked to care within 7 days of diagnosis decreased from 34.1% in 2014 to 25.9% in 2017 (**FIGURE 1A**). This increased to 32.1% in 2018, but substantial progress must be made to achieve MSDH’s 2025 target of linking 65% of all individuals newly diagnosed with HIV to care within 7 days. There is currently no national goal for this metric.

In 2018, a lower percentage of men were linked to care within 7 days compared to women (31% vs 38%; **FIGURE 1B, TABLE 1 ON PAGE 17**). There are noticeable disparities in linkage to care within 7 days by age, with only 24% of individuals less than 35 years old linking to care within 7 days compared to 43% of individuals aged 35 years old or older. Additionally, there are disparities in linkage to care by race. Among the 353 individuals diagnosed with HIV reporting Black race, only 30% were linked to care within 7 days. This was noticeably lower than the percentage linked to care among individuals reporting White (35%) and Hispanic/Latino (48%) race or ethnicity. The percentage linked to care within 7 days was lowest (27%) among individuals categorized as MSM. Of those categorized as injection drug use transmission or heterosexual transmission, the percent linked to care within 7 days were 33% and 37%, respectively.

**Figure 1b: Percentage of individuals linked to care within 7 days of HIV diagnosis in 2018, stratified by sex at birth, age, race/ethnicity, and transmission category <sup>a</sup>**



<sup>a</sup>Only transmission categories with large numbers are shown.

<sup>b</sup>Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multiple and unknown race

## LINKAGE TO CARE WITHIN 30 DAYS

### HOW THIS RELATES TO THE EHE INITIATIVE

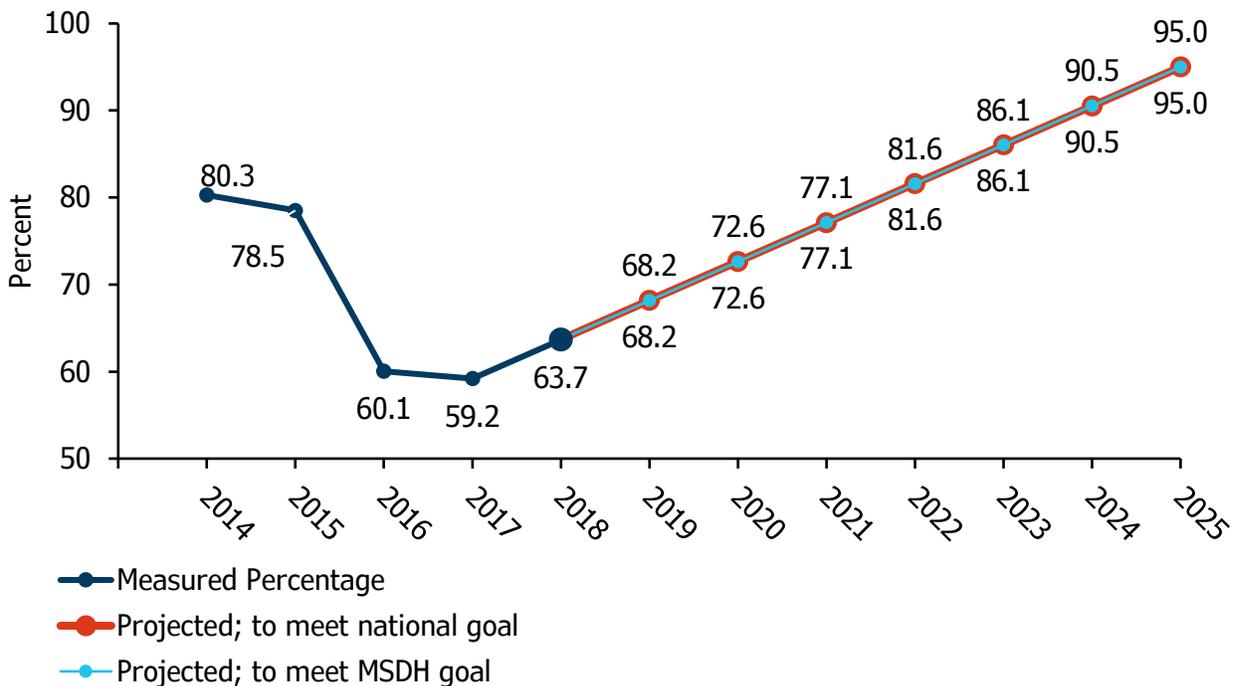
Initiatives that rapidly connect newly diagnosed individuals to care within a 30-day period allows for an earlier initiation of antiretroviral therapy and linkage to ongoing HIV care, ultimately improving the health of the individual and reducing the risk of HIV transmission. This metric also aligns with MSDH activities to promote rapid ART initiation.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

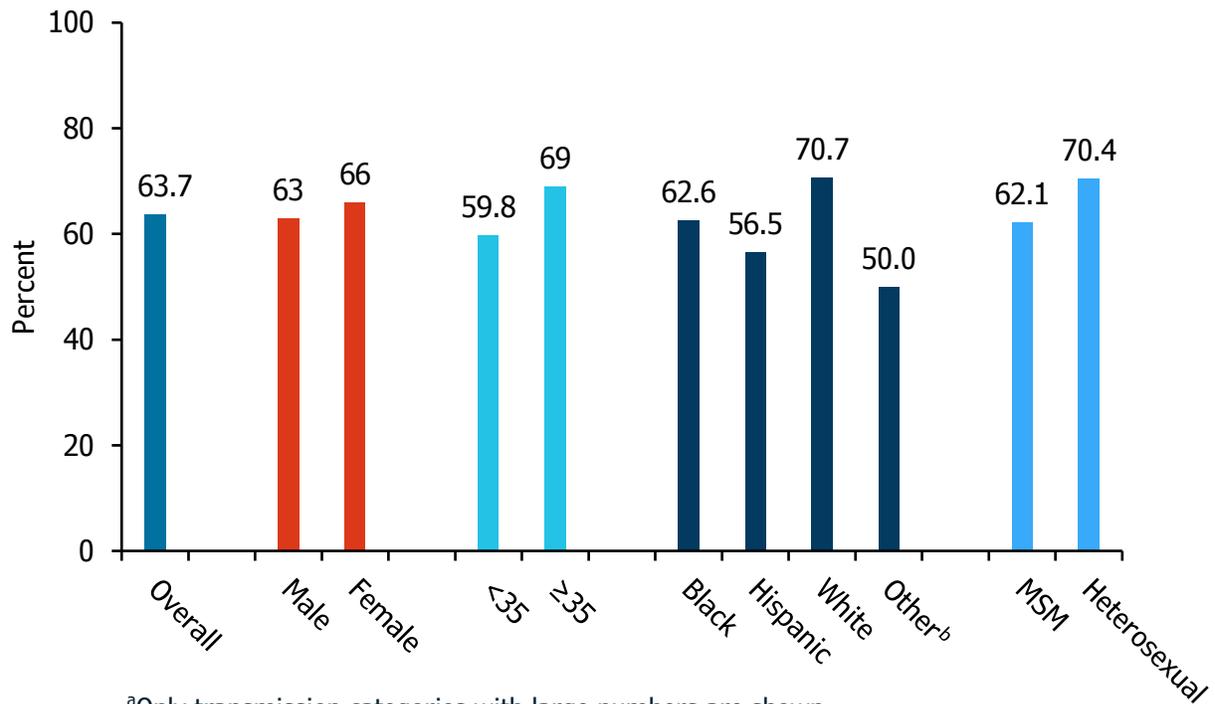
Between 2014 and 2018, the percentage of individuals newly diagnosed with HIV who were linked to care within 30 days of HIV diagnosis decreased, from 80.3% in 2014 to 63.7% in 2018 (**FIGURE 2A**). This reason for this decline is multi-faceted and likely includes access to care, stigma, competing priorities with the increase in sexually transmitted infections, especially syphilis. To achieve the national goal, 95% of newly diagnosed people in Mississippi would need to be linked to care within 30 days of their diagnosis.

In 2018, a slightly lower percentage of men were linked to care within 30 days after HIV diagnosis compared to women (63% vs. 66%; **FIGURE 2B, TABLE 1 ON PAGE 17**). Among people less than 35 years of age, a lower percentage were linked to care within 30 days as compared to those 35 years of age or older (60% vs. 69%). There is a noticeable disparity in linkage to care by race and ethnicity, where the percentage of those linked to care within 30 days was lowest for individuals identifying as Hispanic (57%) and Black (63%) as compared to those identifying as White (71%). Individuals categorized as heterosexual transmission were the most likely to be linked to care in 30 days (70%), followed by those categorized as MSM (62%) and IDU (50%) transmission.

**Figure 2a: Trends in the percent of individuals newly diagnosed with HIV who were linked to care within 30 days of diagnosis, 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



**Figure 2b: Percentage of individuals linked to care within 30 days of HIV diagnosis in 2018, stratified by sex at birth, age, race/ethnicity, and transmission category<sup>a</sup>**



<sup>a</sup>Only transmission categories with large numbers are shown.

<sup>b</sup>Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multiple and unknown race

## VIRAL SUPPRESSION WITHIN 6 MONTHS

### HOW THIS RELATES TO THE EHE INITIATIVE

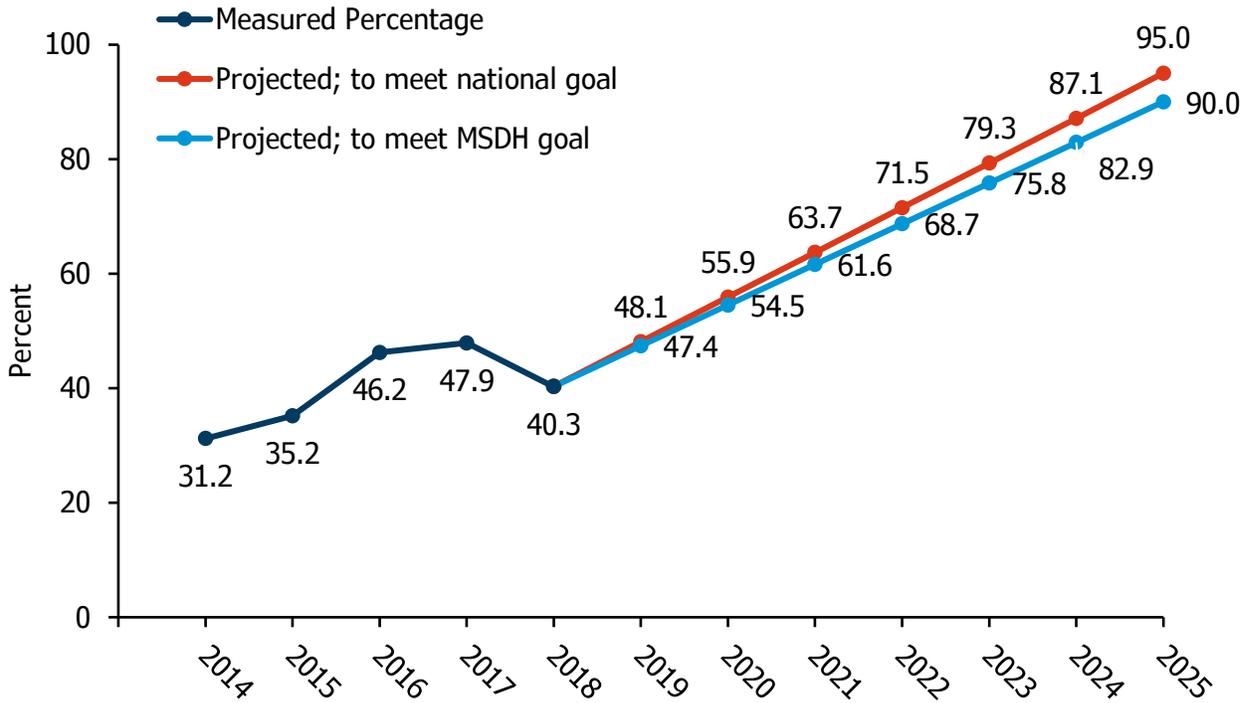
Increasing rapid and efficient initiation of treatment after HIV diagnosis allows for earlier viral suppression, which is an indication of successful HIV treatment. Becoming virally suppressed within 6 months of diagnosis suggests that an individual has linked to care rapidly and has sustained engagement in HIV care. This metric aligns with MSDH activities to promote rapid linkage to care after an initial HIV diagnosis and increasing ART adherence through telehealth visits.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

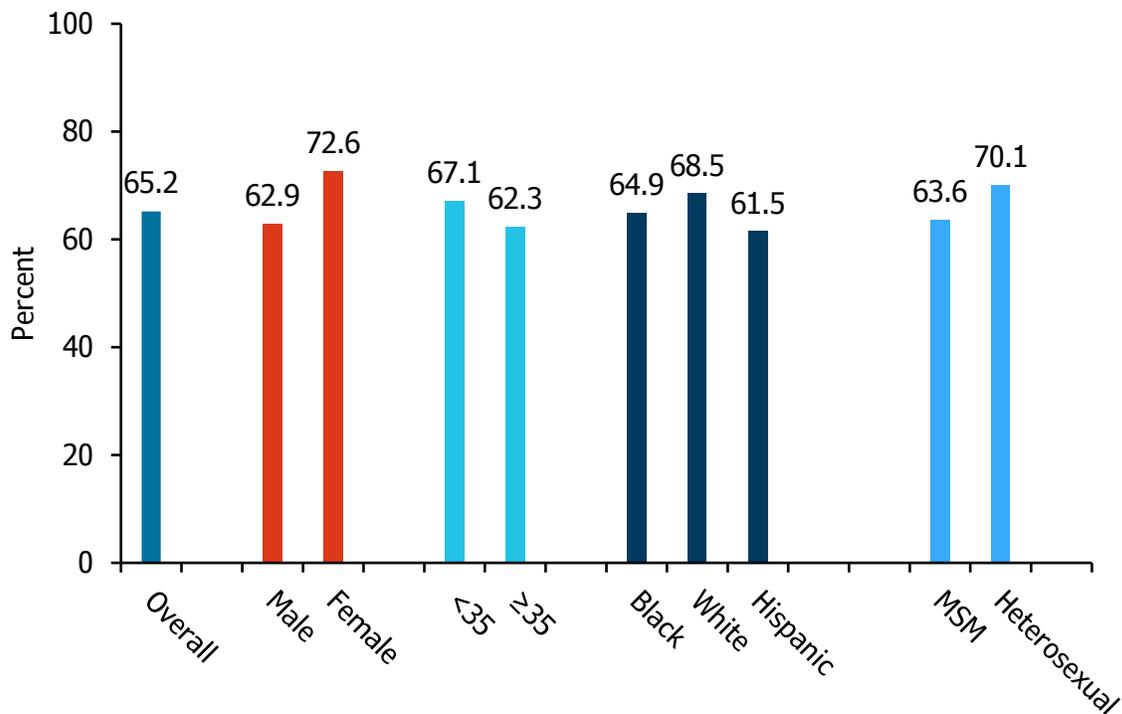
The percentage of individuals newly diagnosed with HIV with a viral load <200 copies/mL within 6 months of initial diagnosis has steadily increased from 31.2% in 2014 to 40% in 2018 (**FIGURE 3A**). The MSDH target by 2025 is to have 90% of individuals virally suppressed within 6 months of their HIV diagnosis. The national goal aims to have 95% of newly diagnosed individuals virally suppressed within 6 months of diagnosis.

In 2018, a lower percentage of men were virally suppressed within 6 months of initial diagnosis compared to women (63% vs. 73%; **FIGURE 3B**). Among people less than 35 years of age, a slightly higher percentage were virally suppressed within 6 months as compared to those who were 35 years of age or older (67% vs. 62%). By race and ethnicity, the percentage of those virally suppressed within 6 months was lower for individuals identifying as Hispanic (62%) and Black (65%) as compared to those identifying as White (67%). Individuals categorized as heterosexual transmission were more likely to be virally suppressed within 6 months (70%) as compared to those categorized as MSM (64%) transmission.

**Figure 3a: Trends in the percent of individuals newly diagnosed with HIV who were virally suppressed within 6 months of HIV diagnosis, 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



**Figure 3b: Percentage of individuals virally suppressed within 6 months of HIV diagnosis in 2018, stratified by sex at birth, age, race/ethnicity, and transmission category<sup>a</sup>**



<sup>a</sup>Only transmission categories with large numbers are shown.

## RECEIPT OF HIV CARE

### HOW THIS RELATES TO THE EHE INITIATIVE

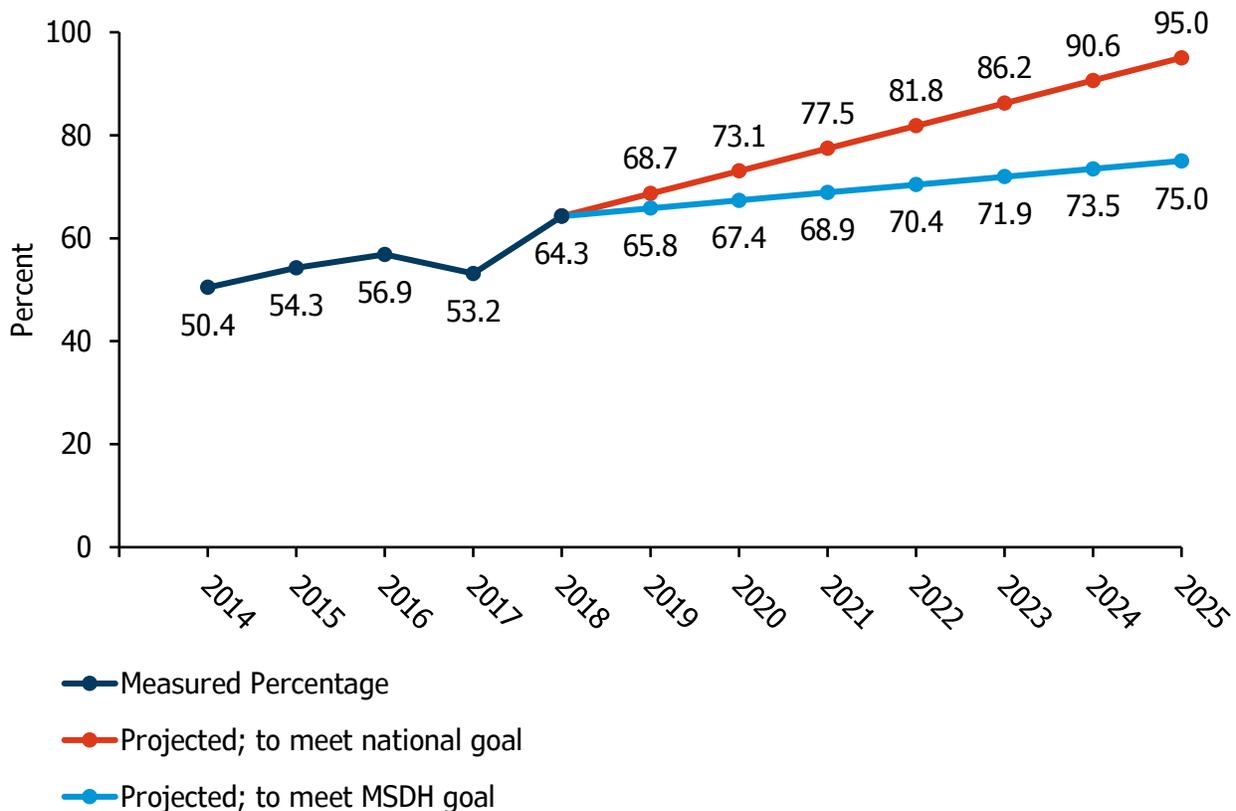
The percentage of individuals who have a viral load, CD4 or HIV-1 genotype lab completed within a given year indicates the proportion of people living with HIV who are receiving HIV laboratory tests. This metric aligns with MSDH activities to promote ongoing and sustained medical care for people living with HIV.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

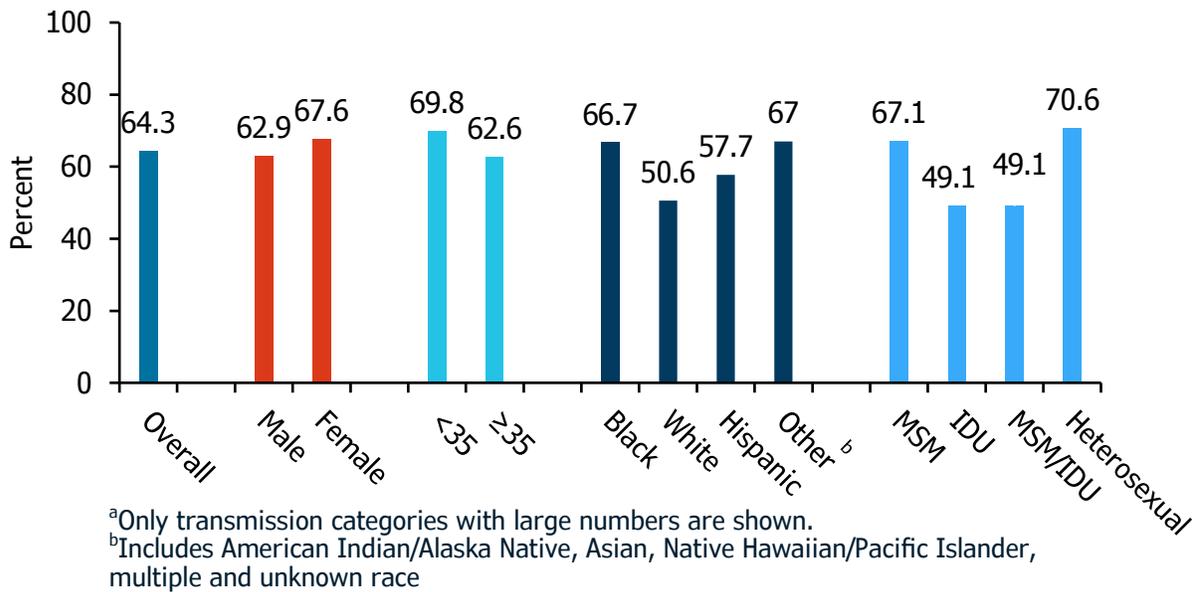
The percentage of individuals living with HIV who had at least one viral load, CD4 or HIV-1 genotype lab in the past 12 months increased from 50% in 2014 to 64% in 2018 (**FIGURE 4A**). MSDH aims to increase this percentage to 75% by 2025. To meet the national goal, 95% of people living with HIV in Mississippi would need to have at least one viral load, CD4 or HIV-1 genotype lab in the previous 12 months.

In 2018, the percentage of men that received either a viral load, CD4, or HIV-1 genotype lab in 2018 was less than the percentage of women (63% vs 68%; **FIGURE 4B, TABLE 2 ON PAGE 18**). There were disparities in engagement in care by age, where 70% of people living with HIV who were less than 35 years of age had a lab in 2018 as compared to 63% of those who were 35 years of age or older. People reporting Black race were more likely to receive either a viral load, CD4 or HIV-1 genotype lab (67%) as compared to individuals reporting Hispanic (51%) or White (58%) race/ethnicity. The percentage of individuals with at least one care visit in 2018 was higher among those categorized as heterosexual (71%) compared to those categorized as MSM (68%), IDU alone (49%) or MSM/IDU (49%).

**Figure 4a: Trends in the percent of individuals living with HIV who received care, 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



**Figure 4b: Percentage of individuals living with HIV who received care in 2018, stratified by sex at birth, age, race/ethnicity, and transmission category<sup>a</sup>**



## VIRAL SUPPRESSION

### HOW THIS RELATES TO THE EHE INITIATIVE

Initiatives that increase viral load suppression via antiretroviral treatment allow for less HIV transmission and better health outcomes for people living with HIV. This metric aligns with MSDH activities to promote ongoing and sustained medical care for people living with HIV.

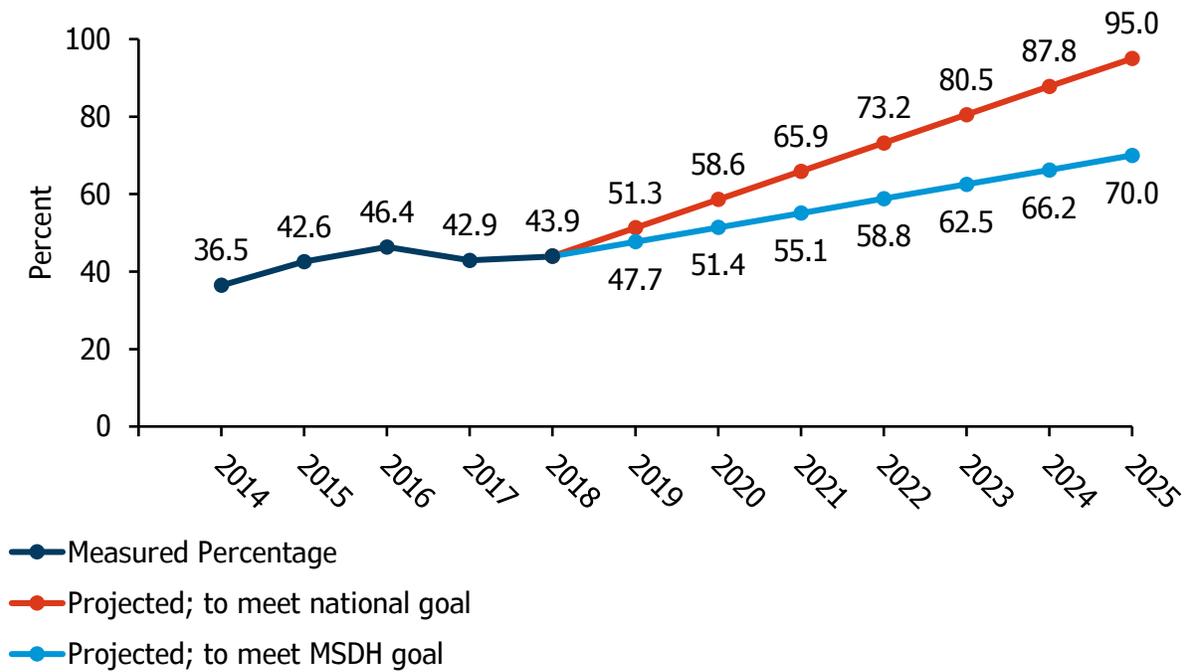
### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

The percent of people living with HIV who had a suppressed viral load increased slightly from 37% in 2014 to 44% in 2018 (**FIGURE 5A**). The percent of people who were virally suppressed in 2018 among those who received care (had a viral load or CD4 lab in the past year) was 82%. MSDH aims to achieve a suppressed viral load in 70% of people living with HIV by 2025. The national goal is 95% by 2025.

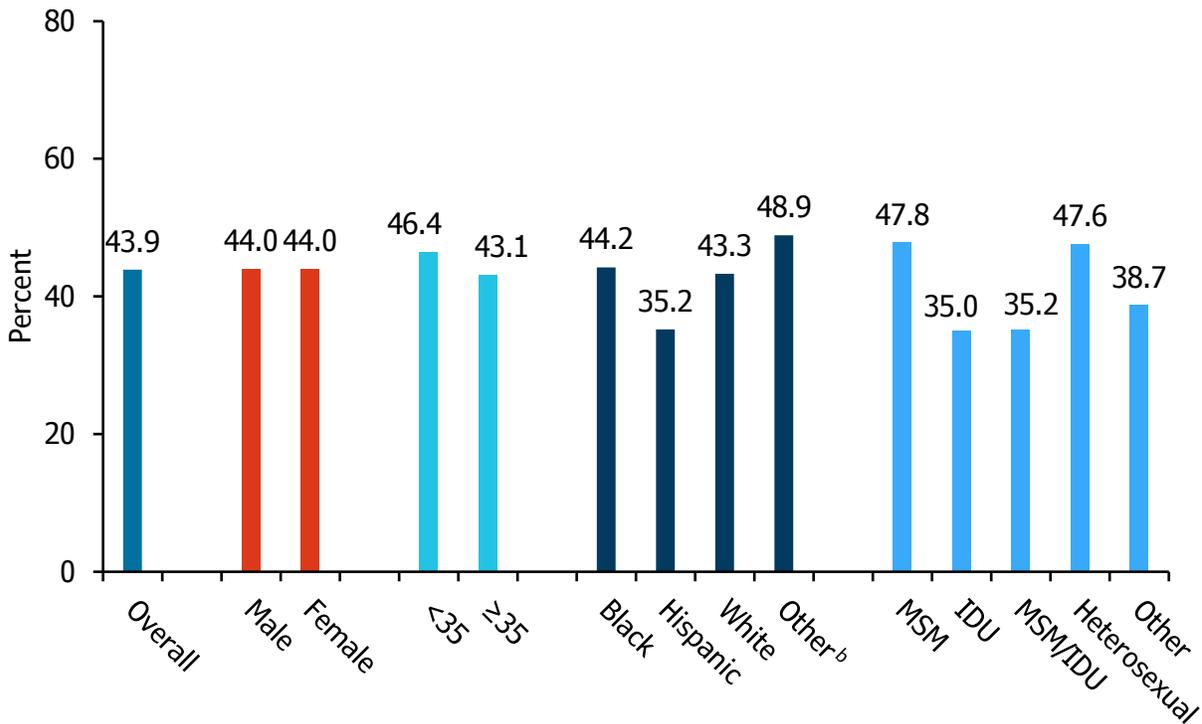
In 2018, the percentage of men and women living with HIV in Mississippi who were virally suppressed was the same (44%) (**FIGURE 5B, TABLE 2 ON PAGE 18**). However, among those who received care in 2018, a higher percentage of men were virally suppressed as compared to women (83% vs. 80%) (**TABLE 2 ON PAGE 18**). A slightly larger proportion of individuals less than 35 years of age were virally suppressed in 2018 as compared to individuals who 35 years of age or older (46% vs 43%). When limiting this to those who received care, this trend was reversed, with a higher proportion of individuals who were at least 35 years old being virally suppressed as compared to those less 35 years of age (84% vs. 75%).

By race/ethnicity among all people living with HIV, a lower percentage of people reporting Hispanic ethnicity were virally suppressed (35%) compared to people reporting Black (44%) or White race (43%). When limiting this to people who received care, the proportion of people virally suppressed was higher among people reporting White race (88%) than those reporting Black (80%) or Hispanic race/ethnicity (78%). There were also disparities in viral suppression by mode of transmission. Only 35% of individuals categorized as IDU transmission were virally suppressed in 2018, whereas 48% of individuals categorized as either MSM or heterosexual transmission were virally suppressed. Among those who received care, this disparity lessened, with about 83% of individuals in these three transmission categories achieving viral suppression in 2018.

**Figure 5a: Trends in the percent of individuals living with HIV who had a suppressed viral load 2014-2018, and estimated trend needed to achieve national and MSDH EHE goals**



**Figure 5b: Percentage of individuals living with HIV had a suppressed viral load in 2018, stratified by sex at birth, age, race, and transmission category<sup>a</sup>**



<sup>a</sup>Only transmission categories with large numbers are shown.

<sup>b</sup>Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, multiple and unknown race

## RE-ENGAGEMENT IN HIV CARE

### HOW THIS RELATES TO THE EHE INITIATIVE

Re-engaging people living with HIV in HIV care will increase the percentage of individuals that are receiving antiretroviral treatment and are virally suppressed, ultimately improving the health of the individual and reducing the transmission of HIV. This metric aligns with MSDH activities to re-engage people with HIV into HIV medical care if they are found to be inadequately engaged in HIV care.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

There is currently no national goal for this metric. The MSDH 2025 goal is for 75% of individuals (who are contacted by the health department after being identified as inadequately engaged in HIV care) to be virally suppressed within 6 months of being contacted by MSDH staff. In 2018 MSDH did not systematically record outcomes of re-engagement in care so there are no baseline data for this metric. However, there are some data available to contextualize this metric and set a “baseline” value. In 2018, there were an estimated 3,661 individuals living with HIV who did not have an HIV lab test in 2018 (i.e., were not considered to be “in care”). Of these, 555 (15%) individuals received HIV care in 2019. It is unclear if these individuals re-engaged in HIV care due to health department intervention or some other mechanism, as these individuals are composed of individuals who self-referred to HIV care, were contacted by HIV care clinic staff, or were contacted by MSDH case managers. As of 2018, the data systems were not in place at MSDH to track these different categories. Subsequent versions of this epidemiologic profile will contain more robust data on re-engagement in HIV care.

## HIV/AIDS STANDARDIZED MORTALITY RATIO

### HOW THIS RELATES TO THE EHE INITIATIVE

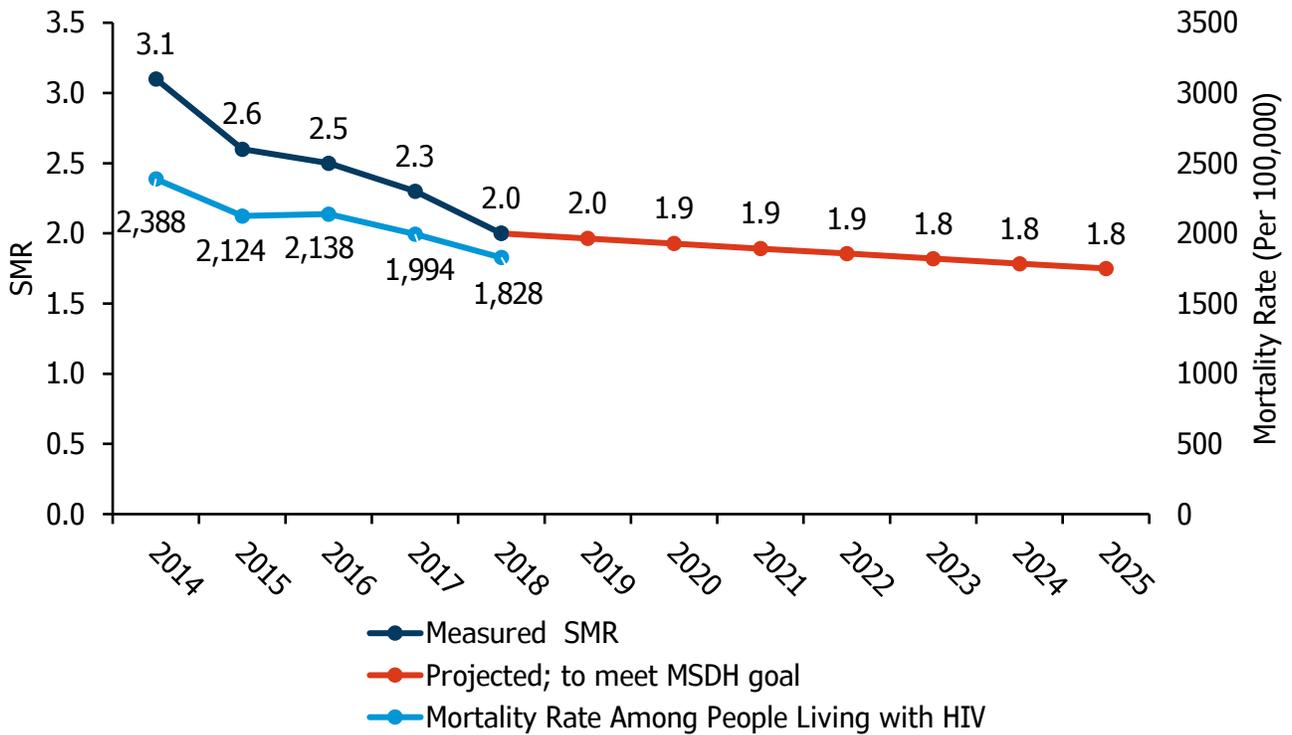
Although reducing mortality among people living with HIV is not an explicit goal of the national EHE, it is a priority for Mississippi’s EHE plan. Initiatives that focus on rapid treatment and sustained engagement in care will lead to an increase in viral suppression and a decrease in HIV-related complications and fatalities, including AIDS. This will reduce the mortality rate among people with HIV. This metric aligns with MSDH’s activities to improve HIV care engagement and viral suppression among people living with HIV.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

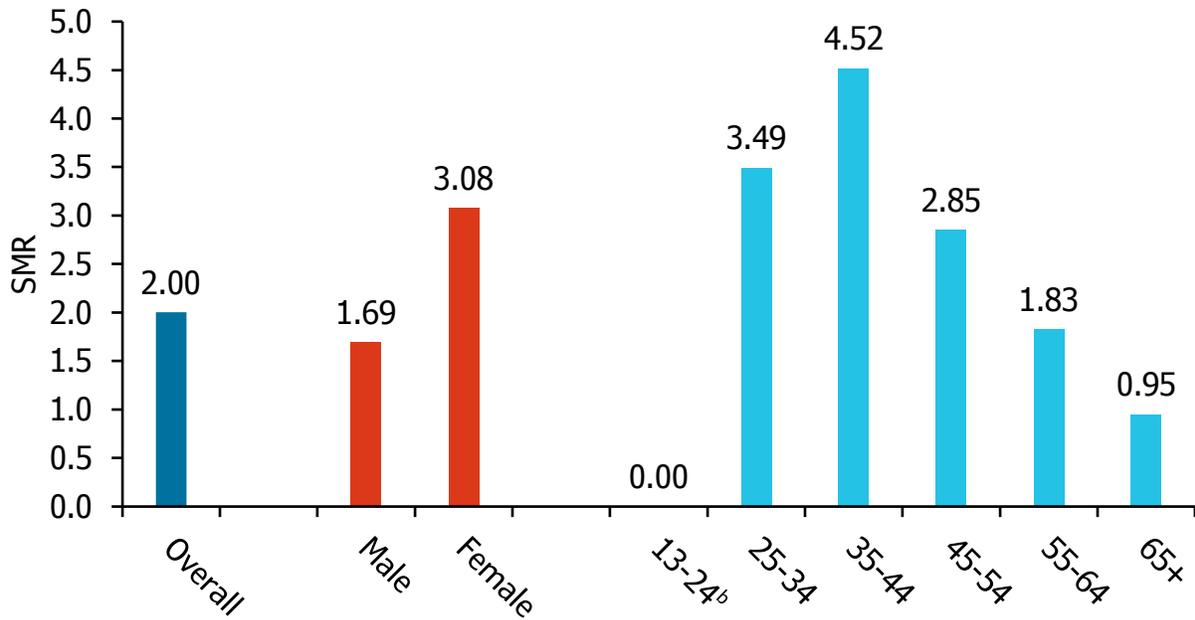
The mortality rate among people living with HIV has decreased steadily in Mississippi in the past 5 years, from 2,388 per 100,000 in 2014 to 1,828 per 100,000 in 2018 (**FIGURE 7A**). During the same time period, the age and sex standardized HIV/AIDS mortality ratio has decreased from 3.1 to 2.0. This indicates that, in 2014, people living with HIV were dying at a rate that was 3.1 times higher than the general population of Mississippians of the same age and sex, and in 2018 people living with HIV were dying at a rate that was twice as high as the general population of Mississippians of the same age and sex. MSDH aims to reduce the standardized mortality ratio by 25% by 2025 (i.e., 2025 target is a standardized mortality ratio [SMR] of 1.75). There is currently no national goal for this metric.

In 2018, the SMR among women living with HIV was 3.1 (with a mortality rate of 2,156 deaths per 100,000 women), while the SMR among men living with HIV was 1.7 (with a mortality rate of 1,693 deaths per 100,000 men) (**FIGURE 7B**). This indicates that women with HIV were dying at a rate that was 3.1 times higher than the general population of women in Mississippi of the same age, while men with HIV were dying at a rate that was 1.7 times higher as the general population of men in Mississippi of the same age. There was also a noticeable disparity by age, with the SMR being highest among individuals 35-44 years of age (4.5) and lowest among those 65+ years of age (0.9). This indicates that people living with HIV that were 35-44 years old were dying at a rate that was 4.5 times higher than Mississippians of the same age, while those living with HIV that were 65+ were dying at a rate that was 0.9 times as high as Mississippians of the same age.

**Figure 7a: Trends in the HIV/AIDS mortality rate and standardized mortality ratio, 2014-2018, and estimated trend needed to achieve the MSDH EHE goal**



**Figure 7b: Standardized mortality ratio (SMR) in 2018, stratified by sex at birth and age<sup>a</sup>**



<sup>a</sup>SMR's for males and females are adjusted for age; SMR's for age are adjusted for birth sex

<sup>b</sup>No individuals in the 13-24 age category died in 2018

# Pillar 3: Prevent New HIV Transmissions by Using Proven Interventions, Including PrEP and Syringe Services Programs (SSPs)

## INTRODUCTION TO PILLAR 3

Pillar 3 of Ending the Epidemic is "Prevent." While the majority of the EHE initiative focuses on people living with HIV, this pillar focuses on people who are HIV negative and their ability to access PrEP or syringe services program (SSPs). PrEP is a medication that, when taken correctly, can prevent acquisition of HIV. This is a powerful tool which helps give people control of their own HIV status.

The metrics that MSDH is using to monitor progress in Pillar 3 are "Knowledge of PrEP," "Screening for PrEP," "Uptake of PrEP," and "Retention on PrEP at 4 Months." These metrics illustrate the different steps in accessing and using PrEP, and they will allow MSDH to identify the areas where there may be obstacles to HIV prevention. There are currently no metrics that specifically focus on SSPs since there are currently no legal SSPs in Mississippi.

## ACTIVITIES IN THE NEXT YEAR TO ACHIEVE MSDH AND NATIONAL PILLAR 3 EHE GOALS

MSDH is undertaking the following activities to prevent new HIV transmissions by using proven interventions:

- Increase Tele-PrEP usage. Reevaluate access points to expand network for PrEP access
- Develop state-wide educational campaign on availability of PrEP and ways to access
- Develop advisory on nonoccupational postexposure prophylaxis (nPEP) for health providers in MS. Develop corresponding educational piece for communities; work with community partners on dissemination
- Work to educate state leaders and legislators to expand provisions for SSPs, including education on statistics on HIV transmission due to injection drug use and the importance of SSP in providing prevention, screening, linkage, and testing services to population.
- Work with the Mississippi Department of Mental Health to ensure screening and testing for HIV and HCV at Community Mental Health Centers.
- Work with education agencies, policymakers, state leaders and community to expand HIV and STI information offered in schools.
- Develop workplan with timeline with action steps to develop legislation requiring school districts to offer abstinence-plus education which includes age-appropriate HIV and STI messages.

### PILLAR 3 METRIC DETAILS

<p><b>KNOWLEDGE OF PREP</b></p>	<p><b>DEFINITION:</b> PERCENTAGE OF PEOPLE AWARE OF PREP AMONG THOSE PRESENTING FOR HIV TESTING AT PUBLICLY-FUNDED SITES OR THOSE WHO UNDERGO A SYPHILIS PARTNER SERVICES INTERVIEW (I.E., PEOPLE DIAGNOSED WITH SYPHILIS AND THEIR SEX PARTNERS)</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE WHO REPORT AWARENESS OF PREP WHILE PRESENTING FOR HIV TESTING OR DURING A SYPHILIS PARTNER SERVICES INTERVIEW DIVIDED BY THE NUMBER OF PEOPLE ASKED ABOUT PREP AWARENESS DURING HIV TESTING OR SYPHILIS PARTNER SERVICES INTERVIEW</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF INDIVIDUALS AWARE OF PREP TO <b>95%</b> BY 2025</p>
<p><b>SCREENING FOR PREP</b></p>	<p><b>DEFINITION:</b> PERCENTAGE OF INDIVIDUALS RECEIVING HIV TESTING WHO ARE SCREENED FOR PREP ELIGIBILITY</p> <p><b>CALCULATION:</b> THE NUMBER OF HIV TESTING ENCOUNTERS WHERE AN INDIVIDUAL IS SCREENED FOR PREP DIVIDED BY THE TOTAL NUMBER OF HIV TESTING ENCOUNTERS WHERE AN INDIVIDUAL IS CONSIDERED TO BE AT RISK FOR HIV</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF INDIVIDUALS WHO ARE SCREENED FOR PREP TO <b>85%</b> BY 2025 .</p>
<p><b>UPTAKE OF PREP</b></p>	<p><b>DEFINITION:</b> PERCENTAGE OF INDIVIDUALS WHO RECEIVED A PRESCRIPTION FOR PREP</p> <p><b>CALCULATION:</b> THE NUMBER OF INDIVIDUALS WHO RECEIVED A PRESCRIPTION FOR PREP DIVIDED BY THE TOTAL NUMBER WHO WERE ELIGIBLE FOR PREP. THIS METRIC IS CALCULATED BY CDC, USING AN ALGORITHM TO DETERMINE THE NUMBER OF INDIVIDUALS WHO ARE ELIGIBLE FOR PREP PER CDC CRITERIA</p> <p><b>MSDH GOAL:</b> INCREASE UPTAKE OF PREP TO <b>50%</b> BY 2025</p>

**PILLAR 3 METRIC DETAILS (CONT.)**

<p><b>RETENTION ON PREP AT 4 MONTHS</b></p>	<p><b>DEFINITION:</b> PERCENT OF INDIVIDUALS WHO INITIATED PREP WHO HAD A PREP FOLLOW-UP APPOINTMENT WITHIN 4 MONTHS</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE ATTENDED A FOLLOW-UP PREP APPOINTMENT AT 3 MONTHS DIVIDED BY THE NUMBER OF PEOPLE USING PREP</p> <p><b>MSDH GOAL:</b> INCREASE RETENTION ON PREP TO <b>75%</b> BY 2025</p>
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**KNOWLEDGE OF PREP**

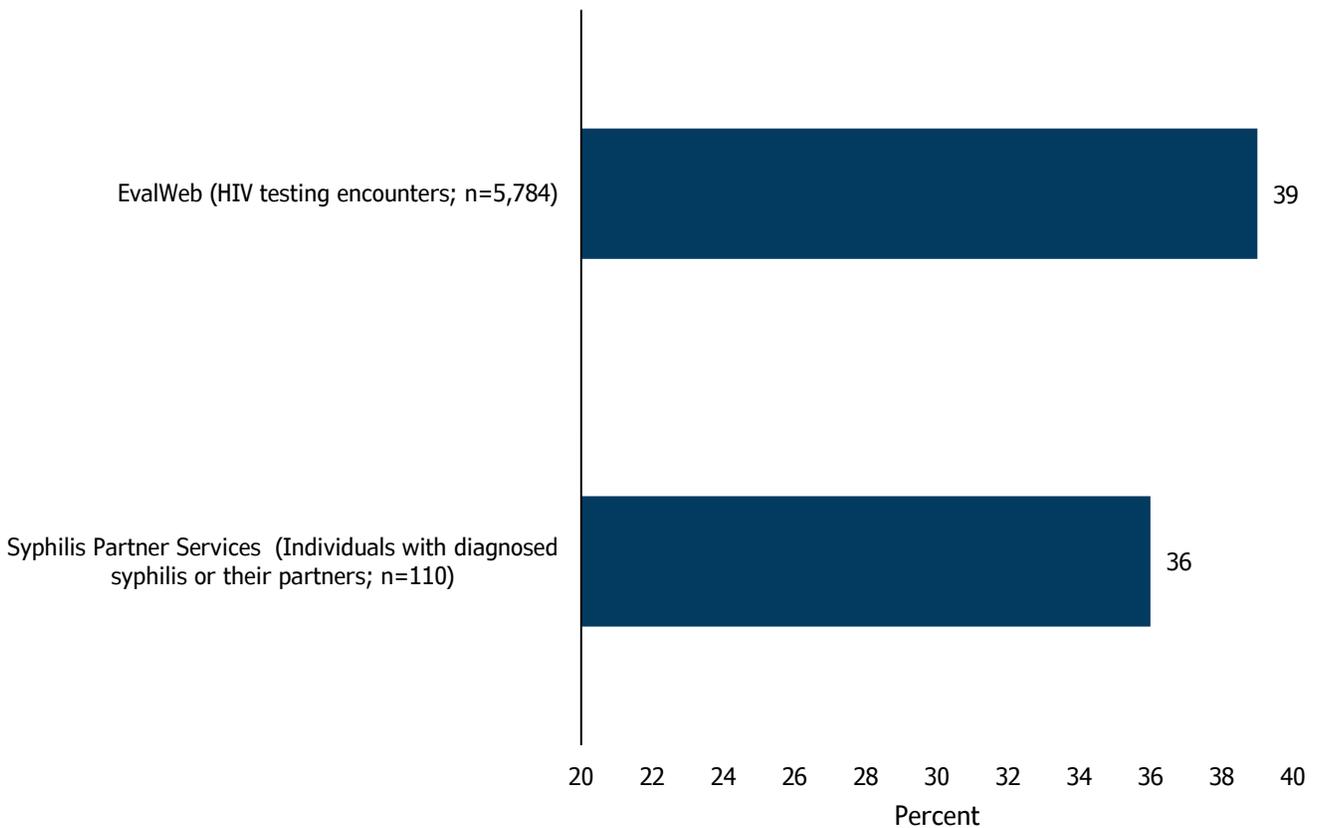
**HOW THIS RELATES TO THE EHE INITIATIVE**

Increasing knowledge of PrEP is one of the first steps to increasing PrEP uptake in MS. More widespread PrEP uptake will lead to a reduction in the number of individuals who acquire HIV. This metric aligns with MSDH activities to promote PrEP education via a state-wide PrEP educational campaign.

**SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS**

There is no national goal for this metric. In MS, awareness of PrEP is monitored using two data sources: (1) Evaluation Web (EvalWeb), which documents publicly-funded testing events throughout the state of MS. Individuals who are receiving HIV testing at a publicly-funded site are asked a series of questions about PrEP, including PrEP awareness; (2) syphilis partner services, which is a health department service provided to individuals diagnosed with syphilis and their sex partners. Disease investigation specialists (DIS) who interview these individuals ask if that person has heard of PrEP.

**Figure 1. Percent of individuals aware of PrEP in MS State, by data source, 2018-2019**



## KNOWLEDGE OF PREP (CONT.)

**EvalWeb:** In 2019, 5,784 (12%) of clients receiving publicly-funded HIV testing in MS had a complete risk assessment with documentation of responses to PrEP-related questions. Of these 5,784 encounters, 2,238 (39%) clients indicated that they had ever heard of PrEP (**FIGURE 1**). No data is available prior to 2019.

**Syphilis Partner Services:** Data from STD partner services was not systematically collected in 2018. Beginning in 2019, the MSDH implemented standardized protocols for DIS in Mississippi to ask about PrEP awareness as part of the syphilis partner services interview and to systematically document responses. In 2019, there were 439 individuals who were interviewed as part of syphilis partner services and 110 (25%) of these individuals were asked if they had heard of PrEP. Among these individuals, 36% (n=40) reported that they had heard of PrEP (**FIGURE 1**).

## SCREENING FOR PREP

### HOW THIS RELATES TO THE EHE INITIATIVE

Assessing whether or not an individual is a candidate for PrEP is a key component to increasing PrEP uptake in MS. All individuals presenting for HIV testing should have an assessment completed to determine whether or not they are candidates for PrEP, as this will likely lead to increased access to PrEP.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

There is no national goal for this metric. MSDH monitors screening for PrEP via Evaluation Web (EvalWeb), which documents publicly-funded testing events throughout the state of MS. Individuals who are receiving HIV testing at a publicly-funded site should be asked a series of questions to determine whether or not they are at risk of HIV, and whether or not they were screened for PrEP eligibility. In 2019, 5,784 (12%) of 49,542 clients who received publicly-funded HIV testing in MS had a complete risk assessment with documentation of responses to PrEP-related questions. Of these clients, 4,406 (76%) individuals were determined to be at risk for HIV, and 797 (18%) were screened for PrEP. No data is available prior to 2019.

## UPTAKE OF PREP

### HOW THIS RELATES TO THE EHE INITIATIVE

PrEP use lowers the risk of HIV transmission and can ultimately lead to a decline in the number of individuals who acquire HIV. This metric aligns with MSDH activities to promote PrEP education via a state-wide PrEP educational campaign and to increase PrEP usage via telePrEP.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS

The national goal for this metric is to increase uptake of PrEP to at least 50%. In 2018, CDC estimated that the percentage of all individuals in MS who received a prescription for PrEP among those who were eligible for PrEP was 12.9%. This equates to approximately 654 individuals among those who are eligible for PrEP.

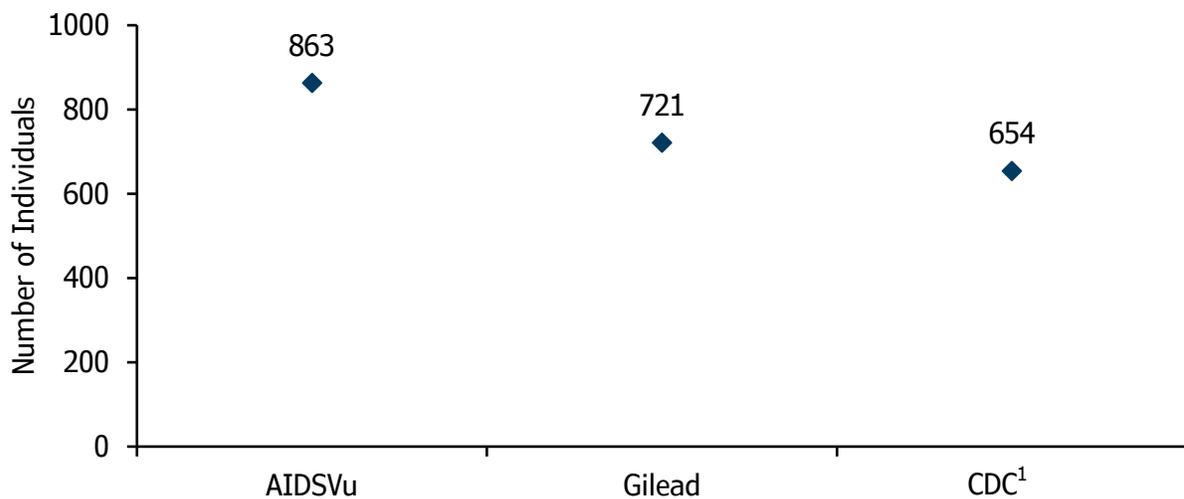
MSDH uses other data sources to monitor the number of individuals who received a prescription for PrEP in a given year: AIDSVu (aidsvu.org) and Gilead. AIDSVu is a national and publicly available data source that estimates PrEP uptake by local geographic area. AIDSVu uses prescription data to calculate the number of people on PrEP. In 2018, AIDSVu estimated that there were 863 people who received a prescription for PrEP in MS. Gilead, the manufacturer of Truvada® for PrEP, provides estimates of the number of individuals on PrEP in MS. In 2018, Gilead estimated that there were 721 individuals on PrEP in MS (**FIGURE 2**).

Taken together, these three estimates suggest that approximately 650-850 individuals received PrEP in 2018.

## UPTAKE OF PREP (CONT.)

Given that there were 476 individuals newly diagnosed with HIV in 2018, this means that for every 1 new person diagnosed with HIV in 2018, there were between 1.37 and 1.79 individuals using PrEP in MS. This is the lowest ratio in the US. MSDH also separately monitors PrEP among individuals diagnosed with syphilis and their sex partners. In MS, the rate of new HIV diagnosis among individuals diagnosed with syphilis is approximately 0.78 per 100 person-years, and is highest for men, Black individuals, and individuals aged 15-24. As part of routine syphilis partner services activities, MSDH offers a PrEP referral to all individuals diagnosed with syphilis in MS. In 2018, there were 439 individuals who received syphilis partner services. These are individuals who were diagnosed with syphilis or their sex partners. Of those 439 individuals, 237 (54%) were asked about PrEP use. Of these, only 9 individuals (4%) reported currently using PrEP or using PrEP within the past 12 months.

**Figure 2: Estimated number of individuals on PrEP in MS in 2018, by data source**



<sup>1</sup>CDC calculates the number of people on PrEP out of those who are PrEP eligible.

Beginning in 2019, MSDH began collecting data on PrEP uptake more systematically from individuals receiving syphilis partner services. These data include information on PrEP uptake and referrals to a PrEP provider. Future reports will track progress toward these metrics.

## RETENTION ON PREP

In 2018 MSDH did not routinely track retention on PrEP among individuals who received a PrEP prescription. Starting in 2020, MSDH will begin systematically tracking PrEP uptake and retention in MSDH clinics and will request these data from community clinics where MSDH has existing partnerships.

## SYRINGE SERVICES PROGRAMS

In the coming year, MSDH will work to ensure community leaders and legislators understand statistics on HIV transmission due to injection drug use and the importance of SSP in providing prevention, screening, linkage and testing services to population. MSDH will monitor the number of webinars/presentations held with key stakeholders, the numbers of attendees at these presentations, and the community partnerships formed.

# Pillar 4: Respond Quickly to Potential HIV Outbreaks to get Needed Prevention and Treatment Services to People in Need

## INTRODUCTION TO PILLAR 4

Pillar 4 of Ending the Epidemic is "Respond." This pillar focuses on activities that identify communities where HIV transmission is occurring so services can be provided to prevent further spread. Currently, these take the form of two activities: molecular cluster detection and time-space cluster detection.

Molecular cluster detection is the collection and analysis of HIV genetic sequences generated during HIV drug resistance testing. In practice, the RNA sequences of HIV viruses are compared to one another to determine how closely they are related (called "genetic distance"). Groups of individuals living with HIV who have similar HIV viruses may be part of local transmission networks. Identifying these groups helps to direct HIV prevention services to where they are needed. These activities are new to HIV, but they have been used in outbreaks of foodborne illness and tuberculosis for many years. It cannot be used to identify HIV transmission from one individual to another, and because of this, prevention activities focus on groups of people and not individuals.

Time-space cluster detection is the comparison of current HIV diagnoses rates to historical HIV diagnoses rates to identify regions where an increase of HIV transmission may be occurring. This activity is a complement to molecular surveillance, because time-space clusters can be detected in areas where collection of HIV nucleotide sequences is incomplete or delayed.

The metrics that MSDH is using to monitor progress in Pillar 4 are "Surveillance for Real-Time Cluster Detection," "Completion of Genotype Sequencing," "Response to HIV Transmission Clusters," "Outcomes of Cluster Investigation among People Living with HIV," and "Outcomes of Cluster Investigations amount People who are HIV -negative." These metrics measure the success of MSDH in detecting clusters and linking the people around them to services.

Technical Note: In Mississippi, a "**priority molecular cluster**" is defined as a group of 5 or more individuals diagnosed with HIV in the prior 12 months who have viruses that are related at a genetic distance of 0.5%. A "**time-space cluster**" is defined as a county where the rate of new HIV diagnoses in the most recent 12 months exceeds the average rate over the prior 3 years by 2 standard deviations. Some counties may reach this threshold by chance, and it is the discretion of MSDH epidemiologists to determine which counties should be considered priority clusters.

### ACTIVITIES IN THE NEXT YEAR TO ACHIEVE MSDH AND NATIONAL PILLAR 4 EHE GOALS

MSDH is undertaking the following activities to respond quickly to potential HIV outbreaks:

- Increase capacity to conduct follow-up investigations of cases with insufficient information or potential cases with insufficient information to establish an HIV diagnosis
- Develop feedback tool for health care providers, facilities, or laboratories with missing or incomplete information on required data
- Identify case prioritization of network members for enhanced linkage and other essential support services
- Develop local measures for evaluating cluster response

#### PILLAR 4 METRIC DETAILS

<p><b>SURVEILLANCE FOR REAL-TIME CLUSTER DETECTION</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF NEW HIV LABS ENTERED INTO THE SURVEILLANCE SYSTEM WITHIN TWO WEEKS OF SPECIMEN COLLECTION</p> <p><b>CALCULATION:</b> THE NUMBER OF NEW HIV LABS ENTERED INTO THE SURVEILLANCE SYSTEM WITHIN TWO WEEKS OF SPECIMEN COLLECTION, DIVIDED BY THE NUMBER OF LABS ENTERED THAT YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PROPORTION OF HIV LABS ENTERED INTO THE SURVEILLANCE SYSTEM WITHIN TWO WEEKS OF SPECIMEN COLLECTION TO <b>85%</b> BY 2025.</p>
<p><b>COMPLETION OF GENOTYPE SEQUENCING</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF PEOPLE NEWLY DIAGNOSED WITH HIV WHO HAD A GENOTYPE SEQUENCE REPORTED TO MSDH</p> <p><b>CALCULATION:</b> THE NUMBER OF PEOPLE NEWLY DIAGNOSED WITH HIV IN A GIVEN YEAR WHO HAVE A SEQUENCE REPORTED TO MSDH, DIVIDED BY THE TOTAL NUMBER OF PEOPLE NEWLY DIAGNOSED WITH HIV IN THAT YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF PEOPLE NEWLY DIAGNOSED WITH HIV WITH GENOTYPE SEQUENCE REPORTED TO MSDH TO <b>70%</b> BY 2025</p>
<p><b>RESPONSE TO HIV TRANSMISSION CLUSTERS</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF INDIVIDUALS IDENTIFIED AS MEMBERS OF PRIORITY CLUSTERS WHO ARE LOCATED AND INTERVIEWED WITHIN 7 DAYS OF IDENTIFICATION</p> <p><b>CALCULATION:</b> THE NUMBER OF INDIVIDUALS IDENTIFIED AS MEMBERS OF PRIORITY CLUSTERS WHO ARE LOCATED AND INTERVIEWED WITHIN 7 DAYS OF IDENTIFICATION, DIVIDED BY THE TOTAL NUMBER OF INDIVIDUALS IDENTIFIED AS MEMBERS OF PRIORITY CLUSTERS IN THAT YEAR</p> <p><b>MSDH GOAL:</b> INCREASE THE PERCENTAGE OF INDIVIDUALS IDENTIFIED AS MEMBERS OF PRIORITY CLUSTERS WHO ARE LOCATED AND INTERVIEWED WITHIN 7 DAYS OF IDENTIFICATION TO <b>65%</b> BY 2025</p>
<p><b>OUTCOMES OF CLUSTER INVESTIGATION AMONG PEOPLE LIVING WITH HIV</b></p>	<p><b>DEFINITION:</b> THE PERCENTAGE OF PEOPLE LIVING WITH HIV IDENTIFIED IN A CLUSTER WHO ARE NOT ADEQUATELY ENGAGED IN HIV CARE WHO ARE LINKED BACK TO CARE</p> <p><b>CALCULATION:</b> NUMBER OF PEOPLE LIVING WITH HIV IDENTIFIED IN A CLUSTER WHO ARE INADEQUATELY ENGAGED IN HIV CARE OR NOT ENGAGED IN HIV CARE (I.E., HAVE A VIRAL LOAD &gt;1000 OR NO VIRAL LOAD/CD4 WITHIN THE PAST 12 MONTHS) WHO HAVE A CD4 OR VIRAL LOAD WITHIN 30 DAYS OF INTERVIEW BY A DISEASE INTERVENTION SPECIALIST (DIS), DIVIDED BY THE TOTAL NUMBER OF PEOPLE LIVING WITH HIV IDENTIFIED IN A CLUSTER IN THAT YEAR WHO ARE NOT ENGAGED IN HIV CARE</p> <p><b>MSDH GOAL:</b> INCREASE PERCENTAGE OF PEOPLE LIVING WITH HIV IDENTIFIED IN A CLUSTER WHO ARE NOT ADEQUATELY ENGAGED IN HIV CARE WHO ARE LINKED BACK TO CARE TO <b>75%</b> BY 2025</p>

**PILLAR 4 METRIC DETAILS (CONT.)****OUTCOMES OF CLUSTER INVESTIGATION AMONG PEOPLE WHO ARE HIV-NEGATIVE**

**DEFINITION:** THE PERCENTAGE OF PEOPLE WITHOUT HIV WHO ARE ASSOCIATED WITH A CLUSTER WHO START ON PREP

**CALCULATION:** NUMBER OF PEOPLE WITHOUT HIV ASSOCIATED WITH A CLUSTER WHO START ON PREP WITHIN 30 DAYS OF THE DIS INTERVIEW OF THE INDEX CASE, DIVIDED BY THE TOTAL NUMBER OF PEOPLE WITHOUT HIV WHO ARE ASSOCIATED WITH A CLUSTER IN THAT YEAR AND NOT ALREADY ON PREP

**MSDH GOAL:** INCREASE PERCENTAGE OF PEOPLE WHO ARE HIV-NEGATIVE WHO ARE ASSOCIATED WITH A CLUSTER WHO START ON PREP TO **75%** BY 2025

**Table 1: Number of days between the date of specimen collection and the date loaded into the surveillance system for labs received in 2018 from individuals newly diagnosed with HIV**

LABORATORY TEST TYPE	NUMBER OF LABS	MEDIAN NUMBER OF DAYS (MIN-MAX) <sup>1</sup>	% OF ALL LABS ENTERED INTO SURVEILLANCE SYSTEM <14 DAYS OF SPECIMEN COLLECTION DATE
CD4	1,244	7 (0-91)	84.6%
Viral load	864	8 (1-113)	77.7%
Qualitative RNA	50	20 (6-66)	28.0%
Antigen/antibody	1,480	13 (1-163)	59.3%
Genotype	57	69 (21-209)	0.0%
Other	16	19 (7-50)	25.0%
All received labs	3,711	10 (0-209)	70.5%

<sup>1</sup>Number of days from specimen collection date to entry into surveillance system

**SURVEILLANCE FOR REAL-TIME CLUSTER DETECTION****HOW THIS RELATES TO THE EHE INITIATIVE:**

Rapid processing of laboratory information from individuals newly diagnosed with HIV is a first step toward real-time cluster detection. This will ultimately lead to a more rapid identification of groups of individuals for whom HIV prevention services may be needed. This metric aligns with MSDH activities to improve electronic laboratory reporting.

**SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS:**

The percentage of new HIV labs (for individuals newly diagnosed with HIV) that were entered into the surveillance system within two weeks of specimen collection was 71% in 2018. This percentage differed substantially by laboratory test type, with CD4 labs being the most likely to be entered into the surveillance system within two weeks (**TABLE 1, ABOVE**). The median number of days from the time of specimen collection to entering the lab into the surveillance system was about one week for CD4 and viral load labs.

## COMPLETION OF GENOTYPE SEQUENCING

### HOW THIS RELATES TO THE EHE INITIATIVE:

Increased completion of genotype sequences will increase the sensitivity of MSDH's molecular cluster detection program and will allow MSDH to more rapidly identify groups of individuals for whom HIV prevention services may be needed. This metric aligns with MSDH activities to improve laboratory processes and data reporting.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS:

The percentage of people newly diagnosed with HIV with a genotype sequence was 16% in 2018 and was not measured prior to this year. Progress was made in mid-2018 to increase completeness of genotype sequencing and reporting, and the results should be seen in subsequent years. Meeting the goal for this metric will require continued improvement in the number of patients whose specimens undergo genotype sequencing and the number of tests results that are reported to MSDH. This will involve provider and laboratory education initiatives, improvements to electronic laboratory reporting, and revisions to the rules and regulations for reporting of laboratory results.

## RESPONSE TO HIV TRANSMISSION CLUSTERS

### HOW THIS RELATES TO THE EHE INITIATIVE:

Interviewing members of priority clusters gives these individuals the opportunity to re-link themselves and their community to HIV prevention and care services. This metric aligns with MSDH activities to rapidly respond to detected priority clusters.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS:

Cluster detection activities did not start until 2019. There is no data to report for 2018.

## OUTCOMES OF CLUSTER INVESTIGATION AMONG PEOPLE LIVING WITH HIV

### HOW THIS RELATES TO THE EHE INITIATIVE:

Re-linking members of priority clusters to effective treatment will decrease the probability of future HIV transmission and the negative health effects of untreated HIV. This metric aligns with MSDH activities to ensure adequate linkage to care among individuals who are inadequately engaged in HIV care.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS:

Cluster detection activities did not start until 2019. There is no data to report for 2018.

## OUTCOMES OF CLUSTER INVESTIGATION AMONG PEOPLE WITHOUT HIV

### HOW THIS RELATES TO THE EHE INITIATIVE:

Re-linking members of priority clusters to PrEP treatment will decrease their probability of HIV acquisition. This metric aligns with MSDH activities to promote PrEP uptake among individuals at high risk of HIV acquisition.

### SUMMARY OF PROGRESS TOWARD MSDH AND NATIONAL EHE GOALS:

Cluster detection activities did not start until 2019. There is no data to report for 2018.

# Additional Pillars and Metrics to Monitor in Future Epidemiologic Profiles

During the development of the 2020 Mississippi EHE Jurisdictional Plan, the Mississippi State Department of Health, Mississippi HIV Planning Council, and Mississippi EHE Task Force outlined four additional pillars (Pillars 5-8) to guide the plan to end the HIV epidemic in Mississippi. These four additional Pillars are:

- Increase access to effective and comprehensive care across the state
- Decrease stigma and provide life-affirming messaging
- Identify and reduce health disparities
- Increase health department capacity and partnerships

Future epidemiologic profiles will include metrics to monitor progress toward the goals of these pillars and will delineate the progress made toward achieving those goals. An example of some of the metrics that will be included in future reports are:

- Proportion of individuals with private insurance or Medicaid/Medicare
- Proportion of people living with HIV who experience food insecurity or housing instability
- Proportion of people living with HIV or people at risk of HIV who experience or report depression, anxiety, stigma, and/or post-traumatic stress disorder
- Relative disparities in all metric measures (e.g., HIV diagnosis rates, viral suppression) by sex at birth, race/ethnicity, age, and urban/rural residence

# References

- Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2018*. Atlanta, Georgia: US Department of Health and Human Services;2019.
- De Voux A, Kidd S, Grey JA, et al. State-Specific Rates of Primary and Secondary Syphilis Among Men Who Have Sex with Men - United States, 2015. *MMWR Morb Mortal Wkly Rep*. 2017;66(13):349-354.
- Grey JA, Bernstein KT, Sullivan PS, et al. Estimating the Population Sizes of Men Who Have Sex With Men in US States and Counties Using Data From the American Community Survey. *JMIR public health and surveillance*. 2016;2(1):e14.
- Song R, Hall HI, Green TA, Szwarcwald CL, Pantazis N. Using CD4 Data to Estimate HIV Incidence, Prevalence, and Percent of Undiagnosed Infections in the United States. *Journal of acquired immune deficiency syndromes*. 2017;74(1):3-9.