



Mississippi Infant Mortality Report 2022

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*NOTE: Data included in this report are current as of **11/1/2024***

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EXECUTIVE SUMMARY

Infant mortality is the death of an infant within his or her first year of life. The infant mortality rate is a measure of the number of infant deaths for every 1,000 live births. This measure is a marker of and helps understand the overall quality of the health of a population. Infant mortality also can help identify factors that contribute to death, gaps in health care, and barriers to care access. This report describes the infant mortality rate, highlights morbidities, and characteristics of Mississippi resident infant deaths which occurred in 2022. Ten-year trend analyses are also included to provide a historical view of infant mortality in Mississippi.

Key Findings

- In 2022, there were 319 infant deaths and 34,678 live births to Mississippi residents. The infant mortality rate for this year was 9.2 infant deaths per 1,000 live births.
- The top three leading causes of infant deaths in 2022 included:
 - congenital malformations/chromosomal abnormalities, birth defects/deformations,
 - accidents, and
 - disorders related to short gestation and low birthweight.
- In 2022, 131 (41%) of the 319 infant deaths were among Whites; 172 (54%) were among Black infants; and 16 (5%) were among Other Races.
 - The infant mortality rate for Whites was 6.7 per 1,000 live births; for Blacks it was 12.2 per 1,000 live births.
- In 2022, the number of infant deaths attributed to sudden infant death syndrome (SIDS) decreased by 64% from 2021 to 2022.

Key Recommendations (State Health Plan, Mississippi)

- Incorporate strategies to decrease the number of preterm and low birthweight infants
- Increase the number of pregnant women who enter prenatal care during the first trimester
- Implement healthy initiatives to assist pregnant women who are high risk including those in the following categories:
 - Pre-existing health conditions (e.g. high blood pressure, diabetes, heart or blood disorders, renal conditions, thyroid conditions, asthma, autoimmune diseases, epilepsy, obesity, sexually transmitted infections, stress, depression, anxiety, etc.)
 - Advanced maternal age
 - Unhealthy lifestyle factors (e.g. substance use/abuse including alcohol and tobacco)
 - Short interpregnancy intervals (i.e. pregnancy spacing)

- Conditions during pregnancy (e.g. multiple gestation, preeclampsia and eclampsia, gestational diabetes, previous preterm birth, birth defects or genetic conditions of fetus)
- Increase overall perinatal health for women in the state

Key Recommendations (Mississippi Child Death Review Panel, 2022)

The Mississippi Child Death Review Panel (CDRP), which is a legislatively mandated committee, reviewed infant death cases and recommended the following:

- Ensure families understand the benefits of practicing safe sleep strategies.
- Ensure car seat restraints are appropriate for infants ages 0-12 months of age.

INTRODUCTION AND BACKGROUND

The Mississippi State Department of Health (MSDH) is committed to decreasing infant morbidity and mortality in the state. Because the infant mortality rate (IMR) is an important indicator of the overall health of a population, it is imperative that efforts are made to eliminate factors contributing to high rates. In the United States, the leading causes of infant mortality include birth defects, preterm birth, low birthweight, complications with maternal pregnancy, sudden infant death syndrome, and injuries (CDC, 2021). These are comparably the major causes of infant deaths in Mississippi as well.

By definition, infant mortality represents the deaths of infants under one year of age. Infant mortality is linked to important social determinants of health and has an apparent association between its causes and other factors that are likely to influence the health status of whole populations including their economic development, general living conditions, social wellbeing, rates of illness, and the quality of the environment (Reidpath & Allotey, 2003). Systemic and historical experiences of racism, inequities in health care access and the quality of health care, discrimination and population differences in social determinants of health all contribute to the vast disparities observed in infant mortality. Infant health and well-being also reflect the quality, safety, accessibility, and equity within the state's healthcare system and the capacity to provide risk-appropriate care to both pregnant women and newborns.

Geographic and racial disparities in infant mortality in Mississippi are significant. In Mississippi, the rate of infant mortality among non-Hispanic Black infants is almost twice that of non-Hispanic White infants. Mississippi's race-specific IMRs have changed very little over the past five years. In 2018, while the overall IMR was 8.4 per 1,000 live births, racial disparities in infant mortality were evident. During that same year, the IMR among non-Hispanic Black infants was 11.4 deaths per 1,000 live births compared to 6.3 deaths per 1,000 live births for non-Hispanic White infants. Data from 2022 indicate disparities are also evident. The IMR for non-Hispanic Black infants in 2022 was 12.1 per 1,000 live births compared to 7.2 per 1,000 live births for non-Hispanic White infants.

Over the past few years, infant deaths due to very/extremely low birth weight or extreme immaturity have been the number one cause of infant deaths in Mississippi. These issues are usually an indicator of the mother's health before and during pregnancy. Proper health care for the mother before and during pregnancy can directly reduce the number of babies born with risks to their

health and survival. In 2022, 14.8% of infants were born preterm (less than 37 weeks gestation) among all live births. In addition, 12.7% were born at a low birth weight (weighing less than 2,500 grams or 5 pounds, 8 ounces). According to the World Health Organization (WHO, 2023), more research is needed to determine the causes and mechanisms of preterm birth; however, some causal factors include multiple pregnancies, infections, and chronic conditions such as diabetes and high blood pressure. In some cases, though, no cause is identified.

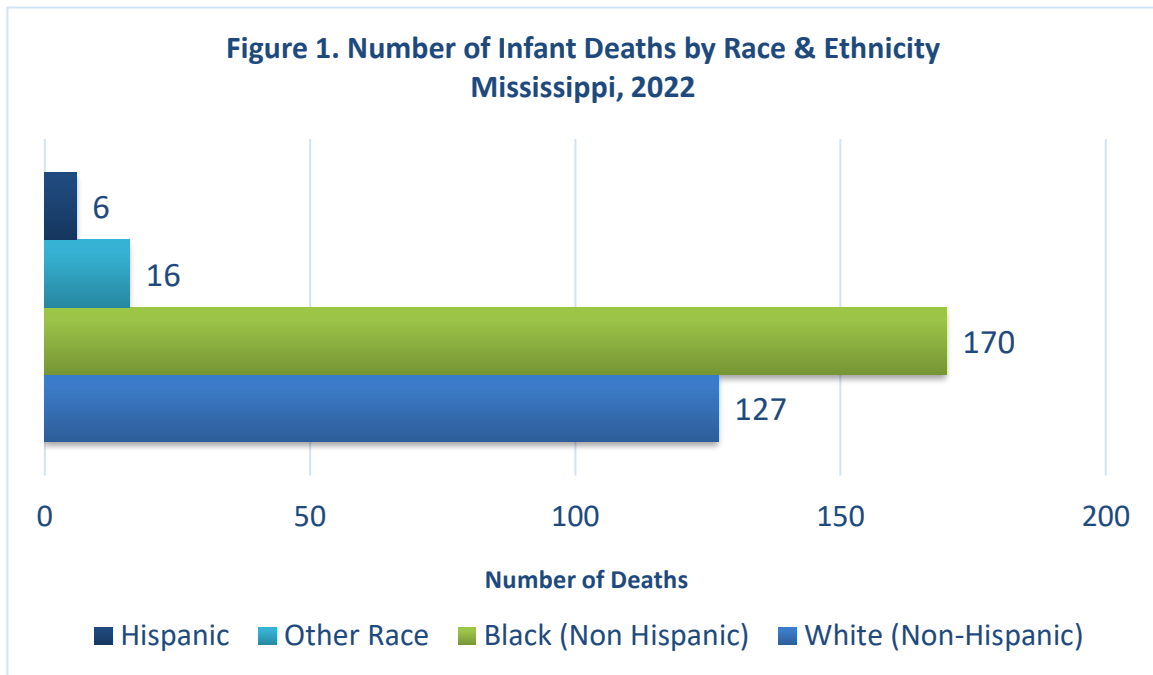
Geographic differences also exist for the state's IMR. For 2022, Public Health District III (Delta Hills Region) had the highest IMR among Black infants in the state. The IMR for White infants were highest in Public Health District VI. Even though the MSDH recently revised the public health district map to transition to public health regions, this report will continue utilizing districts to account for the regionalization of various programs aimed at statewide efforts to decrease infant mortality (i.e. Fetal and Infant Mortality Review Program, Count the Kicks, etc.).

The Healthy People 2030 goal is to *Reduce the rate of infant deaths (MICH-02)*. This report includes the data trends, disparities, and patterns of infant mortality in Mississippi. It also delineates contributing factors and outlines a work plan for reducing the infant mortality rate in the state.

DATA REPORTS

Deaths and Births, Mississippi 2022

In 2022, there were 319 infant deaths and 34,678 live births to Mississippi resident women. Figure 1 indicates the distribution of the number of infant deaths by race during that year.

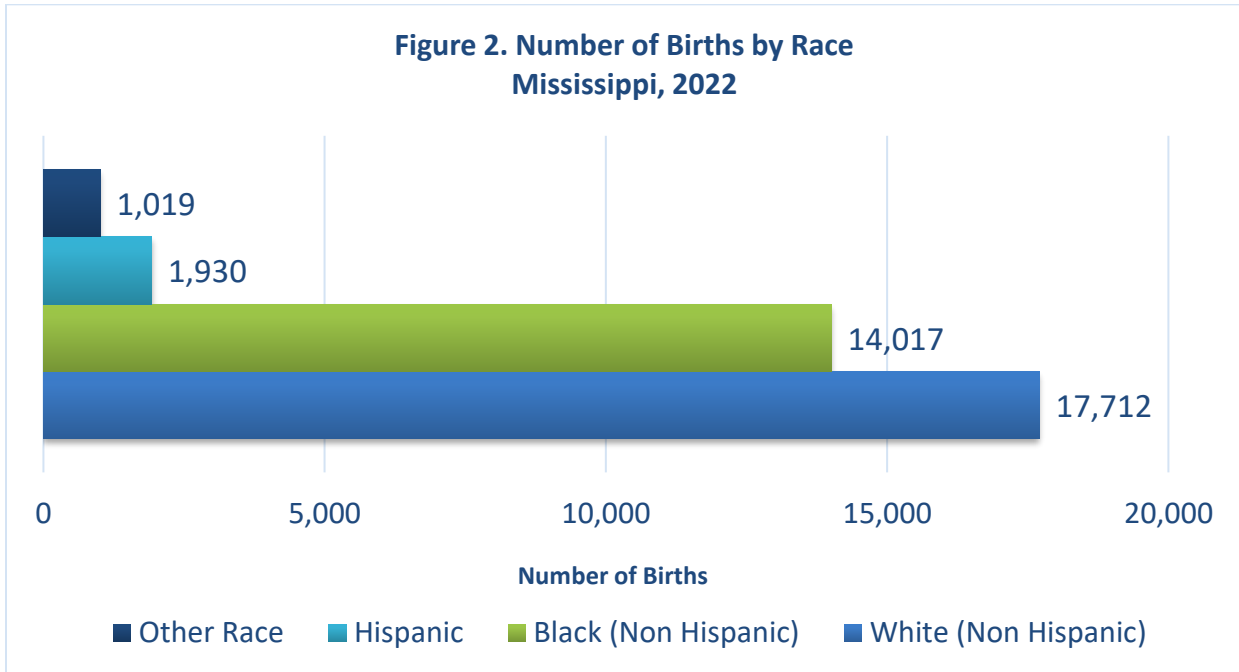


Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2022

Notable in 2022, deaths and births by race and ethnicity were as follows:

- Hispanic infants accounted for 6 (<2%) deaths;
- Non-Hispanic Black infants accounted for 170 (53%) deaths and 14,053 (40%) live births;
- Non-Hispanic White infants accounted for 127 (40%) deaths and 19,562 (56%) live births; and
- Infants of other races and other / unknown ethnicities accounted for 6 (<2%) deaths and 1,063 (3%) live births.

In 2022, there were 34,678 births as indicated in Figure 2. The births are distributed by race and ethnicity in the graph.

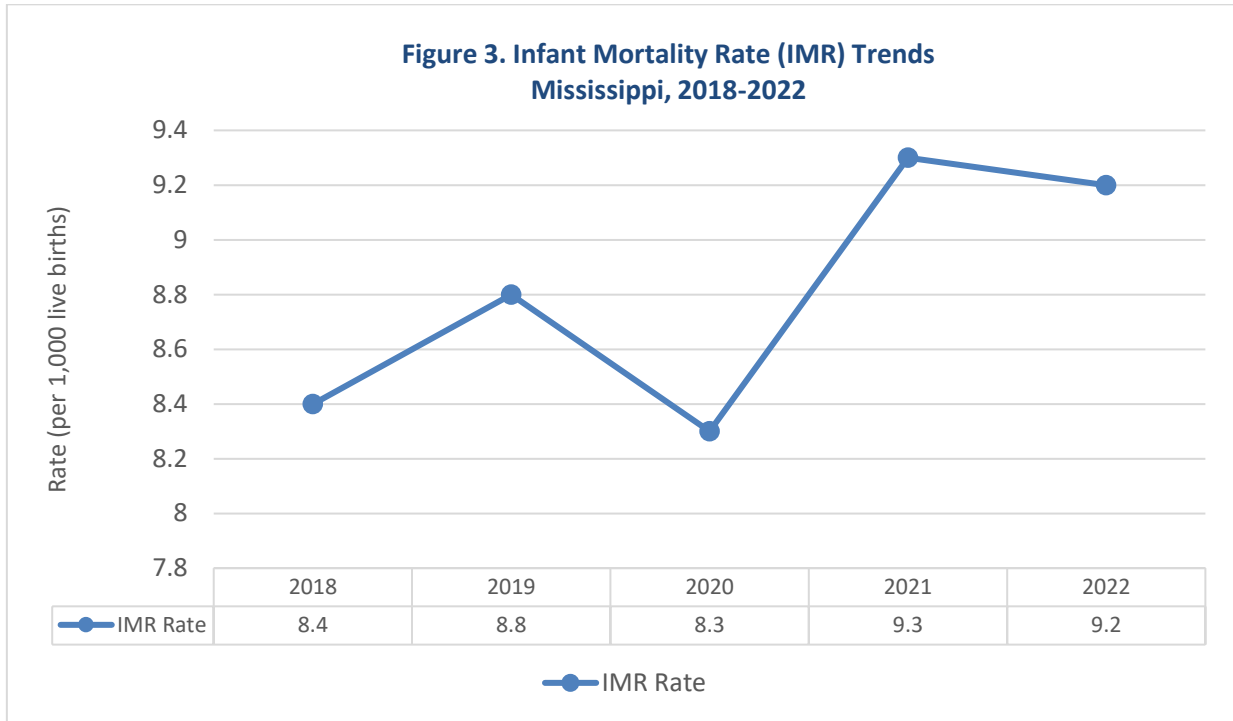


Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2022

Trends in Infant Mortality

The state’s current (2022) IMR at 9.2 per 1,000 live births is more than four points above the HP2030 target of *no more than 5 infant deaths per 1,000 live births*. The infant mortality rate for the state has indicated fluctuation during the past five years with an **average** rate of 8.8 deaths per 1,000 live births for the five-year period.

Figure 3 indicates the trend of the state’s IMR by race for the past five years (2018-2022). As indicated, the rate was highest in 2021 compared to the other four years. From 2021 to 2022, there has been a slight **decrease** in the statewide IMR.

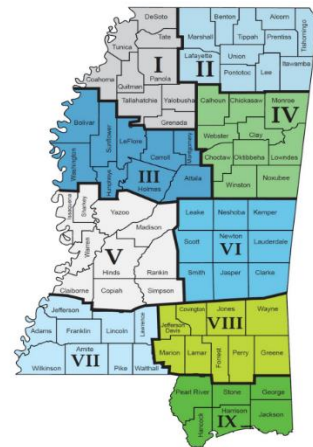


Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2018-2022
 **Some rates for the Other Race category represent values calculated at less than 20 events

Geographic Disparities. Mississippi has geographic disparities in infant mortality. As indicated in the table (Table 1), racial disparities existed in 2022 for each of the Public Health Districts (PHD) except for PHD 6, whereby the IMR for Whites was greater than Blacks. Black infants have continuously had higher infant mortality rates compared to Whites in the state. *Note: Rates with less than 20 events/cases [asterisk*] are unstable and should be viewed with caution.*

Table 1. Mississippi IMR by Public Health District, 2022 (per 1,000 live births)

Public Health District	Black IMR Rate	White IMR Rate	Other Race IMR Rate
1	14.6	5.6*	9.0*
2	12.3*	7.2	12.7*
3	20.0	9.9*	0.0
4	12.7*	4.2*	12.8*
5	11.0	7.6	24.5*
6	10.3*	10.7*	19.7*
7	11.1*	2.3*	0.0
8	10.3*	7.1*	19.4*
9	6.8*	5.6	8.1*



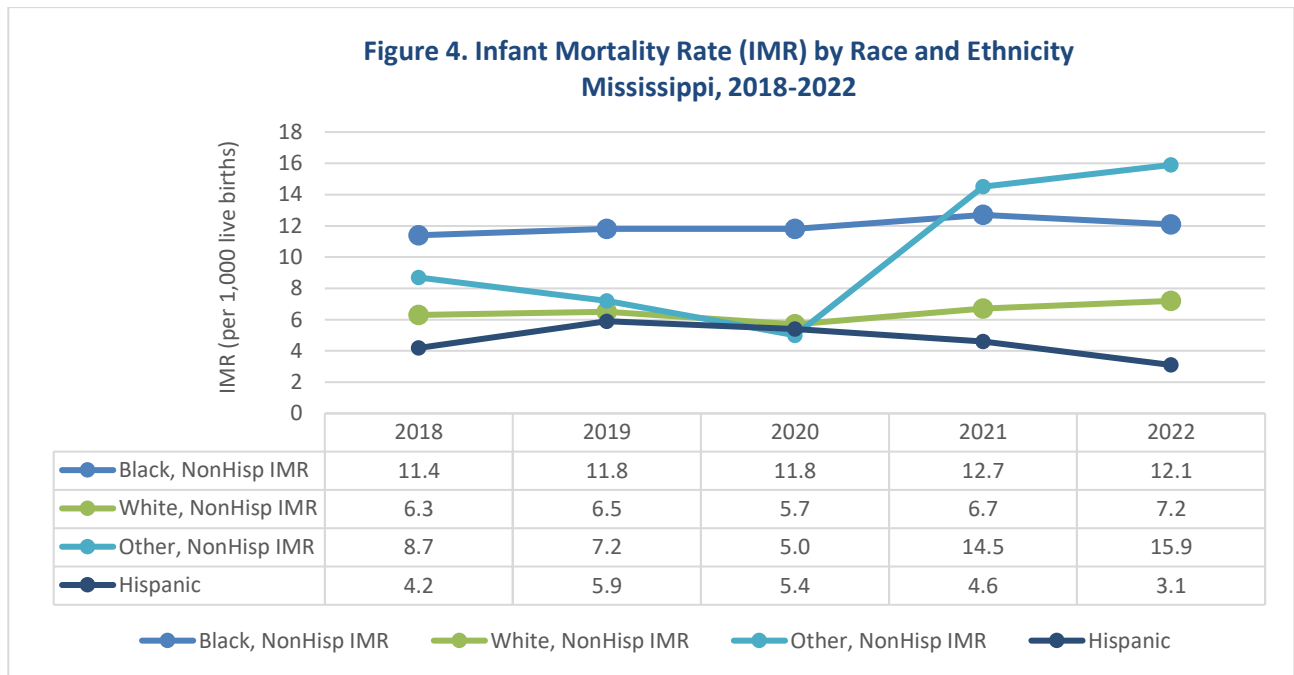
Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2022

Racial Disparities. In 2022, while the overall IMR for the state was 9.2 per 1,000 live births, racial disparities in infant mortality were evident. **Within a year, from 2021 to 2022, the IMR among Black**

infants indicated a decrease from 12.7 deaths per 1,000 live births to the current rate of 12.1 deaths per 1,000 live births. However, there was a slight increase among White infant deaths from 6.7 deaths per 1,000 live births in 2021, to 7.2 deaths per 1,000 live births in 2022. *Note: The rates in Table 1 represent race only and not ethnicity.*

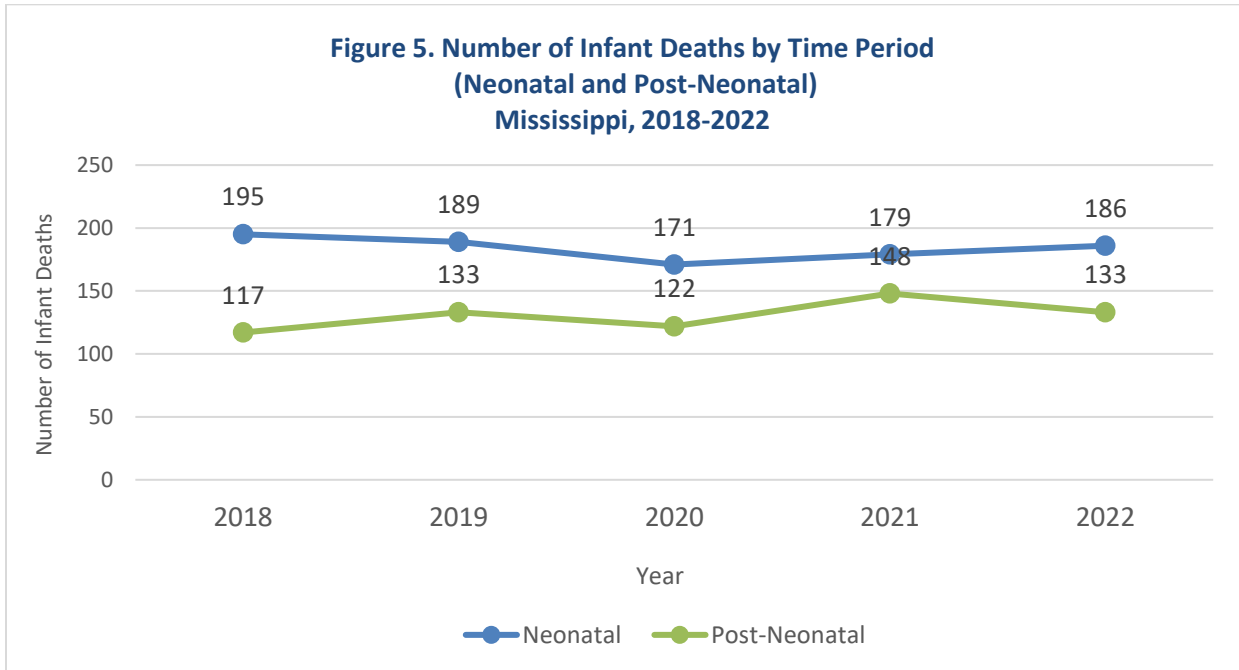
The United States IMR in 2022 was 5.6 deaths per 1,000 live births, which is a 3% increase from 2021 (Ely & Driscoll, 2024).

As indicated in Figure 4 below, the rates (per 1,000 live births) of infant deaths by race and ethnicity have consistently been higher among Black Non-Hispanics and Other Non-Hispanic races. Of the five years, the highest rates for both of these groups occurred in 2021 for Non-Hispanic Blacks and in 2022 for Other Non-Hispanic races.



Source: Mississippi Department of Health, Office of Vital Records and Public Health Statistics, 2022

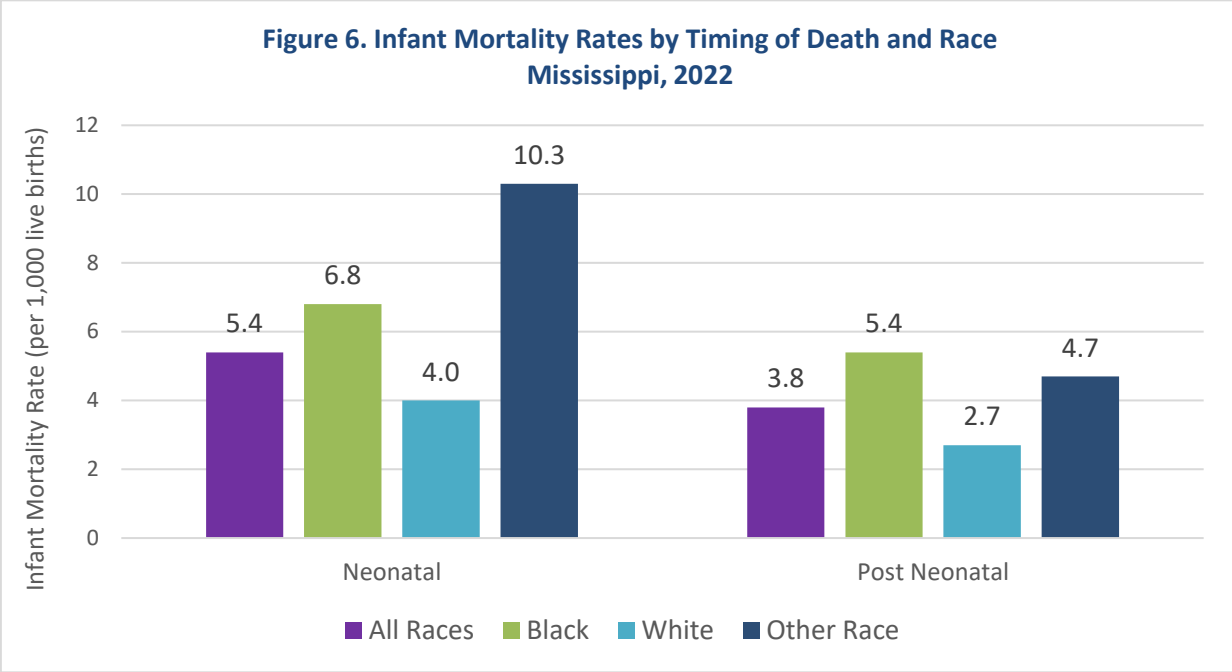
Timing of Death. Infant death can also be examined by the time period after birth when death occurs. Deaths can be divided into two critical periods: the neonatal period (between birth and 27 days of life); and the post-neonatal period (between 28 and 364 days of life). Over the past five years, the number of deaths in the neonatal period has been greater than the number of deaths in the post-neonatal period (Figure 5).



Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2018-2022

In 2022, the Mississippi neonatal and post-neonatal mortality rates were 5.4 and 3.8 deaths per 1,000 live births, respectively. In comparison to 2021, Mississippi's neonatal rate slightly **increased** from 5.1 deaths per 1,000 live births; however, the post-neonatal rate **decreased** from 4.2 deaths per 1,000 live births.

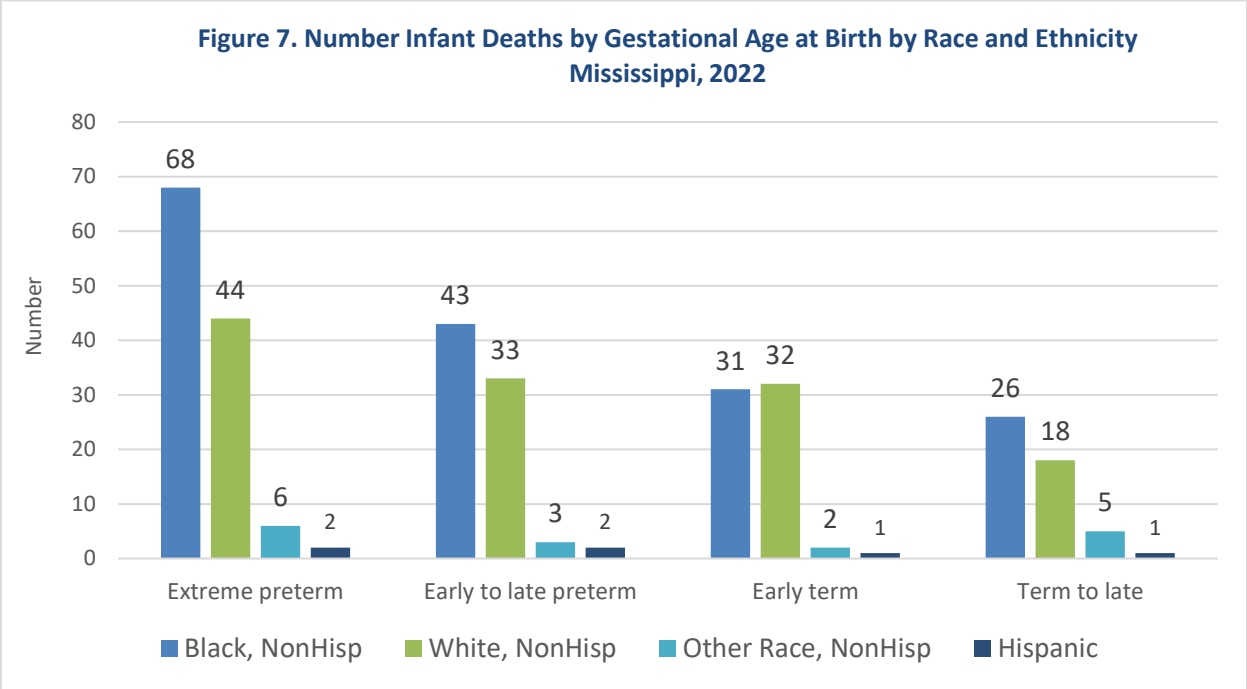
The racial disparity in 2022 for timing of death is evident for Black infants. As indicated in Figure 6, infant death rates that happened within the two periods were higher for Black (non-Hispanic) infants than White (non-Hispanic) infants. Other races are noted as having the highest rates; however, these are represented by less than 20 deaths, which could increase the overall rate once computed.



Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2022

Timing of death may also be categorized into four different groups at birth: (1) extreme preterm, (2) early to late preterm, (3) early term, and (4) term to late. Extreme preterm infant deaths occur during 27 weeks or earlier gestational periods. Early to late preterm deaths occur during 28-36 weeks gestation. Early term deaths occur 37-38 weeks gestation and term to late term deaths occur during 39+ weeks gestation at birth. Further analyses of timing of death in 2022 (Figure 7) indicate that the majority of infant deaths occurred during the extreme preterm (27 weeks or earlier) gestational period at birth. For 2022, the gestational death period was unknown for two infants in the state.

National trends in preterm death rates indicate an overall increase from 2021 to 2022 among preterm infants delivered less than 37 weeks gestation. The U.S. preterm mortality rate among infants in 2021 was 33.59 per 1,000 live births compared to 34.78 in 2022 (Ely & Driscoll, 2024).



Source: Mississippi Department of Health, Office of Vital Records and Public Health Statistics, 2023

Racial Disparities in Timing of Death. Racial disparities in timing of death also are common in Mississippi. During the past five years (2018-2022), neonatal mortality rates among Black infants were consistently higher than all other rates (Table 2). Notably, the neonatal rate for both races slightly increased from 2020 to 2022. The post-neonatal death rate decreased for Black infants from 2021 to 2022 and remained the same for White infants during the same period.

Table 2. Neonatal and Post-Neonatal Mortality Rates by Race, Mississippi 2018-2021 (deaths per 1,000 live births)

Mortality Period	Race	2018	2019	2020	2021	2022
Neonatal	Black	7.4	6.9	6.7	6.5	6.8
	White	3.7	3.8	3.3	3.8	4.0
Post-Neonatal	Black	4.2	4.9	5.1	6.1	5.4
	White	2.3	2.7	2.2	2.7	2.7

Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2022

Leading Causes of and Disparities in Infant Death in 2022

In 2022, there were 319 infant deaths, which resulted in a statewide IMR of 9.2 deaths per 1,000 live births. Table 3 indicates the top five major causes of deaths by number, percent, and rate. The

majority of infant deaths were attributed to congenital conditions/birth defects and deformations, and chromosomal abnormalities.

Table 3. Infant Deaths by Top Five Identified Causes, Mississippi 2022

Cause of Death	Number	Percent	Rate (Per 1,000 live births)
Congenital malformation, birth defects/deformations, and chromosomal abnormalities	54	16.9%	1.6
Accidents	43	13.5%	1.2
Disorders related to short gestation and low birth weight, N.O.S.	40	12.5%	1.2
Sudden Infant Death Syndrome (SIDS)	18	5.6%	0.5
Newborn affected by maternal complications of pregnancy	12	3.8%	0.3
Other causes	152		
TOTALS	319	100%	9.3

Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2022

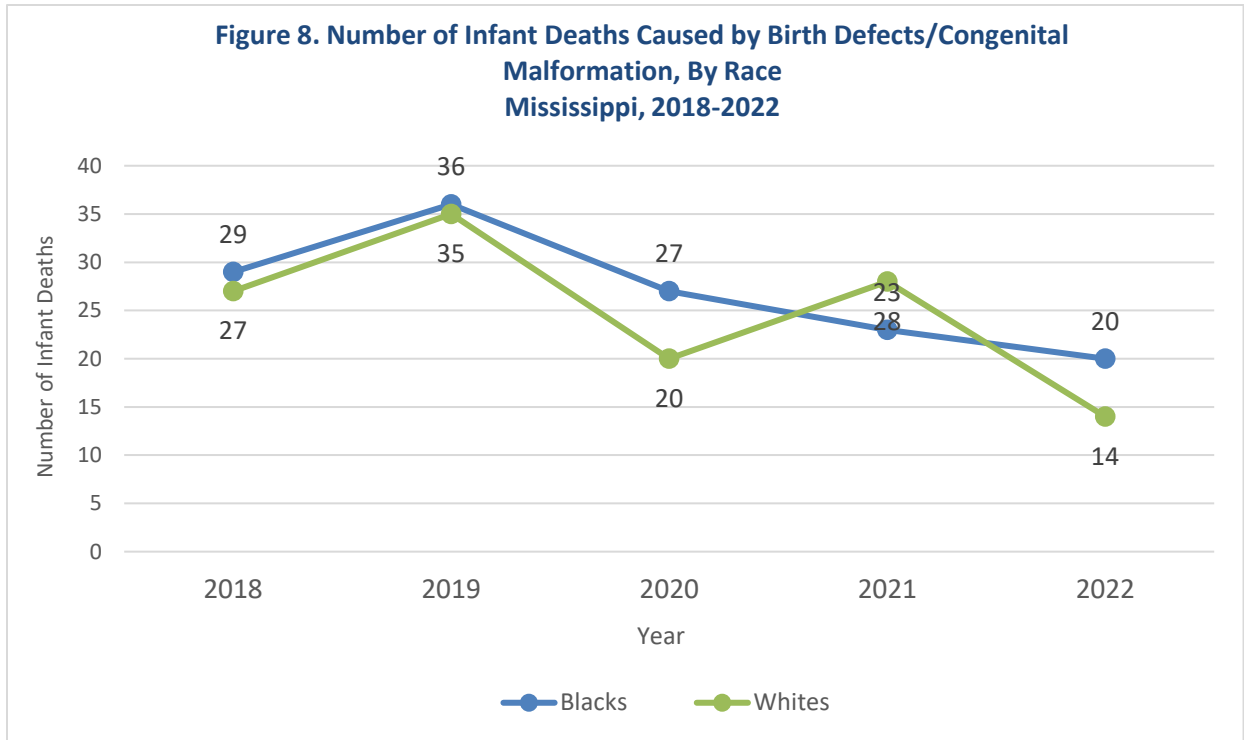
As indicated in Table 3, the top five identified leading causes of infant deaths in Mississippi were due to (1) congenital malformations/birth defects; (2) accidents; (3) disorders related to short gestation and low birth weight [prematurity]; (4) SIDS; and (5) maternal complications of pregnancy. Data and disparities for each of the five leading causes are detailed in the subsections below:

Congenital Malformations. Congenital malformation and/or birth defects are structural changes present at birth that can impact any part of the body such as heart, brain, or foot (CDC, 2024). Some behaviors such as smoking, drinking, uncontrolled medical conditions, genetics, and certain infections potentially increases the chances of having a baby with a birth defect. However, in some cases, a baby born with a birth defect may not be known until after birth (CDC, 2024).

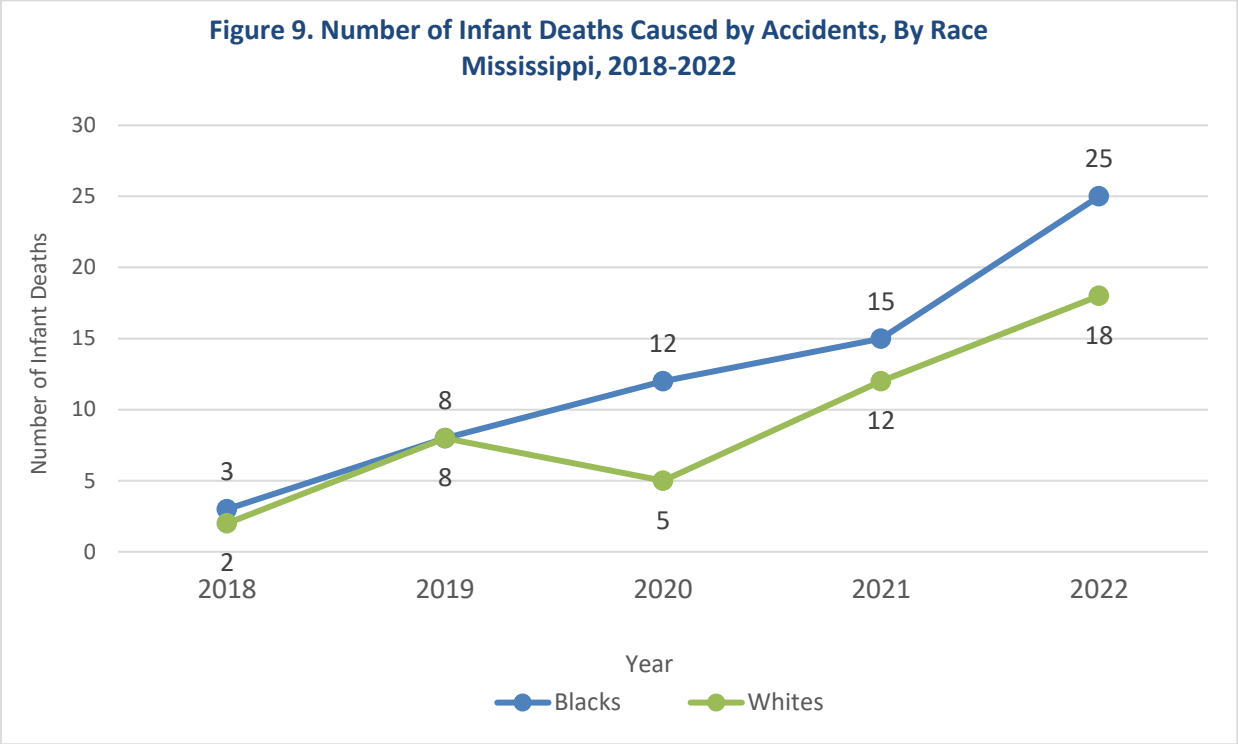
In Mississippi, there were 54 infant deaths in 2022 that were attributed to congenital malformation/birth defects. Of this number, 28 (52%) were among White infants; 23 (43%) were among Black infants; and 3 (5%) were among infants in Other Races.

Birth Defects. Major structural birth defects are defined as conditions that (1) are present at birth, (2) result from a malformation or disruption in one or more parts of the body, and (3) have a serious adverse effect on health, development, or functional ability (DeSilva, et. al, 2016). Some birth defects are directly related to genetic abnormalities. There has been a decrease from 2018 to 2022 in the number of infants dying from birth defects/congenital malformations, with the lowest numbers represented in years 2022 (Figure 8). A comprehensive description of birth defects may

be found here: [Reports - Mississippi State Department of Health \(ms.gov\)](https://www.ms.gov/reports). A specific list of birth defects may also be found at the following website address: <https://www.cdc.gov/birth-defects/index.html>.



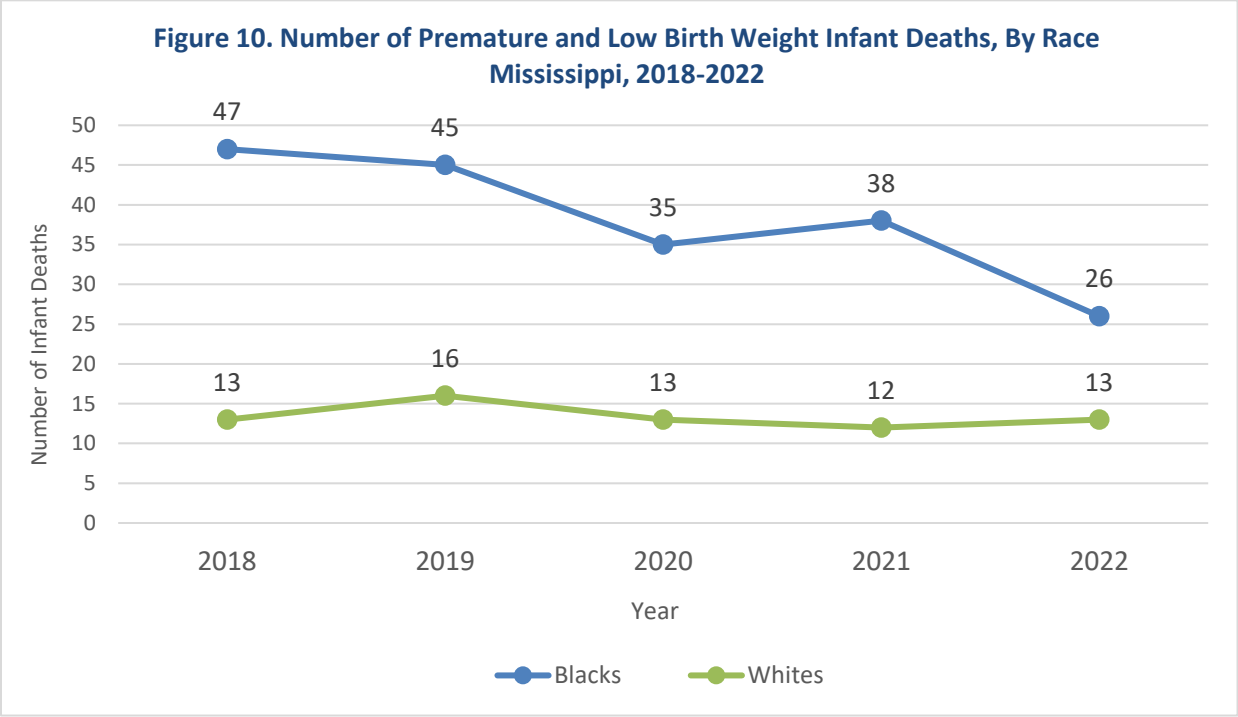
Accidents/Unintentional Injuries. Nationally, unintentional injuries in infants were among the top five leading causes of death in the United States in 2022. Unintentional injuries may include car accidents, drownings, etc. In Mississippi (2022), accidents were the second leading cause of death among infants. During this year, the majority of accidents occurred among Black infants at 58% compared to 42% among White infants. Figure 9 indicates the number of infant deaths caused by accidents [by race] from 2018-2022. As indicated in the graph, the number of infant deaths caused by accidents has increased over the five-year period.



Source: Mississippi Statistically Automated Health Resource System (MSTAHRS), 2018-2022

Prematurity/LBW. Premature or preterm birth is when an infant is born too early, before 37 weeks of pregnancy has been completed. **The earlier an infant is born, the higher the risk of death or serious disability.** Infants who are born before 37 weeks of gestation are at an increased risk of breathing complications, infections, brain injury and death. In 2022, the national preterm birth rate declined 1% from 2021 to 2022 (CDC, 2024). In Mississippi, there was a decrease in the infant death rate as a result of preterm deliveries from 1.5 per 1,000 live births in 2021 to 1.2 per 1,000 live births in 2022.

Figure 10 represents the number of infant deaths in Mississippi due to disorders related to short gestation (prematurity) and low birth weight by race from 2018-2022. As indicated in Figure 10, vast disparities exist among Black and White infants who died from prematurity and low birth weight.



Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2018-2022

In Mississippi, the majority of infant deaths occurred among those born at a very low birth weight or VLBW (less than 1500 grams) in 2022. Even though the overall infant mortality rate by gestational weight was higher among VLBW infants in Other Non-Hispanic racial groups in 2022, the highest actual number of these deaths occurred among Non-Hispanic Blacks (Table 4).

Table 4. Number and Rate (per 1,000 live births) of Infant Deaths in Mississippi by Gestational Weight at Birth, 2022

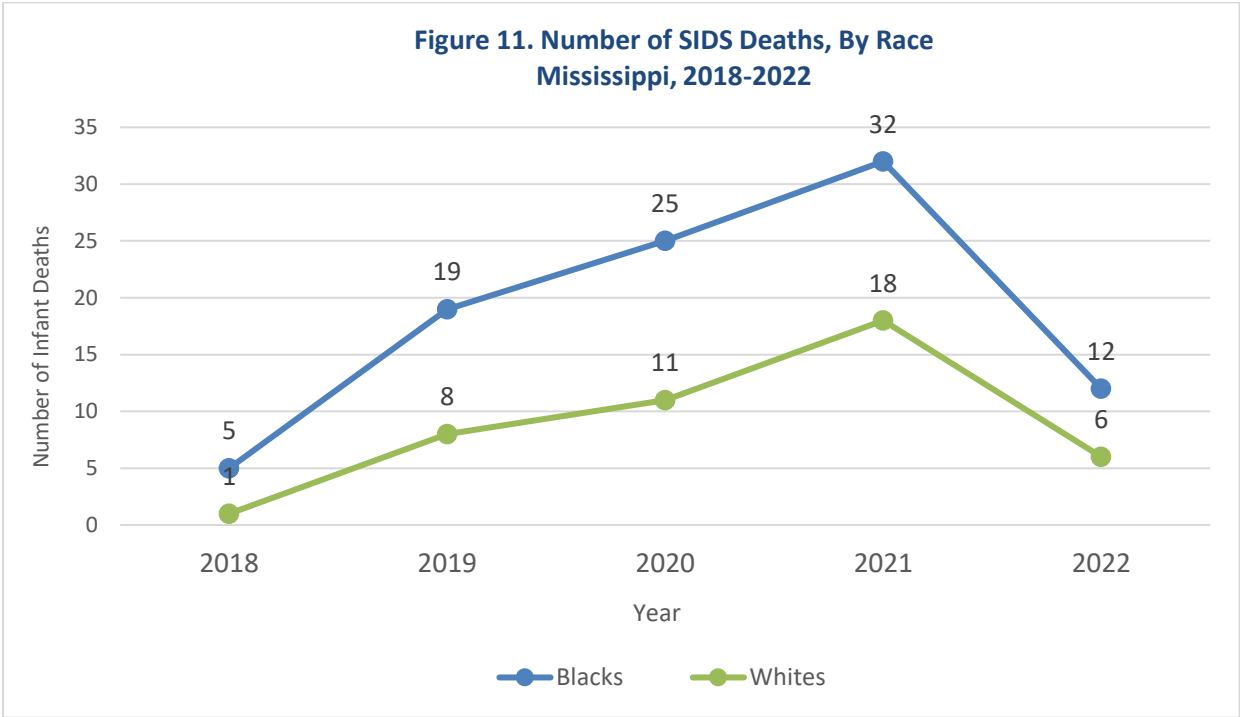
Weight Category	All Races		Black, Non-Hispanic		White, Non-Hispanic		Other Race Non-Hispanic		Hispanic	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
VLBW	146	194.9	80	170.9	56	224.0	8	727.3	2	100.0
LBW	70	19.1	34	16.0	31	23.3	3	40.0	2	15.7
Normal	100	3.3	53	4.6	40	2.5	5	5.4	2	1.1

Source: Mississippi Department of Health, Office of Vital Records and Public Health Statistics, 2023
 **Note: Counts and corresponding rates for an event size of less than 20 should be interpreted with caution

Sudden Unexpected Infant Death. Sudden Unexpected Infant Death (SUID) is a term that englobes the sudden and unexpected death of an infant less than 12 months of age, which cannot be explained by organic or traumatic causes, or that can't be explained such as cases of sudden infant death syndrome, also known as SIDS (Konstat-Korzenny et al., 2019). Most SUID cases in Mississippi occur when the newborn is placed in an unsafe sleep environment or the sleep environment becomes unsafe and causes suffocation, strangulation or an overlay accident occur (these types of deaths are often referred to as accidental suffocation or strangulation in bed).

Sudden Infant Death Syndrome (SIDS) is a form of SUID where no cause is identified but may be impacted by sleeping position and environment.

According to the Centers for Disease Control and Prevention (2023), each year there are about 3,400 SUIDs with the commonly reported types being SIDS, unknown causes, and accidental suffocation/strangulation in bed. SUID-related deaths are disproportionately high in Mississippi compared to most states. As indicated in Figure 11, over the past five years, Mississippi had the highest number of SIDS deaths (both races) in 2021 compared to the other four years.



Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2012-2022

Maternal Complications During Pregnancy. Maternal complications during pregnancy can range from pre-existing conditions to conditions that occur during and immediately after delivery.

According to the Eunice Kennedy Shriver, National Institute of Child Health and Development (National Institutes of Health, 2024), some complications of pregnancy include high blood pressure,

gestational diabetes, infections, pre-eclampsia, and preterm labor. Table 5 identifies infant mortality/deaths by selected maternal morbidities that occurred during pregnancy [at birth] among Mississippi women in 2022. As indicated, women who were obese attributed to the highest number of infant deaths when data were extracted by maternal morbidity conditions/characteristics.

Table 5. Infant mortality by selected maternal morbidity characteristics at birth, 2022

Condition	All Races		Black, Non-Hispanic		White, Non-Hispanic		Other Race Non-Hispanic		Hispanic	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Gestational Hypertension	42	12.0	26	18.3	16	8.6	0	0.0	0	0.0
Gestational Diabetes	8	4.2	3	4.8	4	3.6	1	11.9	0	0.0
Eclampsia	1	12.0	0	0.0	1	25.0	0	0.0	0	0.0
Obesity	132	9.4	82	12.2	44	7.0	5	14.7	1	1.6
Previous Preterm Delivery	33	22.2	23	30.6	7	11.1	3	85.7	0	0.0
Syphilis	6	21.2	3	15.1	2	28.2	1	166.7	0	0.0
TOTALS	319	9.2	170	12.1	127	7.2	16	15.9	6	3.1

INFANT MORBIDITY, MISSISSIPPI

Even though this report addresses infant mortality, it is important to note that some infant deaths may stem from maternal causes and/or behavior that impact the fetus/infant. Infant Morbidity may be defined as any condition that adversely impacts the ability of newborns to survive and thrive. In many cases morbidities lead to mortalities; however, there are some that may be prevented. Because several factors may contribute to infant mortality, it is imperative to consider the precursors that potentially lead to death as an unfortunate conclusion. These factors may include, but are not limited to preconception health and care, pre-existing chronic conditions, prenatal care, and/or overall unhealthy behaviors.

Preconception Care

Preconception care is defined as a set of interventions that are to be provided before pregnancy, to promote the health and well-being of women and couples, as well as to improve the pregnancy and child-health outcomes (World Health Organization, 2013). Preconception care may also involve “interconception care” which is used when referring specifically to care provided between pregnancies. This type of care includes interventions that modify risk factors in order to promote healthy outcomes of subsequent pregnancies (Yonekura, et al, 2009).

Some maternal conditions are known to be associated with birth defects and are usually common chronic conditions that contribute to poor overall health in women—before, during and after pregnancy. These include, but are not limited to genetics, socioeconomic and demographics, environmental factors including infections, and unknown causes (World Health Organization, 2023).

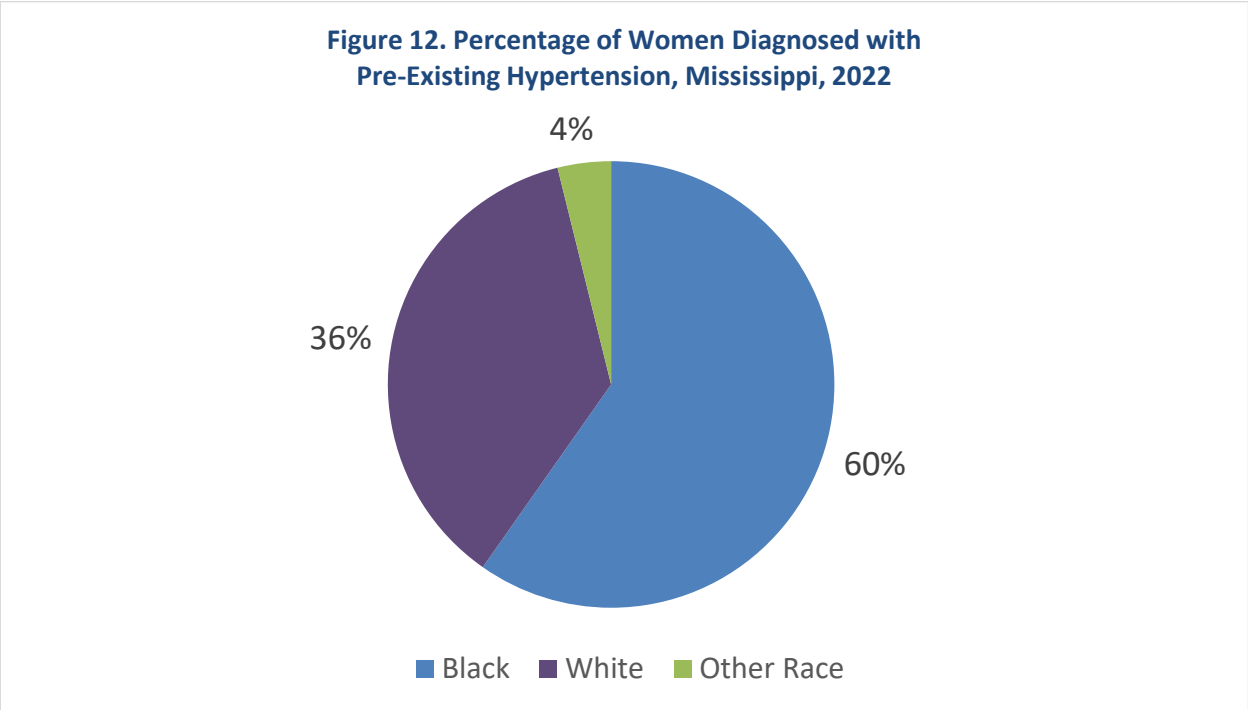
Pre-Existing Chronic Health Conditions [Maternal]

Pre-existing chronic health conditions in pregnant women are cause for concern due to the high-risk nature of these conditions. Pre-existing chronic health conditions heavily manifest during pregnancy and can cause adverse health outcomes not only for the mother, but as well as the infant in which she is carrying. Some pre-existing conditions in maternal patients that are detrimental and cause for concern include, but are not limited to hypertension, diabetes, and obesity. These conditions are further explained below:

Hypertension (High Blood Pressure). Preeclampsia and complications from chronic hypertension are leading drivers of maternal morbidity, mortality and preterm birth. Hypertensive disorders in pregnancy, including chronic hypertension and pregnancy-associated hypertension (i.e.,

gestational hypertension, preeclampsia-eclampsia, and chronic hypertension with superimposed preeclampsia), are associated with poor maternal, fetal, and neonatal outcomes. Based on one publication from the American College of Obstetricians and Gynecologists (2013), pregnant women with Medicaid insurance have an increased risk for complications in pregnancy and poor fetal outcomes compared with women with private insurance. On average, approximately 60% (or higher) of deliveries are from women who have Medicaid insurance in Mississippi each year.

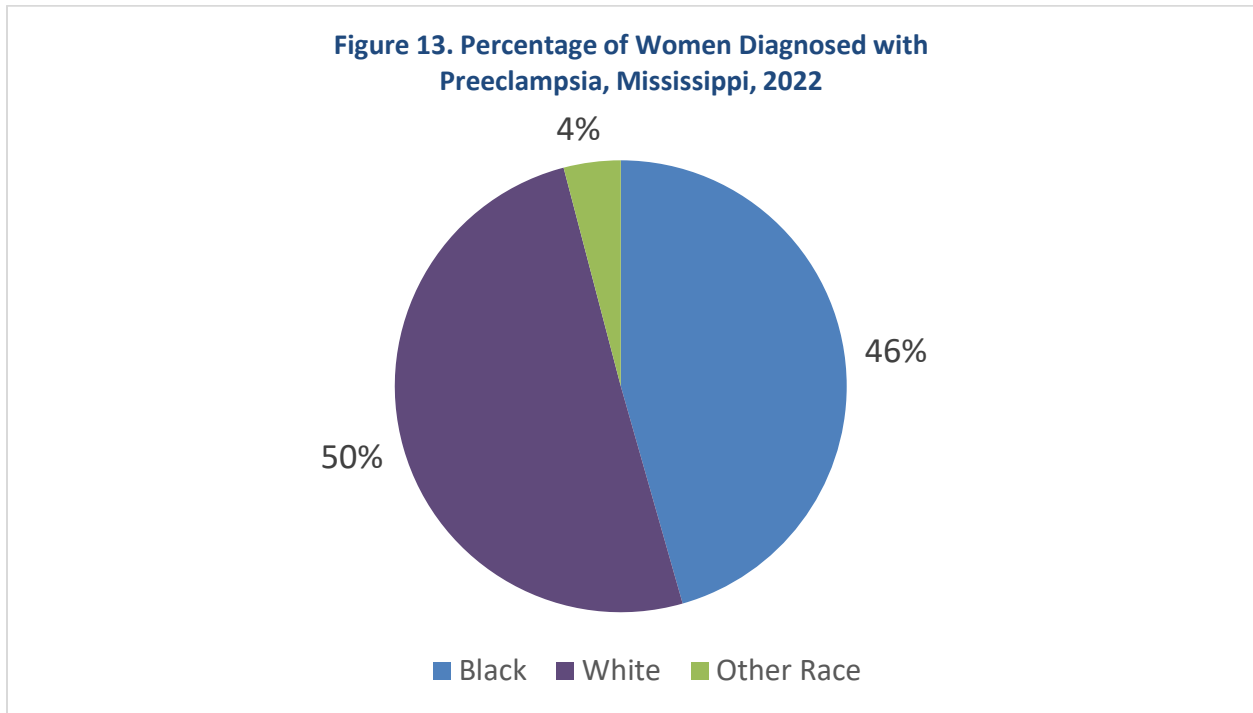
The data below (Figure 12) indicates the percentage of women [by race] who were diagnosed with hypertension before pregnancy using the O10 ICD-10 grouped codes in 2022. These codes capture data for women who were diagnosed with *pre-existing hypertension complicating pregnancy, childbirth and the puerperium* in 2022. The data derived from the CDC’s National Syndromic Surveillance Program (NSSP)/Biosense. This data source is collected in real-time; however, limitations exist because other national sources of data may not be comparable. In addition, edits to the data (if applicable) are conducted via the healthcare facility level versus the state/national level of data collection.



Source: National Syndromic Surveillance Program (NSSP)/Biosense, 2022

Pre-eclampsia. Pre-eclampsia is a pregnancy related high blood pressure disorder whereby blood supply to the fetus is reduced (National Institutes of Health, 2017). Figure 13 represents women [by race] who were diagnosed with *pre-eclampsia during pregnancy* in Mississippi in 2022. The

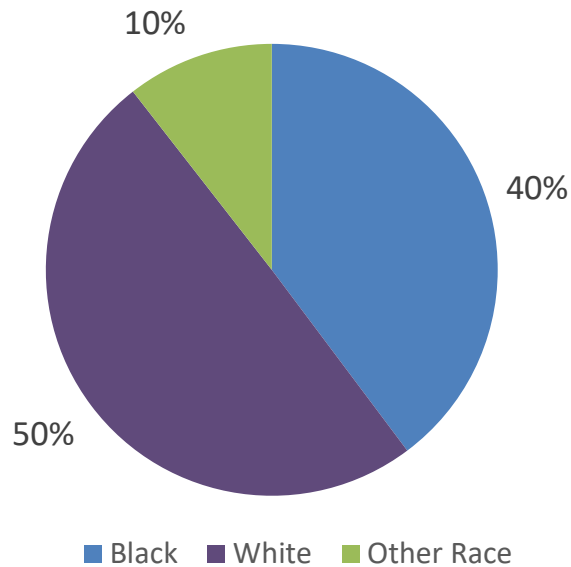
diagnoses were coded using the O14 ICD-10 grouped codes.



Source: National Syndromic Surveillance Program (NSSP)/Biosense, 2022

Diabetes. Poorly controlled diabetes before pregnancy (Type 1 and Type 2) increases the risk of many birth defects including heart, neurologic, musculoskeletal and pulmonary defects. In the United States, about 1% to 2% of pregnant women have type 1 or type 2 diabetes and about 6% to 9% of pregnant women develop gestational diabetes (CDC, 2018). Figure 14 represents the percentage of women [by race] in Mississippi who was diagnosed as having *diabetes mellitus in pregnancy, childbirth, and the puerperium* in 2022. The diagnoses were coded using the O24 grouped ICD-10 codes.

Figure 14. Percentage of Women Diagnosed with Diabetes Mellitus in Pregnancy, Mississippi, 2022



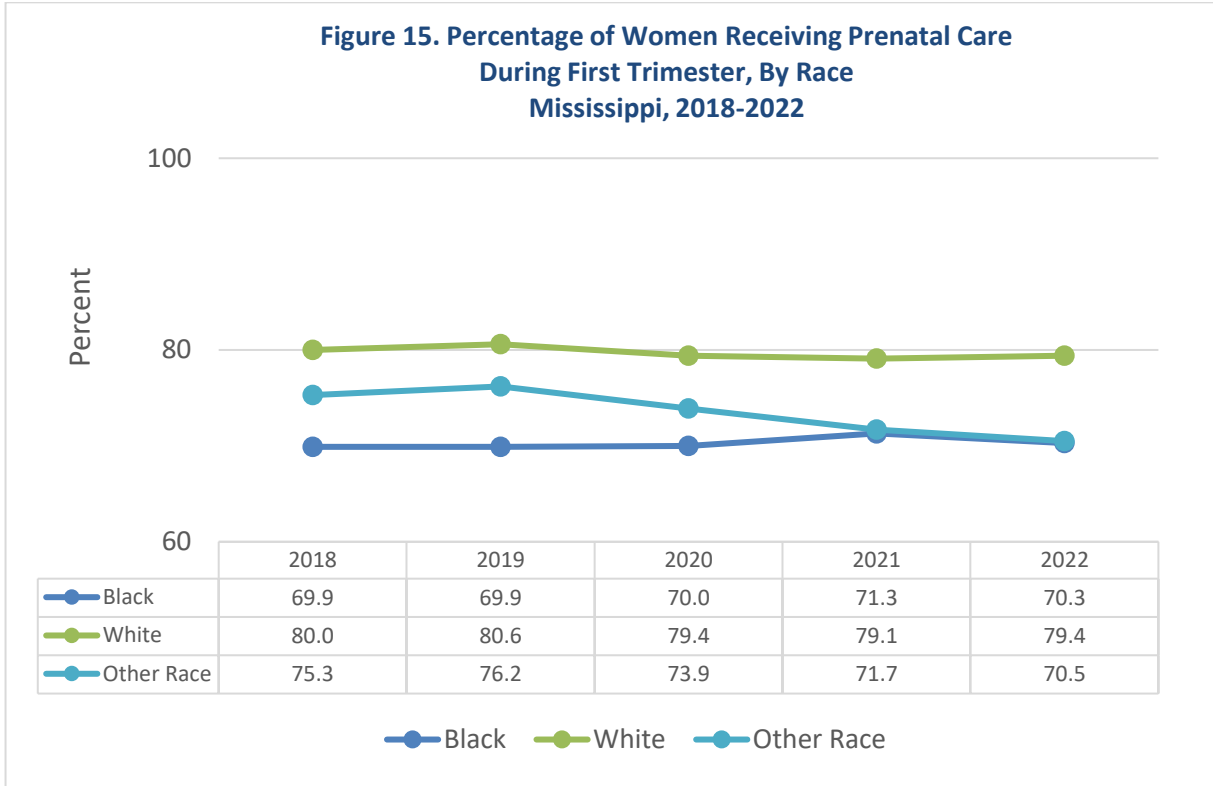
Source: National Syndromic Surveillance Program (NSSP)/Biosense, 2022

Other Morbidities During Pregnancy

In addition to pre-existing conditions, morbidities such as not receiving adequate prenatal care, smoking and/or delivering one or multiple very low birth weight (VLBW) babies can contribute to the state's infant mortality. These may exist and can lead to several health issues that increases the burden of pregnancy and could pose a complicated and/or risky delivery. As indicated in the data, disparities vastly exist in Mississippi among women who received inadequate prenatal care, smoked during pregnancies, and/or had a very low birth weight delivery.

Inadequate Prenatal Care. It is important for every pregnant woman to enter prenatal care as early as possible. Early entry into prenatal care is key to identifying any potential issues early and increase the chances of having a healthy baby. Based on data results (Figure 15), the percentage of women who received prenatal care during the first trimester has slightly increased for Black women from 2018 to 2022; however, the percentage has slightly decreased for White women and those among other racial groups during the same five-year period.

Figure 15. Percentage of Women Receiving Prenatal Care During First Trimester, By Race Mississippi, 2018-2022

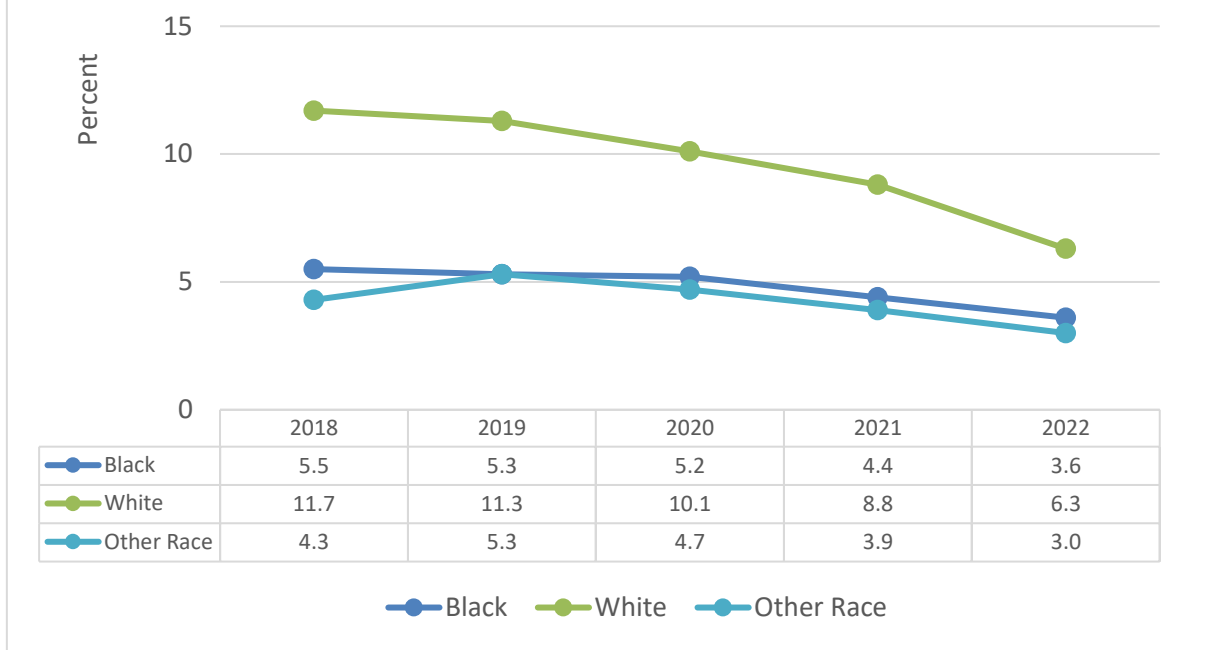


Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2018-2022

Smoking. Cigarette and/or related smoking before or during pregnancy increases a woman’s risk for adverse pregnancy outcomes and the health of the baby before and after delivery. Adverse outcomes may include a host of conditions and pregnancy complications (e.g. premature rupture of membranes, placenta previa, placental abruption, ectopic pregnancy, preterm birth); fetal growth restriction and low birthweight; congenital malformations, like orofacial clefts; adverse effects on fetal lung and brain development; stillbirth; perinatal mortality; and SIDS (CDC, 2014). In 2022, of all 34,678 births, 1,773 (5.1%) of women indicate that they smoked during pregnancy according to birth certificate data. This is a decrease from 6.8% in 2021.

As indicated in Figure 16 below, among all race groups, the percentage of smoking in pregnancy has decreased. Overall, the percent of women who smoked during pregnancy has consistently decreased from 2018-2022.

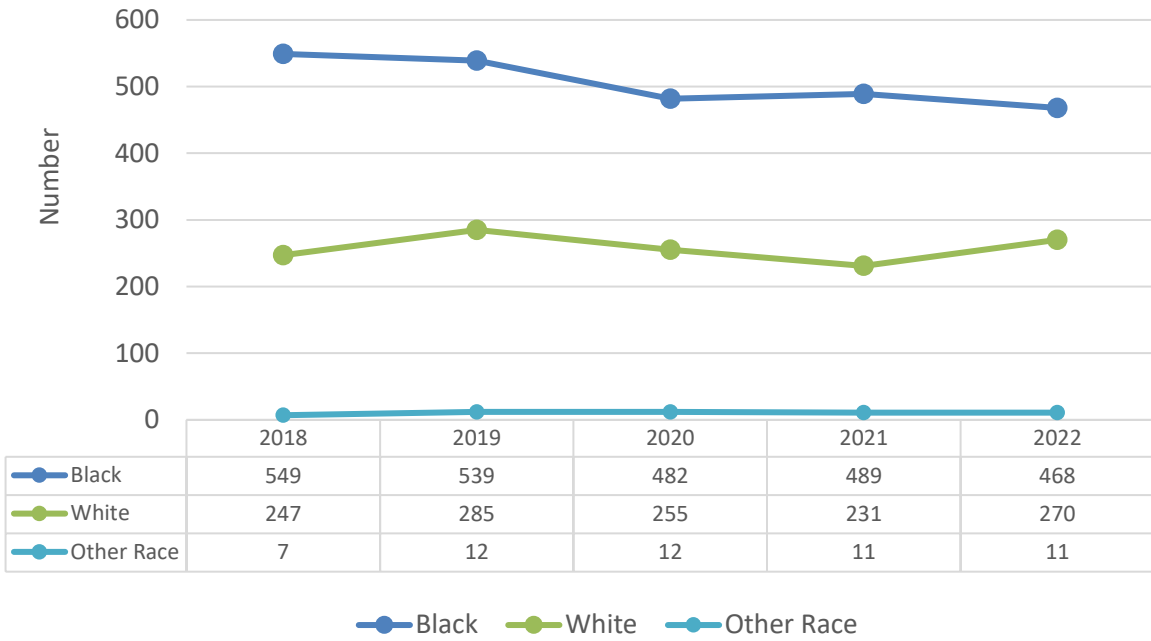
**Figure 16. Percent of Women Who Smoked During Pregnancy By Race
Mississippi, 2018-2022**



Source: Mississippi Statistically Automated Health Resource System (MSTAHRs), 2018-2022

Very Low Birth Weight Deliveries. A very low birth weight delivery (VLBW) is defined as one whereby the infant weighs less than 1500 grams (Cutland, et al, 2017). Overall, the number of VLBW deliveries has decreased in Mississippi (Figure 17) from 2018-2022; however, there was an increase in the number of VLBW deliveries among White women from 2021 to 2022.

**Figure 17. Number of Very Low Birth Weight Deliveries By Race
Mississippi, 2018-2022**



Source: Mississippi Statistically Automated Health Resource System (MSTAHRS), 2018-2022

KEY MSDH PROGRAMS AIMED AT INFANT MORTALITY REDUCTION

Healthy Moms/Healthy Babies (HM/HB)

The Healthy Moms/Healthy Babies of Mississippi program, provided through the Mississippi State Department of Health, is a Medicaid-reimbursed targeted (perinatal) case management (TCM) program for high-risk pregnant women and babies less than one year old. HM/HB partners with patients, communities, and medical providers to provide enhanced access to health care, nutritional and psychosocial support, home visits, and health education. The program aims to decrease preterm births, improve maternal health, decrease infant and maternal mortality, and support infant development. The program receives referrals from health department clinics, other MCH-serving programs, birthing hospitals, OB/GYN practices, other health settings, and Medicaid coordinated care organizations (CCOs) and is available to residents of all 82 Mississippi counties.

Mississippi SIDS/SUID Reduction Task Force

The Mississippi SIDS/SUID Reduction Task Force comprises physicians, nurses, epidemiologists, community leaders, and other leaders to address the growing number of SIDS cases in the state. The task force is charged with developing strategies aimed at decreasing the risk of SIDS/SUID in the state. Some strategies currently being discussed include, but are not limited to, addressing infant safe sleep practices, effectively reaching young mothers (teens to age 24), and determining the causes resulting in the increases across the state.

Count the Kicks® Program

The MSDH also has an active statewide Count the Kicks © program. This program conducts community-based outreach activities for pregnant women. The success of the program comes from partnering with maternal health and non-clinical providers to ensure that all expectant parents are aware of the importance of paying attention to their baby's movements, learning what are normal movement patterns for their baby, and telling their provider right away if they detect any changes. Providers, community organizations, healthcare facilities can request and receive free toolkits tailored to assist families expecting a newborn. In addition to toolkits, families expecting a newborn can also download a free app to effectively monitor fetal movement during pregnancy.

Cribs for Kids Program

The Cribs for Kids program is nationally recognized for providing families with portable cribs. Using available grant funding, the MSDH is able to provide access to free portable cribs for families who

have the greatest need due to poverty, socioeconomics, etc. In addition, families receive free packets which includes a sleep sack, literature referencing infant safe sleep and a pacifier. The MSDH staff, such as nurses and social workers, make home visits to provide evidence-based safe sleep education, demonstration, and instruction on crib setup.

MSDH Maternal and Children’s Health Program

The MSDH Maternal and Children’s Health Program (i.e. Title V Block Grant) is responsible in leading and supporting efforts in local communities and across the state to improve the health and wellbeing of pregnant women, infants, children [with and without special health care needs], adolescents, and others in the state. To address national and state performance measures, this program strategically coordinates activities and efforts with partners and stakeholders to improve health outcomes for the state’s maternal and children’s health (MCH) population. This strategic alignment is imperative in assuring the greatest impact of improved MCH health outcomes statewide through clinical and support services currently established within the county health departments.

Healthy Start – Northeast Mississippi

The Northeast Mississippi Healthy Start Initiative began September 2023. The outlined activities and strategies for the program will be incorporated within a coordinated maternal system of care via the following activities:

- Improve health conditions for women before (preconception), during, and after pregnancy via direct and enabling healthcare and support services.
- Enhance quality of life and/or health conditions for infants up to 18 months of age.
- Decrease the number of Sudden Unexpected Infant Deaths (SUIDS) in the target region.
- Develop a comprehensive and coordinated maternal system of care.
- Utilize community health workers/peer educators to recruit and retain families participating in the program.
- Incorporate a robust referral system via MSDH’s Healthy Moms/Healthy Babies program for high-risk mothers to receive additional healthcare and resources.
- Develop a peer-to-peer model to enhance the support of fathers/men via
- Address social determinants of health that impede mothers and/or infants from receiving healthcare and/or other needed resources.

Women, Infants, and Children (WIC)

To complement other MCH-related activities, the agency’s WIC program provides special supplemental food support for pregnant, breastfeeding, and post-partum women. In addition, these services are also provided to infants and children under the age of five. The WIC program provides

dietary counseling, educational resources, and referrals [as needed] to each participant.

MSDH Office of Tobacco Control (OTC) and Prevention

The MSDH's Office of Tobacco Control (OTC) implements a range of integrated programs to encourage and support tobacco-free lifestyles. The OTC provides funding that covers the 82 counties of the state and implement tobacco control programs at the grassroots level. The office also assists in creating community-based coalitions that work to educate municipalities and schools regarding smoke-free air, prevent the initiation of tobacco use among youth, reduce exposure to secondhand smoke, promote cessation services, and eliminate tobacco-related disparities. The OTC also promotes tobacco cessation services among expecting mothers, fathers, and caregivers of infants.

MSDH Office of Newborn and Genetics Screening

The MSDH's Newborn and Genetics Screening Program tests infants for heritable disorders that can threaten the health or well-being of the infant(s). The program provides genetic counseling via a physician to parents of children whose results indicate a genetic disorder. In addition, the program offers these early screenings so that families can receive the necessary treatment and services to help their baby/children have the best chance to thrive regardless of the condition(s) in which they were diagnosed.

MSDH Lead/Healthy Homes Initiative

The MSDH Lead and Healthy Homes program distributes infant safe sleep materials and resources to families and communities around the state. The program also educates families, businesses, and communities about hazards including mold, mildew, pests, carbon monoxide and lead. These types of hazards can put infants and their families at greater risk for developing asthma, allergies and cancer.

MSDH Early Intervention Program (First Steps)

The MSDH's Office of Early Intervention/First Steps Program supports families of infants and toddlers under three years of age who have a developmental delay, or who have a diagnosed condition that's likely to cause delays in development. The program contracts with and/or employs providers including physicians, early interventionists, social workers, etc. to work directly with families, guiding them to help their child learn at home, in their community, and in care and

education programs. The program provides family-centered services and helps families obtain information, emotional support, and material supports in their community to meet the unique needs of their child and the family.

MSDH Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program

The MIECHV program at MSDH offers free home visits by early childhood specialists to help you build a healthy home for moms, babies and children up to 5 years old. The program also supports its participants in the following ways:

- Supporting healthy pregnancy habits
- Giving advice on breastfeeding, infant safe sleep, eating well, & accident prevention
- Showing parents how to be positive and supportive with their children by reading, playing, and praising good behavior
- Encouraging talking to babies and teaching them things from a young age
- Advising parents on future planning, continuing their education, and finding jobs & childcare
- Connecting families to other services and resources in their community

Mississippi Time 4 Mom Program - MSDH

MSDH's Time 4 Mom Program focuses on assisting post-partum women ("4th Trimester"). The program provides home visiting services aimed at reducing maternal morbidity and mortality in the Mississippi Delta. The program is a partnership among MSDH, University of Mississippi Medical Center, Jackson State University, and Harvard University.

DATA SOURCES FOR TABLES AND FIGURES

The vast majority of data for this report were obtained from the Mississippi STatistically Automated Health Resource System (MSTAHRS) and the Mississippi State Department of Health, Public Health Statistics Division. Additional data (Figures 12-15) were obtained from the Centers for Disease Control's (CDC) National Syndromic Surveillance Program/Biosense Platform.

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