MSDH

MISSISSIPPI INFANT MORTALITY REPORT

Annual Report: Review of 2023-2024 Neonatal Infant Deaths and 2022-2023 Post-Neonatal Infant Deaths

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Submitted to:

Chairmen of the Mississippi House Public Health and Human Services Committee and Senate Public Health and Welfare Committee

Report prepared by:

Mississippi State Department of Health, Office of Vital Records and Public Health Statistics and Office of Women's Health, Maternal and Infant Health Bureau with support provided by
Provisional Infant Mortality Review Committee Members

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- Tami Brooks, MD - Pediatrician and MSDH Medical Director
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Acknowledgements

This report reflects the hard work of the Mississippi Child Death Review Panel, the Provisional Infant Mortality Review Committee members, and those who respond directly to infant and child fatalities. Without the work of coroners, medical examiners, law enforcement, emergency medical services, physicians, social service agencies, and countless others, the Child Death Review Panel and Provisional Infant Mortality Review Committee would not be able to review these deaths. The Mississippi State Department of Health acknowledges the families touched by infant death each year. This report is generated with the goal of preventing these tragic losses. To explore or request data, please check the Mississippi Statistically Automated Health Resource System (MSTAHRS) or submit an online request for MSDH data or public records at:
https://apps.msdh.ms.gov/DataRequestEntry/requestform

Dear Chairman,

I am honored to submit the 2025 Infant Mortality Report on behalf of the Mississippi State Department of Health and to highlight its key findings. Though we have worked diligently to tackle this issue, Mississippi still leads the nation in infant mortality. This report contains a 10-year analysis that illustrates infant mortality trends in the state.

In 2024, Mississippi had 323 infant deaths, with a mortality rate of 9.7 per 1,000 live births, considerably higher than the national average of 5.5 per 1,000. The leading causes of infant death include congenital malformations, accidents (including Sudden Unexpected Infant Death, or SUID), and complications related to preterm birth and low birthweight. Black infants continue to die at more than double the rate of White infants, underscoring racial disparities.

In Mississippi, a significant percentage of infant deaths are related to low birthweight, preterm deliveries, and maternal health issues including hypertension, diabetes and obesity. In addition, though there has been a slight reduction in the SUID rate, it is still twice the national average, with accidental suffocation and strangulation the leading causes.

To confront these issues, this report offers several recommendations: improving maternal health through early prenatal care and preconception health initiatives, promoting safe sleep practices, and requiring coroners to consistently complete SUID forms to ensure proper investigations. We could also see reductions in infant mortality by strengthening the state's perinatal system and referral patterns for high-risk mothers and infants, expanding the Fetal and Infant Mortality Review Program, and increasing neonatal care training statewide.

I want to thank the review committee members and the Mississippi State Department of Health staff who have championed this critical undertaking. Their commitment and expertise have been vital in preparing this report, as well as continuing our efforts to improve maternal and infant health in Mississippi.

A collaboration between hospitals and healthcare providers, along with a public education campaign, will be essential in reducing infant deaths in Mississippi.

Sincerely,

Daniel Edney, MD, FACP, FASAM
Executive Director State Health Officer
Mississippi State Department of Health

EXECUTIVE SUMMARY & KEY FINDINGS

MSDH

Executive Summary

Infant mortality is the death of an infant within the first year of life. Unfortunately, for many years, Mississippi has led the nation in infant mortality. Ten-year trend analysis is included to show trends and provide a historical view of infant mortality in Mississippi. The infant mortality rate for 2024 was up to **9.7** per 1000 births, a significant increase from 8.9 per 1000 births in 2023, and the highest infant mortality rate noted in the last 10 years. In response, the MSDH declared a public health emergency regarding our infant mortality rate.

Review of infant mortality data for 2023 and 2024 shows that Black babies are three times more likely to die than White babies. Black babies are more likely to die soon after birth due to extreme prematurity, and they are more likely to die due to unsafe sleep conditions leading to Sudden Unexpected Infant Death (SUID) in the first year of life. Preventing SUID or deaths due to unsafe sleep is a matter of education and messaging that overcomes barriers to getting the attention of new mothers and fathers. Preventing death due to extreme prematurity will be a multifactorial approach focused on maternal health and the more difficult task of getting mother and babies to the right place for care by creating a system that makes best use of the resources we have available in Mississippi.

Key Findings

In 2024, there were 323 infant deaths in Mississippi. The infant mortality rate was 9.7 per 1000, compared to the national average of 5.5 per 1000.

1. The top three cause of infant death according to table three: the Top 15
   Leading Causes of Infant Deaths by Rankable 71 Causes of Death 2022 to 2024.

   a. Congenital malformations/ chromosomal abnormalities, birth defects/ malformations
   b. Deaths related to short gestation and low birthweight. However, short gestation and low birthweight are likely still the leading cause of infant death if you add up specific causes such as respiratory disease and intraventricular hemorrhage which are more likely to occur in preterm infants.
   c. Unintentional injuries (accidents) which include babies who died due to unsafe sleep.

2. The top three leading causes of infant death in Mississippi from 2022 to 2024 according to table
   four: Causes of Infant Deaths by 130 NCHS Selected Cause Groupings.

   a. Extremely low birthweight or extreme immaturity 129 deaths
   b. Accidental suffocation and strangulation in bed 98 deaths
   c. Sudden Infant Death Syndrome 86 deaths

3. In 2024, 100 (31%) of 323 deaths were among White, non-Hispanic infants; 195 (60%) were among Black, non-Hispanic infants; and 28 (9%) were among other races. Infant mortality for White infants was 5.8 per 1000 births and for Black infants 15.2 per 1000 births.

4. In 2024, most neonatal deaths (55% or 108/198) took place within 5 hours of birth; 33% of all infant deaths were neonatal deaths within 5 hours of birth.

5. Three health districts had the worst infant neonatal mortality rate in 2024: District 3 (Delta) 13/1000, District 6 (East Central) 13/1000, and District 7 (Southwest) 13.1/1000.

6. Thirty percent of neonatal deaths took place at a hospital with no level three NICU or above. A level three NICU can care for the sickest and smallest babies.

7. Fourteen of the neonatal deaths in 2024 were transports to the Children's Hospital NICU; babies
born at an outside hospital and that have to be transported after birth have a higher risk of death or a bad outcome.

8. The largest segment of neonatal deaths in 2024 was the group of babies born at 25 weeks gestation or less 50% or 82/163).

9.Twenty babies were born at 22 weeks gestation. None of these babies survived. Survival at 22 weeks is noted to be between 37 and 51% across the United States.

10. 129 babies born less at than 27 weeks accounted for 40% of all infant deaths in 2024. These infants either died in the hospital or at home within the first year.

11. Sudden Unexplained Infant Death remains the second leading cause of infant death in Mississippi. The CDRP has noted that most of these deaths occur due to unsafe sleep. 72 babies died in 2024 due to SUID.

Key Recommendations of the Provisional Infant Mortality Committee

A. Support efforts of MSDH to establish a statewide infant mortality committee with the mandate, resources, and authority to review infant deaths like the Child Death Review Panel but focusing on deaths less than one year.
B. Support the statewide Obstetrical/perinatal system of care that MSDH has implemented to get mothers and their babies to the appropriate level of care in a timely manner.
C. Develop a statewide system of healthcare that will provide early prenatal care to all women, especially high-risk women with a history of a prior preterm delivery and health risk factors like obesity, hypertension, and diabetes to prevent neonatal deaths less than 25 weeks. Since obesity is the most common risk factor for neonatal death, the state should explore initiatives to reduce obesity among women of childbearing age.
D. Provide education statewide to new mothers and all caregivers about the importance of safe sleep, the need for a safe sleep plan, and the dangers of falling asleep with your baby.

DEFINITIONS & TERMS

Definitions & Terms

Accidental Strangulation or Suffocation: An explained sudden and unexpected infant death in a sleep environment (bed, crib, couch, chair, etc.) in which the infant's nose and mouth are unintentionally obstructed (suffocation) and/or pressure on the infant's neck (strangulation) cause asphyxia (lack of oxygen to the body). Accidental suffocation may occur, for example, when the infant's face is covered by soft or loose bedding, blankets, or pillows, or the infant is trapped between two surfaces, such as a mattress and wall or where the seat and back of a sofa meet. Accidental strangulation may occur when pressure is unintentionally applied to the neck and the infant's breathing is obstructed, e.g. an object in a crib gets caught around the infant's neck.

Bed Sharing or Surface Sharing: Parent(s) and infant sleeping together on any surface (bed, couch, chair).

Birth Certificate: The birth certificate is an official government-issued document that records the facts of a person's birth. A birth certificate serves as legal proof of identity, age, and citizenship and is often required for things like enrolling in school, obtaining a passport, applying for benefits, or proving parentage.

Cause of Death: On a death certificate, "cause of death" includes the sequence of medical conditions that had the greatest impact in causing death and the approximate time intervals between the onset of each condition and death. The underlying cause of death is used for tabulating death counts. The cause of death and underlying causes listed on the death certificate are coded by the National Center for Health Statistics (NCHS) according to the appropriate revision of the *International Classification of Diseases* (ICD. Effective with deaths occurring in 1999, the United States began using the 10th revision of ICD (ICD–10); during 1979–1998, causes of death were coded and classified according to the 9th revision (ICD–9).

Co-sleeping: A general term for sleeping near or with an infant. This term can describe both room sharing and bed sharing and is not recommended for use.

Infant Mortality: The deaths of children less than one year of age. It is typically measured as the number of deaths per 1,000 live births.

Death Certificate: The death certificate is a permanent record of the fact of death. State law specifies the required time frame for completing and filing the death certificate. The death certificate provides important personal information about the decedent and about the circumstances and cause of death. This information has many uses related to the settlement of the estate and provides family members with closure, peace of mind, and documentation of the cause of death. The death certificate collects demographic information on the decedent such as age, sex, race, ethnicity and medical certification information which includes date and

time of death, cause and manner of death. The death certificate is a legal record and has legal safeguards protecting the confidentiality of the record.

The registration and storage of deaths is supported by state laws and regulations. Mississippi uses an electronic death registration system (EDRS), which is a secure web-based system for registering deaths electronically. This system is designed to simplify the data collection process and enhance communication between medical certifiers, medical examiners and coroners, funeral directors, as they work together to register deaths. The EDRS follows the 2003 U.S. Standard Death Certificate in content and structure and has built-in edits, prompts, and alerts to improve data quality. The U.S. standard certificate is revised periodically to ensure that the data collected relates to current and anticipated needs and is comparable with data from other states.

The death certificate is the source for local, state, and national mortality statistics. Mississippi has a contract with National Center for Health Statistics that allows the federal government to use information from that state's records to produce national vital statistics.

External Death: An external death or external cause of death refers to a death that results from outside forces rather than from a disease or internal medical condition. In vital statistics and public health, external causes of death include events such as: injuries (accidental or intentional), motor vehicle crashes, falls, drownings, poisonings, fires or burns, homicide, suicide, or environmental events (extreme heat, cold, natural disasters). In short, it is any death caused by violent, accidental, or environmental factors, rather than by natural or medical causes.

Linked Birth-Death Data Set: The research portion of infant birth certificates and infant death certificates are linked for all infants who die before their first birthday, and a linked birth-death data set is created. This data set is a valuable tool for monitoring and exploring the complex inter-relationships between infant death and risk factors present at birth. In the linked birth-death data set the information from the death certificate is linked to the information from the 'research portion' of the birth certificate for each infant under 1 year of age who dies in the United States, Puerto Rico, the Virgin Islands, and Guam. The purpose of the linkage is to use the many additional variables available from the birth certificate to conduct more detailed analyses of infant mortality patterns. The linked file includes information from the birth certificate (such as parental age, race, ethnicity, education, and marital status, maternal conditions in pregnancy (e.g., hypertension, diabetes), maternal behaviors in pregnancy (e.g., smoking, prenatal care use), maternal delivery characteristics (e.g., vaginal or cesarean delivery, previous preterm birth), neonate's sex, birth weight, obstetric estimation of gestational age, plurality, live birth order, congenital disorders or birth defects) which are linked to information from the death certificate (such as age at death and underlying and multiple cause of death).

Manner of Death: On a death certificate, "manner of death" is important: 1) in determining accurate causes of death, 2) in processing insurance claims, and 3) in statistical studies of

injuries and death. Choices are natural, homicide, accident, pending investigation, suicide and could not be determined. "Could not be determined" should only be used when it is impossible to determine the manner of death.

Natural and External Causes of Death: Natural death is due to internal factors of the body such as heart disease or cancer. An external cause of injury may be classified to Accidents (V01-X59), Intentional self-harm (X60-X84), Assault (X85-Y09), Event of undetermined intent (Y10-Y34), Legal intervention and operations of war (Y35-Y36), Complications of medical and surgical care (Y40-Y84), and Sequela of external causes (Y85-Y89). When unspecified, assume all external cause one-term entities to be accidental unless the External Causes of Injury Index provides otherwise.

Overlaying: Overlaying refers to the accidental suffocation of an infant caused by another person or object pressing against or covering the infant, blocking the airway. An overlap may occur when an adult or older child rolls onto an infant while sharing a bed, leading to mechanical asphyxia due to pressure on the infant's airway or thorax.

Positional asphyxiation: Positional asphyxiation, also known as postural asphyxia, occurs when someone's breathing is restricted due to their body position, which leads to a blockage in the airway structure and an inability of the chest to fully expand. Positional asphyxia may occur in babies, children, and adults.

Room sharing: Parent(s) and infant sleeping in the same room, but infant sleeps on a separate sleep surface made for infants.

Sudden Unexpected Infant Death (SUID): An umbrella category that describes all sudden, unexpected infant deaths—those from known causes, such as sudden infant death syndrome and an injury or accident, and those from unknown causes.

Sudden Infant Death Syndrome (SIDS): The sudden and unexplained death of a baby younger than 1 year of age that doesn't have a known cause, even after a full investigation. Healthcare providers, law enforcement, and others investigate infant deaths to figure out what caused them. This investigation includes a complete autopsy, examining the death scene, and reviewing the clinical history. If they cannot determine a cause of death for the baby or explain why the baby died, the medical examiner or coroner may categorize the death as SIDS.

Suicide: A death caused by self-directed injurious behavior with intent to die as a result of the behavior. Suicide methods include firearms, suffocation, poisoning, and other, less common, methods. Suicide is the second leading cause of death among individuals between the ages of 10-34 years of age, but is extremely rare in children under the age of 10.

Wedging or entrapment: A form of suffocation or mechanical asphyxia in which an infant's head or body becomes trapped between two objects, such a mattress and a wall or bed frame.

Wedging or entrapment cause compression or obstruction of the infant's nose, mouth, or thorax (airway) , preventing the infant from breathing.

NCHS 71 Rankable Causes of Infant Death

	Cause of Death	ICD-10 Codes
1	Diarrhea and gastroenteritis of infectious origin	A09
2	Tuberculosis	A16-A19
3	Tetanus	A33, A35
4	Diphtheria	A36
5	Whooping cough	A37
6	Meningococcal infection	A39
7	Septicemia	A40-A41
8	Congenital syphilis	A50
9	Gonococcal infection	A54
10	Acute poliomyelitis	A80
11	Varicella	B01
12	Measles	B05
13	Human immunodeficiency virus (HIV) disease	B20-B24
14	Mumps	B26
15	Candidiasis	B37
16	Malaria	B50-B54
17	Pneumocyctosis	B59
18	Malignant neoplasms	C00-C97
19	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00-D48
20	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50-D89
21	Short stature, not elsewhere classified	E34.3
22	Nutritional deficiencies	E40-E64
23	Cystic fibrosis	E84
24	Volume depletion, disorders of fluid, electrolyte and acid-base balance	E86-E87
25	Meningitis	G00, G03
26	Infantile spinal muscular atrophy, type I	G12.0
27	Infantile cerebral palsy	G80
28	Anoxic brain damage, not elsewhere classified	G93.1
29	Diseases of the ear and mastoid process	H60-H93
30	Diseases of the circulatory system	I00-I99
31	Acute upper respiratory infections	J00-J06

32	Influenza and pneumonia	J09-J18
33	Acute bronchitis and acute bronchiolitis	J20-J21
34	Bronchitis, chronic and unspecified	J40-J42
35	Asthma	J45-J46
36	Pneumonitis due to solids and liquids	J69
37	Gastritis, duodenitis, and noninfective enteritis and colitis	K29, K50-K55
38	Hernia of abdominal cavity and intestinal obstruction without hernia	K40-K46, K56
39	Renal failure and other disorders of kidney	N17-N19, N25, N27
40	Newborn affected by maternal hypertensive disorders	P00.0
41	Newborn affected by other maternal conditions which may be unrelated to present pregnancy	P00.1-P00.9
42	Newborn affected by maternal complications of pregnancy	P01
43	Newborn affected by complications of placenta, cord and membranes	P02
44	Newborn affected by other complications of labor and delivery	P03
45	Newborn affected by noxious influences transmitted via placenta or breast milk	P04
46	Slow fetal growth and fetal malnutrition	P05
47	Disorders related to short gestation and low birth weight, not elsewhere classified	P07
48	Disorders related to long gestation and high birth weight	P08
49	Birth trauma	P10-P15
50	Intrauterine hypoxia and birth asphyxia	P20-P21
51	Respiratory distress of newborn	P22
52	Congenital pneumonia	P23
53	Neonatal aspiration syndromes	P24
54	Interstitial emphysema and related conditions originating in the perinatal period	P25
55	Pulmonary hemorrhage originating in the perinatal period	P26
56	Chronic respiratory disease originating in the perinatal period	P27
57	Atelectasis	P28.0-P28.1
58	Bacterial sepsis of newborn	P36
59	Omphalitis of newborn with or without mild hemorrhage	P38

60	Neonatal hemorrhage	P50-P52, P54
61	Hemorrhagic disease of newborn	P53
62	Hemolytic disease of newborn due to isoimmunization and perinatal jaundice	P55-P59
63	Hematological disorders	P60-P61
64	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus	P70.0-P70.2
65	Necrotizing entercolitis of newborn	P77
66	Hydrops fetalis not due to hemolytic disease	P83.2
67	Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
68	Sudden infant death syndrome	R95
69	Unintentional injuries (accidents)	V01-X59
70	Assault (homicide)	U01, X85-Y09
71	Complications of medical and surgical care	Y40-Y84

Child Death Review Selected Causes of Death

Causes of Death	ICD-10 Codes
External causes of death	V01-Y36, Y44-Y48, Y90-Y98, R99, R95
Fire	U01.3, X01-X19, X76-X77, X97-X98, Y26-Y27, Y36.3
Suicide	X60-X79, X80-X84, Y87.0
All motor vehicle, transport	V00-V99, Y85
Drowning	W65-W69, W70-W74
Homicide	X85-X99, Y00-Y09, Y87.1
SUID	R99, R95, W75
Firearms	W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0, U01.4

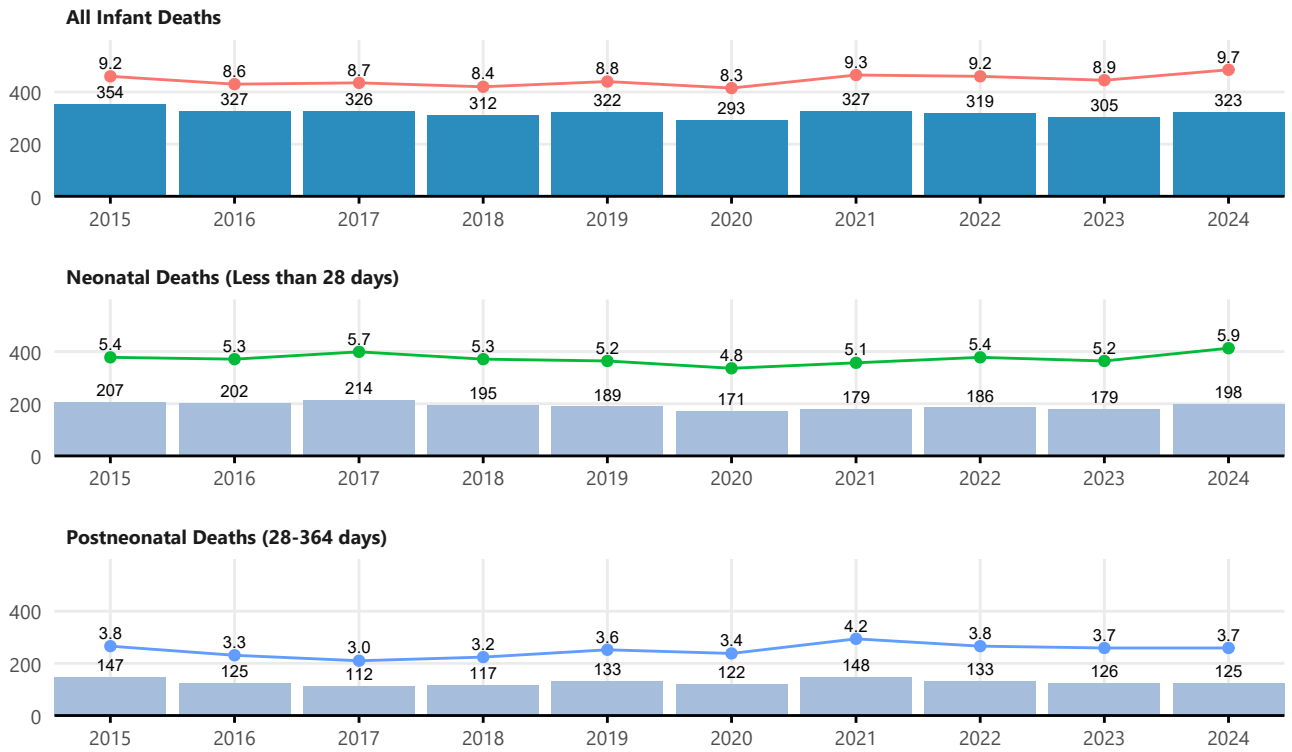
DATA

Infant Mortality, Mississippi 2015-2024

MSDH Office of Vital Records and Public Health Statistics, 10/27/2025

Infant deaths include those occurring after birth and within one year of life. The infant mortality rate is calculated as infant deaths per 1,000 live births. Neonatal infant deaths include infant deaths occurring in less than 28 days of life. Postneonatal deaths include infant deaths occurring within 28 days to 1 year of life. Counts and corresponding rates for less than 20 events should be interpreted with caution. Counts may be incomplete and are subject to change based on the publication timing of the report.

Figure 1: Number of Infant Deaths and Infant Mortality, Mississippi, 2015-2024



NOTE: Year totals on bar; rate shown on line (per 1,000 live births). Rate calculated as infant deaths per 1,000 live births.
Final counts may be incomplete and are subject to change

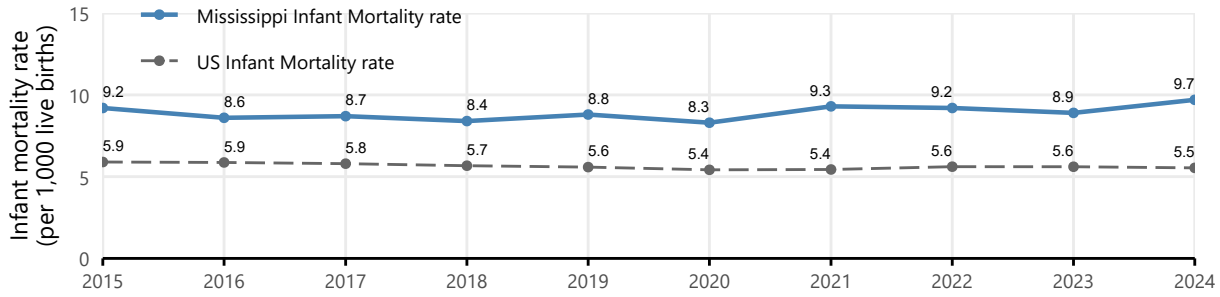
Table 1: Number of Infant Deaths, Infant Mortality Rate, and 3-Year Average Rate, Mississippi, 2015-2024

	All Infant Deaths			Neonatal Deaths (Less than 28 days)			Postneonatal Deaths (28-364 days)		
Year	Count	Rate	Rate, 3-yr avg.	Count	Rate	Rate, 3-yr avg.	Count	Rate	Rate, 3-yr avg.
2024	323	9.7	9.2	198	5.9	5.5	125	3.7	3.7
2023	305	8.9	9.1	179	5.2	5.2	126	3.7	3.9
2022	319	9.2	8.9	186	5.4	5.1	133	3.8	3.8
2021	327	9.3	8.8	179	5.1	5.0	148	4.2	3.8
2020	293	8.3	8.5	171	4.8	5.1	122	3.4	3.4
2019	322	8.8	8.6	189	5.2	5.4	133	3.6	3.3
2018	312	8.4	8.6	195	5.3	5.4	117	3.2	3.2
2017	326	8.7	8.9	214	5.7	5.5	112	3.0	3.4
2016	327	8.6	–	202	5.3	–	125	3.3	–
2015	354	9.2	–	207	5.4	–	147	3.8	–

Note:
Rate calculated as infant deaths per 1,000 live births; 3-year average rate calculated as total aggregate of listed year and previous two years.

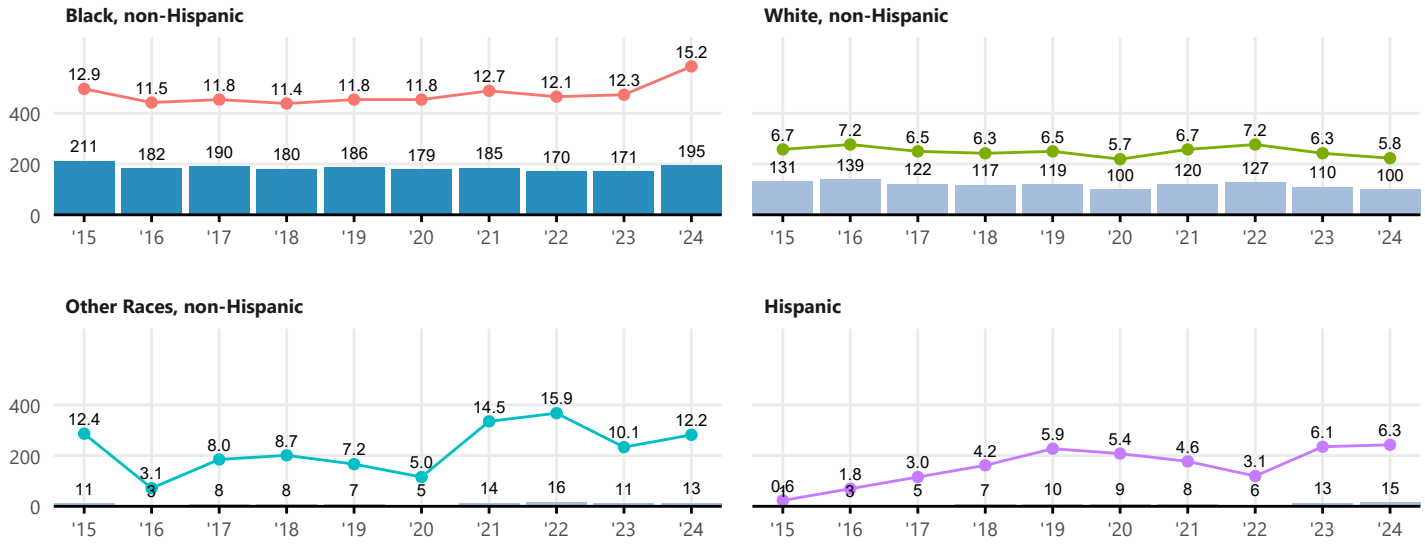
To compare Mississippi to the US, the infant mortality rate is shown below using National Vital Statistics System (NVSS) data and comparable death certificate data from the Mississippi Office of Vital Records and Public Health Statistics.

Figure 2: Comparing Mississippi and United States Infant Mortality Rates, 2015-2024



SOURCES: CDC WONDER Provisional 2024 data; MSDH Office of Vital Records and Public Health Statistics

Figure 3: Infant Deaths and Infant Mortality Rates by Race/Ethnicity, Mississippi, 2015-2024



Note: Year totals on bar; rate shown on line (per 1,000 live births). Case counts may be incomplete and are subject to change.

Table 2: Infant Deaths by Race/Ethnicity, 2015-2024

	All race/ethnicities		Black, NH		White, NH		Other Races, NH		Hispanic	
Year	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
2024	**323**	**9.7**	195	15.2	100	5.8	13	12.2	15	6.3
2023	**305**	**8.9**	171	12.3	110	6.3	11	10.1	13	6.1
2022	**319**	**9.2**	170	12.1	127	7.2	16	15.9	6	3.1
2021	**327**	**9.3**	185	12.7	120	6.7	14	14.5	8	4.6
2020	**293**	**8.3**	179	11.8	100	5.7	5	5.0	9	5.4
2019	**322**	**8.8**	186	11.8	119	6.5	7	7.2	10	5.9
2018	**312**	**8.4**	180	11.4	117	6.3	8	8.7	7	4.2
2017	**326**	**8.7**	190	11.8	122	6.5	8	8.0	5	3.0
2016	**327**	**8.6**	182	11.5	139	7.2	3	3.1	3	1.8
2015	**354**	**9.2**	211	12.9	131	6.7	11	12.4	1	0.6

Note:
'NH' refers to non-Hispanic ethnicity. Shaded colors correspond to race/ethnicity-specific rates higher than the yearly rate for all race/ethnicities; Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; Rate calculated as infant deaths per 1,000 live births; For purposes of this report, records with an unknown ethnicity were included in the non-Hispanic (NH) group.

Table 3: Top 15 Leading Causes of Infant Deaths by National Center for Health Statistics (NCHS) 71 Rankable Infant Mortality Cause Groups, Mississippi, 2022-2024

	All		Black, NH		White, NH		Other Races, NH		Hispanic	
Cause Group	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Congenital malformations, deformations and chromosomal abnormalities	172	1.7	72	1.8	84	1.6	9	2.8	7	1.1
Disorders related to short gestation and low birth weight, not elsewhere classified	154	1.5	106	2.6	35	0.7	6	1.9	7	1.1
Unintentional injuries (accidents)	119	1.2	70	1.7	47	0.9	1	0.3	1	0.2
Sudden infant death syndrome	86	0.8	49	1.2	32	0.6	4	1.3	1	0.2
Newborn affected by maternal complications of pregnancy	31	0.3	19	0.5	10	0.2	0	0.0	2	0.3
Bacterial sepsis of newborn	25	0.2	14	0.3	5	0.1	3	0.9	3	0.5
Necrotizing entercolitis of newborn	25	0.2	14	0.3	9	0.2	2	0.6	0	0.0
Diseases of the circulatory system	19	0.2	9	0.2	7	0.1	1	0.3	2	0.3
Respiratory distress of newborn	19	0.2	5	0.1	12	0.2	2	0.6	0	0.0
Newborn affected by complications of placenta, cord and membranes	17	0.2	10	0.2	7	0.1	0	0.0	0	0.0
Intrauterine hypoxia and birth asphyxia	15	0.1	7	0.2	7	0.1	0	0.0	1	0.2
Assault (homicide)	13	0.1	8	0.2	4	0.1	1	0.3	0	0.0
Neonatal hemorrhage	12	0.1	7	0.2	4	0.1	0	0.0	1	0.2
Atelectasis	11	0.1	7	0.2	1	0.0	0	0.0	3	0.5
All Other Causes	156	1.5	96	2.4	47	0.9	10	3.2	3	0.5

Note:
Cause groups based on the National Center for Health Statistics (NCHS) 71 rankable grouped infant mortality cause groups;
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution;
Rate calculated as infant deaths per 1,000 live births.

Table 4: Top 15 Leading Causes of Infant Deaths by NCHS 130 Selected Cause Groups, Mississippi, 2022-2024

	All		Black, NH		White, NH		Other Races, NH		Hispanic	
Cause Group	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Extremely low birth weight or extreme immaturity	129	1.3	89	2.2	30	0.6	4	1.3	6	0.9
Accidental suffocation and strangulation in bed	98	1.0	59	1.4	37	0.7	1	0.3	1	0.2
Sudden infant death syndrome	86	0.8	49	1.2	32	0.6	4	1.3	1	0.2
Other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	62	0.6	42	1.0	15	0.3	5	1.6	0	0.0
Other perinatal conditions	57	0.6	40	1.0	13	0.2	4	1.3	0	0.0
Congenital malformations of heart	35	0.3	15	0.4	18	0.3	2	0.6	0	0.0
Congenital malformations of genitourinary system	26	0.3	8	0.2	16	0.3	1	0.3	1	0.2
Edwards syndrome	25	0.2	9	0.2	13	0.2	2	0.6	1	0.2
Other low birth weight or preterm	25	0.2	17	0.4	5	0.1	2	0.6	1	0.2
Bacterial sepsis of newborn	25	0.2	14	0.3	5	0.1	3	0.9	3	0.5
Necrotizing enterocolitis of newborn	25	0.2	14	0.3	9	0.2	2	0.6	0	0.0
Respiratory distress of newborn	19	0.2	5	0.1	12	0.2	2	0.6	0	0.0
Congenital malformations and deformations of musculoskeletal system, limbs and integument	18	0.2	6	0.1	10	0.2	1	0.3	1	0.2
Newborn affected by premature rupture of membranes	18	0.2	10	0.2	8	0.2	0	0.0	0	0.0
Other congenital malformations and deformations	16	0.2	11	0.3	4	0.1	1	0.3	0	0.0

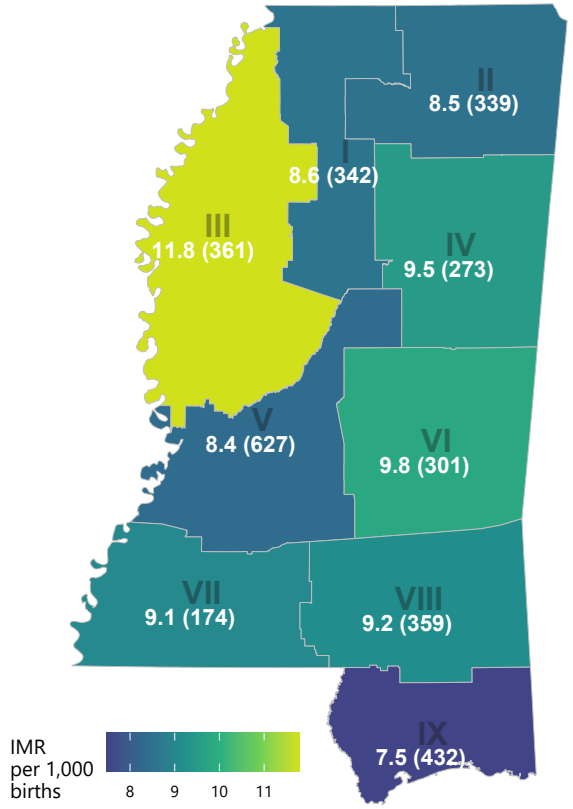
Note:
Cause groups based on the National Center for Health Statistics (NCHS) 130 infant mortality cause groups;
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution;
Rate calculated as infant deaths per 1,000 live births

Figure 4: Aggregate Mississippi Infant Mortality by Public Health District

(a) Ten-Year Aggregate Infant Mortality Rate by Public Health District, 2015-2024

Ten-Year Aggregate Infant Mortality Rates by Public Health District, Mississippi, 2015-2024

Rate calculated as total neonatal infant deaths per 1,000 births; Count shown in parenthesis

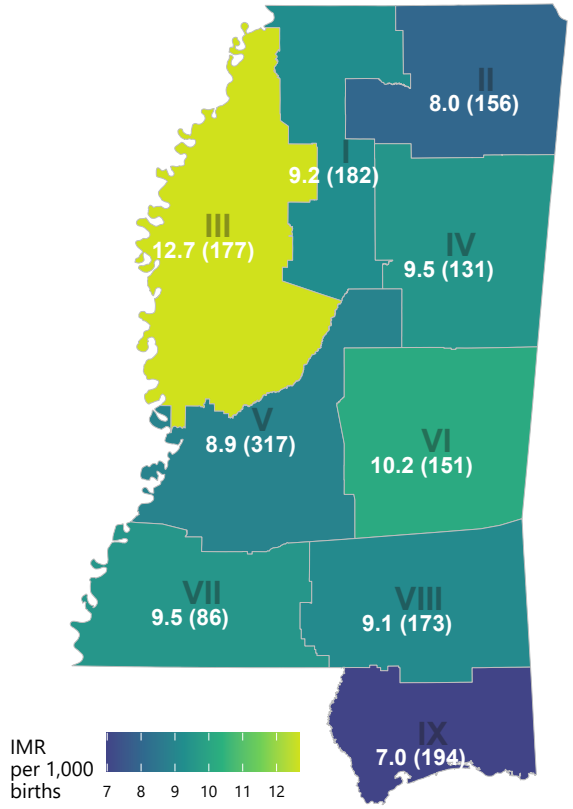


District layout follows 2024 administrative map

(b) Five-Year Aggregate Infant Mortality Rate by Public Health District, 2020-2024

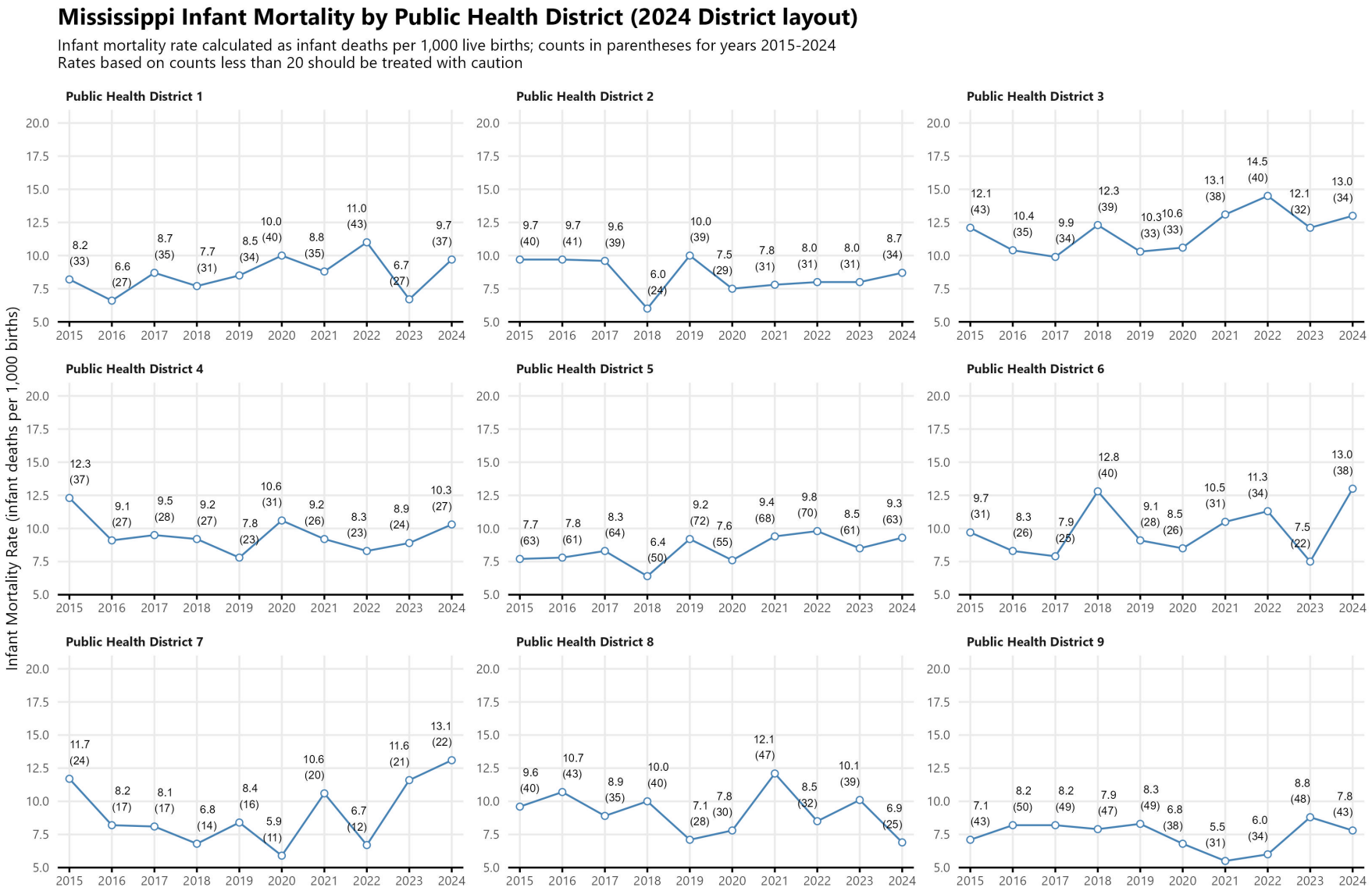
Five-Year Aggregate Infant Mortality Rates by Public Health District, Mississippi, 2020-2024

Rate calculated as total infant deaths per 1,000 births; Count shown in parenthesis



District layout follows 2024 administrative map

Figure 5: Number of Infant Deaths and Infant Mortality Rate by Public Health District, Mississippi, 2015-2024



NOTE: Case counts for 2024 may be incomplete and are subject to change.

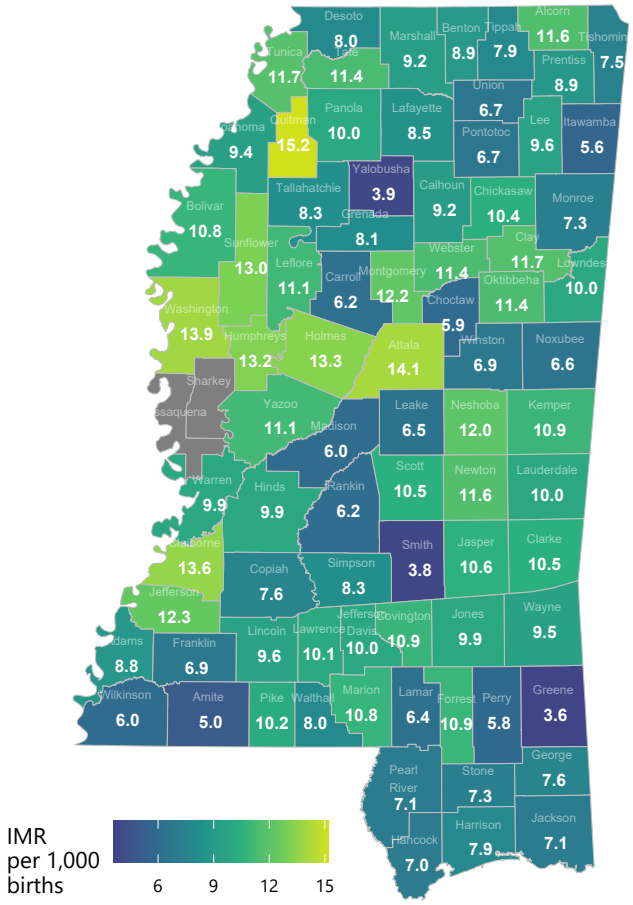
Figure 6: Ten-Year Aggregate Infant Mortality by County, Mississippi, 2015-2024

(a) Infant mortality rate by county, Mississippi, 2015-2024

(b) Infant mortality counts by county, Mississippi, 2015-2024

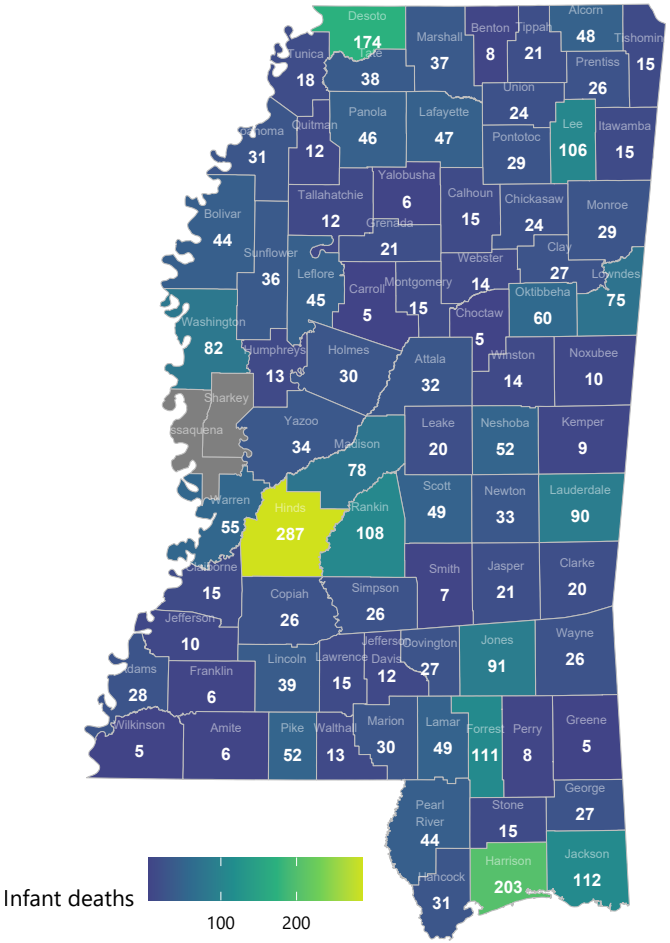
Ten-Year Aggregate Neonatal Infant Mortality Rates by County, Mississippi, 2015-2024

Rate calculated as total neonatal infant deaths per 1,000 birtl



Rates with counts less than 20 should be interpreted with caution;
Counties with less than 5 counts have been suppressed (grey shade)

Ten-Year Aggregate Infant Mortality Counts by County, Mississippi, 2015-2024



Counties with less than 5 counts have been suppressed (grey shade)

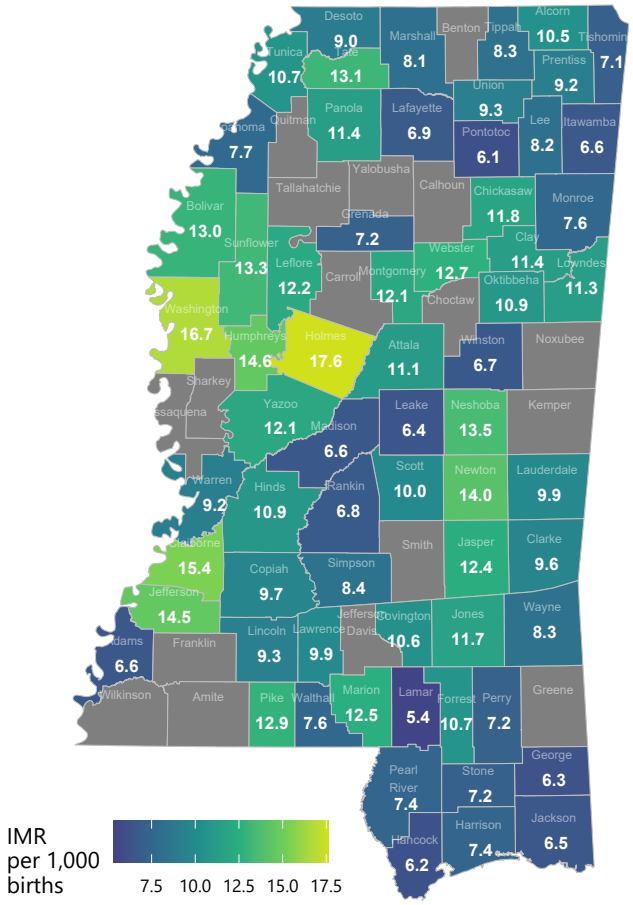
Figure 7: Five-Year Aggregate Infant Mortality by County, Mississippi, Mississippi, 2020-2024

(a) Infant mortality rate by county, Mississippi, 2020-2024

(b) Infant mortality counts by county, Mississippi, 2020-2024

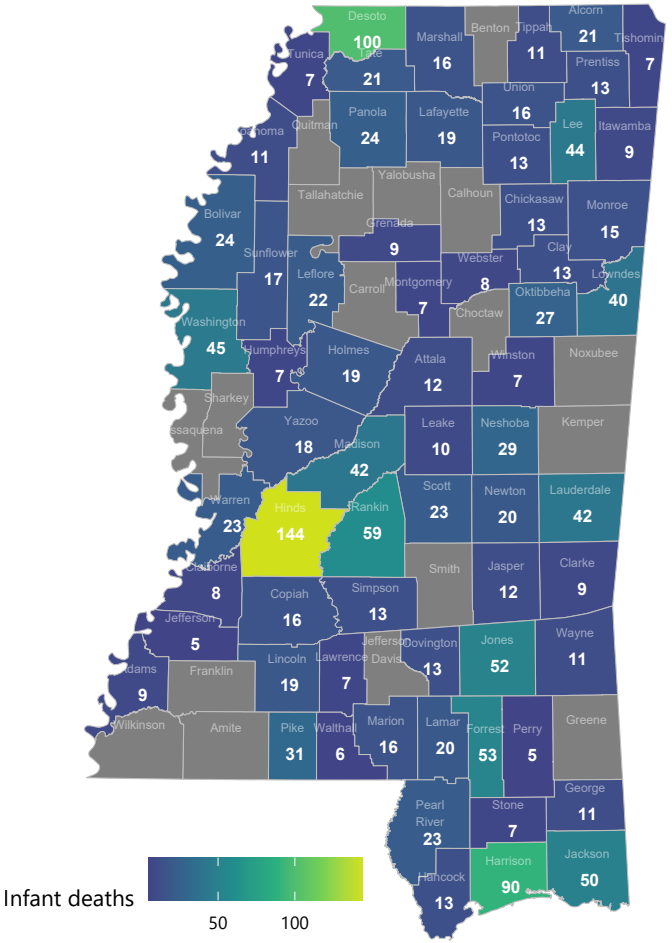
Five-Year Aggregate Infant Mortality Rates by County, Mississippi, 2020-2024

Rate calculated as total infant deaths per 1,000 births



Rates with counts less than 20 should be interpreted with caution;
Counties with less than 5 counts have been suppressed (grey shade)

Five-Year Aggregate Infant Mortality Counts by County, Mississippi, 2020-2024



Counties with less than 5 counts have been suppressed (grey shade)

Sudden Unexpected Infant Deaths (SUID), Mississippi, 2015-2024

Table 5: Number of infant deaths and mortality rates due to SUID, Mississippi, 2015-2024

	2024			2015-2024 Total		
	Count	IM rate	%	Count	IM rate	%
Total	73	2.2	100.0	759	2.1	100.0
Sex						
Female	30	1.8	41.1	318	1.8	41.9
Male	43	2.5	58.9	441	2.4	58.1
Race/ethnicity						
Black, non-Hispanic	45	3.5	61.6	429	2.9	56.5
White, non-Hispanic	24	1.4	32.9	294	1.6	38.7
Other Races, non-Hispanic	3	2.8	4.1	22	2.2	2.9
Hispanic	1	0.4	1.4	14	0.8	1.8
Cause group						
SIDS	23	0.7	31.5	239	0.7	31.5
ASSB	32	1.0	43.8	181	0.5	23.8
Unknown	18	0.5	24.7	339	0.9	44.7

Note:
Infant mortality (IM) rates calculated as per 1,000 Mississippi resident births

Figure 8: SUID related mortality rate by sex and race/ethnicity, Mississippi, 2015-2024

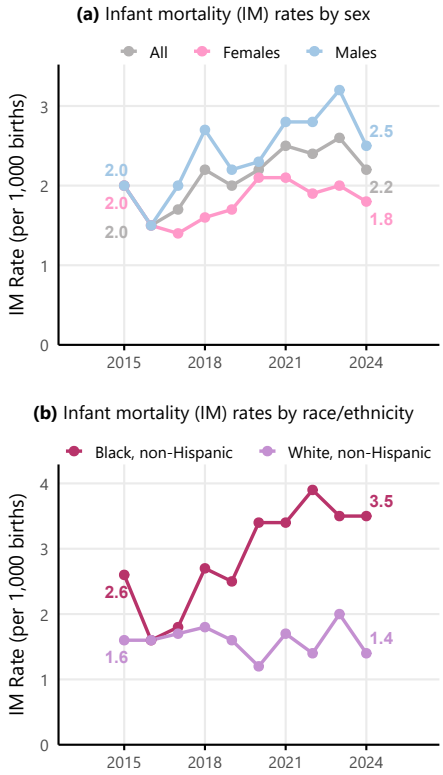


Figure 9: SUID-related mortality rates by Public Health District, Mississippi, 2015-2024

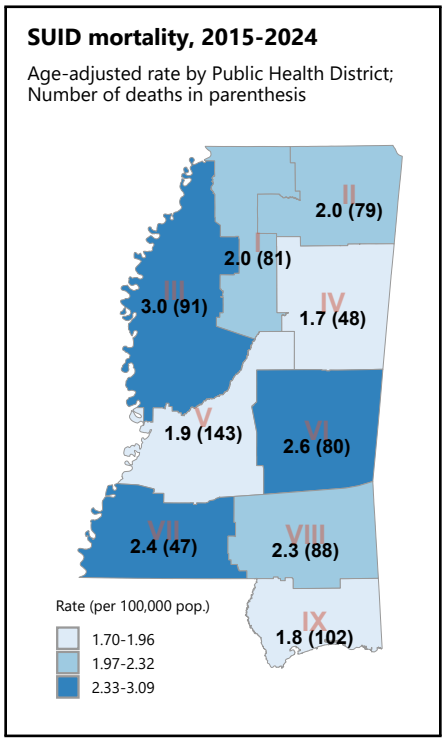
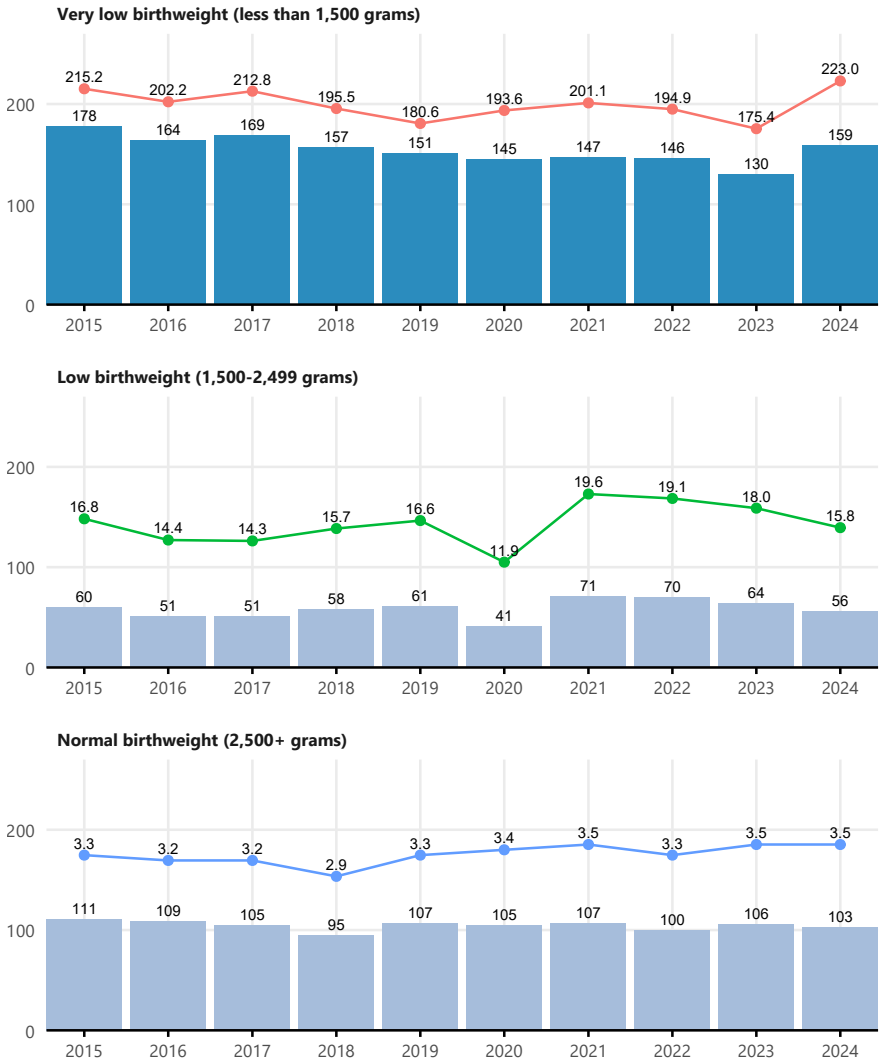


Figure 10: Infant mortality by gestational age and weight at birth, 2015-2024

(a) Infant mortality by gestational age at birth, 2015-2024

Note: Case counts may be incomplete and are subject to change; Year totals on bar; rate shown on line; MSDH Office of Vital Records; Rate calculated as infant deaths per 1,000 live births.

(b) Infant mortality by gestational weight at birth, 2015-2024



Note: Case counts may be incomplete and are subject to change; year totals on bar; rate shown on line; MSDH Office of Vital Records; Rate calculated as infant deaths per 1,000 live births.

Gestational Age at Birth for All Infant Deaths

Table 6: Number, infant mortality rate, and percentage of infant deaths by gestational age at birth and race/ethnicity, Mississippi, 2020-2024

	All			Black, NH			White, NH			Other Races, NH			Hispanic		
Year	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%
Extreme preterm (27 weeks or earlier)															
2024	129	400.6	39.9%	90	426.5	46.2%	28	301.1	28.0%	5	1,250.0	38.5%	6	428.6	40.0%
2023	114	358.5	37.4%	74	371.9	43.3%	30	312.5	27.3%	3	375.0	27.3%	7	466.7	53.8%
2022	120	327.0	37.6%	68	290.6	40.0%	44	392.9	34.6%	6	600.0	37.5%	2	181.8	33.3%
2021	124	345.4	37.9%	79	323.8	42.7%	38	391.8	31.7%	5	833.3	35.7%	2	166.7	25.0%
2020	128	379.8	43.7%	85	381.2	47.5%	37	370.0	37.0%	4	1,333.3	80.0%	2	181.8	22.2%
Early to late preterm (28-36 weeks)															
2024	87	18.6	26.9%	42	18.9	21.5%	32	15.5	32.0%	7	50.0	53.8%	6	23.5	40.0%
2023	82	17.0	26.9%	47	20.1	27.5%	30	14.1	27.3%	4	27.2	36.4%	1	4.5	7.7%
2022	81	17.0	25.4%	43	18.6	25.3%	33	15.4	26.0%	3	27.0	18.8%	2	10.3	33.3%
2021	81	16.5	24.8%	45	18.8	24.3%	32	14.5	26.7%	1	8.9	7.1%	3	16.1	37.5%
2020	65	13.9	22.2%	37	15.8	20.7%	25	12.3	25.0%	1	9.0	20.0%	2	10.1	22.2%
Early term (37-38 weeks)															
2024	70	5.9	21.7%	38	8.0	19.5%	30	5.0	30.0%	0	0.0	0.0%	2	2.5	13.3%
2023	72	5.9	23.6%	34	6.6	19.9%	32	5.4	29.1%	2	5.5	18.2%	4	5.5	30.8%
2022	66	5.5	20.7%	31	6.2	18.2%	32	5.3	25.2%	2	6.2	12.5%	1	1.5	16.7%
2021	70	6.0	21.4%	33	6.6	17.8%	26	4.5	21.7%	8	24.7	57.1%	3	5.2	37.5%
2020	43	3.7	14.7%	26	4.9	14.5%	15	2.7	15.0%	0	0.0	0.0%	2	4.1	22.2%
Term to late term (39+ weeks)															
2024	34	2.1	10.5%	23	4.1	11.8%	9	1.0	9.0%	1	1.8	7.7%	1	0.8	6.7%
2023	34	2.0	11.1%	14	2.3	8.2%	17	1.9	15.5%	2	3.5	18.2%	1	0.9	7.7%
2022	50	2.9	15.7%	26	4.0	15.3%	18	1.9	14.2%	5	8.8	31.2%	1	0.9	16.7%
2021	49	2.7	15.0%	27	3.9	14.6%	22	2.2	18.3%	0	0.0	0.0%	0	0.0	0.0%
2020	56	3.0	19.1%	30	4.1	16.8%	23	2.3	23.0%	0	0.0	0.0%	3	3.1	33.3%

Note:
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified race/ethnicity and gestational age tabulation; percent (%) calculated as percentage of infant deaths within year.

Weight at Birth for All Infant Deaths

Table 7: Infant mortality by weight at birth, Mississippi, 2020-2024

	All			Black, NH			White, NH			Other Races, NH			Hispanic		
Year	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%
Very low birthweight (less than 1,500 grams)															
2024	159	223.0	49.2%	102	222.2	53.1%	41	194.3	41.0%	7	636.4	53.8%	9	281.2	60.0%
2023	130	175.4	42.6%	84	180.6	49.1%	36	162.2	32.7%	3	136.4	27.3%	7	218.8	53.8%
2022	146	194.9	45.8%	80	170.9	47.1%	56	224.0	44.1%	8	727.3	50.0%	2	100.0	33.3%
2021	147	201.1	45.0%	93	191.0	50.3%	47	218.6	39.2%	5	454.5	35.7%	2	111.1	25.0%
2020	145	193.6	49.5%	90	186.7	50.3%	48	206.0	48.0%	4	363.6	80.0%	3	130.4	33.3%
Low Birthweight (1,500-2,499 grams)															
2024	56	15.8	17.3%	26	13.1	13.5%	22	17.1	22.0%	4	40.8	30.8%	4	22.2	26.7%
2023	64	18.0	21.0%	37	18.1	21.6%	21	16.4	19.1%	3	30.3	27.3%	3	22.2	23.1%
2022	70	19.1	21.9%	34	16.0	20.0%	31	23.3	24.4%	3	40.0	18.8%	2	15.7	33.3%
2021	71	19.6	21.7%	36	17.2	19.5%	28	21.0	23.3%	5	60.2	35.7%	2	19.6	25.0%
2020	41	11.9	14.0%	24	11.9	13.4%	14	11.2	14.0%	1	11.6	20.0%	2	19.6	22.2%
Normal birthweight (2,500+ grams)															
2024	103	3.5	31.9%	64	6.2	33.3%	35	2.2	35.0%	2	2.1	15.4%	2	0.9	13.3%
2023	106	3.5	34.8%	47	4.1	27.5%	51	3.2	46.4%	5	5.2	45.5%	3	1.5	23.1%
2022	100	3.3	31.3%	53	4.6	31.2%	40	2.5	31.5%	5	5.4	31.2%	2	1.1	33.3%

2021	107	3.5	32.7%	56	4.7	30.3%	43	2.6	35.8%	4	4.6	28.6%	4	2.4	50.0%
2020	105	3.4	35.8%	63	5.0	35.2%	38	2.3	38.0%	0	0.0	0.0%	4	2.6	44.4%

Note:
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified race/ethnicity and weight tabulation; percent (%) calculated as percentage of infant deaths within year.

Infant Deaths by Selected Linked Maternal Morbidity Characteristics

Table 8: Number of Infant Deaths and Infant Mortality Rates for Select Maternal Morbidities by Race/Ethnicity, Mississippi, 2024

	All		Black, NH		White, NH		Other Races, NH		Hispanic	
Maternal Characteristic	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Gestational Hypertension	42	11.3	25	17.1	14	7.0	3	30.6	0	0.0
Gestational Diabetes	10	5.3	4	6.6	4	3.8	0	0.0	2	15.6
Eclampsia	3	33.7	0	0.0	2	60.6	1	333.3	0	0.0
Obesity	165	12.0	104	16.4	45	7.1	8	23.5	8	10.2
Previous Preterm Delivery	24	13.4	16	17.7	7	9.3	1	27.0	0	0.0
Syphilis	8	19.9	7	24.4	1	10.1	0	0.0	0	0.0
Total Infant Deaths	323	9.7	195	15.2	100	5.8	13	12.2	15	6.3

Note:
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified maternal conditiona and race/ethnicity tabulation.

Table 9: Number of Infant Deaths and Percentage (%) for Select Maternal Morbidities by Race/Ethnicity, Mississippi, 2024

	All		Black, NH		White, NH		Other Races, NH		Hispanic	
Maternal Characteristic	Count	%	Count	%	Count	%	Count	%	Count	%
Gestational Hypertension	42	13.0%	25	12.8%	14	14.0%	3	23.1%	0	0.0%
Gestational Diabetes	10	3.1%	4	2.1%	4	4.0%	0	0.0%	2	13.3%
Eclampsia	3	0.9%	0	0.0%	2	2.0%	1	7.7%	0	0.0%
Obesity	165	51.1%	104	53.3%	45	45.0%	8	61.5%	8	53.3%
Previous Preterm Delivery	24	7.4%	16	8.2%	7	7.0%	1	7.7%	0	0.0%
Syphilis	8	2.5%	7	3.6%	1	1.0%	0	0.0%	0	0.0%
Total Infant Deaths	323	100.0%	195	100.0%	100	100.0%	13	100.0%	15	100.0%

Note:
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution.

Table 10: Number and Percent of Infant Deaths and Mortality Rate for Select Maternal Morbidities by Race/Ethnicity, Mississippi, 2020-2024

	All			Black, NH			White, NH			Other Races, NH			Hispanic		
Year	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%
Gestational hypertension															
2024	42	11.3	13.0%	25	17.1	12.8%	14	7.0	14.0%	3	30.6	23.1%	0	0.0	0.0%
2023	42	12.0	13.8%	25	16.9	14.6%	16	8.9	14.5%	1	11.2	9.1%	0	0.0	0.0%
2022	42	12.0	13.2%	26	18.3	15.3%	16	8.6	12.6%	0	0.0	0.0%	0	0.0	0.0%
2021	37	10.3	11.3%	24	16.2	13.0%	10	5.2	8.3%	0	0.0	0.0%	3	25.6	37.5%
2020	31	9.8	10.6%	22	16.2	12.3%	8	4.9	8.0%	1	13.7	20.0%	0	0.0	0.0%
Gestational diabetes															
2024	10	5.3	3.1%	4	6.6	2.1%	4	3.8	4.0%	0	0.0	0.0%	2	15.6	13.3%
2023	14	7.8	4.6%	7	12.3	4.1%	7	7.0	6.4%	0	0.0	0.0%	0	0.0	0.0%
2022	8	4.2	2.5%	3	4.8	1.8%	4	3.6	3.1%	1	11.9	6.2%	0	0.0	0.0%
2021	8	4.2	2.4%	4	6.3	2.2%	4	3.8	3.3%	0	0.0	0.0%	0	0.0	0.0%
2020	9	5.4	3.1%	8	13.7	4.5%	1	1.1	1.0%	0	0.0	0.0%	0	0.0	0.0%
Eclampsia															

2024	3	33.7	0.9%	0	0.0	0.0%	2	60.6	2.0%	1	333.3	7.7%	0	0.0	0.0%
2023	3	33.0	1.0%	2	40.0	1.2%	1	27.8	0.9%	0	0.0	0.0%	0	0.0	0.0%
2022	1	12.0	0.3%	0	0.0	0.0%	1	25.0	0.8%	0	0.0	0.0%	0	0.0	0.0%
2021	2	31.7	0.6%	2	55.6	1.1%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%
2020	2	21.3	0.7%	1	21.7	0.6%	1	22.7	1.0%	0	0.0	0.0%	0	0.0	0.0%
Obesity															
2024	165	12.0	51.1%	104	16.4	53.3%	45	7.1	45.0%	8	23.5	61.5%	8	10.2	53.3%
2023	147	10.6	48.2%	89	13.2	52.0%	47	7.7	42.7%	6	17.8	54.5%	5	6.8	38.5%
2022	132	9.4	41.4%	82	12.2	48.2%	44	7.0	34.6%	5	14.7	31.2%	1	1.6	16.7%
2021	148	10.7	45.3%	97	14.1	52.4%	43	7.0	35.8%	6	20.5	42.9%	2	3.5	25.0%
2020	142	10.2	48.5%	96	13.6	53.6%	41	6.8	41.0%	2	6.9	40.0%	3	5.9	33.3%
Previous preterm delivery															
2024	24	13.4	7.4%	16	17.7	8.2%	7	9.3	7.0%	1	27.0	7.7%	0	0.0	0.0%
2023	28	19.6	9.2%	20	26.7	11.7%	7	12.3	6.4%	1	28.6	9.1%	0	0.0	0.0%
2022	33	22.2	10.3%	23	30.6	13.5%	7	11.1	5.5%	3	85.7	18.8%	0	0.0	0.0%
2021	40	25.9	12.2%	27	36.0	14.6%	10	14.5	8.3%	2	41.7	14.3%	1	17.2	12.5%
2020	16	10.2	5.5%	10	12.8	5.6%	5	7.3	5.0%	0	0.0	0.0%	1	14.5	11.1%
Syphilis															
2024	8	19.9	2.5%	7	24.4	3.6%	1	10.1	1.0%	0	0.0	0.0%	0	0.0	0.0%
2023	7	20.0	2.3%	5	20.3	2.9%	1	10.9	0.9%	1	166.7	9.1%	0	0.0	0.0%
2022	6	21.2	1.9%	3	15.1	1.8%	2	28.2	1.6%	1	166.7	6.2%	0	0.0	0.0%
2021	1	4.6	0.3%	1	6.1	0.5%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%
2020	2	11.1	0.7%	1	7.6	0.6%	1	26.3	1.0%	0	0.0	0.0%	0	0.0	0.0%
Total Infant Deaths															
2024	323	9.7	100.0%	195	15.2	100.0%	100	5.8	100.0%	13	12.2	100.0%	15	6.3	100.0%
2023	305	8.9	100.0%	171	12.3	100.0%	110	6.3	100.0%	11	10.1	100.0%	13	6.1	100.0%
2022	319	9.2	100.0%	170	12.1	100.0%	127	7.2	100.0%	16	15.9	100.0%	6	3.1	100.0%
2021	327	9.3	100.0%	185	12.7	100.0%	120	6.7	100.0%	14	14.5	100.0%	8	4.6	100.0%
2020	293	8.3	100.0%	179	11.8	100.0%	100	5.7	100.0%	5	5.0	100.0%	9	5.4	100.0%

Note:
Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified maternal condition and race/ethnicity tabulation; percent (%) calculated as percentage of infant deaths within year.

NEONATAL INFANT DEATHS (DEATHS OCCURRING AT LESS THAN 28 DAYS)

Gestational Age at Birth for Neonatal Infant Deaths

Table 11: Number, rate, and percentage of neonatal deaths by gestational age at birth and race/ethnicity, Mississippi, 2020-2024

	All			Black, NH			White, NH			Other Races, NH			Hispanic		
Year	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%
Extreme preterm (27 weeks or earlier)															
2024	115	357.1	58.1%	81	383.9	69.2%	23	247.3	37.7%	5	1,250.0	62.5%	6	428.6	50.0%
2023	101	317.6	56.4%	69	346.7	66.3%	24	250.0	39.3%	3	375.0	60.0%	5	333.3	55.6%
2022	111	302.5	59.7%	62	265.0	66.0%	41	366.1	53.2%	6	600.0	54.5%	2	181.8	50.0%
2021	105	292.5	58.7%	64	262.3	67.4%	34	350.5	47.9%	5	833.3	55.6%	2	166.7	50.0%
2020	112	332.3	65.5%	73	327.4	71.6%	33	330.0	54.1%	4	1,333.3	100.0%	2	181.8	50.0%
Early to late preterm (28-36 weeks)															
2024	54	11.5	27.3%	23	10.3	19.7%	23	11.1	37.7%	3	21.4	37.5%	5	19.6	41.7%
2023	40	8.3	22.3%	18	7.7	17.3%	20	9.4	32.8%	1	6.8	20.0%	1	4.5	11.1%
2022	34	7.1	18.3%	14	6.1	14.9%	17	7.9	22.1%	2	18.0	18.2%	1	5.1	25.0%
2021	44	9.0	24.6%	19	8.0	20.0%	23	10.4	32.4%	1	8.9	11.1%	1	5.4	25.0%
2020	38	8.1	22.2%	20	8.5	19.6%	17	8.4	27.9%	0	0.0	0.0%	1	5.0	25.0%
Early term (37-38 weeks)															
2024	19	1.6	9.6%	8	1.7	6.8%	10	1.7	16.4%	0	0.0	0.0%	1	1.3	8.3%
2023	29	2.4	16.2%	14	2.7	13.5%	11	1.8	18.0%	1	2.7	20.0%	3	4.1	33.3%
2022	27	2.3	14.5%	10	2.0	10.6%	14	2.3	18.2%	2	6.2	18.2%	1	1.5	25.0%
2021	21	1.8	11.7%	8	1.6	8.4%	9	1.6	12.7%	3	9.3	33.3%	1	1.7	25.0%
2020	8	0.7	4.7%	4	0.8	3.9%	4	0.7	6.6%	0	0.0	0.0%	0	0.0	0.0%
Term to late term (39+ weeks)															
2024	8	0.5	4.0%	4	0.7	3.4%	4	0.4	6.6%	0	0.0	0.0%	0	0.0	0.0%
2023	7	0.4	3.9%	2	0.3	1.9%	5	0.5	8.2%	0	0.0	0.0%	0	0.0	0.0%
2022	14	0.8	7.5%	8	1.2	8.5%	5	0.5	6.5%	1	1.8	9.1%	0	0.0	0.0%
2021	8	0.4	4.5%	3	0.4	3.2%	5	0.5	7.0%	0	0.0	0.0%	0	0.0	0.0%
2020	13	0.7	7.6%	5	0.7	4.9%	7	0.7	11.5%	0	0.0	0.0%	1	1.0	25.0%

Note:
Neonatal infant deaths include those occurring at less than 28 days of life. Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified race/ethnicity and gestational age tabulation; percent (%) calculated as percentage of neonatal infant deaths within year.

Weight at Birth for Neontal Infant Deaths

Table 12: Number, rate, and percentage of neonatal deaths by birthweight and race/ethnicity, Mississippi, 2020-2024

	All			Black, NH			White, NH			Other Races, NH			Hispanic		
Year	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%
Very low birthweight (less than 1,500 grams)															
2024	137	192.1	69.2%	88	191.7	77.2%	33	156.4	54.1%	7	636.4	87.5%	9	281.2	75.0%
2023	113	152.5	63.1%	75	161.3	72.1%	30	135.1	49.2%	3	136.4	60.0%	5	156.2	55.6%
2022	123	164.2	66.1%	67	143.2	71.3%	46	184.0	59.7%	8	727.3	72.7%	2	100.0	50.0%
2021	117	160.1	65.4%	71	145.8	74.7%	39	181.4	54.9%	5	454.5	55.6%	2	111.1	50.0%
2020	122	162.9	71.3%	75	155.6	73.5%	40	171.7	65.6%	4	363.6	100.0%	3	130.4	75.0%
Low birthweight (1,500-2,499 grams)															
2024	29	8.2	14.6%	11	5.5	9.6%	14	10.9	23.0%	1	10.2	12.5%	3	16.7	25.0%
2023	32	9.0	17.9%	12	5.9	11.5%	15	11.7	24.6%	2	20.2	40.0%	3	22.2	33.3%
2022	35	9.6	18.8%	12	5.6	12.8%	20	15.0	26.0%	2	26.7	18.2%	1	7.9	25.0%
2021	35	9.7	19.6%	11	5.2	11.6%	20	15.0	28.2%	3	36.1	33.3%	1	9.8	25.0%
2020	19	5.5	11.1%	10	5.0	9.8%	8	6.4	13.1%	0	0.0	0.0%	1	9.8	25.0%
Normal birthweight (2,500+ grams)															
2024	27	0.9	13.6%	15	1.4	13.2%	12	0.8	19.7%	0	0.0	0.0%	0	0.0	0.0%
2023	30	1.0	16.8%	15	1.3	14.4%	14	0.9	23.0%	0	0.0	0.0%	1	0.5	11.1%

2022	27	0.9	14.5%	14	1.2	14.9%	11	0.7	14.3%	1	1.1	9.1%	1	0.6	25.0%
2021	26	0.8	14.5%	13	1.1	13.7%	11	0.7	15.5%	1	1.1	11.1%	1	0.6	25.0%
2020	28	0.9	16.4%	15	1.2	14.7%	13	0.8	21.3%	0	0.0	0.0%	0	0.0	0.0%

Note:
Neonatal infant deaths include those occurring at less than 28 days of life. Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified birthweight and race/ethnicity tabulation; percent (%) calculated as percentage of neonatal infant deaths within year.

Neonatal Infant Deaths by Linked Selected Maternal Morbidity Characteristics

Table 13: Number and rate of neonatal deaths by selected maternal conditions and race/ethnicity, Mississippi, 2024

	All		Black, NH		White, NH		Other Races, NH		Hispanic	
Maternal Characteristic	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Gestational Hypertension	24	6.5	13	8.9	10	5.0	1	10.2	0	0.0
Gestational Diabetes	4	2.1	0	0.0	3	2.8	0	0.0	1	7.8
Eclampsia	3	33.7	0	0.0	2	60.6	1	333.3	0	0.0
Obesity	103	7.5	66	10.4	28	4.4	4	11.7	5	6.4
Previous Preterm Delivery	14	7.8	6	6.6	7	9.3	1	27.0	0	0.0
Syphilis	2	5.0	1	3.5	1	10.1	0	0.0	0	0.0
Total Infant Deaths	198	5.9	117	9.1	61	3.5	8	7.5	12	5.0

Note:
Neonatal infant deaths include those occurring at less than 28 days of life. Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified race/ethnicity and maternal condition tabulation.

Table 14: Number and percent of neonatal deaths by selected maternal conditions and race/ethnicity, Mississippi, 2024

	All		Black, NH		White, NH		Other Races, NH		Hispanic	
Maternal Characteristic	Count	%	Count	%	Count	%	Count	%	Count	%
Gestational Hypertension	24	12.1%	13	11.1%	10	16.4%	1	12.5%	0	0.0%
Gestational Diabetes	4	2.0%	0	0.0%	3	4.9%	0	0.0%	1	8.3%
Eclampsia	3	1.5%	0	0.0%	2	3.3%	1	12.5%	0	0.0%
Obesity	103	52.0%	66	56.4%	28	45.9%	4	50.0%	5	41.7%
Previous Preterm Delivery	14	7.1%	6	5.1%	7	11.5%	1	12.5%	0	0.0%
Syphilis	2	1.0%	1	0.9%	1	1.6%	0	0.0%	0	0.0%
Total Infant Deaths	198	100.0%	117	100.0%	61	100.0%	8	100.0%	12	100.0%

Note:
Neonatal infant deaths include those occurring at less than 28 days of life. Counts and corresponding rates for an event size of less than 20 should be interpreted with caution.

Table 15: Number, rate, and percent of neonatal deaths by selected maternal conditions and race/ethnicity, Mississippi, 2020-2024

	All			Black, NH			White, NH			Other Races, NH			Hispanic		
Year	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%	Count	Rate	%
Gestational hypertension															
2024	24	6.5	12.1%	13	8.9	11.1%	10	5.0	16.4%	1	10.2	12.5%	0	0.0	0.0%
2023	16	4.6	8.9%	7	4.7	6.7%	9	5.0	14.8%	0	0.0	0.0%	0	0.0	0.0%
2022	21	6.0	11.3%	12	8.4	12.8%	9	4.8	11.7%	0	0.0	0.0%	0	0.0	0.0%
2021	18	5.0	10.1%	9	6.1	9.5%	8	4.2	11.3%	0	0.0	0.0%	1	8.5	25.0%
2020	13	4.1	7.6%	9	6.6	8.8%	4	2.5	6.6%	0	0.0	0.0%	0	0.0	0.0%
Gestational diabetes															
2024	4	2.1	2.0%	0	0.0	0.0%	3	2.8	4.9%	0	0.0	0.0%	1	7.8	8.3%
2023	2	1.1	1.1%	1	1.8	1.0%	1	1.0	1.6%	0	0.0	0.0%	0	0.0	0.0%
2022	5	2.6	2.7%	3	4.8	3.2%	2	1.8	2.6%	0	0.0	0.0%	0	0.0	0.0%
2021	3	1.6	1.7%	3	4.7	3.2%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%
2020	5	3.0	2.9%	5	8.5	4.9%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%

Eclampsia															
2024	3	33.7	1.5%	0	0.0	0.0%	2	60.6	3.3%	1	333.3	12.5%	0	0.0	0.0%
2023	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%
2022	1	12.0	0.5%	0	0.0	0.0%	1	25.0	1.3%	0	0.0	0.0%	0	0.0	0.0%
2021	1	15.9	0.6%	1	27.8	1.1%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%
2020	2	21.3	1.2%	1	21.7	1.0%	1	22.7	1.6%	0	0.0	0.0%	0	0.0	0.0%
Obesity															
2024	103	7.5	52.0%	66	10.4	56.4%	28	4.4	45.9%	4	11.7	50.0%	5	6.4	41.7%
2023	80	5.8	44.7%	51	7.5	49.0%	23	3.8	37.7%	3	8.9	60.0%	3	4.1	33.3%
2022	76	5.4	40.9%	41	6.1	43.6%	30	4.7	39.0%	5	14.7	45.5%	0	0.0	0.0%
2021	84	6.0	46.9%	55	8.0	57.9%	26	4.2	36.6%	2	6.8	22.2%	1	1.7	25.0%
2020	78	5.6	45.6%	53	7.5	52.0%	23	3.8	37.7%	1	3.5	25.0%	1	2.0	25.0%
Previous preterm delivery															
2024	14	7.8	7.1%	6	6.6	5.1%	7	9.3	11.5%	1	27.0	12.5%	0	0.0	0.0%
2023	18	12.6	10.1%	13	17.4	12.5%	5	8.8	8.2%	0	0.0	0.0%	0	0.0	0.0%
2022	17	11.4	9.1%	10	13.3	10.6%	5	7.9	6.5%	2	57.1	18.2%	0	0.0	0.0%
2021	23	14.9	12.8%	13	17.3	13.7%	8	11.6	11.3%	1	20.8	11.1%	1	17.2	25.0%
2020	7	4.5	4.1%	6	7.7	5.9%	1	1.5	1.6%	0	0.0	0.0%	0	0.0	0.0%
Syphilis															
2024	2	5.0	1.0%	1	3.5	0.9%	1	10.1	1.6%	0	0.0	0.0%	0	0.0	0.0%
2023	3	8.6	1.7%	2	8.1	1.9%	1	10.9	1.6%	0	0.0	0.0%	0	0.0	0.0%
2022	5	17.7	2.7%	2	10.1	2.1%	2	28.2	2.6%	1	166.7	9.1%	0	0.0	0.0%
2021	1	4.6	0.6%	1	6.1	1.1%	0	0.0	0.0%	0	0.0	0.0%	0	0.0	0.0%
2020	2	11.1	1.2%	1	7.6	1.0%	1	26.3	1.6%	0	0.0	0.0%	0	0.0	0.0%
Total Neonatal Infant Deaths															
2024	198	5.9	100.0%	117	9.1	100.0%	61	3.5	100.0%	8	7.5	100.0%	12	5.0	100.0%
2023	179	5.2	100.0%	104	7.5	100.0%	61	3.5	100.0%	5	4.6	100.0%	9	4.2	100.0%
2022	186	5.4	100.0%	94	6.7	100.0%	77	4.3	100.0%	11	10.9	100.0%	4	2.1	100.0%
2021	179	5.1	100.0%	95	6.5	100.0%	71	4.0	100.0%	9	9.3	100.0%	4	2.3	100.0%
2020	171	4.8	100.0%	102	6.7	100.0%	61	3.5	100.0%	4	4.0	100.0%	4	2.4	100.0%

Note:
Neonatal infant deaths include those occurring at less than 28 days of life. Counts and corresponding rates for an event size of less than 20 should be interpreted with caution; rate calculated as infant deaths per 1,000 live births within each specified race/ethnicity and maternal condition tabulation; percent (%) calculated as percentage of neonatal infant deaths within year.

Mississippi Infant Mortality by SUID, SIDS, and ASSB, 2015-2024

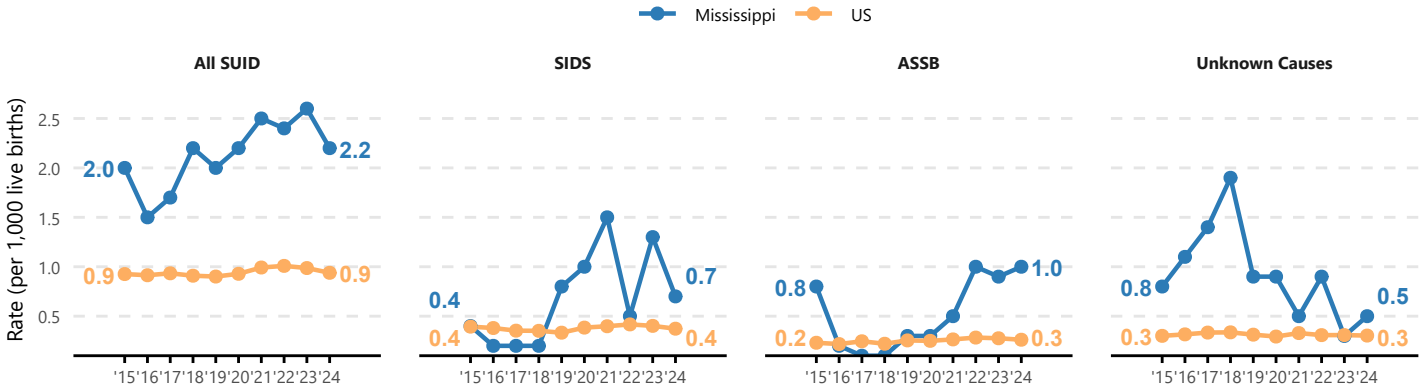
MSDH Office of Vital Records and Public Health Statistics, 9/24/2025

In 2024, Mississippi had the highest infant mortality rate in the US at 9.7 deaths per 1,000 births. Among Mississippi's 323 infant deaths in 2024, SUID deaths made up 22.6% (73 deaths) of total infant deaths.

Sudden unexpected infant deaths (SUID) include deaths due to sudden infant death syndrome (SIDS), accidental suffocation and strangulation in bed (ASSB), and other deaths from unknown causes. Among Mississippi's 2024 SUID deaths, SIDS accounted for 31.5% of deaths, ASSB accounted for 43.8%, and unknown causes made up the remaining 24.7%. Between 2015 and 2024, the rate of SUID mortality increased from 2.0 to 2.2 deaths per 1,000 births. However, fluctuations between ASSB, SIDS, and unknown causes have been seen over the last ten years (Figure 1). These fluctuations may be due to physician training, increased awareness on SUID, and additional investigation reporting.

SUID deaths are defined using the following underlying cause of death ICD-10 codes: W75 (ASSB), R95 (SIDS), and R99 (unknown cause). The SUID rate is the combination of ASSB, SIDS, and unknown cause deaths. To learn more about SUID deaths, visit https://www.cdc.gov/sudden-infant-death/data-research/data/

Figure 1: Rates of Infant Mortality Caused by All SUID, SIDS, ASSB, and Unknown Causes, Mississippi, 2015-2024



Note: Most recent US year may still be provisional at time of reporting.
Source: MSDH Office of Vital Records and Health Statistics CDC WONDER 2024, NCHS CDC

Table 1: Counts and Rates of Infant Mortality Caused by All SUID, SIDS, ASSB, and Unknown Causes, Mississippi, 2015-2024

Year	ALL SUID			SIDS			ASSB			Unknown Causes		
	MS Count	MS Rate	US Rate	MS Count	MS Rate	US Rate	MS Count	MS Rate	US Rate	MS Count	MS Rate	US Rate
2015	76	2.0	0.9	15	0.4	0.4	30	0.8	0.2	31	0.8	0.3
2016	57	1.5	0.9	8	0.2	0.4	7	0.2	0.2	42	1.1	0.3
2017	64	1.7	0.9	8	0.2	0.4	3	0.1	0.2	53	1.4	0.3
2018	81	2.2	0.9	7	0.2	0.4	2	0.1	0.2	72	1.9	0.3
2019	72	2.0	0.9	28	0.8	0.3	12	0.3	0.3	32	0.9	0.3
2020	78	2.2	0.9	36	1.0	0.4	11	0.3	0.3	31	0.9	0.3
2021	87	2.5	1.0	51	1.5	0.4	18	0.5	0.3	18	0.5	0.3
2022	82	2.4	1.0	18	0.5	0.4	34	1.0	0.3	30	0.9	0.3
2023	89	2.6	1.0	45	1.3	0.4	32	0.9	0.3	12	0.3	0.3
2024	73	2.2	0.9	23	0.7	0.4	32	1.0	0.3	18	0.5	0.3

[1] US rates (provisional) retrieved from CDC WONDER, September 2025;
[2] SUID deaths are defined using the following underlying cause of death ICD-10 codes: W75 (ASSB), R95 (SIDS), and R99 (unknown cause). The SUID rate is the combination of ASSB, SIDS, and unknown cause deaths.

COMMITTEE FINDINGS

MSDH

Infant Mortality Review Committee

FINDINGS AMONG 2023 AND 2024 NEONATAL DEATHS

Introduction

House Bill 560 established the Mississippi Child Death Review Panel (CDRP) on July 1,2006. In June of 2025, Dr. Daniel Edney, Chief Health Officer, established a provisional Infant Mortality Review Committee (IMRC) to review deaths of children less than one year of age in Mississippi. The IMRC acted as a subcommittee of the Child Death review Panel. In order to review neonatal deaths, the provisional Infant Mortality Review Committee examined birth and death certificates for infants who died in the first 28 days of age in 2023 and 2024. As with all death certificates, these documents were completed by the attending physician or medical certifier and submitted to National Center for Health Statistics at CDC. The subcommittee compiled the analysis of neonatal deaths that follows. The complete Child Death Review Panel focused on post neonatal deaths due to Sudden Unexpected Infant Death; the findings of the CDRP are included as well.

Infant Death Review Process

With the help of the Office of Vital Records and Public Health Statistics at MSDH, the provisional Infant Mortality Review Committee (IMRC) reviewed all deaths occurring at less than 28 days of age in 2023 and 2024 by examining birth and death certificates. Information was reviewed on each baby's birth and death certificate for time of death, cause of death, location of birth, and location of death. Various terminology was used to describe the cause of death for infants on certificates. Most often, a physician completed the death certificate, but on occasion, a nurse or nurse practitioner pronounced the infant as deceased and assisted with the completion of the death certificate.

Neonatal Mortality: Deaths Less than 28 days of Life

Trends Noted by Provisional Infant Mortality Committee for Neonatal Deaths Less Than 28 Days of Age

1. Out of State Deaths Attributed to Mississippi Totals

In 2023, 22% (39) of Mississippi's neonatal deaths occurred out of state. The IMRC did not review these records due to access limitations. In 2024, 19% (38) of neonatal deaths occurred out of state but contributed to the Mississippi totals because of their Mississippi residency.

Table 17: Mississippi resident neonatal death count by place of death and birth occurrence

Place of Occurrence	In-state birth	Out-of-state birth	Total
2023			
In-state	140	0	140
Out-of-state	5	34	39
Total Neonatal Deaths	145	34	179
2024			
In-state	160	0	160
Out-of-state	6	32	38
Total Neonatal Deaths	166	32	198

2. Timing of Neonatal Deaths

In 2023, of the 305 Mississippi infant deaths, 59% (179) occurred within their first 28 days of life. Of those, 102 deaths (or 33% of all infant deaths) occurred in the first 24 hours and 90 deaths within the first five hours (or 30% of infant deaths). Among deaths occurring within the first five hours, 61% (55) were due to premature births with a gestational age of 25 weeks or less. Only 9% (8) were due to congenital malformations.

In 2024, of all 323 infant deaths, 61% (198) occurred within the first 28 days. Among those, 116 (or 36% of all infant deaths) occurred in the first 24 hours, and 108 (33%) occurred within 5 hours of birth. Among infant deaths occurring in the first five hours, 63% (68) of deaths were 25 weeks or less, and 13% (14) were due to congenital malformation.

Figure 12: Number of infant deaths by time units in months, days, hours, and minutes, Mississippi, 2024

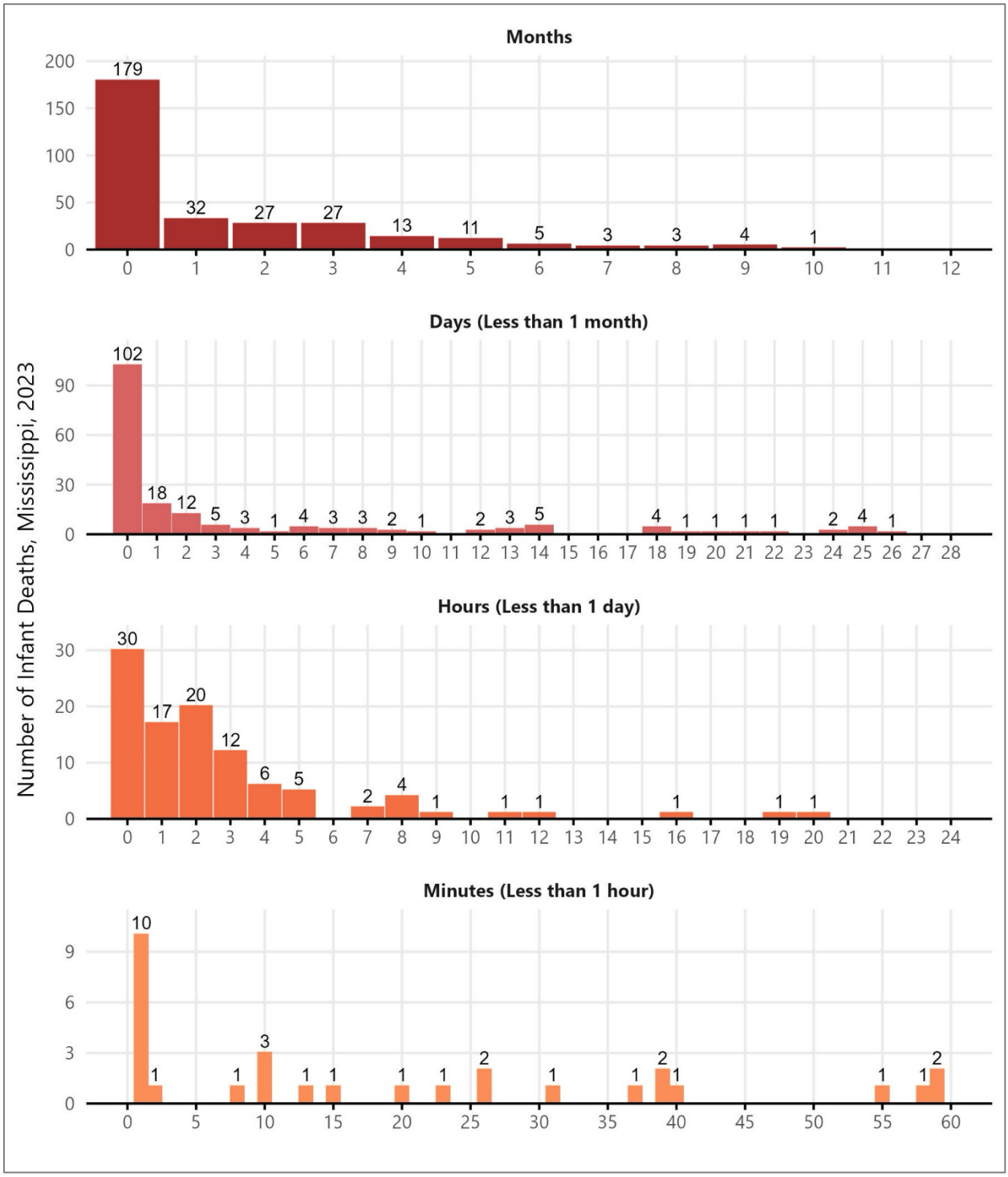


Figure 13: Number of neonatal infant deaths by clinical estimate of gestation, Mississippi, 2023-2024

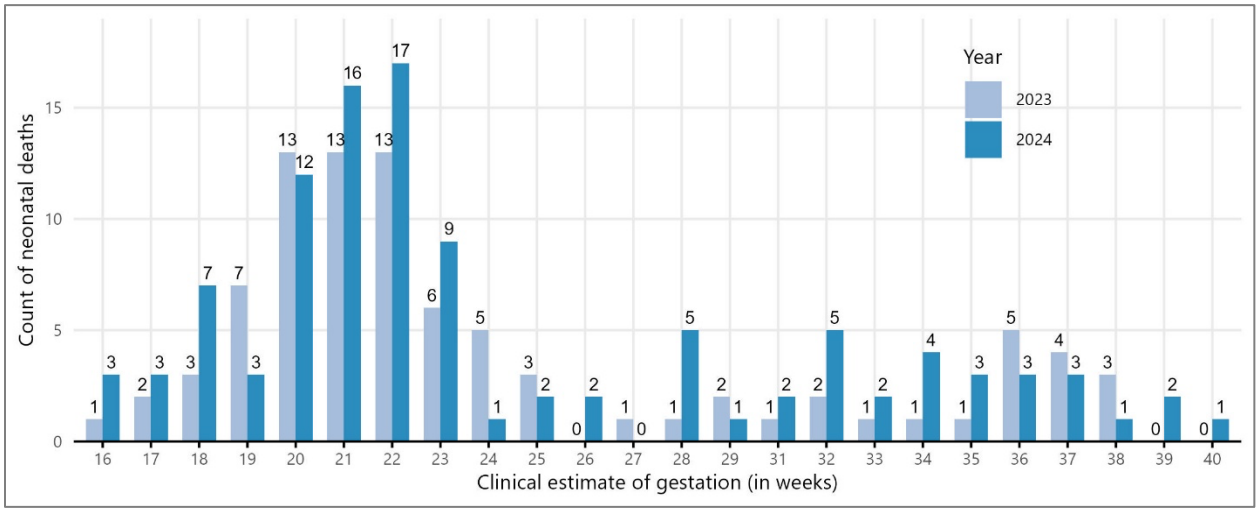


Figure 13 includes infant deaths at gestational ages of less than 20 weeks including those as early as 16 weeks gestation. The definition of live birth includes any birth that has signs of life regardless of gestation according to the World Health Organization and both major pediatric (American Academy of Pediatrics) and obstetrical organizations (American College of Obstetricians). However, anecdotal information from different stakeholders suggests that many hospitals have potentially treated some neonatal deaths occurring at less than 20 weeks as fetal demise. Inconsistency on this topic across Mississippi may relate to physician training and customs of facility reporting.

Table 18: Number of neonatal deaths occurring at 5 hours or less by causes of death (NCHS rankable cause), Mississippi, 2023-2024

	2023	2024
--Total--	**90**	**108**
Disorders related to short gestation and low birth weight, not elsewhere classified	37	51
Congenital malformations, deformations and chromosomal abnormalities	17	23
All Other Causes	15	15
Newborn affected by maternal complications of pregnancy	6	7
Newborn affected by complications of placenta, cord and membranes	3	2

Respiratory distress of newborn	3	1
Atelectasis	2	1
Hydrops fetalis not due to hemolytic disease	2	2
Bacterial sepsis of newborn	1	0
Neonatal aspiration syndromes	1	0
Neonatal hemorrhage	1	1
Newborn affected by noxious influences transmitted via placenta or breast milk	1	0
Newborn affected by other complications of labor and delivery	1	1
Diseases of the circulatory system	0	1
Interstitial emphysema and related conditions originating in the perinatal period	0	1
Intrauterine hypoxia and birth asphyxia	0	2

Table 18 shows the same predominance of deaths due to prematurity in the first five hours of life for both 2023 and 2024. As noted previously, there is variation in listing the cause of death. For example, using the term "atelectasis" (or lung collapse) to describe two neonatal deaths in 2023 and one neonatal death in 2024 fails to note why the atelectasis occurred. The most likely cause for atelectasis is short gestation and low birth weight.

Once again illustrating how different medical professionals assign a different cause of death which may actually be related to the same underlying cause, a closer analysis of these deaths show four 23 week infants whose death was characterized as taking place due to "disorders related to short gestation and low birth weight" as well as one 23 week death due to "atelectasis" (or lung collapse). All of these deaths likely occurred for the same reason: extreme prematurity; different terminology was used to describe short gestation and low birth weight as the cause of death.

3. Location of Neonatal Deaths

Ninety-eight (or 69%) of the 143 neonatal deaths that occurred in Mississippi in 2023 took place at a NICU designated as Level 3 or above. Level 3 NICU's can take care of the sickest babies, but they do not have surgical subspecialities available and do not provide special services like ECMO (heart lung bypass). In 2024, 114 (70%) of 163 neonatal deaths in Mississippi took place at a Level 3 NICU or above.

4. Transports to Level 4 NICUs from Outside Hospitals in 2024

Fourteen (18%) of 76 neonatal deaths in 2024 at a Level 4 NICU were transports from outside hospitals. Unfortunately, infants who must be transported usually have worse long-term outcomes than infants that were born at the hospital of discharge. Out-born preterm infants transported to a higher level of care, especially those born less than 28 to 32 weeks, experience higher mortality, severe brain injury, necrotizing enterocolitis, and neurodevelopmental impairment compared to inborn peers at a tertiary care center. (Kjell Helenius et al. BMJ. 2019)

5. Largest Segment of Neonatal Deaths Less than or equal to 25 weeks Gestation

Seventy-six (76) of 143 (or 53%) of in-state neonatal deaths in 2023 occurred following birth at a gestation of 25 weeks or less (Table 19). Deaths less than 23 weeks are counted as live births if the baby shows any sign of life at the time of birth in the opinion of the medical provider. Based on anecdotal information from providers and hospital staff, one central concern is that babies at less than 23 weeks may not be routinely resuscitated in Mississippi. Additionally, anecdotal information reveals that births at 22 weeks or less are often considered nonviable in Mississippi.

In 2024, 82 of 163 (or 50%) of in-state neonatal deaths occurred at 25 weeks of gestation or less, and two deaths were reported as early as 16 weeks. A Review using a sample of neonatal deaths at 25 weeks or less divided the deaths into two columns: one column counting neonatal deaths at hospitals with a Level 3 NICU or above (facilities capable of caring for the smallest babies that are resuscitated) and another column for hospitals that have no such ability to care for the smallest premature babies. Tables 19 and 20 include details of those neonatal deaths occurring at 25 weeks or less of gestation in 2023 and 2024, respectively.

Table 19: Number of neonatal deaths occurring at 25 weeks of gestation or less by NICU availability at hospital facility, Mississippi, 2023

Gestational Age	NICU Hospital	Non-NICU Hospital
17 weeks	0	1
18 weeks	0	2
19 weeks	6	1
20 weeks	7	3
21 weeks	7	6
22 weeks	7	6
23 weeks	11	2
24 weeks	9	2
25 weeks	4	1
Total	**51**	**24**

Table 20: Number of neonatal deaths occurring at 25 weeks of gestation or less by NICU availability at hospital facility, Mississippi, 2024

Gestation	NICU Hospital	Non-NICU Hospital
16 weeks	0	2
17 weeks	1	1
18 weeks	2	2
19 weeks	1	2
20 weeks	5	1
21 weeks	11	3

22 weeks	9	11
23 weeks	15	3
24 weeks	3	1
25 weeks	6	3
Total	**53**	**28**

Infant mortality is not based on gestational age or weight; the only condition is if the child was living before death, which the physician/attendant determines if there was a sign of life at the time of delivery. Since 2017 in the United States, over 8,000 infant deaths have been reported with a gestational age of less than 20 weeks (CDC WONDER, 2025).
In Mississippi, anecdotal information shows that some physicians may be inclined to not report deaths for live births less than 20 weeks.

The MSDH Office of Vital Records and Public Health Statistics counts "reportable fetal deaths" as those that are either at least 20 weeks of gestation or a weight of at least 350 grams. As long as one condition is met, then it is a reportable fetal death. In 2023 there were 351 fetal deaths and a decrease in 2024 to 268 fetal deaths.

Although there was a decrease in fetal deaths between 2023 and 2024 from 351 to 268 respectively, this drop does not appear to have occurred because of an increase in nonviable neonatal deaths at 22 weeks or less in 2024. The number of neonatal births and deaths at 19 weeks or less was the same (11 deaths) in 2023 and 2024. Overall, there were 6 more deaths at 25 weeks or less in 2024 (82) than 2023 (76). However, there were 5 more deaths at 23 weeks gestation in 2024 than in 2023. Babies with a gestational age of 23 weeks are routinely resuscitated in Mississippi with the permission of parents. The drop in fetal deaths in 2024 did not account for the rise in neonatal deaths because more nonviable newborns were counted as live births.

6. Neonatal Deaths at Hospitals with No Level 3 or 4 NICU

Forty-two (42) neonatal deaths took place at a hospital with no Level 3 or 4 NICU in 2024. Two of the deaths were Sudden Unexpected Infant Deaths; the children were brought to the hospital from home. Twenty-nine (29) or 69% were 25 weeks of gestation or less.

Table 21: Counts of neonatal deaths occurring at hospital facilities with no Level 3 or 4 NICU, Mississippi, 2024

Gestation Age	Cause(s) of Death	Count
16 to 21 weeks	Extreme prematurity	11
22 weeks	Extreme prematurity	11
23 weeks	Extreme prematurity	3
24 weeks	Extreme prematurity	1
25 weeks	Extreme prematurity	3
31 weeks	Anencephaly; respiratory failure	2
32 weeks	Anencephaly	1
33 weeks	Placental abruption	1
34 weeks	Trisomy 13	1
36 weeks	Trisomy 18	1
37 weeks	SUID; unknown; fetal demise; Potter Syndrome	4
38 weeks	SUID	1
40 weeks	Diaphragmatic hernia	1
Unknown	Holoprosencephaly	1

Review of death certificates reveal some neonatal deaths that might have been prevented had the births taken place at a higher level of care. Some examples of these deaths are included in Table 22.

Table 22: Sample neonatal deaths occurring at hospital facilities with no Level 3 or 4 NICU with potentially preventable causes, Mississippi, 2024

Gestational Age and Birth Weight/ Age at Death	Cause of Death
23 weeks 590 grams / 1 day	Extreme prematurity
23 weeks 595 grams / 53 mins	Extreme prematurity
24 weeks 539 grams / 26 mins	Extreme prematurity
25 weeks 765 grams / 1 hour	Extreme prematurity
25 weeks 567 grams / 1 day	Extreme prematurity
25 weeks 510 grams / 35 mins	Extreme prematurity
33 weeks 2,041 grams / 2 mins	Placental abruption
40 weeks / 17 mins	Diaphragmatic hernia

In addition, there were 11 babies born at 22 weeks at hospitals with no Level 3 or above NICU. There are some questions as to whether these pregnancies could have been transferred to a facility that cared for 22-week babies or if the preterm labor in these cases could have been halted in some way.

7. Increase In Neonatal Mortality in 2024

In 2024, the neonatal death rate increased between 2023 and 2024 from 5.2 per 1,000 (179 neonatal deaths) in 2023 to 5.9 per 1,000 (198 neonatal deaths) in 2024. Data from 2024 showed 15 more deaths less than 27 weeks gestation (114 in 2023 vs 129 in 2024). There were 5 more deaths from 28 to 36 weeks. In 2024, there were 29 more deaths with birth weights of less than 1,500 grams (130 in 2023 and 159 in 2024).

Figure 14: Number and mortality rates of infant deaths by birthweight, Mississippi, 2015-2024

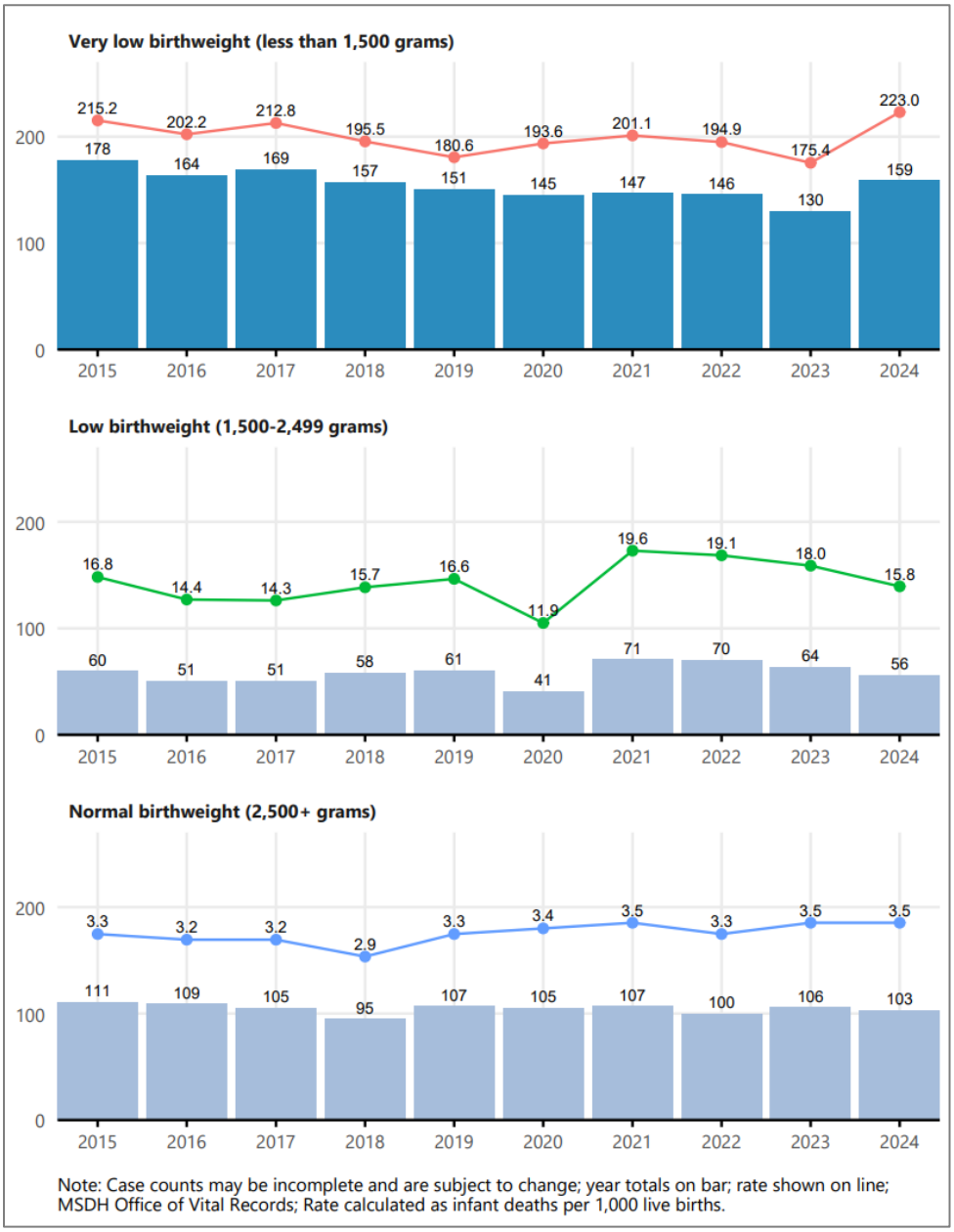
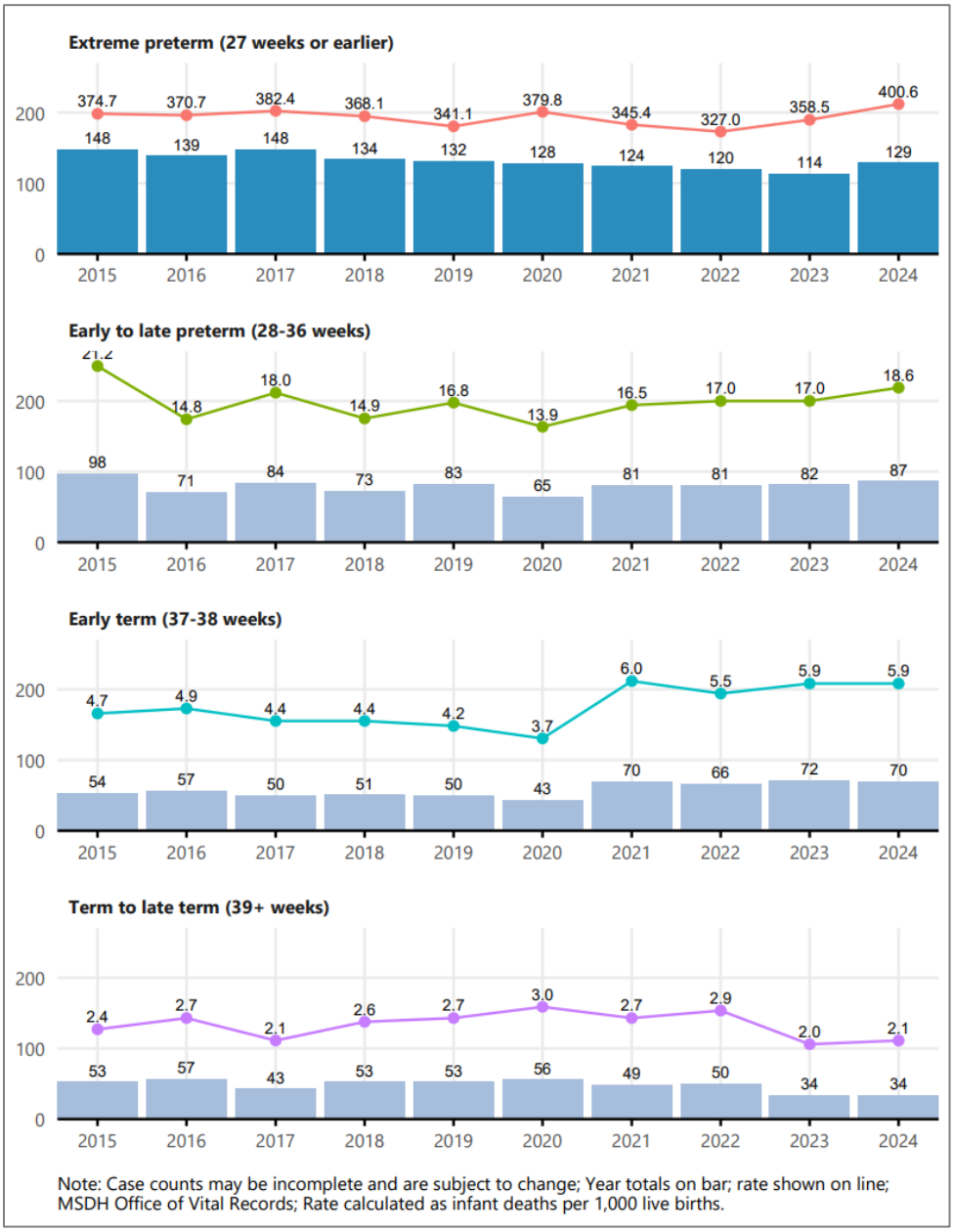


Figure 15: Number and mortality rates of infant death by gestational age at birth, Mississippi, 2015-2024



Note: Case counts may be incomplete and are subject to change; Year totals on bar; rate shown on line; MSDH Office of Vital Records; Rate calculated as infant deaths per 1,000 live births.

Summary of Findings about Neonatal Deaths 2023 and 2024

In both 2023 and 2024, most neonatal deaths took place on the first day of life and within the first five hours of birth. Most of these deaths were due to disorders related to short gestation and low birthweight. In 2023, using the underlying cause of death information from the death certificate, 37 of the 90 deaths occurring in the first five hours were due to extreme prematurity. Further medical review reveals that 55 of those 90 deaths included cases of extreme prematurity. In 2023, 17 of 90 deaths were due to congenital malformations, deformations, and chromosomal defects. In 2024, 51 of 108 deaths in the first 5 hours were due to disorders related to short gestation and low birthweight, with 68 of 108 deaths including extreme prematurity. In 2024, 23 of 108 were due to congenital malformations, deformations and chromosomal abnormalities. Both methods reveal that extreme prematurity is the leading cause of neonatal death in the first five hours after birth.

The location of most neonatal deaths in both 2023 and 2024 was a hospital with a Level 3 NICU or above. In 2023, 98 of 143 or 69% of state neonatal deaths took place in a Level 3 or above. In 2024, 114 of 163 or 70% of neonatal deaths took place at a hospital with a Level 3 NICU or above. Most deaths in 2023 (56 of 143, or 39%) and 2024 (76 of 163, 47%) took place at a Level 4 NICU. Of the neonatal deaths that took place at a Level 4 NICU in 2024, 14 were neonatal transports. Infants that must be transported are at a higher risk of mortality. Furthermore, in 2023 and in 2024, 22% and 19% of the total neonatal deaths attributed to Mississippi residents occurred outside of the state. In the future, access to information about these babies should be established by cooperation with surrounding states.

The largest segment of neonatal deaths in 2023 and 2024 were those occurring at 25 weeks or less. Based on the review of death certificates alone, in 2023, 53% (76) of all neonatal deaths were less than or equal to 25 weeks. In 2024, 50% (82) of neonatal deaths were less than or equal to 25 weeks. In 2023, 46 of the 76 neonatal deaths were deaths of infants with a gestational age of 22 weeks or less. In 2024, 51 of the 82 deaths included infants of a gestational age of 22 weeks or less. The 22-week mark is important because anecdotal information reveals that many facilities in Mississippi consider these infants nonviable and may not resuscitate or provide care for infants at 22 weeks or less.

Looking at deaths that took place in hospitals with no Level 3 or 4 NICU, there were at least 8 neonatal deaths that may have been prevented if the birth had occurred at a facility with a higher level of care. In 2024, there were 11 babies born at 22 weeks at hospitals with no Level 3 NICU or above. Those babies may have benefited from transferring to an out of state facility that cares for infants born at a gestational age of 22 week or there might have been intervention such as stopping preterm labor or placing a cerclage to prolong these pregnancies.

Conclusion

When considering the 163 Mississippi neonatal deaths in 2024, it is clear that high risk infants must receive care at a place that gives them the best chance for survival. For infants born sick or prematurely in Mississippi, the best chance for survival is birth at a hospital with a Level 3 NICU or above. Review of 2024 death certificates suggests at least 8 deaths that might have been prevented if the infant had been born at a Level 3 NICU or higher. Some of the 14 transports to our only Level 4 NICU may have survived if the baby had been born at the Level 4 NICU. Some of the 11 infants that died at 22 weeks at a hospital with no Level 3 NICU may have survived if there had been more aggressive care to prolong the pregnancy or transfer to a facility that cared for 22 week infants. Overall, if a significant portion of the 30% of neonatal deaths that took place somewhere other than a Level 3 NICU or above had been diverted to another facility with a higher level of care at birth, the outcome might have been better. A system that gets mothers to the best place to deliver and babies to the best place for care should be developed in Mississippi.

CHILD DEATH REVIEW PANEL
FINDINGS AMONG 2022 AND 2023 POST-NEONATAL INFANT DEATHS REVIEWED

Introduction:

The Mississippi Child Death Review Panel (CDRP) was established by House Bill 560 and became effective July 1, 2006. The intent of the legislation is to foster the reduction of infant and child mortality and morbidity in Mississippi and to improve the health status of infants and children. The review of these fatalities provides insight on factors that lead to the death, trends of behavior pattern, increases or decreases in the number of causes of death, and gaps in systems and policies that hinder the safety and well-being of Mississippi's children. Through the review process, the CDRP develops recommendations on how to most effectively direct state and other resources to decrease infant and child deaths in Mississippi.

Child Death Review Process:

The CDRP reviews all child deaths due to external causes (non-natural causes of death) from birth to 17 years. This excludes child deaths due to cancer, congenital anomalies, prematurity, and communicable diseases. Causes of death categorized as "undetermined/unknown" are also reviewed if external causes cannot be ruled out. Most cases reviewed are residents of Mississippi; however, non-Mississippi residents are reviewed if the incident and/ or death occurred in Mississippi and necessary records can be obtained. Child death cases are provided by the Mississippi State Department of Health's Office of Vital Records and Public Health Statistics by the calendar year of death. The cases are categorized by external cause of death such as accident, homicide, suicide, undetermined, and pending investigation. Cases with causes of death indicating injury or actions that lead directly to the death, or circumstances of an accident that produced the fatal injury are selected for review. These selected cases largely fall into the following causes of death: Sudden Unexpected Infant Death (SUID), Sudden Infant Death Syndrome (SIDS), motor vehicle accidents, homicides, suicides, fire-related, drowning, and other. The category of "other" includes incidents for which a small number of cases appear in that calendar year. Cases are prepared for panel review by gathering death investigation reports, SUID investigation forms, autopsy reports, toxicology reports, police reports, and any other documents that can clearly demonstrate the sequence of events that led to the death. Each case is reviewed individually by a panel member who is responsible for presenting the case summary to the panel at large for further discussion. It is through this process that the panel develops recommendations to decrease the number of infant and child fatalities. Lack of documentation is one of greatest hindrances to the efficiency of the CDRP. The CDRP depends on thoroughly, timely, and accurate reports to assess the circumstances that led to a child's death. Without this information, the CDRP is not able to fully execute its duties.

Purpose and Data Sources:

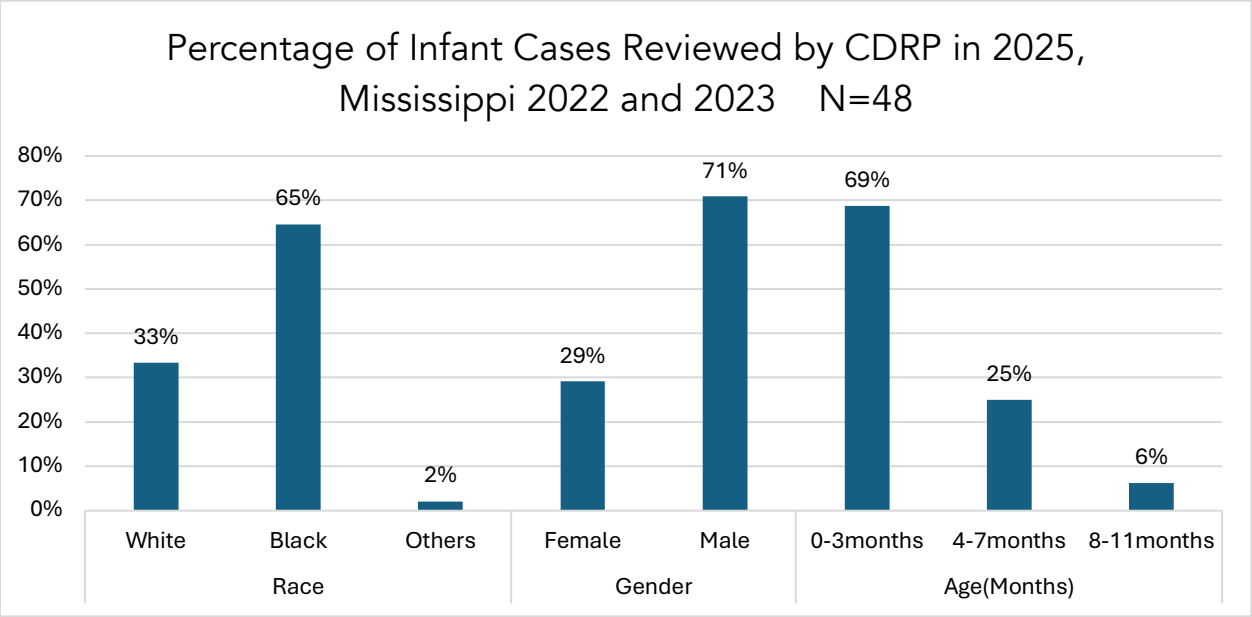
This annual report provides an overview of the post-neonatal cases reviewed by the CDRP and recommendations made by the Panel. This report is compiled using Mississippi Vital Statistics and the National Fatality Review Case Reporting System. The National Fatality Review Case Reporting System assists the CDRP with tracking trends and risk behaviors in the cases reviewed. The following summarizes infant deaths occurring in 2022 and 2023, which were reviewed by the CDRP. The Child Death Review Panel reviewed a subset of 48 deaths among infants who died in 2022 (n=18) and 2023 (n=30) in CY2025. The selection of cases reviewed was largely influenced by the overall number of deaths in a category and the availability of information related to the death (i.e., autopsy, toxicology, law enforcement reports, witness reports, Sudden Unexpected Infant Death Investigation (SUIDI) forms, etc.)

Infant Deaths: Sudden Unexpected Infant Death and Sudden Infant Death Syndrome

In 2022, there were 18 infant deaths and in 2023 there were 30 infant deaths reviewed by the CRDP that were classified as sudden unexpected infant death (SUID). SUID is a term used to describe the sudden and unexpected death of an infant less than 1 year old in which the cause is not known before investigation. Sudden unexpected infant deaths often occur in the sleep environment or during sleep. Sudden unexpected infant deaths fall into three major causes of death: undetermined, Sudden Infant Death Syndrome (SIDS), or accidental suffocation or asphyxiation.

Of the 48 SUID cases reviewed by the CDRP. Sixteen cases (33%) were White, non-Hispanic, 31 cases (65%) were Black, non-Hispanic and 1 case (2%) were Other races. Fourteen cases (29%) were female and 34 cases (71%) were male. Thirty-three cases (69%) were 0-3 months, 12 cases (25%) were 4-7 months, and 3 cases (6%) were 8-11 months.

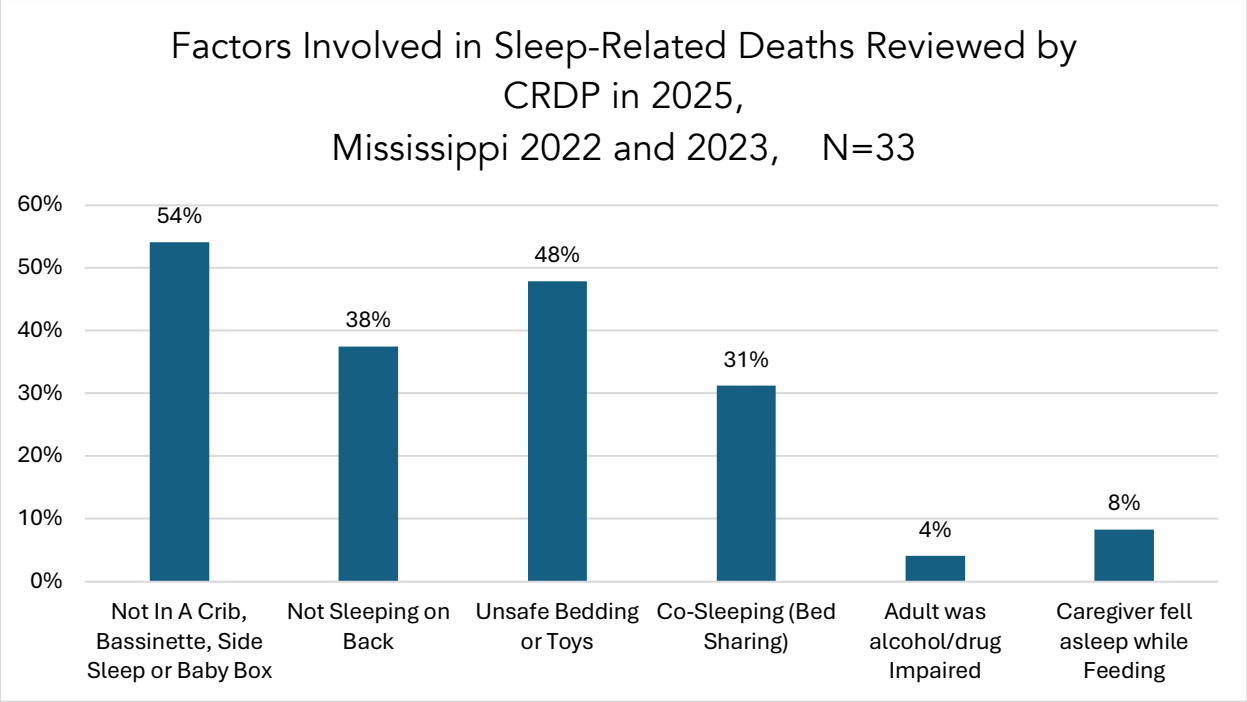
Figure 16: 2022 and 2023 Demographic (Race, Gender and Age Group (months) of infant cases reviewed by CDRP in 2025



Of the 48 cases reviewed, 33 were sleep related deaths. Twenty-six cases (54%) did not sleep in a crib, bassinette, side sleep, or baby box, 18 cases (38%) were not sleeping on their back, 23 cases (48%) had unsafe bedding or toys in the sleeping area, 15 cases (31%) were sleeping with other people (including sleeping adults, other children in the household), 2 cases (4%) where infant was in the care of an adult who was drug or alcohol impaired and 4 cases (8%) had the caregiver/supervisor to fall asleep due to tiredness or while feeding (including bottle and breast feeding).

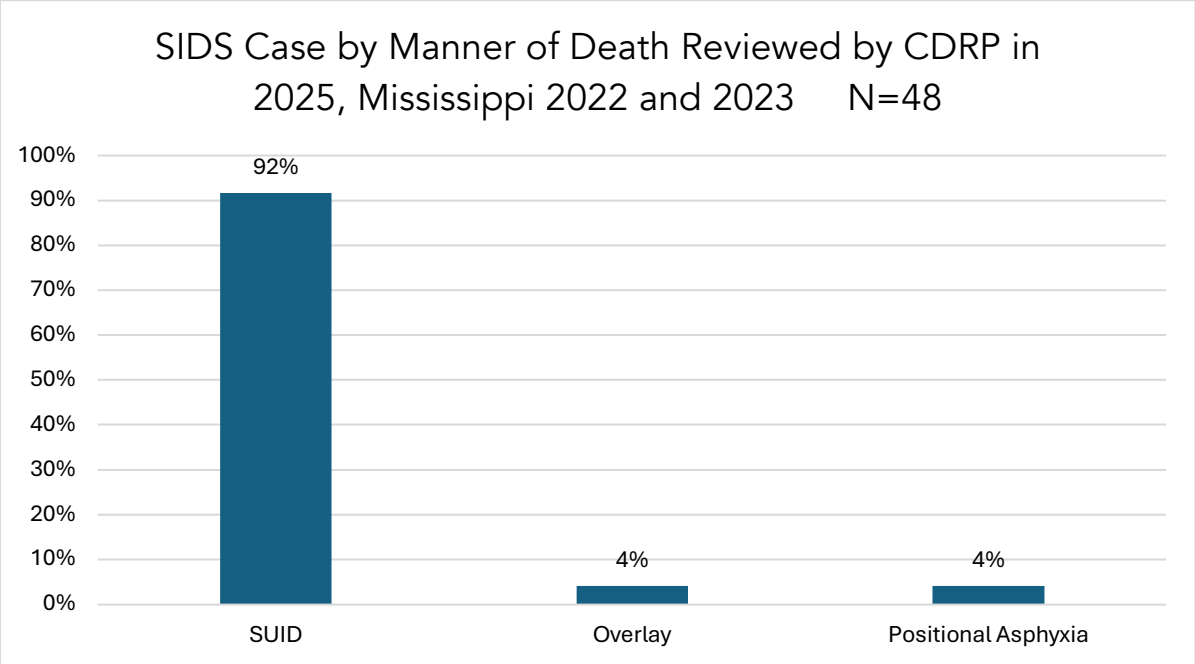
Unsafe sleep practices (infants not sleeping alone, not sleeping on their back, not sleeping in a crib, bassinet, or pack n'play) continue to be a contributing factor of sudden unexpected infant deaths.

Figure 17: 2022 and 2023 Factors involved in sleep-related deaths reviewed by CDRP in 2025



By manner of death, 44 (92%) included SUID as the immediate cause of death. Two cases (4%) were due to overlay and 2 cases (4%) were caused by positional asphyxia.

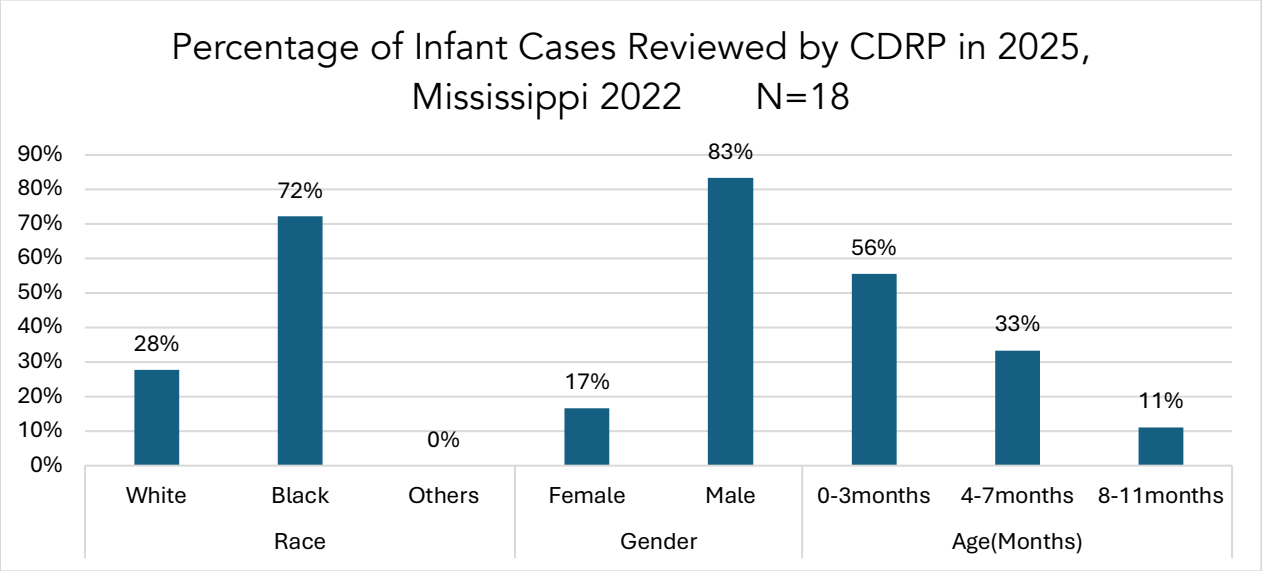
Figure 18: 2022 and 2023 SIDS case by manner of death reviewed by CDRP in 2025



Breakdown by Year: 2022

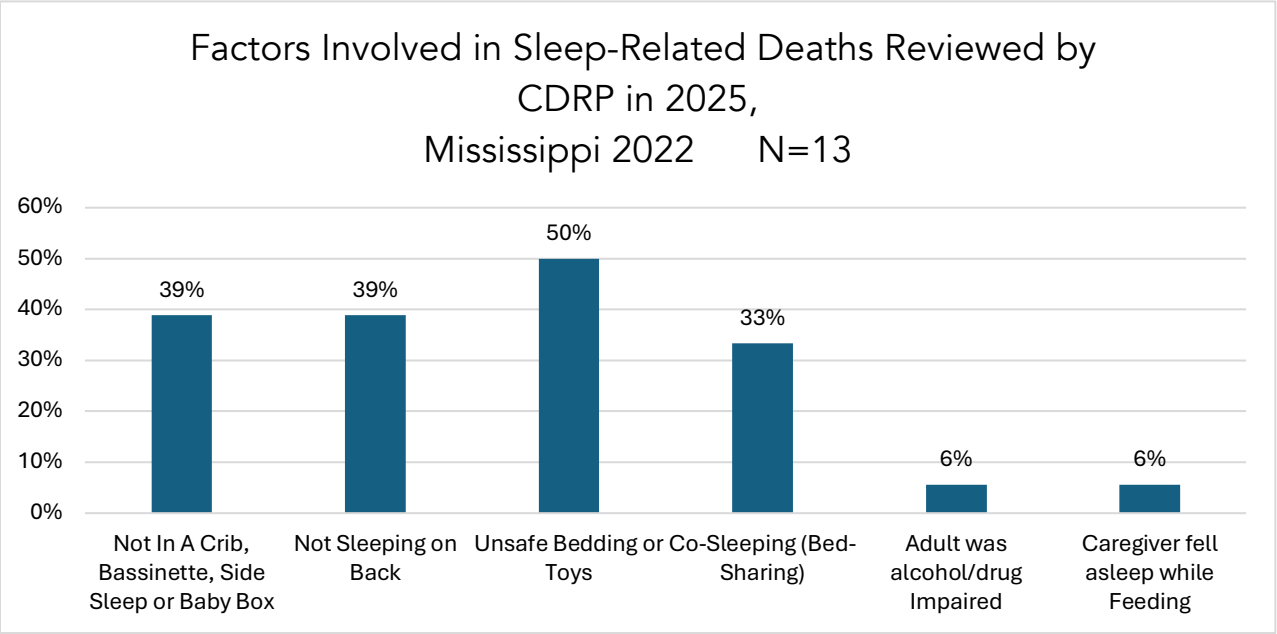
Of the 48 SUID cases reviewed by the CDRP in 2025, 18 cases were from 2022. Five cases (28%) were White, non-Hispanic and 13 cases (72%) were Black, non-Hispanic. Three cases (17%) were female and 15 cases (87%) were male. Ten cases (56%) were 0-3 months, 6 cases (33%) were 4-7 months, and 2 cases (11%) were 8-11 months

Figure 19: 2022 Demographic (Race, Gender and Age Group (months) of infant cases reviewed by CDRP in 2025



Of the 18 cases reviewed from 2022, 13 (72%) were sleep related deaths. Seven cases (39%) did not sleep in a crib, bassinette, side sleep, or baby box, 7 cases (39%) were not sleeping on their back, 9 cases (50%) had unsafe bedding or toys in the sleeping area, 6 cases (33%) were sleeping with other people (including sleeping adults, other children in the household), 1 case (6%) where infant was in the care of an adult who was drug or alcohol impaired and 1 case (6%) had the caregiver/supervisor to fall asleep due to tiredness or while feeding (including bottle and breast feeding).

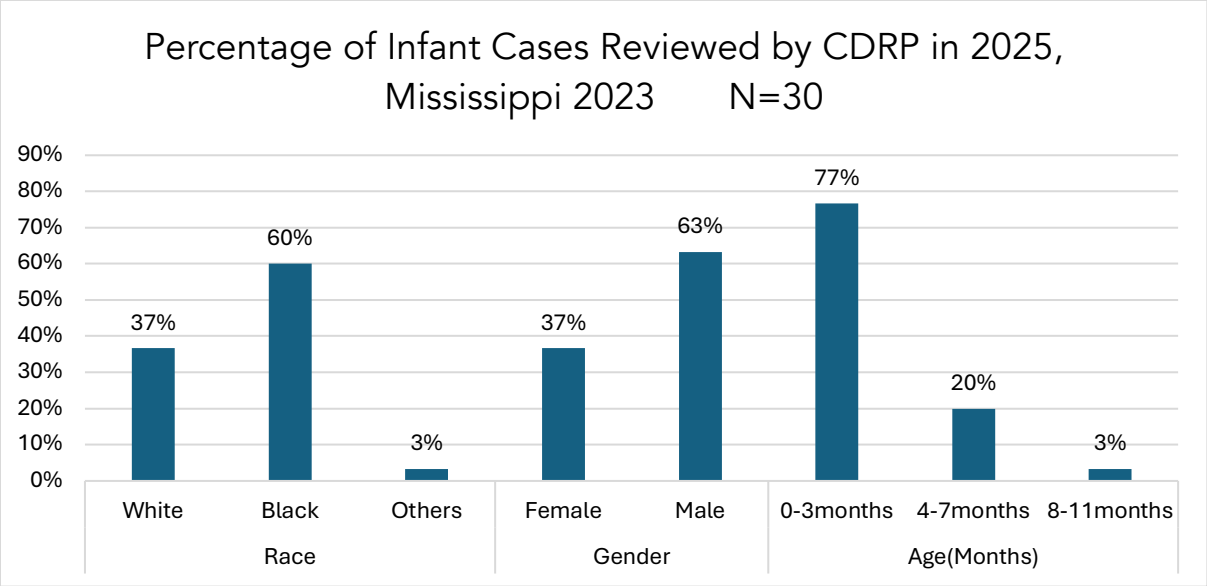
Figure 20: 2022 Factors involved in sleep-related deaths reviewed by CDRP in 2025



Breakdown by Year: 2023

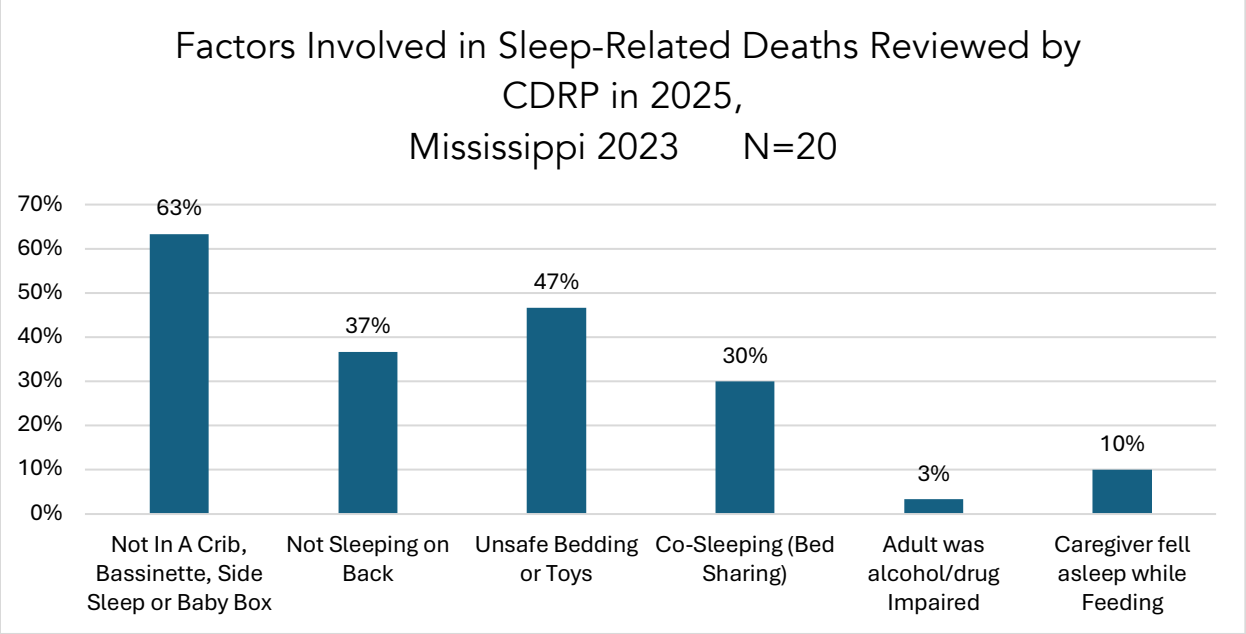
Of the 48 SUID cases reviewed by the CDRP in 2025, 30 cases were from 2023. Eleven cases (37%) were White, non-Hispanic, 18 cases (60%) were Black, non-Hispanic and 1 (3%) were Other. Eleven cases (37%) were female and 19 cases (63%) were male. Twenty-three cases (77%) were 0-3 months, 6 cases (20%) were 4-7 months, and 1 case (3%) was 8-11 months.

Figure 21: 2023 Demographic (Race, Gender and Age Group (months) of infant cases reviewed by CDRP in 2025



Of the 30 cases reviewed from 2023, 20 (67%) were sleep related deaths. Nineteen cases (63%) did not sleep in a crib, bassinette, side sleep, or baby box, 11 cases (37%) were not sleeping on their back, 14 cases (47%) had unsafe bedding or toys in the sleeping area, 9 cases (30%) were sleeping with other people (including sleeping adults, other children in the household), 1 case (3%) where infant was in the care of an adult who was drug or alcohol impaired and 3 cases (10%) had the caregiver/supervisor to fall asleep due to tiredness or while feeding (including bottle and breast feeding).

Figure 22: 2023 Factors involved in sleep-related deaths reviewed by CDRP in 2025



RECOMMENDATIONS

RECOMMENDTIONS FOR PREVENTING NEONATE AND INFANT DEATHS

The Child Death Review Panel makes the following recommendations to the Chairmen of the House Public Health and Human Services Committee and the Senate Public Health and Welfare Committee, as well as others engaged in caring for and supporting infants.

- The best way to reduce infant mortality is to improve maternal health. Promoting preconception health and providing obstetric care early in pregnancy will reduce infant mortality. The adoption of presumptive eligibility for Medicaid mothers allows women to enter care up to 6 weeks earlier in the pregnancy and would likely reduce infant mortality. More work is needed to educate both pregnant women and providers about this policy.

- Assuring that pregnant women received necessary syphilis screening and treatment as promptly as possible, and assessing and referring pregnant women for appropriate substance use treatments should be a routine part of early care.

- Transportation accessibility to prenatal care visits and especially visits to maternal fetal medicine specialists needs to be improved.

- The largest segment of neonatal deaths occurs at 25 weeks gestation and less. The best way to prevent these neonatal deaths is prenatal care targeted at high risk women with a prior history of preterm delivery, with preeclampsia, and mothers who are obese. The greatest risk factor for neonatal mortality in Mississippi is not hypertension nor diabetes; the greatest risk factor for neonatal mortality is obesity.

- Women with high-risk pregnancies should be referred for additional medical and nonmedical support, such as remote patient monitoring, high-risk case management, mental health support, tobacco cessation, and nutritional support.

- Support MSDH efforts to implement an Obstetrical/Perinatal system of care that will track maternal and neonatal transports. The referral pattern for mothers and babies should be strengthened and reviewed for each part of the state so that mothers and babies deliver where there is a chance for the best outcome. Like the trauma system, this referral pattern may rely on out of state partners in Memphis, Mobile, and New Orleans. Delays in maternal transports to a higher level of care must be further examined. The maternal transport system needs improvement to reduce the time it takes to a mother in critical condition to get to the right level of care. The goal is to have mothers deliver in the right place to avoid neonatal transports at birth that are associated with higher mortality and morbidity, seeing more maternal transports and fewer neonatal transports.

- Mississippi's system of Obstetrical/Perinatal care needs to consider incentives for obstetricians to get high risk mothers to a full-service delivery hospital with an NICU if a preterm baby is expected. Reimbursement for obstetricians who decide to transfer mothers to ensure appropriate NICU care should be considered.

- Mississippi's Obstetrical/Perinatal system should plan outreach education so that all delivering hospitals have trained staff to handle emergent preterm or complicated term deliveries.

- Consider providing statewide care for infants born at 22 weeks gestation in the NICU in Mississippi and try to transfer mothers at 22 weeks to hospitals that care for 22 week infants.

- The Mississippi Perinatal Quality Collaborative (MSPQC) should work closely with the Child Death Review Panel, the Fetal Infant Mortality Review Programs, and the MSDH Maternal and Infant Health Bureau to improve collaboration for newborn care.

- The State Department of Health should establish a formal infant mortality review committee of physicians and other stakeholders to review the infant mortality statistics each year. The state should support MSDH efforts to provide resources and staff for this committee.

- Local primary care providers and others supporting families should continue to emphasize the importance of safe sleep to families with a newborn. Local clinics and hospitals should use social media and all other means to spread the word about safe sleep and the importance of a safe sleep plan for a newborn.

- Public service announcements and mass media campaigns about the dangers of bed sharing and a realistic approach to helping put babies to sleep should continue. The message of ABC's of safe sleep: **A**lone, on **B**ack, in a **C**rib should be consistently used and amplified. Pediatricians and family practice doctors can help families with difficulties their infants may be having with sleep or excessive fussiness.

- The MSDH should continue to support and expand the Fetal and Infant Mortality Review Programs throughout the state, notably in public health districts with the highest infant mortality rates. Other agencies or organizations charged with carrying out FIMR programs should assure they prioritize this work, partnering with MSDH to support them in doing so. This program will need funding to support optimal efficiency and outcomes.