Mississippi State Department of Health

Infant Mortality Report

2017

The Health Services Office of Health Data and Research compiles the report annually as required under § 41-3- 15.(1)(c)(viii), MS Code of 1972, as annotated

Total Births 2016:
37,928

Total Infant Deaths 2016:
327

Infant Mortality Rate:

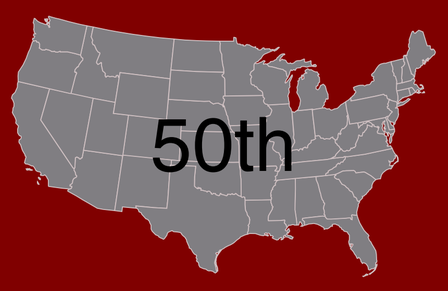
8.6

Infant deaths per 1,000 live births

DECREASED

This represents a 6.5% decrease from the 2015 rate of 9.2

United States Rank:



US, 2015, National Vital Statistics Report 66 (6), 2017

Healthy People 2020 Target Infant Mortality Rate:

6.0

Introduction

This report describes infant deaths among Mississippi residents during 2016. Infant mortality is a complex problem that is influenced by social and environmental factors, the health of the infant's mother during and before pregnancy, pregnancy related complications, the infant's health and the medical care received by the mother and infant before and after birth. In 2015, the infant mortality rate in the United States was 5.9 deaths per 1,000 live born infants.

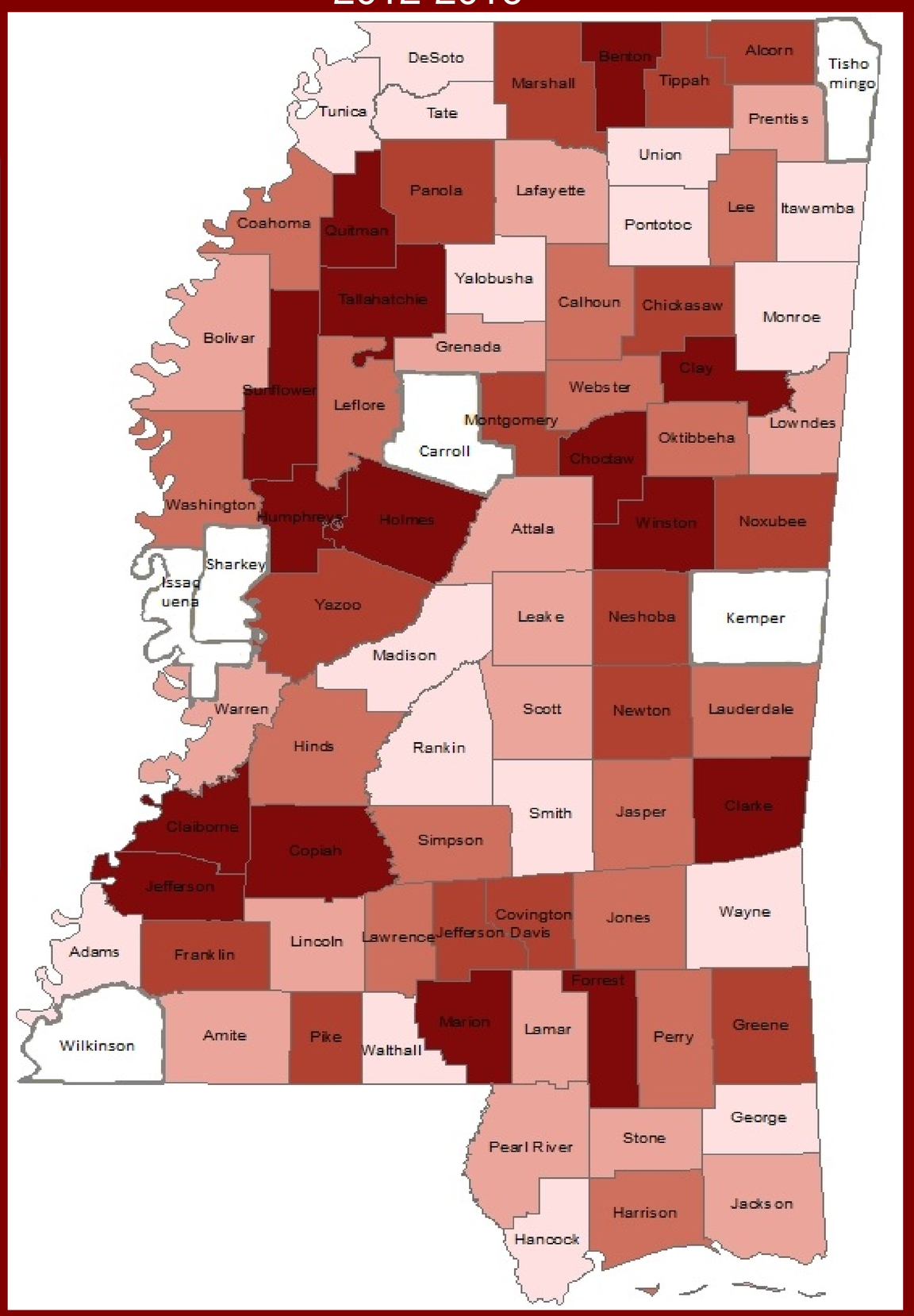
In Mississippi, the infant mortality rate (IMR) in 2016 decreased by 6.5% from 2015, from 9.2 to 8.6 deaths per 1,000 live born infants. There was a 9.6% increase in the white infant mortality rate (6.2 to 6.8 deaths per 1,000) and a 12% decrease in the black infant mortality rate (13.0 to 11.4). The leading causes of infant mortality remain preterm birth, sudden unexpected infant deaths, particularly related to unsafe sleeping practices, and birth defects.

Geography

IMR 2012-2016 by Race for 20 Most Populated Counties

	Total	Black	White
Hinds:	10	11	6
Harrison:	9	13.5	7.2
DeSoto:	5.9	9.4	4.2
Rankin:	4.7	7.5	3.6
Jackson:	7.5	10.8	6.3
Madison:	6.7	9.1	4.9
Lee:	9.6	16.9	5.6
Lauderdale:	9	12.6	5.7
Forrest:	12.5	13.6	11.8
Jones:	9.2	12.3	7.7
Lowndes:	8.7	12.3	4.8
Lamar:	7.9	9.2	7.3
Pearl River:	8	24.9	5.6
Lafayette:	8.2	11.9	7.3
Washington:	9.9	11.4	5
Oktibbeha:	9.7	17.3	2.9
Warren:	8	9.4	6.2
Hancock:	6.5	-	7.3
Pike:	10.4	11.5	9
Alcorn:	12.3	30.8	8.2

Mississippi County Average Infant Mortality Rate, 2012-2016



Infant Deaths per 1,000 Live Births 2012-2016

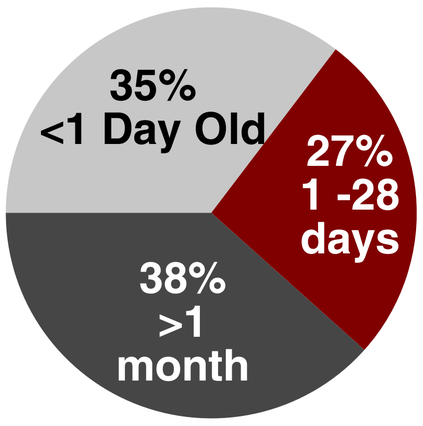
- 4.7 - 7.0
- 7.1 - 8.7
- 8.8 - 10.1
- 10.2 - 12.3
- 12.4 - 20.0
- Suppressed*

* Rates not reported due to small values that may lead to unreliable estimates

Source: Mississippi Vital Statistics, 2012-2016

Timing

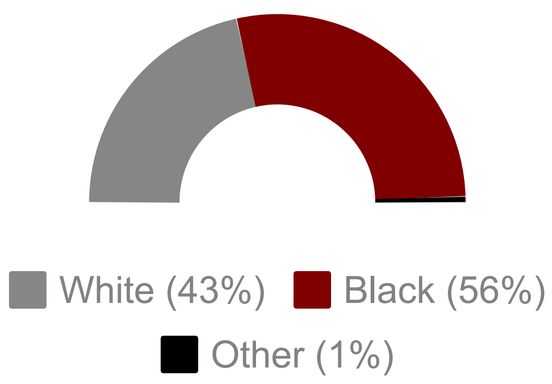
35% of all infant deaths happened on the first day of life. Another 27% happened within the first month.



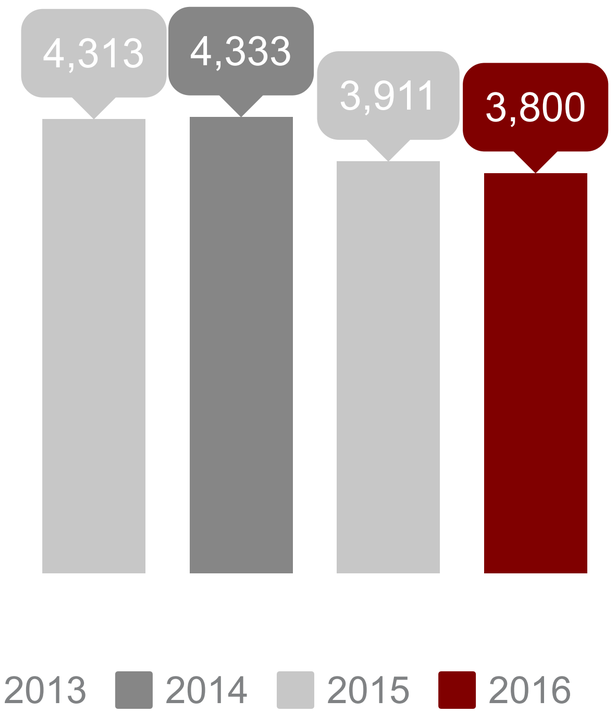
Racial Disparity

The black infant mortality rate (IMR) was 70 percent higher than the white infant mortality rate in 2016. This difference is in part due to the higher preterm birth rate among black infants.

Percent of Infant Deaths by Race, 2017



Tobacco Use in Pregnancy



9.8% Of Mississippi women giving birth in 2016 smoked at some point during pregnancy

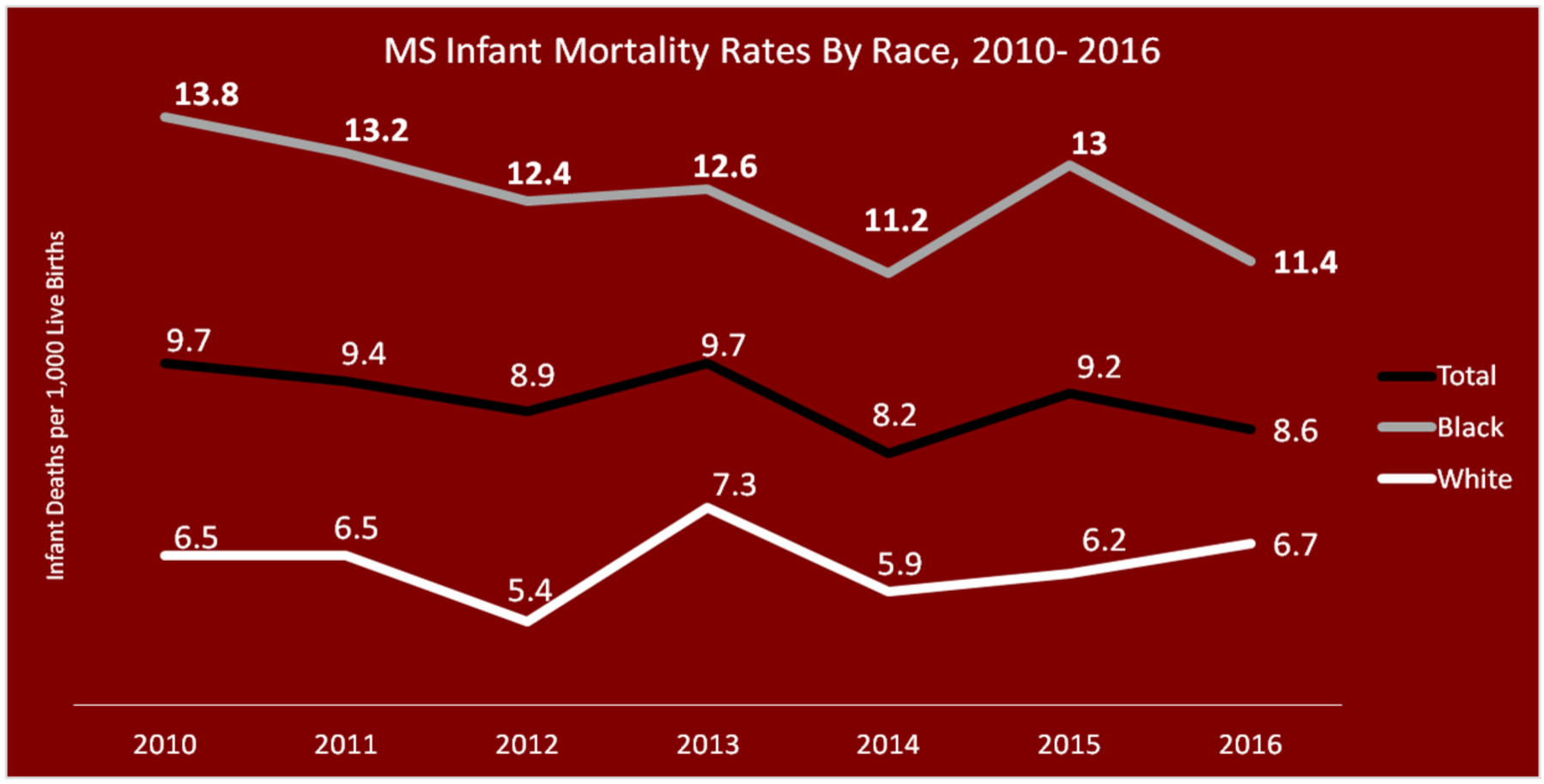
12% DECLINE IN SMOKING SINCE 2014

23% Of infant deaths occurred among mothers who smoked at some point in pregnancy

Source, MS Vital Statistics, 2013- 2016

Trends

In 2015 the infant mortality rate across all groups increased, with the black infant mortality rate reaching its highest level since 2011. In 2016, the overall infant mortality rate declined, primarily due to the decline in the black infant mortality rate. The white infant mortality rate has continued to rise from 6.2 to 6.7 deaths per 1,000 live births. The black infant mortality rate is 70% higher than the white infant mortality rate. The disparity has narrowed due to both the decline in the infant mortality rate and a rise in the white infant mortality rate.



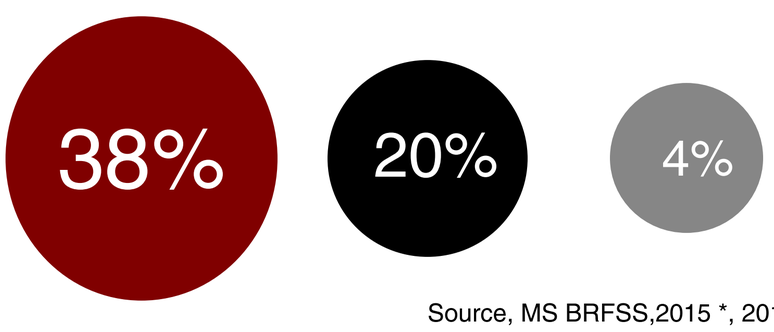
Source: Mississippi Vital Statistics, 2010-2016. Other races not reported due to small values.

Maternal Health

A mother's health and medical care before and during pregnancy can directly impact infant health and the risk of infant mortality. Three key areas of preconception health that can impact infant health include 1) exposure to tobacco and other drugs before and during pregnancy, 2) the presence and management of chronic medical conditions and 3) if a woman plans or intends to be pregnant at the time of conception. There was a 12% decline in tobacco use among women during pregnancy since 2014.

Chronic Medical Conditions

MS, Females Age 18-44, 2015

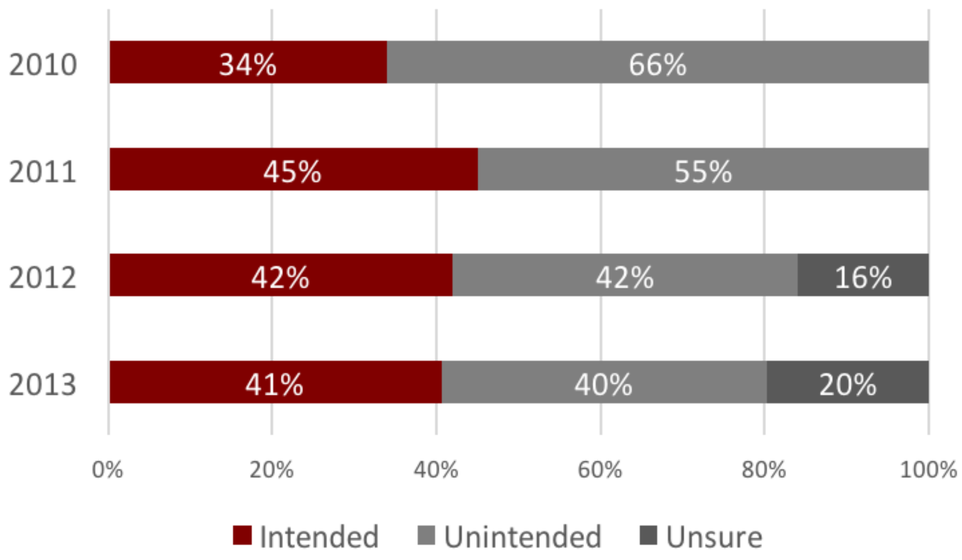


Source, MS BRFSS,2015 *, 2016

Women entering pregnancy with medical conditions like obesity, hypertension (HTN) and diabetes are at an increased risk of complications like preterm birth and stillbirth. Poorly controlled diabetes can lead to birth defects.

Pregnancy Intention

MS Females, 2010- 2013



Source, MS PRAMS, 2010-2013. The response rates were below the 60% representative threshold set by CDC. Interpret the results with caution. Unsure added as option in 2012.

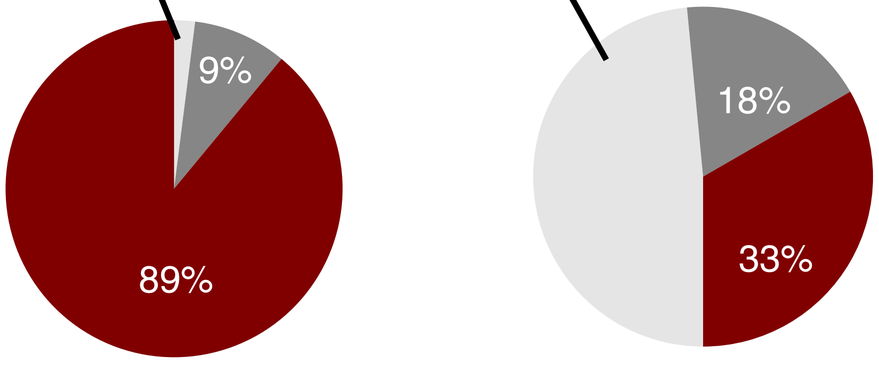
Unintended pregnancies are at greater risk of poor health outcomes including tobacco exposure, late or inadequate prenatal care, low birth weight, low breastfeeding rates and socioeconomic stressors.

Leading Causes

#1 Prematurity

When the multiple complications of prematurity are grouped together, preterm birth (delivery before 37 weeks of pregnancy) is the leading cause of infant death in Mississippi. Infants born preterm are at an increased risk of breathing complications, infections and brain injury. In 2016, 13.6% of infants were born preterm in Mississippi, representing a 4.6% increase from the 2015 rate of 13%. The national preterm birth rate is 9.8%.

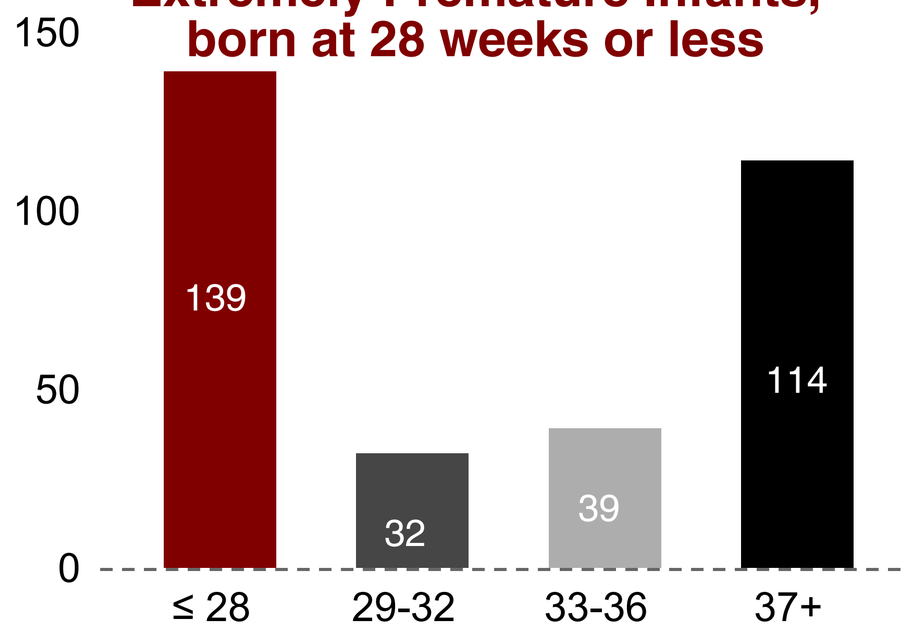
Very Low Birth Weight Infants make up 2% of Births & 48% of Deaths



Mississippi Vital Statistics, 2016

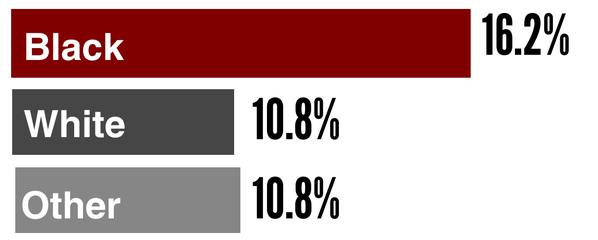
<1500g (3.3 lbs)
1500 - 2499g
2500+g (5.5 lbs)

Most Infant Deaths are Among Extremely Premature Infants, born at 28 weeks or less



MS Infant Deaths by Gestational Age in Weeks, 2016

of MS babies are born preterm



Mississippi, 2016

INCREASING

The preterm birth rate in Mississippi increased by 4.6% in 2016. Mississippi has the highest preterm birth rate in the United States.

Average medical cost for a Healthy Term Baby:

$4,551

Average medical cost for a Premature Baby:

$49,003

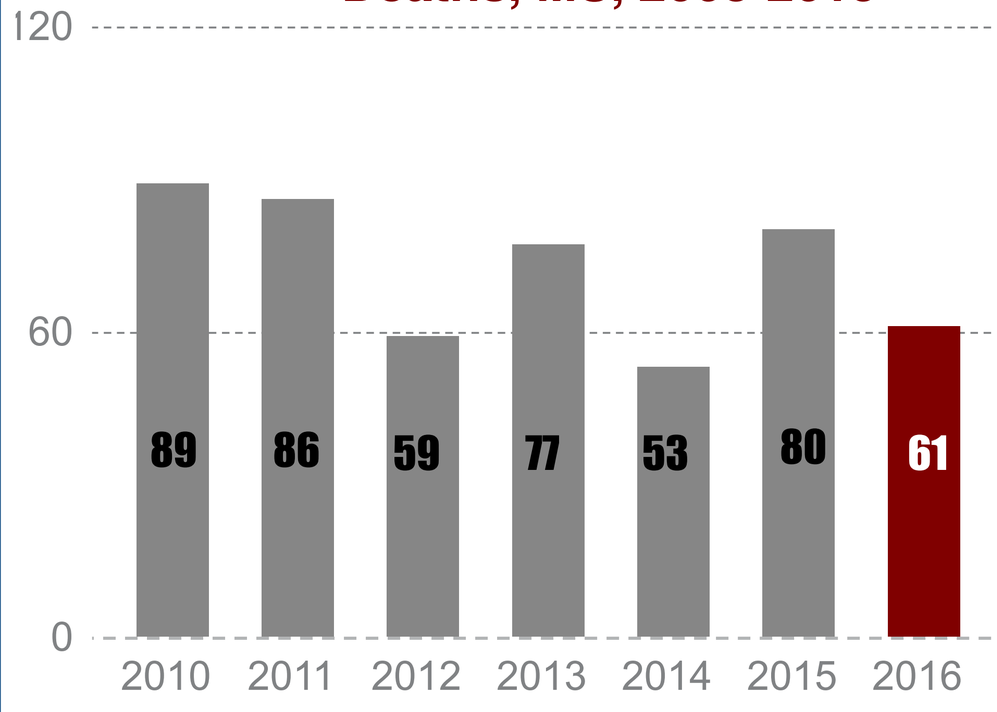
Source: Marchofdimes.org

https://www.marchofdimes.org/Peristats/pdfdocs/cts/ThomsonAnalysis2008_SummaryDocument_final121208.pdf

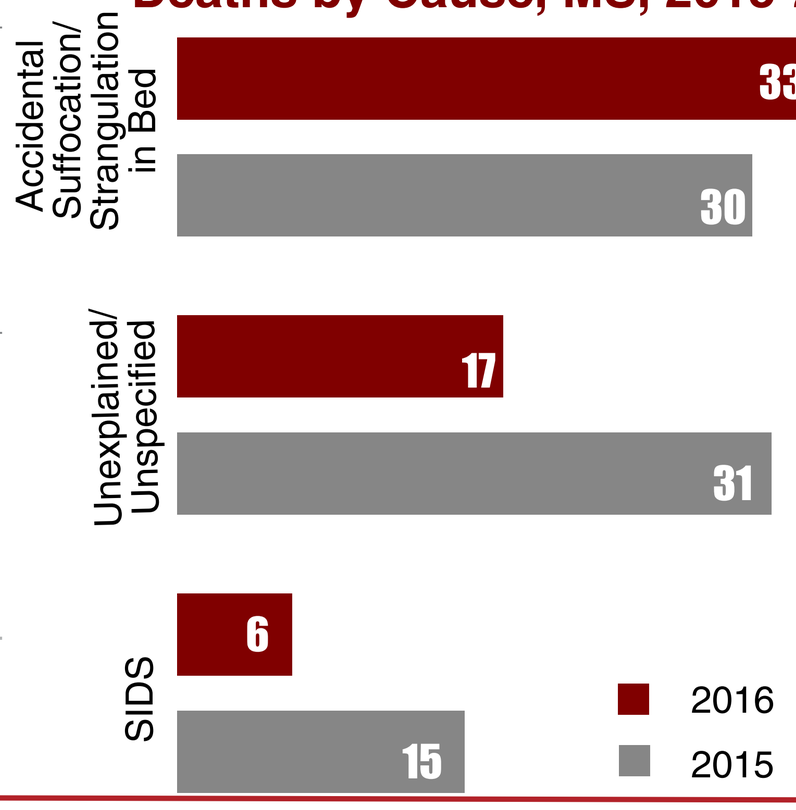
#2 SUID- Unsafe Sleep & SIDS

Sudden Unexpected Infant Death (SUID) describes the death of an infant where the cause is not immediately apparent before investigation. These deaths often occur while an infant is sleeping or in a sleep area. Unsafe sleep environments make up most SUID deaths contributing to suffocation, strangulation or overlay accidents. SIDS or Sudden Infant Death Syndrome is a form of SUID where no cause is identified. These are the leading causes of death for infants between 1 and 4 months of age and combined represent the second leading cause of infant death in MS.

Sudden Unexpected Infant Deaths, MS, 2008-2015



Sudden Unexpected Infant Deaths by Cause, MS, 2015-2016



Unsafe Sleep Environments

- Sleeping face down/ on side
- In an adult bed
- On a couch or chair
- With an adult or siblings
- With pillows, loose bedding
- In car seats out of the car
- Extreme temperatures
- Around tobacco smoke

Prevention Strategies

Case reviews have found that most SUID deaths are preventable.

- Prenatal education
- Hospital safe sleep policies
- Screening for unsafe sleep practices at infant check-ups
- Reduce parental smoking
- Increase breastfeeding to prevent SIDS
- Provide safe infant sleep spaces to families in need

#3 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. Congenital heart defects and chromosomal abnormalities are the leading categories of infant death due to birth defects.

Number Infant Deaths due to Congenital Malformations 2012-2016

2012	2013	2014	2015	2016
41	44	35	29	39

Source: MS Vital Statistics, 2012-2016

Strategies for Improvement

Reducing Preterm Birth & Preterm Related Mortality

- PROGESTERONE THERAPY

  Progesterone medication can reduce the risk of preterm birth in select high-risk patients. Pregnant women need to be screened for a history of spontaneous preterm birth or have an ultrasound of the cervix to determine if they are candidates for this therapy.

- LOW DOSE ASPIRIN

  Preeclampsia is a pregnancy related condition that causes severely high blood pressures and can lead to maternal and fetal death. It is one of the leading causes of preterm birth. Low dose aspirin can help prevent preeclampsia in certain women and reduce the risk preterm birth.

- GROUP PRENATAL CARE

  Patient centered, interactive group prenatal care models have been shown to reduce preterm birth, increase breastfeeding and use of effective family planning.

Improving Maternal Health

- TOBACCO CESSATION

  The MSDH Office of Tobacco Control trains providers in evidence-based techniques to assist pregnant women to stop smoking. Smoke-Free Air policies help reduce second-hand exposure. The Office of Tobacco Control is currently supporting 'Baby and Me Tobacco Free', an evidence-based project that provides structured counseling and incentives to help pregnant women quit smoking.

- LONG-ACTING-REVERSIBLE CONTRACEPTION (LARC)

  LARCs include intrauterine devices and subdermal hormonal implants. They are twenty times more effective than most other forms of birth control and help women to improve their health before pregnancy and space births adequately. MSDH is working with Medicaid and other partners to expand access to LARCs.

Reducing SIDS & Sleep-Related Deaths

- HOSPITAL SAFE SLEEP

  Hospital safe-sleep policies and programs ensure that every new parent is educated about recommended infant sleep guidelines to prevent SIDS and sleep related deaths. MSDH was awarded a project grant from the National Institute for Children's Health Equity to work with Arkansas, Tennessee and New York on strategies to reduce sleep related deaths.

- DIRECT ON SCENE EDUCATION

  The Direct on Scene Education (DOSE) program trains first responders including fire fighters and emergency medical technicians to screen the homes they enter for unsafe infant sleep environments and provide education and cribs to families. MSDH is working to implement DOSE across the state.

Increase Breastfeeding

- HOSPITAL & COMMUNITY TRAINING

  Breastmilk has been proven to reduce the risk of neonatal illness and SIDS. Breast milk is particularly beneficial to preterm and low birthweight infants, by improving nutrition and preventing life threatening infections. MSDH is working with multiple partners to strengthen breastfeeding support within hospitals and communities.

Key Partnerships & Programs

NATIONAL FIMR FETAL– INFANT MORTALITY REVIEW PROGRAM

The Fetal-Infant Mortality Review Program uses local case review teams and community action teams to identify solutions for infant mortality. Mississippi now has three active FIMR programs and is expanding to include more through local partnerships with Healthy Start Programs across the state.

MSPQC Mississippi Perinatal Quality Collaborative

The Mississippi Perinatal Quality Collaborative is a multi-stakeholder partnership dedicated to improving birth outcomes through evidence-based clinical quality improvement initiatives. MSPQC participants are currently working to improve the care of high-risk newborns during the first hour of life, reduce maternal mortality caused by obstetric hemorrhage and improve breastfeeding rates. Mississippi was awarded a 5 year, $1 Million grant from the Centers for Disease Control to further develop the MSPQC.

march of dimes

The March of Dimes works with MSDH, families, researchers and providers across Mississippi and the United States to support research and programs dedicated to improving infant health, reducing preterm birth and infant mortality. Among many projects, March of Dimes is supporting projects to reduce tobacco use in pregnancy and promote interconception health.

CHAMPS

Communities and Hospitals Advancing Maternity Practices is an initiative geared toward improving maternal and child health outcomes through the promotion of the Baby-Friendly Hospital Initiative (BFHI). The BFHI is a global program launched to encourage and recognize hospitals that offer an optimal level of care for infant feeding and mother/baby bonding. MSDH is working with CHAMPS as well as Blue-Cross Blue Shield of Mississippi to support hospitals pursuing Baby-Friendly status in Mississippi and increase breastfeeding rates across the state.

Acknowledgements

The Mississippi State Department of Health first acknowledges the families touched by infant death each year. This report is generated with the goal of preventing these tragic losses.

Data for this report are made available by the Office of Vital Records and the Office of Health Data and Research.

Corresponding Author:
Charlene Collier, MD, MPH, MHS
Charlene.Collier@msdh.ms.gov

Contributors & Data Analysts:
Richard Johnson, MS
Monica Stinson, MS, CHES
Sai Kurmana, MD,MPH
Rodolfo Vargas,MS
Lei Zhang PhD, MBA, MSc