



# Mississippi's Efforts to Address Preterm Birth Rates

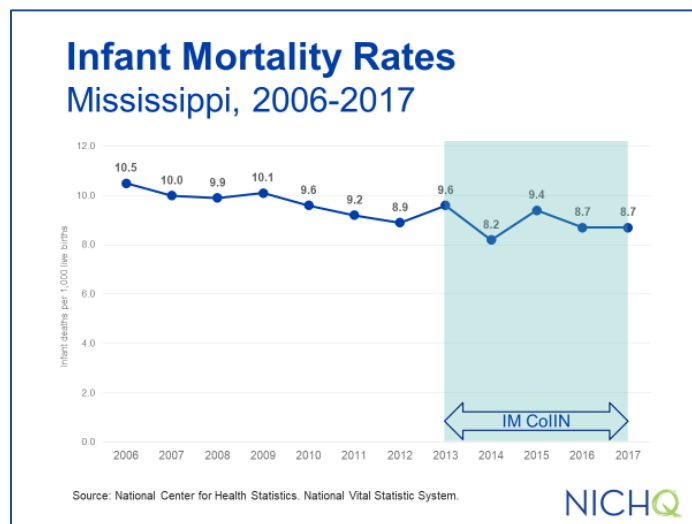
*A Case Study Developed from NICHQ's Exploring State-Level Strategies  
to Improve Maternal Health and Birth Outcomes Initiative*

# Introduction to Mississippi

Following the 2013 introduction of the Infant Mortality Collaborative Improvement and Innovation Network (IM CoIN), Mississippi launched a series of collaborative and coordinated initiatives to address infant mortality beginning in 2014. During Mississippi's IM CoIN participation, the state made significant progress to increase access to clinical interventions, reduce rates of early elective delivery (EED), increase access to smoking cessation programs for expectant mothers, and implement a number of community-centered perinatal programs tailored specifically for Black mothers. Mississippi's maternal and infant health programming is led by a passionate group of public health leaders and health care providers who work to foster community-specific solutions that fit the needs of mothers and infants.

## Case Study Background

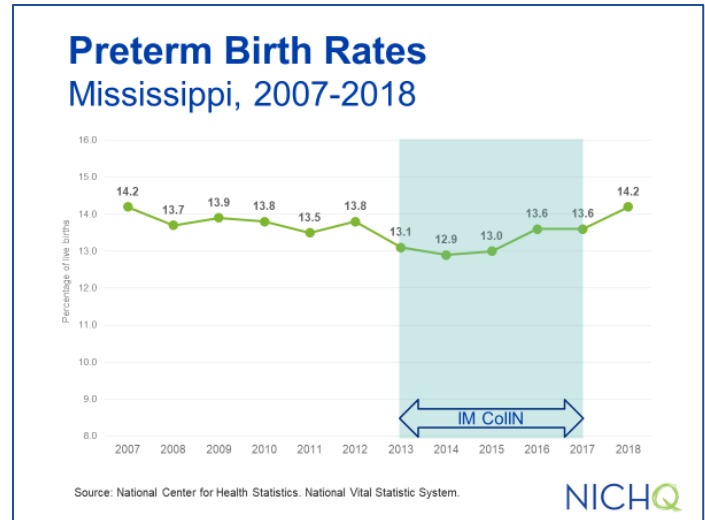
Mississippi's rates for both preterm birth and infant mortality are currently the highest in the nation — like other states in the South, rates for both are far above the United States national average. During the Infant Mortality Collaborative Improvement and Innovation Network (IM CoIN) project period, Mississippi's infant mortality rate fell from 9.6 per 1,000 live births in 2013 to 8.7 per 1,000 live births in 2017.<sup>1</sup> Less successfully, the preterm birth rate increased over the IM CoIN years, from 13.0% in 2013 to 13.6 percent in 2017, and continued to increase to 14.2% in 2018.



Keeping with national trends, Black mothers in Mississippi experienced a disproportionately high burden of infant mortality as compared to white mothers. Infants born to Black mothers had a mortality rate of 12.3 per 1,000 live births in 2013, falling to 11.7 per 1,000 live births in 2017.<sup>1</sup>

Infants born to white mothers, by contrast, had a mortality rate of 7.6 per 1,000 live births in 2013, falling to 6.3 per 1,000 live births in 2017.<sup>1</sup>

Preterm birth follows similar racial trends: between 2013-2015, Black mothers had a preterm birth rate of 15.7% compared to white mothers, whose preterm birth rate was 11%.<sup>2</sup> Between 2015 and 2017, preterm birth rates increased for both Black and white mothers, to 16.1% for Black mothers and 11.3% for white mothers.<sup>2</sup>



With its diverse geography, from the low-lying fertile fields of the Delta region to the sandy beaches of the Gulf shore, Mississippi is a study in contrasts. Mississippi offers a unique example of a state working hard to increase maternal and infant health in the face of challenging conditions.

## Population Characteristics

Bucking national trends toward urbanization, Mississippi ranks 34th in population density with 63.5/sq. mi., meaning a majority of Mississippi's nearly three million residents live in rural areas. The state has only one city with more than 100,000 residents: Jackson, the state capital. Population density thins from there – 17 cities have populations between 20,000-50,000 and 22 cities have populations between 10,000-20,000. Participants in IM ColIN cited this low population density as one of the challenging factors in access to prenatal care, with the closing of rural hospitals around the state creating what one called “an obstetrics desert.”

The Mississippi Delta region is part of the Delta Regional Authority (DRA), an eight-state region that includes 9.8 million people in Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.<sup>3</sup> Half of Mississippi's residents live in the Delta.<sup>4</sup> The Delta is one of the most economically depressed regions of the country – the poverty rate for Delta residents in Mississippi exceeds 30% – and the impact on maternal and infant health is troubling. More than 35% of babies in the Delta were born to women under the age of 24, and preterm birth, low birth weight and infant mortality were significantly higher for infants born in the Delta compared to the rest of the state and country.<sup>5</sup>

# Racial/Ethnic and Socioeconomic Factors

Of Mississippi's almost three million residents, 59% are white and 38% are Black, the largest percentage of any state in the nation.<sup>6</sup> Though the state routinely ranks worst in the nation in measures of poverty, median income, and educational attainment, all residents do not feel these effects equally, just as with infant mortality. Almost a third of Mississippi's Black residents live in poverty (32.7%) compared to 13.0% of white residents. This is higher than national poverty rates of 24.2% for Black residents and 11.6% for white residents.<sup>7</sup> These trends in poverty mirror those seen with educational attainment, with 26.5% of white women with a bachelor's degree or higher, compared to 18.9% of Black women in Mississippi.<sup>8</sup> Similar race-based disparities are seen in median income. As of 2018, the median household income in Mississippi was \$44,717.<sup>9</sup> The median household income for a Black household in Mississippi is \$30,612, compared with \$55,609 for a white household in Mississippi.<sup>10,11</sup>



The persistence of racial health disparities is an issue repeatedly cited by Mississippi's IM CoIIN participants. They highlighted the continuing effects of segregation, mass incarceration, and historical Jim Crow laws on the health of Black mothers. Participants described a white population that would prefer not to discuss issues of race and health because the "conversation is uncomfortable," and would rather believe racism is an individual issue rather than a structural one.

"I want to make [people] aware that African American women are still facing racial biases.... I believe in a multisector approach to help drive change as it relates to this crisis." – Family Interview Quote

## Health Care Access

Mississippi is one of 14 states that did not expand Medicaid after the Affordable Care Act, which means the state has missed out on receiving nearly \$1 billion in federal funds annually since 2012.<sup>12</sup> As a result, almost 186,000 residents in Mississippi do not have health insurance: the state ranks 45 out of 50 in health insurance coverage.<sup>4</sup> A significant number of Mississippi's residents are covered by the state's overburdened Medicaid system: 63% of births in the state are covered by Medicaid.<sup>13</sup> Medicaid coverage rates for the non-elderly, which includes women of childbearing

age and pregnant women, reflects the same racial disparities as poverty rates, with 36% of non-elderly Blacks receiving coverage compared to 16% of non-elderly whites receiving coverage.<sup>22</sup> Complicating access to health care, 41% of Mississippians have past due medical debt, the highest rate in the nation – a number that previously dipped to 31% with the passage of the Affordable Care Act, but has since grown again.

## Maternal Risk Factors for Infant Prematurity

Women in Mississippi have more risk factors for preterm birth and infant mortality than women nationally.

- **Smoking:** Between 2013 and 2017, the rate of smoking among women of childbearing age in Mississippi dropped from 25.4% to 24.1%.<sup>14</sup> Despite a decrease in the rate of smoking among women of childbearing age in Mississippi between 2013 and 2017, women in Mississippi are still more likely to smoke than in the U.S. as a whole, with comparative rates of 20.5% in 2013 and 15.5% in 2017.<sup>14</sup>
- **Obesity:** Between 2013 and 2017, the number of women in Mississippi who reported a body mass index (BMI) of 30 or more, classified as obese, rose from 35.3 to 37.2%.<sup>1</sup>
- **Hypertension/Pre-eclampsia:** Between 2013 and 2016 (most current data available), 10% of pregnancy-associated maternal deaths were related to hypertension/pre-eclampsia. Of these deaths, 58% of the babies were born prematurely.<sup>16</sup>





# Targeted Programs and Interventions to Reduce Preterm Birth

Mississippi has a vibrant network of committed health care providers, community center leaders, and public health practitioners who are using a community-based approach to target high-risk populations around the state. During IM CoIIN, Mississippi worked to address preterm births in the following ways:

## 1. Increase Availability of Progesterone Statewide

During the IM CoIIN project period, project, 17 alpha-hydroxyprogesterone caproate (17P) was identified as one strategy that states could pursue to reduce preterm birth, specifically in preventing premature birth among women with a previous preterm birth. Access to the medication was a challenge across the country, but specifically in Mississippi, and largely due to the cost of the drug. In order to address the access issues, stakeholders in Mississippi worked with Medicaid plans and insurers to adopt a new pricing structure for 17P, which reduced the cost and resulted in a pricing structure that both were willing to reimburse without prior authorization. This opened an opportunity for Mississippi to launch provider education on 17P's potential benefits.<sup>17</sup>

As with many states, Mississippi recently began to limit its work to increase progesterone access and use after conflicting trial results (see sidebar). While the Society of Maternal-Fetal Medicine released new guidelines suggesting that doctors assess the patient's level of risk before recommending hydroxyprogesterone shots, the

In October 2019 amid conflicting new study results, the FDA Advisory Board recommended withdrawal of approval for 17P, with seven of the committee's members voting to leave the product under accelerated approval and to require a new confirmatory trial. Although both the 2003 and 2019 trials had the same eligibility criteria, women in the original government-sponsored trial had more risk factors for preterm birth, including smoking, being unmarried, being Black, and having multiple previous preterm deliveries. Some panel members who voted to order a new trial said 17P helps a subset of women that has yet to be defined.<sup>24</sup>

American College of Obstetricians and Gynecologists (AGOC) said it had reviewed the results and wasn't changing its guidance.<sup>24</sup> Until the FDA resolves the efficacy of 17P in reducing preterm deliveries, Mississippi has put promoting 17P utilization on hold.

## 2. Support Smoking Cessation

- **Baby and Me – Tobacco Free™:** Baby and Me – Tobacco Free™ is a national cessation program conducted in Mississippi as well as in 22 other states around the country. Baby and Me – Tobacco Free™ representatives train local facilitators to provide counseling and resources to women to encourage them to quit smoking during pregnancy and maintain a smoke-free lifestyle after the birth of their baby. The program provides diaper vouchers and other incentives to women who pass carbon monoxide (CO) monitoring during pregnancy, and women can continue the program after birth and receive one voucher per month for each passed CO test. Other adults in the home may also participate in the program and receive one diaper voucher for each passed CO test for up to 12 months after the birth of the baby.

As part of IM CoIN, Mississippi worked through the Office of Tobacco Control to secure funding to bring Baby and Me – Tobacco Free™ to the state. Mississippi began enrolling women in the Baby and Me – Tobacco Free™ pilot program in 2018 and currently has 11 health centers that participate in the program. As of June 2019, 88 women were enrolled in the program, with 35 births so far, and the results look promising.

*“Some moms can't afford to participate in some of the programs, so making resources available to everyone is very important.” – Family Interviewee*

- **Smoking impact:** 91% of women stopped smoking. This significant decrease will have positive long-term effects on asthma and family health.
- **Low-birth weight impact:** 27 of the 35 babies were born weighing at least 5.5 pounds.
- **Pre-term birth impact:** 29 of the 35 babies were born at 37 weeks or later

## 3. Increase Access to Community-Based Prenatal and Maternal Education

- **Sisters United:** Started in Arkansas, Sisters United is a perinatal education program for Black women, started by the four historically Black National Pan-Hellenic Council sororities: Alpha Kappa Alpha, Inc.; Delta Sigma Theta, Inc.; Sigma Gamma Rho, Inc.; and Zeta Phi Beta, Inc. The program uses a train-the-trainer model to recruit two to three sisters in each sorority who provide the program content in 10-minute sessions at monthly sorority meetings, focusing on six areas of perinatal and postpartum health:

- Reducing low birth weight
- Reducing birth defects
- Increasing immunization rates during pregnancy
- Educating to prevent Sudden Infant Death Syndrome (SIDS)
- Increasing breastfeeding
- Reducing tobacco use during pregnancy and after birth.

*"I felt like I was failing as a patient, and I was disappointed in the lack of education provided by the health care staff." – Family Interviewee*

The Sisters United program came to Mississippi in 2014, when the Mississippi State Department of Health, Office of Health Disparity Elimination received a \$25,000 grant from the March of Dimes Foundation. The program began in Mississippi community colleges, and though the Office of Health Disparity Elimination was absorbed into a larger Office of Health Equity in 2014, the program continued to show modest progress through 2017.

- **Healthy Start:** Healthy Start is a state-based program funded by the Maternal and Child Bureau (MCHB), Health Resources and Services Administration (HRSA) and the U.S. Department of Health and Human Services (HHS). The program works with women in communities with high rates of infant mortality to provide access to culturally sensitive, community-based healthcare during pregnancy through a child's second birthday. Healthy Start uses multiple touchpoints to reach women, including home visits, group education classes, access to transportation services, and classroom engagement of co-parents.

During the IM CollIN project years, Mississippi had three Healthy Start programs that were administered through community health centers. The largest program at the Jackson-Hinds Comprehensive Health Center has partnered with the Sisters in Birth doula program, which works with women starting at 16 weeks to reduce rates of early elective delivery.

- **IMPLICIT Network:** Since 2003, the IMPLICIT (Interventions to Minimize Preterm and Low Birth Weight Infants through Continuous Improvement Techniques) Network has trained pediatricians and family medicine physicians to assess the health of the mother during pediatric visits for their infants. The physicians screen for depression and smoking and provide information and access to contraception and vitamins.

March of Dimes in Mississippi sponsored the program at the University of Mississippi Medical Center to train pediatric residents to work with mothers during their infant's well-child visits. Successful interventions were shared from the Family Medicine Education Consortium's program in Pennsylvania, New York, Connecticut, Maryland, Massachusetts, and North Carolina. In Mississippi, pediatric residents were chosen because the majority of children in the state see pediatricians, rather than family medicine physicians as was common in Consortium states.<sup>18</sup> In the first three years of the program, physicians have screened more than 2,000 mothers, connecting them to additional services where warranted.



## 4. Increase Use of Data-Driven, Evidence-Based Perinatal Care

Started in 2014, the Mississippi Perinatal Quality Collaborative (MSPQC) is a statewide partnership that “aims to promote evidence-based quality improvement initiatives at the hospital and community level to improve birth outcomes across Mississippi.” MSPQC’s current priority efforts include Neonatal Abstinence Syndrome training and a focus on increasing breastfeeding rates in the state, especially for preterm births.

As one of the leading organizations for IM CoIIN in Mississippi, MSPQC focused their efforts on two areas: decreasing infant mortality during the “golden hours” — the first hours after the birth of low-birth weight infants — and increasing use of safe sleep practices. The “Golden Hour” initiative uses checklists to standardize medical techniques for resuscitation and communication between families and providers before and after infant resuscitation. The safe sleep initiative provides a board book to all new mothers called “Sleep Baby Safe and Snug,” which describes safe sleep practices.





## Policy Efforts

Mississippi IM CoIN participants cited a statewide culture that values mothers and babies even though they may be reluctant to enact regulations. There is statewide recognition that the infant and maternal mortality rates in Mississippi – currently the highest in the nation – need to be studied and addressed. Mississippi has used several innovative medical reimbursement and institutional policies aimed at reducing preterm birth and reducing maternal risk factors, such as smoking.

### 1. Creating Collaborations to Reduce Infant Mortality and Maternal Mortality

To understand infant mortality, the state legislature created the Infant Mortality Reduction Collaborative (IMRC) in 2015 and reauthorized the bill in 2018. The IMRC mandates the creation of a committee of public health practitioners, legislative leaders, and physicians who meet quarterly and make policy recommendations to the legislature on the following areas:

- Ensuring the availability, accessibility, and affordability of 17P
- Ensuring access to preconception health care
- Reducing the number of early elective deliveries
- Developing perinatal regions of care

Legislation creating a Maternal Mortality Review (MMR) passed in 2017. The MMR committee is charged with gathering data about maternal deaths and conducting analysis on whether the death was preventable. Many of the causes of maternal mortality are similar to those that result in a preterm birth, making this work critical to improving all outcomes for moms and babies in Mississippi.

### 2. Streamlining Access to Coverage and Expanding Pregnancy Services for Medicaid Recipients

As one of 14 states that did not expand Medicaid, Mississippi's overburdened Medicaid system is marked by long wait times for coverage approval and fewer services compared to other state Medicaid systems. Almost two-thirds of all births in Mississippi are covered by Medicaid, which

makes it a natural fit for policy changes to promote healthier birth by increasing coverage to cover more people and more services.

Since 2013, the Mississippi Division of Medicaid has made the following changes:

- *Decreased Time for Medicaid Eligibility Determination:* Under the current system, Medicaid applications are routed to one of 30 regional Medicaid offices for review. Applicants may be contacted by phone or mail for additional information. According to the Medicaid program, eligibility determination has been reduced to five days. However, these improvements may not be experienced equally by communities across the state, potentially leading to a lack of early prenatal care for the mothers who need it most.
- *Increased Access to Family Planning Services:* To fill the mandate for birth control as part of the Affordable Care Act, Mississippi's Division of Medicaid created the Family Planning Waiver. The Family Planning Waiver is open to any resident of the state and provides access to birth control, including long-term reversible contraception (LARC) and vasectomies.<sup>19</sup>
- *Increased Access to Transportation for Medical Appointments:* Mississippi expanded reimbursement of providers of Non-Emergency Transportation (NET) for medical appointments to include family members.



### 3. Providing Financial Incentives to Reduce Early Elective C-Section Delivery

Working with individual hospitals, Mississippi has adopted a statewide commitment to increasing the number of babies born at 39 weeks of gestation and reducing non-medically indicated early elective deliveries (NMI EED) – that is, EEDs without a trial of labor at 37 or 38 weeks – if the mother does not have a medical condition prior to or during pregnancy. To date, 36 of Mississippi's hospitals (80%) have committed to a March of Dimes program that recognizes hospitals that have been successful in reducing EEDs to less than 5% of births. Thirteen hospitals across the state have met the standard.

In addition to institutional commitment, Mississippi has changed the rate of reimbursement to incentivize elective deliveries only after 39 weeks of gestation. These higher reimbursement rates apply to both Medicaid and private insurance births.

## 4. Changing Requirements for Title V Maternal Health Funding

Mississippi State Department of Public Health administers Title V funding, which is used to fund several child and maternal health focused programs in the state. Recently, Mississippi began to mandate that Title V funding could only be used for evidence-based health programming. Participants in IM CoIIN applauded these changes, citing the need for the state's limited resources to be used to greatest effect and anticipating that the requirement for evidence-based programming would foster links between program administrators in the state.

Title V funding in Mississippi is described by the Mississippians as “foundational.” IM CoIIN participants named a number of infant mortality and preterm birth prevention programs that received either direct or indirect support through Title V funding, including Sisters United, sleep safe programming to reduce SIDS, and family engagement programming to encourage co-parenting.<sup>20</sup>

## 5. Shifting Tobacco Control from State Level to Local Control



Because of Mississippi's relatively high smoking rates, efforts to reduce smoking and exposure to secondhand smoke were seen as important to reduce the effects of smoking on pregnant women. Mississippi's Office of Tobacco Control (OTC) currently funds 34 Mississippi Tobacco-Free Coalitions (MTFC). The network of 34 MTFCs covers all of Mississippi's counties and works to implement local tobacco control policies and programs. According to the OTC website, the coalitions are asked to “prevent the initiation of tobacco use among youth, reduce exposure to secondhand smoke, promote tobacco cessation services, and eliminate

tobacco-related disparities.” Among other activities in their communities, local Coalitions provide evidence-based curriculum in schools, Freedom from Smoking — a cessation program for multi-unit housing and low income adults, and merchant training for businesses to comply with tobacco laws.

## Future Policy Priorities

In Mississippi, stakeholders identified five policy priorities to address the needs of women and assist in reducing the rising preterm birth rates.

- **Medicaid Expansion:** Passage of reimbursement for postpartum depression screening in a pediatric setting, as well as coverage to 12 months postpartum.
- **Expand Birth Delivery Options:** Expand Medicaid reimbursement to include births delivered by certified nurse midwives and doulas
- **Enhance Workplace Protections:** Increase workplace protections for pregnant women through legislation.
- **Address Substance Use:** Protect women from criminalization of substance use disorders.
- **Leverage a Tobacco Tax:** Enact a statewide tobacco tax to reduce smoking among all adults.

## Emerging Issues in Mississippi

- Like many states across the country, Mississippi's health challenges continue to grow. From the closing of rural hospitals to a statewide lack of mental health and substance misuse programs, to the increased use of opioids by expectant mothers, Mississippi's combination of high need for health care will continue to test the state's maternal and child health professionals.
- Participants in IM CoIIN also anticipate changes to perinatal health care delivery due to the increased presence of Hispanic and other immigrant populations in the state. Mississippi has long been a state without great diversity, with an effectively binary population of Black and white, all who spoke English. The increasing numbers of patients who require Spanish and other language translation services in clinics across the state is yet another challenge

to providing adequate care in a system set up primarily for English language health delivery.

- Despite the many challenges Mississippi's committed maternal and child health professionals face, throughout their work during IM ColIN, the state made great progress in fostering connections between agencies to address specific issues. Notable efforts include partnerships between the Office of Tobacco Control and local community centers to provide smoking cessation programming to prenatal mothers and the widespread commitment by hospitals to decrease EEDs.
- Mississippi's IM ColIN participants also note the growing push across the state to join the majority of other states in expanding Mississippi's Medicaid program. The lack of Medicaid expansion is suggested to have led to increased costs and decreased access to health care for residents of the state.<sup>6</sup> The situation is rapidly becoming untenable for state budgets and for the first time, IM ColIN participants have hope that current legislation to expand Medicaid might pass.
- Finally, Mississippi IM ColIN participants are grateful for the increased data capacity as a result of IM ColIN. Many of them cite the hole left in their efforts when technical assistance services ceased after IM ColIN and recognize the need for statewide policy and program evaluation efforts conducted by dedicated maternal and child health epidemiologists. This gap is a barrier to documenting and demonstrating the success of their ongoing efforts as they continue to work to improve the health of mothers and babies in Mississippi.



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