

Efforts to Address Preterm Birth Rates

Introduction and Methodology



Case Study Background

From 2014 to 2018, with funding from Health Resources & Service Administration's Maternal and Child Health Bureau (HRSA MCHB), the National Institute for Children's Health Quality (NICHQ) led the Collaborative Improvement and Innovation Network to Reduce Infant Mortality (IM CoIIN), a national initiative to improve birth outcomes and decrease infant mortality rates. NICHQ was the backbone organization of IM CoIIN, engaging 51 states and jurisdictions and more than 2,800 federal, state, and local leaders, public and private agencies, professionals, and communities to use quality improvement, innovation, and collaborative learning to address this significant public health issue.

As part of this work, many states in the IM CoIIN focused their efforts on strategies that were intended to reduce early and preterm births (less than 37 weeks gestation, PTB), a leading cause of infant mortality and morbidity. While preterm birth rates did decline nationwide and in many states between 2006 and 2014, rates in the U.S. increased throughout the span of the project (2014-2017), from 9.67% of live births in 2014 to 9.85 in 2016, and have continued to rise to 10.0% in 2018. Additionally, significant disparities persisted in the preterm birth rate, with the gaps steadily widening. These disparities and widening gaps account for the increase in the overall U.S. preterm birth rate despite success in many states — and point to the critical need to address these disparities to have a meaningful impact on national rates.

Building on the Results of the IM ColIN

IM ColIN evaluation results indicated that 78% of the states improved at least one outcome measure, and 43% of states [reduced their infant mortality rate](#). The results of IM ColIN also suggested that certain systems and infrastructure components (e.g., health department workforce, data capacity, partnerships) facilitated reductions in PTB rates. Data collected as part of IM ColIN, coupled with contextual knowledge facilitated by strong relationships between NICHQ and state IM ColIN teams, has enabled NICHQ to explore and document systems and infrastructures that promoted or hindered improvements.



Evolving Science

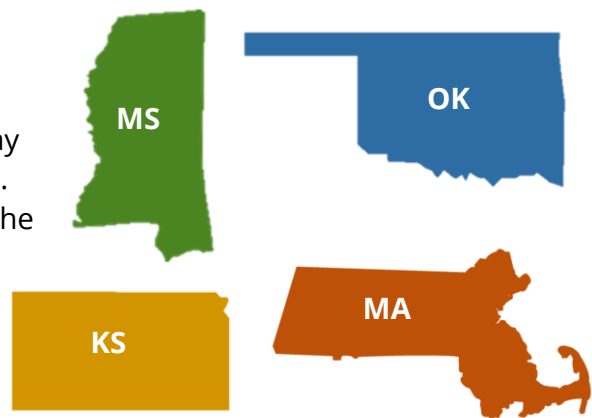
Because the science is still evolving on preterm birth prevention, the strategies used as part of IM ColIN, and what we know about them, also have evolved.

- **Impact of COVID-19 on Expectant Mothers and Preterm Birth:** Emerging studies from the Centers for Disease Control and Prevention show that pregnant mothers who are infected with the coronavirus and hospitalized are at risk for developing serious complications — and they may face an elevated risk for delivering their babies prematurely, losing the pregnancy, or having a stillbirth. Medical professionals are calling for routine testing, consistent use of masking and social distancing, and more studies that include asymptomatic women.
- **Care Delivery and Programming:** New care delivery models have emerged, like group prenatal care, which has grown during the past 20 years, and telehealth — long an important option for rural and frontier regions and now in increasing use in the wake of the COVID-19 pandemic. Evidence is growing about both these and other models and programs to ensure the effective deployment of available interventions.
- **17P Efficacy:** Many states have begun to limit access to 17 alpha hydroxyprogesterone caproate after conflicting clinical trial results. 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 American College of Obstetricians and Gynecologists (ACOG) said it had reviewed the results and wasn't changing its guidance. Until the FDA resolves the efficacy of 17P in reducing preterm deliveries, many states have put promoting 17P utilization on hold. More detail is provided in each case study that utilizes 17P.

Case Study Methods

1. State Selection

NICHQ worked with Kansas, Massachusetts, Mississippi, and Oklahoma to identify policies, structures, and other contextual factors that may have impacted preterm birth rates in each state. Each of the four selected states participated in the 2013-2017 phase of the Collaborative Improvement and Innovation Network to Reduce Infant Mortality (IM CoIIN) and elected to address preterm births as one of their priority areas. In order to have a diverse set of states, NICHQ determined and included additional criteria for state selection:



- Representation of different areas of the country based on Health Resources and Services Administration (HRSA) Regions: Kansas-HRSA Region 7; Massachusetts-HRSA Region 1; Mississippi-HRSA Region 4; and Oklahoma-HRSA Region 6
- High level of program engagement and data submission capacity during IM CoIIN participation
- High level of engagement of the state perinatal quality collaborative
- Variability in Medicaid expansion

Additionally, NICHQ analyzed the overall state-specific preterm birth and infant mortality data over the past few years (2011-2018), as well as disparities by race/ethnicity in these rates, in order to understand the overall trends in rates (both during IM CoIIN and since) as a backdrop to the programs and policies that were implemented.

2. Listening to Partners and Stakeholders

NICHQ conducted site visits from June to September 2019, contacting state team leads from IM CoIIN and asking them to identify key stakeholders to participate in a series of focus groups over two days. Focus groups were broken out by topics: Background/Overview, State Programs, Policies, Social Determinants of Health, Bright Spots, and Emerging Issues. Participation ranged from more than 20 participants in Oklahoma to fewer than 10 in Massachusetts. All sessions were recorded.

NICHQ conducted a formal thematic analysis, using NVivo software for the Policy and Emerging Issues focus groups, with transcriptions from the sessions provided by project staff.

The site visits and interviews with the stakeholders allowed the NICHQ project team to dig deeper and ask probing questions related to state-specific risk factors, data capacity, innovative solutions, how progress is measured, and more. Stakeholders included local and

state health departments, state hospital associations, local March of Dimes markets, WIC offices, Healthy Start programs, social service agencies, and Medicaid offices.

NICHQ is appreciative of all those who hosted, guided, and participated in our site visits (see complete list at the end of the report). Specifically, NICHQ thanks our lead hosts:

- *Kansas*: **Rachel Sisson, MS**; Director of the Bureau of Family Health, Kansas Department of Health and Environment
- *Massachusetts*: **Audra Meadows, MD, MPH**; Brigham and Women's Hospital
- *Mississippi*: **Charlene Collier, MD, MPH**; Director of the Mississippi Perinatal Quality Collaborative
- *Oklahoma*: **Barbara O'Brien, MS, RN**; Director, Oklahoma Perinatal Quality Improvement Collaborative

3. Listening to Families

Additionally, interviews were conducted across all four states with parents who recently had a baby and were willing to share their stories of high-risk pregnancies and preterm births, with a focus on those families who may have participated in programs identified as bright spots according to key stakeholders. These voices provide a critically important perspective on the impact of programs and policies on families' real-world experiences.

Case Study Results Overview

Kansas

- **Targeted interventions** included increasing the availability of progesterone statewide; increasing participation in smoking cessation programs; supporting prenatal education engagement; and fostering use of data collection and tracking systems.
- **Policy efforts** included presumptive eligibility for Medicaid; a "hard stop" policy on Early Elective Deliveries; increasing access to long-acting reversible contraception; and smoking-related policy initiatives.
- **Emerging issues** include comprehensive screening during well-woman visits; citizenship and immigration; guns and violence against women; and opioids and other substance abuse.

Massachusetts

- **Targeted interventions** included broadening provider involvement in the Perinatal-Neonatal Quality Improvement Network of Massachusetts (PNQIN); expanding group prenatal care using the *CenteringPregnancy*® program; and increasing statewide perinatal data collection for mothers and infants.

- **Policy efforts** included funding the Health Equity Initiative (Massachusetts Department of Public Health); establishing priority housing status for women and children; increasing the state Earned Income Tax Credit rate (EITC); passing the Massachusetts Paid Family Medical Leave (PFML); and prioritizing equity for the Title V Block Grant Program For Maternal and Child Health (2019).
- **Emerging issues** include partnering with immigrants' rights organizations to better serve immigrants and undocumented mothers.

Mississippi

- **Targeted interventions** included increasing the availability of progesterone statewide; increasing participation in smoking cessation programs; increasing access to community-based prenatal and maternal education; and increasing the use of data-driven, evidence-based perinatal care.
- **Policy efforts** included creating collaborations to reduce infant mortality and maternal mortality; streamlining access to coverage and expanding pregnancy services for Medicaid recipients; providing financial incentives to reduce Early Elective C-Section Delivery (Medicaid and private insurance); changing requirements for Title V maternal health funding; and shifting tobacco control from the state level to local control.
- **Emerging issues** include providing Spanish and other language translation services to a changing population; lack of Medicaid expansion; closing of rural hospitals and lack of mental health and substance misuse programs; and the increased use of opioids among expectant mothers.

Oklahoma

- **Targeted interventions** included the Oklahoma Perinatal Quality Improvement Collaborative; focusing on Native American women and infants; establishing the Preparing for a Lifetime statewide initiative; addressing Early Elective Deliveries; and increasing the availability of progesterone statewide.
- **Policy efforts** have seen a shift away from infant mortality and prematurity reduction activities to initiatives focused on substance/opioid use and maternal mortality reduction. While addressing these issues could positively impact infant mortality and prematurity, there is currently no focused effort to address prematurity.
- **Emerging issues** include passage of reimbursement for postpartum depression and anxiety screening in a pediatric setting; instituting a certified nurse midwife program to address the lack of a strong midwifery program in Oklahoma; and reimbursement for doula care, which is linked to improved maternal health outcomes, particularly in addressing issues of equity and access to quality care.

Case Study Recommendations

The four case studies provide common themes and insights into recommendations for priority and practice and for public health and clinical care professionals, maternal health care providers, and MCH advocates — not only for these states, but for all U.S. states and territories.

Two new impacts — the advent of COVID-19 and the impasse of 17P's efficacy — influence these recommendations. Particularly, national and state initiatives need to be more intentionally focused on the social influences on preterm birth that so clearly arose from the case studies:

- Inequities in care and care coverage across states
- Bias/racism in health care systems
- Unequal availability of programs and supports that are effective in reducing preterm birth and related infant mortality.

With or without effective clinical interventions, the barriers related to social determinants and equity underlie and exacerbate access and quality of care. **All four case studies underscore this need for programs that address social determinants of health in including transportation, housing, and food security.**

National strategies are needed to permanently change the persistent contribution of preterm birth to infant mortality rates:

1. Federal prioritization of policy and funding for programs that work.

More support is needed for healthcare initiatives that have been shown to decrease the incidence of preterm birth and related infant mortality. Specifically, policies that increase health care coverage and access through Medicaid, the Affordable Care Act, and other mechanisms; policies and funding intended to address negative social determinants of health; and funding for programs that address contributors to poor health — and poor birth outcomes — such as obesity and opioid use disorder.

2. A shift in how we recognize and change the impact of racism in America.

Our language, messages, and programming need to move from *disparities reduction* and *implicit bias* to a bolder, clearer focus on *anti-racism* and *full health equity for all*. In order to improve care and outcomes, recognition that racism is a public health crisis in the U.S. must occur at an individual level, a practice level, and at a systems level. Health care professionals all have a personal responsibility to advocate for change within these

systems. And if change doesn't occur, we are ultimately complicit in the endurance of these disparities. Even more important is building in accountability measures for anti-racism in the health care field — again, among both systems and individuals.

3. A continuation of national coordination efforts, whether federal or non-profit.

From the IM ColIN to the more recent National Network of Perinatal Quality Collaboratives and including national organizations that support state and local programs like the National Healthy Start Association and the March of Dimes, nationally coordinated efforts are key to supporting the decline in infant mortality.

4. Evaluation of programs to prevent preterm birth that continue to inform best local, state, and national efforts.

Continuing to build the evidence for what programs work and how best to replicate and scale those programs is critical, as well as identifying and assessing new, promising efforts to determine their efficacy and replicability. And further funding and studying the spread and scale of evidence-based programming is essential to bringing what is effective to all communities. Given the conflicting news about the pharmaceutical intervention 17P, we must recognize the limitations of clinical research in determining solutions to a problem where the causes are rooted in other areas and focus on interventions and programming that address social determinants of health.



States, cities and communities have an important role and responsibility to recharge preterm birth prevention efforts, and clear strategies emerged from the case studies:

1. State health departments and perinatal quality collaboratives should re-examine their IM ColIN experiences to identify the deeper contributors to persistent infant mortality.

The case studies revealed significant areas of concern where states were unable to make sustainable change in preterm birth rates if states did not pass and promote access to consistent, quality care through Medicaid coverage. Identifying the deep contributors to preterm birth is required to make sustainable change, especially including the biases in health care and other state and municipality systems.

2. Re-build statewide preterm birth reduction strategic plans.

Many states, including in the four case studies, had robust collaboratives during the IM CollN implementation period. However, three case study states saw their collaboratives lose strength and momentum regarding preterm birth prevention efforts after 2017. Programmatic efforts then scattered across states, hampering lasting change despite the individual positive impact. Recharging preterm birth prevention efforts requires informed collaboratives of public and private health leaders planning for coordinated statewide efforts.

3. Identify and increase access to effective programming.

The case studies identified success with programming like Healthy Start, group prenatal care, doula support, support and incentive programs, and Early Elective Delivery prevention. With limited funds available to scale and spread these programs, building the evidence for these programs and demonstrating their impact is important to obtaining future resources.

4. Identify specific ways to support new and flexible care models like group prenatal care and telehealth.

Despite the evidence that these care delivery mechanisms are effective for certain groups and in certain situations, neither are fully reimbursable nor promoted across all states. Learning from states that have successfully adopted innovative technology or funding solutions, such as enhanced reimbursement, would lead programs to reach more women with potential solutions.

5. Create connections between public structures and social needs.

All four case study states identified a disconnect between public supports such as transportation, housing, and education and the needs expressed by pregnant women and their healthcare providers. States and municipalities should develop mechanisms to understand and address this disconnect.

A photograph of a Black woman and man smiling warmly while holding a newborn baby. The woman is on the left, wearing a light pink shirt, and the man is on the right, wearing a green and white striped shirt. The baby is wrapped in a white blanket and is being held by the woman. The background is softly blurred, suggesting an indoor setting with natural light.

Kansas'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 Kansas

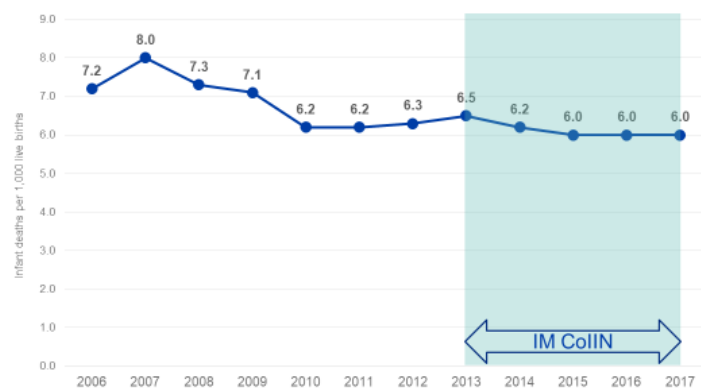
With the introduction of the Infant Mortality Collaborative Improvement and Innovation Network (IM CoIIN) in 2014, Kansas launched a series of collaborative and coordinated initiatives to address infant mortality, including focused work on reducing preterm (less than 37 weeks gestation) and early term (37-38 weeks gestation) birth and leveraging existing partnerships and statewide stakeholders. Kansas was highly engaged in both program activities and data submission during IM CoIIN and focused their preterm birth reduction activities on increasing access to interventions such as progesterone and smoking cessation.

Case Study Background

Throughout the IM CoIIN years, Kansas's infant mortality rate fell from 6.5 per 1,000 live births in 2013 to 6.0 per 1,000 live births in 2017. In contrast, the preterm birth rate increased from 8.7 percent of live births in 2014 to decade high 9.6% in 2017. This is in comparison to preterm birth rates in the United States, which increased from 9.6% of live births in 2014 to 9.9 % in 2017.¹

As with national trends in disparities in infant mortality, non-Hispanic Black mothers in Kansas experienced a disproportionately high burden of infant mortality compared to white mothers. Infants born to non-Hispanic Black mothers had a mortality rate of 15.0 per 1,000 live births in 2013, falling to 11.4 per 1,000 live births in 2017.¹ Infants born to non-Hispanic white mothers, by contrast, had a mortality rate of 5.6 per 1,000 live births in 2017, narrowing the gap

Infant Mortality Rates Kansas, 2006-2017

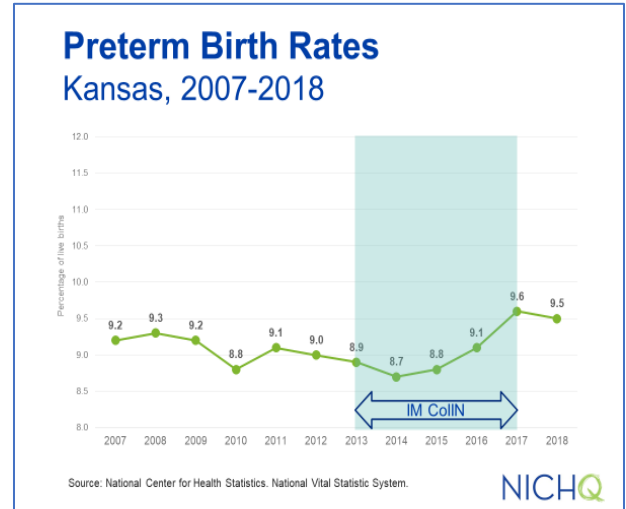


Source: National Center for Health Statistics. National Vital Statistic System.

NICHQ

only slightly as infants born to non-Hispanic white mothers had an average mortality rate of 5.9 per 1,000 live births in 2013.¹

Similar disparities exist among mothers delivering preterm babies. Between 2013-2015, Black mothers had a preterm birth rate of 12.3% of live births compared to white mothers, whose preterm birth rate was 8.5%.² However, between 2015-2017, preterm birth rates remained relatively stable for both Black and white mothers, increasing slightly to 8.8% of live births for white mothers and to 12.6% for Black mothers.²



Population Characteristics

Compared with the rest of the United States, Kansas is one of the least densely populated states, particularly in the northwestern corner of the state.² With a population of more than 2.9 million people spread over 82,278 square miles, the state is largely rural. This lower population density leads to challenges in accessing medical services, where residents of many counties must travel several hours to access a hospital for care.³ Kansas has a unique geographic layout, ranging from urban to frontier counties. Within each of its regions, there are a few populous cities and multiple rural areas. For example, the South-Central region includes Wichita, with a population of 389,255. Within that same region also lies Pratt, with a population of 6,630 — a good example of Kansas's population diversity, where rural communities and mid-sized cities are influenced by each other.

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Kansas is an agricultural powerhouse of the United States. In 2017, there were more than 58,500 farms in Kansas, generating \$18.7 billion in agricultural output. Family-owned farms and ranches are central to Kansas's farm infrastructure, accounting for 84.6% of farms.⁸

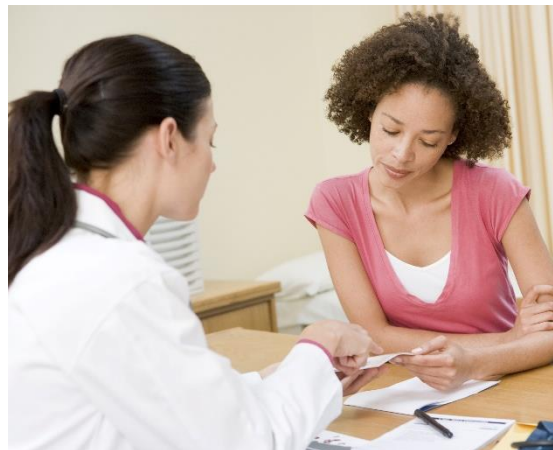
Racial/Ethnic and Socioeconomic Factors

Of Kansas's almost three million residents, 80.8% are white and 8.9% are Black.⁴ Black Kansans are more than twice as likely to be unemployed than non-Hispanic whites and account for 25.3% of those in the state who live in poverty.⁵ Hispanics, a growing population in the state,⁶ account for approximately one quarter of those living in poverty (25.3%).⁴ Educational attainment plays a

crucial role in employment status and poverty, and both Black and Hispanic Kansans were less likely to graduate or receive a GED than white residents. Nearly four in ten (38.7%) Hispanic Kansans age 25 or older did not have a high school diploma or GED as of 2015. Black Kansans (12.6%) were nearly twice as likely as white Kansans (6.4%) to not have a high school diploma or GED.⁴

Health Care Access

Kansas is one of 14 states that have not adopted Medicaid expansion. However, legislation has recently been introduced that could lead to an estimated enrollment of nearly 132,000 additional Kansans to KanCare, the Kansas equivalent to Medicaid.⁷ In early 2020, Senate Bill 252 to expand medical assistance eligibility and implement a health insurance plan reinsurance program was introduced, but work on the bipartisan legislation was suspended and the bill died in the Senate Public Health & Welfare Committee without receiving final action.¹⁷



Maternal Risk Factors for Infant Prematurity

Women in Kansas have higher incidence of risk factors for preterm birth and infant mortality than women nationally.

- **Smoking:** Although the rate of smoking among childbearing women in Kansas dropped from 21.1% to 19.5% between 2013 and 2017, it still is higher than national rates (16.9% in 2017).⁹
- **Obesity:** Between 2013-2017, the number of women among childbearing age who reported a body mass index (BMI) of 30 or more rose from 28.3% to 31.8%, a steeper rise than the national obesity rate increase from 25.2% (2013) to 27.6% (2017).¹



Targeted Programs and Interventions to Reduce Preterm Birth

awareness and engage with local stakeholders.

1. Increase Availability of Progesterone Statewide

As part of their work in the IM CoIN preterm and early term birth workgroup, Kansas chose to focus on increasing the use of progesterone in their state plan. To mitigate any potential provider resistance, their strategies included provider education around the use of 17 alpha-hydroxyprogesterone caproate (also called 17P), which has been shown to decrease preterm birth among women with a prior preterm birth. The Kansas Department of Health and Environment (KDHE) collaborated with in-state managed care organizations to increase utilization and created co-branded materials to address provider and patient education.

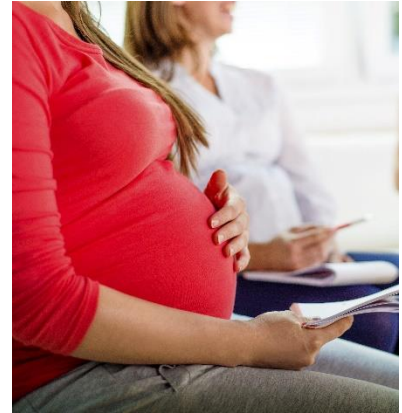
Kansas has identified several barriers to 17P utilization, including the willingness of eligible women to accept the injections, issues with coding and billing, and transportation to clinics for the weekly injection administration. KDHE has worked to address these issues, including managed care coverage of in-home administration of injections.

As with many states, Kansas 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 American College of Obstetricians and Gynecologists (ACOG) said it had reviewed the results and was not changing its guidance.¹² Until the FDA resolves the efficacy of 17P in reducing preterm deliveries, Kansas has put promoting 17P utilization on hold.

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.¹²

2. Increase Smoking Cessation Programs

Kansas has realized some success in reducing smoking rates among women of childbearing age. IM CoIN participants noted that CoIN tobacco cessation initiatives were effective in encouraging women to stop smoking while supporting them during pregnancy and beyond. From a state-level strategy perspective, the state strengthened collaboration between the Maternal and Child Health (MCH) and Chronic Disease bureaus in order to support multiple evidence-based programs: Baby and Me – Tobacco Free™ (BMTF) and Smoking Cessation and Reduction in Pregnancy Treatment Program (SCRIPT®), from the Society for Public Health Education), in addition to partnering with other programs to leverage messages and resources, such as KanQuit, the state tobacco Quitline.



- **Baby and Me – Tobacco Free™:** One of the strongest tobacco cessation programs in the state can be found in Crawford County, where the county health department has implemented *Baby and Me – Tobacco Free™*, which includes incentives for women who quit smoking and continue to remain smoke free up to 12 months after the baby is born. However, these incentives can often become costly, so the program in Crawford County partnered with a local community foundation for a grant, and the Kansas Title V Maternal and Child Health Program provided a 40% match in order to ensure its success.
- **SCRIPT®:** Shown to be effective in helping pregnant women stop smoking through a train-the-trainer model and patient guides, the MCH program in Kansas worked with the March of Dimes and the Special Supplemental Nutrition Program for Women Infants and Children (WIC program) to fund the trainings across the state. More information on the SCRIPT® program can be found here: <https://www.sophe.org/focus-areas/script/>.
- **Partnering with managed care organizations:** In partnership with the Kansas Infant Death and SIDS Network, tobacco cessation messages and education were incorporated as a required part of community baby showers and health fairs.
- While underutilized, there is a **Quitline available** to all Kansans across the state. Kansas has designated the Quitline as a cognitive behavioral intervention, which qualifies the program to pay for 10 Quitline calls with a social worker for pregnant women. In collaboration with the Statewide Breastfeeding Coalition, the KDHE is working to improve prioritizing pregnant women for entry into the Quitline program and follow up.

3. Support Prenatal Education Engagement

Through a targeted, evidence-based approach, the Kansas Title V MCH division, in collaboration with March of Dimes, developed and implemented the Kansas Perinatal Community Collaborative (KPCC) birth outcomes model throughout the state. Now serving 16 communities with 30 more

sites pending implementation, KPCC utilizes the March of Dimes Becoming a Mom®/Comenzando bien® (BaM/Cb) prenatal education curriculum.

Becoming a Mom/Comenzando bien has been utilized in Kansas as a collaborative model focusing on prenatal care and education, with particular emphasis on addressing disparities in birth outcomes, including preterm birth. The program collects data from participants by utilizing surveys, and has collected pre-surveys (n=1,116), post surveys (n=827), and outcomes surveys (n=685).¹³ Additional evaluation data from 2018 also show success in reaching target audiences of at-risk mothers, including those who are from low socioeconomic status who are eligible for Medicaid. Mothers receiving prenatal education through BaM/Cb were more likely to be racial/ethnic minorities than mothers giving birth in the state, especially Hispanics and non-Hispanic Blacks. In 2018, attendance of non-Hispanic Black mothers in Kansas's BaM/Cb was 8.9%, compared to their percent of overall Kansas births at 6.9%. Attendance of Hispanic mothers in BaM/Cb was 28.8%, compared to their percent of overall Kansas births at 16.5%.¹³

"While improving birth outcomes remains a top priority, the sense of community and support this program provides offer families a lifelong lifeline." - Stephanie Wolf, RN, BSN/Perinatal Health Consultant

Read more about the Kansas Perinatal Community Collaborative in the "Spotlight" Section, as well as [here](#).

4. Foster Data Collection and Tracking Systems

Recognizing the need for reliable data to help inform policies, evaluate programs, and provide accountability, KDHE prioritized the development of data systems to assist with data collection on outcomes and tracking of referrals during IM ColIN and in the years since it ended.

- **Data Application and Integration Solutions for the Early Years (DAISEY):** Beginning in 2014, KDHE and the University of Kansas Center for Public Partnerships and Research (KU-CPPR) partnered to build a shared data infrastructure to measure health outcomes for children and families.¹¹ <https://kdhe.daiseysolutions.org/>
- **Integrated Referral and Intake System (IRIS):** Spearheaded by the University of Kansas Center for Public Partnerships and Research, IRIS is an integrated system to link service agencies and community organizations, allowing for increased communication across entities and better connections for individuals and families. This online referral system closes the loop for families served by multiple agencies. See <https://connectwithiris.org/> for more information and short video.



Policy Efforts

In Kansas, directives set forth by the local and federal government guide the success of health care policies. Establishing grassroots support and having federal directives or guidance can help garner state-level support and eventually, more policy successes.

1. Presumptive Eligibility for Medicaid

As of October 2020, Kansas is one of 14 states across the country that has not passed Medicaid expansion, leaving many residents without affordable coverage options. Low-income and undocumented residents are at highest risk of forgoing health insurance. In 2016, to fill this gap in care, Kansas successfully adopted presumptive eligibility, which provides coverage for outpatient ambulatory services for women at the point of conception and through 60 days postpartum. Since the policy started, the state has seen an improvement in the percent of pregnant women on Medicaid receiving prenatal care beginning in the first trimester – from 68.6% in 2013 to 72.1% in 2017.

2. Hard Stop Policy on Early Elective Deliveries

The Kansas Healthcare Collaborative, the Kansas Hospital Association, and March of Dimes worked together to implement a “hard stop” policy in hospitals across the state in 2012, to reduce 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. Through these efforts, Kansas saw a continuous decline in NMI EED rates, starting at 8% in 2013 down to 1% in 2017.

3. Increasing Access to Long-Acting Reversible Contraception (LARC)

While long-acting reversible contraception (LARC) has been covered by Medicaid, there have also been payment solutions that make it easier for women to access it. In addition, educating providers on billing and payment policies has made LARC more widely accessible. Provider feedback has shown that despite its coverage and inclusion in the payment bundle, providers



often did not realize that this birth control method could be provided *after delivery* as part of the bundled payment. The billing was changed so that providers can now bill separately for LARC, and stakeholders clarified the new billing guidelines with providers. The Kansas Department of Health and Environment has utilized a [LARC Integration Toolkit](#) that includes Medicaid guidelines on this process.

To address the large disparity in pregnancy intention between Black and white mothers, pregnancy intention screening is being encouraged as an upstream approach to reduce unintended pregnancies and poor birth outcomes. Efforts have been made to expand state funding for family planning as well as establish a family planning Medicaid waiver.

4. Smoking-Related Policy Initiatives

In order to address the relatively high adult smoking rates in Kansas (17.4% compared to 17.1% in the U.S.¹⁴), stakeholders worked collaboratively with other partners and coalitions, including the Tobacco Free Kansas Coalition, to develop and promote several policy initiatives:

- **Tobacco Free Workplace:** A study in Kansas examined the relationship between tobacco-free policies at worksites to worksite demographics, such as company size and geographic location. More worksites had tobacco-free policies in place (56.7%) than those that did not (43.3%), lagging behind the percentages in other state-based studies. Worksites in urban counties and worksites with more employees were more likely to have tobacco-free policies in place than worksites in rural areas and worksites with fewer employees. Large worksites in Kansas were nearly three times as likely as small employers to support tobacco-free policies. In a largely rural and geographically large state such as Kansas, it is especially important for rural and smaller employers to more fully embrace tobacco-free policies in the workplace, as the majority of worksites in the sample were located in rural, non-metropolitan communities (76%) and had fewer than 250 employees (76%).¹⁵
- **Tobacco 21:** An initiative to raise the minimum age for legal access to tobacco to 21 years and limit the access of adolescents and teens to tobacco products. Several local ordinances have been adopted by counties across the state. In Kansas, a statewide Tobacco 21 law would have a positive effect among nearly 250,000 Kansans aged 15-20. Young adults age 18-20 would be directly affected, and adolescents age 15-17 might no longer have access to a supply of tobacco products from their peers age 18-20.¹⁶



Looking Forward

Future Policy Priorities

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

1. **Medicaid Expansion:** Passage of reimbursement for postpartum depression screening in a pediatric setting, as well as coverage to 12 months postpartum.
2. **Reimbursable Prenatal and Perinatal Education:** Although a strong focus of the Kansas Perinatal Community Collaboratives, the prenatal education component of those programs like Becoming a Mom is not currently reimbursable with Medicaid.
3. **Reimbursable Care Coordination:** Many of the Kansas Perinatal Community Collaboratives work with community health workers or navigators to help women as they move through the health care system and outreach with other community-based services (transportation, food, housing), which are often critical to ensuring equity in care to all.
4. **Variable Coverage Options:** Moving beyond essential services with managed care organizations to provide more complete coverage of services that can help improve outcomes for moms and babies.

Spotlight On: Kansas Perinatal Community Collaborative

Developing widespread and sustainable improvements in perinatal outcomes, specifically preterm birth and infant mortality, is a top priority for the Kansas Department of Health and Environment. Using a [collective impact framework](#), the Kansas Perinatal Community Collaborative (KPCC) launched and has successfully enhanced the maternal and child health infrastructure within high-risk communities experiencing significant birth disparities. Starting with the implementation of the March of Dimes Becoming a Mom®/Comenzando bien® (BaM/Cb) curriculum in Saline County in 2012, the KPCC has since grown to 16 active sites throughout the state, most clustered in the northeast corner, with three sites in southwest Kansas. One new site joined in the northwest part of Kansas to serve counties with the least population density.

This widespread expansion can be attributed to strong collaboration between private and public partnerships across the state and at the local level. The KPCC serves high-risk women throughout Kansas and connects them with community resources such as WIC, *Baby and Me Tobacco Free*, Maternal and Child Health Services, SCRIPT, and Mental Health Services.

Three KPCC sites in the state, Crawford County, Saline County, and Wyandotte County, have shown long-term success that they attribute to strong partnerships, improved cross-program referrals through the Integrated Referral and Intake System (IRIS), incentive programs, and sustained funding for the collaboratives through grants.

Crawford County KPCC identified its inter-referral system as a strength to success and enrollment, especially its partnership with WIC. A focused MCH Navigator works in the community to actively source referrals and conduct outreach to mothers who may not know about available supports. Barriers include increasing private practice participation in the shared referral system, accessing virtual and telehealth, and continued health disparities.

Saline County KPCC cited positives of truly collaborative efforts in the local community, including a partnership with the Child and Advocacy Parenting program that provides a no-cost facility and daycare to support mothers attending group prenatal education classes. Combined with the availability of telehealth, this United Way-funded support has been a tremendous asset to increase attendance and participation. Barriers include referral follow through, staff turnover, high smoking rates, and ensuring communities can access available telehealth technologies.

Wyandotte County KPCC partners with the Keeler Women's Center and local YMCAs to host *Becoming a Mom/Comenzando bien* classes. More women can access the classes because Wyandotte County offers multiple locations for their classes, making them more accessible to where the women live, as well as free childcare. This reduction in barriers has also widened the group's reach to mothers who may not have otherwise been able to attend.

Overall, the use of IRIS has made it easier for pregnant women to connect to important services in their communities. Improving referral rates and closing the loop on pending referrals has proven beneficial for both mothers and the KPCC.

Emerging Issues in Kansas

When the initial iteration of IM CoIIN was complete in 2017, states were expected to continue their efforts to improve birth outcomes related to infant mortality and preterm birth – not an easy feat without funding and the support provided through the CoIIN and organized with technical assistance by NICHQ.

As Kansas continues its work to improve outcomes for mothers and babies, stakeholders identified several critical issues. In addition to the loss of infrastructure that IM CoIIN provided, stakeholders in Kansas reported limitations due to the lack of evidence-based clinical solutions and the complexity of addressing factors related to the social determinants of health, including housing, transportation, food security, and others that can either hinder or support maternal health.



Other issues as Kansas considers priorities for the future include:

- Comprehensive screening during well-woman visits (mental health, domestic violence, substance abuse, tobacco, pregnancy intention screening, social determinants of health) as an upstream approach to achieve healthy pregnancies
- Citizenship and immigration
- Violence against women including homicide
- Opioids and other substance use

There are numerous reasons why access to care is a major barrier to the health needs of pregnant and postpartum women. Hospital closures, clinician shortages (outside of metropolitan areas), and a lack of Maternal Fetal Medicine specialists, all make it particularly difficult for low-income women to access high-quality, equitable health care.

In addition, the IM CoIIN participants in Kansas pointed to the lack of clinical solutions and the complex nature of preterm birth as limitations on the ability to create a comprehensive preterm birth reduction strategy with partners across the state. More research into the causes and solutions, specifically related to addressing social determinants of health and the underlying causes of preterm birth, is needed to turn the corner in the rising preterm birth rate.

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Massachusetts's Efforts to Reduce Preterm Birth Rates

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



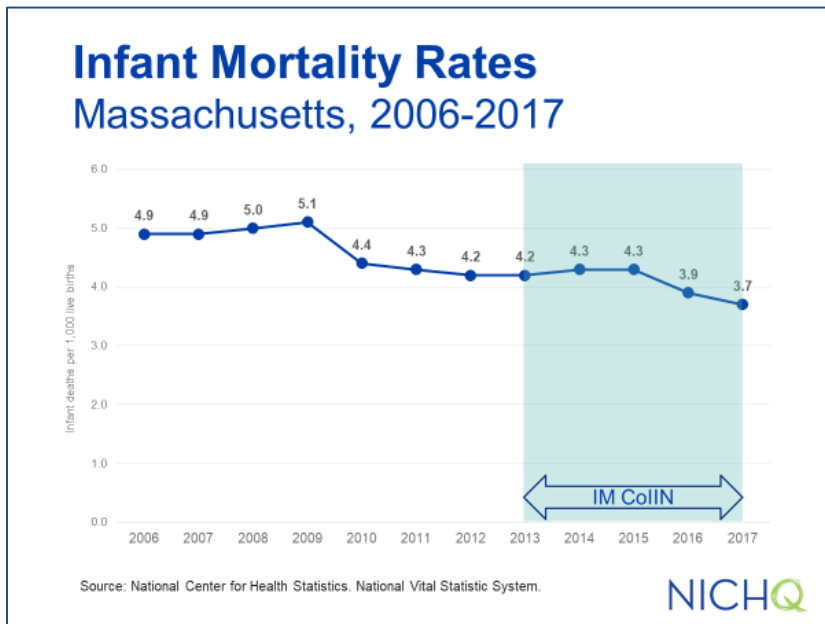
Introduction to Massachusetts

Following the 2013 introduction of the Infant Mortality Collaborative Improvement and Innovation Network (IM CoIIN), Massachusetts launched a series of collaborative and coordinated initiatives to address infant mortality. During participation in the Massachusetts IM CoIIN beginning in 2014, the state used a systemwide lens to address racial inequities in infant mortality and preterm birth with statewide programming, changes in state laws and policies, and increased perinatal data collection.

Case Study Background

As the birthplace of the American Revolution, Massachusetts has a proud history of championing progressive causes — in this spirit, the Commonwealth leads the nation in healthcare innovation. Two top-ranked academic medical centers, Massachusetts General Hospital and Brigham and Women’s Hospital, both teaching institutions of Harvard Medical School in Boston, are national leaders in research and dissemination of clinical best practices in obstetrics.

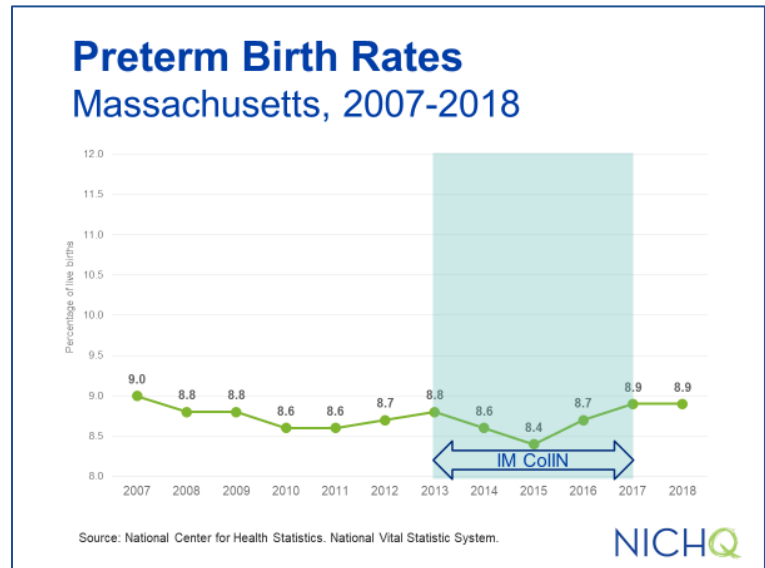
Massachusetts entered IM CoIIN with a wealth of advantages: the Commonwealth has nearly universal health coverage for all residents and a long-running status as one of the healthiest states in the nation.^{1,2} When IM CoIIN began in 2013, Massachusetts’s infant mortality rate was 4.2 per 1,000 live births and decreased to 3.7 per 1,000 live births in 2017.³ The preterm birth rate (percent of live births before 37 weeks gestation) stayed relatively stable, rising slightly from 8.8% in 2013 to 8.9% in 2017.⁴ These are both lower than the United States overall,



where infant mortality in 2017 was 5.8 births per 1,000 live births, and preterm birth was 9.9 % of live births.^{5,6}

As in the rest of the country, Black mothers in Massachusetts experienced a disproportionately high burden of infant mortality as compared to white or Asian mothers. Infants born to Black mothers in Massachusetts had a mortality rate of 7.8 per 1,000 live births in 2013, decreasing to 6.8 per 1,000 live births in 2017.¹ By contrast, infants born to white mothers had a mortality rate of 3.7 per 1,000 live births in 2013, decreasing to 3.2 per 1,000 live births in 2017.¹ Asian mothers in Massachusetts experienced the lowest rates of infant mortality, with 3.2 per 1,000 live births in 2013, decreasing to 2.7 per 1,000 live births in 2017.¹

Preterm birth follows similar racial trends in Massachusetts: Between 2013-2015, Black mothers had a preterm birth rate of 10.4% compared to white mothers, whose preterm birth rate was 8.4%, and Asian mothers, whose preterm birth rate was 7.8 percent.² Between 2015-2017, preterm birth rates rose for Black mothers to 10.8 per 1,000 live births, fell slightly for white mothers to 8.3 per 1,000 live births, widening the disparity.²



Population Characteristics

With 6.9 million residents tucked into just 7,800 square miles, Massachusetts is the third most population-dense state in the nation, with nearly 840 people per square mile.⁷ The state's population is heavily clustered on the eastern side, anchored by Boston and its network of suburbs. The Boston Metropolitan Statistical Area (which includes the southern tip of neighboring New Hampshire) has 4.9 million residents and a population density of 1,400 people per square mile.⁸

The population of Massachusetts is 70% White, 8% Black, 8% Asian, and 12% Hispanic (may include other races). Massachusetts's residents rank among the lowest nationwide on measures of poverty and highest in median income and education. However, as mirrored by racial trends around the country, white residents in Massachusetts are better off than any other racial group in the Commonwealth. One-quarter of Hispanic and Latino residents in Massachusetts live in poverty, along with 17.9% of Black residents and 15.7% of Asian residents. By contrast, only 6.8% of white residents live in poverty.⁹

However, these trends in poverty do not dovetail neatly with educational attainment: Almost two-thirds of Asian women (61%) in the Commonwealth have a bachelor's degree or higher, compared to 48.1% of white women, 30% of Black women, and 23.4% for Hispanic/Latino women.¹⁰ Similar race-based disparities are seen in median income. As of 2018, the median household yearly income in Massachusetts was \$79,835. The median household yearly income for a Black household in Massachusetts was \$53,270, compared with \$83,090 for a white household in Massachusetts.

Consistent with population density, the eastern half of the Commonwealth is more diverse than the homogenous western half, both in racial makeup and varied socioeconomic status. IM COLLN participants cited these differences as key to understanding the disparate birth outcomes for women.

Health Care Access

Massachusetts is one of few states in the nation where nearly every resident has universal health care coverage. More than 97% of residents are insured, the highest rate in the nation.¹ However, uninsured residents in the states live in what have been termed “hot spots,” rather than distributed equally across the state. In some hot spots, 30% of residents are uninsured, though the average rate of uninsured is 5.7% across the entire community.¹ Residents in hot spot communities are more likely to be paying more than half of their income in housing, be living below the federal poverty line, or be living with undocumented legal status. Areas of highest rates of hot spots can be found in Southeast Massachusetts (27%) and Western Massachusetts (22.6%).¹

Unique Impacts

Accounting for 4.7% of all the births in the state, Massachusetts has the highest rate of Assisted Reproductive Technology (ART) in the nation, which is a significant contributor to preterm birth risk. Massachusetts mandates insurance coverage for ART, including in vitro fertilization (IVF), gamete intra-fallopian transfer (GIFT), and zygote intrafallopian transfer (ZIFT).¹¹ More than 12% of preterm births in the state are linked to ART.¹²



Though ART is widely available in Massachusetts, women of all ethnicities do not utilize the service equally. Research shows that Black and Hispanic women are more likely to be in need of reproductive technology interventions but are less likely to utilize them, possibly due to differences in knowledge and cultural stigma against ART.¹³ In Massachusetts, as in the nation, high-income white women with advanced degrees disproportionately utilize ART.¹⁰

Maternal Risk Factors for Infant Prematurity

Women in Massachusetts are healthier on average than those in the rest of the country and have fewer risk factors for preterm birth and infant mortality than women nationally.

- **Smoking:** Between 2013 and 2017, the rate of smoking among childbearing women in Massachusetts dropped from 16.9% to 12.5%, compared to 16.7% for childbearing women nationally in 2017.¹⁴
- **Obesity:** Between 2013 and 2017, the number of women who reported a BMI of 30 or more rose from 17.2% to 19.6%, but still lower than national rate of 27.6% in 2017.¹⁵





Targeted Programs and Interventions to Reduce Preterm Birth

With a robust public health infrastructure at the state, county, and city/town levels, as well as strong networks of public and private healthcare organizations and teaching hospitals pioneering new techniques, Massachusetts is the strongest of the four IM CoIIN states in this case study in sheer infrastructure dedicated to maternal and child health.

However, IM CoIIN providers cited this wealth of resources as an unintentional barrier in addressing long-standing disparities in rates of infant mortality and preterm birth among communities of color and younger women. Many mentioned providers who adopt a “this is a problem individual” mindset, rather than seeing perinatal issues among women of color as systemic and intersectional.

To begin to address this mindset, Massachusetts IM CoIIN focused on improving systemwide perinatal programming in the Commonwealth in the following ways:

- Increasing training opportunities for providers using progesterone (17P)
- Expanding the reach of group prenatal care in hospitals that primarily serve communities and families of color
- Increasing perinatal data collection on state-issued birth certificates

1. Broaden Provider Involvement in the Perinatal-Neonatal Quality Improvement Network of Massachusetts (PNQIN)

The Perinatal-Neonatal Quality Improvement Network of Massachusetts (PNQIN), which was very involved in leading the IM CoIIN work in Massachusetts, is a voluntary organization of perinatal providers and maternity facilities that promote best clinical practices across the state.¹⁶ Based in our home state of Massachusetts, NICHQ serves on the PNQIN, which uses a collaborative learning model to address preterm birth, maternal hypertension, and early elective deliveries. PNQIN is an umbrella organization for two major perinatal-neonatal projects:

- **Massachusetts Perinatal Quality Collaborative (MPQC):** The MPQC is “a cooperative voluntary program involving Massachusetts maternity facilities and key perinatal stakeholders, designed to promote the sharing of best practices of care.”

During IM CollIN, MPQC focused their work on 1) reducing early elective deliveries (EED) and 2) increasing consistent treatment of maternal hypertension, a risk factor for preterm birth. MPQC partnered with March of Dimes and the American College of Obstetricians and Gynecologists (ACOG) to institute a hard stop on early elective deliveries before 39 weeks. The rate of EED fell from 14.8% of births in 2010 to 1.3% of births in 2013. MPQC is currently piloting a program to treat maternal hypertension at four hospitals around the Commonwealth: initial data show increased numbers of women receiving care for hypertension during pregnancy.

MPQC is currently focused on improving maternal mortality and morbidity rates through a partnership with the Alliance for Innovation in Maternal Health (AIM), a national data-driven maternal safety and quality improvement initiative. The work that MPQC is doing as part of AIM is also focused on increasing provider education on use of progesterone (17P) to prevent preterm birth. During the project period, MPQC developed a progesterone pocket card for physicians and hosted a Progesterone Toolkit training that was attended by 113 medical providers.

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.³⁴ 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 American College of Obstetricians and Gynecologists (AGOC) said it had reviewed the results and wasn’t changing its guidance.³⁴

- **Neonatal Quality Improvement Collaborative of Massachusetts (NeoQIC):** NeoQIC is a voluntary organization of newborn health care providers that support quality improvement through the open sharing of information and practices. NeoQIC seeks to foster a culture of continuous quality improvement among its members through the development of joint quality improvement projects and initiatives, promotion of evidence-based best practices, and support of education and training. NeoQIC currently supports four ongoing collaborative quality improvement initiatives:
 - Increasing the use of mother’s own milk in very low birth weight infants
 - Increasing safe sleep practices in high-risk infants

- Improving the care of newborns and families impacted by perinatal opioid use and neonatal abstinence syndrome
- Eliminating hospital-acquired infections and using antibiotics wisely in the neonatal intensive care unit

2. Expansion of Group Prenatal Care Using CenteringPregnancy® Program

During IM ColIN, Massachusetts expanded group prenatal care options around the state. Group prenatal care is increasingly recommended for women who may be in greater need for social support and prenatal education. Women who participate in group prenatal care report greater satisfaction with their care, increased comfort with labor and delivery, and are more likely to initiate breastfeeding.¹⁷ Though outcomes research for group prenatal care is growing, initial data suggest that women in group prenatal care are less likely to deliver preterm, less likely to use emergency care in the third trimester, and less likely to deliver low birthweight infants.¹⁷

Established in the 1990s, CenteringPregnancy®, operated by Centering Healthcare Institute (CHI) located in Boston, is the most well-established model of group prenatal care in the country. The program provides prenatal care to groups of eight to 12 women in a two-hour monthly format, providing mothers with 10x more time with their provider than if they were seen individually.³² Massachusetts currently has 12 obstetric practices that host CenteringPregnancy® programs, six of which are accredited by CHI, a designation achieved after two years of implementation with fidelity to the program model. IM ColIN participants noted the high patient satisfaction for women in group prenatal care, citing increased parenting skills, feelings of comfort and safety with the prenatal caregiver, and increased knowledge of postpartum stressors and how to address them (e.g. sleep deprivation, stress, nutrition).



3. Statewide Increase in Perinatal Data Collection for Mothers and Infants

IM CoIIN participants identified a focus on data collection as key to galvanizing support for preterm birth and infant mortality initiatives in Massachusetts. Two statewide data collection efforts were instituted during IM CoIIN:

- ***Pregnancy to Early Life Longitudinal Data System (PELL)***: PELL is a joint project between the Massachusetts Department of Public Health, Boston University School of Public Health, and the Centers for Disease Control and Prevention. PELL links maternal delivery and birth records (as well as fetal death records) collected at hospital discharge to program and state agency data from Early Intervention, Birth Defects, WIC, Newborn Hearing Screening, Substance Abuse Services, and Assisted Reproductive Technology. This unique data system allows researchers and public health professionals the ability to track outcomes over time and see the impact of specific programs on births across the state.
- ***Standard Collection of Maternal Progesterone Use on Certificate of Live Birth***: In 2018, Massachusetts added two questions about maternal use of progesterone (17P) to the certificate of live birth.¹⁸
 - *Were you offered progesterone to prevent an early delivery during this pregnancy?* Answer options include “Yes, because of a prior early delivery”; “Yes, because of short cervix”; “No” and “I don’t know”
 - *Did you receive progesterone during this pregnancy?* Answer options include delivery methods in pill form, as a shot, or vaginally. Also includes “No for lack of insurance coverage,” “No because I declined,” and “I don’t know.”

Collecting this information for every baby issued a birth certificate in Massachusetts will allow the state the better understand practice patterns and treatment access for women, as well as outcomes among women who received the treatment.



Policy Efforts

Massachusetts is unique among the four IM CoIIN states in this case study in its use of statewide legislation and state agency policies to address preterm birth and infant mortality. IM CoIIN participants leveraged the power of statewide policy work to increase access to housing for mothers in need, lobby for increasing the state Earned Income Tax Credit rate, and address issues of racial equity in maternal health care as part of federal Title V funding. The Title V Maternal and Child Health Service Block Grant is a key source of support for promoting and improving the health and well-being of the nation's mothers, children, including children with special needs, and their families. Since IM CoIIN, Massachusetts has continued to focus on policy solutions to improve maternal and infant outcomes that can impact preterm birth rates across the state. Recent policy successes are described below.

1. Health Equity Initiative (Massachusetts Department of Public Health)

In 2017, the Massachusetts Department of Public Health created the Office of Population Health (OPH), charged with a mandate to “accelerate the use and dissemination of data and advanced analytics to identify disparities in health outcomes, risk factors, and the social determinants of health.”¹⁹ The OPH has focused on creating engaging and accessible data presentations about infant mortality in Massachusetts, specifically highlighting racial inequities in birth outcomes and mortality. IM CoIIN participants welcomed these presentations as a way of increasing visibility for maternal and child health inequities in the Commonwealth and look forward to partnering with the office in their own work.

2. Priority Housing Status for Women and Children

Massachusetts changed its Emergency Family Shelter policy to fast-track pregnant women and mothers with minor children into housing due to unsafe living conditions or homelessness.²⁰ In addition to state-level policies that make it easier for mothers to find housing, two hospitals in Boston as part of IM CoIIN, Brigham and Women's Hospital and Boston Medical Center, expanded their social services to provide assistance with housing for pregnant women and mothers. Both hospitals are also currently focusing on providing additional social supports to pregnant women and mothers, including help finding affordable childcare and applying for state vouchers for free or reduced-price childcare.

3. State Increase in Earned Income Tax Credit Rate

The Earned Income Tax Credit (EITC) is a federal tax credit for people who earn low income that provides a return on taxes paid based on the number of children in the household. As low and moderate-income people pay proportionately more of their income in taxes than higher earners, the EITC returns income to families in need. EITC has been shown to be associated with improved birth outcomes across all racial and ethnic groups, thus improving the outlook for children in low-income households.²¹

Massachusetts is one of 28 states that also has a state-based EITC program. The Massachusetts EITC is based on the federal EITC: For taxable years between 2016 and 2018, the Massachusetts credit is limited to 23% of the federal credit. For taxable years starting after January 1, 2019, the Massachusetts credit is limited to 30% of the federal credit.²² As part of IM CoIIN, Boston Medical Center social workers showed lower income women during prenatal and pediatric appointments how to apply for and follow up on the state EITC program after finding that many of the women were not receiving benefits.

4. Massachusetts Paid Family Medical Leave (PFML)

In 2018, Massachusetts passed legislation mandating comprehensive Paid Family Medical Leave (PFML).²³ The law establishes a system to allow family members to care for one another for up to 12 weeks and to take up to 20 weeks to recover from their own illness. The program is paid for by a tax increase that began in 2019; the PFML program will begin in 2021. While not enacted during the IM CoIIN project period, this legislation has been advocated for well earlier than 2018, and many partners and stakeholders that were deeply engaged with IM CoIIN contributed to its success.

5. Title V Block Grant Program Prioritizing Racial Equity for Maternal and Child Health (2019)

Massachusetts Title V Block Grant Program undergoes a strategic planning session every five years. With representation from IM CoIIN participants, the 2019 strategic plan included a focus on addressing issues of racial equity in maternal and child health care as a primary priority.²



Looking Forward

Future Policy Priorities

In Massachusetts, stakeholders identified a clear priority to address the needs of mothers and assist in reducing the rising preterm birth rates.

Priority Populations

As in many states, immigrants and foreign-born people make up an increasing percentage of the population. In the wake of a Supreme Court decision that considers public benefits in federal immigration decisions (the Public Charge Rule), IM CoIIN participants stressed the need to partner with immigrant rights' organizations to ensure that immigrants and undocumented mothers felt safe accessing perinatal care.

Spotlight On: Stronger Generations

At Brigham and Women's Hospital in Boston, a new model of perinatal care, *Stronger Generations*, focuses on resolving racial inequities in birth outcomes. Drawing on their connections with the diverse neighborhoods of Mission Hill and Roxbury, which border the hospital, *Stronger Generations* provides women with support and care in the perinatal setting. Using a framework called the Birth Inequity Initiative (BEI), providers in the *Stronger Generations* program focus on health throughout the lifespan, with the understanding that "a lifetime of health equity begins at birth."²⁶ Providers work with pregnant mothers to establish trust in the medical setting, and then support mothers through pediatric care for their children, provide housing support and domestic violence counseling as needed, and expand access to educational programs that support learning goals both in high school and beyond using a throughout-the-lifespan, integrated care approach.

Emerging Issues in Massachusetts

With their steady focus on addressing system-based inequities, IM CoIIN participants in Massachusetts cited a number of emerging issues to address, from access to housing to immigration laws, which are crucial in realizing equity in birth outcomes.

1. Impact of Housing Crisis on Perinatal Care

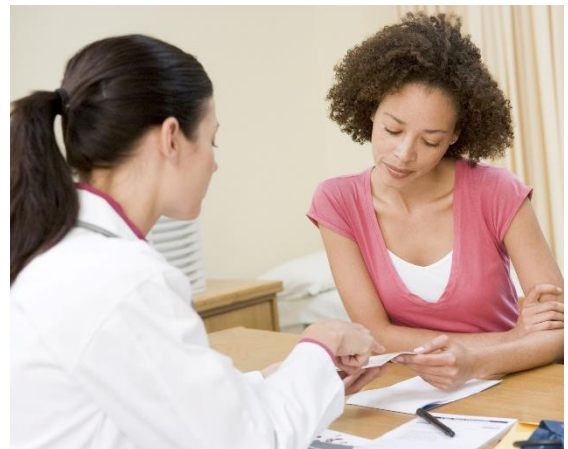
Massachusetts is in the midst of a housing shortage, with Boston being the fifth most expensive city in the country for housing.²⁷ The housing stock in the state is heavily weighted toward single-family housing and in many cities and towns, prohibitions on building multifamily units and apartments effectively block lower and moderate-income families from moving in.²⁶ Even in Boston, which provides incentives for builders who create multi-family residences, the pace of building is too slow to keep up with demand.²⁶

As a result, families are increasingly part of the homeless population, necessitating immediate housing support. Many lower and moderate-income families are forced to move further away from Boston, where as IM CoIIN participants point out, health care is harder to access. Boston's many hospitals and clinics are accessible by public transportation, but in the far-flung suburbs, cars are needed to get to clinics, which families may not have.

2. Diversity of Immigrant Population and Challenges to Quality of Perinatal Care

More than 1 in 6 residents of Massachusetts is an immigrant.²⁸ Though as a collective, there is no dominant country of origin, the top countries of origin for immigrants in Massachusetts are China, India, Brazil, Portugal, Haiti, Cape Verde, the Dominican Republic, Vietnam, El Salvador, and Canada.²⁷ This rich diversity is a strength for the economy, with 20% of the workforce foreign-born and almost 60% employed in medical and life sciences.²⁷

This diverse immigrant population creates unique challenges in delivering consistent, quality perinatal care, according to IM CoIIN participants. They cited an increasing need for translation services, multilingual staff and providers, and prioritized efforts to provide culturally sensitive perinatal care.



3. Impact of Opioid Epidemic on Perinatal Health and Child Health

As in the rest of the country, Massachusetts has been affected by the opioid crisis, which has spawned a greater focus on substance use care in the perinatal setting. At Massachusetts General Hospital, Project HOPE is an integrated care perinatal model that provides women with quality perinatal care, substance use care, social worker support, mental health care, and psychosocial support within the timeframe of a typical prenatal appointment.²⁹ Project HOPE follows women for two years post-birth, providing pediatric care for children up to two years of age, including those born with Neonatal Abstinence Syndrome (NAS). IM ColIN participants called for more integrated programs for women with substance use disorders, citing the urgent need for more attention to care for children born with NAS.

4. Updated Focus on Maternal Mortality

Massachusetts Department of Public Health has a dedicated Maternal Mortality and Morbidity Review Committee, though the last public report was in 2014.³⁰ IM ColIN participants noted that the committee needed a reboot, particularly given the Title V focus on resolving racial inequities in maternal and child health.

5. Refinement of Transportation Access Programs to Increase Access to Perinatal Care

As in many cities, Boston residents increasingly rely on rideshare services for transportation. IM ColIN participants cited the impact of these services on health care access: For women without access to their own private transportation, these services are often safe, affordable, and easy to access. Accordingly, IM ColIN participants pointed to programs in prenatal clinics that provide vouchers to women for rideshare apps, but then highlighted problems that need to be resolved to ensure women can consistently access perinatal care. Primary problems were inconsistent acceptance of vouchers by rideshare apps and inconsistent enforcement of car seat laws by drivers. Resolving transportation access issues remains a priority for IM ColIN participants as they work to ensure consistent prenatal care is available to all women.



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Mississippi's Efforts to Address Preterm Birth Rates

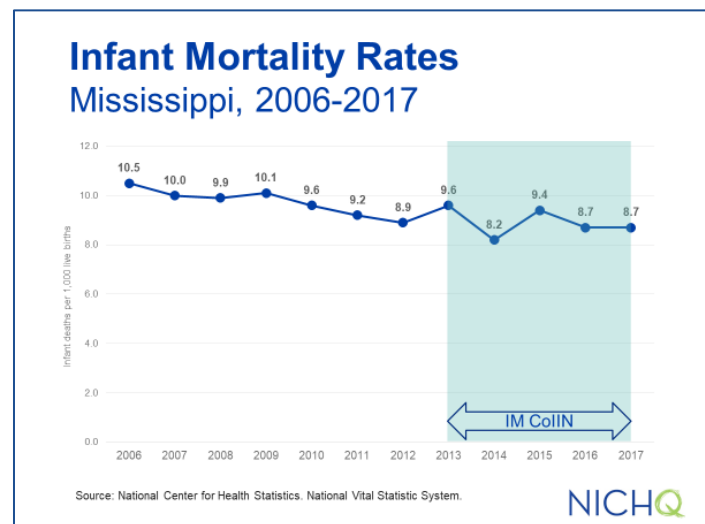
*A Case Study Developed from NICHQ's Exploring State-Level Strategies
to Improve Maternal Health and Birth Outcomes Initiative*

Introduction to Mississippi

Following the 2013 introduction of the Infant Mortality Collaborative Improvement and Innovation Network (IM ColIN), Mississippi launched a series of collaborative and coordinated initiatives to address infant mortality beginning in 2014. During Mississippi's IM ColIN 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

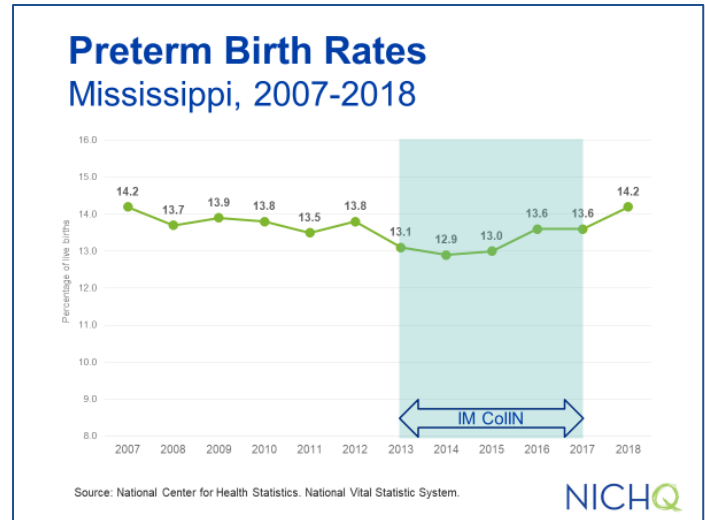
Mississippi's rates for both preterm birth and infant mortality are currently the highest in the nation — like other states in the South, rates for both are far above the United States national average. During the Infant Mortality Collaborative Improvement and Innovation Network (IM ColIN) project period, 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 2017.¹ Less successfully, the preterm birth rate increased over the IM ColIN 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 2017.¹

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 2017.¹

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%.² 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.²



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.³ Half of Mississippi's residents live in the Delta.⁴ 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.⁵

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.⁶ 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.⁷ 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.⁸ Similar race-based disparities are seen in median income. As of 2018, the median household income in Mississippi was \$44,717.⁹ The median household income for a Black household in Mississippi is \$30,612, compared with \$55,609 for a white household in Mississippi.^{10,11}



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 2012.¹² 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.⁴ 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.¹³ 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.²² 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%.¹⁴ 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 2017.¹⁴
- **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%.¹
- **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.¹⁶





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.¹⁷

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.²⁴

American College of Obstetricians and Gynecologists (AGOC) said it had reviewed the results and wasn't changing its guidance.²⁴ 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.¹⁸ 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 CoIN 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.¹⁹
- *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.²⁰

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.⁶ 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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Oklahoma'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 Oklahoma

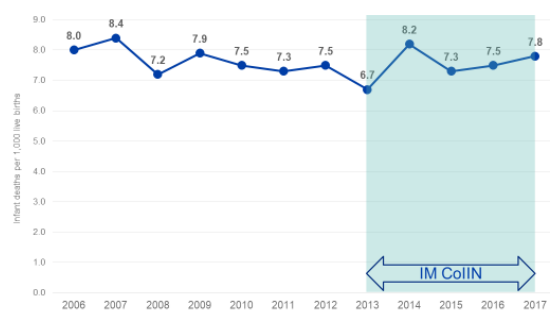
With the introduction of the Infant Mortality Collaborative Improvement and Innovation Network (IM CoIIN) in 2013, Oklahoma launched a series of collaborative and coordinated initiatives to address infant mortality in 2014, including focused work on reducing preterm (less than 37 weeks gestation) and early term birth (37-38 weeks gestation) and leveraging existing partnership and statewide stakeholders. Oklahoma was highly engaged in both program activities and data submission during IM CoIIN and focused their preterm birth reduction activities on increasing access to interventions such as progesterone and smoking cessation.

Case Study Background

Since 2007, Oklahoma has seen a decline in infant mortality from 8.4 per 1,000 live births to 7.8 in 2017. However, similar to a majority of other states, preterm birth rates have been increasing. 2018 saw the highest rates of preterm birth in Oklahoma in more than a decade — 11.4 percent.¹ This is higher than the 2018 U.S. national rate of 10%.

In addition, racial disparities in infant mortality remain persistently high. Black mothers in Oklahoma experienced a more than two-fold higher risk of infant mortality compared to white mothers and Asian/Pacific Island mothers. Black mothers are 38% more likely to have a preterm birth compared to all other women.¹ American Indian/Alaska Native mothers in Oklahoma experience a higher risk of infant mortality than white or Hispanic mothers at a rate of 11% of live births.

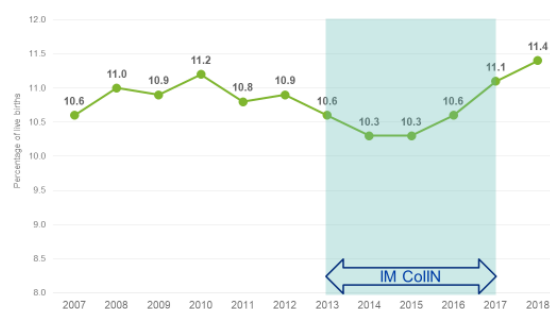
Infant Mortality Rates
Oklahoma, 2006-2017



Source: National Center for Health Statistics, National Vital Statistic System.



Preterm Birth Rates
Oklahoma, 2007-2018



Source: National Center for Health Statistics, National Vital Statistic System.



Population Characteristics

With nearly 4 million residents across 69,899 square miles, Oklahoma is a relatively rural state, with population clusters centered in two major cities, Oklahoma City and Tulsa. Economically, Oklahoma relies on a base of telecommunications, aviation, biotechnology, and energy sectors — the state is a major producer of natural gas, oil, and agricultural products.² Oklahoma City and Tulsa anchor Oklahoma's primary economies, with 58% of Oklahomans living within these two metropolitan statistical areas. Oklahoma's largest cities in 2010 were Oklahoma City (579,999), Tulsa (391,906), and Norman (110,925).

Racial/Ethnic and Socioeconomic Factors

According to the 2010 Census, the population of Oklahoma is 65.3% White, 10.9% Hispanic or Latino, 9.3% American Indian/Alaska Native, and 7.8% Black. More than 6% of the population identified themselves as two or more races, which is larger than the Asian population, comprising 2.3% of Oklahoma's total.

Oklahoma had the second-largest Native American population in 2010 after California, with the highest density in the Tulsa-Broken Arrow Metropolitan area. The state ranked fourth behind Alaska, New Mexico, and South Dakota for Native Americans as a percentage of population, at 8.5%, largely a result of the Trail of Tears.² Oklahoma's Black population is somewhat clustered in southeast Lawton, northeast Oklahoma City, northwest Tulsa, and portions of Muskogee. It's significant to note the historical context of the Tulsa race massacre and the historic Black community of Greenwood as it relates to present-day racial disparities.²

Oklahoma's rank of annual household income is below the national average, and the state's poverty rate is in excess of 15%, with higher percentages in rural areas.²



Health Care Access



In Oklahoma, 14.2% of the population was uninsured in 2019, with rates varying greatly for women, and in particular, women of childbearing age. Oklahoma ranked 49 among 50 states and the District of Columbia in uninsured women, with more than 1 in 5 women aged 19-44 without insurance (21.7 percent). After the passage of the Affordable Care Act, Oklahoma has not expanded Medicaid to help with coverage of the relatively high proportion of uninsured, although that may change after a referendum passed in July 2020. In addition to a lack of insurance, more than 240,000 Oklahoman mothers live in a maternity care desert each year, defined as counties where access to maternity health care services is limited or absent.¹

Maternal Risk Factors for Infant Prematurity

Women in Oklahoma have higher incidence of risk factors for preterm birth and infant mortality than women nationally.

- **Smoking:** Oklahomans have a high prevalence of smoking compared to residents of other states. Although smoking among women of childbearing age decreased from 2015-2016 (22.6% to 20.1%), 2017 saw it increase again back to 22.6%, a wide margin over the national rate of 15.5% that year. Despite a recent drop to 18.4% in 2018, rates of smoking among women of childbearing age in Oklahoma show no clear trend but were still higher than U.S. average rates (16.7%).
- **Obesity:** In 2018, among women of childbearing age (18-44 years), more than 1 in 3 (37.9%) were obese (a Body Mass Index of 30 or greater), up from 29.1% in 2011. This is an increase of more than 30% over nine years and considerably higher than the U.S. average rate of 30.5% in 2018.

“While it’s not an easy conversation to have, it’s important to look at foundational structural racism and the role it plays in the multifactorial causes of preterm birth.” —Focus group participant



Targeted Programs and Interventions to Reduce Preterm Birth

Oklahoma 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 CoIN, Oklahoma worked to address preterm births in the following ways.

1. The Oklahoma Perinatal Quality Improvement Collaborative (OPQIC)

Launched in 2014, the Oklahoma Perinatal Quality Improvement Collaborative (OPQIC) works with more than 40 partners across the state. The mission of the OPQIC is to improve the health outcomes of mothers and infants in Oklahoma using evidence-based practice guidelines and quality improvement processes. With funding from an Oklahoma State Department of Health (OSDH) Maternal and Child Health (MCH) Title V Block Grant, and initial support from the March of Dimes, the Collaborative utilizes a [Collective Impact](#) approach to improving maternal and child health. Health care providers, the target audience, focus on a variety of current challenges such as payment, policies, and clinical practices. The OPQIC has led a number of initiatives to improve the health of moms and babies, ranging from Every Mother Counts Collaborative, Preparing for a Lifetime, and more recently, the Alliance for Innovation on Maternal Health (AIM). Through strong partnerships, these initiatives are committed to collaborative resource development, increasing community engagement, and improving data collection.

2. Focus on Native American Women and Infants

Among pregnant women in Oklahoma, nearly 11% of live births are to Native American women (10.7%), compared to less than 1% nationwide, making services and access to care for Native Americans critically important in Oklahoma. Three tribally-funded hospitals — Choctaw Nation, Cherokee Nation, and Chickasaw Nation — are important partners in Oklahoma. Barriers do exist, such as with data sharing, and can limit participation in the OPQIC initiatives.

3. Establishing the Preparing for a Lifetime Statewide Initiative

Oklahoma's Preparing for a Lifetime is a statewide initiative that focuses on the health and well-being of all mothers and infants. This initiative brings together multiple partners across the sector that widen the reach to disparate populations. Partners include providers, Oklahoma State Department of Health, Oklahoma Hospital Association, Oklahoma Perinatal Quality Improvement Collaborative, Medicaid, the March of Dimes, federally qualified health centers (FQHCs), and the state's Healthy Start programs. The initiative targets the following areas:

- Preconception/Interconception Health
- Tobacco and Pregnancy
- Premature Birth
- Breastfeeding
- Postpartum Depression/Maternal Mood Disorders
- Safe Sleep for Infants
- Injury Prevention for Infants

"Oklahoma Perinatal Quality Improvement Collaborative has been instrumental and central to the state-level strategies to reduce preterm birth. The people at the table really feel like they have a say." — Focus group participant

4. Addressing Early Elective Deliveries

One state-level initiative that was spurred from the Preparing for a Lifetime initiative was Oklahoma's Every Week Counts (EWC) Collaborative (2011-2014). Supported by the Oklahoma State Department of Health, the March of Dimes, the Office of Perinatal Quality Improvement, and the Oklahoma Hospital Association, the initiative worked with hospitals to implement a "hard stop" policy effort, prohibiting providers from delivering 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. The initiative was highly successful in decreasing early elective deliveries by 96% over the course of the project. Although this initiative has ended, Oklahoma hospitals continue to report rates of early elective deliveries to the Centers for Medicare and Medicaid Services (CMS) and six years later have managed to sustain low rates across the state.

Stakeholders identified strong **partnerships between the members of OPQIC and the use of data to drive improvement** as the major facilitators to the success in reducing early elective deliveries and sustaining those successes.

5. Increase Availability of Progesterone Statewide

Partnering with the Oklahoma Perinatal Quality Improvement Collaborative, Oklahoma launched the Oklahoma Progesterone Project, which worked at several critical levels to increase use of 17 alpha-hydroxyprogesterone caproate (also called 17P). At a policy level, the project was successful in developing and publishing Progesterone Guidelines for its Medicaid program (Sooner Care). These guidelines expanded coverage of progesterone by increasing the window of initiation from 16-20 weeks, included initiation of treatment in women up to 26 weeks gestation, increasing use among eligible women who may enter care later than the 20th week of gestation.

As with many states, Oklahoma is considering 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 American College of Obstetricians and Gynecologists (ACOG) said it had reviewed the results and wasn't changing its guidance.⁷ Until the FDA resolves the efficacy of 17P in reducing preterm deliveries, Oklahoma has put promoting 17P on hold.

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.⁷

Other Program Efforts

Building on the success of the Early Elective Delivery Initiative and the creation of the OPQIC, the state launched several other programs that have addressed the reduction of preterm births. These include:

- **High-Risk Obstetrics Program:** This program works in collaboration with the Oklahoma Healthcare Authority to provide case management for high-risk women in 10 counties. The Authority administers SoonerCare, Oklahoma's Medicaid program and Insure Oklahoma.
- **Focus Forward Oklahoma:** An interconception (between pregnancies) care program working to increase access to contraceptives in the state, particularly long active reversible contraceptives (LARC). The program includes patient education, provider training (including clinical support staff), and inventory management. This program also targets small practices in rural areas of the state to help address lack of access.

Demonstrating a reduction in PTB based on LARC usage could take several years due to the purpose to delay pregnancy. Because of this complexity, Oklahoma-specific efforts have not yet been linked directly to reductions in preterm births. Still, these interventions address important opportunities to positively impact rates of prematurity and other negative health outcomes among women and infants.



Policy Efforts

Successes and barriers to policy-level solutions in Oklahoma are important to understand. Even with a lack of bipartisan cooperation, stakeholders across the state have found success in supporting grassroots efforts to address systems-level changes. While Oklahoma did not expand Medicaid after the passage of the Affordable Care Act, the Oklahoma Health Care Authority, which oversees the Medicaid program, has been a responsive partner in addressing policy needs.

Department of Health Initiatives & Expansions

The Soon-to-be-Sooners program, which was started in 2008, has seen many changes over the past decade, particularly during the IM CollN years (2013-2017). The program was originally started to support undocumented individuals without health care coverage and has since expanded Medicaid eligibility to adults ages 19-64 whose income is 138% (133% with a 5% disregard) of the federal poverty level or lower. This equates to an estimated annual income of \$16,970 for an individual or \$34,846 for a family of four.³ Expanding the policy guidelines of the Soon-to-be-Sooners programs has changed the landscape of maternity care in Oklahoma, reducing the number of undocumented women without coverage. In addition, the program has expanded services to cover many additional services that can have a positive impact on outcomes among moms and babies:

- Second trimester ultrasound
- Expanded high risk obstetric care (additional ultrasounds, non-stress test, biophysical profiles)

- Additional care management services, including licensed clinical social workers (LCSW), Breastfeeding support with International Board-Certified Lactation Consultants (IBCLC)
- Genetic Counseling Services
- SoonerRide Non-Emergency Transportation Services
- Outpatient Observation Services

Despite the progress, there are still several barriers to comprehensive health care coverage for women in Oklahoma and under the Soon-to-be-Sooner program. In the most basic terms, the Soon-to-be-Sooner program ends at the time of delivery or when the pregnancy ends, creating limited coverage of postpartum care for mothers, a critical time to ensure the health and safety of the mother and infant — as well as the health of subsequent pregnancies.

Notes on Navigating the Policy Landscape

It is often a challenge for stakeholders interested in addressing infant mortality and prematurity to navigate the political landscape. Issues of particular significance to maternal health are often not mandated in Oklahoma, such as health education in schools. Successful methods to nurture specific policy issues, such as Medicaid expansion, are most successfully approached with a provider-based strategy that begins with provider discussions and garners bipartisan engagement early in the process. According to the Oklahoma Policy Institute (OPI), the state's ranking of 34th in maternal mortality and 37th in infant mortality in 2018, combined with its high uninsured rate, indicates the critical need for collaborative policy.

IM CoIIN focus group participants described their policy strategies in Oklahoma as focusing on issues and prioritizing them based on potential for the biggest impact. Lack of funding for implementation was identified as one of the greatest of those barriers to enacting policies. With the ending of IM CoIIN, Oklahoma has seen a shift away from infant mortality and prematurity reduction activities to initiatives focused on substance/opioid use and maternal mortality reduction. While addressing these issues could positively impact infant mortality and prematurity, there is currently no focused effort to address prematurity. For example, the Oklahoma Legislature passed SB 419 in 2019, requiring all health care providers, including obstetricians and pediatricians, to invite mothers to complete a depression screening while pregnant and before the baby's first birthday. The OPI points out that without Medicaid expansion, there's no way to ensure that Oklahoma women with postpartum mental health disorders can access health care coverage for treatment.³ Expansion of Medicaid would ensure more mothers are healthier before, during, and after pregnancy — and facilitate additional evidence-based practices to address prematurity.



Future Policy Priorities

In Oklahoma, stakeholders identified several policy priorities to address the needs of women that could help to decrease the rising preterm birth rates in the state.

- **Medicaid Expansion:** Passage of reimbursement for postpartum depression and anxiety screening in a pediatric setting, as well as coverage to 12 months postpartum.
- **Strengthening Midwifery:** Instituting a certified nurse midwife program to address the lack of a strong midwifery program in Oklahoma.
- **Reimbursement for Doula Care:** There is increasing evidence as to the importance of doulas to improved maternal health outcomes, particularly in addressing issues of equity and access to quality care. The Health Care Authority in Oklahoma offers reimbursement for other “non-traditional” forms of care, including group prenatal care, motivating advocates to gain coverage for doula care.

Spotlight On: Health Women, Healthy Futures Oklahoma

In Oklahoma, a major cause of neonatal and fetal death was poor maternal health prior to pregnancy. As a response, the Healthy Women, Healthy Futures Oklahoma (HWHF) program was created and piloted in areas in Tulsa County with the highest rates of infant mortality and preterm birth. Through a team of nurse educators and social workers, HWHF can assess women’s risk factors, educate on a variety of pre-pregnancy health topics, connect to community resources through referrals and linkages, and build partnerships through the community. With private funding from The George Kaiser Family Foundation, the program has grown to seven locations throughout Tulsa County.

HWHF serves a diverse population of women of childbearing age. The program offers classes in both English and Spanish and has seen positive outcomes through evaluation efforts. The curriculum currently includes 11 topics and, following evidence-based guidance, is written at an accessible, fifth-grade literacy level. With an expanding Burmese population in Tulsa, the program

recently added classes in Burmese and in locations closer to where women live — meeting participants where they are. These successes earned HWHF Oklahoma the status of “Promising Practice” by the Association of Maternal and Child Health Programs (AMCHP) through their Innovation Station sharing of best practices.

HWHF subcontracts with the Healthy Start program in Tulsa to provide an interconception care coordinator through home visiting and a behavioral care coordinator, who works with the mother at any time during the pregnancy through the first 18 months of the baby’s life.

“Healthy Women Healthy Futures Oklahoma highlights the importance of communities coming together and working to get back to relevant issues affecting moms and babies in Oklahoma.”
— Focus group participant

Spotlight On: Take Control Initiative, Tulsa

The work to improve access to LARC — and particularly, the work done in Tulsa — highlights a commitment to health equity. The Take Control Initiative (TCI) in Tulsa focuses on providing access to contraception for women through a partnership with the George Kaiser Family Foundation. According to their website,⁴ the TCI works to “improve access to contraception by providing education and outreach for all methods and free clinical services for long acting reversible contraception (LARC).” TCI has expanded clinical services to include all contraception, ensuring women and families have sustained, equitable access to the method that is best for them. The choice of when and if to have children is associated with securing better women’s health and pregnancy outcomes. TCI drives this change by breaking down social, economic, and clinical barriers to access with a goal of promoting health equity.

Since 2010, TCI has provided more than 18,000 LARCs, saving the state \$5.85 for every dollar spent on an intrauterine device (IUD) or contraceptive implant. As with many other programs and initiatives in Oklahoma, TCI relies heavily on the strengths of their partnerships and attributes much of their success to the community partnerships. In order to help women overcome barriers to contraception, TCI works to provide solutions. For example, to support women without transportation to appointments, TCI has secured free rides from a local car service.



The initiative began in 2010, continued throughout the IM CoIIN years, and is still active today. TCI has been successful in lowering teen pregnancy rates and abortions in Tulsa between baseline (2009) and 2017.

Spotlight On: The Oklahoma Family Network

With more than 1 in 10 babies born preterm in Oklahoma, supporting families after the early birth of an infant is a priority for Oklahoma. The Oklahoma Family Network, located in five regions throughout the state, informs and connects individuals with special health care needs and disabilities, their families, and professionals to services and supports in their communities. The Network services are designed for any child who had to spend time in the NICU or was born preterm, has physical disabilities or medical concerns, or has mental or behavioral health concerns. The program is focused on providing services in three areas:

- Emotional Support
- Information and Training
- Advocacy and Leadership

Through their advocacy work specific to programs and policies in Oklahoma, the Oklahoma Family Network has been instrumental to integrate family voices with policy strategies and to educate policymakers on the impact and unintended consequences of proposed policies and legislation. In addition, they work directly with the Title V agency and all child-serving agencies within the Oklahoma State Department of Health, through The Health Care Authority Advisory Committee and Title V policy work.

“Oklahoma Family Network reminds professionals of why they do what they do, integrating the voices of families affected by prematurity or maternal crisis.” –Focus group participant

Families offer a unique perspective when they participate in the policy development process. Members of the Oklahoma Family Network include moms, dads, and grandparents, as well as representatives from urban, rural, and frontier counties. As valued stakeholders and partners, family representatives are often provided a stipend for their time to participate in meetings.

“In Oklahoma, we have a lot of challenges and a lot of barriers. But we also have seen a lot of success, especially when we can pull together, bringing others along with us.” —Focus group participant

Emerging Issues in Oklahoma

Oklahoma has identified five issues of focus to address maternal and infant health across the state, as they continue to work toward reductions in preterm birth and infant mortality.

1. **Focus on Disparities and Addressing Social Determinants of Health:** In Oklahoma, preterm birth rates are higher among Native American and Black women, and preterm birth rates are increasing among Hispanic women, a growing population across the state.
2. **Increase Preconception and Interconception Care:** Chronic and pre-existing conditions, such as hypertension, are on the rise rising in Oklahoma, underscoring the importance of preconception and interconception care, as well as an overall focus on the health and wellness of all women.
3. **Build Systemic Trust:** Stakeholders highlighted the lack of trust in the health care system and the need to address that mistrust, including the importance of implicit bias training for health care providers.
4. **Address Provider Shortages, Especially Maternal-Fetal Medicine Specialists:** Creative and innovative solutions, including telehealth and expansion of certified nurse midwives, are possible ways to address these provider shortages and help provide a more comprehensive and continuous source of care for women across the state.
5. **Stabilize Program Funding:** Lack of funding for programs is a constant challenge. The support of private foundations, particularly local foundations with an interest in improving the health of Oklahomans, are the key ways many programs across the state will continue to exist — especially programs identified as successful.

“When we talk about the real issues facing our programs and our funding resources, we never talk about the way that our economy works and how it’s built to generate inequality. In order to move the needle forward, we need to talk about how we make the programs work within the way our economy works — and across the political spectrum.”
— Focus group participant



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