

STATE OF ALABAMA INFANT MORTALITY REDUCTION PLAN

Final Report

October 1, 2018 - September 30, 2023

TABLE OF CONTENTS

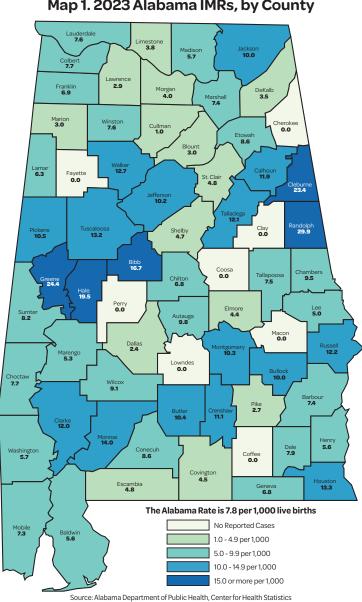
Introduction1					
State of Alabama Infant Mortality Reduction Plan2					
Infant Mortality Trends4	Infant				
Racial Disparities4					
The Seven Funded Strategies of the SAIMRP7					
1. Evidence-Based Home Visiting Program7	1.				
Preconception/Interconception/Postconception Care (The Well Woman Program)	2.				
3. Safe Sleep Initiative10	3.				
4. Screening, Brief Intervention, Referral, and Treatment11	4.				
5. Perinatal Regionalization12	5.				
6. Breastfeeding13	6.				
7. Increased Utilization of Alpha Hydroprogesterone Caproate to Reduce Prematurity Rate14	7.				
Moving Forward – Beyond the SAIMRP15					



INTRODUCTION

Infant mortality is defined as the death of an infant before his or her first birthday. Health outcomes cannot simply be reduced to the health behaviors of the infant's family, but rather are molded by the family's environment. Healthy People 2023 defines social determinants of health as "the conditions in the environment where people are born, live, work, play, worship, and age that affect a wide range of health, social, political, and economic forces." Due to these factors, expectant mothers can be at a higher risk of having poor birth outcomes due to their preexisting chronic health conditions such as diabetes, heart disease, and obesity. In 2023, the three leading causes of infant mortality were congenital anomalies, sudden infant death syndrome, and preterm and low birth weight. Combined, these factors account for 42.3 percent (n=190/449) of all infant deaths.

The infant mortality rate (IMR) is the number of infant deaths for every 1,000 live births. The IMR provides key information about both maternal and infant health and is an important marker of the overall health of society. Alabama has consistently had one of the worst IMRs in the nation and consistently has a large disparity in IMRs by race. Map 1 highlights the 2023 IMRs at the county level.



Map 1. 2023 Alabama IMRs, by County

STATE OF ALABAMA INFANT MORTALITY REDUCTION PLAN

According to the Alabama Center for Health Statistics (AL-CHS), the 2016 IMR was 9.1 per 1,000 live births, which exceeded the United States IMR rate of 5.90 per 1,000 live births. Compared to other states, the Centers for Disease Control and Prevention ranked Alabama as having the highest IMR in the nation. In response, Governor Kay Ivey convened the Children's Cabinet to address the issue of infant mortality in Alabama and a subcommittee was created to develop an action plan. The subcommittee, which drafted the Infant Mortality Reduction Plan, was comprised of leaders from the following agencies:

- Alabama Department of Early Childhood Education (ADECE)
- Alabama Department of Human Resources (ADHR)
- Alabama Department of Mental Health (ADMH)
- Alabama Department of Public Health (ADPH)
- Alabama (Governor's) Office of Minority Affairs (GOMA)
- Alabama Medicaid Agency (AMA)

Through this collaboration, 11 counties were identified as having disproportionately high infant death rates relative to their populations in the period 2014-2016. Autauga, Colbert, Etowah, Jackson, Macon, Marion, Mobile, Montgomery, Russell, Tuscaloosa, and Walker were the identified counties. The Children's Cabinet adopted the recommendations of the working subcommittee to implement a pilot program to reduce infant mortality rates by at least 20 percent in the three selected pilot counties (Montgomery, Macon, and Russell) within 5 years. Beginning in FY 2019, the State of Alabama Infant Mortality Reduction Plan (SAIMRP) was provided \$1 million annually by the Alabama Legislature. Figure 1 highlights the timeline of the 5-year agreement.

Figure 1. 5-Year Timeline, by Alabama State FY



During this 5-year agreement, the SAIMRP implemented the following strategies.

- Evidence-based home visitation
- Enhanced breastfeeding efforts
- Perinatal Regionalization (PR)
- Preconception, interconception, and postconception (pre/inter/postconception) care
- Prematurity prevention
- Safe-sleep education
- Screening tool for substance use

Map 2 highlights the counties where the SAIMRP incorporated strategies to address infant mortality during this 5-year plan. In 2016, **8.4 percent (n=45/537)** of infant deaths occurred within the three pilot counties.



Map 2. Pilot Counties for the SAIMRP

INFANT MORTALITY TRENDS

As shown in Figure 2, the annual IMRs for 2017-2023 did not exceed the 2016 combined pilot county IMR of 10.9 deaths per 1,000 live births. However, the annual IMRs for 2019, 2020, and 2023 did exceed the 2017-2023 pilot county combined rate.

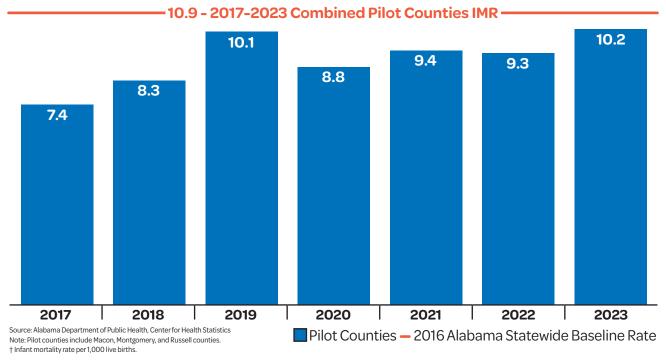
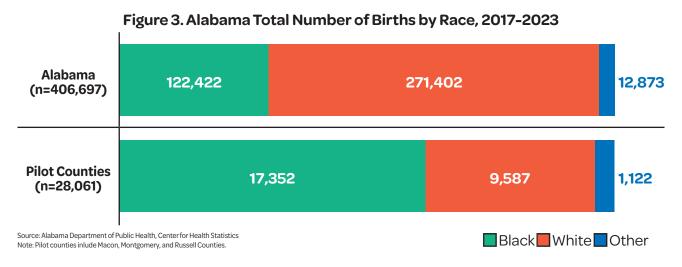


Figure 2. IMR for the Pilot Counties, 2017-2023†

RACIAL DISPARITIES

Between 2017 and 2023, 28,061 births with a known race were delivered by mothers who resided within the pilot counties. As shown in Figure 3, **61.8 percent (n=17,352/28,061)** of births delivered within the pilot counties were black, followed by **38.2 percent (n=10,709/28,061)** for white or other combined.



4

Between 2017 and 2023, 28,061 births with a known race were delivered by mothers who resided within the pilot counties. As shown in Figure 3, 61.8 percent (n=17,352/28,061) of births delivered within the pilot counties were black, followed by 38.2 percent (n=10,709/28,061) for white or other combined.

Alabama 1.443 1,422 85 (n=2,950)**Pilot Counties** 193 45 11 (n=249)Source: Alabama Department of Public Health, Center for Health Statistics ■Black White Other Note: Pilot counties inlude Macon, Montgomery, and Russell Counties.

Figure 4. Alabama Total Number of Infant Deaths by Race, 2017-2023

Figure 5 compares the Alabama statewide IMR to the pilot county IMR by race using birth and death counts for 2017 to 2023 as presented in Figures 3 and 4. It should be noted that the 2017-2023 pilot county racial IMRs and the total pilot county IMR were marked either green (did not exceed) or red (exceeded) to highlight whether it exceeded the statewide 2017-2023 IMRs. The pilot county IMR did not exceed the statewide IMR for either white or black. However, the total pilot county IMR did exceed the statewide 2017-2023 IMR of 7.3 per 1,000 due to the higher IMR among infants reported as other.

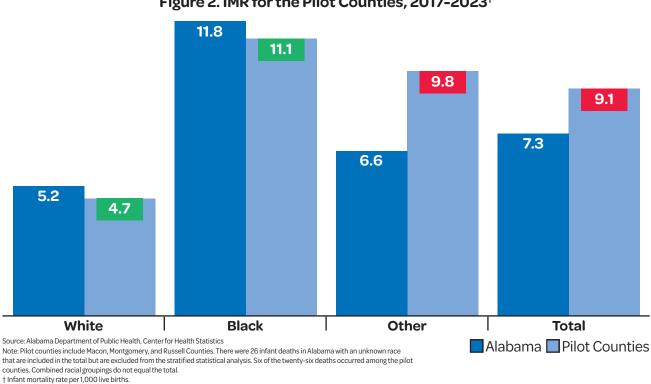


Figure 2. IMR for the Pilot Counties, 2017-2023†

As shown in Figure 6, the annual IMR for black and other infants has steadily increased over time.

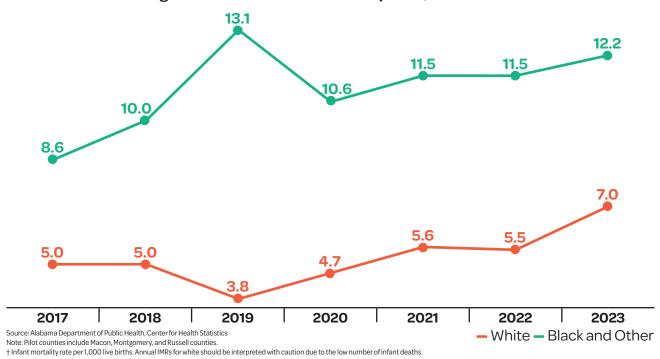


Figure 6. IMRs in Pilot Counties by Race, 2017-2023†



THE SEVEN FUNDED STRATEGIES OF THE SAIMRP

During the 5-year agreement, seven strategies were identified to address infant mortality within the pilot counties.

EVIDENCE-BASED HOME VISITING PROGRAM

The Home Visiting Program, led by the ADECE, selected two subcontractors using two different models of home visiting: Gift of Life, using Nurse Family Partnership (NFP) in all three pilot counties, and East Alabama Mental Health, using Parents as Teachers (PAT) only in Russell County. NFP has baccalaureate-prepared registered nurse home visitors who follow first-time expectant families through the baby's second birthday. PAT has parent educators who follow expectant families until the child enters kindergarten. Both models support parents as they navigate pregnancy and parent-child interactions. In total, there were 759 families who participated in the Home Visiting Program. Figure 6 highlights the annual successes and challenges that took place for each year of the SAIMRP.

Figure 6. Timeline of Successes and Barriers to the Home Visiting Program

Year 1 (October 2018-September 2019)

- Staff were hired and went through extensive NFP and PAT training.
- Staff used the medical and family service provider referrals to recruit 50 families to participate.

Year 2 (October 2019-September 2020)

• Due to the challenges with the COVID-19 pandemic, staff started to complete virtual home visits. Following this new approach, 145 virtual home visits were completed.

Year 3 (October 2020-September 2021)

• Despite staffing turnover and the COVID-19 pandemic, 201 families completed home visits.

Year 4 (October 2021-September 2022)

The Home Visiting Program served 203 active families, including 67 women who gave birth.

Year 5 (October 2022-September 2023)

- At the start of Year 5, the East Alabama Mental Health PAT Program withdrew from the Home Visiting Program. The focus shifted to solely providing the NFP model in the three pilot counties.
- The NFP model served 160 families.

The success of this program contributed to the excellent reputation of NFP in Alabama, which resulted in AMA submitting a State Plan Amendment (SPA) to request the authority to reimburse for NFP services in Alabama. Although the logistics of NFP service providers becoming certified as AMA providers and the cost of NFP training for nurse home visitors caused some delay in scaling NFP up statewide, the SPA went into effect January 1, 2022.

Home Visiting Program Success Story - NFP Russell County

"My doctor referred me to Nurse Tina, and from that first visit, I felt more at ease knowing that I had someone who could help me. She was concerned about me and made sure I did the things I needed to do to have a healthy pregnancy and that I was prepared to take care of my baby. I've learned so much about reducing sudden infant death syndrome, practicing safe sleep, and why it's important that I place my baby on his back to sleep without loose bedding. I also learned how to track developmental milestones and how to create goals and work toward them for my future. As a teen mom, I've faced challenges that many my age haven't had to go through, but NFP has helped me build my confidence in myself and as a parent," said NFP participant. The NFP participant also shared, "despite the late nights, early mornings, balancing school, work, and motherhood, I have proven to myself that hard work and determination can get me through anything. I'm a hard-working mother who provides for my son and will do anything for my baby. I feel good about my future, and a lot of that is because of the things I've learned through my time in NFP with Nurse Tina."

PRECONCEPTION/INTERCONCEPTION/POSTCONCEPTION CARE (THE WELL WOMAN [WW] PROGRAM)

The WW Program works with women ages 15-55 to improve their overall health before and after pregnancy by providing reproductive health planning, risk factor screenings for cardiovascular disease (CVD), and nutritional counseling. All participants received a New Leaf book, which is an evidence-based curriculum that instructs participants on how to prepare healthy meals, make informed food choices, and include physical activity in their daily lives. Within the 5-year time frame, 804 participated in the WW Program. Of these, **48 percent (n=165/346)** improved their blood pressure (BP), and **46 percent (n=159/346)** decreased their body mass index (BMI). Through health screenings, case management, and pre/inter/postconception education, the program aimed to address chronic health conditions prior to a woman becoming pregnant to improve birth outcomes and infant and maternal mortality.

In addition to the three pilot counties during the SAIMRP, the WW Program was available in Barbour, Butler, Dallas, Henry, Macon, Marengo, and Wilcox Counties. Due to its great success, the WW Program was expanded to Bullock, Lowndes, and Covington Counties in October 2024, providing the same preventative health care and education to the women in these counties to promote healthy lifestyle education and give women the resources needed to sustain a better quality of life.

The program goals for existing WW counties were to increase each participant's understanding of their risk factors for developing CVD and/or other chronic diseases such as diabetes, hyperlipidemia, and hypertension; provide education to implement healthy lifestyle changes to prevent disease and promote overall health; understand preconception/interconception/postconception health care needs; and increase the percentage of women receiving both Family Planning (FP) and WW services.

Though the program saw many successes throughout the 5-year initiative, such as increased returns for annual re-enrollment into the program, decreased BP, and decreased BMI, there were also challenges that were noted over the 5-year period. These challenges included navigating patient care through the pandemic, consistency in providing physical activity resources, and staffing in the Central Office and county health departments. Central Office Program staff worked through these challenges to create continuity and sustainability by routinely meeting with staff in the county health departments, implementing a social work protocol, updating clinic protocol, and providing education and resources to participants for physical activity.

WW PROGRAM SUCCESS STORIES

"The Well Woman Program has taught me about being healthy. The knowledge gained has positively impacted my lifestyle. I'm proud to say I'm 10 pounds lighter since joining the program." - WW participant

"Some patients were eating no fruits, fish, or vegetables when they started the program. They learned from the nutrition classes that these foods are needed in their diet and have since added these foods to their overall diet. Fried chicken and red meats were major foods for a lot of patients. Since starting the program, they have cut out red meats and have started purchasing skinless chicken to bake. Some reported that they did not drink water, only sweet tea and sodas. They are now drinking 4-5 bottles of water and no sugary drinks. They have also reported that they've stopped using large amounts of salt and are now using Dash to season food. There have been lots of changes in eating habits, weight loss, lower blood pressure, pre-diabetes has gone away and reports of feeling better." - WW Social Worker

"I am so grateful for this program and the resources. I enjoy the nutritional classes." - WW participant

"I love the Well Woman Program. Words cannot express how much this program has and is helping me. I also love the togetherness, teamwork, support, and motivation I have in the group." - WW participant

Figure 7. Timeline of Successes and Challenges for the WW Program

Year 1 (October 2018-September 2019)

- Year 1 = Implementation Phase.
- WW was implemented and promoted within the counties, and participants were enrolled in Montgomery, Macon, and Russell Counties.

Year 2 (October 2019-September 2020)

- Year 2 = Continued implementation phase.
- WW was promoted within the counties, and participants were enrolled in Montgomery, Macon, and Russell Counties.

Year 3 (October 2020-September 2021)

- A total of 268 women were enrolled in the WW Program in Macon, Montgomery, and Russell Counties.
- Of these, **41.9 percent (n=67/160)** showed a decrease in their BMI.
- Of these, **39.5 percent (n=62/157)** showed a decrease in both systolic and diastloic BP readings.

Year 4 (October 2021-September 2022)

- A total of 297 women were enrolled in the WW Program in Macon, Montgomery, and Russell Counties.
- Of these, **48.5 percent (n=32/66)** showed a decrease in their BMI.
- Of these, **36 percent (n=31/66)** showed a decrease in both systolic and diastolic BP readings.

- A total of 239 women were enrolled in the WW Program in Macon, Montgomery, and Russell Counties.
- Of these, **50 percent (n=60/120)** showed a decrease in their BMI.
- Of these, 61 percent (n=72/120) showed a decrease in both systolic and diastolic BP readings.

SAFE SLEEP

The Safe Sleep Strategy, led by ADHR, used various methods to spread the message of the ABCs of safe sleep within the three pilot counties.

What are the ABCs?

A for Alone—nothing in the crib but baby—no blankets, pillows, family members, or stuffed animals.

B for Back—on their back on a firm, flat surface.

C for Crib—in a crib, portable crib/play yard, or bassinet

As shown in Figure 10, the digital media campaign was the primary focus of the safe sleep strategy.

Figure 10. Timeline of Successes and Challenges for the Safe Sleep Initiative

Year 1 (October 2018-September 2019)

- A total of 140,000 postcards providing education about safe sleep were mailed to residents within the pilot counties.
- To increase awareness of the ABCs of safe sleep, five billboards were set up in Montgomery and Macon Counties, and two bus wraps were set up in Montgomery County.
- A total of 865 baby boxes were available at the ADHR offices for the pilot counties.

Year 2 (October 2019-September 2020)

- With the transition to various social media platforms, safe sleep ads were shown on 52 indoor digital screens within Montgomery County.
- Safe sleep education was also included in newspaper articles to reach older residents.

Year 3 (October 2020-September 2021)

- The digital media campaign continued, resulting in an estimated 845,000 views.
- Bus wraps were used to share safe sleep education within Montgomery County.

Year 4 (October 2021-September 2022)

- A new website (www.SafeSleepAlabama.com) was created to highlight safe sleep practices. The campaign has now reached over 1.8 million views.
- ADPH hosted a satellite training titled, "Talking with Parents and Caregivers about Safe Sleep" to cover new guidance to avoid inclined sleep surfaces.
- The Alabama Cribs for Kids Program improved its distribution tracking, increased the number of referrals processed, and decreased the distribution of baby boxes.

- Various streaming platforms promoted safe sleep practices. Through these platforms, the ads were viewed a total of 28.6 million times, generating 19,000 clicks for more information.
- Cribs for Kids refined its data collection process and the referral process with updated forms.
- Over 300 Pack 'n Plays were provided to families in need of a safe sleeping space for their infant.

SCREENING, BRIEF INTERVENTION, REFERRAL, AND TREATMENT (SBIRT)

This evidence-based strategy, led by the ADMH, promoted the screening of women before, during, and after pregnancy for substance use, depression, and intimate partner violence. This type of routine screening has been repeatedly recommended by the Alabama Maternal Mortality Review Committee (MMRC) because of the substance use and mental health related deaths of mothers that they have reviewed. The VitAL Team at the University of Alabama School of Social Work was hired by ADMH as subcontractors.

Figure 11. Timeline of Successes and Challenges for the SBIRT Initiative

Year 1 (October 2018-September 2019)

- The SBIRT Committee began meeting to complete background work and planning.
- The SBIRT Committee reviewed best practices in providing services for pregnant mothers and mothers after delivery.
- In-person SBIRT training was provided to ADPH and ALL Babies Care Coordinators.

Year 2 (October 2019-September 2020)

- VitAL developed an online training module. The goal was to share it with maternity, Family Planning, and ALL Babies Care Coordinators.
- Due to the COVID-19 pandemic, sharing the module with private providers became unrealistic.

Year 3 (October 2020-September 2021)

• Online SBIRT training was provided for the Care Coordinators within the seven regions of the Alabama Coordinated Health Networks (ACHNs). With this partnership, 6,805 pregnant women with AMA coverage were screened using the SBIRT tool.

Year 4 (October 2021-September 2022)

- The SBIRT Initiative provided additional training to the medical providers office staff.
- The SBIRT team expanded its outreach activities and provided educational materials on topics pertaining to substance use disorders, post-partum depression, and intimate partner violence.

- Additional content for SBIRT was created to include a perinatal toolkit. The toolkit offered
 providers and individuals within the community information on harm reduction strategies among
 those utilizing the SBIRT tool.
- The self-paced online training modules titled, "Substance Use Disorders in the Maternal Population: Implementation of the SBIRT Model" for providers was developed and submitted for approval.

PERINATAL REGIONALIZATION

Perinatal regionalization (PR) creates a system for referrals to ensure that high-risk pregnancies and low-birth weight, preterm, or otherwise at-risk newborns receive consultations and access to risk-appropriate care. This strategy was developed so that women deliver infants at hospitals with adequate resources to meet the medical needs of the mother and infant. Receiving risk-appropriate care can reduce both maternal and infant mortality.

Figure 12. Timeline of Successes and Challenges for the Perinatal Regionalization Initiative

Year 1 (October 2018-September 2019)

- A workgroup began collaborating with the Alabama Hospital Association (AlaHA) and the State Health Planning and Development Agency (SHPDA).
- Delivering hospitals self-declared their level of neonatal care.

Year 2 (October 2019-September 2020)

- Epidemiologists and Research Analysts reviewed pertinent data to create an evidence based PR model.
- Training on PR was provided to hospital staff, hospital administrators, and Emergency Medical Services personnel.

Year 3 (October 2020-September 2021)

- A Nurse Coordinator was hired to assess previous activities with PR.
- Self-declared levels of neonatal care were published in the SHPDA annual hospital survey.

Year 4 (October 2021-September 2022)

- A new workgroup was formed with AlaHA and SHPDA.
- Over half of the delivering facilities participated in the self-assessment of both their neonatal and maternal levels of care.

- An online directory of delivering hospitals for transfer and consult communication related to neonatal and maternal care was developed.
- A webinar on PR was held with attendance from all 47 delivering hospitals.

BREASTFEEDING

Scientific evidence documents the benefits for the mother, baby, and the environment if breastfeeding is initiated and continued through at least the first 6 months of life. Breastfeeding is a key strategy geared towards improving the physical and emotional well-being of mothers and their infants.

Figure 13. Timeline of Successes and Challenges for the Breastfeeding Initiative

Year 1 (October 2018-September 2019)

- A multidisciplinary workgroup was established and included partners from 18 different agencies.
- The workgroup collaborated with the Alabama Cooperative Extension Office and the Alabama Partnership for Children to implement a breastfeeding friendly childcare certification program to recognize childcare providers who offer welcoming environments for breastfeeding mothers.
- Five childcare centers were certified in Montgomery and Lee Counties.

Year 2 (October 2019-September 2020)

- A media campaign launched statewide and provided online and printable material geared towards parents, caregivers, and communities.
- ADPH established the framework for a new breastfeeding-friendly provider program.

Year 3 (October 2020-September 2021)

- Initiatives to promote breastfeeding were developed.
- Ongoing work continued with the development of the breastfeeding-friendly provider program.

Year 4 (October 2021-September 2022)

- After losing key members of the previous workgroup, a new workgroup was restarted. The
 workgroup established a new goal of improving communication to link breastfeeding families to
 existing community resources.
- A postcard and bookmark listing breastfeeding resources was created and distributed in Women, Infants, and Children (WIC) clinics and medical provider offices in the pilot counties.

- A postcard was created and distributed to delivering facilities in the pilot counties with instructions for newly delivered mothers on how to enroll themselves and their babies in the WIC Program.
- "Breastfeeding Welcome Here" decals were distributed to county WIC clinics throughout the state.

INCREASED UTILIZATION OF ALPHA HYDROXYPROGESTERONE CAPROATE (17P) TO REDUCE PREMATURITY RATES

To address the high premature delivery rate in Alabama, an initiative to increase the use of 17P was established as part of the SAIMRP. The use of 17P in women with previous spontaneous singleton preterm births has proven to reduce the incidence of subsequent preterm births. Unfortunately, 17P was removed from the market by the U.S. Food and Drug Administration (FDA), and a new strategy to address the high prematurity rate in Alabama was developed. Group Prenatal Care was selected as the new initiative to help decrease the high prematurity rate.

Figure 14. Timeline of Successes and Challenges for the Utilization of 17P

Year 1 (October 2018-September 2019)

- Strategies were identified for the baseline utilization of 17P.
- Education was provided to providers and potential patients.

Year 2 (October 2019-September 2020)

• A workgroup was developed, and a 17P survey was distributed to providers. The survey assessed beliefs, practices, and challenges pertaining to 17P.

Year 3 (October 2020-September 2021)

- The FDA removed 17P from the market in October 2020.
- New strategies were explored to address prematurity.

Year 4 (October 2021-September 2022)

- Group Prenatal Care was selected as the new strategy to address prematurity.
- A strong team of cross-sector stakeholders was gathered to form a new workgroup for this strategy. Due to the lack of maternity care providers, Macon County was chosen as the pilot location for the strategy.
- ADPH planned to partner with a maternity care physician group that would travel to the Macon County Health Department to provide prenatal care in a group setting.

Year 5 (October 2022-September 2023)

 Requests for applications were released in December 2022 to encourage providers to apply for the project. Although there was provider interest in participating in Group Prenatal Care, ADPH was unable to enter into a contract for this service.

MOVING FORWARD - BEYOND THE SAIMRP

There were many valuable lessons learned from the 5-year SAIMRP. Of the seven initial strategies, increasing the use of 17P to reduce prematurity rates was the only strategy that could not be fully executed. However, the remaining six initial strategies were executed throughout the 5-year period. The strategies will continue to improve the health and well-being of mothers and infants across the state, even beyond the SAIMRP.

Evidence-Based Home Visitation

Due in part to the success of the NFP Program during the SAIMRP, AMA approved the reimbursement for several NFP Program services statewide in 2024.

WW Program

The WW Program has expanded from 9 counties to 12 to focus on pre/inter/postconception health for women in rural areas.

Safe Sleep Program

ADPH continued the Safe Sleep Program in partnership with the Cribs for Kids® National Program. Data has shown a decrease in sleep-related infant deaths following a significant increase in the distribution of Pack 'n Plays statewide.

SBIRT

ADPH renewed the contract with ADMH to continue the utilization of SBIRT in screening for maternal mental health and substance abuse by ADPH Care Coordinators and provider offices. Data from the most recently published Alabama Maternal Mortality Review Program Report (FY 2018-2019) showed that there were 10 maternal overdose deaths during this fiscal year, which accounted for 14.5 percent of the pregnancy-associated deaths. Overdoses were the third leading cause of pregnancy-associated deaths. Increased screenings of substance abuse with the SBIRT tool may help decrease the rate of overdoses in maternal deaths.

Perinatal Regionalization

Ongoing collaboration between ADPH and AlaHA continue to establish maternal levels of care at all delivering facilities across the state and provide the results to the public.

Breastfeeding Initiative

ADPH will continue to partner with the Wellness Coalition and the Alabama Breastfeeding Committee to provide support and education to the public about the benefits and importance of breastfeeding.

Increased Access to Prenatal Care

Extensive work is ongoing to develop a pilot program that will provide access to prenatal care in rural areas through various delivery methods in local county health departments. By providing prenatal care to individuals in areas with high infant mortality rates, ADPH hopes to see a decline in infant mortality and premature delivery rates over time.



