# Alabama Perinatal Health Act
# Annual Progress Report for FY 2016
# Plan for FY 2017

*"It is more likely for a child to die in the first year after birth than in all the rest of childhood"*

# ALABAMA PERINATAL HEALTH ACT

## Annual Progress Report for Fiscal Year (FY) 2016
## Plan for FY 2017

**State and Regional Perinatal Advisory Committee**
**Bureau of Family Health Services, Alabama Department of Public Health**

February 2, 2017

STATE OF ALABAMA DEPARTMENT OF

# PUBLIC HEALTH

Thomas M. Miller, M.D.
State Health Officer

February 2, 2017

Dear Senators and Representatives:

It is my pleasure to present the Alabama Perinatal Progress Report, which describes the Fiscal Year 2016 activities and accomplishments of the State Perinatal Program.

Alabama's infant mortality rate decreased from 8.7 to 8.3 infant deaths per 1,000 live births in 2015. There were 59,651 live births in Alabama and the infant mortality rate represented 494 infant deaths.

The leading causes of infant mortality in Alabama are congenital anomalies, disorders related to low birthweight (LBW) and short gestation, Sudden Infant Death Syndrome (SIDS), Sudden Unexplained Infant Death (SUID), and other sleep related infant deaths. These deaths accounted for 34.0 percent of all infant deaths in 2015.

When addressing infant mortality, it is important that we look at the number of preterm and LBW births and subsequently, the morbidities that have long-term consequences for families and society. A particular concern is the widening gap in disparities. Although the overall infant mortality rate in Alabama declined in 2015, the disparity between black infant mortality was nearly three times higher at 15.3 than the infant mortality rate for white infants at 5.2. We also need to promote safe sleep environments for infants in Alabama. In 2015, 108 infants died from SUID and accounted for 22.1 percent of the infant mortality rate.

Leading perinatal providers in our state met throughout 2016 to guide the State Perinatal Program. As a result, strategies have been developed to address the factors associated with adverse outcomes of pregnancy. These strategies and the problems they address are described in detail in this report. The report is available at www.adph.org/perinatal for your viewing.

Due to your continued support, the State Perinatal Program will enable Alabama families to look toward the future with hope and enthusiasm.

Sincerely,

Thomas M. Miller, M.D.
State Health Officer

TMM/ARS/MCW

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**ACRONYMS**

| Acronym | Explanation |
|---|---|
| AAP | American Academy of Pediatrics |
| ABC | Alabama Breastfeeding Committee |
| ADPH | Alabama Department of Public Health |
| APEC | Alabama Perinatal Excellence Collaborative |
| ASTHO | Association of State and Territorial Health Officials |
| CAT | Community Action Team |
| CDC | Centers for Disease Control and Prevention |
| CoIIN | Collaborative Improvement and Innovation Network |
| CRT | Case Review Team |
| FHS | Family Health Services |
| FIMR | Fetal and Infant Mortality Review |
| FY | Fiscal Year |
| HCCA | Healthy Child Care Alabama |
| HBWW | Healthy Babies are Worth the Wait |
| IM | Infant mortality |
| IMR | Infant mortality rate |
| LBW | Low birthweight |
| MCH | Maternal and Child Health |
| MCH Epi | Maternal and Child Health Epidemiology Branch |
| MOD | March of Dimes |
| NAS | Neonatal abstinence syndrome |
| NICU | Neonatal intensive care unit |
| NPM | National Performance Measures |
| NSP | Newborn Screening Program |
| PRAMS | Pregnancy Risk Assessment Monitoring System |
| SPAC | State Perinatal Advisory Committee |
| SPP | State Perinatal Program |
| SUID | Sudden unexplained infant death |
| UAB | University of Alabama at Birmingham |
| U.S. | United States |
| USA | University of South Alabama |
| VLBW | Very low birthweight |
| WIC | Special Supplemental Nutrition Program for Women, Infants, and Children |

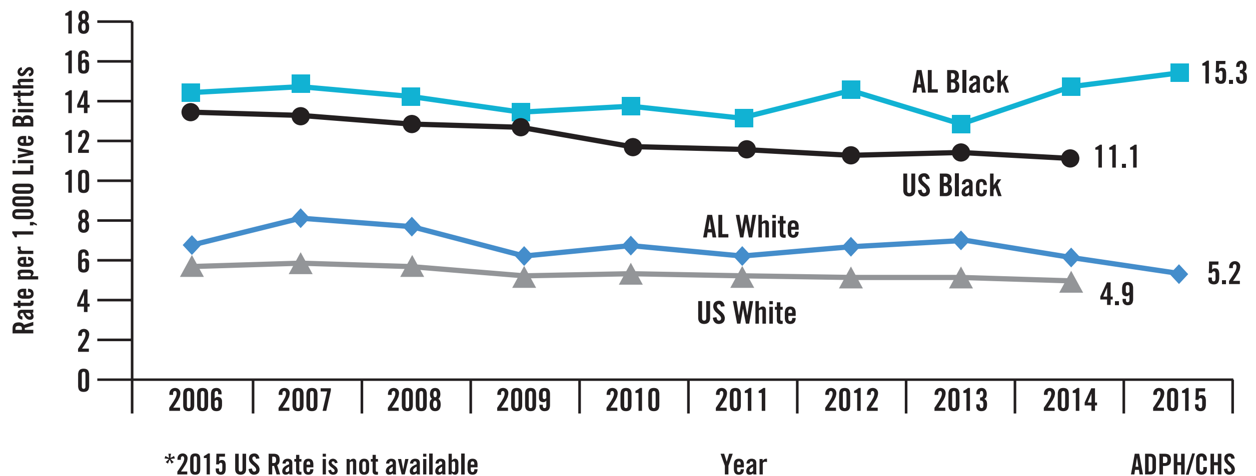
## INTRODUCTION

Infant mortality (IM), a proxy measure for population health, is a cause of great concern for the state, the nation, and the world. These deaths occur among infants less than one year old. Its impact on families and society is profound. The 2015 rate of 8.3 infant deaths per 1,000 live births in Alabama remains higher than the United States (U.S.) rate of 5.8 infant deaths per 1,000 live births in 2014 and the Healthy People 2020 target of 6.0 infant deaths per 1,000 live births. Infant mortality rates by county can be viewed in Appendix B.

The leading causes of IM in Alabama are congenital anomalies, disorders related to low birthweight (LBW) and short gestation, Sudden Infant Death Syndrome (SIDS), Sudden Unexplained Infant Death (SUID), and other sleep related infant deaths. These deaths accounted for 34.0 percent of all infant deaths in 2015[1] .

Although the overall infant mortality rate (IMR) in Alabama declined in 2015, the disparity between black IM increased to nearly three times the rate of white IM (black: 15.3 infant deaths per 1,000 live births in 2015; white: 5.2 infant deaths per 1,000 live births in 2015, see Chart 1).

***Chart 1. Infant Mortality Rates Alabama, and United States, by rates, 2006 - 2015****




Preterm births occur when a baby is born too early, before 37 weeks of pregnancy. Disorders related to preterm births and LBW births are the leading causes of death for infants born to black women. It is important that efforts to reduce IM in Alabama aim to achieve health equity across generational life spans by directly addressing risk factors and providing evidence-based guidelines.

The mission of the State Perinatal Program (SPP) is to identify and recommend strategies that will effectively decrease infant morbidity and mortality. The state's regional perinatal health system is composed of five perinatal regions. Availability of neonatal intensive care units (NICU) directs the system of regionalized care in Alabama. A nurse supervisor is housed in each of the five perinatal centers to focus on perinatal activities for that region.

In 2014, the Bureau of Family Health Services (FHS) established the Perinatal Health Division, which consists of the Maternal and Child Health-Epidemiology Branch (MCH Epi), the Newborn Screening Program (NSP), and the SPP. The SPP has long standing positive relationships with major maternal and child health stakeholders and community agencies actively participating in efforts to address Alabama's historically high IMR.

Alabama has been a participant in the Collaborative Improvement and Innovation Network (CoIIN) to Reduce Infant Mortality since its inception. Other practices and programs that are being utilized in the fight against morbidity and mortality include collaboration with partners throughout the state. The SPP continues to seek grant opportunities to improve IM; one such grant in 2016 included the awarding of funds to establish the Alabama Zika Pregnancy Registry.

As the SPP closes out 2016 and looks toward 2017, efforts to reduce IM in Alabama will include working with the March of Dimes (MOD) to implement Healthy Babies are Worth the Wait (HBWW), improving access to systems of care, promoting use of evidence-based patient practices, promoting health across the lifespan, using data to inform practice and drive decision-making, and improving health inequities and disparities.

[1] (Alabama Center for Health Statistics, 2016)

## HISTORY OF ALABAMA'S PERINATAL SYSTEM

Neonatal intensive care and regionalization of perinatal care were developed in the late 1970s. In an effort to confront the state's high IMR, a group of physicians, healthcare providers, and interested citizens came together and became the impetus behind the passage of the Alabama Perinatal Health Act in 1980, see Appendix A. This statute established the SPP and the mechanism for its operation under the direction of the State Board of Health. The program's functioning body is the State Perinatal Advisory Committee (SPAC) which represents Regional Perinatal Advisory Committees (RPACs). The RPACs make recommendations to the SPAC regarding perinatal concerns and strategies to improve the health of women and infants.

The SPP is based on a concept of regionalization of care, a systems approach in which program components in a geographic area are defined and coordinated to ensure that pregnant women and infants have access to appropriate care. The availability of neonatal intensive care served as the framework for the organization of regionalized care.

Initially, Alabama had neonatal intensive care capacity in Birmingham and Mobile. Additional capacity subsequently developed in Huntsville, Tuscaloosa, and Montgomery. The state adopted a perinatal plan based on six regions which corresponded to the Health System Agency designations at the time of passage of the Alabama Perinatal Health Act. These regions were also the basis for the Alabama Department of Public Health (ADPH) Areas. In 1988, the ADPH changed to eight Public Health Areas and the SPP followed. In 1995, ADPH reorganized to eleven areas and will continue with this structure until September 2017.

In 1996, the SPP reorganized into five regions, see Appendix B. The reorganization was based on the designated NICUs located within each of these regions. The five designated NICUs are: Region I - Huntsville Hospital in Madison County, Region II - DCH Regional Medical Center in Tuscaloosa County, Region III - University of Alabama at Birmingham (UAB) in Jefferson County, Region IV - University of South Alabama (USA) in Mobile County, and Region V - Baptist Medical Center South in Montgomery County.

In 2002, the SPAC designed a plan to enhance perinatal leadership within each of the five regions. The plan redirected outreach education funds for the creation of ADPH nurse positions in each perinatal region. The purpose of these five positions is management of the RPACs and coordination of all regional perinatal activities, including outreach education. The SPAC voted to approve the plan and the regional perinatal nurse positions were filled by August 2002. In Fiscal Year (FY) 2016, these regional perinatal nurses collaborated with perinatal providers and advocates across the state to strengthen each region's system of care for women and infants.

## CURRENT STATISTICS FOR ALABAMA

### Birth Rate

The numbers of live births and birth rates for residents of Alabama from 2006 through 2015 are listed in Table 1.

***Table 1. Resident Births and Birth Rates* By Race of Mother, Alabama, 2006-2015***

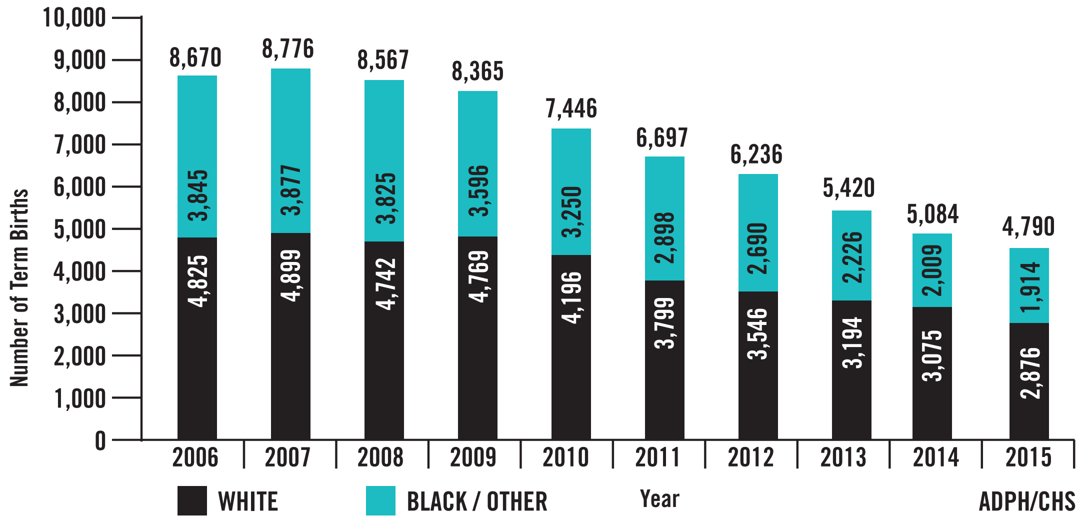
| YEAR | TOTAL | | WHITE | | BLACK AND OTHER | |
|---|---|---|---|---|---|---|
| | NUMBER | RATE* | NUMBER | RATE* | NUMBER | RATE* |
| 2006 | 62,915 | 13.7 | 42,369 | 12.9 | 20,546 | 15.5 |
| 2007 | 64,180 | 13.9 | 42,986 | 13.1 | 21,194 | 15.8 |
| 2008 | 64,345 | 13.8 | 42.897 | 13.0 | 21,448 | 15.9 |
| 2009 | 62,476 | 13.3 | 41.963 | 12.6 | 20,513 | 15.0 |
| 2010 | 59,979 | 12.5 | 40,193 | 12.3 | 19,786 | 13.2 |
| 2011 | 59,322 | 12.4 | 39,770 | 11.8 | 19,552 | 13.6 |
| 2012 | 58,381 | 12.1 | 38.637 | 11.5 | 19,744 | 13.6 |
| 2013 | 58,162 | 12.0 | 38,604 | 11.4 | 19,558 | 13.4 |
| 2014 | 59,532 | 12.3 | 39,488 | 11.7 | 20,044 | 13.6 |
| 2015 | 59,651 | 12.3 | 39,632 | 11.6 | 20,019 | 13.9 |

***Rate is per 1,000 population for specified group.**

## Teenage Pregnancy

Alabama's teenage pregnancy rate is the lowest in recorded history. Rates from 2006 through 2015 are listed in Chart 2.

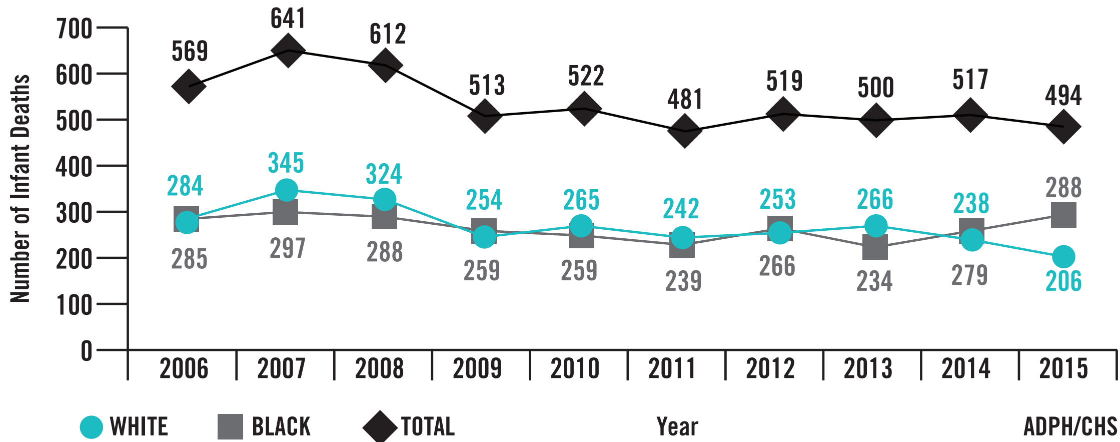
*Chart 2. Number of Teen Births (10 – 19), Alabama, 2006-2015*




## Infant Mortality Rate

Alabama infant deaths for white, black/other, and total from 2006 through 2015 are listed in Chart 3.

*Chart 3. Number of Infant Deaths, Alabama, 2006 – 2015*



## CONTRIBUTING FACTORS TO INFANT MORTALITY

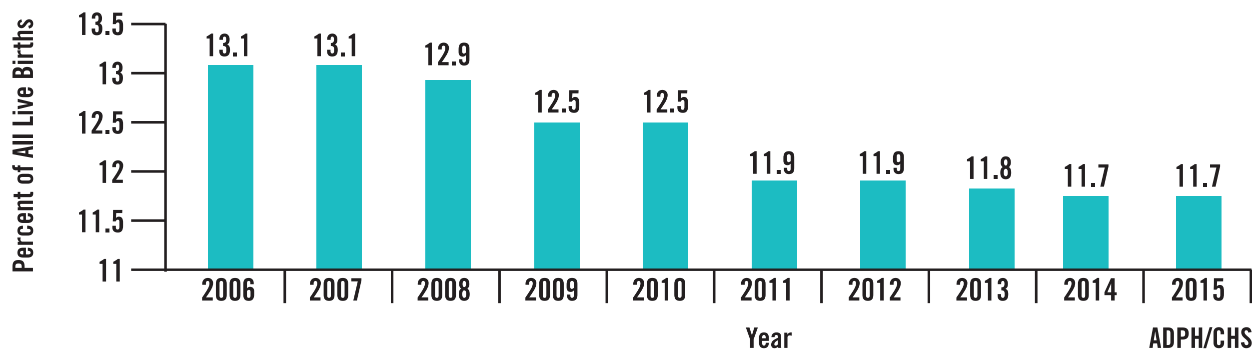
Several factors contributing to Alabama's high rate of infant morbidity and death which require continued attention from healthcare leaders and policymakers include: disorders related to short gestation and LBW, SIDS/SUID/unsafe sleep environments, preconception and interconception health of women, short birth intervals and unintended pregnancies, substance abuse, and lack of access and availability of health insurance coverage for women. Contributing factors, such as lack of access to systems of care, limited evidence-based patient practices, and poor health across the lifespan are identified as the primary areas in which interventions can be made.[2]

Improving access to systems of care can impact the effects of congenital anomalies, LBW, and preterm births on IMRs. Similarly, more evidence-based patient practices and improved health across the lifespan can impact the effects of congenital anomalies, LBW, prematurity, risky lifestyle behaviors, and accidental deaths[3]. Appropriate strategies within these priority areas can impact the factors that cause IM in Alabama.

### Disorders Related to Short Gestation and Low Birthweight

Preterm births occur when a baby is born too early, before 37 weeks of pregnancy. Important growth and development occurs throughout pregnancy, especially in the final months and weeks. From 2007 to 2014, the percentage of preterm births in the U.S. decreased by 8 percent. Preterm births remain one of the biggest infant death contributors in the U.S., with most preterm-related deaths occurring among babies who were born before 32 weeks gestation. In 2015, 11.7 percent of the births in Alabama were preterm, see Chart 4. Babies who survive due to the advancements of modern medicine and technology may spend weeks or months hospitalized in a NICU. These small infants are at high risk for developing major, long-term, physical, and cognitive problems with consequences that impact families and state resources.

***Chart 4. Percent of Births Less Than 37 Weeks Gestation, Alabama, 2006-2015***



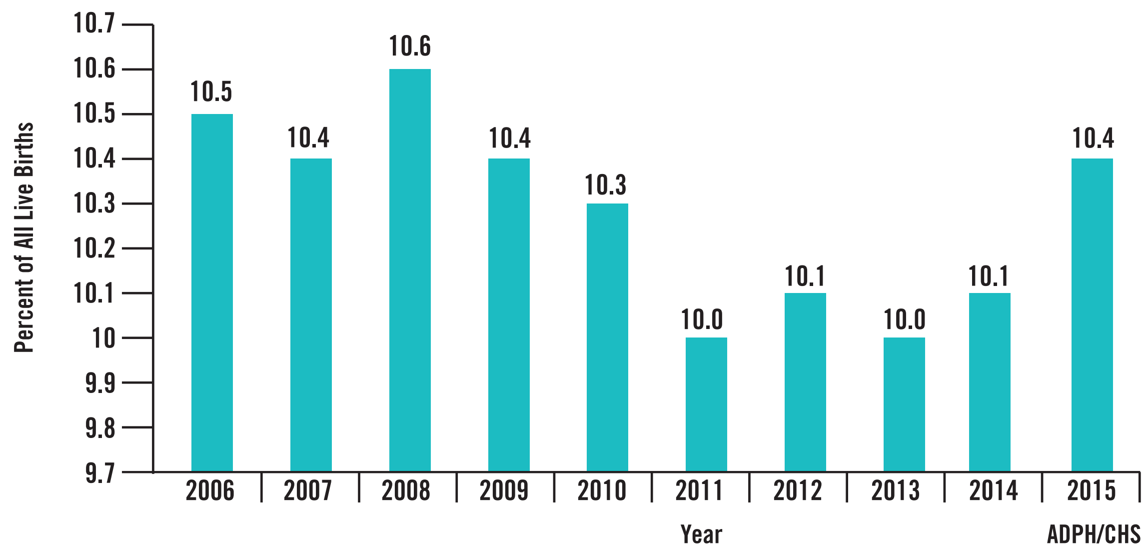

Babies born too soon or too small encounter significant risks of serious morbidity. In 2015, Alabama LBW infants accounted for 10.4 percent of all live births compared to the 2015 U.S. rate of 8.07 percent, see Chart 5 (on page 5). Very low birthweight (VLBW) infants, under 3 pounds, 5 ounces, accounted for 233 of the 494 infant deaths in 2015. These very small babies are medically fragile and usually require weeks of medical treatment for life-threatening conditions and infections. Medical care provided in the NICUs has a positive impact on neonatal mortality (the first 28 days after birth); however, during the post-neonatal period (29 days through one-year of life) many require hospital readmission. IM in the post-neonatal period in 2015 accounted for 39.3 percent (194) of the total infant deaths in Alabama.

The definitive cause(s) of prematurity remains unknown; however, the increasing magnitude of the problem has gained the attention of medical researchers and scientists. Currently, the one measure that can reduce prematurity is the prevention of unintended pregnancies in women who have experienced a previous preterm birth. The probability of preterm birth is 30 percent greater for a woman who has had one previous premature infant and the risk increases to 70 percent for two or more previous preterm births.

[2](Association of Maternal and Child Health Programs, 2012)

[3](Alexander & Kotelchuck, 2001)

*Chart 5. Percent of Low Weight Births (< 2,500 G), Alabama, 2006-2015*




## Sudden Infant Death Syndrome/Sudden Unexplained Infant Death/Unsafe Sleep

Each year in the U.S., there are about 3,500 SUID deaths[4]. In 2015, 108 infants in Alabama died from SUID and accounted for 22.1 percent of the total IMR. A SUID diagnosis includes all sleep related causes of infant death and is made after a complete examination of the death scene, an autopsy, and a review of the infant's medical history. Although the causes of death in many of these infants cannot be explained, most occur while the infant is sleeping in an unsafe sleep environment (co-sleeping with adults or other children, accidental suffocation and/or strangulation). The number of infants who have died from unsafe sleep environments in Alabama has continued to rise since 2011, see Table 2. Infants should always be placed to sleep alone, on their back, and in a safety-approved crib with no bumper pads, pillows, toys, or stuffed animals.

*Table 2. SIDS/SUID/Unsafe Sleep*

| YEAR | NUMBER OF SLEEP RELATED INFANT DEATHS | TOTAL NUMBER OF INFANT DEATHS |
|---|---|---|
| 2011 | 85 | 481 |
| 2012 | 87 | 519 |
| 2013 | 107 | 500 |
| 2014 | 109 | 517 |
| 2015 | 108 | 494 |

## Preconception and Interconception Health

Preconception and interconception health focus on taking steps before and between pregnancies to improve birth outcomes in the future. Poor maternal health prior to pregnancy is a factor that must be taken into account when addressing IM. A mother's poor health before pregnancy can have detrimental effects on her infant. Disparities in birth outcomes can also be addressed through preconception and interconception care[5]. Conducting educational activities for men and women of child bearing age can raise awareness about the need to address chronic health conditions and lifestyle behaviors that will shape the life of an unborn infant.

[4](Centers for Disease Control & Prevention, 2106)

[5](Lu M., 2003)

## Substance Abuse

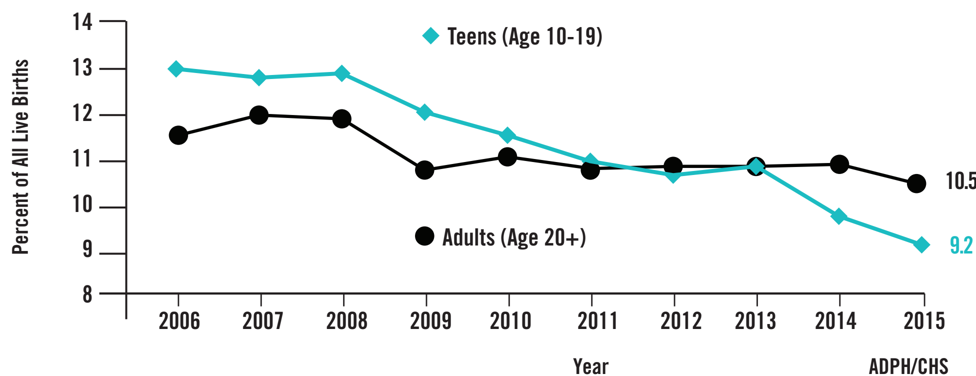
In order to improve the IMR in Alabama, it is essential to understand the impact substance abuse has on women, infants, and families. The most prevalent substances misused in Alabama include tobacco, alcohol, and prescribed and non-prescribed drugs. Conditions associated with substance abuse or misuse during pregnancy may include miscarriage, placental abruption, preterm birth, LBW, SIDS/SUID, and chronic health conditions in mother and baby.

Smoking during pregnancy is a modifiable risk factor for poor birth outcomes. Research documents that smoking before and during pregnancy is associated with a higher frequency of miscarriages, preterm births, and LBW babies, and may be associated with an increased risk of behavioral and learning disabilities[6]. According to the Centers for Disease Control and Prevention (CDC), secondhand smoke causes numerous health problems in infants and children, including more frequent and severe asthma attacks, respiratory infections, ear infections, and SIDS. Smoking during pregnancy results in more than 1,000 infant deaths annually in the U.S. In 2015, 10.4 percent of all live births were to mothers who smoked during pregnancy. Statistics indicate babies of mothers who smoke during pregnancy are three times more likely to die from SUID than infants of nonsmoking mothers.

In Alabama, smoking tends to decrease during pregnancy in the majority of women, only to increase again after the birth of the infants. Mothers who smoked before pregnancy declined significantly; while, mothers who admitted to smoking during pregnancy rose by more than three points from 11.7 to 14.9 percent in 2012[7].

Maternal teen smoking rates have declined. There is no available data to show the incidence of smokeless or E-cigarette usage or both. The percentage of births to teenage women who admitted to smoking decreased to 9.2 percent in 2015, compared to 9.7 percent in 2014. During 2015, tobacco use among women, aged 20 or more, was 10.5 percent, see Chart 6.

***Chart 6. Maternal Smoking by Age of Mother, Alabama, 2006-2015***




***Smoking question changed from "yes" or "no" during pregnancy to an indication for each trimester in 2014. For comparison, smoking in any trimester equaled smoking during pregnancy.***

Alcohol use during pregnancy can cause serious birth defects. Alcohol consumption during pregnancy is the leading cause of mental retardation and developmental delays. According to Alabama Pregnancy Risk Assessment Monitoring System (PRAMS) data from 2012 to 2013, there was an increase of 10.9 percent in alcohol consumption before becoming pregnant and an increase of 22.6 percent in alcohol use during the last three months of pregnancy. Although most mothers may realize that drinking during pregnancy can have detrimental effects on their babies, and that they should curtail their consumption of alcohol, 6.9 percent of adult mothers continue to use alcohol while pregnant.

The number of delivering mothers using or dependent on opiates rose nearly five-fold from 2000 to 2012, when an estimated 21,732 infants were born with Neonatal Abstinence Syndrome (NAS) in the U.S.[8] Drug use during pregnancy can cause long-term health problems for the mother and child. Pregnant women who use cocaine are at risk of preterm labor and their infants are at an increased risk for compromised neurological development[9]. The effects of these substances on the fetus are creating serious challenges for perinatal providers and communities across the state. Opioids, methamphetamines, and methadone are the emerging drugs of choice for many women in Alabama. Cases of NAS, which is a group of problems that can occur in newborns exposed to prescription painkillers and other drugs while in the womb, affected one baby born every 25 minutes in 2012. Intravenous drug users and their offspring are at particular risk for contracting Hepatitis B and Human Immunodeficiency Virus, the virus which causes Acquired Immunodeficiency Syndrome.

[6](Centers for Disease Control and Prevention, 2016)

[7](Pregnancy Risk Assessment Monitoring System (PRAMS), 2013)

[8](Al., 2012)

[9](Thompson, 2009)

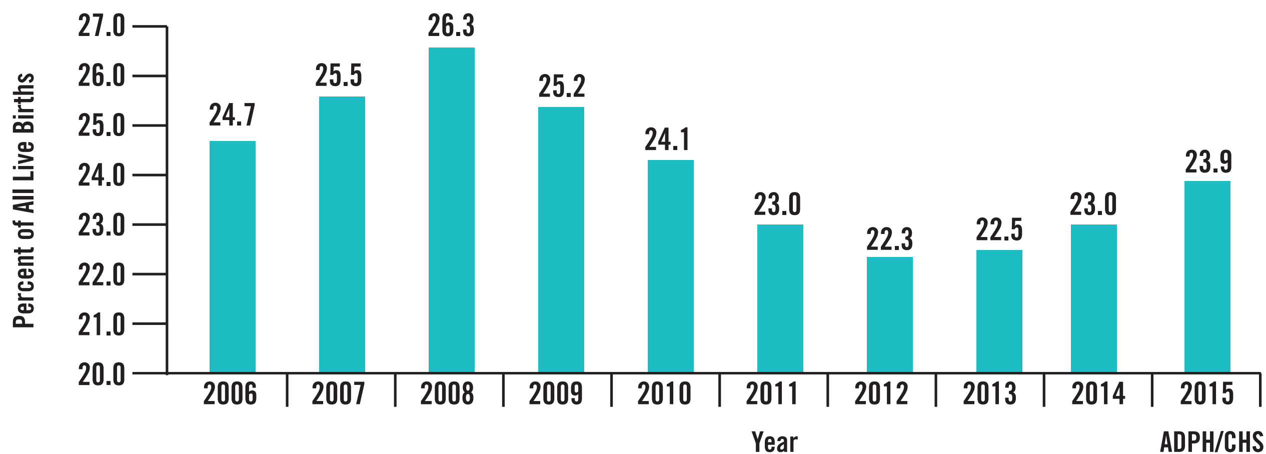
According to the National Institute on Drug Abuse, newborns with a diagnosis of NAS stayed in the hospital for an average of 16.9 days (compared to 2.1 days for other newborns), costing hospitals an estimated $1.5 billion with approximately 81 percent of the charges being paid for by state Medicaid programs.

## Short Birth Intervals and Unintended Pregnancy

Birth spacing refers to the time from one child's birth until the next pregnancy. Pregnancies less than two years apart are associated with delayed prenatal care and adverse birth outcomes. Among women with a previous live birth, approximately 30 percent had a birth spacing of less than two years[10]. These mothers and infants were placed at a greater risk for adverse health outcomes.

In 2015, 23.9 percent of all live births in Alabama were to women with a birth interval of less than two years, see Chart 7. Patient counseling and education prior to pregnancy are important for favorable maternal and child health. Access to the most effective methods of contraception is another way to promote adequate birth spacing and reduce the risks of adverse birth outcomes.

*Chart 7. Percent of Births With a Birth Interval Less Than 2 Years, Alabama, 2006-2015*




The link between unintended pregnancy and poor birth outcomes is not clear, but requires addressing socioeconomic inequities, preconception health planning, access to adequate prenatal care, and unhealthy lifestyle behaviors. The latest 2013 PRAMS data showed that 53.5 percent of women reported their pregnancy as unintended; 30.0 percent of births in Alabama occurred to women who wanted a later pregnancy, and 6.9 percent of women did not want to be pregnant then or at any time in the future.

Unplanned pregnancies have serious consequences. Women who have an unintended pregnancy are at risk for inadequate or delayed initiation of prenatal care, smoking and substance abuse during pregnancy, premature delivery, and are less likely to breastfeed.

## Access and Availability of Health Insurance

Low income families are most likely to be uninsured. Access to adequate, early, and consistent prenatal care may be determined by the availability of health insurance coverage for the pregnant mother. In 2015, 85.1 percent of pregnant women with private insurance received adequate prenatal care, compared to 67.6 percent of pregnant women who were insured by Medicaid, and 58.8 percent of pregnant women who were self pay[11].

[10](Mosher, Jones, & Abma, 2012

[11](Alabama Center for Health Statistics, 2016)

## STATE PERINATAL PROGRAM ACTIVITIES

### Fetal and Infant Mortality Review (FIMR) Program

The FIMR program was implemented in 2009, as a statewide initiative to address the state's high IMR. The program's purpose is to identify critical community strengths and weaknesses as well as unique health and social issues associated with poor outcomes of pregnancy. The FIMR program is based on the national model developed by the American Congress of Obstetricians and Gynecologists in collaboration with the federal Maternal and Child Health (MCH) Bureau.

The SPP director reviewed all fetal death records, birth, and death certificates of infant deaths that occurred in 2016. Since two-thirds of the infant deaths in Alabama can be attributed to prematurity, that became the primary focus for FIMR data abstraction in 2016. The perinatal staff abstracted data on approximately 200 fetal and infant deaths and conducted voluntary maternal interviews. The de-identified case summaries were presented to the Case Review Teams (CRTs) by the perinatal staff. The RPACs assumed the role of the CRTs. The RPACs met, at a minimum, quarterly. A Region II Perinatal Coordinator was hired in March 2016, and a Region IV Perinatal Coordinator was hired in November 2016. A grant, established in October 2014, allows the Mobile County Health Department to continue the well-established Mobile FIMR Program.

The CRTs in each of the perinatal regions provided recommendations to the Community Action Teams (CATs), which then developed plans of action and implementation strategies to address the identified, contributing factors at the community level. At least one CAT is in each perinatal region, with the state currently having nine counties with active CATs. Actions implemented in 2016, were based on 2015 recommendations.

### Collaborative Improvement and Innovation Network to Reduce Infant Mortality

CoIIN in Alabama was born out of a January 2012 IM Summit for Public Health Regions IV and VI to support learning, innovation, and quality improvement efforts to reduce IM and improve birth outcomes. Alabama, in collaboration with national partners, created a state team for each of the original five strategic action teams and appointed a CoIIN Director to coordinate all state CoIIN efforts.

In February 2015, CoIIN was re-launched to include all Public Health Regions and required that states select two or three initiatives to address. Alabama selected: perinatal regionalization and improving unsafe sleep environments. Collaboratives in Alabama continue to work to reduce the number of non-medically indicated early elective deliveries and improve interconception care for women who have had a previous adverse pregnancy outcome.

#### *Perinatal Regionalization*

The goal of perinatal regionalization is to increase the percentage of VLBW births that occur in Level III or higher facilities in Alabama to 90 percent. Currently, Alabama is at 85 percent.

2016 Activities

- Shared with stakeholders the Levels of Neonatal Care: Committee on Fetus and Newborn policy.
- Developed, with the facilitation of Dr. Wally Carlo, University of Alabama at Birmingham neonatologist and co-author of the policy, the Neonatal Levels of Care for Perinatal Regionalization in Alabama: Definitions, Capabilities, and Provider Types map.
- Recommended endorsement of, as best-practice, the Neonatal Levels of Care for Perinatal Regionalization in Alabama.

*Safe Sleep*

The goal is to increase infant safe sleep practices by five percent among all racial and ethnic groups. Alabama's infant sleep related deaths have increased each year since 2011.

2016 Activities

- Collaborated with the Association of Maternal and Child Health Programs Birth Outcomes Collaborative to conduct a Safe Sleep Campaign that included:
  - Targeted public awareness education by zip codes.
  - Placement of "ABC" floor stickers.
  - Direct On Scene Education Program training for first responders.
  - Public Transit safe sleep messaging.
  - Public service announcements.

- Collaborated with the National Institute of Child Health and Human Development Eunice Kennedy Shriver Safe to Sleep Campaign®-Alabama Safe Sleep Outreach mini-grant projects that included:
  - Twenty-seven grantees awarded approximately $47,000.
  - Safe sleep education provided within local communities.
  - Local churches conducted October SIDS Sunday awareness.

## Alabama Zika Pregnancy Registry

Zika virus infection during pregnancy can cause microcephaly and other severe fetal brain defects and has been linked to adverse outcomes including pregnancy loss, eye defects, hearing loss, and impaired growth in infants[12]. In August 2016, the Alabama Zika Pregnancy Registry was established as a collaborative effort with the CDC to collect information following laboratory evidence of Zika virus infection during pregnancy. The data collected through the registry is being used to update recommendations for clinical care, to plan for services for pregnant women and families affected by the Zika virus, and to improve prevention of Zika virus infection during pregnancy.

## Text4baby

Text4baby is an educational campaign of the National Healthy Mothers, Healthy Babies Coalition with more than 1,000 partners. ADPH is the leading state agency for text4baby in Alabama. As of December 3, 2016, approximately 20,250 individuals in Alabama were enrolled in text4baby.

[12](Centers for Disease Control and Prevention, 2016)

## CONTRIBUTING PROGRAM PARTNERS

### Alabama Newborn Screening Program and Birth Defects Registry

The Alabama NSP is mandated by statutory authority Code of Alabama 1975, Section 22-20-3. The Alabama NSP panel includes 31 disorders recommended by the American College of Medical Genetics and MOD. Every hospital or delivering facility is required to screen all infants for these potentially devastating disorders. Timely testing, identification, and follow-up care provided by the NSP ensure that every newborn in Alabama receives the best possible start to life.

Additionally, the Alabama Newborn Screening Hearing Program, "Alabama's Listening", follows guidelines established by the National Center for Hearing Assessment and Management to ensure that all infants born in the state receive appropriate hearing screenings at birth. Timely diagnosis and early intervention for services provide the best possible outcomes for infants and families.

Alabama received funding from the CDC to establish a Birth Defects Registry. Having a Birth Defects Registry will allow Alabama to better understand the number, types, and reasons for birth defects among infants and children. With funding and support from the CDC, a Birth Defects Registry is being established in Alabama. The SPP is working closely with the NSP Program in developing processes and protocols for the Birth Defects Registry.

### Alabama Special Supplemental Nutrition Program for Women, Infants, and Children

Breastfeeding is an important public health issue that impacts the health of both infants and mothers. The United States Department of Health and Human Services identifies breastfeeding as a high priority for the Healthy People 2020 Objectives. The 2020 Objectives include: at least 81.9 percent of women will initiate breastfeeding, 60.6 percent of those will breastfeed until the infant is six months old, and at least 34.1 percent will continue breastfeeding for one year. Objectives for exclusive breastfeeding through three months and six months are 46.2 percent and 25.5 percent, respectively. The American Academy of Pediatrics recommends breastfeeding for at least one year and beyond. The Alabama Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Program supports and promotes breastfeeding as the preferred method of infant feeding.

Research indicates that Breastfeeding Peer Counselor Programs help improve breastfeeding rates. The WIC Breastfeeding Peer Counselor Program continues to provide additional support and breastfeeding information to pregnant and postpartum mothers who are WIC participants. The program employs present or former WIC participants who have breastfed their infants for at least six months. During FY 2016, peer counseling was available at 74 sites across Alabama. Due in part to the WIC Breastfeeding Peer Counselor Program, Alabama WIC Program breastfeeding rates have consistently increased since the program was initiated in 2005. Expansion of the Peer Counselor Program continues statewide.

### Healthy Child Care Alabama

Healthy Child Care Alabama (HCCA) continues as a collaborative effort between ADPH and the Alabama Department of Human Resources. During 2016, HCCA continued to provide services in 67 counties through its 12 registered nurse consultants. Services provided by HCCA included information on child development, health and safety classes, coordinating community services, identifying community resources to promote child health and safety, and promoting routine healthcare and medical homes for children.

The HCCA nurses educate state certified daycare centers on the importance of supporting breastfeeding mothers who are returning to work and placing their infants in daycare. Breastfeeding support is a key factor in mothers successfully continuing to breastfeed at the three and six month periods.

In addition to breastfeeding, the HCCA nurses provide safe sleep education. These efforts are aimed at promoting the health and safety of infants in childcare settings based on the American Academy of Pediatrics (AAP) safe sleep recommendations. Creating safe sleep environments in state certified daycare facilities aims to reduce the incidence of SIDS and other sleep related infant deaths and is an essential component in reducing Alabama's IMR.

## Maternal and Child Health Block Grant Transformation

The ADPH, through the Bureau of FHS, continued in FY 2016 as the lead agency for assessing needs pertaining to pregnant women, mothers, and infants. In FY 2015, an MCH needs assessment was performed by ADPH and the Alabama Department of Rehabilitation Services, Children's Rehabilitation Service, through contractual agreements with the University of Alabama at Birmingham (UAB) School of Public Health's Health Care Organization and Policy Department and in partnership with key stakeholders. Salient findings from the FY 2014-2015 Five-Year Statewide MCH Needs Assessment were key to understanding the health needs of the State's Title V populations as were the priority MCH needs based on these findings. Based upon the Five-Year Statewide MCH Needs Assessment findings conducted in 2014-2015, the Alabama Title V Program's National Performance Measures (NPM) for programmatic focus over the next five year (2016-2020) funding cycle period were selected and are as follows:

NPM 1: Percent of women with a past year preventive medical visit.

NPM 3: Percent of VLBW infants born in a hospital with a Level III designation.

NPM 5: Percent of infants placed to sleep on their backs.

NPM 6: Percent of children, ages 10 through 71 months, receiving a developmental screening using a parent-completed screening tool.

NPM 10: Percent of adolescents, ages 12 through 17, with a preventive medical visit in the past year.

NPM 11: Percent of children with and without special health care needs having a medical home.

NPM 12: Percent of adolescents with and without special health care needs who received services necessary to make transitions to adult health care.

NPM 13: A. Percent of women who had a dental visit during pregnancy, and

B. Percent of children, ages 1 through 17, who had a preventive dental visit in the past year.

Some notable trends over the surveillance periods (2009 to 2015 for characteristics of live births and 2009 to 2015 for risk of infant death) include the following:

- The percentage of infants born to Latino mothers decreased from 8.1 percent in 2009 to 7.2 percent in 2015.
- In the Medicaid-funded group, the prevalence of short (less than 12 months) live birth interval increased from 1.9 percent in 2014 to 2.2 percent in 2015.
- In the White, non-Latino, Medicaid-funded group, the prevalence of tobacco use during pregnancy decreased from 30.1 percent in 2009 to 28.6 percent in 2015.
- The prevalence of inadequate prenatal care, as measured by the Kotelchuck Index, for 2015 was 26.5 percent in the self-pay group, 24.5 percent in the Medicaid-funded group, 8.3 percent in the privately-insured group, and 17.2 percent in the total group.

FHS continues to assess the ever-changing needs of Alabama's population and to develop strategies to address these needs. The FY 2014-2015 Five-Year Statewide MCH Needs Assessment was submitted to the federal MCH Bureau in July 2015. The MCH Title V Block Grant to States Program is being transformed. ADPH has collaborated with the MCH Workforce Development Center to align the Alabama MCH Title V Program with the objectives and goals of the newly-transformed MCH Title V Block Grant. ADPH plans to continue working with the MCH Workforce Development Center in its continuing efforts to transform the MCH Title V Block Grant.

### Pregnancy Risk Assessment Management System

PRAMS is an ongoing, population-based surveillance system designed to generate state-specific data for planning and assessing maternal and child population needs. Maternal behavior and pregnancy outcomes are strongly associated with one another. Therefore, the data collected from PRAMS can be used to identify groups of women and infants at high risk for health problems, to monitor changes in health status, and to measure progress toward goals in improving the health of mothers and infants. The information provided includes topics ranging from obstetrical history and prenatal care to maternal stress factors and pregnancy intentions. In 2016, PRAMS was relocated from the Center for Health Statistics to the Bureau of FHS.

### Well Woman Program

The Alabama Family Planning Program expanded services by establishing the Well Woman Program in an effort to improve the overall health of women. The additional services are for women between the ages of 15 and 44. The program serves as a foundation for identification and management of chronic health conditions, and preconception and interconception care services. The program is being piloted in Butler, Dallas, and Wilcox County Health Departments, and the first patients were served in December 2016.

## CONTRIBUTING PERINATAL PARTNERS

### Alabama Breastfeeding Committee

That Alabama Breastfeeding Committee (ABC) is made up of volunteer members from across the state who are dedicated to improving breastfeeding and the health of mothers and infants. The mission of the ABC is to work toward development of resources and partnerships that will lead to the effective promotion, protection, and support of breastfeeding statewide. The ABC works closely with breastfeeding support groups, Baby Friendly hospitals, Baby Cafés, Milk Depots, and the Mother's Milk Bank of Alabama.

### Alabama Perinatal Excellence Collaborative

The Alabama Perinatal Excellence Collaborative (APEC) was developed in 2012, as a joint effort between the Alabama Medicaid Agency, ADPH, UAB, USA, and community care providers, to lower IM and improve maternal and infant health in Alabama through a comprehensive approach to develop and implement evidence-based obstetric care guidelines. The MOD provided grant funds to APEC for a free, downloadable smart device application. Each posted guideline includes a full-text narrative and a summary of the guideline. APEC worked with ADPH to create continuing medical education credits for healthcare providers who view the guidelines, pass a test, and complete an evaluation form.

## Association of State and Territorial Health Officials Breastfeeding Grant

The Association of State and Territorial Health Officials (ASTHO) awarded funds for the SPP to collaborate with 18 other states and the District of Columbia in the ASTHO Breastfeeding Learning Community Network to increase practices supportive of breastfeeding in birthing facilities. Efforts include: working with hospitals to incorporate the Ten Steps to Successful Breastfeeding, conducting educational workshops to train hospital staff with the "Birth and Beyond: Empowering Mothers and Nurturing Babies" Vermont educational curriculum, providing funds for 30 healthcare providers to be trained and certified as Breastfeeding Certified Lactation Counselors, providing funds for Dr. Emma Omoruyi, Assistant Professor of Pediatrics, University of Texas Health Science Center at Houston and co-developer of the Texas Ten Steps Program, to speak at the 2016 Spring Alabama Chapter - AAP Conference.

## Healthy Start Programs

The National Healthy Start Association mission is to reduce infant mortality and perinatal disparities and to function as the nucleus for maternal and child health programs and services. Alabama has two Healthy Start Programs: Birmingham Healthy Start Plus and Gift of Life Foundation Healthy Start. The Bureau of FHS meets with both programs on a quarterly basis to collaborate and share support, successes, challenges, and strategies to improve the lives of women, infants, and families in Alabama.

## March of Dimes

The SPP has partnered with the MOD since 2004 on many initiatives to improve preterm births. In 2016, the SPP was a recipient of the 2015 Community Grant from the Alabama Chapter MOD. The funding was used to support efforts conducted through FIMR to reduce morbidity and mortality rates in Alabama. As a means to address prematurity, the MOD, in collaboration with the Gift of Life Foundation and Baptist Medical Center East, is launching a pilot HBWW program in Region V. HBWW is an innovative, community-based preterm birth prevention initiative. The program is anticipated to expand throughout the state in years to come.

## FY 2017 GOALS

1. Improve the health and well-being of women, infants, and families in Alabama.
2. Decrease infant morbidity and mortality by identifying the contributing factors and implementing steps to mitigate those factors by promoting the use of evidence-based patient practices.
3. Promote health across the lifespan by improving healthcare services for women and infants through facilitation of national, regional, state, and local collaborations.
4. Address disparities and promote health equity for women and infants.
5. Use data to inform practice and drive decision-making as it relates to the maternal and child health populations.

## FY 2017 OBJECTIVES

1. Identify factors that contribute to fetal and infant deaths by reviewing 50 percent of fetal and infant deaths that occur in 2017 through the FIMR Program.
2. Decrease Alabama's infant mortality rate to 7.8 infant deaths per 1,000 live births (Alabama Baseline: 8.3 infant deaths per 1,000 live births in 2015; source: ADPH, Center for Health Statistics).
3. Decrease the IMR among blacks to 14.5 infant deaths per 1,000 live births (Alabama Baseline: 15.3 infant deaths per 1,000 live births in 2015; source: ADPH, Center for Health Statistics).
4. Decrease the percent of births less than 37 weeks gestation to 11.5 percent of all live births (Alabama Baseline: 11.7 percent of all live births in 2015; source: ADPH, Center for Health Statistics).
5. Decrease the percent of LBW births to 10.0 percent of all live births (Alabama Baseline: 10.4 percent of all live births in 2015; source: ADPH, Center for Health Statistics).
6. Decrease the percent of births with a birth interval less than two years to 23.0 percent of all live births (Alabama Baseline: 23.9 percent of all live births in 2015; source: ADPH, Center for Health Statistics).
7. Increase the percent of births with adequate prenatal care to 76.0 percent; adequacy of care measure using the Kotelchuck Index. (Alabama Baseline: 75.3 percent in 2015; source: ADPH, Center for Health Statistics).
8. Decrease the percent of births with maternal smoking to 10.0 percent of all live births (Alabama Baseline: 10.4 percent of all live births in 2015; source: ADPH, Center for Health Statistics).
9. Decrease the percent of adolescents, ages 10 to 19, who smoke during pregnancy to 8.9 percent of all live births (Alabama Baseline: 9.2 percent of all live births in 2015; source: ADPH, Center for Health Statistics).
10. Decrease the number of Alabama's unintended pregnancy rate to 45.0 percent (Alabama Baseline: 49.0 percent in 2011; source: ADPH, Center for Health Statistics; National-level data: 45.0 percent in 2011; source: Guttmacher Institute, Institute of Medicine-Committee on Preventive Services for Women).
11. Decrease the number of Alabama infants who die before their first birthday from unsafe sleep environments to 18 percent of the total IMR (Alabama Baseline: 22.1 percent in 2015; source: ADPH, Center for Health Statistics).
12. Increase the percent of mothers who place sleeping infants on their backs to 67.0 percent (Alabama Baseline: 65.5 percent in 2011; source: ADPH, Center for Health Statistics, PRAMS data).
13. Increase the percent of mothers who initiate breastfeeding to 69.0 percent (Alabama Baseline: 67.6 percent in 2015; source: CDC, Breastfeeding Report Card).

# APPENDICES

# APPENDIX A
## Alabama Perinatal Healthcare Act (1980)

# CHAPTER 12A.
# PERINATAL HEALTHCARE.

Sec.
22-12A-l. Short title.
22-12A-2. Legislative intent; "perinatal" defined.
22-12A-3. Plan to Decrease infant mortality and handicapping conditions; procedure, contents, etc.
22-12A-4. Bureau of maternal and child health to develop priorities, guidelines, etc.
22.12A-5. Bureau to present report to legislative committee; public health funds not to be used.
22.12A-6. Use of funds generally.

**§22-12A-l. Short title.**

This chapter may be cited as the Alabama Perinatal Health Act. (Acts 1980, No.80-761, p. 1586, § 1.)

**§22-12A-2. Legislative intent; "perinatal" defined.**

(a) It is the legislative intent to effect a program in this state of:

(I) Perinatal care in order to Decrease infant mortality and handicapping conditions;

(2) Administering such policy by supporting quality perinatal care at the most appropriate level in the closest proximity to the patients' residences and based on the levels of care concept of regionalization; and

(3) Encouraging the closest cooperation between various state and local agencies and private healthcare services in providing high quality, low cost prevention oriented perinatal care, including optional educational programs.

(b) For the purposes of this chapter, the word "perinatal" shall include that period from conception to one year post delivery. (Acts 1980, No.80-761, p. 1586,§ 2; Acts 1981, 3rd Ex. Sess., No.81-1140, p. 417, § 1.)

**§ 22-12A-3. Plan to Decrease infant mortality and handicapping conditions; procedure, contents, etc.**

The bureau of maternal and child health under the direction of the state board of health shall, in coordination with the state health planning and development agency, the state health coordinating council, the Alabama council on maternal and infant health and the regional and state perinatal advisory committees, annually prepare a plan, consistent with the legislative intent of section 22-12A-2, to Decrease infant mortality and handicapping conditions to be presented to legislative health and finance committees prior to each regular session of the legislature. Such a plan shall include: primary care, hospital and prenatal; secondary and tertiary levels of care both in hospital and on an out-patient basis; transportation of patients for medical services and care and follow-up and evaluation of infants through the first year of life; and optional educational programs, including pupils in schools at appropriate ages, for good perinatal care covered pursuant to the provisions of this chapter. All recommendations for expenditure of funds shall be in accord with provisions of this plan. (Acts 1980, No.80-761, p. 1586, § 3; Acts 1981, 3rd Ex. Sess., No.81-1140, p. 417, § I.)

**§ 22-12A-4. Bureau of maternal and child health to develop priorities, guidelines, etc.**

The bureau of maternal and child health under the direction of the state board of health, and the state perinatal advisory committee representing the regional perinatal advisory committees, shall develop priorities, guidelines and administrative procedures for the expenditures of funds therefore. Such priorities, guidelines and procedures shall be subject to the approval of the state board of health. (Acts 1980, No. 80-761, p. 1586, § 4.)

**§ 22-12A-5. Bureau to present report to legislative committee; public health funds not to be used.**

The bureau of maternal and child health under the direction of the state board of health shall annually present a progress report dealing with infant mortality and handicapping conditions to the legislative health and finance committees prior to each regular session of the legislature. No funds of the state department of public health shall be used for the cost of any reports or any function of any of the committees named in section 22-12A-3. (Acts 1980, No. 80-761, p. 1586, § 5.)

**§ 22-12A-6. Use of funds generally.**

Available funds will be expended in each geographic area based on provisions within the plan developed in accordance with section 22- 12A-3. Funds when available will be used to support medical care and transportation for women and infants at

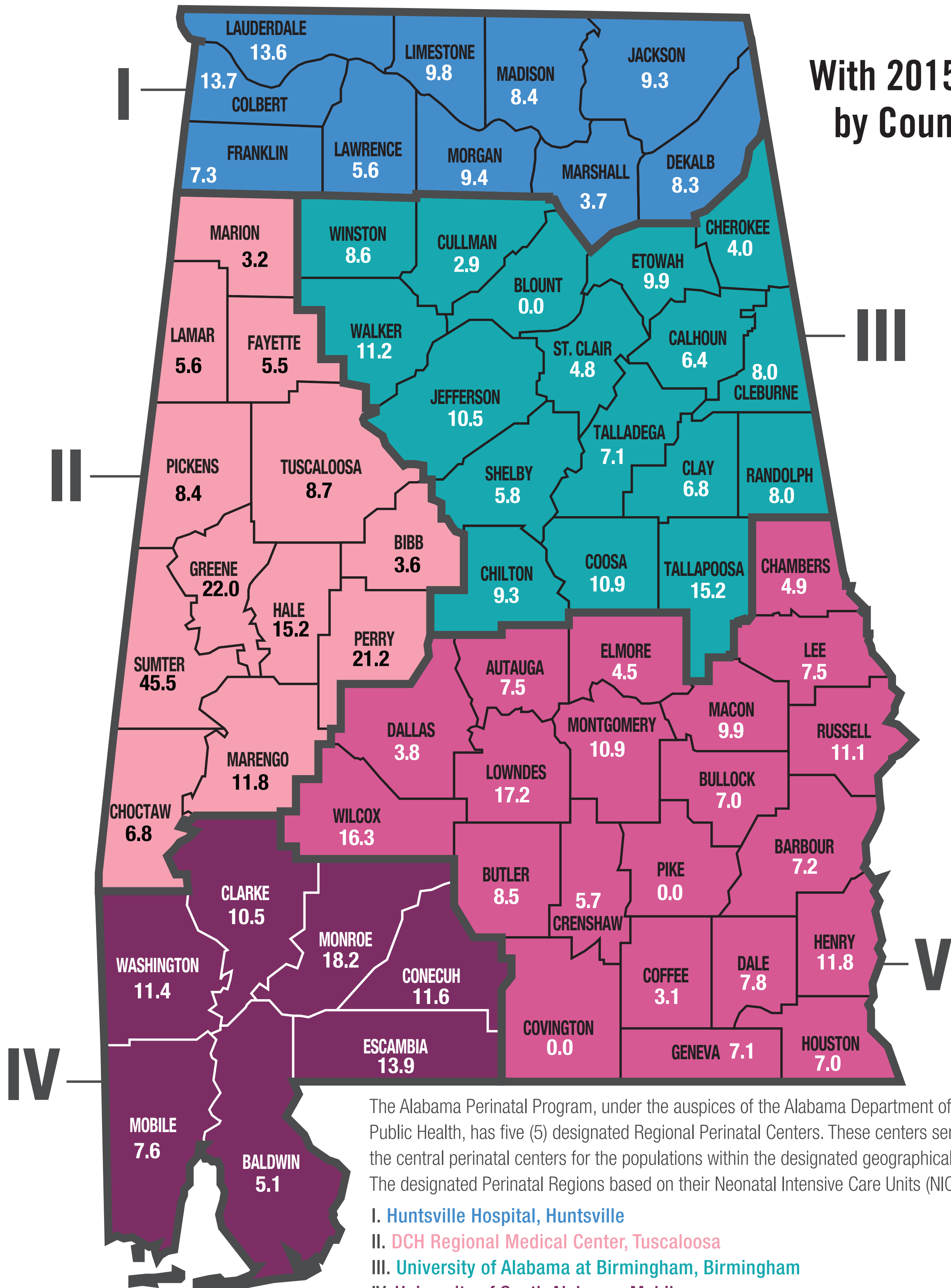
high risk for infant mortality or major handicapping conditions who are unable to pay for appropriate care. Funds will only be used to provide prenatal care, transportation, hospital care for high risk mothers and infants, outpatient care in the first year of life and educational services to improve such care, including optional educational programs, for pupils in schools at appropriate ages but subject to review and approval by the local school boards involved on an annual basis. (Acts 1980, No.80-761, p. 1586, § 6; Acts 1981, 3rd Ex. Sess., No.81-1140. p. 417, § I.)

# APPENDIX B

## Perinatal Regions Map with Infant Mortality Rates per County

# Alabama Perinatal Regions Map

## With 2015 IMR by County[13]




The Alabama Perinatal Program, under the auspices of the Alabama Department of Public Health, has five (5) designated Regional Perinatal Centers. These centers serve as the central perinatal centers for the populations within the designated geographical areas. The designated Perinatal Regions based on their Neonatal Intensive Care Units (NICUs) are:

I. Huntsville Hospital, Huntsville
II. DCH Regional Medical Center, Tuscaloosa
III. University of Alabama at Birmingham, Birmingham
IV. University of South Alabama, Mobile
V. Baptist Medical Center, Montgomery

[13](Centers for Health Statistics, 2016)

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