FETAL AND INFANT MORTALITY REVIEW

2010 ANNUAL REPORT

Alabama Perinatal Program

Fetal and Infant Mortality Review

2010 Annual Report

Alabama Department of Public Health

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We would like to thank the members of the State Perinatal Advisory Council, Regional Perinatal Advisory Councils (RPACs), Case Review Teams (CRTs), and Community Action Teams (CATs) for volunteering their time and expertise. The objectives of the Fetal and Infant Mortality Review (FIMR) Program could not be achieved without the commitment, assistance, and ongoing support of these members.

We would like to thank Kathleen Buckley, M.S.N., C.N.M., Director of the National Fetal and Infant Mortality (NFIMR) Program. Her knowledge, understanding, and guidance in the implementation of the FIMR Program in Alabama were invaluable.

A special thanks to the parents who have shared their most personal experiences in the expectation that they may help other families. Thank you for opening up your hearts and homes. We commend you for the courage and willingness to share your experiences with us.

Forward

The purpose of this report is to describe Alabama FIMR Program activities in 2010.

FIMR is a process of identification and analysis of factors that contribute to fetal and infant death through chart review and interview of individuals. FIMR complements other studies of infant death but uses an approach that is community based and designed to bring together local health providers, consumers, advocates, and leaders. FIMR identifies strengths and areas for improvement in overall service systems and community resources for women, children, and families. FIMR also provides direction towards the development of new policies to safeguard families. Through the regular collection, analysis, and sharing of health data and information about risks and resources in a community, the FIMR program identifies trends in infant mortality and the factors that may be involved.

The National Fetal and Infant Mortality Review Program is a partnership between the American College of Obstetricians and Gynecologists and the Federal Maternal and Child Health Bureau. (Grant # U08 MC00136)

Mobile County's FIMR, the Alabama Baby Coalition (ABC), was established in 1998. The ABC reviews fetal (over 20 weeks gestational age) and infant deaths of Mobile County residents only. When the program began, the infant mortality rate (IMR) was very high and exceeded the state and national averages. The Alabama Department of Public Health initiated the FIMR Program statewide on January 21, 2009. Prior to 2009, Mobile was using a modified version of the ACOG protocol, but adopted the full ACOG model in 2009. Thus, Alabama now has a statewide FIMR program which utilizes the full ACOG model.

FIMR has proven beneficial to many communities. The program has helped identify gaps in current services and collaborates to fill those gaps. Services have been expanded and improved through cooperative programming and joint funding. Enhanced coordination of services through interagency networking, communication, and collaboration has occurred in communities that have implemented the program. FIMR helps communities prepare and deliver culturally appropriate interventions to improve service systems and resources for their multi-ethnic populations. FIMR has contributed to a greater understanding of maternal and child health community needs by assisting the community in seeing not just a part but the whole picture. FIMR offers a means to implement needs assessment, quality assurance, and policy development, which are essential public health functions.

A Letter from the State Health Officer

May 20, 2013

A fetal or infant death is a catastrophic event for the family, the community, the state, and our nation. The death of an infant has always been viewed as a sentinel event that serves as a measure of a community's overall social and economic well-being as well as its health. A standardized process for in-depth review of fetal and infant deaths allows us to better understand the factors that contribute to infant death and take actions to prevent future deaths. This is the task that has been given to the State Perinatal Program (SPP).

In 2009, the Fetal and Infant Mortality Review (FIMR) Program was implemented statewide as an initiative to address the state's high infant mortality of 10.0 deaths per 1,000 live births in 2007. FIMR is a community-owned, action-oriented process that results in improved service systems and resources for women, infants, and families. The FIMR process brings a community team together to examine confidential, de-identified cases of infant deaths. The purpose of these reviews is to understand how a wide array of local, social, economic, public health, educational, environmental, and safety issues relate to the tragedy of infant loss.

Alabama FIMR is modeled after the National Fetal and Infant Mortality Review (NFIMR) Program. NFIMR was established in 1990 through collaboration of the federal Maternal and Child Health Bureau and the American Congress of Obstetricians and Gynecologists (ACOG), to facilitate the understanding of fetal and infant mortality, as well as to systematically develop strategies at the local level to address the issue. Many states and communities, through the implementation of FIMR, have over time seen improved maternal and child health outcomes.

It is with great pleasure that I present the 2010 FIMR Annual Report. This report represents the data collected and analyzed related to fetal and infant deaths in Alabama in 2009-2010. Our goal is to decrease the number of such deaths in Alabama. I encourage you to carefully read this report and to continue to take an active role in improving the health and lives of women, infants, and families in Alabama.

Sincerely,

Donald E. Williamson, M.D.
State Health Officer

A Letter from the Director of the National FIMR Resource Center

Dear Colleagues:

The infant mortality rate has long been used by communities and states as an effective measure of a society's well-being, as well as its overall health, including the state of a community's health system, the economic status of the inhabitants, and the condition of the community's environment. Deaths of infants are not only associated with medical conditions, but also multiple social factors such as poverty, lack of access to health services, ineffective social service programs for families in need, substandard housing, poor nutrition, environmental hazards, or some combination of these and other factors. Many of the causes of infant deaths relate to a lack of cohesive community systems and resources.

Fetal and Infant Mortality Review (FIMR) is a comprehensive, community-based qualitative approach to examining the services and resources available to women and families through death reviews followed by the development of action steps that can be implemented by the community to improve services and resources and strengthen the system of care. FIMR information complements local population-based fetal and infant mortality data. The FIMR approach has undergone a rigorous national evaluation and results have shown that FIMR has important value as a qualitative method of improving perinatal care for women and infants.

The continued maternal and child health benefits from the community FIMR-based process are tremendous. The information derived from local review efforts has the potential to influence local, state, and national understanding about the factors that cause infant death, and consequently, improve policy and program development at all levels. Given the fiscal constraints states and local communities currently face, local officials need practical and useful information on system changes that can be implemented. FIMR develops recommendations that can be implemented over time with other community partners. When local agencies work together through FIMR, they are always able to identify a broader array of existing service systems and resources and make them available for women, infants, and families.

I commend the Alabama Department of Public Health for its foresight in developing the FIMR program throughout the state as one important strategy to improve the health and well-being of all of the state's childbearing families, especially those at highest risk. The state's advocacy and leadership for mothers and infants through FIMR will help shape a better tomorrow for these youngest and most fragile of Alabama's citizens.

Sincerely,

Kathleen Buckley, MSN, CNM
Director, National FIMR Resource Center

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Introduction

The loss of a baby during pregnancy or in early infancy can be devastating and life changing. The Alabama FIMR Program is a community-based case review process that concentrates on fetal and infant mortality. The purpose of the program is to improve maternal and child health outcomes through community-based actions.

Infant mortality is defined as the death of an infant before his or her first birthday. It is an indicator used to compare the health and social well-being of populations across and within countries, states, and communities. Also, it is a critical gauge of the health status of a population and reflects the overall state of maternal health, as well as the quality and accessibility of primary health care available to pregnant women and infants in their community and state. Consequently, it is a reflection of the current health status of a large segment of the U.S. population and also a predictor of the health of the next generation.

Most often, a single factor does not cause an infant's death. Instead, the death results from a number of contributing factors. Identifying the contributing factors and implementing strategies to address them can lead to fewer fetal and infant deaths and, over time, improvement in birth outcomes.

This report will describe the Alabama FIMR Program and share the program findings and recommendations to address fetal and infant mortality in 2010. In 2010, the FIMR Program chose to focus its review on postneonatal deaths (infants born alive who die on/after 28 days of life). Of the 200 cases reviewed, 128 were postneonatal; 38 were fetal; 33 were neonatal; and one was of unknown age at death. This report is a descriptive analysis of the findings in these cases.

Alabama FIMR Process

FIMR reviews fetal deaths occurring at 20 weeks gestation or greater and infant deaths up to one year of age. Annually, there are approximately 1,000 fetal and infant deaths statewide. The FIMR program was implemented by the SPP staff. Because of the in-depth nature of the reviews and the process, only five to six cases can be reviewed at each CRT Meeting, according to estimates.

Data gathering includes the reviewing of records and information obtained from the voluntary maternal/family interview. When a fetal or infant death occurs, fetal records and death certificates are received by the Center for Health Statistics (CHS). Fetal records and birth and death certificates are provided by CHS to the FIMR program. Upon receiving the information from CHS, the case abstraction process begins. FIMR gathers and reviews information related to the death from a variety of sources including birth and death certificates, medical records, physician office records, autopsy reports, police records, and social records. A FIMR Coordinator (a public health nurse) contacts the mother and invites her to participate in a voluntary interview. If the mother consents, the interview is conducted with the mother and family to record their experiences with the care they received. Confidentiality is important in the FIMR process. All information is confidential and in compliance with the Health Insurance Portability and Accountability Act. All abstracted medical and related records are stored in locked files, and all identifiers are deleted from abstracted records.

The FIMR Coordinator prepares a case summary from the gathered data. All identifiers (patient names, hospital or clinic sites, and provider names) are removed, and the case summary is presented to the CRT. The CRT is a multidisciplinary team that reviews the data. The team represents a range of professional organizations and public and private agencies that provide services to women, infants, and families. Alabama is divided into five perinatal regions, and a CRT is in each region. A map of the perinatal regions is shown in Appendix A. A list of the CRT members is included in Appendix B. In 2010, the Regional Perinatal Advisory Councils (RPACs) served as the CRTs. Most of the RPACs met monthly instead of quarterly to review the case summaries. At each meeting, all CRT members sign a pledge of confidentiality that prohibits them from discussing review specifics outside the team meetings. After the case summaries are reviewed, the CRT identifies health system and community factors that may have contributed to the death, and makes recommendations for community change.

The CRT presents recommendations to the Community Action Team (CAT). The CAT creates an action plan based on the recommendations and participates in implementation of interventions designed to address the identified system and resource issues. The CAT may include members of the CRT, representatives of organizations and agencies, and community leaders. In the course of its work, the CAT may respond to issues that are broad to politically complex, that change over time, and that require substantial time and resources to implement change. There are seven CATs, at least one in each region and two in Regions III and IV. There have been discussions regarding the need to implement additional CATs in Region I (Marshall County) and Region IV (Escambia and Monroe Counties). A list of CAT members is included in Appendix B.

Summary of FIMR Process

The FIMR process described above is often referred to as the Cycle of Improvement (Figure 1). The continuous nature of the process provides a feedback mechanism that can help identify the extent to which the recommendations and actions are working. Over time, the review of new cases will reveal how successful interventions, programs, and policies have been because the change, or lack thereof, will be evident in future case reviews. As such, FIMR can function as a mechanism for continuous quality improvement.

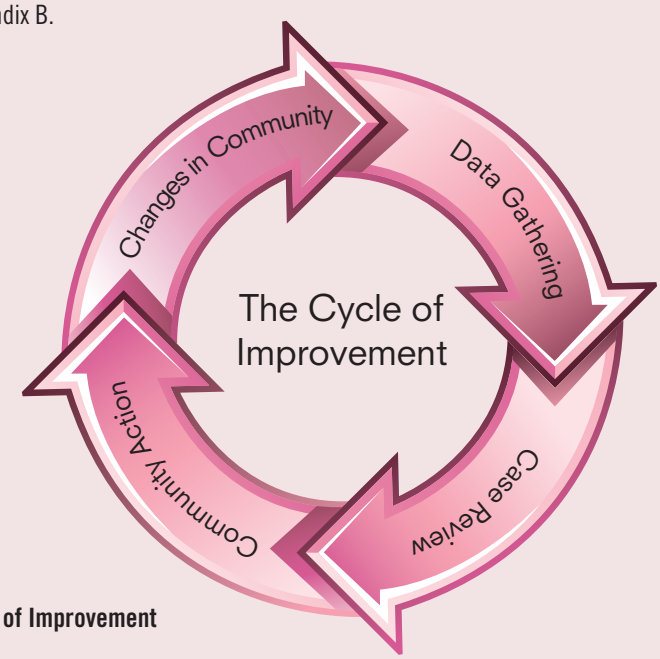


Figure 1. The Cycle of Improvement

Vital Statistics Data in 2010

In 2010, there were 59,979 resident live births (Appendix C), 562 fetal deaths, and 522 infant deaths in Alabama (Appendix D). Of the 522 infant deaths, 325 were neonatal deaths and 197 were postneonatal deaths. Table 1 displays fetal and infant mortality rates in comparison to national data and national goals.

Table 1. Fetal, Neonatal, Postneonatal, and Infant Mortality Rates for Alabama, the United States, and Healthy People 2010 National Goal

	Alabama (2005-2009)	Alabama (2010)	United States (2005)	Healthy People 2010 National Goal
Fetal Mortality Rate[a]	8.9	9.3	6.2[(1)]	4.1
Neonatal Mortality Rate[b]	5.8	5.4	4.5[(2)]	2.9
Postneonatal Mortality Rate[c]	3.5	3.3	2.3[(2)]	1.2
Infant Mortality Rate[d]	9.2	8.7	6.9[(2)]	4.5

a Fetal Mortality Rate: Number of fetal deaths at 20 or more weeks of gestation per 1,000 live births plus fetal deaths
b Neonatal Mortality Rate: Number of neonatal deaths per 1,000 live births
c Postneonatal Mortality Rate: Number of postneonatal deaths per 1,000 live births
d Infant Mortality Rate: All infant deaths (within 1 year) per 1,000 live births

Leading Causes of Infant Death in 2010

The causes of death were grouped by International Classification of Diseases (ICD-10) codes. The leading causes of infant deaths ranked 1 to 3 below were congenital malformations, deformations, and chromosomal abnormalities (Q00-Q99); disorders related to short gestation and low birth weight (P07); and sudden infant death syndrome (R95). These three leading causes accounted for 40.8% (213/522) of all infant deaths in 2010 (Table 2).

Table 2. Number of Infant Deaths and Percentage of Total Infant Deaths for Leading Causes of Infant Death in 2010

Rank	Cause of Death	ICD-10	Number (n=522)	% of Total Death
1	Congenital Malformations, Deformations, and Chromosomal Abnormalities	Q00-Q99	96	18.4
2	Disorders Related to Short Gestation and Low Birth Weight	P07	73	14.0
3	Sudden Infant Death Syndrome	R95	44	8.4
4	Accidents	V01-X59, Y85-Y86	25	4.8
5	Newborn Affected by Maternal Complications of Pregnancy	P01	20	3.8
5	Newborn Affected by Complications of Placenta, Cord and Membranes	P02	20	3.8
7	Neonatal Hemorrhage	P50-P52, P54	18	3.4
8	Necrotizing Enterocolitis of Newborn	P77	17	3.3
9	Diseases of the Circulatory System	I00-I99	16	3.1
10	Respiratory Distress of Newborn	P22	15	2.9
	All Others		178	34.1

Selected Characteristics of FIMR Cases in 2010

Following are percentages of select characteristics of the 200 FIMR cases reviewed in 2010. These cases consisted of 38 fetal deaths, 33 neonatal deaths, 128 postneonatal deaths, and 1 death with unknown age at death.

Maternal Age

Of the FIMR cases, 63.5% were born to mothers 20-29 years of age, 20.0% to mothers 30-39 years of age, 14.5% to mothers < 20 years of age, and 1.5% to mothers ≥ 40 years of age (Figure 2).

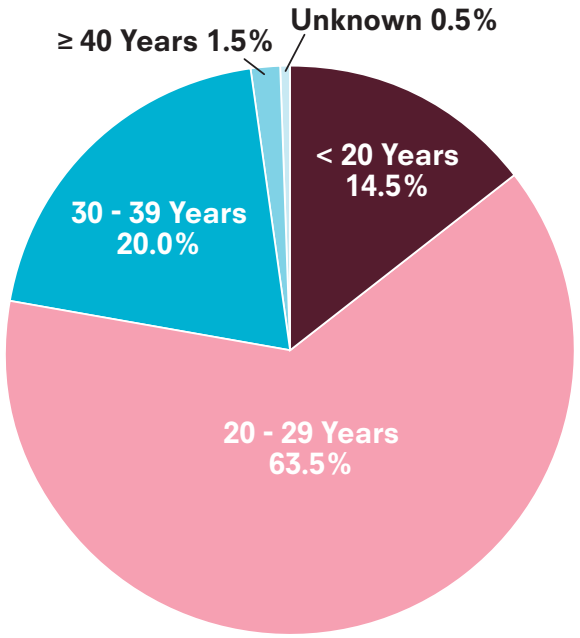


Figure 2. Percentage of FIMR Cases by Maternal Age (n=200)

Entry into Prenatal Care

Of the FIMR cases, 64.5% were born to mothers who entered into prenatal care in the first trimester followed by 26.0% whose mothers entered into prenatal care in the second trimester and 2.0% whose mothers entered into prenatal care in the third trimester (Figure 3).

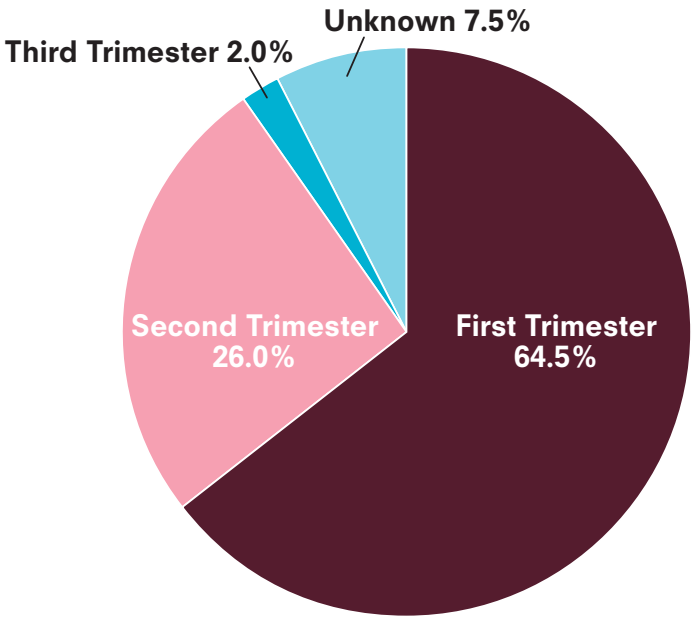


Figure 3. Percentage of FIMR Cases by Entry into Prenatal Care (n=200)

Method of Payment for Prenatal Care

Of the FIMR cases, 61.5% were born to mothers who utilized Medicaid as the method of payment for prenatal care, 29.0% to mothers who utilized private insurance, 5.5% to mothers who were self-payers, and 2.0% to mothers who utilized other methods (Figure 4).

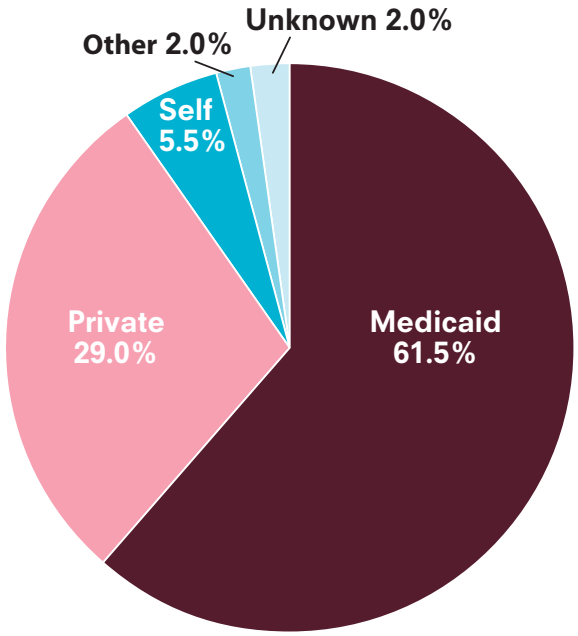


Figure 4. Percentage of FIMR Cases by Method of Payment for Prenatal Care (n=200)

Age of Infant at Death

Among infant cases reviewed, 1.9% of infants died within 1 hour, 7.4% between 1 hour and 24 hours, 11.1% between 1 day and 28 days, and 79.0% between 29 days and 364 days (Figure 5).

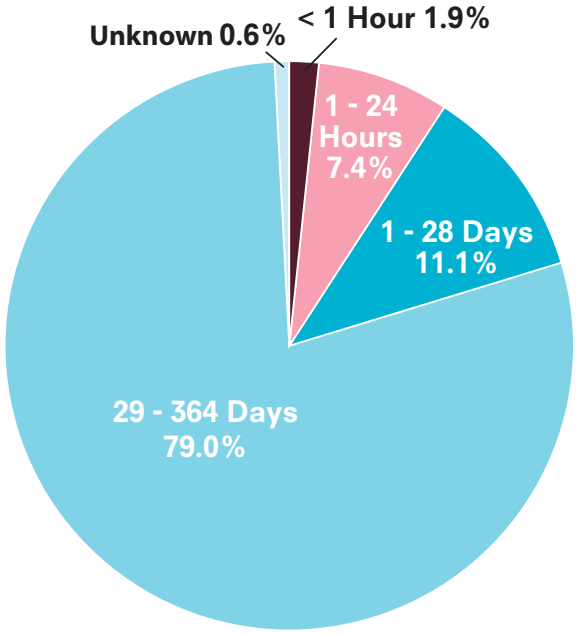


Figure 5. Percentage of FIMR Infant Cases by Age of Infant at Death (n=162)

Table 3 shows selected characteristics of the total FIMR cases reviewed.

Table 3. Characteristics of FIMR Cases

	# of Total FIMR Cases (n=200)	%	# of Fetal Deaths (n=38)	%	# of Infant Deaths (n=162)	%
Perinatal Region						
Region I	28	14.0	0	0.0	28	17.3
Region II	17	8.5	0	0.0	17	10.4
Region III	55	27.5	0	0.0	55	34.0
Region IV	72	36.0	38	100.0	34	21.0
Region V	28	14.0	0	0.0	28	17.3
Maternal Marital Status						
Single	116	58.0	25	65.8	91	56.2
Married	80	40.0	13	34.2	67	41.3
Other	4	2.0	0	0.0	4	2.5
Maternal Race						
White	97	48.5	16	42.1	81	50.0
Black and Other	103	51.5	22	57.9	81	50.0
Maternal Age (years)						
< 20	29	14.5	4	10.5	25	15.4
20-29	127	63.5	27	71.1	100	61.7
30-39	40	20.0	6	15.8	34	21.0
≥ 40	3	1.5	1	2.6	2	1.3
Unknown	1	0.5	0	0.0	1	0.6
Maternal Education (years)						
≤ 8	9	4.5	1	2.6	8	4.9
9-11	43	21.5	5	13.2	38	23.5
12	60	30.0	14	36.8	46	28.4
13-15	53	26.5	15	39.5	38	23.5
≥ 16	29	14.5	3	7.9	26	16.0
Unknown	6	3.0	0	0.0	6	3.7
Entry into Prenatal Care						
First Trimester	129	64.5	28	73.7	101	62.3
Second Trimester	52	26.0	7	18.4	45	27.8
Third Trimester	4	2.0	1	2.6	3	1.9
Unknown	15	7.5	2	5.3	13	8.0

	# of Total FIMR Cases (n=200)	%	# of Fetal Deaths (n=38)	%	# of Infant Deaths (n=162)	%
Method of Payment for Prenatal Care						
Medicaid	123	61.5	26	68.4	97	59.9
Private	58	29.0	11	29.0	47	29.0
Self	11	5.5	0	0.0	11	6.8
Other	4	2.0	0	0.0	4	2.4
Unknown	4	2.0	1	2.6	3	1.9
Fetus or Infant Gender						
Male	111	55.5	16	42.1	95	58.6
Female	89	44.5	22	57.9	67	41.4
Plurality						
Single	181	90.5	33	86.8	148	91.4
Plural	19	9.5	5	13.2	14	8.6
Birthweight (grams [g])						
< 500	37	18.5	18	47.4	19	11.7
500-1,499	38	19.0	6	15.8	32	19.8
1,500-2,499	37	18.5	6	15.8	31	19.1
≥ 2,500	88	44.0	8	21.0	80	49.4
Gestational Age (weeks)						
≤ 28	65	32.5	19	50.0	46	28.4
29-33	24	12.0	7	18.4	17	10.5
34-36	26	13.0	5	13.2	21	13.0
≥ 37	84	42.0	7	18.4	77	47.5
Unknown	1	0.5	0	0.0	1	0.6
Age of Infant at Death						
< 1 Hour					3	1.9
1-24 Hours					12	7.4
1-28 Days					18	11.1
29-364 Days					128	79.0
Unknown					1	0.6

Key Findings in 2010

Leading Contributing Factors Identified by FIMR

In total, 200 FIMR cases have been reviewed as of August 23, 2011. These cases comprised 38 fetal deaths and 162 infant deaths. Leading contributing factors identified by FIMR are presented in Table 4a and Table 4b.

Table 4a. Leading Contributing Factors in Alabama Infant Cases in 2010

Contributing Factor	% of Total Cases (n=162)	% of White (n=81)	% of Black & Other (n=81)
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	77.8	80.2	75.3
Prematurity (< 37 weeks)	51.9	45.7	58.0
Low birthweight (< 2,500 g)	50.6	45.7	55.6
Unplanned pregnancy	50.0	33.3	66.7
Substance abuse	46.9	51.9	42.0
Preterm labor	40.1	30.9	49.4
Obesity	37.0	30.9	43.2
Infection	34.6	29.6	39.5
Sudden infant death syndrome prevention/Safe Sleep	30.2	29.6	30.9
History of fetal or infant loss	27.8	29.6	25.9
Late entry into prenatal care after 13th week	27.2	29.6	24.7
Maternal infection other than sexually transmitted diseases	25.9	16.0	35.8
Pre-existing medical condition (includes nonlethal anomalies, metabolic disorders, etc.)	23.5	30.9	16.0
Anemia (diagnosed after first trimester)	22.2	17.3	27.2
Maternal age < 21	21.0	13.6	28.4

Table 4b. Leading Contributing Factors in Alabama Fetal Cases in 2010

Contributing Factor	% of Total Cases (n=38)	% of White (n=16)	% of Black & Other (n=22)
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	81.6	81.3	81.8
Prematurity (< 37 weeks)	81.6	62.5	95.5
Low birthweight (< 2,500 g)	78.9	62.5	90.9
Unplanned pregnancy	55.3	50.0	59.1
Obesity	47.4	18.8	68.2
Substance abuse	42.1	31.3	50.0
History of fetal or infant loss	39.5	18.8	54.5
Previability	39.5	31.3	45.5
Preterm labor	36.8	31.3	40.9
Maternal infection other than sexually transmitted diseases	26.3	25.0	27.3
Maternal age < 21	23.7	31.3	18.2
Placental abruption	21.1	25.0	18.2

Pre-existing Medical Conditions

In 77.8% (126/162) of the FIMR infant cases reviewed and 81.6% (31/38) of the FIMR fetal cases reviewed, pre-existing medical conditions were identified as an important contributing factor. This proportion, among the infant cases reviewed, was similar among white (80.2%) and black (75.3%) women. This proportion, among the fetal cases reviewed, was virtually equal for the white (81.3%) and black (81.8%) women. Selected pre-existing medical conditions are listed in Table 5a and Table 5b.

Of 162 Alabama infant cases, 67 mothers had a significant gynecological history, such as abnormal Pap smears, cervical dysplasia, dilation and curettage, uterine fibroids, ovarian cysts, endometriosis, and sexually transmitted diseases; 35 mothers had significant mental health issues, such as depression, anxiety, and bipolar disorder; 29 mothers had chronic and acute respiratory disorders; and 44 mothers had other medical history, such as appendectomy, gallbladder surgery, tonsillectomy, morbid obesity surgery, hernia repair, arthritis, skin cancer, and history of drug abuse.

Table 5a. Selected Pre-existing Medical Conditions among Alabama Infant Cases

Pre-existing Medical Condition	# of Cases Involved (n=162)	% of Total
Gynecological issue	67	41.4
Mental health issue	35	21.6
Chronic and acute respiratory disorders	29	17.9
Gastrointestinal condition	22	13.6
Urinary tract disorder	22	13.6
Hypertension	19	11.7
High risk social/sexual behavior	18	11.1
Musculoskeletal problem	15	9.3
Neurological disorder	14	8.6
Diabetes	12	7.4
Anemia	9	5.6
Other endocrine disorders such as hyper/hypothyroidism	10	6.2
Heart disease	7	4.3
Dental/gum infection	7	4.3
Sickle cell disease	4	2.5
Genetic disorder	3	1.9
Born preterm	2	1.2
Lupus	2	1.2
Cancer	1	0.6
Other medical history	44	27.2

Of 38 Alabama fetal cases, 14 mothers had a significant gynecological history, such as abnormal Pap smears, cervical dysplasia, dilation and curettage, uterine fibroids, ovarian cysts, endometriosis, and sexually transmitted diseases; 8 mothers had significant mental health issues, such as depression, anxiety, and bipolar disorder; 8 mothers had chronic and acute respiratory disorders; and 14 mothers had other medical history, such as appendectomy, gallbladder surgery, tonsillectomy, morbid obesity surgery, hernia repair, arthritis, skin cancer, and history of drug abuse.

Table 5b. Selected Pre-existing Medical Conditions among Alabama Fetal Cases

Pre-existing Medical Condition	# of Cases Involved (n=38)	% of Total
Gynecological issue	14	36.8
Mental health issue	8	21.1
Chronic and acute respiratory disorders	8	21.1
Gastrointestinal condition	9	23.7
Urinary tract disorder	7	18.4
Hypertension	8	21.1
High risk social/sexual behavior	5	13.2
Musculoskeletal problem	5	13.2
Neurological disorder	5	13.2
Diabetes	3	7.9
Anemia	3	7.9
Other endocrine disorders such as hyper/hypothyroidism	0	0.0
Heart disease	2	5.3
Dental/gum infection	0	0.0
Sickle cell disease	1	2.6
Genetic disorder	0	0.0
Born preterm	1	2.6
Lupus	0	0.0
Cancer	0	0.0
Other medical history	14	36.8

Low Birthweight

Low birthweight was a factor associated with 50.6% (82/162) of the Alabama infant cases reviewed. The proportion of low birthweight among black babies (55.6%) in this group was greater than that among white babies (45.7%) in this group. Among the Alabama infant cases (n=162), 11.7% were less than 500 g, 19.8% were between 500 and 1,499 g, and 19.1% were between 1,500 and 2,499 g (Figure 6a).

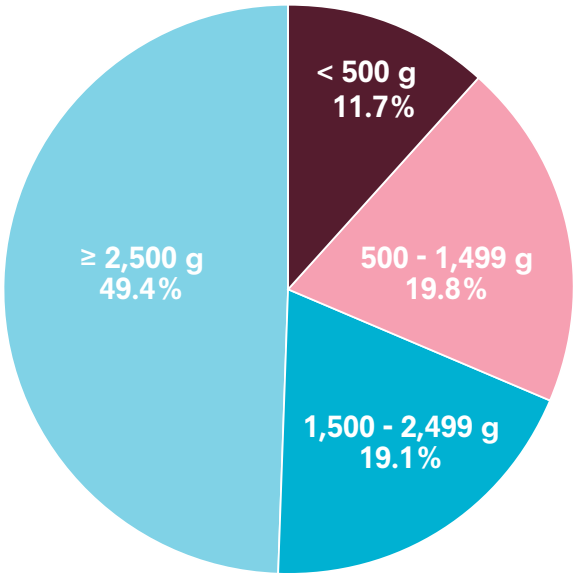


Figure 6a. Birthweight Distribution of Alabama Infant Cases (n=162)

Low birthweight was a factor associated with 78.9% (30/38) of the Alabama fetal cases reviewed. The proportion of low birthweight among black babies (90.9%) in this group was greater than that among white babies (62.5%) in this group. Among the Alabama fetal cases (n=38), 47.4% were less than 500 g, 15.8% were between 500 and 1,499 g, and 15.8% were between 1,500 and 2,499 g (Figure 6b).

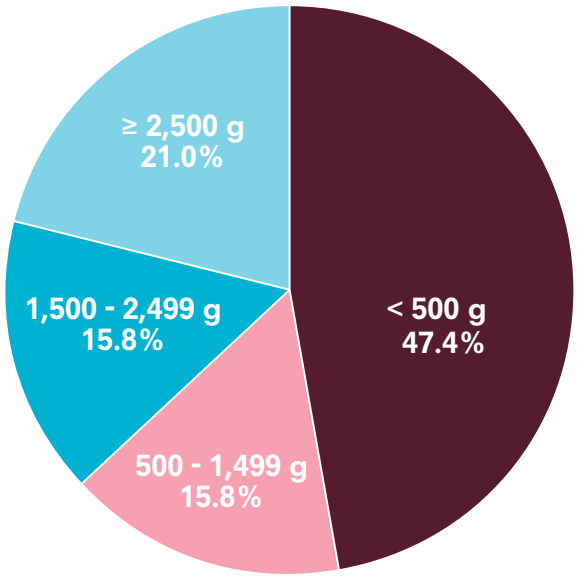


Figure 6b. Birthweight Distribution of Alabama Fetal Cases (n=38)

Prematurity

The definition of prematurity in this report is a baby born before 37 weeks of gestation. In 51.9% of the Alabama infant cases reviewed (84/162), prematurity was identified as an important contributing factor. Among black babies, the proportion of those born prematurely was higher at 58.0% (47/81) than was the proportion among white babies whose prevalence of prematurity was 45.7% (37/81). For the Alabama infant cases (n=162), 28.4% were less than or equal to 28 weeks gestational age, 10.5% between 29 and 33 weeks gestation, and 13.0% between 34 and 36 weeks gestation (Figure 7a).

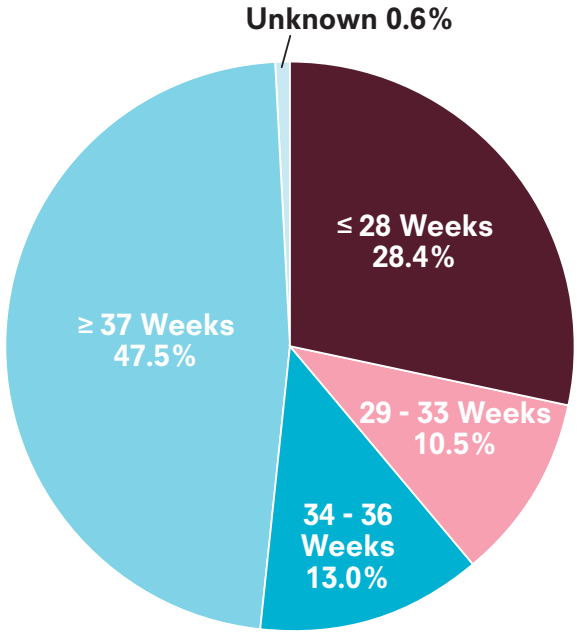


Figure 7a. Gestational Age Distribution of Alabama Infant Cases (n=162)

In 81.6% (31/38) of the Alabama fetal cases reviewed, prematurity was identified as an important contributing factor. Among black babies, the proportion of those born prematurely was higher at 95.5% (21/22) than was the proportion among white babies whose prevalence of prematurity was 62.5% (10/16). For the Alabama fetal cases (n=38), 50.0% were less than or equal to 28 weeks gestational age, 18.4% between 29 and 33 weeks gestation, and 13.2% between 34 and 36 weeks gestation (Figure 7b).

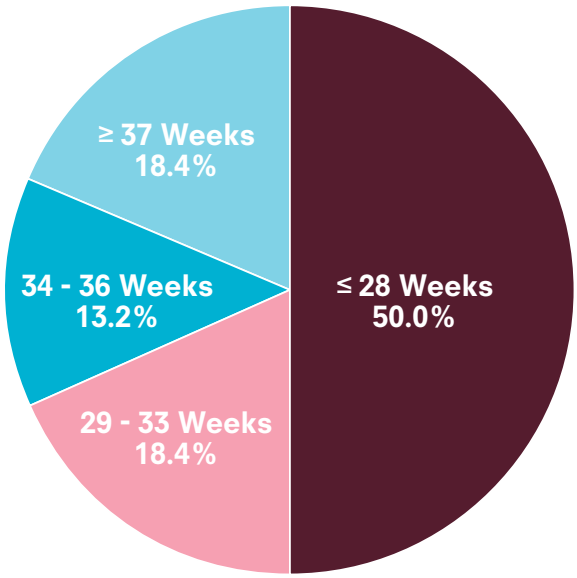


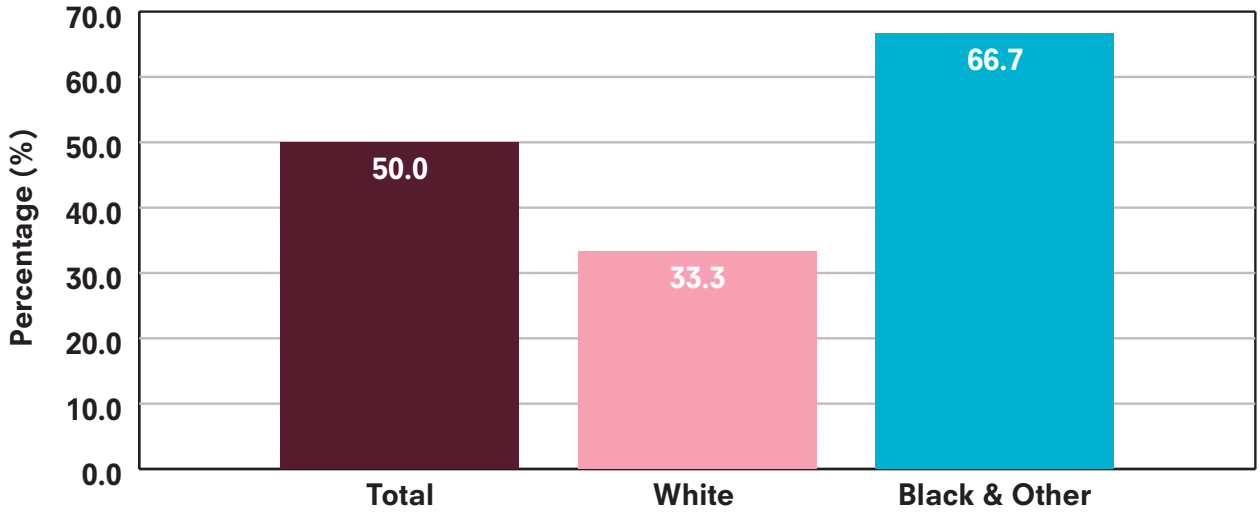
Figure 7b. Gestational Age Distribution of Alabama Fetal Cases (n=38)

Unplanned Pregnancy

Pregnancies that are unwanted or mistimed are an important health care issue. The health of the infant is directly affected by the mother's attitude, behaviors, and experiences during the pregnancy (3).

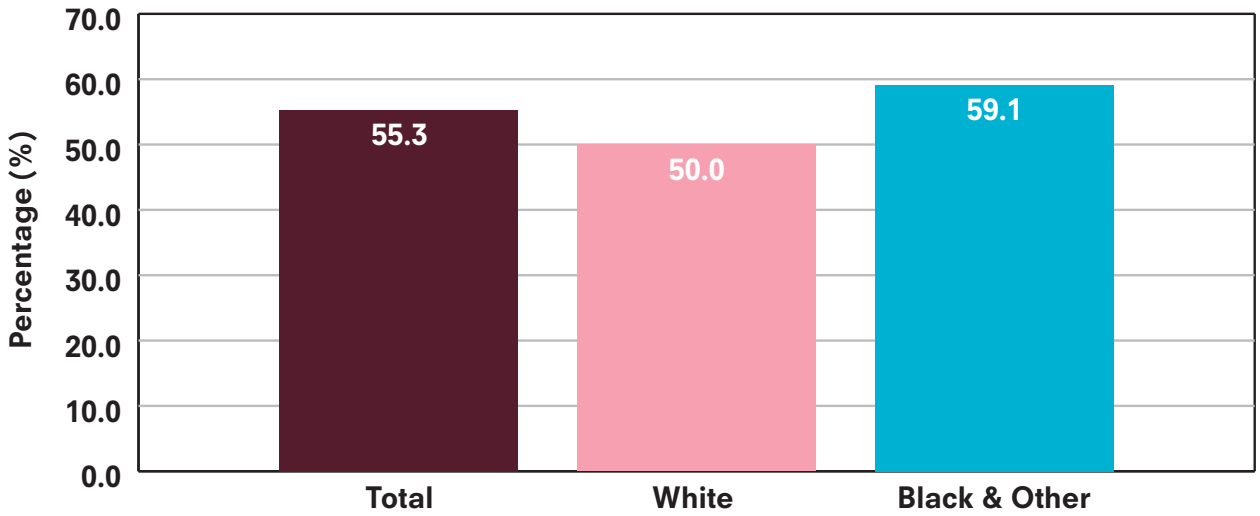
In 50.0% (81/162) of the Alabama infant cases, the CRTs identified unplanned pregnancy as a contributing factor of fetal and infant mortality. The proportion of unplanned pregnancies among black women (66.7%) in this group was greater than that among white women (33.3%) in this group (Figure 8a).

Figure 8a. Percentage (%) of Unplanned Pregnancy among Alabama Infant Cases in 2010 (n=162)



In 55.3% (21/38) of the Alabama fetal cases, the CRTs identified unplanned pregnancy as a contributing factor of fetal and infant mortality. The proportion of unplanned pregnancies among black women (59.1%) in this group was greater than that among white women (50.0%) in this group (Figure 8b).

Figure 8b. Percentage (%) of Unplanned Pregnancy among Alabama Fetal Cases in 2010 (n=38)



Substance Abuse

In 46.9% (76/162) of the Alabama infant cases, substance abuse was identified as a contributing factor of fetal and infant mortality. The percentage of substance abuse among white women at 51.9% (42/81) was greater than that among black women at 42.0% (34/81) (Figure 9a). The substances and percentages of abuse are listed in Table 6a.

Figure 9a. Percentage (%) of Substance Abuse among Alabama Infant Cases in 2010 (n=162)

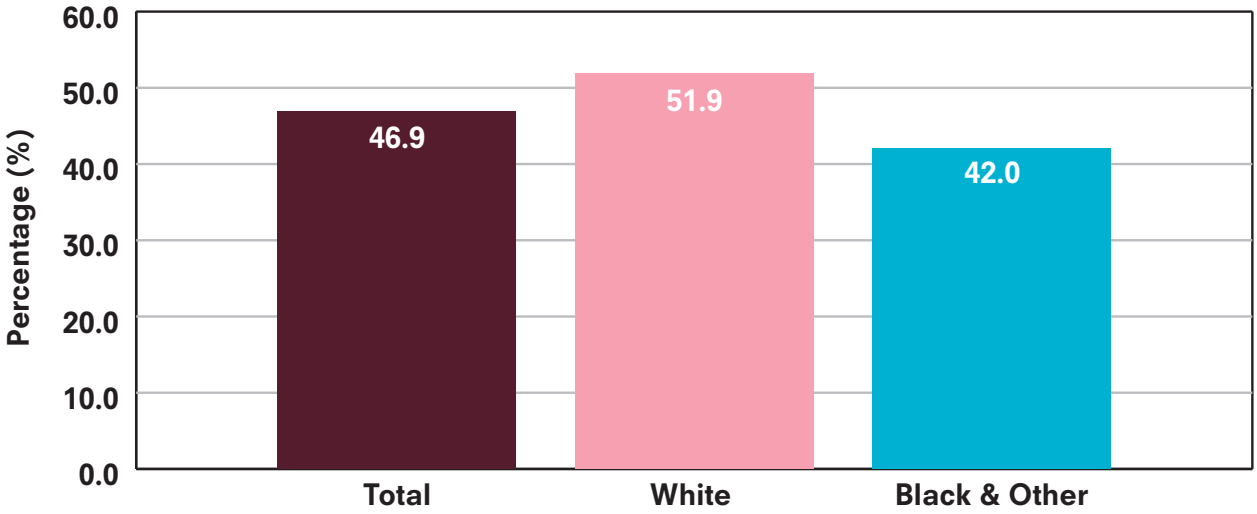


Table 6a. Percentage of Substance Abuse among Alabama Infant Cases

Substance	# of Cases Involved (n=162)	% of Total
Tobacco	28	17.3
Marijuana	12	7.4
Alcohol	4	2.5
Prescription Medicines	2	1.2
Cocaine	3	1.9
Methamphetamines	1	0.6
Ecstasy	1	0.6
Others	5	3.1

In 42.1% (16/38) of the Alabama fetal cases, substance abuse was identified as a contributing factor of fetal and infant mortality. The percentage of substance abuse among black women at 50.0% (11/22) was greater than that among white women at 31.3% (5/16) (Figure 9b). The substances and percentages of abuse are listed in Table 6b.

Figure 9b. Percentage (%) of Substance Abuse among Alabama Fetal Cases in 2010 (n=38)

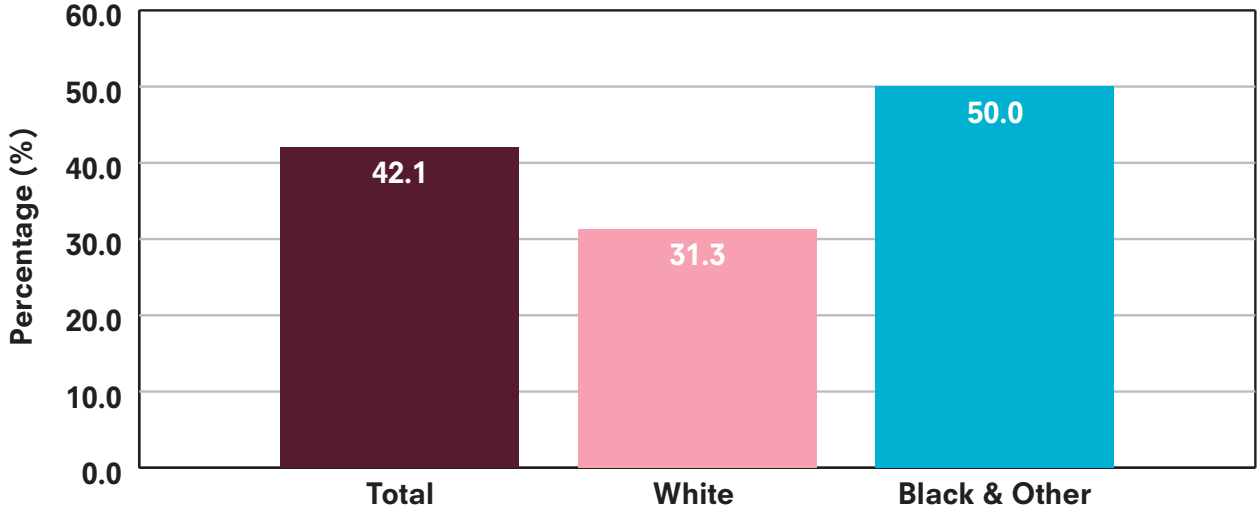


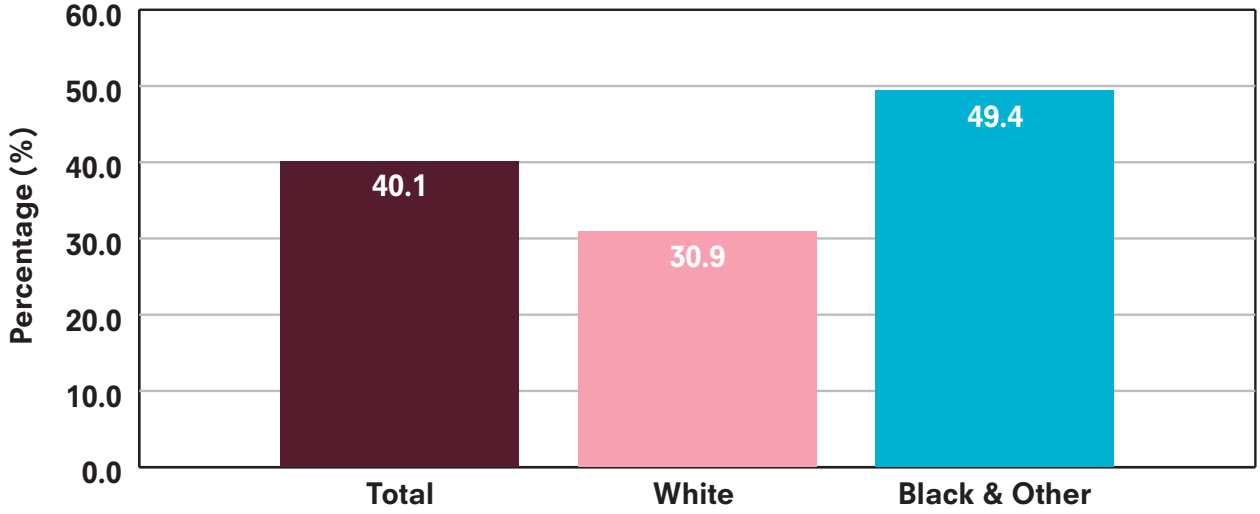
Table 6b. Percentage of Substance Abuse among Alabama Fetal Cases

Substance	# of Cases Involved (n=38)	% of Total
Tobacco	10	26.3
Marijuana	6	15.8
Alcohol	2	5.3
Prescription Medicines	1	2.6
Cocaine	2	5.3
Others	1	2.6

Preterm Labor

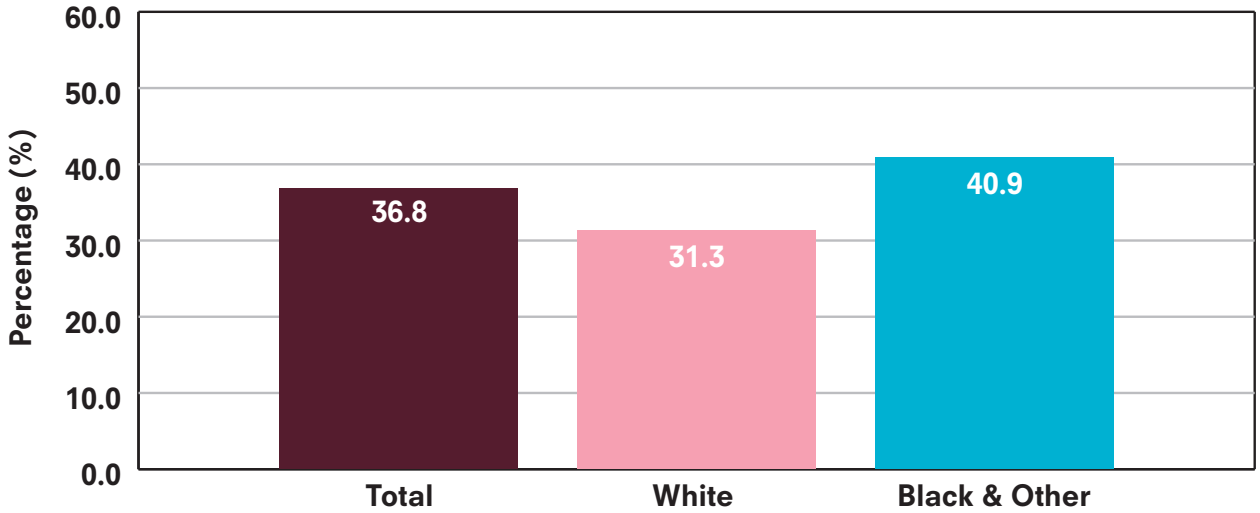
In 40.1% (65/162) of the Alabama infant cases reviewed, mothers went into preterm labor. Of these, 49.4% (40/81) of the infant cases were among black women and 30.9% (25/81) of the infant cases were among white women (Figure 10a). Mothers were diagnosed with premature rupture of membranes or preterm premature rupture of membranes in 9.3% of the infant cases reviewed, prolonged rupture of membranes in 1.9% of the infant cases, newly diagnosed incompetent cervix in 3.1% of the infant cases, and a history of incompetent cervix in 1.9%. In 3.1% of the infant cases reviewed, the mother had a history of preterm labor.

Figure 10a. Percentage (%) of Preterm Labor among Alabama Infant Cases in 2010 (n=162)



In 36.8% (14/38) of the Alabama fetal cases reviewed, mothers went into preterm labor. Of these, 40.9% (9/22) of the fetal cases were among black women and 31.3% (5/16) of the fetal cases were among white women (Figure 10b). Mothers were diagnosed with premature rupture of membranes or preterm premature rupture of membranes in 13.2% of the fetal cases reviewed, prolonged rupture of membranes in 2.6% of the fetal cases, and newly diagnosed incompetent cervix in 2.6% of the fetal cases.

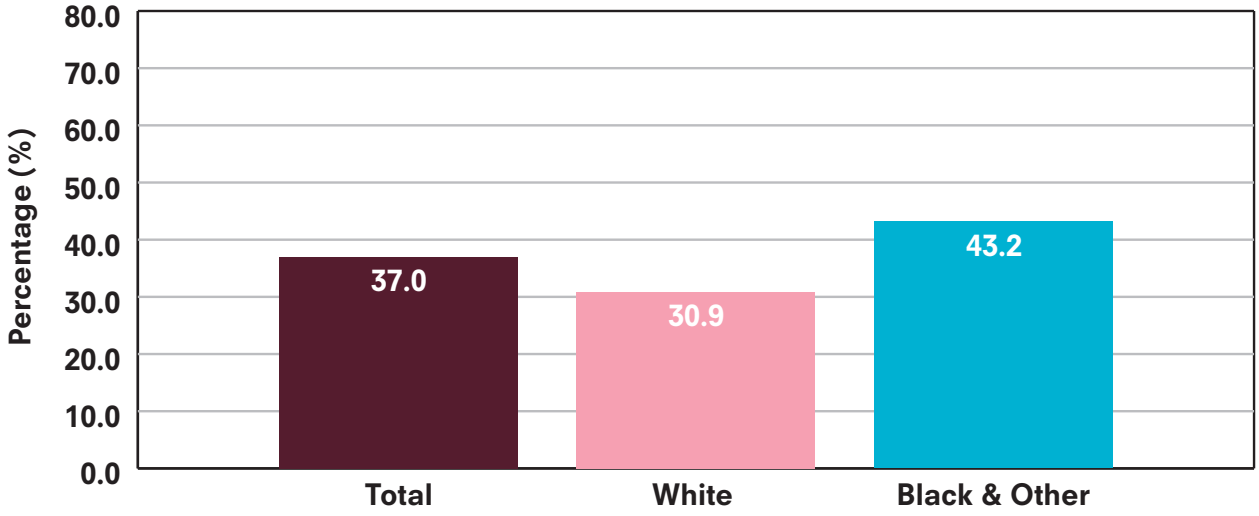
Figure 10b. Percentage (%) of Preterm Labor among Alabama Fetal Cases in 2010 (n=38)



Obesity

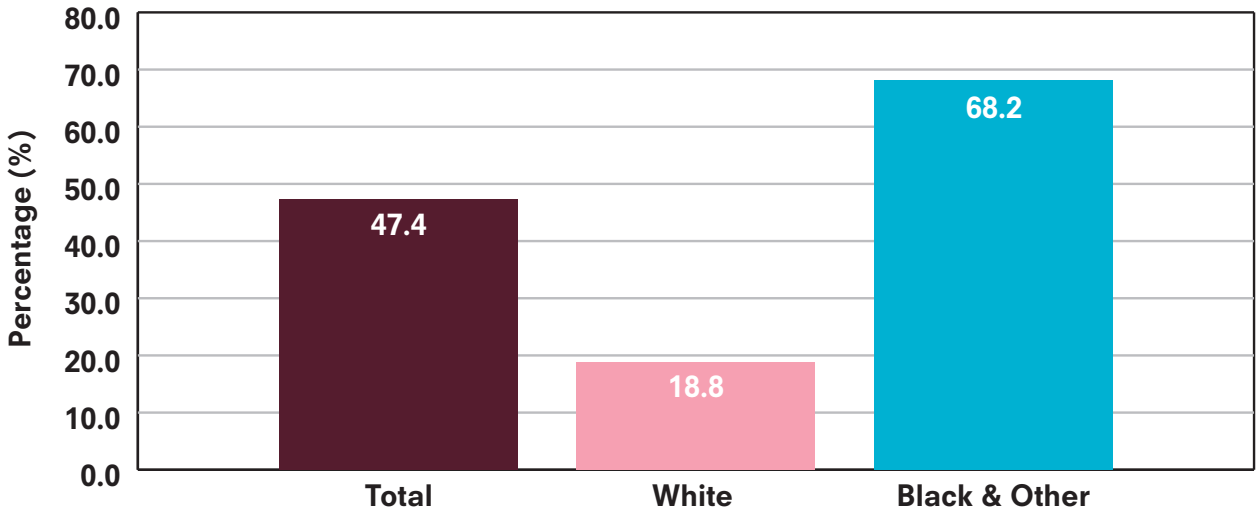
In 37.0% (60/162) of the Alabama infant cases reviewed, mothers were classified as obese. The proportion of those with obesity among the group's black women at 43.2% (35/81) was greater than that among the group's white women at 30.9% (25/81 women) (Figure 11a).

Figure 11a. Percentage (%) of Obesity among Alabama Infant Cases in 2010 (n=162)



In 47.4% (18/38) of the Alabama fetal cases reviewed, mothers were classified as obese. The proportion of those with obesity among the group's black women at 68.2% (15/22) was greater than that among the group's white women at 18.8% (3/16 women) (Figure 11b).

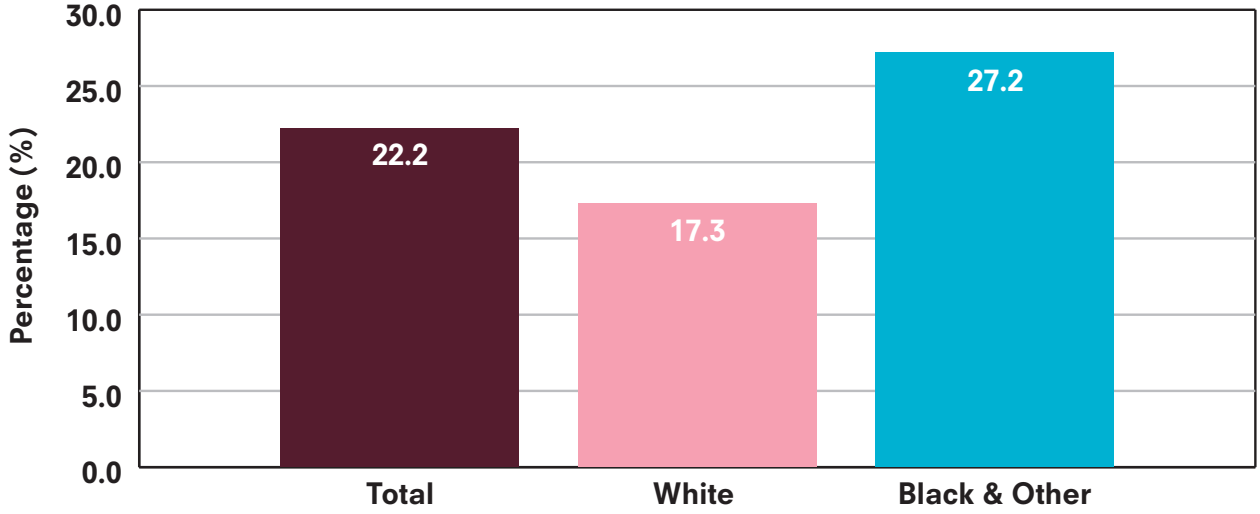
Figure 11b. Percentage (%) of Obesity among Alabama Fetal Cases in 2010 (n=38)



Nutrition

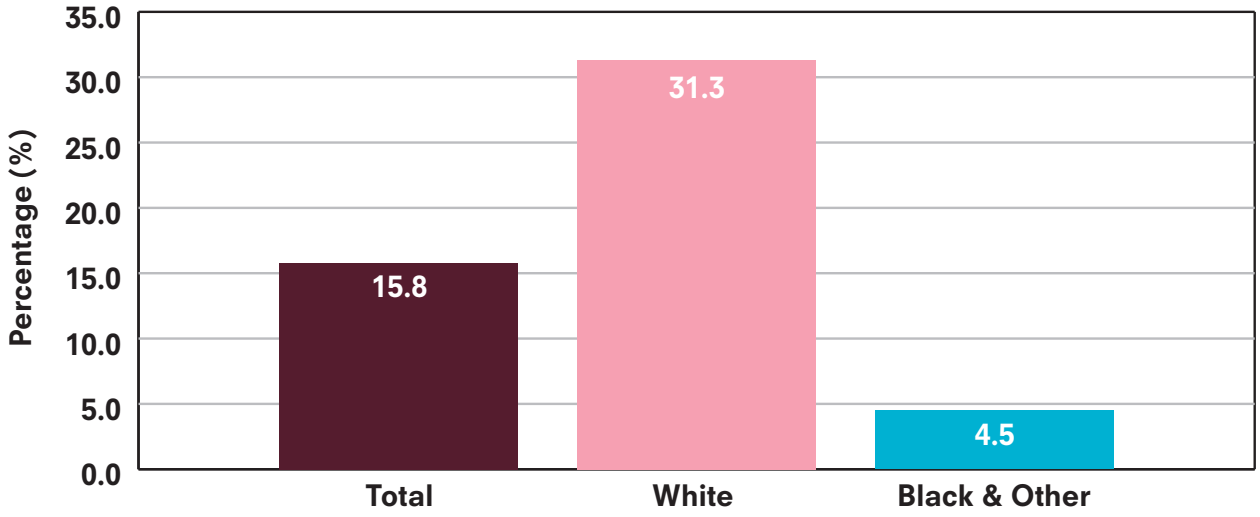
In 22.2% (36/162) of the Alabama infant cases reviewed, mothers were diagnosed with anemia after the first trimester. The proportion of anemia among the group's black women at 27.2% (22/81) was greater than that among the group's white women at 17.3% (14/81) (Figure 12a). In 17.3% (28/162) of the infant cases reviewed, the mothers were classified as having inadequate nutrition and/or anemia in the first trimester.

Figure 12a. Percentage (%) of Anemia After First Trimester among Alabama Infant Cases in 2010 (n=162)



In 15.8% (6/38) of the Alabama fetal cases reviewed, mothers were diagnosed with anemia after the first trimester. The proportion of anemia among the group's white women at 31.3% (5/16) was greater than that among the group's black women at 4.5% (1/22) (Figure 12b). In 13.2% (5/38) of the fetal cases reviewed, the mothers were classified as having inadequate nutrition and/or anemia in the first trimester.

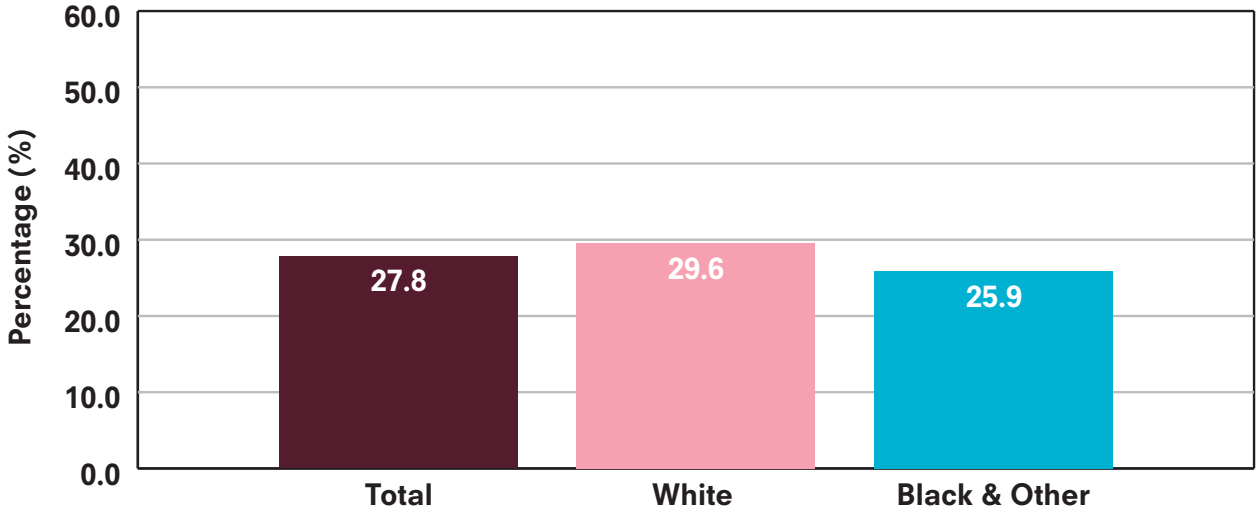
Figure 12b. Percentage (%) of Anemia After First Trimester among Alabama Fetal Cases in 2010 (n=38)



History of Fetal or Infant Loss

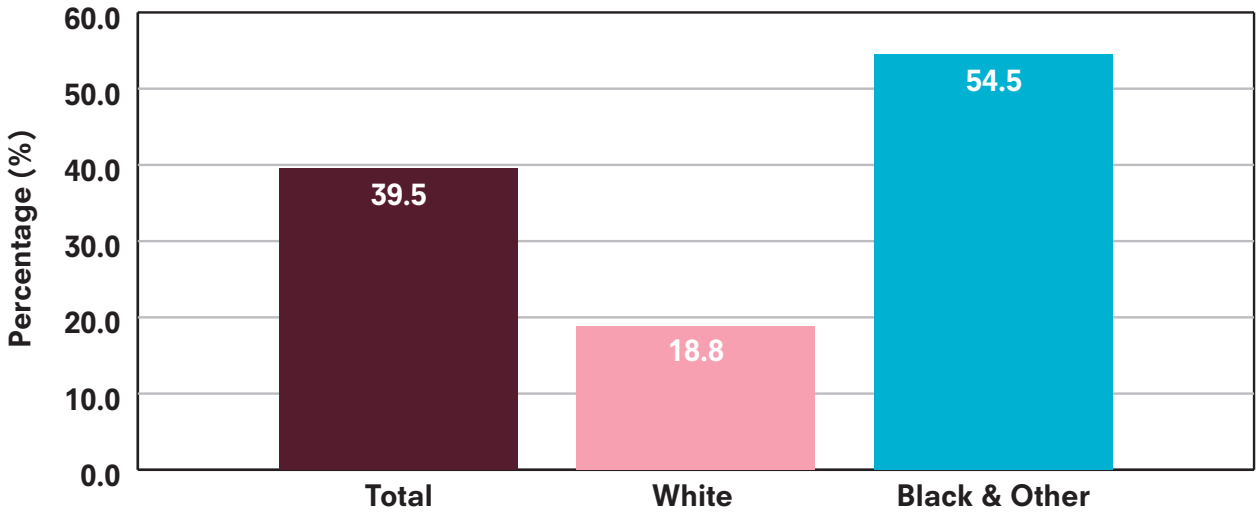
In 27.8% (45/162) of the Alabama infant cases, the maternal history of fetal or infant loss was identified as an important contributing factor. The proportion of maternal history of fetal or infant loss among the group's white women at 29.6% (24/81) was greater than that among the group's black women at 25.9% (21/81) (Figure 13a).

Figure 13a. Percentage (%) of Maternal History of Fetal or Infant Loss among Alabama Infant Cases in 2010 (n=162)



In 39.5% (15/38) of the Alabama fetal cases, the maternal history of fetal or infant loss was identified as an important contributing factor. The proportion of maternal history of fetal or infant loss among the group's black women at 54.5% (12/22) was greater than that among the group's white women at 18.8% (3/16) (Figure 13b).

Figure 13b. Percentage (%) of Maternal History of Fetal or Infant Loss among Alabama Fetal Cases in 2010 (n=38)

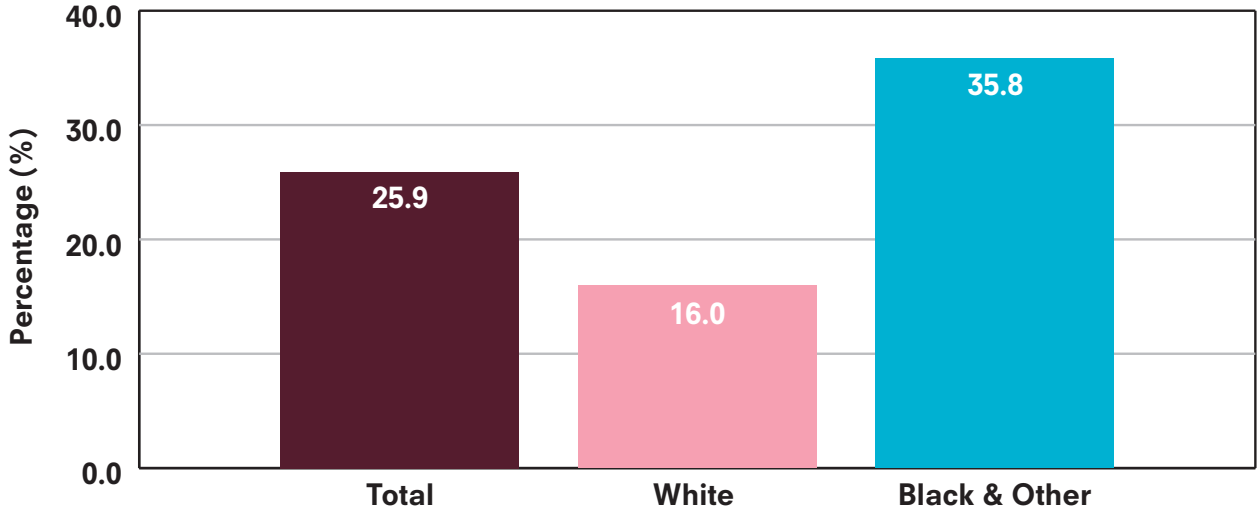


Infection

Infections, both maternal and infant, can contribute significantly to infant deaths. Any infection during pregnancy, including dental, genital, and urinary tract, can be harmful to the fetus.

In 25.9% (42/162 women) of the Alabama infant cases, the CRTs identified maternal infection other than sexually transmitted disease (STD) as a contributing factor. The proportion of maternal infection other than STDs among black women (35.8%) in this group was greater than that among white women (16.0%) in this group (Figure 14a).

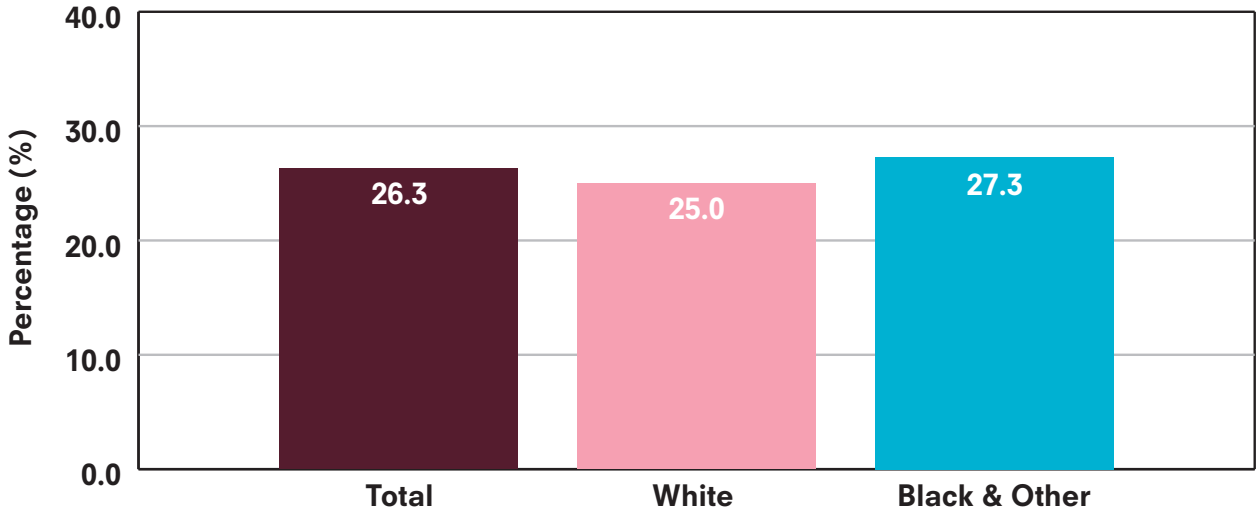
Figure 14a. Percentage (%) of Maternal Infection Other Than STD among Alabama Infant Cases in 2010 (n=162)



In 14.8% (24/162 women) of the Alabama infant cases, the mothers had STDs, which include infections of chlamydia, gonorrhea, hepatitis B, herpes, human papillomavirus, syphilis, trichomonas, and HIV. The proportion of STDs among the group's black women (21.0%) was greater than that among the group's white women (8.6%). In 11.7% of the Alabama infant cases (19/162), the mothers had a history of STDs or other genitourinary infection.

In 26.3% (10/38 women) of the Alabama fetal cases, the CRTs identified maternal infection other than STD as a contributing factor. The proportion of maternal infection other than STDs among black women (27.3%) in this group was greater than that among white women (25.0%) in this group (Figure 14b).

Figure 14b. Percentage (%) of Maternal Infection Other Than STD among Alabama Fetal Cases in 2010 (n=38)

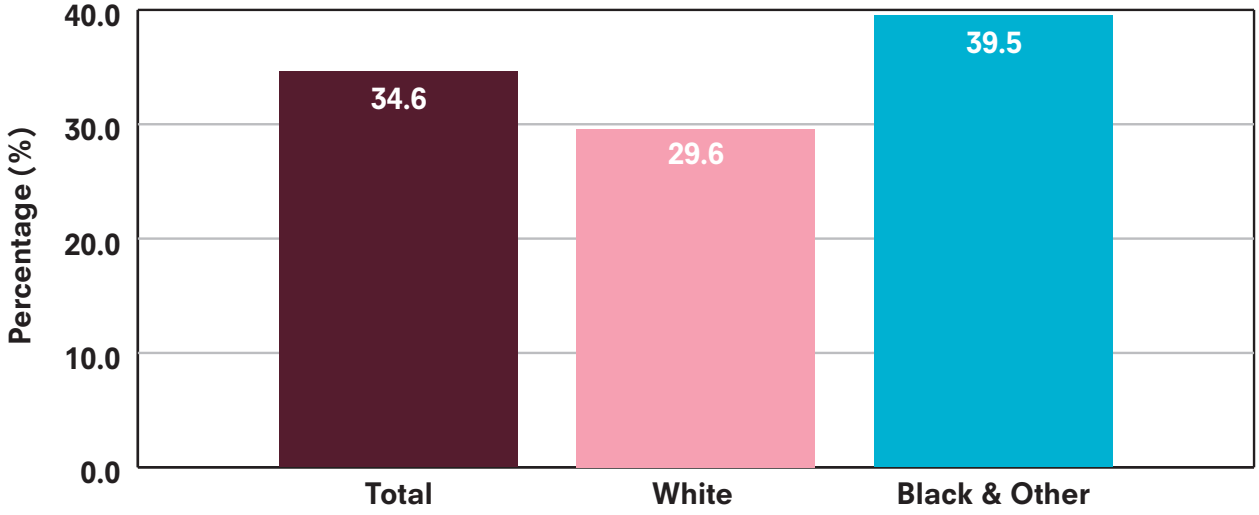


In 10.5% (4/38 women) of the Alabama fetal cases, the mothers had STDs, which include infections of chlamydia, gonorrhea, hepatitis B, herpes, human papillomavirus, syphilis, trichomonas, and HIV. The proportion of STDs among the group's white women (12.5%) was greater than that among the group's black women (9.1%). In 5.3% of the Alabama fetal cases (2/38), the mothers had a history of STDs or other genitourinary infection.

Infection, particularly pneumonia, meningitis and sepsis, is a major contributor to high mortality rates in very young infants. The lungs are not fully developed in a premature infant with subsequent vulnerability to upper respiratory infections.

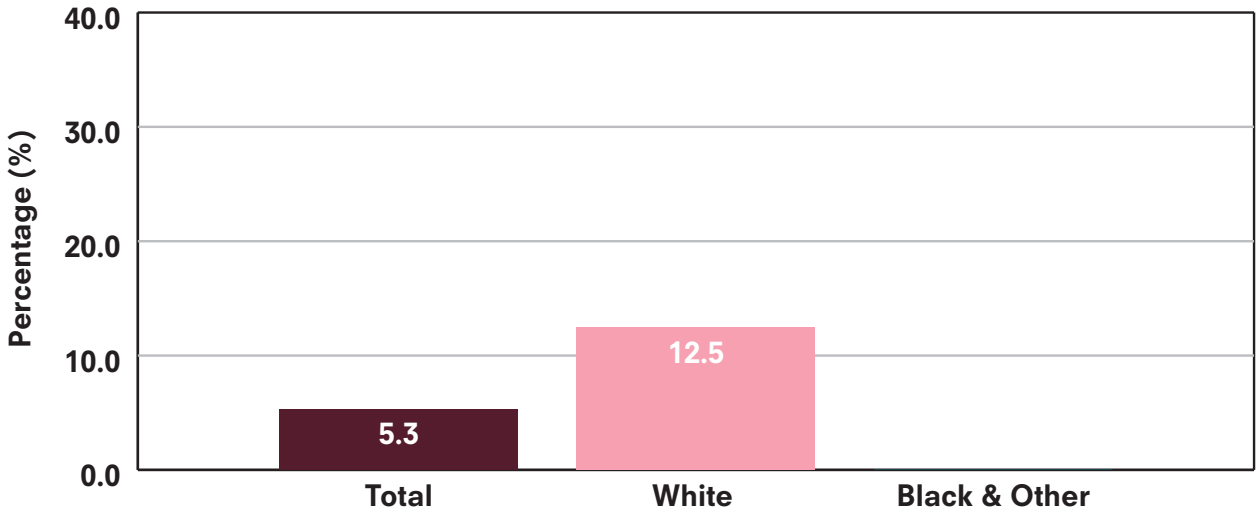
In 34.6% (56/162) of the Alabama infant cases, the CRTs identified infections as an important risk factor. The infections include bronchiolitis, bronchitis, fever, necrotizing enterocolitis, pneumonia, respiratory syncytial virus, sepsis, site infection, and urinary infection. The percentage of infection among the group's black infants at 39.5% was greater than that among the group's white infants at 29.6% (Figure 15a).

Figure 15a. Percentage (%) of Infection among Alabama Infant Cases in 2010 (n=162)



In 5.3% (2/38) of the Alabama fetal cases, the CRTs identified infections as an important risk factor. The infections include bronchiolitis, bronchitis, fever, necrotizing enterocolitis, pneumonia, respiratory syncytial virus, sepsis, site infection, and urinary infection. For this group, infections were only present among the white infants at 12.5% (2/16) (Figure 15b).

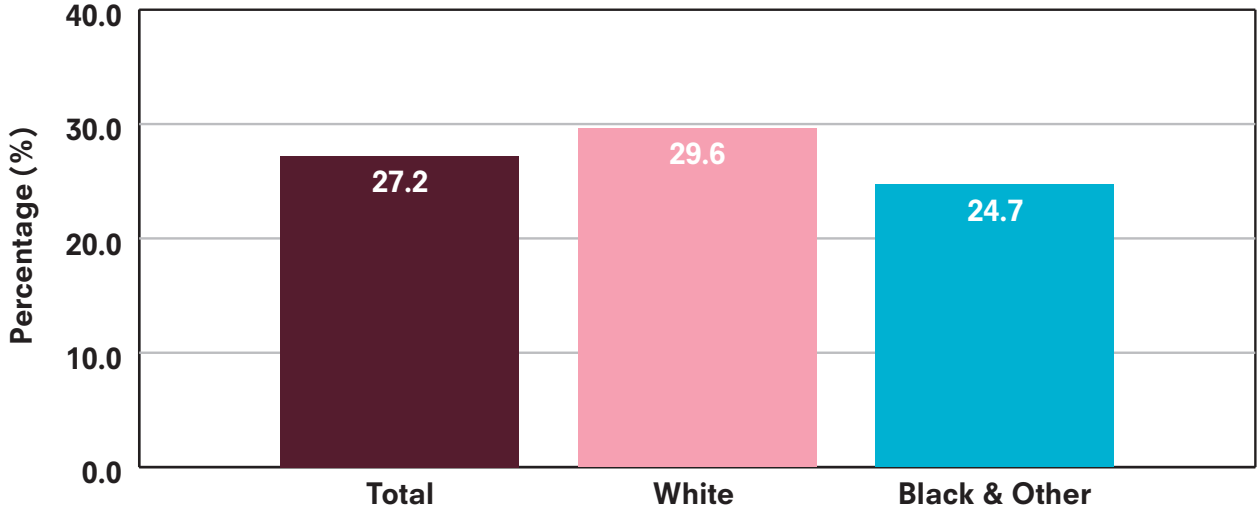
Figure 15b. Percentage (%) of Infection among Alabama Fetal Cases in 2010 (n=38)



Late Entry into Prenatal Care after the 13th Week

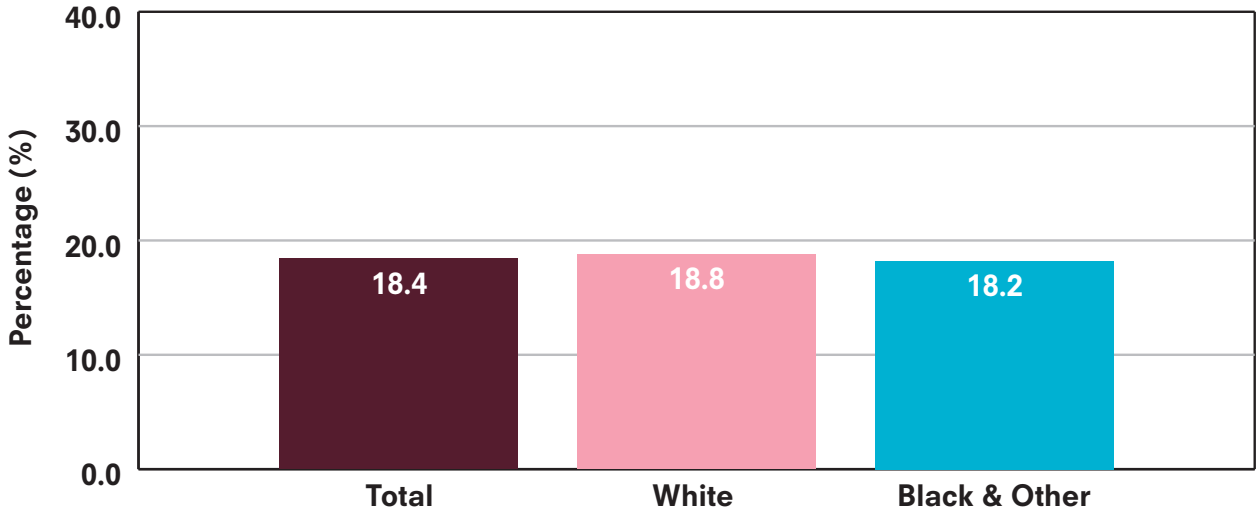
In 27.2% (44/162) of the Alabama infant cases, late entry into prenatal care after the 13th week was identified as an important contributing factor. The proportion of late entry into prenatal care after the 13th week among the group's white women at 29.6% (24/81) was greater than that among the group's black women at 24.7% (20/81) (Figure 16a).

Figure 16a. Percentage (%) of Late Entry into Prenatal Care after the 13th Week among Alabama Infant Cases in 2010 (n=162)



In 18.4% (7/38) of the Alabama fetal cases, late entry into prenatal care after the 13th week was identified as an important contributing factor. The proportion of late entry into prenatal care after the 13th week among the group's white women at 18.8% (3/16) was greater than that among the group's black women at 18.2% (4/22) (Figure 16b).

Figure 16b. Percentage (%) of Late Entry into Prenatal Care after the 13th Week among Alabama Fetal Cases in 2010 (n=38)



Perinatal Region I – Lisa Carter, MSN, RN, FIMR Coordinator

Ten leading contributing factors in Perinatal Region I are listed in Table 7.

Table 7. Ten Leading Contributing Factors in Perinatal Region I

Contributing Factor	% of Total Cases (n=28)	% of White (n=21)	% of Black & Other (n=7)
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	67.9	61.9	85.7
Prematurity (< 37 weeks)	53.6	52.4	57.1
Low birthweight (< 2,500 g)	50.0	47.6	57.1
Preterm labor	46.4	42.9	57.1
Substance abuse	39.3	42.9	28.6
History of fetal or infant loss	35.7	38.1	28.6
Late entry into prenatal care after the 13th week	35.7	33.3	42.9
Pre-existing medical condition (includes nonlethal anomalies, metabolic disorders, etc.)	28.6	33.3	14.3
Obesity	25.0	23.8	28.6
Sudden infant death syndrome prevention/Safe Sleep	25.0	19.0	42.9

2010 Recommendations from Region I CRT

Problem/Issue Identified:

1. Grief Support

Provide grief counseling/support at delivery and/or pediatric care facility as well as information of services available and referrals to community agencies for grief counseling. Provide education to prenatal care providers on available tools to utilize in addressing grief and denial issues. Provide postpartum depression screening and assessment of grieving status with appropriate referrals. Provide education to emergency room (ER) staff related to care of the family following an infant death and of services available and referrals to community agencies for grief counseling for families experiencing an infant death.

2. Patient/Caregiver/Community Education

Provide education on the following: the importance of early and consistent prenatal care; "Kick Counts," the signs and symptoms of decreased fetal movement, and when to call the doctor; the importance of proper nutrition and weight gain during pregnancy; the risks of obesity; and Safe Sleep/SIDS prevention, before discharge and ongoing to families and communities.

3. Family Planning

Provide education about the importance of being healthy before pregnancy. Provide family planning counseling prior to discharge. Provide genetic counseling prior to the next pregnancy, when appropriate.

4. Emergency Services/Law Enforcement

Establish/enhance death scene investigation protocols and documentation of infant deaths. Advocate and educate county coroners, legislators, and the public regarding the need for mandatory scene investigations when an infant dies, particularly for those occurring outside of the hospital setting. Advocate for autopsies to be conducted without exception, in all cases of infant death except those cases that have a clear cause of death – prematurity, diagnosed disease, congenital anomaly, etc.

5. Substance Abuse

Provide education regarding smoking cessation and substance abuse treatment. Supply providers with tools to screen for substance abuse, with referrals for substance abuse treatment, when appropriate.

2010 Activities for Region I CAT*

Madison County CAT:
Recommendation: Provide and develop resources for families and providers to access grief support services following a loss.
Actions:
1. Developed, established and launched, in May-June 2010, a Facebook page named "Healing Hearts for Baby Loss of North Alabama."
2. Held a Perinatal Loss event on October 15, 2010, at Trinity United Methodist Church in Huntsville, Alabama.
Recommendation: Provide education and awareness of the need to implement a CAT in Marshall County.
Actions:
1. Designated a subcommittee of the Marshall County Children's Policy Council to take on the recommendations from the CRT.

*Based on 2009 Recommendations from Region I CRT (see 2009 FIMR Annual Report).

Perinatal Region II – Kathy Warren, BSN, RN, FIMR Coordinator
Sharon Bradford, BSN, RN, FIMR Coordinator

Ten leading contributing factors in Perinatal Region II are listed in Table 8.

Table 8. Ten Leading Contributing Factors in Perinatal Region II

Contributing Factor	% of Total Cases (n=17)	% of White (n=8)	% of Black & Other (n=9)
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	70.6	62.5	77.8
Prematurity (< 37 weeks)	64.7	62.5	66.7
Low birthweight (< 2,500 g)	58.8	50.0	66.7
Obesity	52.9	37.5	66.7
Infection	52.9	37.5	66.7
Sudden infant death syndrome prevention/Safe Sleep	47.1	50.0	44.4
Pre-eclampsia/eclampsia/HELLP syndrome	29.4	25.0	33.3
Late entry into prenatal care after the 13th week	29.4	25.0	33.3
Substance abuse	29.4	37.5	22.2
Multiple gestation	23.5	12.5	33.3

2010 Recommendations from Region II CRT

Problem/Issue Identified:
1. Grief Support
Provide information of services available and referrals to community agencies for grief counseling. Provide education to prenatal care providers on available tools to utilize in addressing grief and denial issues. Provide information regarding infant mortality in a culturally competent manner, specifically targeting the black population.

2. Patient/Caregiver/Community Education
Provide education on the following: the risks of obesity; Safe Sleep/SIDS prevention, before discharge and ongoing to families and communities; the importance of early and consistent prenatal care; the importance of receiving care from an appropriate prenatal care provider; the importance of proper nutrition and weight gain during pregnancy; the importance of protected sex and STD/HIV prevention; infant cardio-pulmonary resuscitation, to parents or caregivers before discharge from the hospital; and the signs and symptoms of a sick infant and when to call the pediatrician.

3. Family Planning
Provide education about the importance of being healthy before pregnancy. Provide family planning counseling prior to discharge with follow-up if no contraception at discharge.

4. Substance Abuse
Provide education regarding smoking cessation and substance abuse treatment. Supply providers with tools to screen for substance abuse, with referrals for substance abuse treatment, when appropriate. Develop protocol to screen all mothers with early abruptions for drugs.

5. Socioeconomic Issues
Enhance and improve assessment of family's home/socioeconomic situation. Provide appropriate interventions to address stressors in childhood, poverty, lack of support, etc.

6. Case Management (CM) Services
Provide consistent and ongoing domestic violence screening. Use open ended questions in initial contact to solicit more information from patient. Enhance and improve: knowledge of community services available, as evidenced by referrals; assessment of patient's understanding of discharge instructions prior to discharge; and communication of issues during pregnancy, of infant's care, and of the patient's understanding of care giving needs.

7. Emergency Services/Law Enforcement
Establish/enhance death scene investigation protocols and documentation of infant deaths. Advocate for the availability, in rural areas, of Advanced Life Support (ALS) emergency medical service providers who have been trained in the care of obstetric (OB) and pediatric patients.

2010 Activities for Region II CAT*

Community Action Team of Tuscaloosa:
Recommendation: Provide education to providers of available bereavement services for referral of patient and families who experience a fetal or infant loss.
Actions:
1. Provided educational training to providers, perinatal staff, and clergy in June 2010.
2. Established and implemented bereavement follow-up protocol with Compassionate Friends in May 2010.
Recommendation: Provide education in the summer to youth that participate in the summer food program to address stressors in childhood.
Actions:
1. In 2010, identified the McDonald Hughes Community Center as the location for the summer program to be held the summer of 2011.

*Based on 2009 Recommendations from Region II CRT (see 2009 FIMR Annual Report).

Perinatal Region III – Gayle Whatley, CRNP, RN, FIMR Coordinator

Ten leading contributing factors in Perinatal Region III are listed in Table 9.

Table 9. Ten Leading Contributing Factors in Perinatal Region III

Contributing Factor	% of Total Cases (n=55)	% of White (n=30)	% of Black & Other (n=25)
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	92.7	96.7	88.0
Substance abuse	70.9	63.3	80.0
Unplanned pregnancy (parental compliance/knowledge)	56.4	40.0	76.0
Prematurity (< 37 weeks)	45.5	43.3	48.0
Low birthweight (< 2,500 g)	43.6	40.0	48.0
Poverty (during pregnancy or infant's life)	41.8	23.3	64.0
Anemia (diagnosed after first trimester)	41.8	26.7	60.0
Inadequate nutrition (includes anemia at first trimester prenatal care visit with hemoglobin < 12 or hematocrit < 37)	38.2	30.0	48.0
Preterm labor	38.2	30.0	48.0
Sudden infant death syndrome prevention/Safe Sleep	36.4	33.3	40.0

2010 Recommendations from Region III CRT

Problem/Issue Identified:

1. Grief Support

Provide grief counseling/support information of available services and referrals to community agencies for grief counseling, as needed. Provide education to health care providers on available tools to utilize in addressing grief. Provide postpartum depression screening with appropriate referrals. Improve the process of the notification of fetal and infant deaths to the Alabama Medicaid Agency. Provide home visits to Medicaid mothers who have experienced a perinatal loss.

2. Family Planning

Provide education about the importance of being healthy before pregnancy, of family planning/preconceptional/interconceptional care education to ensure appropriate birth spacing and management of chronic diseases. Provide family planning counseling prior to discharge. Provide birth control in the immediate postpartum period. Provide follow-up regarding contraception and family planning when patient initially refused services. Provide genetic counseling prior to the next pregnancy, when appropriate.

3. Patient/Caregiver/Community Education

Provide education on the following: the importance of proper nutrition and weight gain during pregnancy; Safe Sleep/SIDS prevention, before discharge and ongoing to families and communities; the importance of early and consistent prenatal care; the importance of compliance with plan of care; the risks of obesity; infant cardio-pulmonary resuscitation, to parents or caregivers before discharge from the hospital; and the importance of protected sex and STD/HIV prevention.

4. Medical Care/Provider Opportunities

Provide assessment and evaluation of dietary habits and of diet content/nutritional counseling. Improve communication by provider, of issues during pregnancy or infant's care, and evaluate the patient's/caregiver's understanding. Provide management/follow-up for mothers with pregnancy complications and subsequently transfer, in a timely manner, as warranted to appropriate level of care. Provide infant cardio-pulmonary resuscitation training as standard discharge from hospital. Provide, to the Risk Management division in delivering hospitals, notification of postneonatal deaths occurring outside of the hospital setting. Establish a regional list-serve for Risk Managers in all delivering hospitals so that information regarding OB issues can be addressed. Provide education to OB providers as directed in ACOG standards pertaining to bottle/breast feeding, car seat safety, safe sleep issues, etc.

5. Socioeconomic Issues

Enhance and improve assessment of family's home/socioeconomic situation. Make early referrals to social services, as well as increase availability of low cost/subsidized quality daycare.

6. Substance Abuse

Provide education regarding smoking cessation and substance abuse treatment. Supply providers with tools to screen for substance abuse, with referrals for substance abuse treatment, when appropriate. Provide education to the patient and the community on the importance of not using drugs anytime, especially when pregnant. Develop universal screening protocol for substance abuse for use by hospitals and physicians in Perinatal Region III to screen all pregnant females. Develop protocol to screen for substance abuse in specific situations, i.e., specifically targeting placental abruptions.

7. Case Management (CM) Services

Provide domestic violence screening tools to providers. Develop protocol for domestic violence referral. Provide education to providers of the referral process and of the services available in the community. Improve access for Maternity Care Program registration by enhancing and improving communication to patient regarding the SOBRA Medicaid process, and the items needed to properly process application, in order to facilitate a more timely approval. Enhance and improve both social services consults for perinatal patients, when applicable, and assessment of the income level for pregnant women, specifically targeting pregnant women who have private insurance, to ensure that basic needs as well as medical needs are being met during a pregnancy.

8. Emergency Services/Law Enforcement

Establish/enhance death scene investigation protocols and documentation of infant deaths. Enhance and improve intra-agency communications, including those with the medical examiner. Provide sensitivity training for all first responders. Enhance and improve bereavement service referrals by coroners in all cases of infants discovered dead in the home.

2010 Activities for Region III CAT*

Jefferson County CAT:

Recommendation: Provide bereavement training for hospital staff.

Actions:

1. University of Alabama at Birmingham, in November 2010, sponsored a conference which offered the Resolve Through Sharing (RTS) Bereavement Training.

Recommendation: Provide bereavement services list for distribution to parents.

Actions:

1. Create a list of bereavement providers to share with coroners and ER departments.

Recommendation: In collaboration with the Jefferson County Children's Policy Council, begin a process to assess the degree of health education received by adolescents in Jefferson County.

Actions:

1. Jefferson County Children's Policy Council created a new subcommittee for Reproductive Healthcare to address preconception health needs.

Recommendation: Promote identification of substance abuse issues.

Actions:

1. In July 2010, the Safety Committee, a subcommittee of the Jefferson County CAT, obtained agreement from the Children's Health System's marketing director to assist, for a six-month period beginning in January 2011, with a media blitz concerning substance abuse and safe sleep to be used in physicians' offices to educate parents/caretakers while they are waiting to see their provider.
2. The Safety Committee met with black pastors in Jefferson County to provide education on perinatal issues such as human trafficking, homeless youth, youth violence, shaken baby syndrome, and safe sleep.

Calhoun/Cleburne/North Talladega County CAT:

Recommendation: Provide information of the social services available in the community.

Actions:

1. In 2010, the Community Resource Subcommittee developed and distributed, to physicians and medical facilities, a county directory of services.

Recommendation: Provide prenatal care education to pregnant teens.

Actions:

1. Prenatal classes to teens were provided by a local church.

Recommendation: Provide safe sleep information to the parents in Etowah County.

Actions:

1. In 2010, began to meet with nurse managers, administration, and physicians regarding a plan to provide accurate information regarding safe sleep.
2. Made plans to present safe sleep information at annual nursing conference in May 2011, at Gadsden State Community College.

*Based on 2009 Recommendations from Region III CRT (see 2009 FIMR Annual Report).

Ten leading contributing factors in Perinatal Region IV are listed in Table 10.

Table 10. Ten Leading Contributing Factors in Perinatal Region IV

Contributing Factor	% of Total Cases (n=72)	% of White (n=30)	% of Black & Other (n=42)
Low birthweight (< 2,500 g)	72.2	56.7	83.3
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	69.4	76.7	64.3
Prematurity (< 37 weeks)	68.1	56.7	76.2
Unplanned pregnancy (parental compliance/knowledge)	59.7	50.0	66.7
Preterm labor	41.7	30.0	50.0
Substance abuse	41.7	43.3	40.5
Previability	38.9	23.3	50.0
Obesity	37.5	26.7	45.2
History of fetal or infant loss	33.3	16.7	45.2
Maternal age < 21	27.8	23.3	31.0

2010 Recommendations from Region IV CRT

Problem/Issue Identified:

1. Grief Support

Provide information of services available and referrals to community agencies for grief counseling. Provide education to prenatal care providers on available tools to utilize in addressing grief and denial issues. Provide postpartum depression screening and assessment of grieving status with appropriate referrals. Provide education to emergency room staff of recommended steps to providing grief support, to include provision of a Grief Packet/Box, to families experiencing a loss.

2. Family Planning

Provide education about the importance of being healthy before pregnancy. Provide family planning counseling or bilateral tubal ligation prior to discharge. Provide genetic counseling prior to the next pregnancy, when appropriate. Provide education of the importance of family planning/preconceptional/interconceptional care to ensure appropriate birth spacing. Provide follow-up regarding contraception and family planning when patient initially refused services in the hospital or at the postpartum visit.

3. Patient/Caregiver/Community Education

Provide education on the following: the risks of obesity; the importance of proper nutrition and weight gain during pregnancy; the importance of early and consistent prenatal care; the importance of protected sex and STD/HIV prevention; Safe Sleep/SIDS prevention in addition to other child safety issues such as car seat safety, safe bathing practices, seizure disorder and infant care, etc., before discharge and ongoing to families and communities; infant cardio-pulmonary resuscitation to parents or caregivers before discharge from the hospital or during childbirth classes; and the need for child safety kits including back-to-sleep campaign kits.

4. Substance Abuse

Provide education regarding smoking cessation and substance abuse treatment. Supply providers with tools to screen for substance abuse, with referrals for substance abuse treatment, when appropriate.

5. Medical Care/Provider Opportunities

Enhance and improve: communication among providers, especially with high risk patients; completeness/consistency of the Care Coordinator's record; and management and follow up for mothers with multiple or frequent outpatient and inpatient visits. Provide education to providers of the need to document cervical lengths at 16 weeks as well as the appropriate medications to be used for postpartum depression.

2010 Activities for Region IV CAT*

Babies and Moms (BAM) in Baldwin County CAT:

Recommendation: Provide education to the public on the importance of being healthy before pregnancy.

Actions:

1. Distributed the March of Dimes' "I Want My 40 Weeks" information on cards at health fairs in Fairhope, Alabama.

Recommendation: Provide education to prenatal care providers on available tools to utilize in addressing grief and denial issues.

Actions:

1. Developed a packet to distribute to providers in Baldwin County to inform them of available community services, grief support, and available educational brochures and where and how to order the brochures.
2. Formed, in August of 2010, various groups to accomplish this task.

Recommendation: Provide education on Safe Sleep/SIDS prevention in addition to other child safety issues such as car seat safety, safe bathing practices, seizure disorder and infant care, etc., before discharge and ongoing to families and communities.

Actions:

1. An educational Power Point slide presentation on Baldwin County infant mortality statistics was developed and presented in black churches to increase the awareness of infant mortality.

Recommendation: Provide information of services available and referrals to community agencies for grief counseling.

Actions:

1. Developed a Facebook page that was added to the Grief Support List of services available in the community.

Recommendation: Provide education and awareness of the need to implement a Community Action Team in Monroe County.

Actions:

1. Implementation of a CAT in Monroeville.

Recommendation: Provide education and awareness of the need to implement a Community Action Team in Escambia County.

Actions:

1. Laying the ground work creating a CAT in Escambia County for implementation of FIMR in Escambia County.

Alabama Baby Coalition:

Recommendation: Provide information on natural family planning to providers to share with patients who may not want medicinal birth control.

Actions:

1. Invited a member from the Mobile CRT to a CAT meeting to discuss natural family planning and future actions.

Recommendation: Provide, prior to discharge, grief support to parents who suffer a loss.

Actions:

1. Discussed placing the Alabama Baby Coalition (ABC) sympathy cards in the Neonatal Intensive Care Unit (NICU) and Labor & Delivery (L&D).
   - ABC sympathy cards have been placed in the Level 3 hospital for distribution to parents who suffer a loss.

Recommendation: Provide education on safe sleep before discharge and ongoing to families and communities.

Actions:

1. Suggestions for various methods for providing safe sleep education were made.
   - Food & Lodging Inspectors with the Mobile County Health Department distributed safe sleep posters to the 175 Mobile County daycare centers.

Recommendation: Collect additional data for the FIMR database system.

Action:

1. The data team now seeks to add Mother's parents' height, record access issues, data discrepancies, the measure of immature neutrophils (Bands) as well as mature neutrophil count (Segs) and to mark Momcare Medicaid as "HMO Medicaid."

Recommendation: Plan for Infant Mortality Awareness Month in September.

Action:

1. Suggested activities to be completed, determined the theme, and suggested sponsors and speakers/topics.
2. Decided to send out "Save the Date" Cards as soon as the venue and date were secured.

Recommendation: Plan an ABC Infant Mortality Conference for 2011.

Action:

1. The CRT began discussing the 2011 ABC Infant Mortality Conference plans.

*Based on 2009 Recommendations from Region IV CRT (see 2009 FIMR Annual Report).

Ten leading contributing factors in Perinatal Region V are listed in Table 11.

Table 11. Ten Leading Contributing Factors in Perinatal Region V

Contributing Factor	% of Total Cases (n=28)	% of White (n=8)	% of Black & Other (n=20)
Pre-existing medical conditions such as asthma, hypertension, diabetes, mental health disorders, etc.	82.1	100.0	75.0
Unplanned pregnancy (parental compliance/knowledge)	64.3	37.5	75.0
Obesity	60.7	37.5	70.0
Low birthweight (< 2,500 g)	42.9	25.0	50.0
Presence of life course perspective risk factors (stressors in childhood, history of abuse, poverty, lack of support, etc.)	39.3	37.5	40.0
Prematurity (< 37 weeks)	39.3	12.5	50.0
Maternal infection other than sexually transmitted diseases	35.7	25.0	40.0
Preterm labor	35.7	25.0	40.0
Infection	35.7	25.0	40.0
Sudden infant death syndrome prevention/Safe Sleep	25.0	25.0	25.0
Substance abuse	25.0	37.5	20.0

2010 Recommendations from Region V CRT

Problem/Issue Identified:

1. Grief Support

Provide education to prenatal care providers on available tools to utilize in addressing grief and denial issues. Provide grief counseling/support at delivery and/or pediatric care facility as well as information of services available and referrals to community agencies for grief counseling. Provide postpartum depression screening and assessment of grieving status with appropriate referrals. Provide education on the importance of bonding time for grief resolution for families who have a non-viable baby.

2. Family Planning

Provide education about the importance of being healthy before pregnancy and of family planning/preconceptional/interconceptional care to ensure appropriate birth spacing. Provide birth control in the immediate postpartum period and encourage compliance with the chosen contraceptive method so that no doses are missed. Provide family planning counseling prior to discharge. Provide genetic counseling prior to the next pregnancy, when appropriate.

3. Patient/Caregiver/Community Education

Provide education on the following: the risks of obesity; the importance of proper nutrition and weight gain during pregnancy; the importance of early and consistent prenatal care; the importance of compliance with plan of care; Safe Sleep/SIDS prevention, before discharge and ongoing to families and communities; the importance of protected sex and STD/HIV prevention; infant cardio-pulmonary resuscitation, to parents or caregivers before discharge from the hospital; and child safety education to include discussions on car restraint, medication administration, Shaken Baby Syndrome, child proofing, etc.

4. Medical Care/Provider Opportunities

When applicable, debrief parents 2-3 months after loss to assess understanding of cause(s)/circumstances of death. Enhance and improve sensitivity training, cultural competency training for providers, and network of interpreters for translation. Provide education to emergency room staff regarding the importance of prenatal care. Provide assessment and evaluation of dietary habits and of diet content/nutritional counseling.

5. Emergency Services/Law Enforcement

Provide sensitivity training for all first responders. Enhance and improve intra-agency communications, including those with the medical examiner. Establish/enhance death scene investigation protocols and documentation of infant deaths.

6. Socioeconomic Issues
Enhance and improve assessment of family's home/socioeconomic situation.

7. Substance Abuse
Provide education regarding smoking cessation and substance abuse treatment. Supply providers with tools to screen for substance abuse, with referrals for substance abuse treatment, when appropriate.

2010 Activities for Region V CAT*

River Region CAT:
Recommendation: Provide family planning referral to all women who deliver regardless of the outcome of the pregnancy.
Actions:
1. Implemented a protocol that the patient will receive a Plan First referral from the Care Coordinator following delivery, regardless of the outcome of the pregnancy.

Recommendation: Provide education on the importance of bonding time for grief resolution for families who have a non-viable baby.
Actions:
1. Presented information pertaining to this issue at the regional Nurse Managers' meeting in March 2010.

Recommendation: Provide diabetic education to pregnant mothers diagnosed with gestational diabetes.
Actions:
1. Developed, in partnership with Jackson Hospital, a class to educate pregnant mothers diagnosed with gestational diabetes about diabetes and its effect on the mother, the fetus, and delivery outcomes.

Recommendation: Provide education to providers, families, and communities on bereavement/grief issues related to the loss of an infant.
Actions:
1. Decided, in October 2010, to hold a conference to address bereavement/grief issues. The conference was held in August 2011.

*Based on 2009 Recommendations from Region V CRT (see 2009 FIMR Annual Report).

Summary

In 2010, there were 59,979 resident live births, 562 fetal deaths, and 522 infant deaths in Alabama. Of the 522 infant deaths, 325 were neonatal deaths and 197 were postneonatal deaths. In total, 200 FIMR cases have been reviewed by CRTs as of August 23, 2011. These cases comprised 38 fetal deaths and 162 infant deaths.

Recommendations

The review of cases accomplished by the CRTs has resulted in different recommendations being passed on to the CATs in each perinatal region. Recommendations were made that highlight the importance of family planning, preconception care, and reductions in barriers to care. These recommendations also include improving grief support, screening and counseling on substance abuse, continued campaigns to encourage safe sleeping for infants, and ongoing support of the FIMR Program.

Selected Characteristics of Reviewed Cases

- Of 200 FIMR cases, 38 were fetal deaths and 162 were infant deaths.
- Of 200 FIMR cases, 28 were reviewed by the Region I CRT, 17 by the Region II CRT, 55 by the Region III CRT, 72 by the Region IV CRT, and 28 by the Region V CRT.
- 58.0% of mothers of reviewed cases were single.
- 48.5% of mothers of reviewed cases were white and 51.5% were black and other.
- 14.5% of mothers of reviewed cases were < 20 years of age.
- 4.5% of maternal education of reviewed cases were < 8 years, 21.5% were between 9 and 11years, 30.0% were 12 years, 26.5% were between 13 and 15 years, and 14.5% were ≥ 16 years.
- 64.5% of mothers entered into prenatal care in the first trimester, and 7.5% of mother's entrance into prenatal care was unknown.
- 61.5% of payments for prenatal care of reviewed cases were paid by Medicaid, 29.0% by private insurance, and 5.5% by self-payers.
- 55.5% of reviewed cases were male and 44.5% were female.
- 18.5% of fetal and infant birthweights were < 500 g, 19.0% were 500-1,499 g, 18.5% were 1,500-2,499 g, and 44.0% were ≥ 2,500 g.
- 1.9% of reviewed infant cases died within 1 hour, 7.4% between 1 hour and 24 hours, 11.1% between 1 day and 28 days, and 79.0% between 29 days and 364 days.
- 32.5% of gestational age of reviewed cases were ≤ 28 weeks, 12.0% were 29-33 weeks, 13.0% were 34-36 weeks, and 42.0% were ≥ 37 weeks.

Ten Leading Contributing Factors Identified by FIMR

- 77.5% of mothers of reviewed cases had identified pre-existing medical condition.
- 56.0% of reviewed cases had identified low birthweight.
- 55.5% of reviewed cases had identified prematurity.
- 50.0% of mothers of reviewed cases had identified unplanned pregnancy.
- 46.0% of mothers of reviewed cases had identified substance abuse, which included tobacco, marijuana, alcohol, prescription medicines, cocaine, ecstasy, methamphetamines, and others.
- 39.0% of mothers of reviewed cases had identified preterm labor.
- 38.0% of mothers of reviewed cases had identified obesity and 21.0% had identified anemia after first trimester.
- 29.5% of mothers of reviewed cases had identified history of fetal or infant loss.
- 28.5% of reviewed cases had identified fetal or infant infection.
- 25.5% of mothers of reviewed cases had identified infection other than sexually transmitted disease.

Supporting Documents

The appendices include FIMR supporting documents, one of which is an analysis of the "Perinatal Periods of Risk Approach" described and summarized in Appendix E.

Appendices

Appendix A. Alabama Perinatal Region Map

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 (NICU's) are:

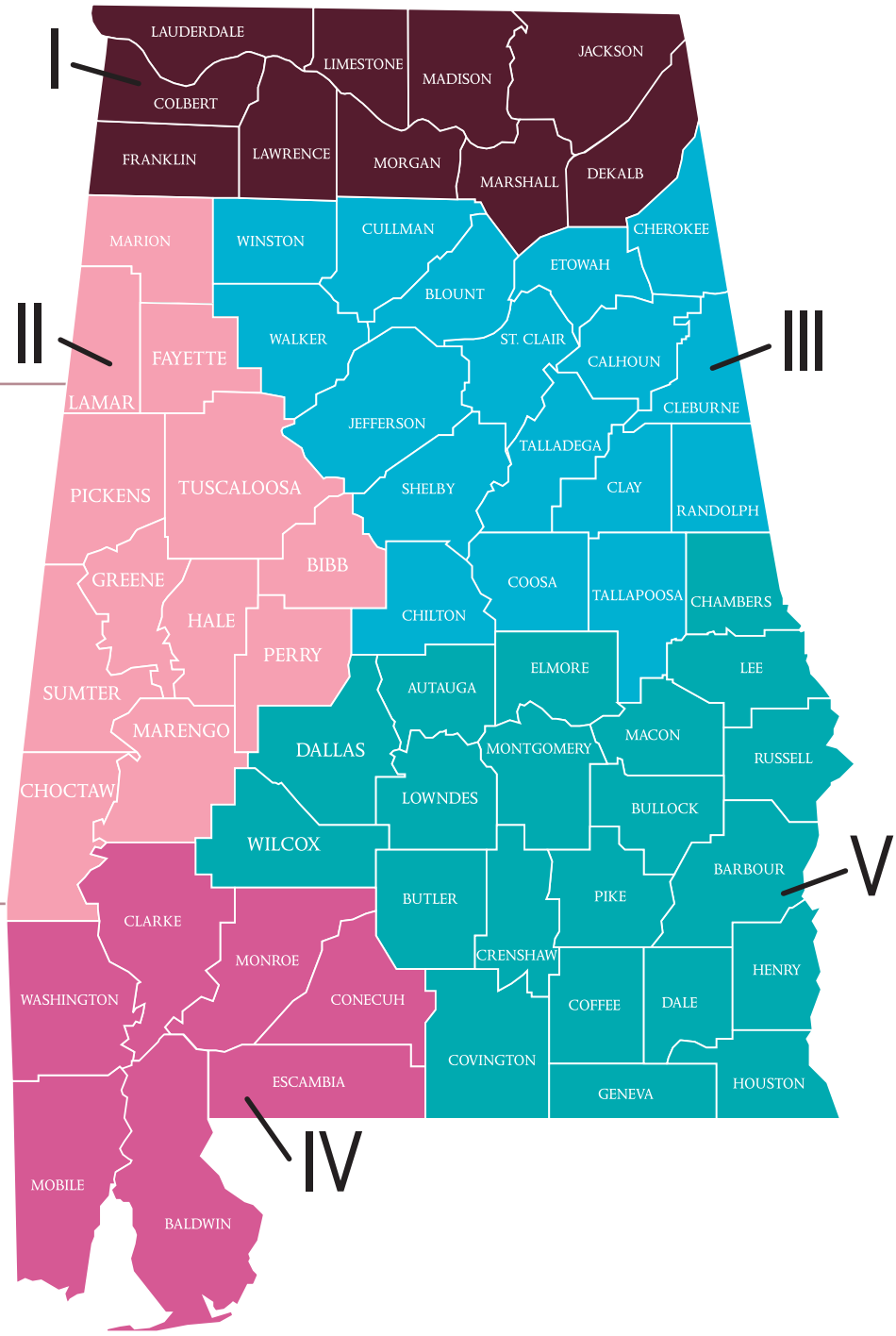
I. Huntsville Hospital, Huntsville

II. DCH Regional Medical Center, Tuscaloosa

III. University of Alabama at Birmingham, Birmingham

IV. University of South Alabama, Mobile

V. Baptist Medical Center, Montgomery



Appendix B. Members of CRTs and CATs

CRT Members of Perinatal Region I

Barbara Bush, AuD	Alabama A & M University
Janet Clark, RN	Children's Rehabilitation Services
Patricia Collins, CRNP	Decatur Physicians for Women
Flora Flood, CRNP, DSN	Oakwood University, School of Nursing
Madeline Hardacre, MD	Decatur Physicians for Women, PC
Karen Harmon-Smith	Mother/Volunteer
James R. Light, MD	University of Alabama at Birmingham
Yolanda Martinez, RN, BSN	Alabama Department of Public Health
Lee Morris, MD	Tennessee Valley Neonatology
Nita Nichols, RD	Jackson County Health Department
Angie Norwood, LBSW	Huntsville Hospital Women & Children
Caroline Page, MSW	Limestone County Department of Human Resources
Noreen Riley**, MSW, LCSW, PIP	Best Start Care Coordinator
Ann Robertson, RN	Children's Rehabilitation Services
Rachel Robinson, MSW, PhD, LCSW	Faculty, Alabama A&M University, School of Social Work
Darlene Showalter, RN, MSN	Faculty, University of Alabama in Huntsville, School of Nursing
Laura Thompson, RN, BSN	Health Group of Alabama
Charlotte Turner, RN, BSN	DeKalb Regional Medical Center
Debra Williams*, MD	Madison County Health Department

CAT Members of Perinatal Region I

Jean Bright, RN	Best Start Care Coordinator, Madison County
Twila Carodine, RN, MSN	Hospice Family Care
Sheryl Gilbreath	Madison County Health Department
Vicki Goodman	Family Strengthening Program
Ellen Harris, RN, BSN	Huntsville Hospital Women & Children
Karen Ivey, RN, BSN	Huntsville Area SAFE KIDS Coordinator
Amber Keith	Madison City Schools
Jane Mitchell, RN, IBCLC	Crestwood Medical Center
Ashley Ray, RN	Huntsville Hospital-Women & Children
Claudia Smith	Family Services Center

CRT Members of Perinatal Region II

Dan Avery**, MD	University of Alabama
Brittani Blackston	Tuscaloosa Campaign to Prevent Teen Pregnancy
Mary Beth Bodin	University of Alabama at Birmingham
Melissa Carruth	Northport DCH
Renee Cole	Alabama Department of Public Health
Carla Cowan	Northport Medical Center
Cindy Dedmon, MD	Tuscaloosa Family Practice
Trendle Ford	DCH Regional Medical Center
Guillermo Godoy, MD	DCH Health Care Authority
Ann Moorehead	Northport DCH Medical Center
Barbara Hankins	Children's Rehabilitation Services
April Davis Hansford	Greater Alabama Health Network
Becky Henderson	Greater Alabama Health Network
Carolyn Henley	DCH Northport Medical Center
Kristi Pritchett	Bryan-Whitfield Memorial Hospital
Terry Humphryes	DCH Regional Medical Center
Barbara Jernigan	Northport Medical Center
Kristi Kelly	Greater Alabama Health Network
Jim Leeper*, PhD	University of Alabama
William Lenahan, MD	Obstetrician Women's Clinic of Winfield
Jim Moore	Indian Rivers Mental Health Center
Marcia Pugh	Healthy Start Maternity Program
Iris Robertson	DCH Regional Medical Center
Tracy Schofield	Alabama Department of Public Health
Peggy Thornton	DCH Regional Medical Center
Earnestine Tucker	Tuscaloosa City Board of Education
Mary Beth Vick	Early Intervention Community Service
Cindy Wagner	Medela
John Waits, MD	University of Alabama
Sara Webb	Healthy Start Medicaid Maternity Program

CAT Members of Perinatal Region II

Dan Avery, MD	University of Alabama
Brittani Blackston	Tuscaloosa Campaign to Prevent Teen Pregnancy
Mary Beth Bodin	DCH Health Care Authority
Melissa Carruth	Northport DCH
Carla Cowan	Northport Medical Center
Tracy Croom	Tuscaloosa Mayor's Office
Jackie Currie	Stillman College
Cindy Dedmon, MD	Tuscaloosa Family Practice
Audrey Ellis	Tuscaloosa City School System
Jane Eure	Professional Advisor
Trendle Ford	DCH Regional Medical Center
Linda Forte	Stillman College Nursing Program
Pamela Payne Foster, MD, MPH	University of Alabama
Susan Gaskins	University of Alabama
Flora Gay	City of Northport
Guillermo Godoy, MD	DCH Health Care Authority
Sister Carol Gray	Catholic Family Service Center
Barbara Hankins	Children's Rehabilitation Services
Becky Henderson	Greater Alabama Health Network
Carolyn Henley	Northport Medical Center
Gladys Hill	Shelton State Community College
Barbara Jernigan	Northport Medical Center
Laurie Johns	Attorney
Kristi Kelly	Greater Alabama Health Network
Jim Leeper, PhD	University of Alabama
Jim Moore	Indian Rivers Mental Health
Ann Moorehead	Northport DCH
Kathy Oths	University of Alabama
Tracy Schofield	Alabama Department of Public Health
Chris Spencer	University of Alabama
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Earnestine Tucker*	Tuscaloosa City Board of Education
John Waits, MD	University of Alabama

CRT Members of Perinatal Region III

Connie Arnwine ..... Jefferson County Department of Health
Joey Biggio, MD ..... University of Alabama at Birmingham
Shelley Birchfield ..... Regional Medical Center
Reba Brannan ..... Alabama Department of Public Health
Kathy Bryson ..... Servants in Faith and Technology
Wally Carlo, MD ..... University of Alabama at Birmingham
Brenda Causey ..... Alabama Department of Public Health
Freda Centor ..... University of Alabama at Birmingham
Paula Clark ..... Alabama Department of Public Health
Robin Allison Collins ..... March of Dimes
Glenda Dickerson ..... Brookwood Medical Center
Ken Elmer, MD ..... Simon Williamson Clinic
Melissa Graham ..... Gadsden Regional Medical Center
Nell Henderson ..... Jefferson County Department of Human Resources
Elaine St. John, MD ..... University of Alabama at Birmingham
Angela Jukkala ..... University of Alabama at Birmingham
Blyth Keith ..... University of Alabama at Birmingham
Joan Kilpatrick ..... Cullman Regional Medical Center
Byron Phillips, MD ..... Citizen's Baptist Medical Center
Kim Reach ..... VIVA Steps Ahead Program
Ava Rozelle ..... Alabama Department of Public Health
Stephanie Terrell ..... Coosa Valley Medical Center
Ed Whatley ..... Retired Educator
Martha Slay Wingate ..... University of Alabama at Birmingham

CAT Members of Perinatal Region III (Calhoun/Cleburne/North Talladega)

Denise Adcock, RN ..... Jacksonville Medical Center
Larry Amerson ..... Sheriff, Calhoun County
Lisa Amerson ..... Calhoun County Board of Education
Shelley Birchfield, RN** ..... Regional Medical Center
Saundra Carter, RN ..... Calhoun-Cleburne Mental Health Center
Brenda Causey, LBSW ..... Public Health Area VI
Jeff Collins, MD ..... Obstetrician, Anniston
Lesa Cotton, RN ..... Calhoun County Board of Education
Lewis Doggett, MD ..... Pediatrician, Anniston
Sandra Fortner, LBSW ..... Calhoun County Department of Human Resources
Jennifer Frank, RN ..... Jacksonville State University
Jennifer Gallahar, RN ..... Regional Medical Center
Devora Hahn, LPN ..... Quality of Life Health Services
Susan Langley, RN ..... Regional Medical Center
Tim Lockette ..... Reporter, The Anniston Star
Beth Long ..... Calhoun County Board of Education
Suzanne Payne ..... Community Advocate
Tim Rolfe ..... Anniston Army Depot
Stephanie Stamps ..... Family Link Social Services Program
Stephanie Weathers, LBSW ..... Public Health Area VI
Ed Whatley* ..... Retired Educator

CAT Members of Perinatal Region III (Jefferson)

Connie Arnwine ..... Community Volunteer
Bonnie Bradley ..... AllKids
Jennifer Kilburn ..... Children's Policy Council of Jefferson County
Candy Palmer ..... Midfield City Schools
Ginger Parsons ..... Children's Hospital
Wynn Speir ..... Children's Hospital
Tom Struzick ..... UAB Center for the Study of Community Health
Virginia Sweet ..... Children's Policy Council of Jefferson County
Martha Thomas ..... Children's Rehabilitation Services
Charline Whyte ..... Jefferson County Department of Health
Vivian Winters ..... Children's Rehabilitation Services

CRT Members of Perinatal Region IV

Tony Bondora, MPH ..... Mobile County Health Department
Marjorie Nicole Brooks*, DO ..... University of South Alabama
Monica Busbee ..... University of South Alabama
Paquita Carter ..... Mobile County Health Department
Meg Cole, DSN ..... Springhill College
Shirley Colston, RNC, MSN ..... Mobile Infirmary
Vicki Curtis, RN ..... Thomas Hospital
Nicole Carter Davis ..... District Early Intervention Coordinator, Mobile, AL
Paula Drummond, MD ..... Eastern Shore Children's Clinic
Susan Eschete, RN, MSN ..... Medicaid Maternity Program, Mobile, AL
Eniola Fagbongbe, MD ..... Obstetrician-Gynecologist, Grove Hill
Kendal I. Foster, MD ..... Obstetrician-Gynecologist, Mobile
Jeanette Gibson ..... Gift of Life Maternity Care Program
Catherine Hanks, RN, BSN ..... Alabama Department of Public Health
Melissa Heath, MD ..... Obstetrician-Gynecologist, Brewton
Peg Hilliard ..... University of South Alabama
Carl W. Martens, MD ..... Monroeville Medical Clinic
Catherine North ..... March of Dimes, Mobile
Michele Nowlin, MSN ..... Emergency Management, Baldwin County
Barbie Oliver, RN, WHNP-BC ..... University of South Alabama
Shannon Payne ..... Police Officer, Mobile
Marsha Raulerson**, MD ..... Pediatrician, Brewton
Richard A. Roh, MD ..... Obstetrician-Gynecologist, Fairhope
Martha Dawn Singleton, NNP ..... D.W. McMillian Memorial Hospital
Hanes M. Swingle, MD ..... University of South Alabama
Sherri K. Taylor, MD ..... University of South Alabama
Debbie Thomasson, ... Area Nursing Director Area 7 and 9
James J. Walker, MD ..... Obstetrician-Gynecologist, Brewton
Kelly Warren ..... Mobile County Health Department
James D. West, MD ..... Obstetrician-Gynecologist, Foley
Stephanie M. Woods, BAC, MPH ..... Mobile County Health Department
Michael M. Zayek, MD ..... University of South Alabama

CAT Members of Perinatal Region IV

Everlean Banks ..... Community Volunteer
Leslie Berry, RN ..... Gift of Life, Foley
Kristen Byrd ..... Angels to Lean Upon Support Group
Barbara Cramton, RN ..... Community Volunteer
Amy Davis, BSN ..... USA Children's and Women's Hospital
Lois Dean, LPN ..... Gift of Life, Bay Minette
Jacquie DePalma ..... Baldwin County Board of Education
Caroline Dube ..... Community Volunteer

Catherine Hanks, RN, BSN	Alabama Department of Public Health
Sharron Lanham	Women's Care Medical Center
Sue Leavins	Women's Care Medical Center
Gina McBride, MSN	Faculty, Faulkner State Community College, School of Nursing
Catherine North	March of Dimes
Pat Preston, RN	Eastern Shore Obstetrician-Gynecologist, Fairhope
Mary Anne Roh, BSN	Thomas Hospital
Carole Schneider	To Be, Fairhope
Dreama Schofield*, LGSW	Thomas Hospital

CRT Members of Alabama Baby Coalition (Mobile)

Sharon Barnicle	Springhill Memorial Hospital
Sabrina Blackweld	Mobile Infirmary
Robin Brooks	Alabama Department of Human Resources
Marjorie Nicole Brooks*, DO	Mobile, AL
Tracy Brown, MD	USA Children's and Women's Hospital
Carol Cannon	Mobile County Health Department
Leslie Carley, MSN	USA Children's and Women's Hospital
Erin Carlisle	USA Children's and Women's Hospital
Anne Carpenter	Springhill Memorial Hospital
Ted Catranis*, MD	Obstetrics & Gynecology Associates
Meg Cole, DSN	Springhill College of Nursing
Stephanie Collins	Alabama Department of Children's Rehabilitation Service
Shirley Colston	Mobile Infirmary
Catherine Dearman	USA Children's and Women's Hospital
Susan Eschete	Momcare
Shirley Ezell, RN	Springhill Memorial Hospital
Sheryl Falcos, MD	USA Children's and Women's Hospital
Linda Fontenot	The Shoulder Rehabilitation Services
Lisa Forsberg, RN	USA Children's and Women's Hospital
Mac Hardeman	Mobile County Police Department
Ina Hall	Mobile Infirmary
Catherine Hanks, BSN	Alabama Department of Public Health
James Hanley	USA Children's and Women's Hospital
Peg Hilliard, BSN	USA Department of Genetics
Debra Hinton, RN	Providence Hospital
Selina Huff	Alabama Dept of Human Resources
Jessi Kirk	USA Children's and Women's Hospital
Barbie Oliver, RN, WHNP-BC	USA Department of Pediatrics
Keith Peevy, MD	USA Children's and Women's Hospital
Marsha Raulerson**, MD	Pediatrician, Brewton
Susan Roberson	Providence Hospital
Richard A. Roh, MD	Eastern Shore Obstetrician-Gynecologist
Danette Scott	Springhill Memorial Hospital
Kirk Simm	USA Children's and Women's Hospital
Elizabeth W Smith	Mobile County Health Department
Hanes M. Swingle, MD	USA Department of Pediatrics–Behavior & Developmental Clinic
Monica Taylor, CRNP	Mostellar Medical Clinic
Tonie Ann Torrans	Penelope House
Rosa Vidal, MD	USA Children's and Women's Hospital
Kelly Warren	Mobile County Health Department
Mary Schaffer Kramer Wells, MD	Mobile Infirmary

CAT Members of Alabama Baby Coalition (Mobile)

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Cathy Algood	MCHD Dorothy May, Community Advocate
Lydia Bennett	Medimmune
Leslie Berry	South Baldwin Hospital
Kristen Byrd	Mother Grief Support Group
Shirley Colston	Mobile Infirmary
Barbara Cramton	Thomas Hospital
Amy Davis, RN	USA Children's and Women's Hospital
Amy Davis	University of South Alabama
Jacquie DePalma	Board of Education
Shirley Ezell, RN	Springhill Memorial Hospital
Linda Fontenot	The Shoulder Rehabilitation Services
Sheree LaCoste	Mobile Hospital Association
Sharron Lanham	Women's Care Medical Center
Sue Leavins	Women's Care Medical Center
Sommerlyn Mitchell	Mobile County Health Department
Catherine North	March of Dimes
Barbie Oliver	USA Beth Edwards, Providence Hospital
Ashley Peyer	Mobile County Health Department
Pat Preston, RN	Dr. Hunt and Childs
Susan Roberson	Providence Hospital
Renee Rogers	USA Children's and Women's Hospital
Mary Anne Roh	Thomas Hospital
Dreama Schofield*, LGSW	Thomas Hospital
Nicole Smith	Momcare
Kelly Warren	Mobile County Health Department
Gwen Weed	Alabama Rehabilitation
Stephanie Woods	Mobile County Health Department

CRT Members of Perinatal Region V

Donna Armstead	Department of Human Resources
Elizabeth Barnes, MD	Pediatrician, Montgomery
Jaqueline Belser, RN	Baptist South
Amy Blackwell, MSN, RN	Baptist South
Paula Brennan	Baptist East
JaWandalyn Brooks	Alabama Coalition Against Domestic Violence
Roger Duggar, MD	Obstetrician, Montgomery
Lee Esco	Investigator, Montgomery County Sheriff's Office
Jason Gentry, MD	Obstetrician, Montgomery
Elizabeth Henderson, MSN, RN	Baptist East
A.Z. Holloway, MD	Pediatrician, Montgomery
Martha Jinright*	Gift of Life
Henry Johnson, MD	Obstetrician, Montgomery
Timothy Marlow	Obstetrician, Selma
Aaron Millage, MD	Neonatologist, Montgomery
Sandra Nasca	Deputy Coroner, Certified Medical Investigator
Bill Petrey	Emergency Medical Services Montgomery
Beth Phillips, MD	ER, Baptist Health
Belfondia Pou, MD	Family Practice, Montgomery
Marilyn Rhodes	Auburn University Montgomery

Renate Rommell	Center for Child/Adolescent Development
James Smith	Sergeant, Montgomery County Sheriff's Office
Donna Guin Taylor	Small Wonders Maternity Program
Charles Tompkins, MD	Family Practice, Luverne
Amy Trammell, RN	Baptist South
Jerry Williams	Coroner, Pike County
Yvonne Willis, RN	Baptist East Montgomery

CAT Members of Perinatal Region V

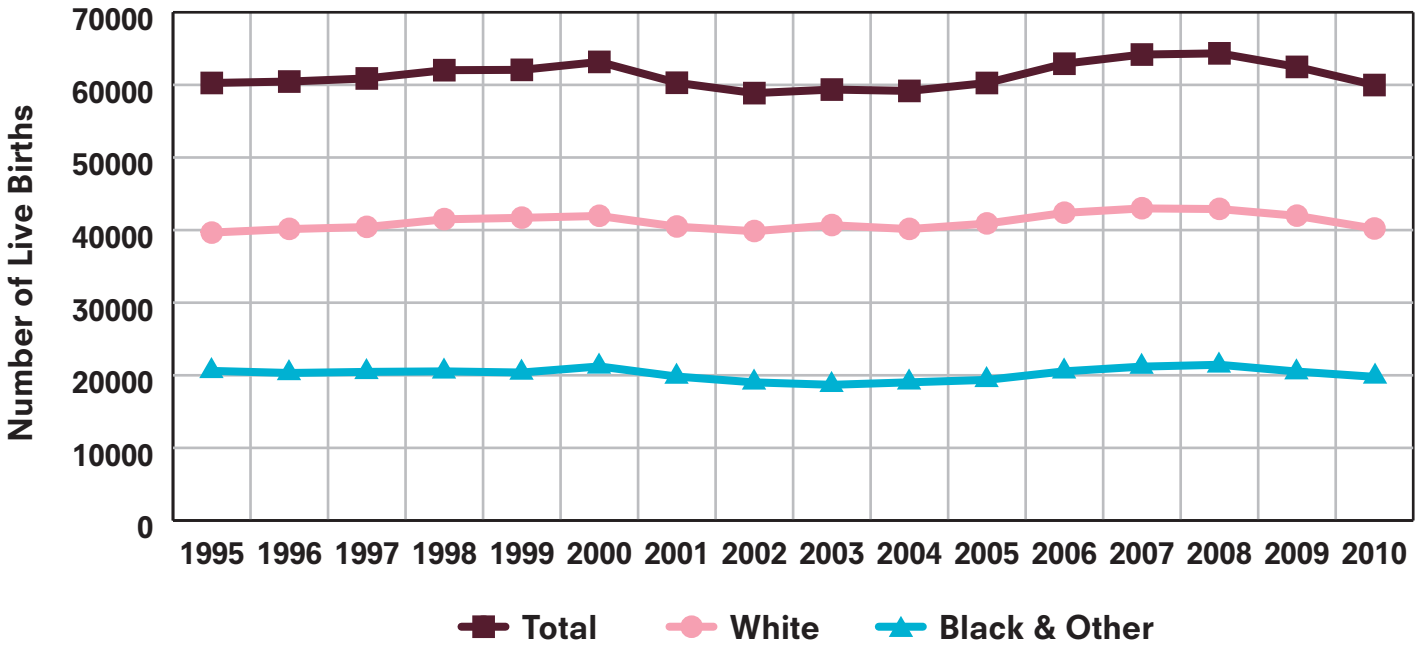
Tamika Anderson	Health Services, Inc.
Valecia Asberry	Montgomery Public Schools
Joann Ashley	Stork's Nest
Demecia Austin	Health Services, Inc.
Jackie Belser	Baptist South
Amy Blackwell	Baptist South
Paula Brennan	Baptist East
Maureen Britton, RN (Retired)	Community Advocate
Twanna Brown	Alabama Department of Public Health
Paula Collins	Family Guidance Center
LaShanda Craig	Montgomery Metro Treatment Center
Debbie Dobbins	Nellie Burge Center
Carol Duvall	Montgomery Metro Treatment Center
Carmalita Green	Alabama Department of Public Health
Sara Hughes	Family Sunshine Center
Saundra Ivey	Gift of Life
Betty Matthews	Baptist East
Kerrie Kelly	March of Dimes
Paige Mitchell	Gift of Life
Nakema Moss	Alabama Department of Public Health
Lorie Mullins *	Counseling Outreach for Pregnancy Emergency Center
Barry Nelson	Montgomery Metro Treatment Center
Sarian Ross	Health Services, Inc.
Janice M. Smiley, MSN, RN	Alabama Department of Public Health
Linda Thomas	Head Start
Cynthia Tomczak	Community Advocate
Kevin Tomczak	Community Advocate
Amy Trammell	Baptist South
Jessica Whatley	Gift of Life

*** Chair**
**** Vice Chair**

Appendix C. Trend of Live Births from 1995-2010

The trend of live births in Alabama during 1995–2010 is shown in Figure 17.

Figure 17. The Number of Live Births in Alabama during 1995-2010



Appendix D. Trend of Fetal and Infant Mortality Rates from 1995-2010

Trends in the fetal mortality rate and the infant mortality rate are shown in Figures 18–25. The data is from 1) Alabama Vital Statistics 2009, 2) Alabama Vital Statistics birth and death files from the Center for Health Statistics in the Alabama Department of Public Health, and 3) MacDorman and Kimeyer 2009[1].

Figure 18. Fetal Mortality Rates, Alabama and United States, 1995-2010

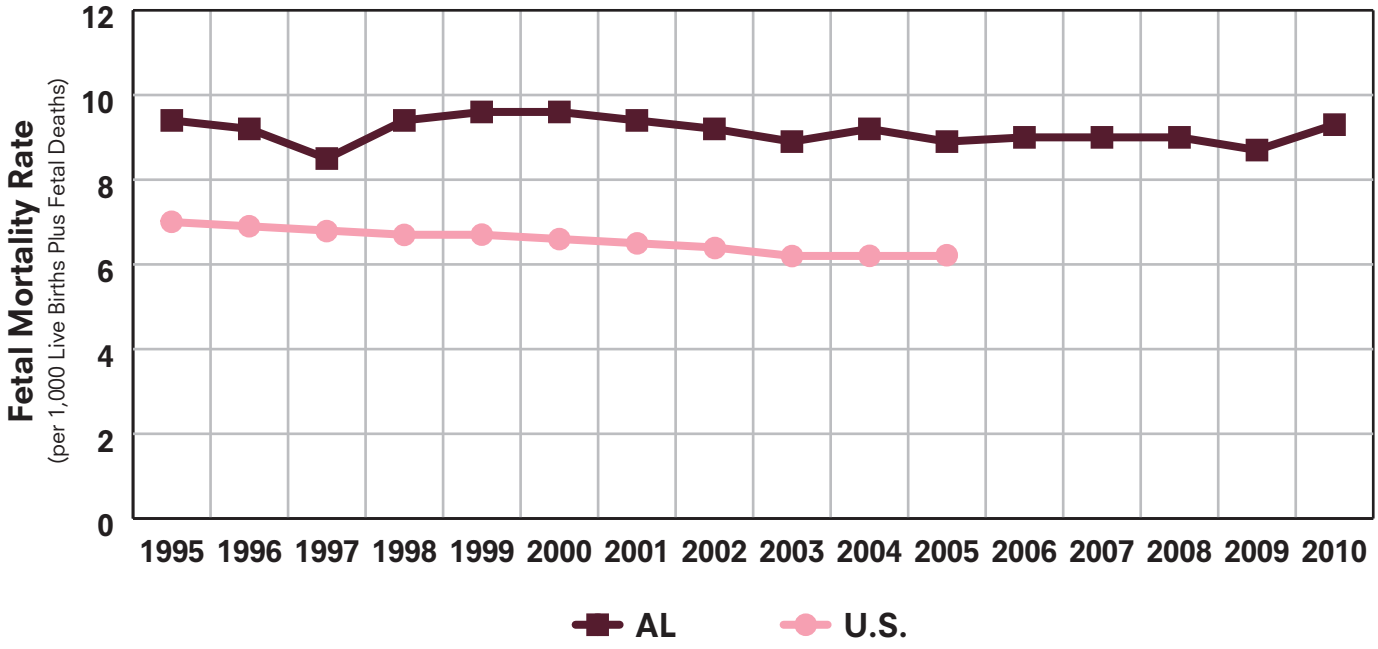


Figure 19. Fetal Mortality Rates by Race, Alabama and United States, 1995-2010

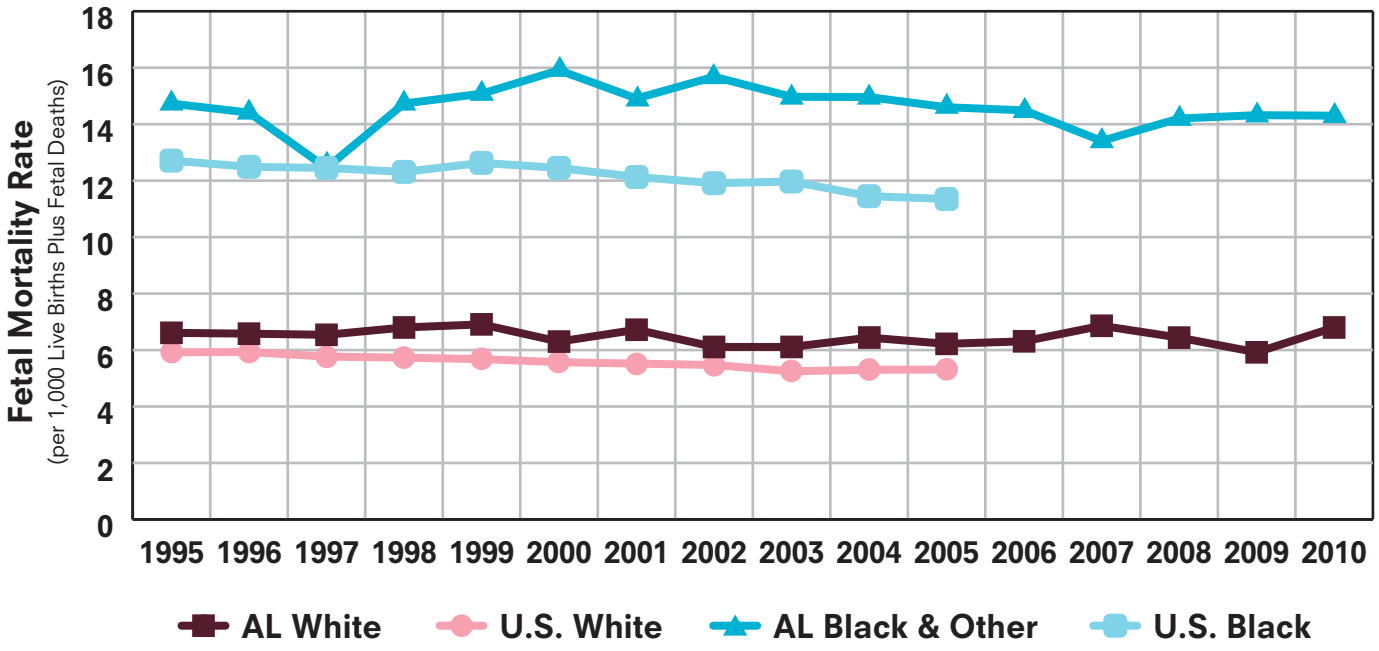


Figure 20. Infant Mortality Rates, Alabama and United States, 1995-2010

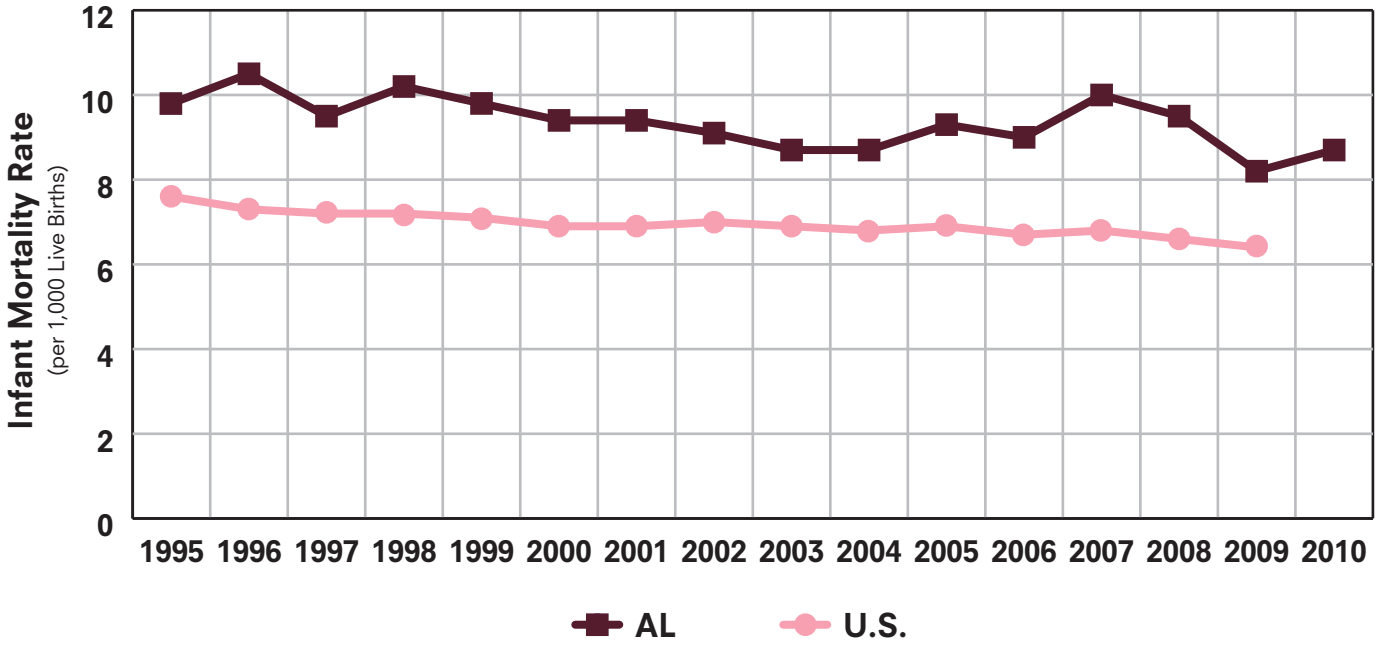


Figure 21. Infant Mortality Rates by Race, Alabama and United States, 1995-2010

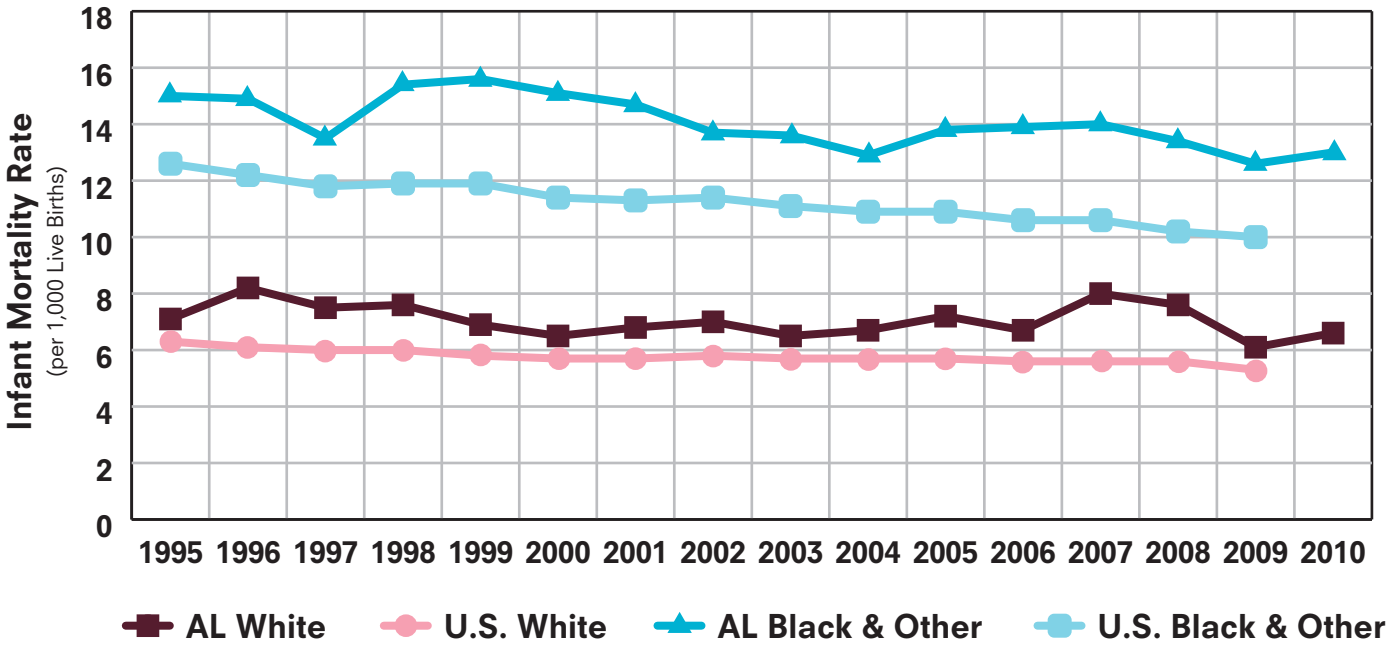


Figure 22. Neonatal Mortality Rates, Alabama and United States, 1995-2010

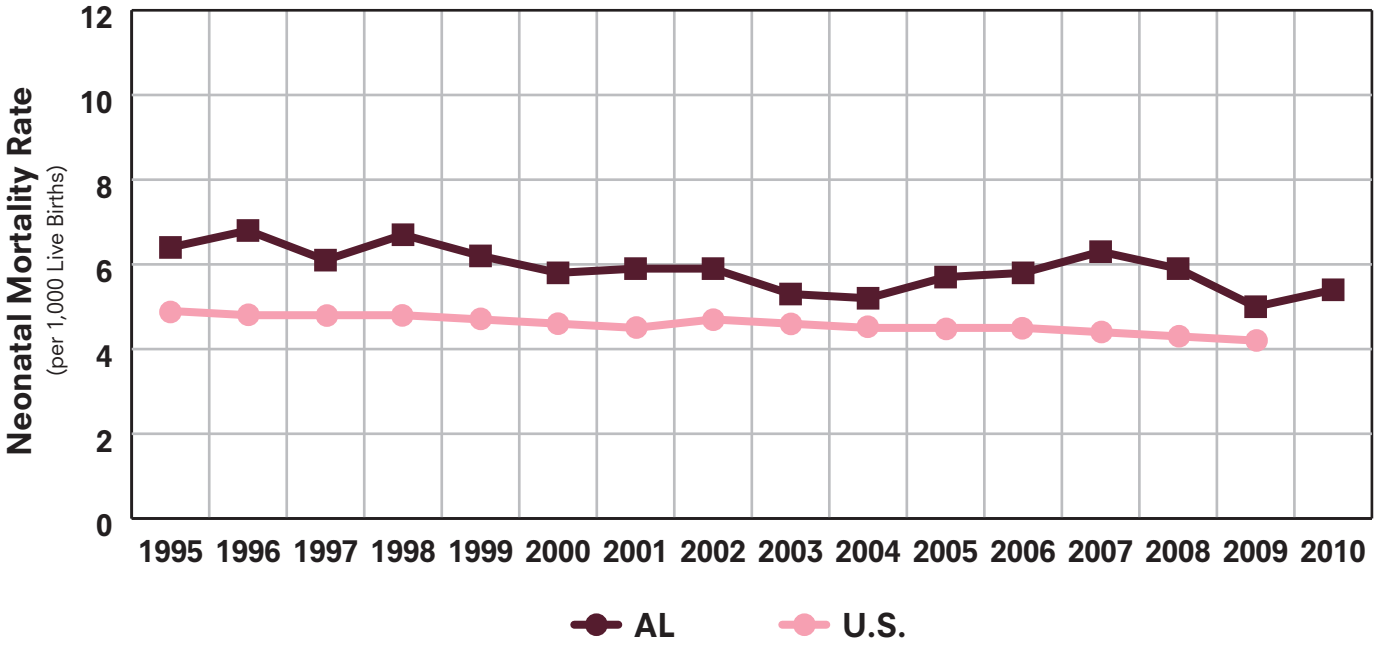


Figure 23. Neonatal Mortality Rates by Race, Alabama and United States, 1995-2010

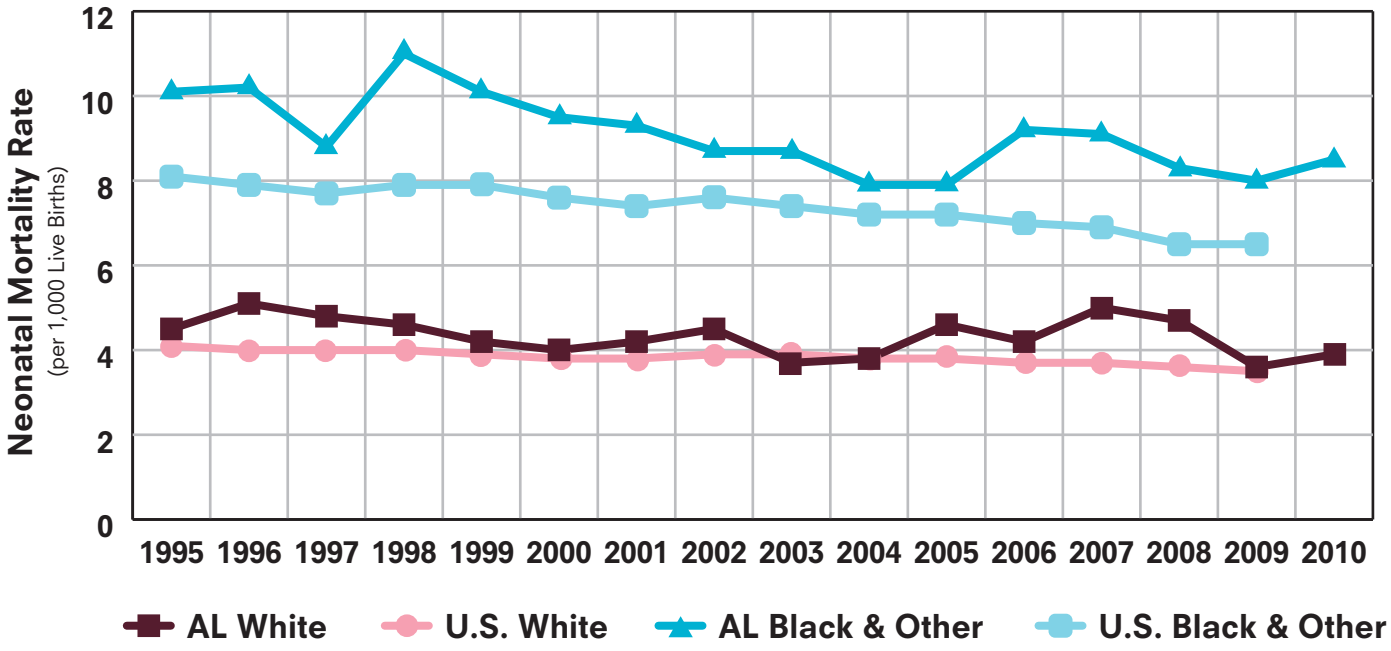


Figure 24. Postneonatal Mortality Rates, Alabama and United States, 1995-2010

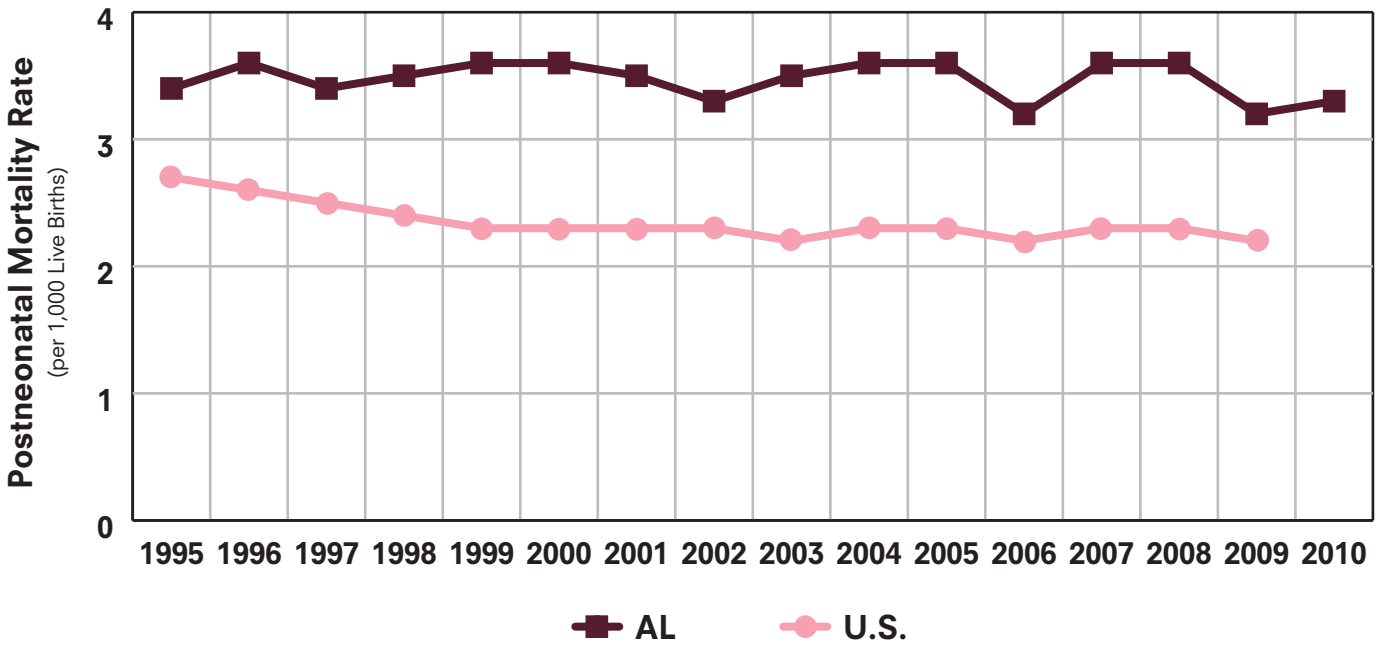
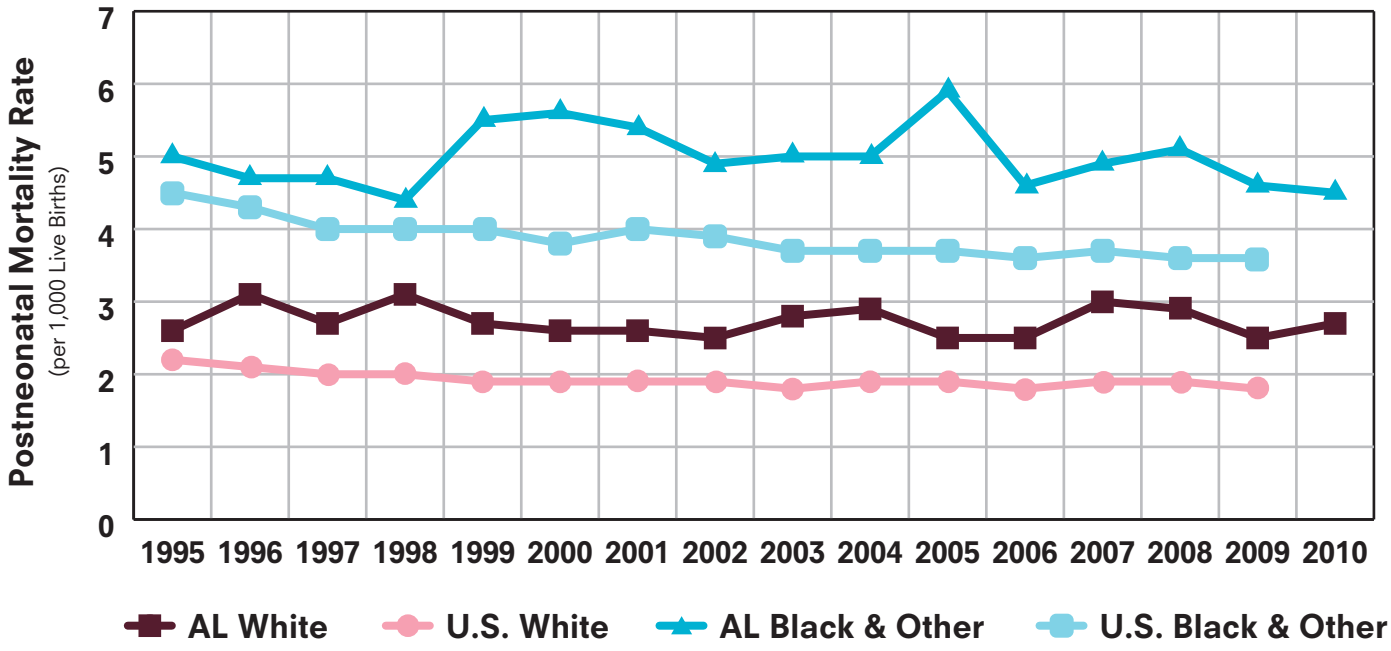


Figure 25. Postneonatal Mortality Rates by Race, Alabama and United States, 1995-2010



Appendix E. Phase 1 Analysis of Perinatal Periods of Risk Approach[5]

Introduction of Perinatal Periods of Risk (PPOR) Approach

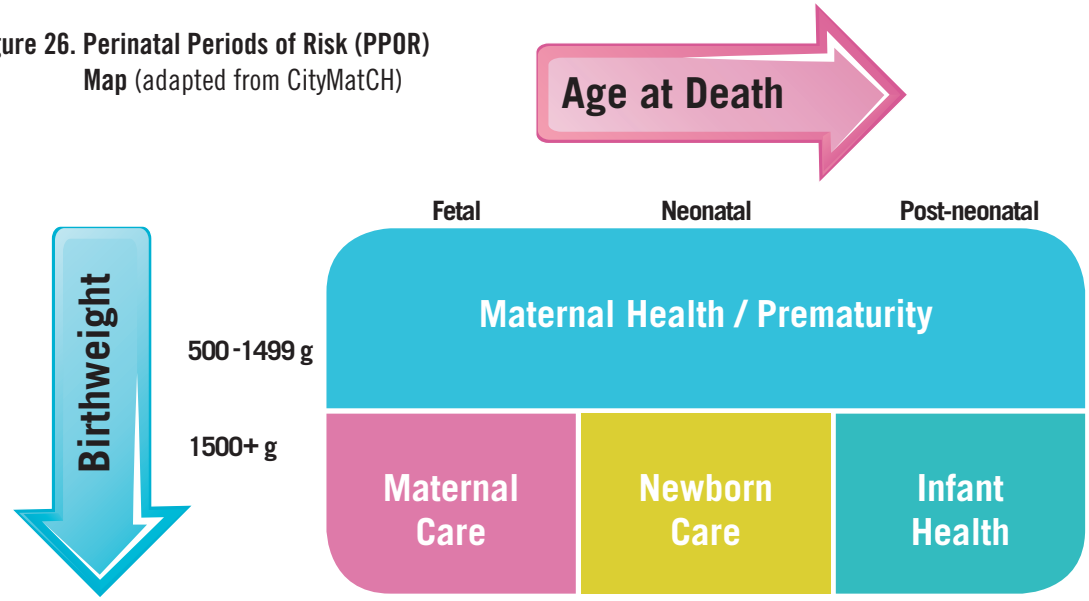
The PPOR approach was developed by Dr. Brian McCarthy, from the Centers for Disease Control and Prevention (CDC), and other World Health Organization collaborators and modified for use in US cities, by a CityMatch Practice Collaborative to monitor and investigate feto-infant mortality. The PPOR methods provide the necessary framework and tools for large urban communities to investigate feto-infant mortality problems.

The approach offers a new way to monitor and investigate feto-infant mortality. The intent was to develop a simple method that is based on a strong conceptual prevention framework and that can be used by community partners to mobilize the community to prioritize prevention efforts. The approach also forms one of the core components of an ongoing maternal and child health surveillance system.

The traditional methods for assessing infant mortality in a community do not readily identify potential gaps in the community for further reduction and do not directly lead to action and prevention activities. The PPOR approach provides newer insight into infant and fetal deaths in two ways: 1) the analysis includes fetal deaths, which is an important perinatal health indicator, but is not a regular practice when examining infant deaths and 2) PPOR divides the overall feto-infant mortality rate of a community into four periods aimed at prevention (Figure 26):

- **Maternal Health/Prematurity (infant and fetal deaths weighing less than 1,500 g)**
- **Maternal Care (fetal deaths weighing 1,500 g or more)**
- **Newborn Care (neonatal deaths weighing 1,500 g or more)**
- **Infant Health (postneonatal deaths weighing 1,500 g or more)**

Figure 26. Perinatal Periods of Risk (PPOR) Map (adapted from CityMatCH)

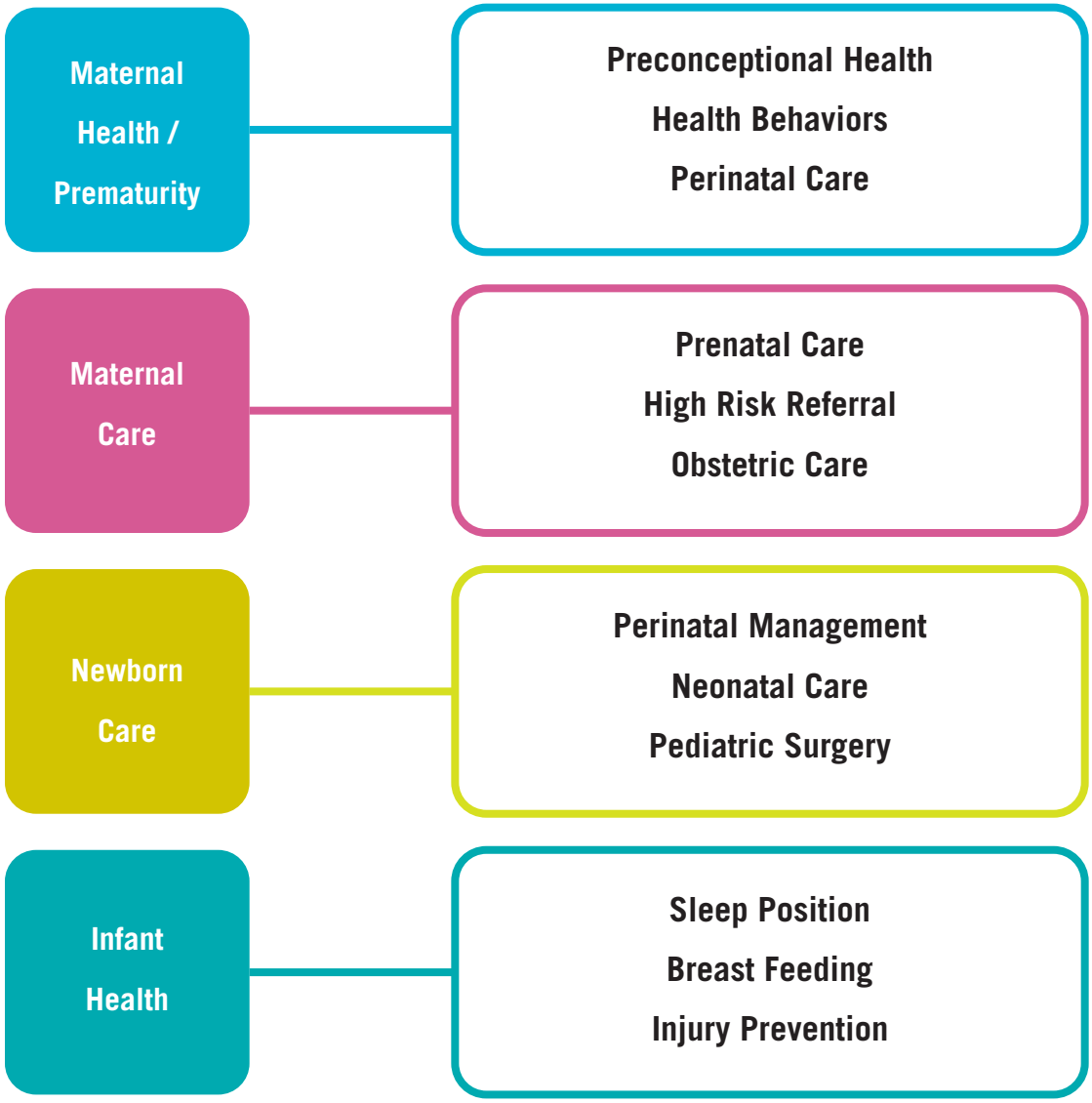


The PPOR analysis compares feto-infant mortality rates of a community to a reference group that has the "best" birth outcomes. In this report, the reference group is a group of births in Alabama in 2010 to non-Hispanic White women who were 20 or more years of age with 13 or more years of education. The PPOR analysis then calculates excess deaths from the target and comparison groups to determine the target community's "opportunity gap."

The PPOR mapping of feto-infant mortality into these four periods of risk enables communities to identify and further investigate periods where there are the greatest opportunities for local impact.

The PPOR is about action. Each component period of risk can then be associated with suggested potential areas of focus for prevention strategies, as shown in Figure 27.

Figure 27. The PPOR Periods of Risk Labeled by Primary Prevention Areas and Potential Prevention Strategies (adapted from CityMatCH)



There are six comprehensive steps to the PPOR approach:

1. **Assure Analytic and Community Readiness**
2. **Conduct Analytic Phases of PPOR**
3. **Develop Strategic Actions for Targeted Prevention**
4. **Strengthen Existing and/or Launch New Prevention Initiatives**
5. **Monitor and Evaluate Approach**
6. **Sustain Stakeholder Investment and Political Will**

Each of these steps is an essential building block with each building upon the previous. The approach divides feto-infant mortality into four strategic prevention areas: maternal health/prematurity, maternal care, newborn care, and infant health. PPOR mapping of feto-infant mortality enables communities to identify and further investigate areas in which there are the greatest opportunities for local impact. Follow-up investigations provide in-depth information and strategic direction for targeted prevention of fetal and infant mortality.

The data analysis in PPOR is actually just one part of a large process of community partnership, understanding, consensus, and mobilization to address feto-infant mortality. In this report, only the phase 1 analysis of the PPOR approach, from 2010 data, is presented.

Fetal deaths less than 24 weeks of gestation, live births and fetal deaths weighing less than 500 grams (g), as well as spontaneous and induced abortions and births with unknown birthweight, are excluded from the analysis to ensure comparability across regions and time periods through the use of uniform reporting criteria.

PPOR Phase 1 Analysis by Perinatal Region

After excluding 1) < 500 g infants and fetal deaths, 2) fetal deaths < 24 weeks and 3) implausible birthweight, the feto-infant deaths in each region and total resident births are shown in Table 12.

Table 12. Live Births and Feto-Infant Deaths by Perinatal Region in 2010*

Region	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Fetal-Infant Death	Live Births
Region I	42	28	18	27	115	11,910
Region II	29	13	8	18	68	4,494
Region III	96	61	27	62	246	20,578
Region IV	21	21	12	20	74	9,194
Region V	64	35	25	27	151	13,666
Reference	50	39	24	38	151	20,086

The feto-infant mortality rates in each region are mapped into the four periods of risk. The overall feto-infant mortality rates are also presented in Table 13.

Table 13. Feto-Infant Mortality Rates by Perinatal Region in 2010*

Region	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Mortality Rate
Region I	3.5	2.3	1.5	2.2	9.6
Region II	6.4	2.8	1.8	3.9	14.9
Region III	4.6	2.9	1.3	3.0	11.8
Region IV	2.3	2.3	1.3	2.2	8.0
Region V	4.6	2.5	1.8	2.0	10.9
Reference	2.5	1.9	1.2	1.9	7.5

*In this report, feto-mortality rate is the number of fetal (birthweight between 500 g and 6,999 g and age of gestation ≥ 24 weeks) and infant deaths (birthweight between 500 g and 6,999 g) per 1,000 live births (birthweight between 500 g and 6,999 g) plus fetal and infant deaths.

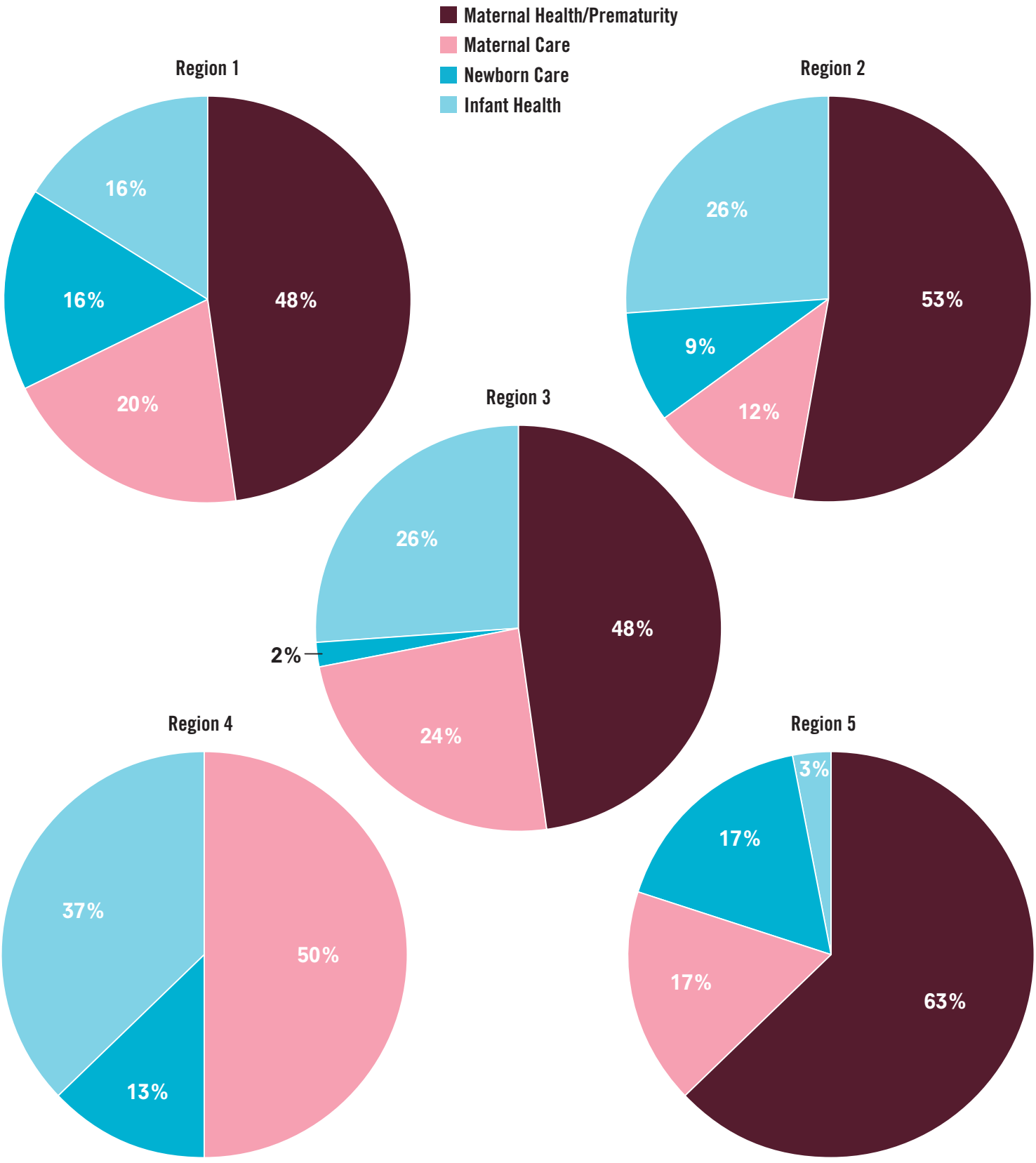
Excess feto-infant mortality rates are calculated by subtracting Alabama reference population from the target population for each of the periods of risk. The excess feto-infant mortality rates for Region 1 to Region 5 compared to Alabama reference group are 2.1, 7.4, 4.3, 0.5, and 3.4 per 1,000 live births and fetal deaths (Table 14).

Table 14. Excess Feto-Infant Mortality Rates by Perinatal Region in 2010

Region	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Mortality Rate
Region I	1.0	0.4	0.3	0.3	2.1
Region II	3.9	0.9	0.6	2.0	7.4
Region III	2.1	1.0	0.1	1.1	4.3
Region IV	-0.2	0.4	0.1	0.3	0.5
Region V	2.1	0.6	0.6	0.1	3.4

Comparing each region to the Alabama reference group with optimal birth outcomes helps target deaths that could be prevented. Except for Region IV, the highest percentage of the excess feto-infant deaths was in the Maternal Health/Prematurity group. Approximately 48%, 53%, 48%, and 63% of the excess feto-infant mortality were in the Maternal Health/Prematurity group in Region I, II, III, and V, respectively. In Region IV, approximately 50% of the excess feto-infant deaths were in the Maternal Care group (Figure 28).

Figure 28. Distribution of Excess Feto-Infant Mortality by Period of Risk in 2010



Estimated excess feto-infant deaths in each region in 2010 are shown in Table 15. There were a total of 25, 34, 89, 6, and 46 excess, or preventable, feto-infant deaths in Region I, II, III, IV, and V, respectively.

Table 15. Estimated Excess Feto-Infant Deaths by Perinatal Region in 2010

Region	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Mortality
Region I	12	5	4	4	25
Region II	18	4	3	9	34
Region III	43	21	2	23	89
Region IV	-2	4	1	3	6
Region V	29	8	8	1	46
Total	100	42	18	40	200

PPOR Phase 1 Analysis by Race/Ethnicity

The feto-infant deaths and live births by race/ethnicity are shown in Table 16.

Table 16. Live Births and Feto-Infant Deaths by Race/Ethnicity in 2010

Race/Ethnicity	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Death	Live Births
Non-Hispanic White	112	89	46	83	330	35,684
Non-Hispanic Black	122	58	33	61	274	18,058
Hispanic & Other	18	10	11	10	49	6,028
Reference	50	39	24	38	151	20,086

The feto-infant mortality rates by race/ethnicity are mapped into the four periods of risk. The overall feto-infant mortality rates are also presented in Table 17.

Table 17. Feto-Infant Mortality Rates by Race/Ethnicity in 2010

Race/Ethnicity	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Mortality Rate
Non-Hispanic White	3.1	2.5	1.3	2.3	9.2
Non-Hispanic Black	6.7	3.2	1.8	3.3	14.9
Hispanic & Other	3.0	1.6	1.8	1.6	8.1
Reference	2.5	1.9	1.2	1.9	7.5

The excess feto-infant mortality rates for non-Hispanic White, non-Hispanic Black, and Hispanic compared to Alabama reference group are 1.7, 7.4, and 0.6 per 1,000 live births and fetal deaths (Table 18).

Table 18. Excess Feto-Infant Mortality Rates by Race/Ethnicity in 2010

Race/Ethnicity	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Mortality Rate
Non-Hispanic White	0.6	0.6	0.1	0.4	1.7
Non-Hispanic Black	4.2	1.3	0.6	1.4	7.4
Hispanic & Other	0.5	-0.3	0.6	-0.3	0.6

The distribution of excess feto-infant mortality by race/ethnicity is shown in Figure 29. Estimated excess feto-infant deaths by race/ethnicity in 2010 are shown in Table 19. There were a total of 61, 135, and 4 excess, or preventable, feto-infant deaths among non-Hispanic White, non-Hispanic Black and Hispanic, respectively.

Figure 29. Distribution of Excess Feto-Infant Mortality by Period of Risk and Race/ Ethnicity in 2010

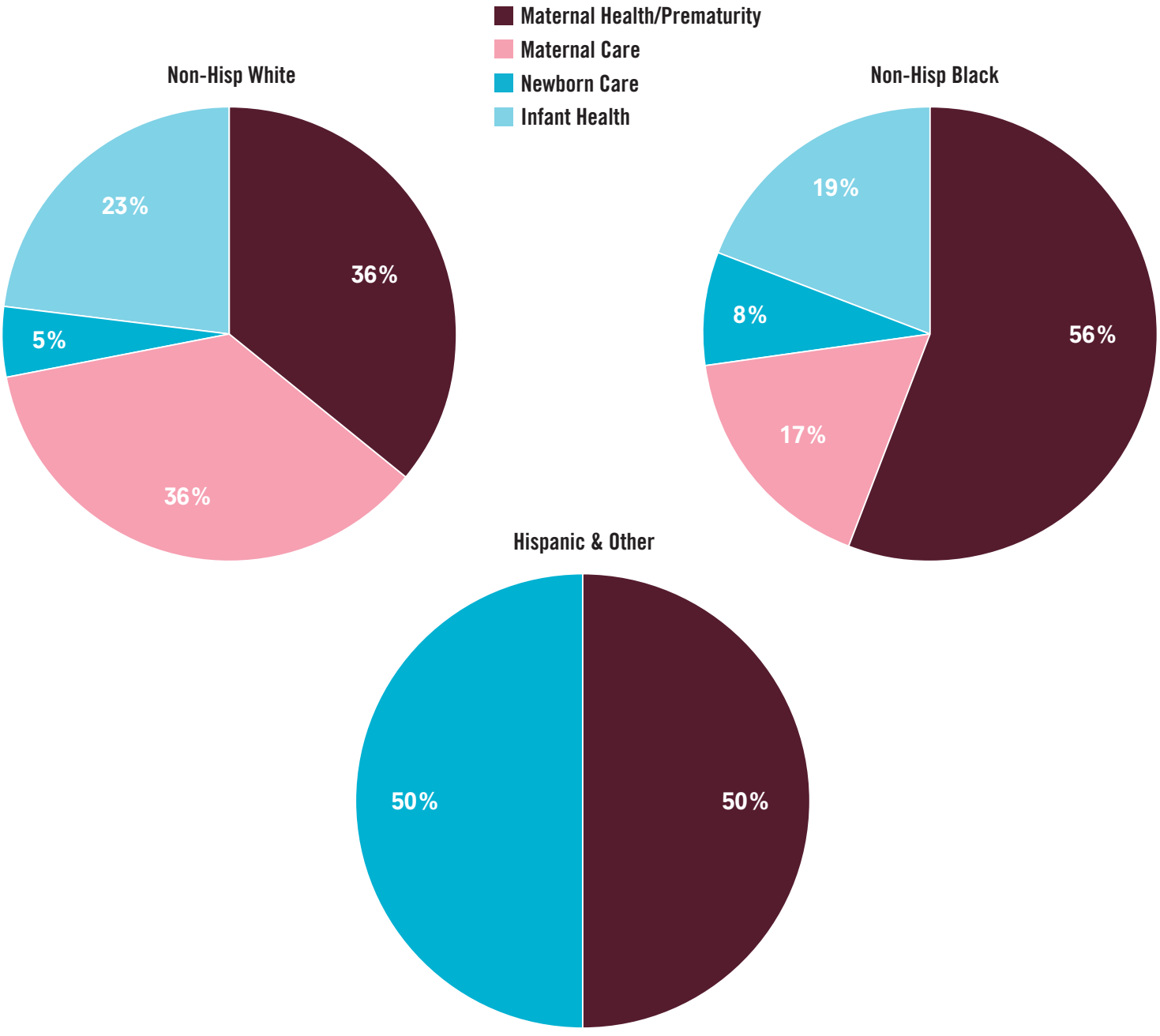


Table 19. Estimated Excess Feto-Infant Deaths by Race/Ethnicity in 2010

Race/Ethnicity	Maternal Health/ Prematurity	Maternal Care	Newborn Care	Infant Health	Feto-Infant Mortality
Non-Hispanic White	22	22	3	14	61
Non-Hispanic Black	76	23	11	25	135
Hispanic & Other	3	-1	3	-1	4
Total	101	44	17	38	200

In summary, there were 200 excess feto-infant deaths in 2010.Of 200 excess feto-infant deaths, 25 were in Region I, 34 in Region II, 89 in Region III, 6 in Region IV, and 46 in Region V. Of 200 excess feto-infant deaths, 61 were non-Hispanic White, 135 were non-Hispanic Black, and 4 were Hispanic and others. Non-Hispanic Black accounted for 68% of excess feto-infant deaths in 2010.

According to PPOR analysis for 2010, excess feto-infant deaths in Regions I and V mainly occurred in the perinatal periods of Maternal Health/Prematurity and Maternal Care, which suggests that primary prevention areas and prevention strategies need to focus on preconception health, healthy behaviors, perinatal care, prenatal care, high risk referral, and obstetric care. Excess feto-infant deaths in Region V also occurred mainly in the perinatal period of Newborn Care, which suggests that primary prevention areas and prevention strategies also need to focus on perinatal management, neonatal care, and pediatric surgery. In Region IV, excess feto-infant deaths mainly occurred in the perinatal periods of Maternal Care and Infant Health, which suggests that primary prevention areas and prevention strategies need to focus on prenatal care, high risk referral, obstetric care, sleep position, breast feeding, and injury prevention. Excess feto-infant deaths in Regions II and III mainly occurred in the perinatal periods of Maternal Health/Prematurity and Infant Health, which suggests that primary prevention areas and prevention strategies need to focus on preconception health, healthy behaviors, perinatal care, sleep position, breast feeding, and injury prevention.

Technical Notes

ADEQUACY OF PRENATAL CARE UTILIZATION INDEX (APNCU) This index, also known as the Kotelchuck Index of Prenatal Care, was designed as an improvement on the Kessner Index. It has 5 values: 1 = adequate plus, 2 = adequate, 3 = intermediate, 4 = inadequate and 5 = unknown. Its major advantage is that it divides the adequate into two categories. Those with adequate plus had other risk factors, which increased the number of visits. The index can serve as an indicator that some medical condition required additional prenatal care. [Kotelchuck M., "An Evaluation of the Kessner Adequacy of Prenatal Care Index and a Proposed Adequacy of Prenatal Care Utilization Index," American Journal of Public Health, 1994, 84(9):1414-20.]

BIRTHWEIGHT The first weight of the fetus or newborn obtained after birth. This weight preferably is measured within the first hour of life, before a significant postneonatal weight loss has occurred.

CONGENITAL ANOMALIES The abnormality of the structure of a body part. "Birth defect" is a widely-used term for a congenital malformation or anomaly which is recognizable at birth.

CAUSE OF DEATH The cause of death presented in this publication is the "underlying cause," which is defined as the cause deemed responsible for the sequence of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury. Deaths, by cause, are classified according to the International Classification of Diseases (ICD), Tenth Revision, following instructions established by the National Center for Health Statistics.

DEATH Death is defined in Black's Law Dictionary, Sixth Edition as "The cessation of life; permanent cessations of all vital functions and signs." For definitions of the determination of death under other than general circumstances, the Code of Alabama should be consulted.

FETAL DEATH "Death prior to the complete expulsion or extraction from the mother of a product of human conception, irrespective of the duration of pregnancy and which is not an induced termination of pregnancy. The death is indicated by the fact that after the expulsion or extraction the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps." Code of Alabama, 1975, Section 22-9A-1. While the definition of fetal death includes all gestations, only fetal deaths that have advanced to or are beyond the twentieth week of uterogestation are required to be reported under Alabama law and they are the only ones counted as fetal deaths in this publication.

$$\text{Fetal Death Rate} = \frac{\text{Number of Fetal Deaths 20 or More Weeks in Gestation}}{\text{Number of Live Births+Fetal Deaths}} \times 1{,}000$$

GESTATION The period of development from the time of fertilization of the ovum to birth. In these publications, the terms "gestation" and "uterogestation" are used synonymously.

INFANT DEATH Death of a liveborn infant under one year of age. The term excludes fetal death.

$$\text{Infant Mortality Rate} = \frac{\text{Number of Deaths Under 1 Year of Age}}{\text{Number of Live Births}} \times 1{,}000$$

INTERNATIONAL CLASSIFICATION OF DISEASES (ICD) A publication of the World Health Organization (WHO) that provides the essential ground rules for the coding and classification of cause-of-death data. The purpose of the ICD and of WHO sponsorship is to promote international comparability in the collection, classification, processing, and presentation of health statistics. In addition to being a classification system, the rules provide for identification of a single condition on the death certificate, that is considered most informative from a public health point of view, called the "underlying cause of death."

LATE PRENATAL CARE Medical care during pregnancy that is initiated after the first trimester (after the third month).

LIVE BIRTH "The complete expulsion or extraction from the mother of a product of human conception, irrespective of the duration of the pregnancy, which, after such expulsion or extraction, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps." Code of Alabama, 1975, Section 22-9A-1. In these publications, the terms "live birth" and "birth" are used synonymously.

LOW BIRTHWEIGHT A weight at birth of under 2,500 g or under 5 pounds and 8 ounces.

NEONATAL DEATH Death of a liveborn infant occurring within the first 27 days of life.

$$\text{Neonatal Mortality Rate} = \frac{\text{Number of Deaths Under 28 Days of Age}}{\text{Number of Live Births}} \times 1{,}000$$

OCCURRENCE DATA Data compiled as to the geographical place where the event occurred.

POSTNEONATAL DEATH Death of a liveborn infant after the first 27 days of age but before one year of age.

$$\text{Postneonatal Mortality Rate} = \frac{\text{Number of Deaths 28 or More Days But Less Than 1 Year of Age}}{\text{Number of Live Births}} \times 1{,}000$$

RESIDENCE DATA Data compiled as to the place of residence without regard to the geographical place where the event occurred. For births and deaths, place of residence of mother is used.

TRIMESTER A 3-month period of time. First trimester care, for example, refers to care initiated in the first three months of pregnancy.

VERY LOW BIRTHWEIGHT A weight at birth of less than 1,500 g or under 3 pounds and 5 ounces.

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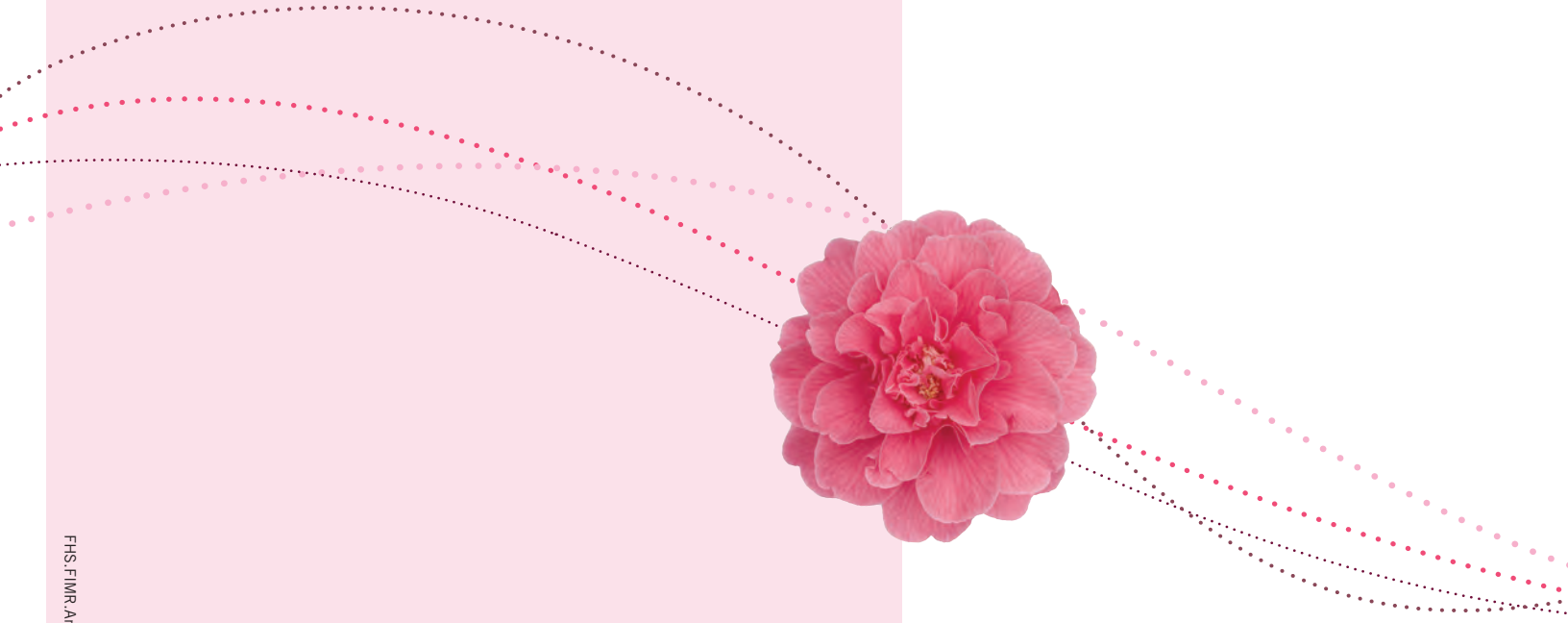

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