



GEORGIA

STATE OF THE STATE REPORT

2019



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About Healthy Mothers, Healthy Babies Coalition of Georgia ¹

Since 1974, Healthy Mothers, Healthy Babies Coalition of Georgia has been the strongest statewide voice for improved access to healthcare and health outcomes for Georgia's mothers and babies. HMHBGA is the only organization in Georgia that focuses on the full spectrum of maternal and child health concerns from prematurity to maternal mortality.

Access to Vital Resources: On behalf of the Georgia Department of Public Health (DPH), HMHBGA operates the Georgia Family Healthline, Children 1st high-risk screening line, and Help Me Grow Georgia to provide callers with appropriate referrals and resources across the State. HMHBGA also operates the Prevent Child Abuse Georgia Helpline on behalf of Georgia State University.

Advocacy: In a non-partisan role, HMHBGA engages with legislators as well as medical, business and other community organizations to encourage fiscally responsible policies that promote access to care and improved health outcomes for women and children.

Education: HMHBGA provides evidence-informed prenatal education across the State through collaboration with other community organizations and clinicians. HMHBGA also works to educate and build capacity for healthcare providers and public health professionals working in maternal and infant health across Georgia.



Executive Summary

The *2019 State of the State: Maternal and Infant Health in Georgia Report* summarizes the known data and evidence regarding maternal and infant health indicators in the state of Georgia. It is published by Healthy Mothers, Healthy Babies Coalition of Georgia, and this is the third edition of this report. The purpose of this report is to continue to share current knowledge and projected trends of maternal and infant health outcomes in Georgia, as well as what can be accomplished to further improve the health of mothers and babies. Primary sources of data were used when possible (e.g. Online Analytical Statistical Information System [OASIS], Pregnancy Risk Assessment & Monitoring System [PRAMS]), and further data analysis was conducted using IBM SPSS® and R. Additionally, content area experts were consulted to provide the most updated statistics, in addition to current best practices.

Overall, we found that Georgia has made many strides in maternal and child health in the past decade, however there is still room for improvement. Georgia ranks high in Tdap and HPV vaccine uptake for children. However, flu vaccine uptake is below average for children, pregnant women, and adults, compared to national rates. Georgia is also a top performer in developmental screenings of children. Georgia's breastfeeding frequency of initiation is slightly higher than the national average. However, the duration to the recommended six months of exclusive breastfeeding remains a challenge. Nationally, Georgia ranks in the bottom 10% for infant mortality, low birthweight, preterm birth, and maternal mortality. In 2017, the leading cause of infant death in Georgia was fetal and infant conditions, particularly prematurity. Georgia also experiences unintended pregnancy slightly above the national average. Finally, there are known disparities and inequities in Georgia by race, age, ethnicity, education, region, insurance status, etc. Black and African American women in Georgia experience worse maternal and infant outcomes than all other races and ethnicities.

In order to improve maternal and infant health in Georgia, we recommend evidence-based interventions in the following areas: (1) infant health, (2) prenatal/perinatal health, (3) maternal substance prevention, (4) neonatal abstinence syndrome, (5) maternal mental health, (6) maternal mortality prevention, (7) patient education, (8) increasing breastfeeding duration, (9) social support during prenatal and postpartum periods, (10) legislative advocacy, and (11) data collection and needs assessment.

Key Findings

- The Georgia Maternal Mortality Review Committee found that 58% of pregnancy-related deaths in 2014 were preventable.
- As of 2017, Georgia's infant mortality rate ranked 6th highest in the nation.
- In both 2016 and 2017, Georgia ranked 4th highest in low birthweight nationally.
- As of 2017, Georgia ranked 5th highest in the nation for preterm birth rates (marginal increase from 2013 to 2017).
- As of 2015, Georgia's breastfeeding frequency of initiation was slightly higher than the national average. However, the duration to the recommended six months of exclusive breastfeeding remains a challenge.
- As of 2015 in Georgia, the rate of neonatal abstinence syndrome in Georgia increased threefold from 2010.
- In 2011, the frequency of unintended pregnancy was 54.8% across Georgia, with large disparities by race.
- Georgia's teen pregnancy rate for 2017 was slightly higher than the national average, but have continued to decrease over time.
- Georgia ranked highest in Tdap and HPV vaccine uptake in children in 2016.
- In Georgia, pregnant women ranked below the national average for flu vaccine uptake in 2017.

Introduction

Healthy Mothers, Healthy Babies Coalition of Georgia's (HMHBGA) mission is to improve maternal, child and infant health through advocacy, education and access to vital resources¹. The State of the State of Maternal & Infant Health in Georgia is provided by HMHBGA to both private and public stakeholders to summarize pertinent health data in the following areas: fetal and infant health, maternal health, access to care, racial and ethnic disparities, and regional perinatal statistics. Our goal is to continue to share the knowledge of where we have been, where we are now, and what can be done through the collaboration of invested stakeholders. The previous State of the State was published in 2016. In this version of the report, we have included seven new sections: Dental Care, Insurance and Medicaid, Vaccinations, WIC Services, Social Support, Racial and Ethnic Disparities, and Perinatal Region Statistics. A significant amount of the data used in this report are from primary sources ^a.

Data analysis conducted by the following Graduate Research Assistants: Michaila Czarnik, Sara Blough, Sarah DiGirolamo, Jasmine Kelley, Sabrina Madni, and Jiaxin Xu.

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Learn more about ways to get involved with Healthy Mothers, Healthy Babies Coalition of Georgia by emailing us at thecoalition@hmhbga.org.

An electronic version of this document, with hyperlinked citations, is on the HMHBGA website: www.hmhbga.org.

Published November 2019.

^a Much of the data presented in this document has been retrieved from the Georgia Department of Public Health (DPH) vital statistics data portal, "OASIS" (Online Analytical Statistical Information System), or from DPH analysis of "PRAMS" (Pregnancy Risk Assessment Monitoring System) survey data.

Fetal & Infant Health

Live Births

Birth rate is defined as “the number of live births occurring to females in an age group per 1,000 females in the same age group”². Since the publication of the 2016 State of the State of Maternal and Infant Health in Georgia, there has been a marginal decrease in the birth rate across the state of Georgia from 39.6 live births per 1,000 females to 39.0 live births per 1,000 females^{2,3}. The birth rate is highest in rural counties (by 0.5 per 1,000) and among Hispanic/Latino women.

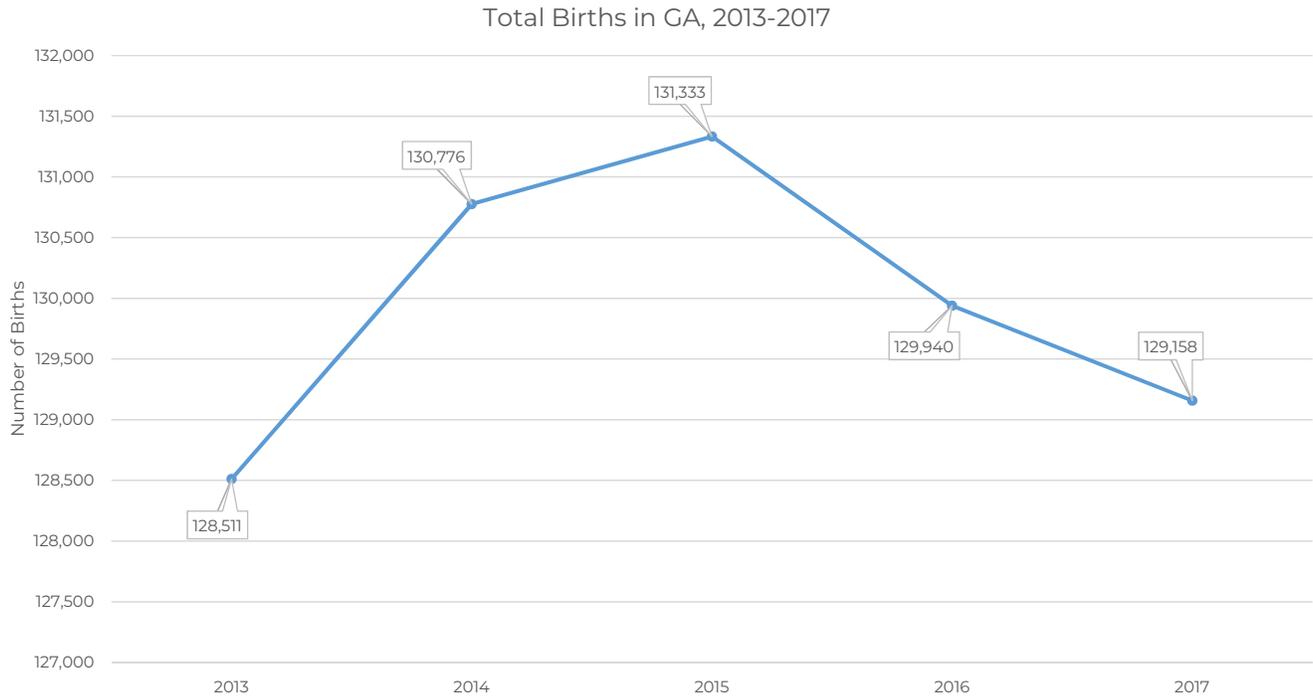


Figure 1. Total Births in Georgia, 2013-2017²
OASIS

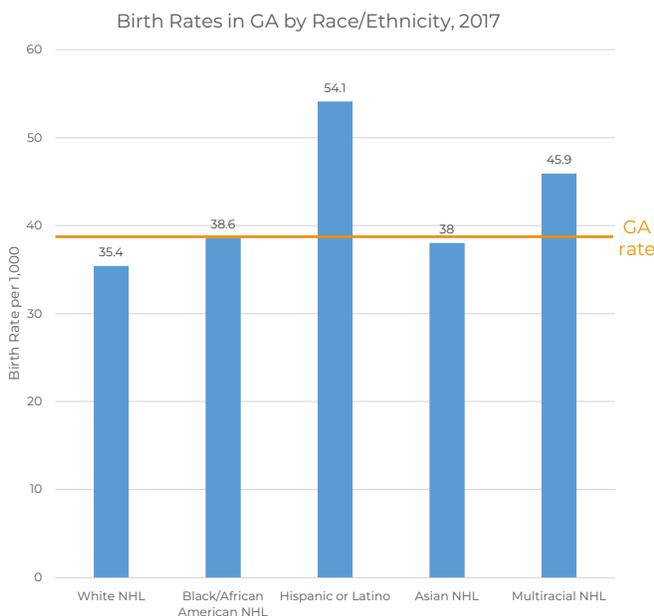


Figure 2. Birth Rate in Georgia by Race/Ethnicity, 2013-2017²
OASIS

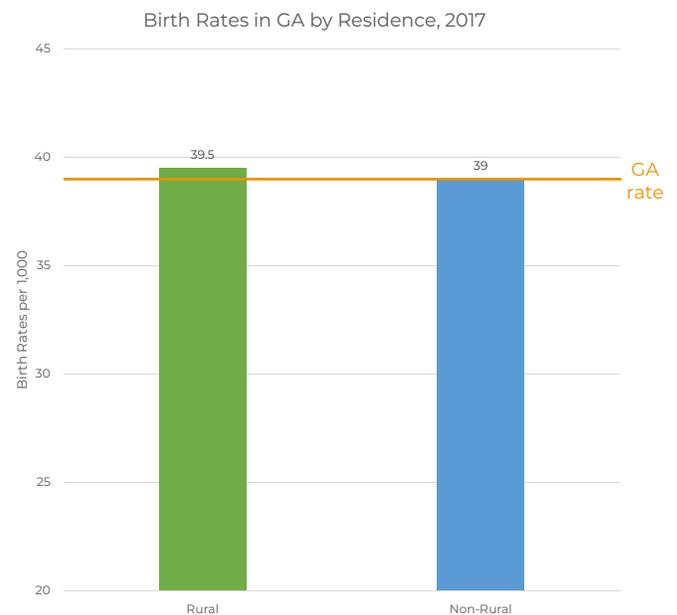


Figure 3. Birth Rate in Georgia by Residence, 2013-2017²
OASIS

Demographics	2013	2014	2015	2016	2017
Total birth rates	39.9	40.3	40.2	39.6	39.0
Race/Ethnicity					
White (NHL*)	35.4	35.9	36.1	35.2	35.4
Black/African American (NHL)	39.3	39.3	39.3	38.6	38.6
Hispanic or Latino	58.0	56.7	57.2	56.3	54.1
Asian (NHL)	34.7	37.3	37.6	38.6	38.0
Other Races (NHL)*	98.0	74.6	58.5	60.5	42.9
Maternal Age					
10-17 years	5.3	4.8	4.5	4.0	3.5
18-24 years	81.6	79.0	76.6	72.8	70.7
25-34 years	97.2	99.3	99.9	99.3	97.6
35-44 years	25.6	27.0	27.7	28.1	28.7
Over 45 years	0.3	0.3	0.3	0.4	0.4
Residence					
Rural	39.2	40.1	40.2	39.9	39.5
Non-rural	40.0	40.4	40.2	39.5	39.0

*NHL – non-Hispanic or Latino

*Data for Hispanic or Latino mothers in Georgia may be unreliable due to underreporting in census data or over-reporting of birth certificates.

*Other Race: American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, multiracial, and unknown race

Table 1. Birth Rates per 1,000 in GA by demographic²

In 2017, 99.1% of Georgia births occurred in hospitals⁴. In Georgia, 34.2% of mothers had cesarean deliveries, the 9th highest rate in the country⁵. Teen mothers had the highest rate of vaginal deliveries (87.1%), while mothers aged 35 years and older had the highest rate of cesarean sections (30%)⁶. However, a majority of births among women aged 35 years and older were delivered vaginally (51.6%)⁶.

Birth Demographics		Percentage
Vaginal	19 years and younger	87.1%
	20-34 years	70.8%
	35 years and older	51.6%
Cesarean	19 years and younger	12.9%
	20-34 years	17.4%
	35 years and older	30%

GA PRAMS, 2017

Table 2. Prevalence of Delivery Type by Maternal Age, in Georgia 2017⁶

Decrease in Adolescent Birth Rate

According to the Centers for Disease Control and Prevention (CDC), the birth rate among teenagers (aged 15-19 years) in Georgia is 21.9 per 1,000 compared to the national birth rate of 18.8 per 1,000⁷. Additionally, it should be noted that over the past five years, there has been a slight decrease in the birth rate among women 10-19 years of age and a slight increase in women aged 35 and older². The birth rate among women aged 20-34 years old has fluctuated over the same time period².

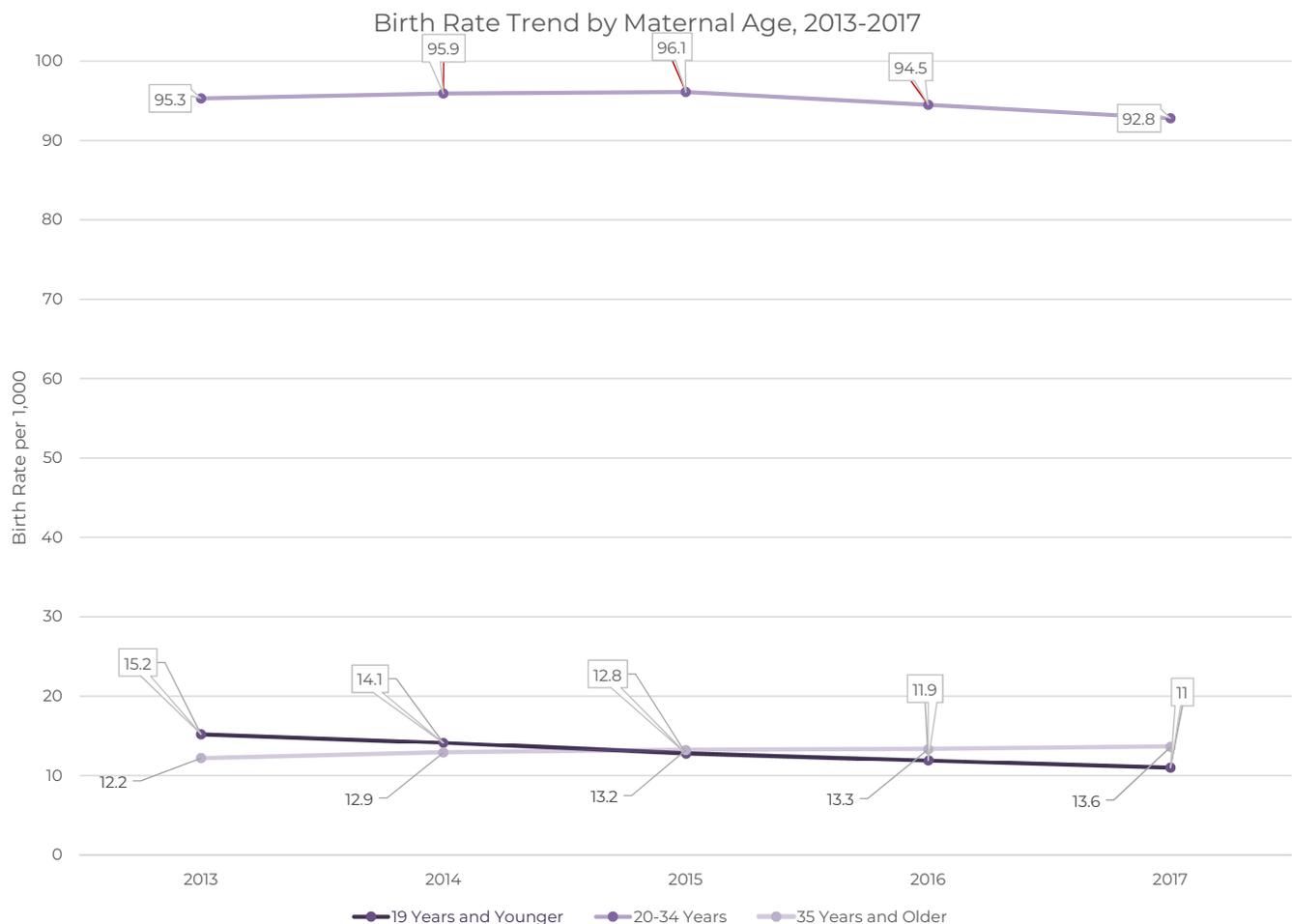


Figure 4. Birth Rate Trend in Georgia by Maternal Age, 2013-2017²
OASIS

Reproductive Trends

Nationally, the age of mothers at their first birth has increased since 2002, with the average age at first birth being 23.1 years of age from 2011-2015⁸. The age at first birth for fathers has been stable since 2002, at 25.5 years at first birth⁸. Nationally, men and women, on average, expect to have 2-3 children in their lifetime⁸. Approximately one-third of all women in the United States will have two children by their 44th birthday⁸. Furthermore, 22% will have three children, 16.8% will have one child, 15% will have no children, and 12.6% will have four or more⁸. About 51% of births in the U.S. are unintended; Georgia is slightly higher than the national average at 54.8% unintended. Of those who became pregnant in Georgia, 20.2% wanted to become pregnant later, 10.5% wanted to become pregnant sooner, and 8.4% did not want to be pregnant⁶.

Use of Artificial Reproductive Technology

In 2015, 3,904 Artificial Reproductive Technology (ART) procedures were performed in Georgia¹⁰. ART procedures include “fertility treatments in which eggs or embryos are handled in a laboratory (i.e., in vitro fertilization [IVF], gamete intrafallopian transfer, and zygote intrafallopian transfer)”¹⁰. These procedures resulted in 1,656 pregnancies and 1,316 live-birth deliveries. The majority of women seeking ART services in Georgia are under 35 years of age¹⁰. Infertility is a growing concern with 23.6% of married women nationally reporting impaired fecundity, and 6.7% reported as infertile (i.e., not surgically sterile). Given the rising infertility rate and improvements in technology over the past decade, 7.3 million women between 15 and 44 years of age received infertility services from 2011-2015 across the United States¹¹. The majority of those women were between 35 and 44 years of age (21.5% for 35-39 years and 23.7% for 40-49 years, respectively)¹¹. Of those who have received infertility services, only 1.4% have received artificial insemination. The most common service utilized is medical advice and pregnancy counseling¹¹. In the United States, ART resulted in 72,913 live births in 2015, about 2% of all births that year^{12,13}.

Birth Defects

Major birth defects are defined as structural changes present at birth, that occur in one or more body parts and with a spectrum of consequences from serious health, developmental, or functional ability of the baby to death¹⁴. Birth defects include congenital malformations, deformations, and chromosomal abnormalities¹⁴. Birth defects affect 1 in 33 babies annually in the United States. Nationally, the most prevalent is Trisomy 21 or Down Syndrome (1 in 691 births), followed by cleft lip or cleft palate (1 in 940 births), and atrioventricular septal defect (1 in 2,122 births)¹⁶. Birth defects are the leading cause of infant death in the U.S. and the 3rd leading cause of infant death in Georgia (see Infant Mortality)^{2,16}. In the most recently available reported comparative data, the rate of infant death due to birth defects in Georgia was slightly lower than the national average (110.6 versus 121.5 per 100,000, respectively)¹⁷. Georgia specific data on the prevalence of specific birth defects is not currently available.

Premature Births

The premature birth rate is defined as, “the number of live births with a gestational age less than 37 weeks, per 100 live births”¹⁸. It should be noted that beginning with the 2014 data year (and retroactively through the 2008 data year), the estimated gestational age at birth follows the new national standard for calculating gestational age based on the Obstetric Estimate (medically determined) instead of the Last Menstrual Period method (determined by self-report). Rate of prematurity using the new indicator are about 2% lower than prematurity rates for the same years using the old indicator¹⁸.

Nationally, 1 in 10 babies is born prematurely, making up 9.6% of births in the U.S.^{19,20}. In 2007, the estimated cost of premature birth in the U.S. is \$26.2 billion annually; \$5.7 billion of that cost is associated with lost work and pay for people born prematurely²¹. Among children born prematurely, 1 in 3 will require special school services²¹.

Premature Birth Rate in GA, 2013-2017

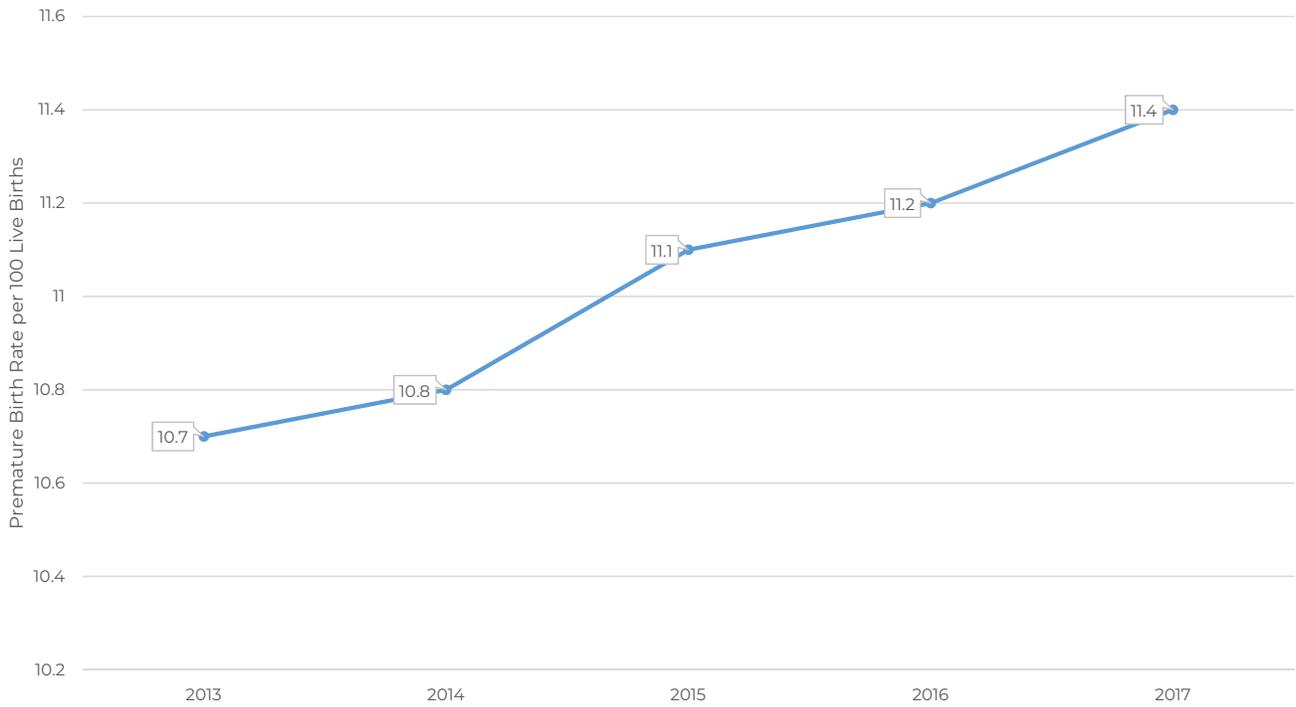


Figure 5. Premature Birth Rate per 100 Live Births in Georgia, 2013-2017²
OASIS

County	% of Preterm Births	Total # of Preterm Births
Taliaferro	17.1	12
Calhoun	16.9	43
Clinch	15.6	75
Screven	14.9	132
Spalding	14.8	612
Lamar	14.5	145

OASIS, 2013-2017

Table 3. Georgia Counties with Preterm Birth Percentages of $\geq 14.5\%$, 2013-2017²

Demographics	2013	2014	2015	2016	2017
Total births	10.7	10.8	11.1	11.2	11.4
Race/Ethnicity					
White (NHL)	9.4	9.3	9.4	9.8	10.0
Black/African American (NHL)	13.7	13.7	13.7	14.1	14.2
Hispanic or Latino	8.7	9.2	8.9	9.5	9.8
Asian	7.7	8.3	7.3	8.1	8.9
Other races (NHL)	10	9.6	11.1	10.4	10.2
Education					
Less than high-school	11.8	11.7	11.7	12.1	13.2
High-school diploma/GED	11.3	11.5	11	12.1	11.9
Some college or higher	10	10	10.3	10.4	10.6
Maternal Age					
10-17 years	10.1	11.5	11.9	11.1	11.5
18-24 years	10.5	10.7	10.5	11.2	10.8
25-34 years	10.3	10.1	10.2	10.6	11.0
35-44 years	12.5	12.8	13	13	13.5
Over 45 years	24.3	24.3	20.4	23.4	21.7
Residence					
Rural	10.8	11.6	11.0	11.5	12.0
Non-rural	10.7	10.6	10.7	11.1	11.3

OASIS, 2013-2017

Premature births are gestational age less than 37 weeks¹⁸.

Table 4. Number of premature births, per 100 live births in Georgia²

Premature Birth Rate by Residence, 2017

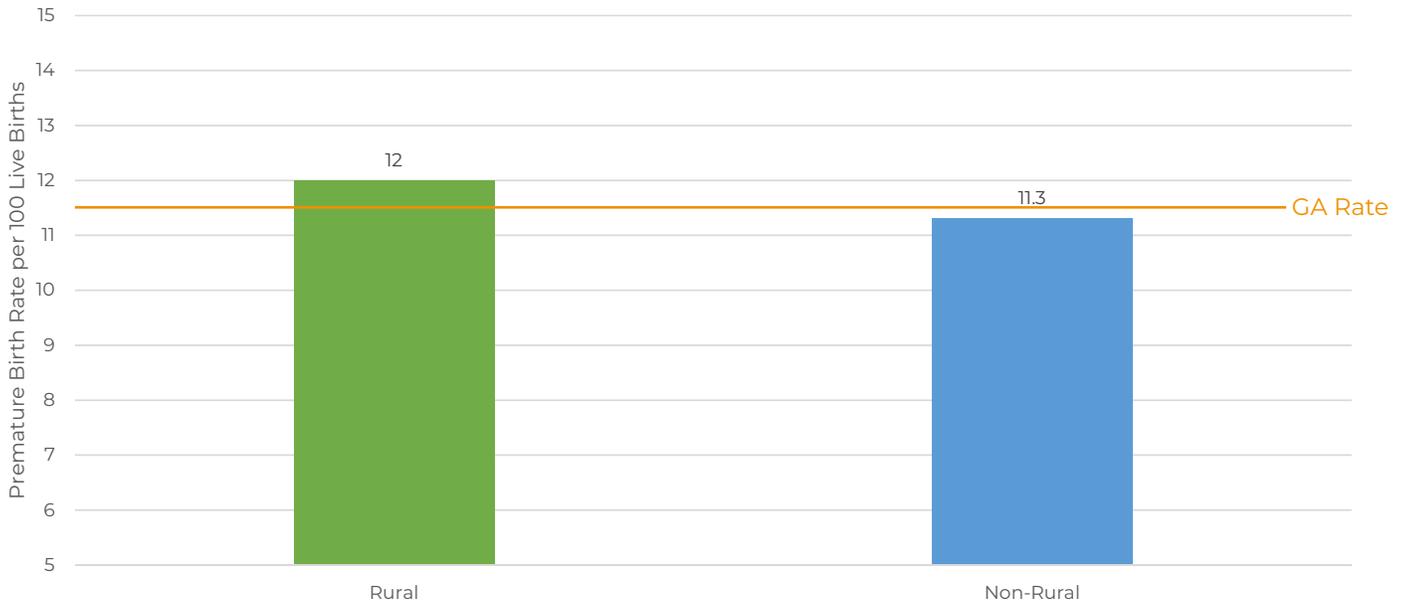


Figure 6. Premature Birth Rate per 100 Live Births by Residence, 2017²
OASIS

Increase in Preterm Birth Rates

In 2017, Georgia ranked 5th highest in the U.S. for preterm birth rates, compared to its ranking of 7th highest in 2016²². In Georgia, there has been a marginal increase in premature births since 2013, from 10.7% to 11.4% in 2017². Premature birth occurred most frequently among Black, non-Hispanic women². However, there has also been a decrease in premature births among teen mothers (10-19 years of age) over the last 20 years, from 13.2% of teen births in 1997 to 11.3% in 2017². During the years 2013-2017, there were slightly more premature births in rural counties than non-rural counties (11.4% and 10.9% respectively)². The March of Dimes “2017 Premature Birth Report Card” rated Georgia as a “D” for its lack of change in preterm birth in 2016 and its projected inability to reach the March of Dimes goal of 8.1% by 2020²³.

Premature Birth Rate by Race/Ethnicity, 2017

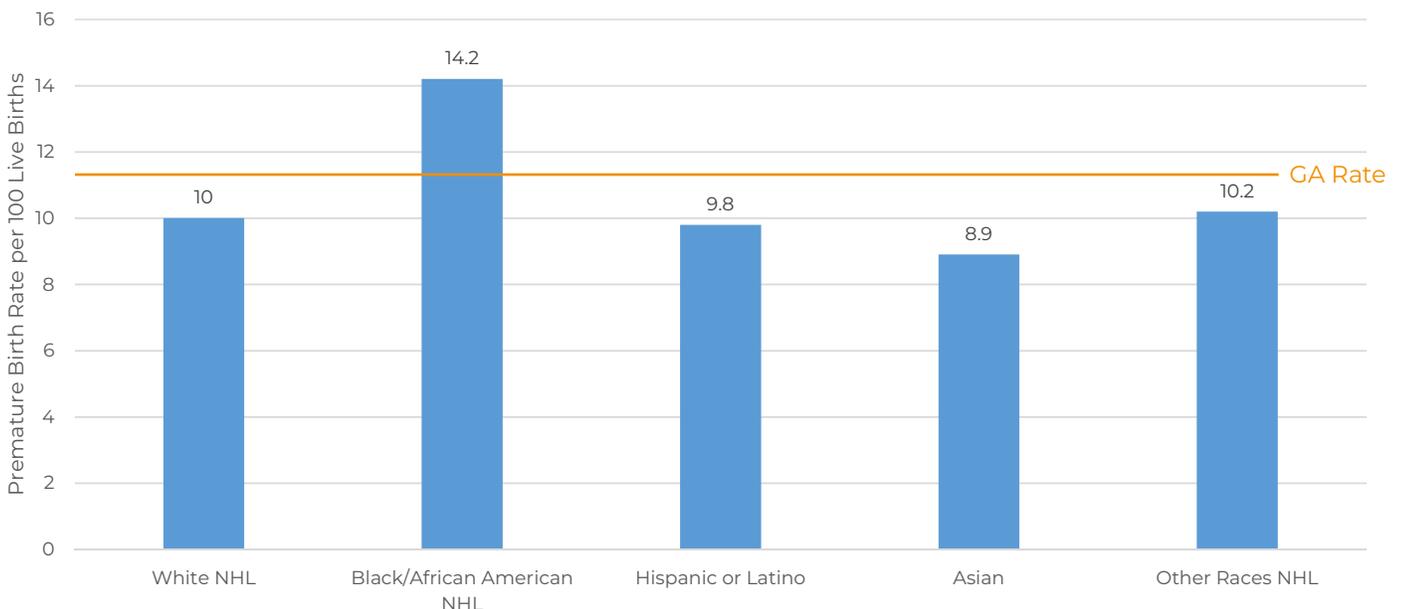


Figure 7. Premature Birth Rate per 100 Live Births by Race/Ethnicity, 2017²
OASIS

Risk Factors for Preterm Birth

The CDC has identified the following as risk factors for preterm birth: low income, prior preterm birth, infection, carrying multiples (twins, triplets, or more), tobacco and substance use, poor folic acid intake, certain chronic conditions, and stress. In addition, teens, women over 35, and black women are at a higher risk of preterm birth²⁴. Women who use in vitro fertilization are also at a higher risk of preterm birth. This may be related to the increased likelihood of multiples among those who use in vitro fertilization²⁴. Women can reduce their risk of preterm birth by quitting smoking, avoiding alcohol and drugs, seeking prenatal care as soon as pregnancy is determined, continuing to seek prenatal care throughout the pregnancy, seeking medical attention if there are warning signs of preterm labor, and spacing pregnancies at least 18 months apart. If a woman has experienced a previous preterm birth, she should discuss the possibility of progesterone treatment with her doctor or healthcare provider²⁴. Babies who are born preterm are at risk for: “breathing problems, feeding difficulties, cerebral palsy, developmental delays, vision problems, and hearing problems”²⁴.

Low Birthweight Babies

The rate of low birthweight (LBW) is defined as live births with birth weights less than 2,500 grams (5lbs. 8oz.) per 100 live births¹⁸. It is calculated by the number of live births under 2,500 grams divided by the number of live births multiplied by 100¹⁸. Babies born with LBW are at risk for long-term health problems, such as, “delayed motor and social development or learning disabilities”²⁵. Risk factors for LBW delivery include: maternal smoking and alcohol use, lack of weight gain, maternal age younger than 15 years or older than 35 years, low income and low educational achievement, stress, being a victim of domestic violence or other abuse, being unmarried^b, having had a previous preterm birth, and toxic environmental exposures (e.g. to air pollution, lead exposure through water, etc.)²⁵. Suggested ways to prevent low birthweight births include: quitting smoking and avoiding alcohol and other substances, consulting a doctor before becoming pregnant, controlling chronic diseases (e.g., diabetes), seeking prenatal care throughout pregnancy, and taking folic acid before and during pregnancy²⁵.

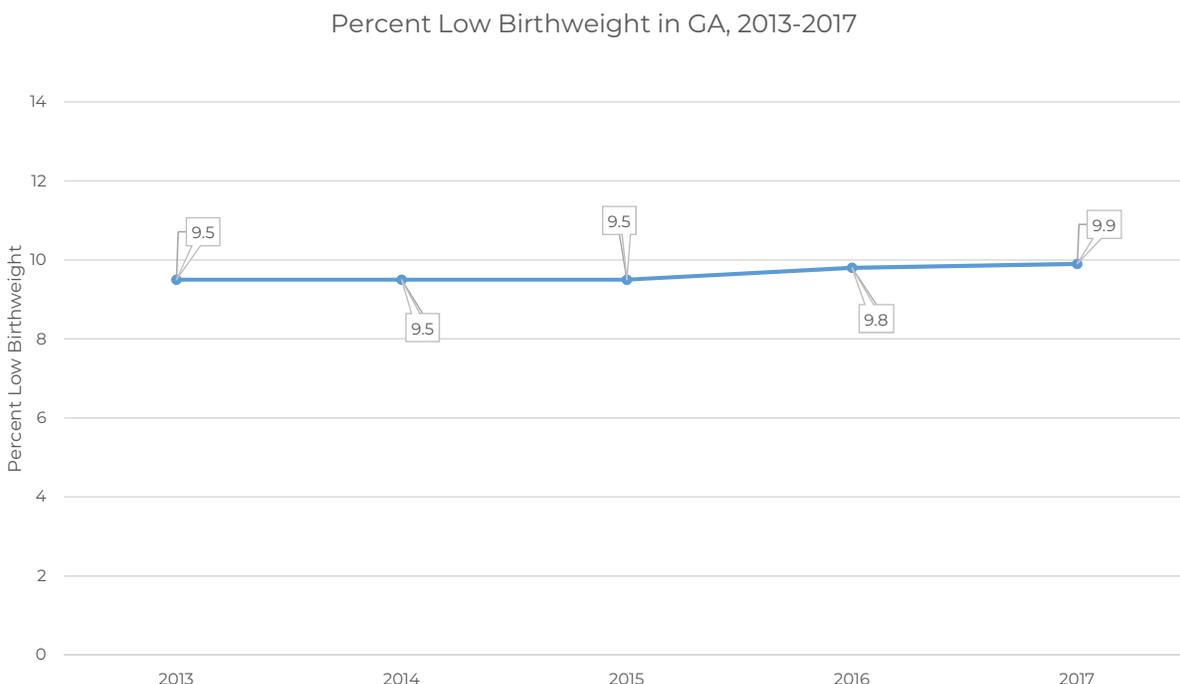


Figure 8. Percent Low Birthweight in GA, 2013- 2017²
OASIS

^b CDC lists being unmarried as a socioeconomic risk factor. See Recommendations section for further analysis.

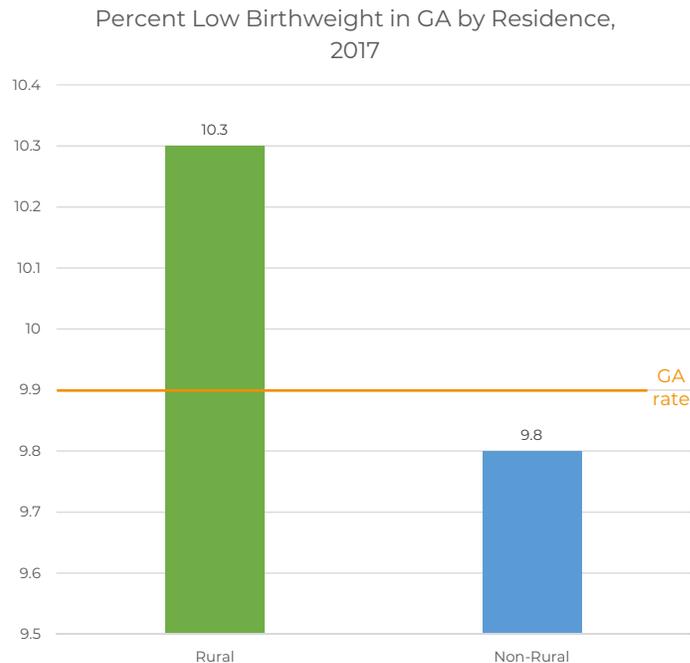
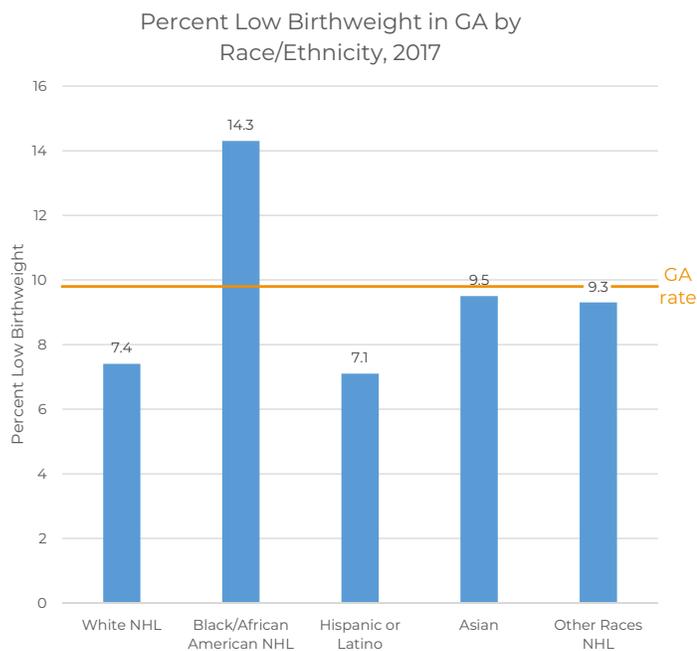


Figure 9. Percent Low Birthweight in GA by Race/Ethnicity, 2017²
OASIS

Figure 10. Percent Low Birthweight in GA by Residence, 2017²
OASIS

Rate of Low Birthweights Remains Unchanged

Nationally, the rate of low birthweight is 8.3 per 1,000 live births²². This rate has remained stable for the past five years²⁶. In Georgia, 9.9% of live births result in a low birthweight baby, affecting 1 in 11 infants^{22,26}. In both 2016 and 2017, Georgia ranked the 4th highest in low birthweight nationally²². On trend with national statistics, the highest rates of low birthweight babies occur among mothers over 40 years and under 20 years of age (13% and 11.5%, respectively)²⁶.

Black non-Hispanic women have the highest prevalence (14.3%) of low birthweight deliveries of all racial/ethnic groups². Rural counties experience low birthweight babies more than non-rural counties (10.3% and 9.8% respectively)². This has been consistent over the past four years.

County	% of Low Birthweight Births	Total # of Low Birthweight Births
Taliaferro	17.1%	12
Hancock	15%	50
Macon	14.9%	100
Dougherty	14.2%	898
Seminole	14.1%	69
Warren	14%	39

OASIS, 2013-2017

Table 5. Georgia Counties with Low Birthweight Percentages of ≥14%, 2013-2017²

Demographics		2013	2014	2015	2016	2017
	Total births	9.5	9.5	9.5	9.8	9.9
Race/Ethnicity						
	White (NHL)	7.2	7	7.1	7.3	7.4
	Black/African American (NHL)	13.7	14	14	14.3	14.3
	Hispanic or Latino	6.8	6.8	7	7.3	7.1
	Asian	8.3	8.5	8.1	8.6	9.5
	Other races (NHL)	9.5	8.8	10.1	9.0	9.3
Education						
	Less than high-school	10.7	10.7	10.8	11.1	11.3
	High-school diploma/GED	10.4	10.8	10.3	10.9	11.1
	Some college or higher	8.5	8.4	8.7	8.8	8.9
Maternal Age						
	10-17 years	11.2	11.1	11.9	12.1	10.9
	18-24 years	10.2	10.6	10.3	10.8	10.7
	25-34 years	8.7	8.5	8.7	8.9	9.3
	35-44 years	10.2	10.5	10.6	10.6	10.6
	Over 45 years	22.4	21.7	13.9	19.1	18.4
Residence						
	Rural	9.6	10	9.6	10	10.3
	Non-rural	9.4	9.4	9.5	9.8	9.8

OASIS, 2013-2017

Low birthweight births include any baby weighing less than 2,500 grams (5lbs. 8oz.) at birth.¹⁸

Table 6. Percent low birthweight births by demographic in GA²

Fetal Mortality

Fetal death is defined as “death [to a fetus] prior to the complete expulsion or extraction from its mother” and is indicated by lack of voluntary muscle movement, breath, heartbeat, or umbilical cord pulsation¹⁸. Fetal deaths are often referred to colloquially as “miscarriages” if they occur before 20 weeks of pregnancy or “stillbirths” if they occur after 20 weeks of pregnancy²⁷.

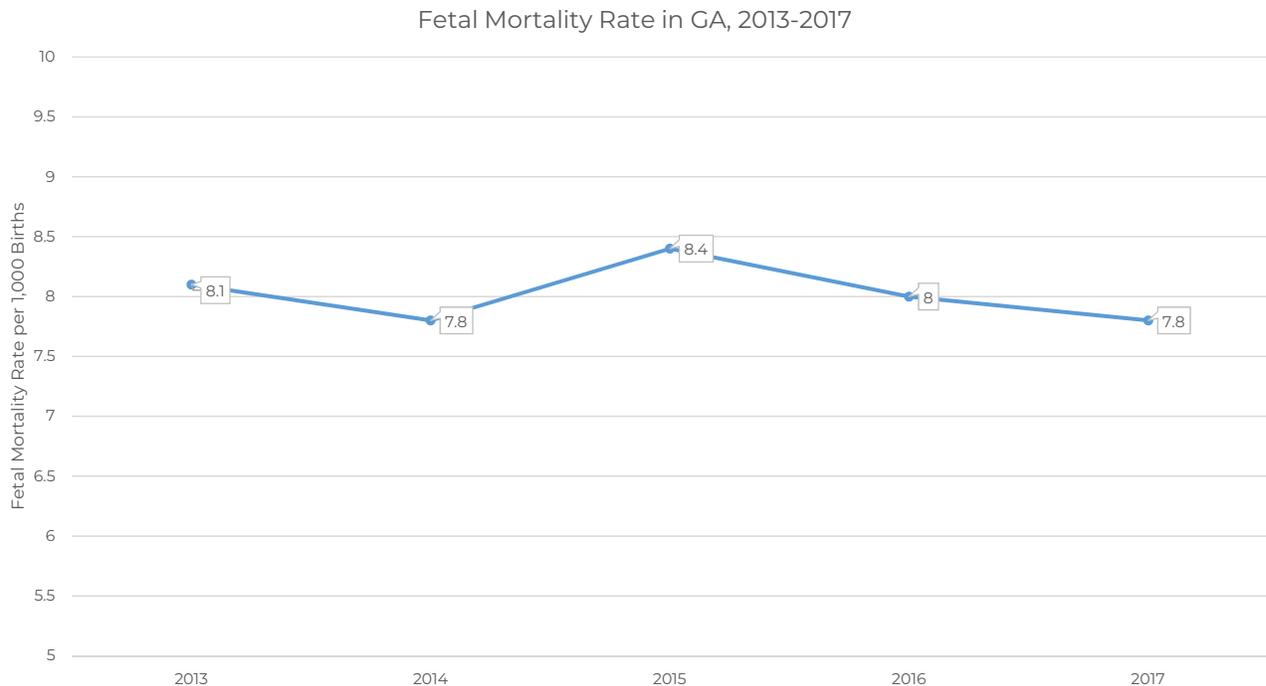


Figure 11. Fetal Mortality Rate per 1,000 in Georgia, 2013-2017²
OASIS

Miscarriages

Miscarriages in the United States are more common than once believed, with as many as half of pregnancies ending in miscarriage²⁸. Of women who know they are pregnant, 10-15% of pregnancies will end in miscarriage²⁸. All causes of miscarriage are still unknown, but 28.4% are attributed to placenta, cord, and membrane complications, 14.2% are attributed to maternal complications, and 10.2% occur due to chromosomal abnormalities that are not compatible with life^{28,29}. Most miscarriages occur in the first trimester before women know they are pregnant; miscarriage in the second trimester occurs less frequently (1-5% of pregnancies)²⁸.

In 2016, the majority of total fetal deaths in Georgia occurred among 25-34 year olds³⁰. Additionally, in 2016, the frequency of fetal death was negatively associated with the number of successful live births, such that the highest prevalence of fetal deaths occurred among women who had not had a previous live birth and the lowest prevalence of fetal death occurred among those who had five or more children³⁰.

Fetal Death Rate Second Highest in Nation

The fetal mortality rate in Georgia in 2017 was 7.8 per 1,000 births². In 2016, 8,933 fetal deaths occurred in Georgia, with 81% occurring within the first 20 weeks of pregnancy³⁰. In 2016, Georgia had the second highest occurrence of fetal death (at any time of gestation) in the country³⁰. As fetal loss can be a sensitive topic for both mothers and providers, the number of stillbirths is underreported or not reported at all³¹. In Georgia, the highest rates of fetal deaths are seen among women 45 years or older (19.4 per 1,000) and 10-17 years old (11 per 1,000)². Among all racial/ethnic groups, Black non-Hispanic women had the highest rate of fetal mortality (11.5)².

Demographics	2013	2014	2015	2016	2017
Number of fetal deaths	1,054	1,023	1,107	1,052	1,012
Total births	8.1	7.8	8.4	8	7.8
Race/Ethnicity					
White (NHL)	5.4	5.2	5.4	5.3	5.2
Black/African American (NHL)	13.1	12.3	13	12.1	11.5
Hispanic or Latino	6.9	5.7	5.9	6.3	5.9
Asian	4.4	4.3	4.2	5.2	4.6
Other races (NHL)	5.2	5.5	6	6.1	7.3
Maternal Age					
10-17 years	12.3	9	10	11.4	11
18-24 years	8.2	7.8	8.4	8.1	7.6
25-34 years	7.3	7.1	7.7	7.4	7.3
35-44 years	10.3	10.1	10.4	9.6	9.5
Over 45 years	0	*	*	19.4	19.4
Residence					
Rural	7.9	7	8.6	8	8.7
Non-rural	8.2	7.9	8.3	8	7.6

OASIS, 2013-2017

Table 7. Fetal mortality rate in Georgia by demographic²

*Rates not stated due to low frequency (1-4 events)

County	Fetal Mortality Rate	Total # of Fetal Deaths
Montgomery	20.9	10
Johnson	20.8	10
Hancock	20.6	7
Warren	17.7	5
Meriwether	17.2	22
Sumter	15.9	31
Wilkes	15.5	8

OASIS, 2013-2017

Table 8. Georgia Counties with Fetal Mortality Rates of ≥ 15 Deaths per 1,000 , 2013-2017²

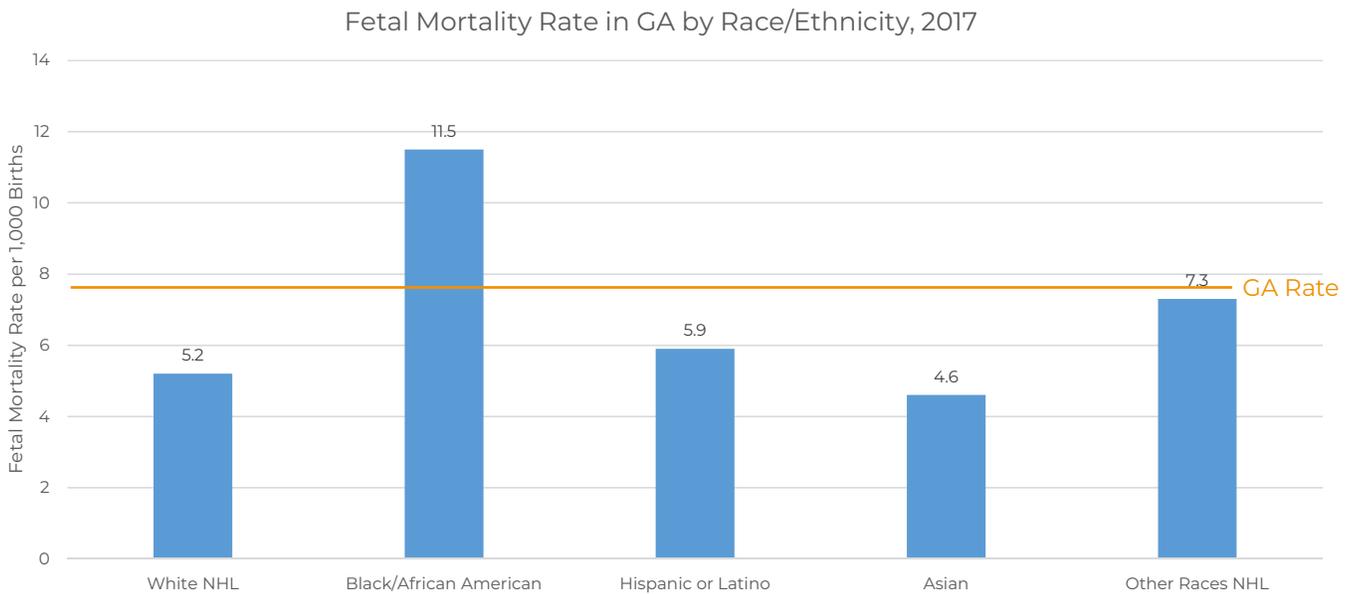


Figure 12. Fetal Mortality Rate in Georgia by Race/Ethnicity, 2017²
OASIS

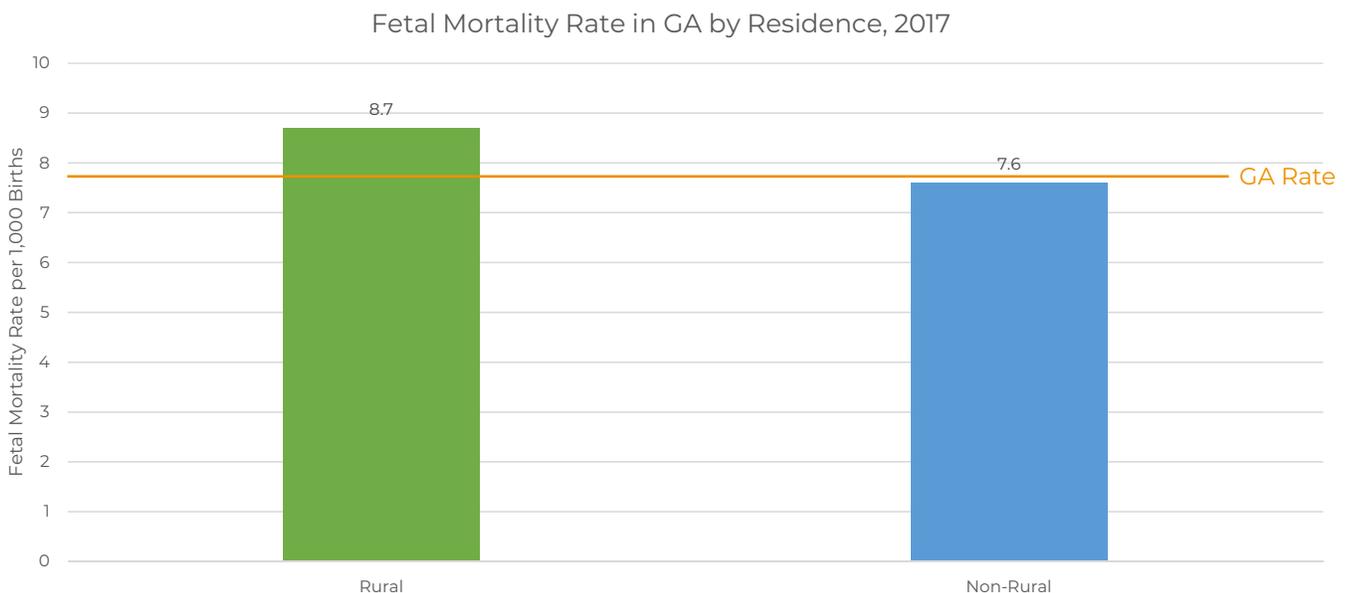


Figure 13. Fetal Mortality Rate in Georgia by Residence, 2017²
OASIS

Infant Mortality

Infant mortality is defined as “the death of an infant before his or her first birthday” and is calculated by the number of infant deaths divided by the total number of live births multiplied by 1,000^{32,33}. The top five leading causes of infant mortality as identified by the CDC are birth defects, preterm birth and low birthweight, Sudden Infant Death Syndrome (SIDS), maternal pregnancy complications, and injuries³². Nationally, the rate of infant mortality in 2016 was 5.9 per 1,000 live births^{22,34}. Known methods of reducing infant mortality include receiving preconception and prenatal care, creating a safe sleep environment for the infant, receiving newborn screenings, limiting substance use, and taking folic acid to reduce neural tube defects³⁵.

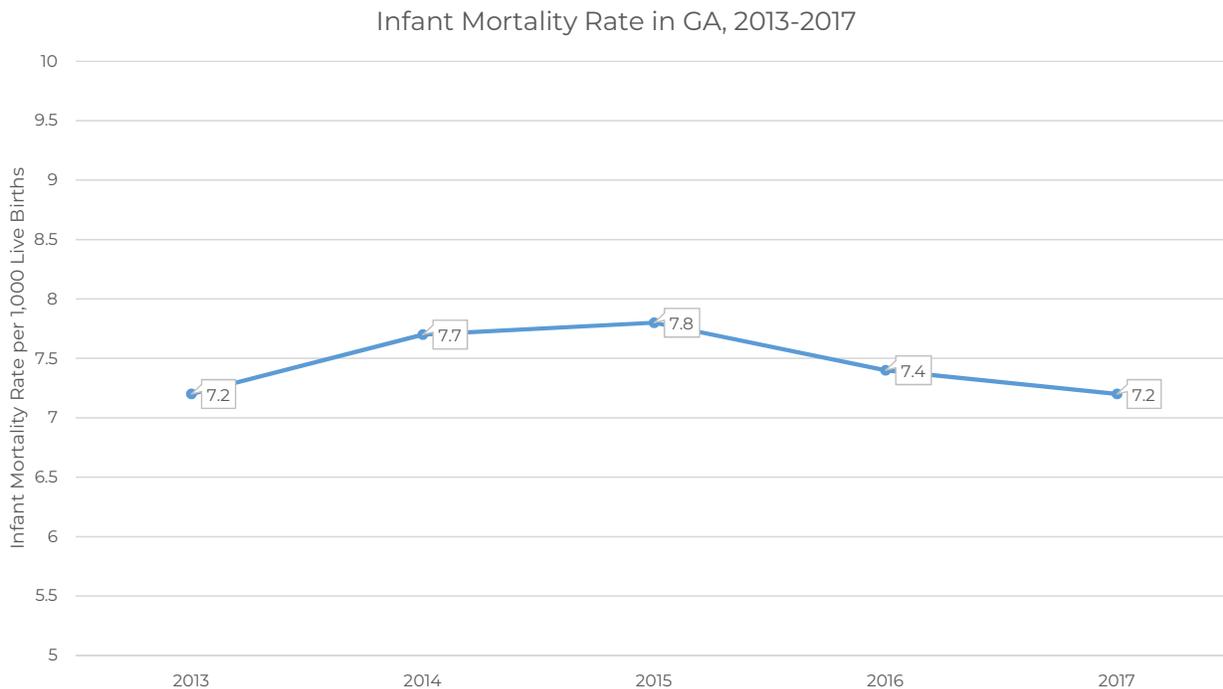


Figure 14. Infant Mortality Rate in GA, 2013-2017²
OASIS

Infant Mortality Rate Sixth Highest in Nation

In 2017, the infant mortality rate in Georgia was 7.2 per 1,000 live births, ranking 6th highest in the nation³⁶. Since 1994, the infant mortality rate in rural counties has been slightly higher than non-rural counties². However, in recent years, non-rural counties' infant mortality rates have been slightly higher than rural counties' (7.3 and 6.8 respectively in 2017)². Black non-Hispanic infants have the highest rate of infant mortality².

County	Infant Mortality Rate	Total # of Infant Deaths
Crisp	17	25
Clinch	16.6	8
Wilcox	15.3	7
Dodge	14.5	16
Dougherty	14.1	89

OASIS, 2013-2017

Table 9. Georgia Counties with Infant Mortality Rates of ≥ 14 Deaths per 1,000 , 2013-2017²

Demographics	2013	2014	2015	2016	2017
Number of infant deaths	931	1,004	1,023	962	932
Total	7.2	7.7	7.8	7.4	7.2
Race/Ethnicity					
White (NHL)	5.8	5.2	5.5	5.4	4.9
Black/African American (NHL)	11.4	13.4	13	11.8	11.7
Hispanic or Latino	4.9	4.9	5.7	6.3	5.1
Asian	3.3	3.9	2.7	3.5	4.1
Other races (NHL)	1.2	3.6	3.4	1.7	7.0
Infant's sex at birth					
Male	7.7	8.6	8.2	7.7	7.3
Female	6.7	6.7	7.4	7.1	7.2
Residence					
Rural	8.1	8.6	7.8	7.3	6.8
Non-rural	7.1	7.5	7.8	7.4	7.3

OASIS, 2013-2017

**Infant deaths include any loss of life between birth and one year of age.³²*

Table 10. Infant mortality rate (per 1,000 live births) in Georgia by demographic²

Infant Mortality Rate in GA by Race/Ethnicity, 2017

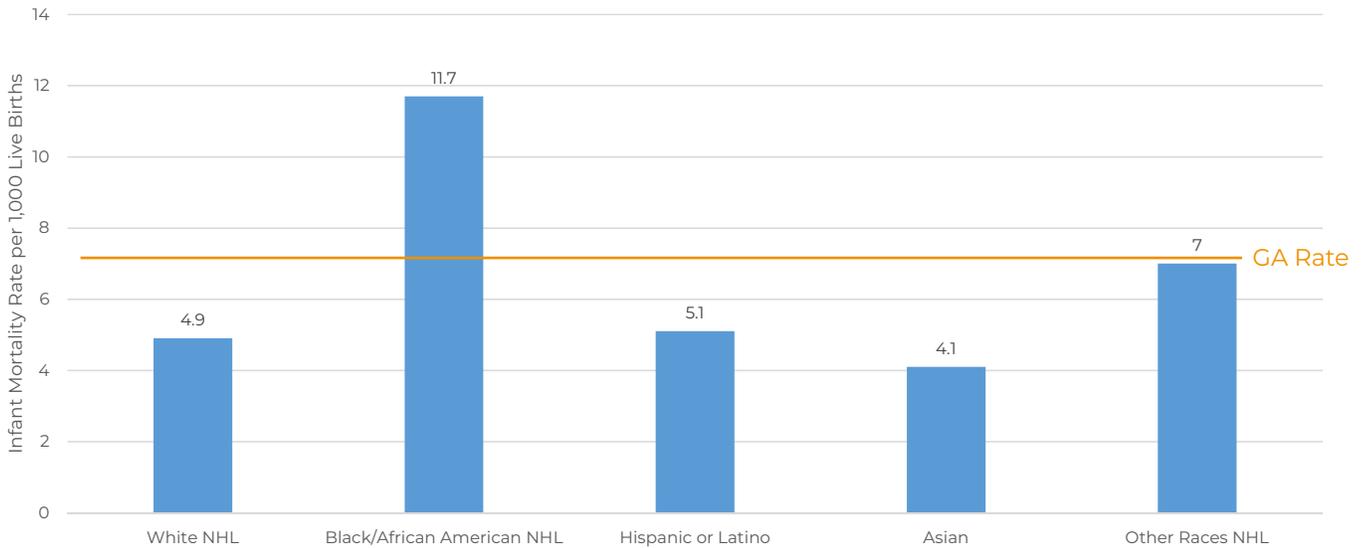


Figure 15. Infant Mortality Rate in GA by Race/Ethnicity, 2017²
OASIS

Infant Mortality Rate in GA by Residence, 2017

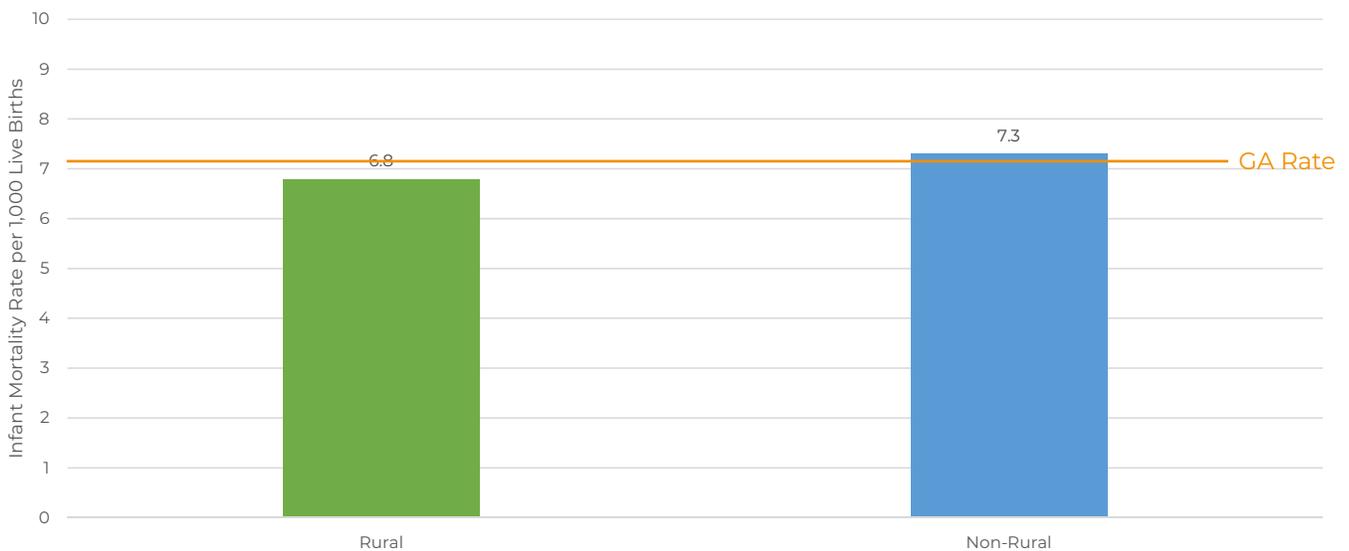


Figure 16. Infant Mortality Rate in GA by Residence, 2017²
OASIS

Increase in Sleep-Related Deaths

Sudden Infant Death Syndrome (SIDS) affects 4,000 infants nationally³⁷. In Georgia, three infants a week will die from sleep-related causes, the majority of which are preventable³⁸. Sleep-related causes of death include Sudden Unexpected Infant Death (SUIDS), Sudden Infant Death Syndrome (SIDS), and Accidental Suffocation Strangulation in Bed³⁸. While SIDS is a sudden death that cannot be explained, SUIDS causes of death are determined after a full investigation³⁸. SIDS and other sleep-related causes are a major contributor to Georgia's high infant mortality rate, accounting for 11.7% of infant deaths in 2017. While the rate of SIDS has marginally increased over the last five years, the rate of suffocation has nearly doubled^{2,38}. Education about safe sleep for caregivers and healthcare professionals has the potential to reduce Georgia's high infant mortality rate.

In 2014, 92.4% of sleep-related infant deaths occurred between 0-6 months of age, emphasizing the importance of vigilance at this critical time in an infant's life³⁸. The Georgia Department of Public Health

utilizes the ABC model for their Safe to Sleep Campaign. They recommend that babies sleep alone, on their backs, and in a crib or bassinet³⁷. Infants should not share a sleeping surface with another person but should be in proximity to their caregiver³⁷. Additionally, infants should sleep on their backs every time they are put down, and the surface should be firm, flat, with no toys, blankets, or crib bumpers³⁷. These methods have been shown to reduce the risk of sleep-related infant death³⁷.

Since 1990, Georgia has had a Child Fatality Review Panel that is led by the Georgia Bureau of Investigation. This panel reviews deaths of children (from birth through age 17) that are “sudden, unexpected, and/or unexplained”⁴⁰. The Georgia Child Fatality Review Panel consists of, “experts in the fields of child abuse prevention, mental health, family law, death investigation, and injury prevention”⁴⁰. In 2016, there were 966 infant deaths in Georgia, 200 of which were reviewed by the Child Fatality Review Panel⁴⁰. According to the Georgia Fatality Review Panel, sleep-related infant deaths remain the leading cause of preventable post-neonatal deaths in Georgia. Of sleep-related infant deaths in 2016, 85 infants (56%) were sleeping in an adult bed, 14 infants were sleeping in cribs, and 12 infants were sleeping in bassinets⁴⁰.

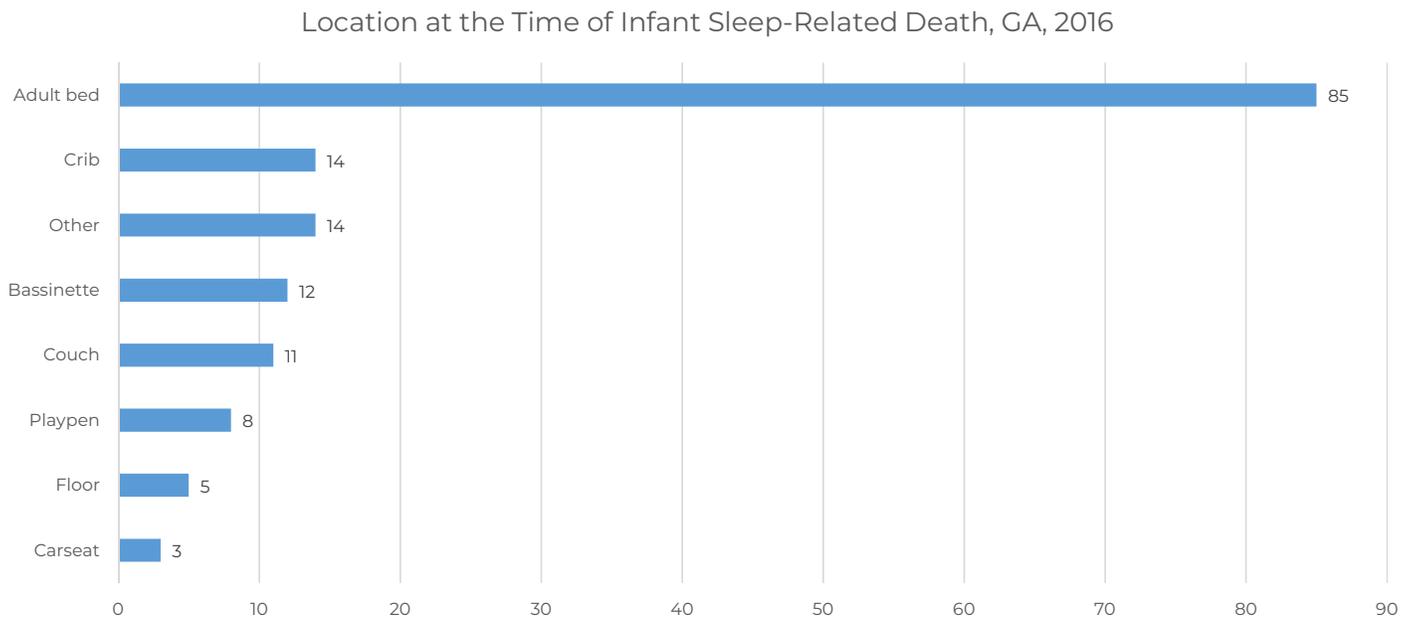


Figure 17. Location of Infant Sleep-related Deaths in Georgia, 2016²
Georgia Child Fatality Review File, 2016³⁹

Other Causes of Infant Mortality

Additional leading causes of infant mortality in Georgia include fetal and infant conditions, birth defects, and external causes. In 2017, 21% of infant deaths were caused by prematurity, 18% by birth defects, and 7.7% by external causes².

Cause	2013	2014	2015	2016	2017
Fetal and Infant Conditions	56.6	53.3	49.3	51.9	51.2
Prematurity	23.2	22.1	22.4	23.3	21.0
Lack of oxygen to fetus	1.2	1.8	1.2	2.3	2.3
Respiratory Distress Syndrome (RDS)	2.0	1.4	1.3	2.0	2.0
Birth related infections	3.5	3.1	2.7	3.5	3.8
Birth Defects	15.3	18.2	18.7	17.8	18.0
Neural tube defects	1.8	2.4	2.7	1.6	2.3
Sudden Infant Death Syndrome (SIDS)	9.8	10.9	10.3	10.1	11.7
External Causes	5.2	4.9	5.8	5.7	7.7
Motor vehicle crashes	*	*	0.5	0.7	*
Suffocation	2.8	3.7	3.8	3.5	4.4
Homicide	1	0.9	1.3	0.9	1.8

OASIS, 2013-2017

Table 11. Percent of infant mortality due to an array of causes in Georgia, 2013-2017²

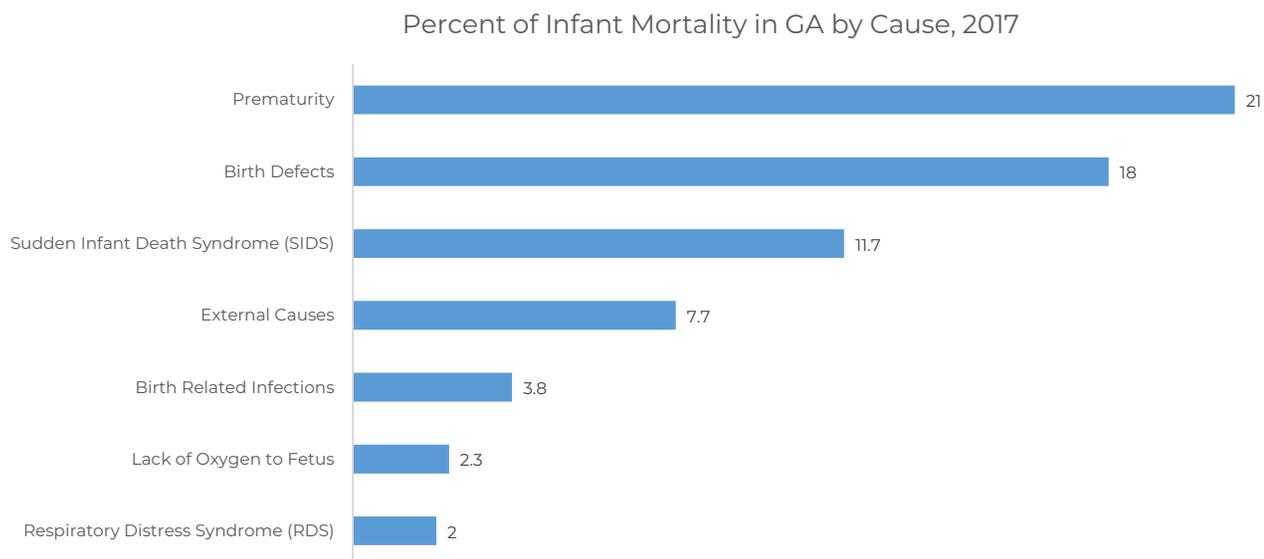


Figure 18. Percent of Infant Mortality in GA by Cause, 2017²
OASIS

Maternal Health

Maternal Disease

Because pregnancy can be a vulnerable time for both mother and baby, it is vital that our communities support women so they can take care of their bodies during this time. Some of the acute diseases and illnesses that women can experience during pregnancy include anemia, urinary tract infections (UTI), viral hepatitis, sexually transmitted infections, other infections, and hyperemesis gravidarum or severe “morning sickness”. Although these diseases are not chronic, they can cause complications throughout pregnancy. For example, hyperemesis gravidarum can lead to weight loss and dehydration, which are risky for both mother and child. Infections, such as UTIs, in pregnancy, can also be harmful to the baby if left untreated. Medically confirmed infections are treated with a round of antibiotics to help reduce the risk to the mother and infant⁴¹.

Increase in Congenital Syphilis Rates

Congenital syphilis is on the rise in the United States for the first time in a decade, due to the increasing rate of syphilis among women⁴². From 2016 to 2017, there was a 44% increase among newborns, with 918 incident cases nationally (23 per 100,000 births)⁴². Congenital syphilis can cause death and health complications among newborns. Therefore, screening and treatment in the early stages of the disease are crucial before and during pregnancy⁴². In Georgia, in 2016, the rate of congenital syphilis is 16 per 100,000, placing Georgia among the top 10 highest rates of congenital syphilis among all U.S. states and territories⁴³.

Chronic Disease

Although acute disease is a risk for mothers during this time, chronic disease is a long-term threat to both mother and baby. Chronic disease, also known as non-communicable disease, is defined as an illness that is not passed through transmission, is long in duration, and is slow in progression⁴⁴. The World Health Organization (WHO) identifies the four main types of chronic diseases globally as cardiovascular disease, cancer, chronic respiratory disease, and diabetes⁴⁴. Chronic diseases are “the most common, costly, and preventable of all health problems,” affecting half of all adults⁴⁵.

Chronic disease is not only expensive for the individual, but for the country. Ninety percent (\$2.97 trillion) of the national health care budget in the U.S. can be attributed to chronic and mental health conditions⁴⁵. The most common chronic conditions for pregnant women include: high blood pressure, diabetes, heart disease, and obesity⁴⁶. Nationally, 700 women die of pregnancy-related causes annually, while the impact of severe maternal morbidity from pregnancy complications impacts more than 50,000 women annually⁴⁶. Examples of severe maternal morbidity include heart attack and hemorrhage. Postpartum hemorrhage is a major concern impacting 21.2 per 10,000 births in the U.S.⁴⁷. Since 2000, the rate of severe maternal morbidity has doubled in the U.S. contributing to higher medical costs and longer hospital stays⁴⁶. It has been hypothesized that the increase in severe maternal morbidities is related to the increase in “maternal age, pre-pregnancy obesity, preexisting (sic) chronic conditions, and cesarean or other complications during delivery”⁴⁶.

Complications that are chronic in pregnancy include: mental health conditions (see Perinatal Mood and Anxiety Disorders), hypertension, gestational diabetes mellitus, obesity (see Maternal Obesity) and HIV. Hypertension in pregnancy is associated with preeclampsia or toxemia (sudden increase in blood pressure during pregnancy), preterm delivery, low infant birth weight, placental abruption, and gestational diabetes⁴¹. The national cost of preeclampsia in the U.S. is \$2.18 billion for medical costs associated with care for both mothers who experienced preeclampsia and their infants⁴⁸. It is recommended that women who have hypertension prior to pregnancy seek treatment early to manage high blood pressure throughout the perinatal period⁴¹. Nationally, 912.4 per 10,000 births are affected by hypertensive disorders and 166.9 per 10,000 births are impacted by chronic hypertension annually⁴⁷. In Georgia, 11.7% of births were to mothers with high blood pressure,

eclampsia, or preeclampsia⁶. Non-Hispanic multiracial (20.5%) and non-Hispanic Black (17.9%) mothers had the highest prevalence of hypertensive disorders during their pregnancy⁶. Women with gestational diabetes mellitus are at an increased risk of preeclampsia, early delivery, cesarean birth, having a large infant (which increases delivery complications), and having an infant with low blood sugar, breathing problems, or jaundice⁴¹. Gestational diabetes typically resolves post-pregnancy. However, women who experience diabetes during pregnancy are more susceptible to Type 2 Diabetes later in life⁴¹. In 2017, 8.7% of births in Georgia were to mothers with gestational diabetes⁶. Similar to hypertension, it is recommended that women who have diabetes prior to becoming pregnant talk to their healthcare provider before pregnancy to establish a management strategy before, during, and after pregnancy⁴¹.

HIV

Women should be screened for HIV as early as possible in pregnancy⁴⁹. In 2017, 51.2% of Georgia mothers were tested within 12 months prior to pregnancy⁶. Transmission of HIV from mother to infant is possible during pregnancy, labor, birth, and breastfeeding without the proper antiviral treatment during pregnancy⁴⁹. In 2016, nationally, there were 2,225 children (13 years or younger) living with HIV, 81% of which can be attributed to perinatal transmission. In 2016, there were 122 Georgians living with HIV due to perinatal transmission⁵⁰. Half of all cases of HIV-infected pregnant women in Georgia are between the ages of 25-34 years and about 60% of the reason for transmission is unknown⁵². However, in light of these facts, 81% of HIV-infected women received prenatal antiretroviral therapy and 90% received prenatal care in Georgia⁵². In Georgia, 85% of HIV-infected pregnant women are Black; 7% of cases are White, and 6% of cases are Hispanic/Latina⁵².

Maternal Obesity

Obesity is determined by an individual's Body Mass Index (BMI) which is calculated by a "person's weight in kilograms divided by the square of height in meters⁵³." A BMI of 30.0 or higher is classified as obese⁵³. Women who are obese before becoming pregnant are at higher risk of preeclampsia, gestational diabetes mellitus, stillbirth, longer hospital stays, and a cesarean delivery⁴¹. Gaining more than the recommended amount of weight during pregnancy can lead to higher weight retention post-pregnancy, increasing the risk of obesity⁵⁴. Maternal obesity is a concern not only for mother, but also for baby. Gaining too much weight during pregnancy is associated with childhood obesity, delivery complications, and having a baby that is "too large," which puts the mother and infant at risk for delivery complications⁵⁴. Compared to normal weight pregnancy, maternal obesity in pregnancy was significantly associated with an increased odds of asthma in the first four years of life and for each one-unit increase in BMI there was an association with increased odds for asthma in children⁵⁵. Research suggests that foods consumed during pregnancy and breastfeeding influence infant preferences. Eating a balanced diet of fruits and vegetables is encouraged to help set the foundation for a healthy palate and healthy eating habits for the baby⁵⁶.

Almost half of all pregnancies in the United States are complicated by weight gains higher than recommendations established by the CDC⁵⁴. Nationally, only a third of women gain a healthy amount of weight during pregnancy per these recommendations⁵⁴. For women of normal weight, the weight gain recommendation for a singleton birth is 25-35 pounds⁵⁴.

In Georgia, 33.3% of women have a BMI classification of obese⁵⁷. Georgia is also notably high nationally in several obesity indicators: 24th in obesity, 12th in diabetes, 9th in physical inactivity, and 17th in hypertension⁵⁸. Based on CDC guidelines for BMI and pregnancy, 42.1% of live births in Georgia are to women with normal BMI pre-pregnancy weight⁵⁹. Outside of this range, 28.3% (2015) of births are to women with obese BMI and 25.9% (2015) of births are to women with overweight BMI⁵⁹. Comparisons for rural and non-rural counties cannot be made due to confidentiality constraints^{4,26,60}.

Maternal Use of Drugs and Alcohol

The use of drugs and alcohol during pregnancy is known to be detrimental to a developing fetus, however maternal risk behaviors, such as smoking are still prominent in the U.S.⁴⁶.

Alcohol Use

In Georgia, the data on alcohol use during pregnancy is sparse. However, the latest PRAMS survey collected data on alcohol consumption in the last three months of pregnancy. The majority of Georgia women did not drink in the last three months of their pregnancy⁶. However, about 9.4% reported having at least one drink in their last three months of pregnancy⁶. There is a significant association between maternal age and number of drinks in the last three months of pregnancy, with women over the age of 35 drinking at a higher frequency (15.2%) than teen mothers (0%) and mothers aged 20-34 years (8%)⁶. This age association is likely related to socioeconomic status, as women of higher socioeconomic status are more likely to drink occasionally and are more often pregnant over the age of 35 when compared to women of lower socioeconomic status.

Decline in Tobacco Use During Pregnancy

Health risks of smoking during pregnancy include preterm birth, SIDS, and in some cases fetal death⁴⁶. Nationally, 1 in 5 women smoke in the three months prior to pregnancy and 1 in 10 smoke in the last three months of pregnancy⁴⁶. In Georgia, there has been a decline in the percentage of births to women who reported using tobacco during pregnancy². While in 2013, 6.0% of women reported using tobacco during pregnancy, 4.7% reported use in 2017².

There are geographic disparities in tobacco use among Georgia mothers. In rural Georgia, 10.3% of mothers reported using tobacco during pregnancy, compared to non-rural Georgia at 3.6%². In 2017, the highest prevalence of smoking is seen among White non-Hispanic women (7.9%), teen mothers (5.2%), and mothers with less than a high school diploma (10.7%)².

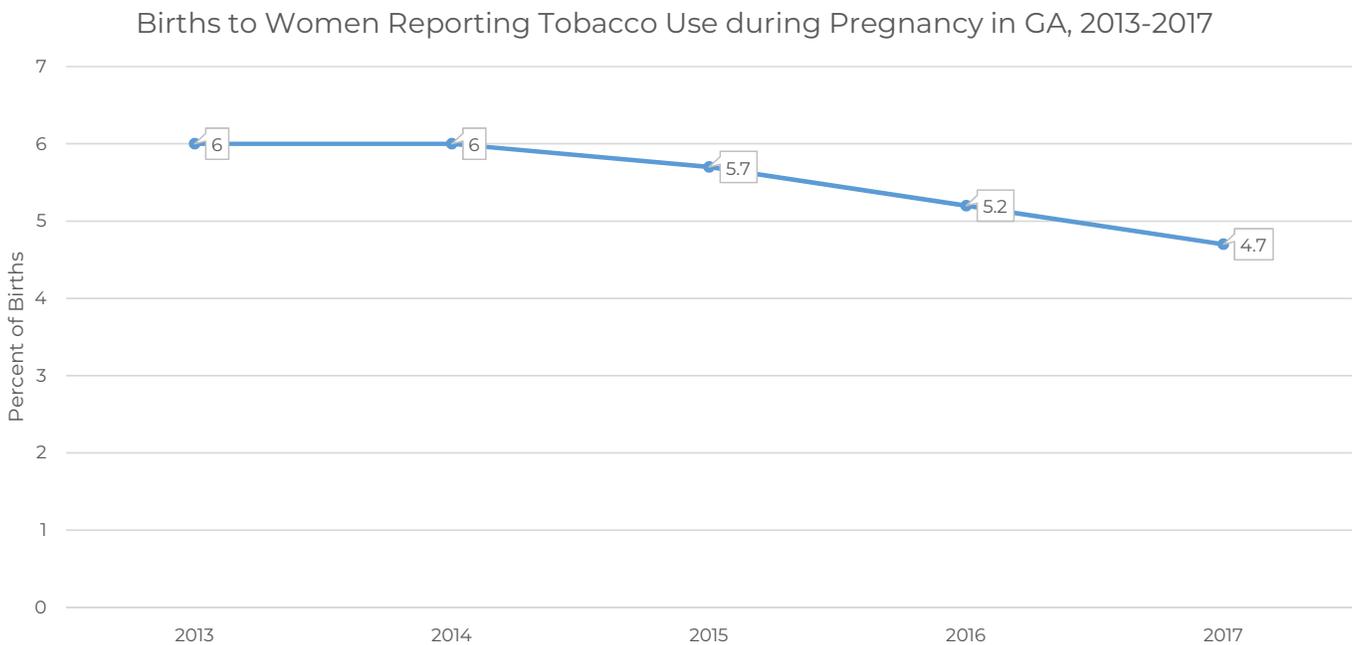


Figure 19. Percent of births to women reporting tobacco use during pregnancy, 2013-2017²
OASIS

Demographics		2013	2014	2015	2016	2017
	Total births	6.0	6.0	5.7	5.2	4.7
Race/Ethnicity						
	White (NHL)	10	10.1	9.6	8.8	7.9
	Black/African American (NHL)	3.3	3.2	3.3	3.1	2.5
	Hispanic or Latino	1.1	1.4	1	0.9	1.0
	Asian	0.5	0.5	0.3	0.3	0.2
	Other races (NHL)	4.9	4.4	4.7	4.3	5.1
Education						
	Less than high-school	11.8	12.3	12.3	11.6	10.7
	High-school diploma/GED	8.7	8.7	8	7.3	6.5
	Some college or higher	2.9	2.9	2.7	2.4	2.2
Maternal Age						
	10-17 years	4.3	4.7	4.1	3.6	3.4
	18-24 years	8.5	8.5	8	6.9	5.9
	25-34 years	5.3	5.5	5.1	5.0	4.5
	35-44 years	3.2	3.1	3.6	3.1	3.1
	Over 45 years	5.2	3.5	2.9	1.7	2.3
Residence						
	Rural	12.1	11.8	11.3	10.6	10.3
	Non-rural	4.9	5	4.7	4.2	3.6

OASIS, 2013-2017

Table 12. Percent of births to women reporting tobacco use during pregnancy by demographic in Georgia²

County	% of Births to Women Reporting Tobacco Use	Total # Births to Women Reporting Tobacco Use
Walker	22.8	820
Chattooga	22.7	321
Stephens	20.4	308
Dade	20.1	157
Union	19.7	163
Pierce	18.5	220
Towns	18.5	78
Murray	18	453

OASIS, 2013-2017

Table 13. Georgia Counties with Percentage Maternal Tobacco Use of $\geq 18\%$, 2013-2017²

The use of e-cigarettes (e.g., vaping products) is on the rise in the United States and poses threats to pregnant women and their children; 14% of women nationally have used e-cigarettes during pregnancy with the intention to self-treat their smoking cessation^{61,62}. Although there is not a lot of research on the effects of e-cigarettes during pregnancy, the dose of nicotine in e-cigarettes can be just as high as or higher than conventional tobacco methods⁶³. The nicotine exposure from e-cigarettes impacts the tissue and organ development of the fetus and causes injury to the cells of the mother⁶³. The risk of harm from nicotine exposure is so high that e-cigarettes and other forms of nicotine replacement therapy (NRT), are only recommended by the American College of Obstetricians and Gynecologists (ACOG) if behavioral interventions, like group therapy and telephone counseling fail^{62,63}. Infants born to mothers who smoked during pregnancy have a higher risk of nicotine dependence, tobacco use later in life, and a host of other birth defects, such as clubfoot, gastroschisis, and heart defects^{62,64}.

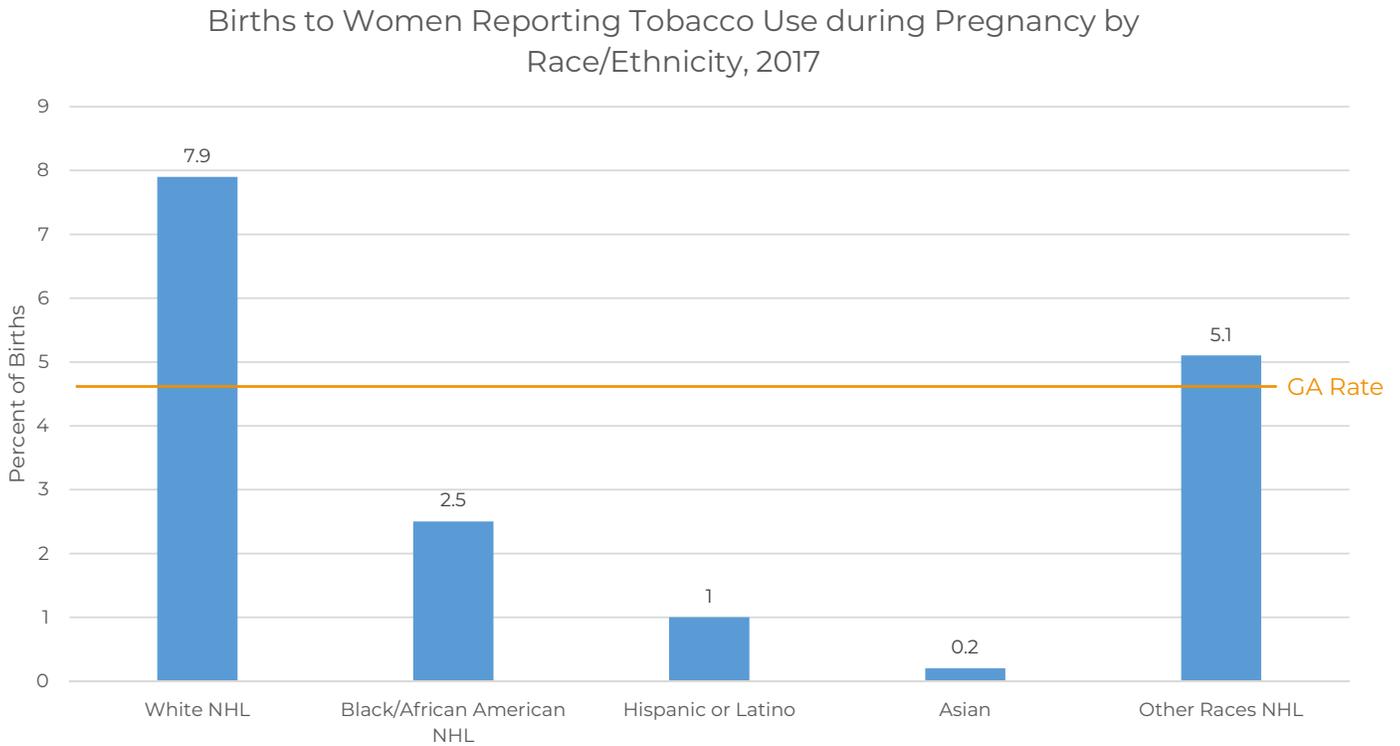


Figure 20. Percent of Births to Women Reporting Tobacco Use during Pregnancy by Race/Ethnicity, 2017²
OASIS

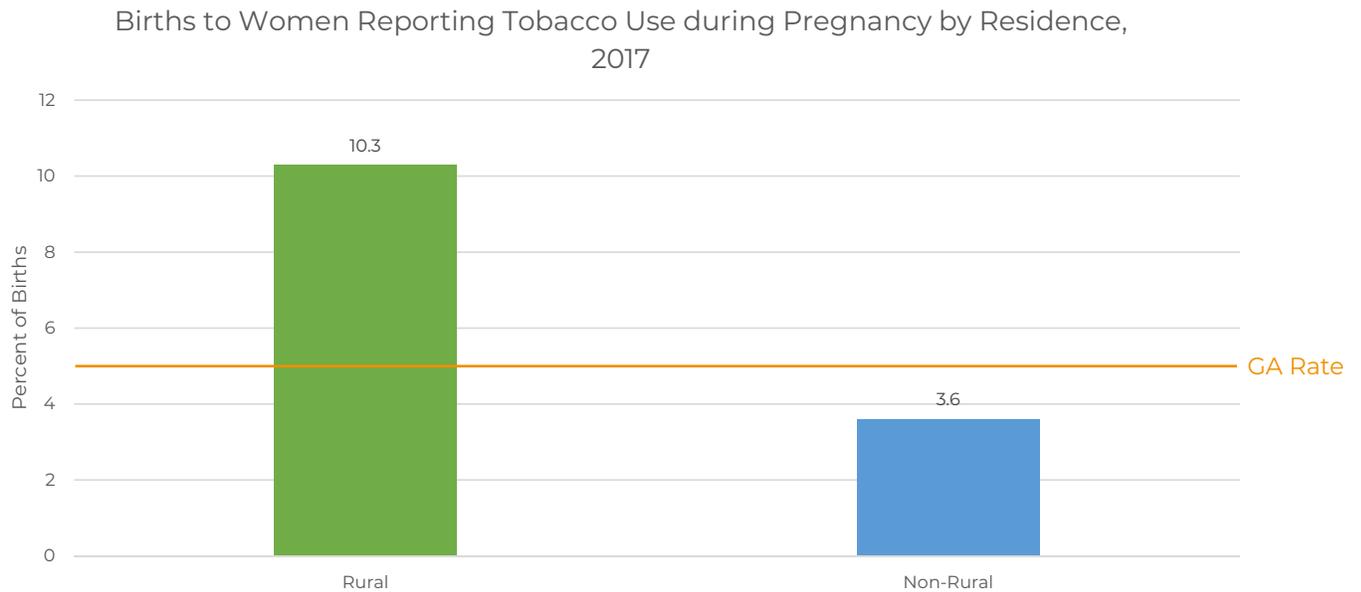


Figure 21. Percent of Births to Women Reporting Tobacco Use during Pregnancy by Residence, 2017²
OASIS

Drug Use

When looking at maternal substance use by category, in 2016 stimulants (i.e. amphetamines, methamphetamines) were used in a third of all medically confirmed cases of maternal substance use in Georgia, followed by opiates (e.g. oxycodone, heroin, etc.) at 29.7%, and cannabinoids (e.g. marijuana, tetrahydrocannabinol [THC], etc.) at 28.7%⁶⁵. Although research is limited on the effects of marijuana during pregnancy, the Georgia Department of Public Health (DPH) found that 23.6% of infants who were only exposed to marijuana in utero (monosubstance use) did have clinical symptoms of withdrawal; marijuana withdrawal symptoms include temporary tremors or long periods of crying after birth^{65,66}.

Rise in Opioid Use

Opioid use in the U.S. has been on a steady rise since the early 2000s. The rate of drug poisoning has increased three-fold for females since 1999, surpassing the rate among men^{67,68}. Among Georgia residents, the leading cause of death is motor vehicle crashes, closely followed by drug overdoses. In 2014, drug overdoses surpassed motor vehicle crashes briefly⁶⁵.

Opioid prescription practices impact all women nationally; 25% of privately insured women and 30% of Medicaid-enrolled women filled a prescription for an opioid during pregnancy^{69,70}. However, women on Medicaid consistently have more opioid prescriptions filled in comparison to privately insured women⁷⁰. In addition, there are regional differences in the frequency of opioid prescriptions across the U.S., with the highest frequency of opioids filled during pregnancy in the South (36%) and the lowest in the Northeast (9.3%)^{69,70}. Common reasons a woman may need a prescribed opioid during pregnancy include cesarean delivery, abdominal and lower back pain, headaches and migraines, and joint pain⁶⁹. The most commonly prescribed opioids among privately insured women and women covered by Medicaid during pregnancy are codeine (6.9 & 9.4%, respectively), oxycodone (5.5% & 13.0%), and hydrocodone (17.5 & 25%)^{69,70}. According to PRAMS data from 27 states, about 5% of all pregnant women report they have used drugs illegally⁴⁶.

Rise in Neonatal Abstinence Syndrome Rates

One major concern for women who use opioids during pregnancy is Neonatal Abstinence Syndrome (NAS), defined as “postnatal drug withdrawal syndrome primarily caused by maternal opiate use”⁷¹. In Georgia, the presence of NAS is a reportable condition to state health departments for public health surveillance purposes⁷². There are four codes that are used in the surveillance of NAS in Georgia identified by the Georgia Department of Public Health: “ICD-9: 779.5 (drug

withdrawal syndrome in a newborn) and 760.72 (noxious influences affecting fetus or newborn via placenta or breastmilk, narcotics), and for ICD-10: P96.1 (drug withdrawal, infant of dependent mother) and P04.4 (newborn affected by maternal use of drugs of addiction)”⁶⁵.

In 2015, the rate of NAS in Georgia was 6.1 per 1,000 births, which is almost a three-fold increase from 2010⁶⁵. However, as noted in the Georgia DPH NAS surveillance report, there are likely under-reports due to surveillance challenges with NAS⁶⁵. The highest rates of NAS are seen in rural parts of Georgia, concentrating in the southeast and northeast corners of the state⁶⁵.

In 2012, the national cost of NAS in the U.S. was \$316 million, a four-fold increase from the decade prior. Infants affected by NAS stay on average 3.5 days longer in the hospital and incur significantly higher costs than non-afflicted infants (\$16,893 compared to \$5,610)⁷⁴. From 2003-2012, 77.3% of NAS discharges were billed to Medicaid programs^{71,74}. Infants born with NAS are at an increased risk of low birth weight, cleft palate, cleft lip, spina bifida, hypoplastic left heart syndrome, and respiratory complications. Furthermore, most babies with NAS will be covered by Medicaid in the first few years of life^{71,75}.

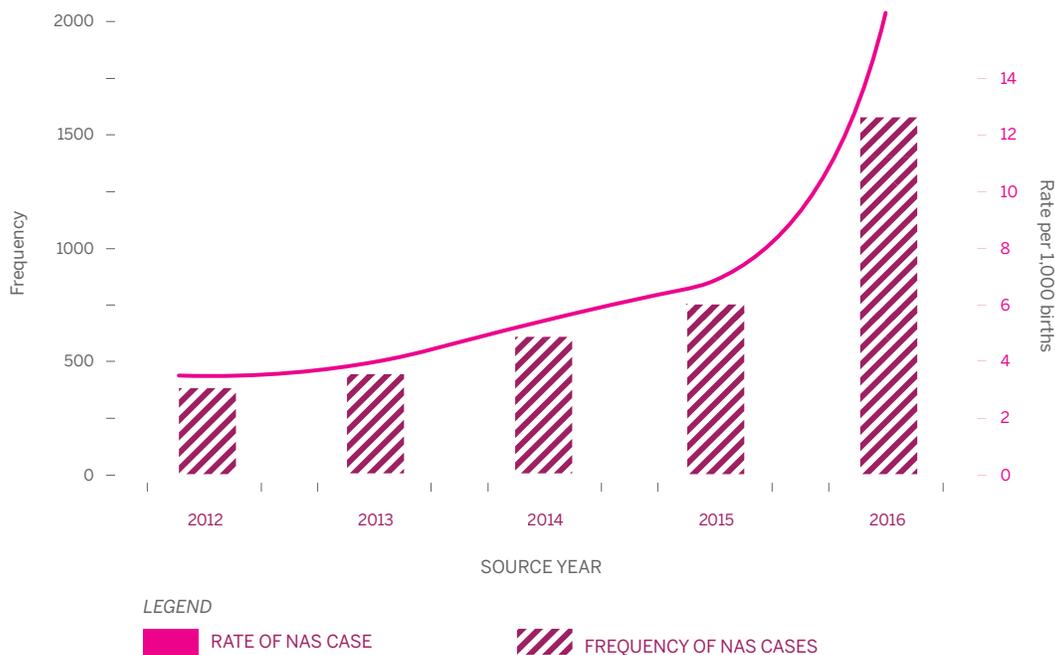


Figure 22. Frequency and rate of neonatal abstinence syndrome cases (per 1,000 births) among Georgia infants from hospital discharge data, 2012-2016⁷³
Georgia Department of Public Health

Maternal Mortality

There are two distinct measurements of maternal mortality recognized in public health. The first identifies maternal deaths by death certificate via an ICD-10 code and only includes, “causes related to or aggravated by pregnancy or pregnancy management”⁷⁶. Pregnant women are not captured with this measurement if their death was not associated with their pregnancy (e.g., unintentional injuries, homicides, suicides, etc.)⁷⁶. Additionally, this measurement only captures women up to 42 days “after the termination of pregnancy”⁷⁶. This is the most common measurement of maternal mortality and is used by international organizations, like the World Health Organization.

An additional measure of maternal mortality looks at maternal deaths more than 42 days, but less than one year after delivery and is coined as “Late Maternal Death”. This code is identified with ICD-10 O96⁷⁶. This second measurement of maternal mortality is used by the CDC and has a broader definition of maternal mortality, which looks at maternal deaths up to one year postpartum and

is divided into two categories: pregnancy-associated (or unrelated) deaths and pregnancy-related deaths⁷⁶. This definition was created in 1986 by the American College of Obstetricians and the CDC^{76,77}. The Georgia Department of Public Health defines a pregnancy-associated, but not related, death as “the death of a woman while pregnant or within one year of the end of pregnancy, due to a cause unrelated to pregnancy (e.g. motor vehicle crash, homicide or cancer, as determined by the Georgia Maternal Mortality Review Committee)”⁷⁸. The Georgia Maternal Mortality Review Committee uses this broader definition to understand the nuanced determinants that contribute to maternal deaths. Given that there are three distinct points in time to measure maternal deaths (up to 42 days after termination of pregnancy, more than 42 days but less than one year after termination of pregnancy, and up to one year postpartum), using calculations that are comparable can be difficult.

National Overview

Using the broader CDC definition for pregnancy-related maternal mortality, the national maternal mortality ratio has almost tripled since 1987⁷⁷. The maternal mortality ratio (MMR) for pregnancy-related deaths in 2016 was 19.9 per 100,000 births and is predicted to be 20.7 per 100,000 for 2018 given current trends⁷⁹. Maternal age also influences these rates, with the MMR for mothers aged 25-34 at 14 per 100,000 and mothers aged 35-44 at 38.5 per 100,000⁷⁹.

Over Half of Pregnancy-Related Deaths Preventable

Georgia’s MMR for pregnancy-related deaths from 2012-2014 was 26 per 100,000 births⁷⁸. The Georgia Maternal Mortality Review Committee reviews cases of maternal deaths caused by pregnancy complications in order to identify contributors and possible interventions to maternal mortality in Georgia⁷⁸. The last Maternal Mortality Review Committee report covered cases from 2014 and looked at 85 cases of both pregnancy-associated (not related deaths) and pregnancy-related deaths⁷⁸. The Maternal Mortality Review Committee found that 58% of pregnancy-related deaths that occurred in 2014 were preventable⁷⁸. They also found that 49% of pregnancy-related deaths in 2014 occurred among Black, non-Hispanic women, 28% among White, non-Hispanic women, and 12% among Hispanic women⁷⁸. Additionally, 40% of pregnancy-related deaths were to women 30-34 years of age⁷⁸. In 2014, 74% of pregnancy-related deaths occurred within 42 days after the end of pregnancy⁷⁸. Of all pregnancy-related deaths, the majority of women experienced complications with cardiovascular and coronary conditions, followed by embolism, cardiomyopathy, and hemorrhage⁷⁸.

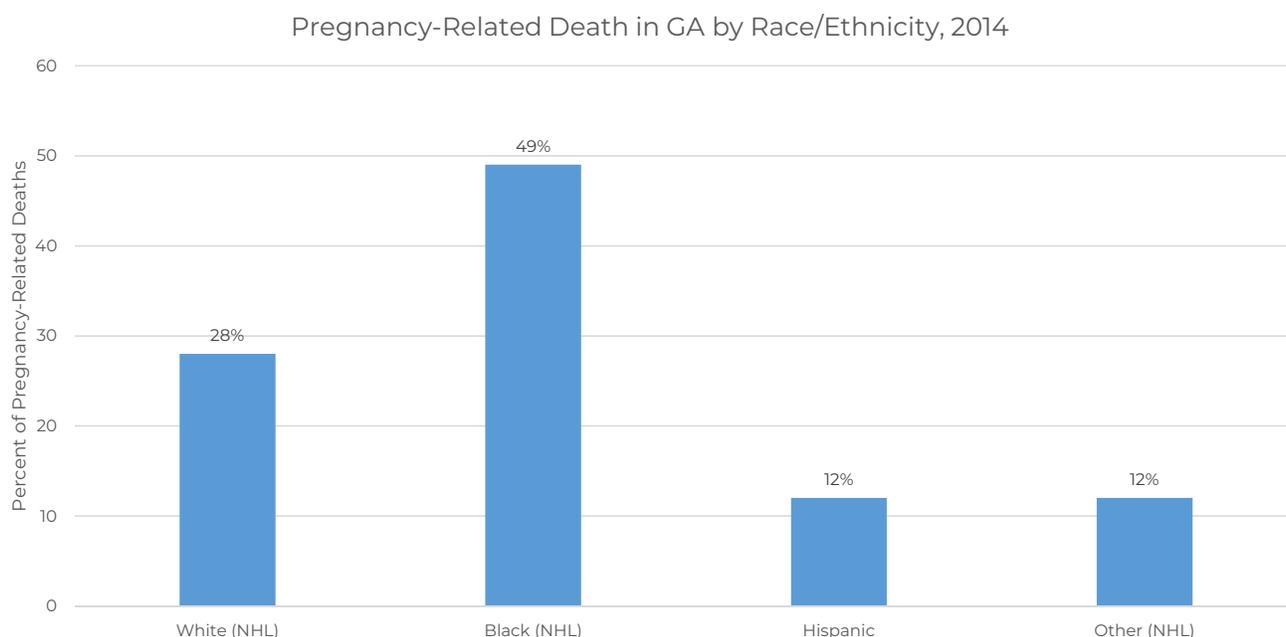


Figure 23. Percent of Pregnancy-Related Death in GA by Race/Ethnicity, 2014⁷⁸
Georgia Department of Public Health

Contributing Factors

According to the 2018 report published by the CDC reviewing findings from nine statewide maternal mortality review committees within the US, over 60% of the reviewed pregnancy-related deaths were preventable⁸⁰. The most prevalent elements identified as contributing to death were patient and family factors, particularly lack of knowledge among patients and family regarding warning signs and when to seek care. Provider-related factors were the second contributing causes of death, particularly misdiagnosis and ineffective treatments. Finally, systems of care factors, such as lack of coordination among providers, were the third contributing causes of death⁸⁰.

Perinatal Mood and Anxiety Disorders

There are several Perinatal Mood and Anxiety Disorders that affect women during the pregnancy and postpartum period: perinatal depression, perinatal anxiety, Obsessive-Compulsive Disorder (OCD), Posttraumatic Stress Disorder (PTSD), and postpartum psychosis¹⁰¹. The most commonly diagnosed of these is perinatal depression which affects up to 20% of new mothers¹⁰¹. Perinatal depression is defined as a “depressive episode that occurs during pregnancy or within a year of giving birth”¹⁰¹. There is an important distinction between perinatal depression and the “baby blues”. Perinatal depression is a depressive episode over a prolonged period of time, the “baby blues” are temporary, “with peak onset 3-5 days after delivery and a maximum duration of two weeks,” usually resolving itself without intervention¹⁰¹. The “baby blues” occur in up to 80% of new mothers, and although it can be a risk factor for a Perinatal Mood and Anxiety Disorder, it is not causal¹⁰¹. According to the Georgia Maternal Mortality Review Committee, 6% of the pregnancy-associated deaths were due to suicide in 2013¹⁰². Access to mental health records can be difficult for the Committee to access during review, making causal determinations difficult.

Maternal Depression

The frequency of feeling “down, depressed, or hopeless” based on PRAMS data is outlined in the Table below⁶. The frequency of having little interest or pleasure in doing things among Georgia women who gave birth follows a similar pattern of association, with the majority of women never losing interest or pleasure in doing things (51%) and a very small percentage always having little interest or pleasure in doing things (4.8%)⁶. The prevalence of maternal depression during pregnancy is 8.4%⁶.

Frequency	%
Always	0.27%
Often	4.3%
Sometimes	14.5%
Rarely	32.1%
Never	48.9%

PRAMS 2017, Georgia

Table 14. Prevalence of feeling “down, depressed, or hopeless,” 2017⁶

Perinatal Anxiety

The second most common Perinatal Mood and Anxiety Disorder is perinatal anxiety, which is defined as a “range of anxiety disorders, including generalized anxiety, panic disorder, and/or social anxiety experienced during pregnancy or the postpartum period,” occurs in 6-8% of pregnancies nationally¹⁰¹. Obsessive Compulsive Disorder (OCD) in pregnancy or the postpartum period is likely under-reported, but is known to occur in 4% of new mothers and is defined as “intrusive repetitive thoughts that are scary and do not make sense to mother/expectant mother. Compulsions (e.g., counting, hand washing) may or may not be present”¹⁰¹. Some risk factors unique to perinatal

depression, anxiety, and OCD include personal or perinatal history of mood or anxiety disorders, lack of social support, poor marital or intimate partner relationship, difficulties in pregnancy or in infant temperament, having a child with special needs or an extended time in the neonatal intensive care unit, and having a prior pregnancy or infant loss¹⁰¹.

Posttraumatic Stress Disorder and Perinatal Psychosis

Nationally, posttraumatic stress disorder occurs in 2-9% of mothers and is defined as “specific anxiety symptoms, including nightmares, flashbacks, and hypervigilance, experienced after traumatic events(s), including a traumatic birth”¹⁰¹. Posttraumatic stress disorder has the same risk factors as perinatal depression, anxiety, and OCD in addition to risk factors associated with a traumatic birth experience and previous sexual trauma¹⁰¹.

The final Perinatal Mood and Anxiety Disorder, perinatal psychosis, only occurs in 1-2 in 1,000 pregnancies across the country and is defined as the “sudden onset of psychotic symptoms following childbirth, in particular delusions regarding self and/or child. Increased risk with bipolar disorder”¹⁰¹. Risk factors of perinatal psychosis are primarily associated with a “history of bipolar disorder, history of psychosis, history of postpartum psychosis (80% will relapse), family history of psychotic illness, severe sleep deprivation, and medication discontinuation for bipolar disorder (especially when done quickly)”¹⁰¹. Women who experience postpartum psychosis should seek immediate psychiatric help¹⁰¹.

Perinatal Mood and Anxiety Disorders and Maternal Age

Research suggests that perinatal mood and anxiety disorders and maternal age are associated as well. In the U.S., early parenthood has shown association with depressive symptoms such that younger mothers experienced higher levels of depressive symptoms than older parents and non-parents¹⁰³. One study found that teen mothers have higher levels of depressive symptoms compared to young adult mothers and childless females¹⁰³. The findings of this study suggest that young childbearing reduces the potential for social capital as young mothers transition into adulthood (e.g. parenthood as a barrier to romantic partners and maintaining same-age friends) and also increases financial strain which can all contribute to feelings of depression¹⁰³. However, several longitudinal studies suggest that the feelings of depression and distress are temporary for young mothers who do not have a previous diagnosis of depression or were not already at a higher level of distress (e.g., financial, social, etc.)^{104,105,106}.

Access to Care

Prenatal Care

There are three measures that DPH uses to estimate prenatal care: Inadequate Kotelchuck Index (IKI), late or no prenatal care births, and less than 5 prenatal care visit births¹⁸. The IKI measures “adequacy of prenatal care based upon month of entry, number of prenatal visits and gestational age of infant at birth. It uses the ACOG’s standards for the number of visits”¹⁸. The calculation for IKI is as follows: $[\text{Number of Live Births with Inadequate Kotelchuck Value} / \text{Number of Live Births}] \times 100$ ¹⁸. The second measure, late or no prenatal care is defined as “births where the mother received prenatal care after the 2nd trimester, or not at all”¹⁸. The final measure, less than five prenatal care visit births is calculated by “the number of births where mother had less than five prenatal care visits, per 100 live births”¹⁸.

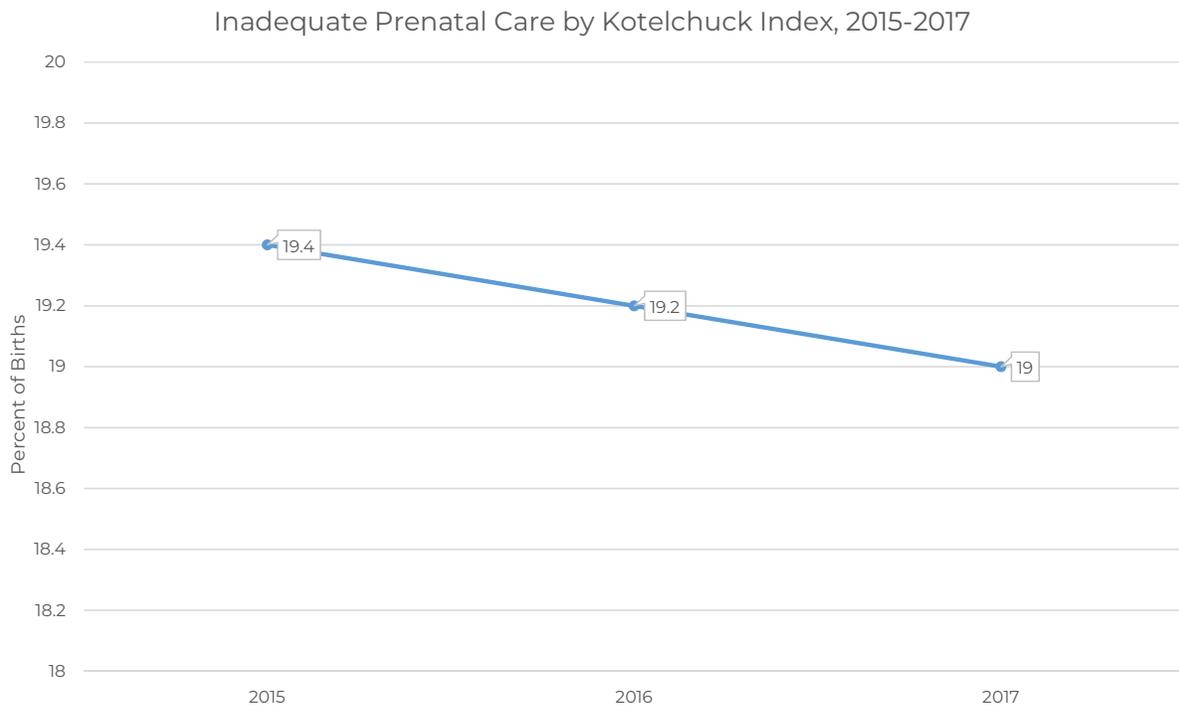


Figure 24. Percent Inadequate Prenatal Care by Kotelchuck Index, 2015-2017²
OASIS

Early prenatal care is essential for the healthy development of the baby and the health of the mother during pregnancy. The CDC recommends taking folic acid, checking for rubella and blood type, and seeking counseling on smoking, alcohol, and healthy eating before conception⁸¹. Prenatal checkups are essential to reducing maternal and infant mortality rates.

Demographics	2015	2016	2017
Total	19.4	19.2	19.0
Race/Ethnicity			
White (NHL)	11.7	11.7	11.9
Black/African American (NHL)	26.2	25.8	25.9
Hispanic or Latino	28.4	26.2	24.4
Asian	18.2	17.2	16.3
Other races (NHL)	25.6	25.6	24.1
Education			
Less than high-school	34.8	35.2	35.2
High-school diploma/GED	23.5	24.0	23.8
Some college or higher	12.5	12.1	12.3
Maternal Age			
10-17 years	38.8	38.6	37.2
18-24 years	24.8	25.1	24.9
25-34 years	16.7	16.6	16.5
35-44 years	15.4	15.3	15.7
Over 45 years	23.9	22.1	22.7
Residence			
Rural	17.9	17.0	17.6
Non-rural	19.8	19.6	19.2

OASIS, 2015-2017

Note. The Kotelchuck Index is sometimes referred to as Adequacy of Prenatal Care Utilization (APNCU) Index¹⁸

Table 15. Percent Inadequate Kotelchuck Index by demographic²

County	% of Births with Inadequate Kotelchuck Index	Total # Births with Inadequate Kotelchuck Index
Glynn	39.6	1,108
McIntosh	36.7	125
Echols	36.2	59
Webster	32.9	27
Grady	32.3	315
Clayton	30.8	3,785
Dooly	29.1	82
Randolph	28.9	69
Gordon	27.8	561
Sumter	27.1	308
Douglas	27	1,318
Polk	26.7	426
Carroll	26.7	1,166
Brantley	26.5	178
DeKalb	25.3	7,288
Hancock	25.3	46
Rockdale	25.2	719
Gilmer	25.2	245
Schley	25	37

OASIS, 2013-2017

Table 16. Georgia Counties with Percent Inadequate Kotelchuck Index of $\geq 25\%$, 2015-2017²

Decrease in Prenatal Care

Since 1994, there have been at least 37 labor and delivery unit closures across the state of Georgia, limiting pregnant women’s access to care, particularly in rural counties⁸². In Georgia the percentage of women who attend less than five prenatal visits have incrementally increased over the last decade². In 2017, 7.7% of births across the entire state of Georgia were preceded by less than five prenatal visits compared to 4% in 1997². Likewise, the percentage of women who received late or no prenatal care has also marginally increased in the past decade. From 1997 to 2017, the percentage of births with late or no prenatal care rose from 3.1% to 5.6%².

Georgia’s progress on Healthy People 2020 for prenatal care has not been determined in the initiative’s midterm report. The 2020 benchmarks for beginning prenatal care in the first trimester and receiving adequate and early prenatal care are 77.9% and 77.6% of births, respectively⁸³. In Georgia, 74.8% of women obtain prenatal care during the first trimester⁸⁴. There are several barriers that Georgia women cited as reasons they could not access early prenatal care, the top three being: not knowing they were pregnant (42.9%), could not get an appointment (25.6%), and no transportation to the appointment (12.9%)^{c,85}.

^c Missing system total was 86.6%, so percentages should read “of those who responded to the question.”

Prenatal Care Disparities by Demographics

When looking at the frequency of inadequate prenatal care by demographics, there are disparities by race, age, geography, and education in Georgia as well. While, only 11.9% of White non-Hispanic women received inadequate prenatal care, 25.9% of Black non-Hispanic and 24.4% of Hispanic women did². In 2017, inadequate prenatal care was more prevalent among mothers aged 19 years and younger compared to mothers 20 years and older (31.5% and 18.2% respectively)². Since 2006, women in non-rural counties have not only received less prenatal care overall, but the prenatal care that does occur is often late or less frequent in occurrence². For example in 2017, 6.8% of rural mothers and 7.8% of non-rural mother had less than five prenatal visits². The gap between rural and non-rural in late or no prenatal care is much smaller at 5.2% and 5.7% respectively². Moreover, there is also an educational trend: women with less education receive less prenatal care². In 2017, 10.6% of mothers with less than high school education, 6.8% of mothers with a GED or high school diploma, and 3.8% of mothers with some college or higher had births preceded by late or no prenatal care².

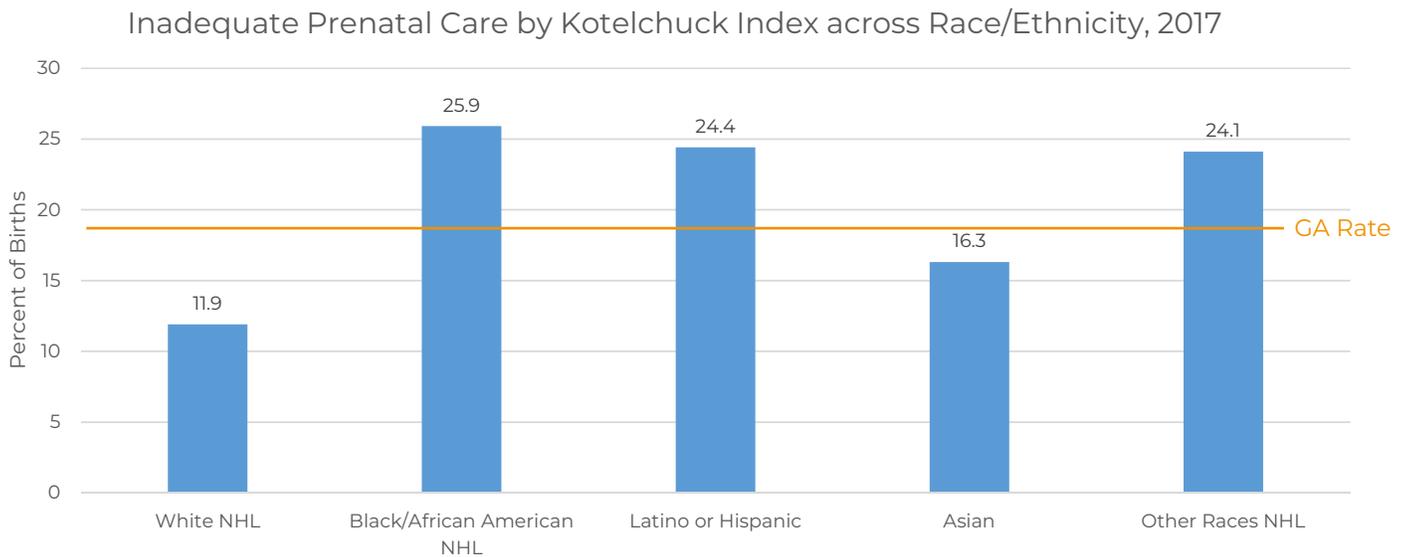


Figure 25. Percent Inadequate Prenatal Care by Kotelchuck Index across Race/Ethnicity, 2017²
OASIS

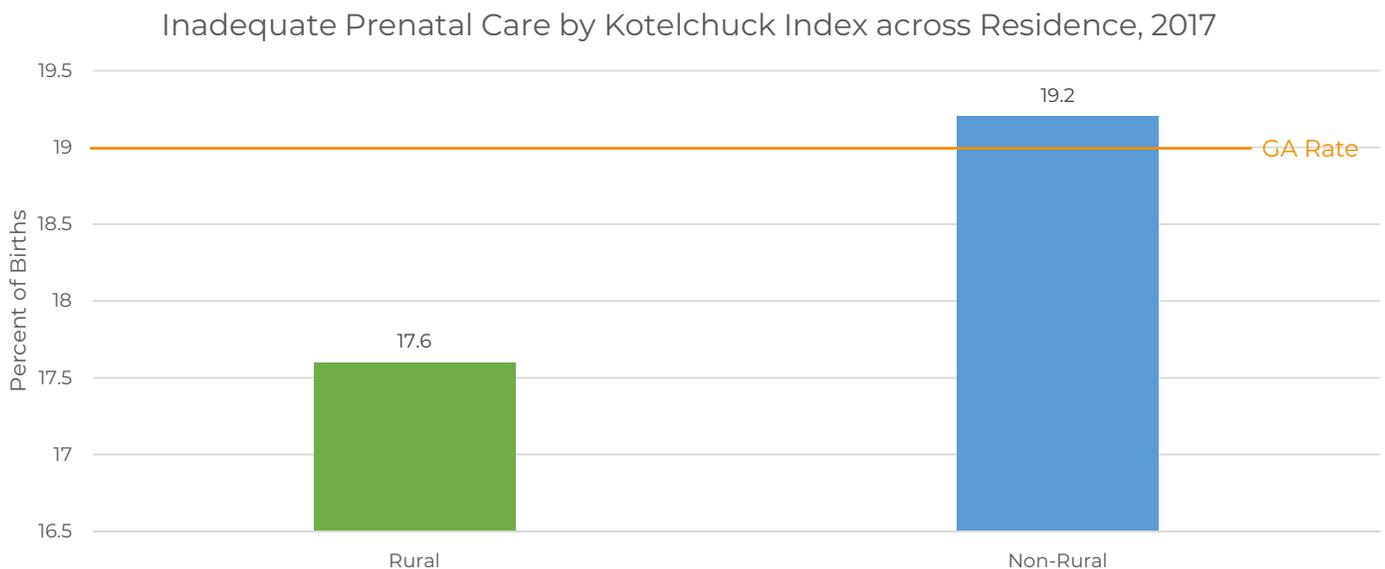


Figure 26. Percent Inadequate Prenatal Care by Kotelchuck Index across Residence, 2017²
OASIS

Prenatal Education

Across the U.S., 94% of women have received some prenatal education before their 6th month of pregnancy⁸⁶. Based on a sample of Georgia PRAMS respondents, only 8% attended a class to prepare for childbirth⁸⁵. There is a significant positive association between maternal education and prenatal classes. Mothers with 16+ years of education attend the most prenatal classes (28.1%) and mothers with <8 years of education attend the least (6.7%)⁸⁵. There are statistically significant differences in who is attending prenatal classes by race. While White mothers make up 20.5% of prenatal class attendees, only 14.1% of Black mothers are attending prenatal classes⁸⁵.

In 2018, Healthy Mothers, Healthy Babies Coalition of Georgia conducted a study, *An Evaluation of Current Prenatal Education Availability and Receptivity to Online Education in the State of Georgia*. The study evaluated provider education referral practices, prenatal education curriculum, and the experiences of pregnant and postpartum women with prenatal education classes through focus groups and surveys¹⁶⁰. Providers surveyed (n=216) were most likely to refer patients to a local hospital for prenatal education. This becomes more difficult in rural areas where there are fewer labor & delivery hospitals. After reviewing 105 prenatal curricula in Georgia, we found that important maternal and infant health topics such as oral health, STI prevention, health literacy, Medicaid, and public benefit programs were not typically included. Participants in our pregnant and postpartum patient focus groups also identified a need to learn more about postpartum care and cesarean section procedures. While patients preferred face-to-face education, they were receptive to an online or mobile-based education platform. Participants in each category were representative of different communities across the State of Georgia. Importantly, the study found that only 10-12% of women in Georgia are receiving any type of in-person prenatal education outside of their prenatal visits with providers. See the Recommendations section for more on Pickles & Ice Cream (P&I) Georgia – a free, online platform for families in Georgia to access easy to understand, evidence-based, prenatal education.

Postpartum Visits

Postpartum visits are comprehensive health exams of mothers within the first month after delivery. The assessment includes an evaluation of mood and emotional well-being, infant care and feeding, contraception, birth spacing, sleep/fatigue, physical recovery from birth, chronic disease management, and health maintenance⁸⁷. The American College of Obstetricians and Gynecologists recommends that ongoing postpartum care is individually tailored to women's needs and takes into consideration potential changes in insurance coverage⁸⁷. Postpartum care should begin 3 weeks after delivery and conclude with a comprehensive visit at 12 weeks⁸⁷. The comprehensive visit should include an assessment of physical, and psychological wellbeing of mother and baby.

Nationally, approximately 40% of women in the U.S. report not attending a postpartum visit⁸⁷. In April 2018, ACOG released a statement on redesigning postpartum care as it relates to maternal mortality, referring to the time immediately postpartum as the “fourth trimester”⁸⁷. As of 2018, it is recommended that women meet with their Ob/Gyns or other maternity care providers within the first three weeks postpartum, and have an additional comprehensive care visit no later than twelve weeks postpartum⁸⁷. This is an update to the previous recommendation of a visit at six weeks postpartum with no follow-up⁸⁷.

Data on Georgia's frequency of postpartum care visits is limited. However, some indicators can be observed from 2017 PRAMS⁶. In 2017, 91% of women in Georgia attended their maternal postpartum checkup⁶. Among women enrolled in Medicaid, 52.5% are receiving timely (21-56 days after delivery) postpartum visits compared to the national median for Medicaid patients of 60.1%⁸⁸.

Breastfeeding

The American Academy of Pediatrics (AAP) recommends that infants be exclusively breastfed for the first six months of life and that the introduction of solid food only compliment the baby's diet in the first year of life⁸⁹. Water is considered unnecessary for infants during the first six months⁸⁹.

AAP recommends breastfeeding through the first year (12 months) of life and the WHO recommends breastfeeding through the first two years of life (24 months), with continuation as long as both mother and baby desire⁸⁹.

Benefits of breastfeeding for mothers include lowering the risk of heart disease, type 2 diabetes, ovarian cancer, and breast cancer⁸⁹. Benefits of breastfeeding for babies include reducing the risk of asthma, obesity, type 2 diabetes, ear and respiratory infection, and SIDS⁸⁹. The CDC provides recommendations to mothers who want to nurse by encouraging skin-to-skin contact, rooming-in, and avoiding pacifiers immediately following birth⁹⁰. Skin-to-skin contact can stimulate milk production, in addition to stabilizing the mother's glucose levels and maintaining the infant's body temperature⁹⁰. Rooming-in is the practice of allowing mother and infant to remain together in the hospital post-birth for 24 hours a day. Following safety guidelines, rooming-in allows the mother to be attentive to her infant's feeding needs⁹⁰. Finally, pacifiers should be avoided for mothers initiating breastfeeding and should be delayed until breastfeeding practices are firmly established⁹⁰. There is a correlation between U.S. breastfeeding rates and mother and infant medical costs in the U.S., with low rates of breastfeeding accounting for \$3 billion in associated medical costs for mother and baby⁹¹.

Breastfeeding Frequency Slightly Higher than National Average

According to the CDC's most recently published breastfeeding report card, 83.2% of infants born in 2015 were ever breastfed, and breastfeeding rates at 6 and 12 months have increased from 2014⁹². However, there is a steep decline in continued breastfeeding between initiation and the first six months, with only 57.6% infants still breastfeeding for the entire duration of the recommended minimum of six months⁹².

Georgia's breastfeeding frequency is slightly higher than the national average, with 84% of mothers ever breastfeeding their infants⁹². At six months, 55.5% of infants were still breastfeeding and 22.1% of infants were breastfeeding exclusively⁹². For infants who are exclusively breastfed in Georgia, only 43.8% are still exclusively breastfeeding at three months⁹². Notably, Georgia does not have regulations that support access to breastmilk in childcare settings. The decrease in breastfeeding rates throughout the first 12 months of life may suggest that women are not receiving the social, political, and/or physical support they need to continue breastfeeding⁹².

Barriers to Breastfeeding

Approximately 60% of mothers stop breastfeeding before they originally intended⁹³. Some reasons for early discontinuation may include: returning to work early, lack of support, issues concerning modesty, and lack of access to professional breastfeeding support^{93,94}. Georgia women cited several reasons as to why they did not choose to breastfeed, the top five reasons being: the mother did not want to (51.5%), the mother did not like it (18.6%), the mother tried but it was too hard (13.9%), the mother was sick (11.1%), and the mother had other kids to care for (10.4%) (See Appendix A)⁸⁵. The top five reasons why women did not continue to breastfeed after initiating include: they were not producing milk (39.2%), milk alone did not satisfy their baby (38.3%), they experienced difficulty latching (28.2%), it was too hard or painful (19.2%), and the mother had to return to work or school (19.1%)⁸⁵.

Demographics and Breastfeeding Rates

There is a significant association between race/ethnicity and breastfeeding rates. Multiracial (99.3%) and Hispanic women had the highest rates of ever breastfeeding, while Asian (77%) and Black (81.1%) had the lowest rates⁶. For women who receive Medicaid, about 81.4% ever breastfed, compared to 90.3% of women with private insurance⁶. Among women without insurance, 86.8% ever breastfed⁶. There is also a significant relationship between education and ever breastfeeding, with higher education levels being associated with the frequency of breastfeeding (71.1% of mothers who did not finish high school to 93.4% of mothers with at least a bachelor's degree)⁶.

Baby-Friendly Hospital Designation

The Baby-Friendly hospital designation is a WHO international initiative started in the 1990s to recognize hospitals that promote breastfeeding initiatives within a set of global guidelines. In 2018, 25% of births in the U.S. were at Baby-Friendly hospitals, a five-fold increase from 2008⁹⁵. There are 530 Baby-Friendly Hospitals in the U.S. and 13 Baby-Friendly Hospitals in Georgia as of July 2018⁹⁵. Another assessment measure of breastfeeding in the U.S. is the Maternity Practices in Infant Nutrition and Care Survey, which “assesses maternity care practices and provides feedback to encourage hospitals to make improvements that better support breastfeeding”⁹⁶. In Georgia, 31.1% of births are occurring in Baby-Friendly hospitals and Georgia’s Maternity Practices in Infant Nutrition and Care Survey score is 75/100^{92,90}. In 2017, Georgia met the benchmark for the Healthy People 2020 breastfeeding initiation rate of 81.9%⁹².

The Georgia Department of Public Health’s Georgia 5-Start Hospital Initiative program also recognizes hospitals that promote and support breastfeeding within their facilities⁹⁷. The WHO and Baby-Friendly USA’s Ten Steps to Successful Breastfeeding is used to encourage hospitals to promote breastfeeding in their maternity centers. A hospital receives 1 star for every 2 steps they perform until reaching the 5-star designation⁹⁷. As of July 2019, 20 hospitals throughout the state of Georgia are 5-Star participants⁹⁷.

Breastfeeding Laws

There are two Georgia laws and one national law concerning breastfeeding outside the home: Code §31-109: Breastfeeding in Public, Code §34-1-6: Breastfeeding at Work and The Patient Protection and Affordable Care Act amended section 7(r). The details of those laws are outlined in the table below^{98,99,100}:

Level	Law Name/ Code	Summary of Law
State	Code §31-109: Breastfeeding in Public	“Mothers in Georgia may breastfeed their babies in any location where the mother and baby are otherwise authorized to be.” ⁱ
State	Code §34-1-6: Breastfeeding at Work	“Employers may provide ‘reasonable unpaid break time’ each day to employees who need to breastfeed or pump breast milk. Break time should coincide with any break time already given to employees. Employers may provide a room where moms can breastfeed or pump breast milk in private (other than a toilet stall). Additionally, employers are not required to provide break time if doing so would disrupt work operations.” ⁱⁱ
Federal	The Patient Protection and Affordable Care Act amended section 7(r) of the Fair Labor Standards Act regarding breastfeeding at work	The amended section states that: “An employer should provide – (A) a reasonable break time for an employee to express breast milk for her nursing child for one year after the child’s birth each time such employee has need to express milk; and (B) a place, other than a bathroom, that is shielded from view and free from intrusion from coworkers and the public, which may be used by an employee to express breast milk.” ⁱⁱⁱ

ⁱ O.C.G.A. § 31-1-9 (Lexis Advance through the 2019 Regular Session of the General Assembly).

ⁱⁱ O.C.G.A. § 34-1-6 (Lexis Advance through the 2019 Regular Session of the General Assembly)

ⁱⁱⁱ U.S. Department of Labor. (n.d.). Section 7(r) of the Fair Labor Standards Act – Break Time for Nursing Mothers Provision. Retrieved from https://www.dol.gov/whd/nursingmothers/Sec7rFLSA_btm.htm

Table 17. State and Federal Laws Concerning Breastfeeding

Dental Care

Dental care during pregnancy is an essential part of health management for both mother and baby. The American Dental Association (ADA) has determined that “preventive, diagnostic and restorative dental treatment is safe throughout pregnancy,” in addition to the use of local anesthetics with epinephrine . There are several common oral health concerns during pregnancy which include: gingivitis, dental caries (cavities), pyogenic granuloma, and erosion¹⁰⁷.

One of the biggest concerns is the increased susceptibility to bacteria in the gums and acidity in the mouth due to vomiting during pregnancy. Thus the ADA recommends brushing twice a day with a soft-bristled toothbrush, flossing, and using fluorinated products¹⁰⁷. The use of nitrous oxide is determined to be harmful to the developing fetus and should be avoided during pregnancy¹⁰⁷. Patients who need radiographs should have abdominal and thyroid shielding per the recommendation of ACOG¹⁰⁷. Additionally, there has been a strong correlation suggested between periodontal disease and preterm deliveries, due to the path of inflammation from the gums to the bloodstream. This infection directly impacts the fetus, leading to premature labor and low birthweight babies¹⁰⁸. Known barriers to accessing dental care include: being unaware of the importance of dental care during pregnancy, hesitancy from the dental provider to service pregnant women, limited financial resources, and lack of transportation¹⁰⁹.

Nationally, about 56% of women during pregnancy did not visit a dentist, although it is projected that 67.4% of women of reproductive age would see a dentist in 2018^{110,111}. In Georgia, in 2017, 39% of women had their teeth cleaned during their last pregnancy⁶. Additionally, 71.6% had dental insurance and 85.8% of women reported knowing about the importance of caring for their teeth and gums during pregnancy⁶. Mothers 35 years and older had the highest rate of dental cleanings at 53.2%; this was found to be significant when compared to teen mothers at 27.4%⁶. There are significant differences in maternal teeth cleaning during pregnancy among racial groups, with non-Hispanic White (46.4%) and non-Hispanic Black (41.7%) mothers receiving teeth cleanings at higher rates compared to Hispanic (20.7%) mothers⁶. There are also disparities in oral health during pregnancy among insurance groups. Dental cleanings received by Georgia Medicaid patients while pregnant, slightly decreased between 2012-2017. In 2012, 4% of pregnant patients received a dental cleaning while only 2% received one in 2017¹¹².

	2012	2013	2014	2015	2016	2017
Total Deliveries	88,024	87,484	87,479	80,634	64,362	64,323
Percent of Patients	4%	2%	2%	3%	2%	2%

Georgia Department of Community Health, 2019

Table 18. GA Medicaid Patients that Received a Dental Cleaning During Pregnancy¹¹²

Insurance and Medicaid

In 2017, 90% of women had health coverage: the most in national history . One of the largest barriers to care is affordability including: services not being covered, cost sharing, out-of-pocket costs of prescriptions and treatment, and providers not accepting coverage¹¹³. Additionally, women reported not having time to seek care or not having employment that allows them to take time off to go to an appointment¹¹³. Over half (55%) of adult women take at least one prescription on a regular basis, and 26% of those women do not have those prescriptions covered by their insurance¹¹³. Currently, 33% of women have personal unpaid medical bills, and 25% had trouble paying medical bills for themselves or their family in the past year¹¹³. This burden is greater for

who have fair or poor health, those living <200% below the Federal Poverty Line, those uninsured, and those in rural communities¹¹³. Furthermore, Black women are significantly more burdened by unpaid medical bills (44%) than White (32%) and Latina (26%) women¹¹³. Since 2013, there have been modest declines in cost barriers to low-income and uninsured women; however, 49% still report delaying care due to costs¹¹³.

Georgia Medicaid and CHIP Enrollees

According to the April 2018 Medicaid Report, Georgia received a total of 46,419 new applications for Medicaid and Children's Health Insurance Plan (CHIP)¹¹⁴. Of those, 38,182 new people (both men and women) were deemed eligible for Medicaid, and 1,188 children were deemed eligible for CHIP at the enrollment period¹¹⁴. Across the State, there were 1,824,433 people enrolled in Medicaid or CHIP as of April 2018¹¹⁴. Georgia did not expand Medicaid to low-income adults and their children (at or below 138% of the federal poverty level) as part of the 2010 Affordable Care Act (ACA)¹¹⁴.

Above Average Medicaid and CHIP Quality of Care

Medicaid.gov publishes state-specific measures of quality of care. Overall, Georgia is slightly above average in their Medicaid and CHIP quality of care compared to other states⁸⁸. In regards to children-specific services, 94.4% of children had a Primary Care Physician (PCP) visit at 12-24 months of age. However, only 58.5% of infants had 6 or more Well-Child visits during the first 15 months of life⁸⁸. Georgia, in particular, performs well in the area of vaccines, ranking above average nationally with 84.7% of children receiving meningococcal conjugate and Tdap vaccines by their 13th birthday (compared to the national median of 73.2%)⁸⁸. About 1 in 5 Georgia adolescents covered by Medicaid or CHIP (18.7%) receive their 3rd human papillomavirus (HPV) dose by their 13th birthday (compared to the national median of 20.8%)⁸⁸. Finally, Georgia is also a leader in screening children 0-3 years of age for developmental, behavioral, and social delays, with 52.1% of children enrolled on CHIP being screened (compared to the national median of 39.8%)⁸⁸.

Poor Maternal Outcome for Medicaid Enrollees

Among women enrolled in Medicaid who delivered live births, only 38.2% of women had almost all of their expected prenatal visits (compared to the national median of 61.7%)⁸⁸. Georgia is also below average nationally for early prenatal care. Among women enrolled in Medicaid who delivered live births, 67.6% had at least one prenatal care visit in the first trimester or within the first month and a half of Medicaid enrollment (national median, 81.6%)⁸⁸. However, women enrolled in Medicaid in Georgia are almost in line with the national median, in their frequency of postpartum care visits, with 52.5% of women receiving a postpartum care visit between 21-56 days after delivery (national median, 60.1%)⁸⁸.

Lack of Insurance Coverage: Pre-pregnancy and Postpartum

The Medicaid program in Georgia offers a variety of prenatal services including genetic counseling, case management, substance alcohol abuse treatment, prenatal and postpartum home visits, childbirth education classes, infant care/parenting education, birth center deliveries, postpartum visits, breastfeeding education, and electric breast pumps¹¹⁵. In 2014, 54% of Georgia births were covered by Medicaid¹¹⁶. However, there is a disparity between insurance coverage during pregnancy and in the postpartum period. Data from the 2017 PRAMS show that, in Georgia, the frequency of uninsured mothers covered before pregnancy is 24.6%, during pregnancy is 6.5%, and in the postpartum period is 24.7%⁶. This trend is present for Medicaid users as well, with 15.5% of women covered before pregnancy, 47.6% covered during pregnancy, and 23.9% covered postpartum⁶. Women who were privately insured during pregnancy have the lowest prevalence of postpartum coverage loss (5%)⁶. Among women covered by Medicaid during their pregnancy, 34.6% become uninsured during the postpartum period⁶. In 2016, 6.7% of children were uninsured in Georgia¹¹⁷.

Planning for Healthy Babies

Planning for Healthy Babies is Georgia's family planning demonstration waiver through the

Georgia Medicaid. It aims to reduce low birthweight and very low birthweight babies in Georgia . The four plans women can enroll into are: Amerigroup, Peach State, CareSource, and Wellcare¹¹⁸. Planning for Healthy Babies provides no-cost family planning services to Georgia U.S.-born women 18-44 years of age who do not receive Medicaid, have recently given birth, and are no more than 200% of the federal poverty level (FPL)¹¹⁹.

Three types of services are offered: family planning only, inter-pregnancy care, and Resource Mother outreach¹¹⁹. Inter-pregnancy care services are for women who gave birth to a baby weighing less than 3 pounds, 5 ounces on or after January 1, 2011. Inter-pregnancy care services offer primary care, substance abuse treatment, case management, limited dental services, and prescription drugs for treatment of chronic diseases. Resource Mother outreach services are for women who currently receive Medicaid benefits and gave birth to a baby weighing less than 3 pounds, 5 ounces on or after January 1, 2011. This service offers support to mothers and provides them with information on parenting, nutrition, and healthy lifestyles.

As of 2017, there were a total of 21,195 enrollees in family planning only services and 1,975 enrollees in inter-pregnancy care and Resource Mother services¹²⁰. In 2017, 109,373 women were eligible for Planning for Healthy Babies family planning only services in Georgia¹²⁰. Therefore, 19.4% of the eligible population were enrolled in the program. Of the 3,354 women eligible only for the inter-pregnancy care and Resource Mother program services, 58.9% were enrolled in the program¹²⁰.

It is important to note that the February 2017 implementation of the Georgia Gateway, the State's integrated system for determining eligibility across multiple benefits programs, has resulted in a notable increase of eligible women in need of family planning services enrolled in Planning for Healthy Babies. The number of women enrolled in the family planning component of the program doubled from 2016 to 2017. Additionally, inter-pregnancy care enrollment doubled from 2016 to 2017, and Resource Mother enrollment grew nine times from 2016 to 2017¹²⁰.

In 2017, 14% of women enrolled in the family planning only services at Planning for Healthy Babies attended a family planning visit within the first six months of enrollment, compared to 18.8% enrolled in the inter-pregnancy and Resource Mother services. Moreover, of women enrolled in the family planning only services, 9.8% had a visit or service for birth control within the first six months of enrollment, compared to 13.1% enrolled in the inter-pregnancy and Resource Mother services¹²⁰.

Overall, the Planning for Healthy Babies 2018 Annual Report demonstrated the program's positive effect on reducing unintended births, reducing teen births, increasing access to pregnancy prevention, increasing age at first birth, and reducing very short inter-pregnancy intervals. Additionally, Planning for Healthy Babies enrollees in the inter-pregnancy care and Resource Mother only services experienced a significant decrease in subsequent adverse birth outcomes¹²⁰.

WIC Services

WIC is the Women Infants and Children Special Supplemental Nutrition Program that provides short-term assistance to pregnant women and their children to improve nutrition and health behaviors¹²¹. Women are eligible to participate under the following circumstances: if they are pregnant, breastfeeding, postpartum, their children are under 5 years of age, and are equal to or less than 185% FPL¹²¹. Georgia WIC provides food vouchers for WIC-authorized vendors along with nutrition and breastfeeding education¹²¹. Nationally, 7,286,000 people participated in WIC in 2017, with the average national cost per participant averaging \$41.25 monthly¹²². The national average cost for the program is \$5,638,800,000 annually¹²². In 2017, Georgia received \$191,152,834 in Food and Nutrition Services and Administration (NSA) grants¹²³. Nationally, there were 1,880,000 infants enrolled in WIC in 2016¹²⁴. In April 2018, Georgia had 54,233 women enrolled in WIC, about an 8% decrease from the previous year¹²⁵.

In Georgia, the majority of infants on WIC are fully formula-fed (72.1%); 27.8% of infants are breastfed (exclusively or partially), but only 8.4% are breast fed exclusively¹²⁶. The average food cost per person is \$39.23 monthly in Georgia¹²⁶. Based on 2017 PRAMS data, 39.9% of Georgia mothers utilized WIC

during their pregnancy⁶. There is a significant difference in WIC use by age, with teen mothers using WIC services at a significantly higher rate (71.7%) than mothers aged 20-34 (41.6%) and mothers older than 35 years old (17.8%)⁶. Additionally, there was a significant difference between WIC use and race among Georgia mothers, with more non-Hispanic Black mothers enrolled in WIC (57%) than non-Hispanic White mothers (26.5%)⁶.

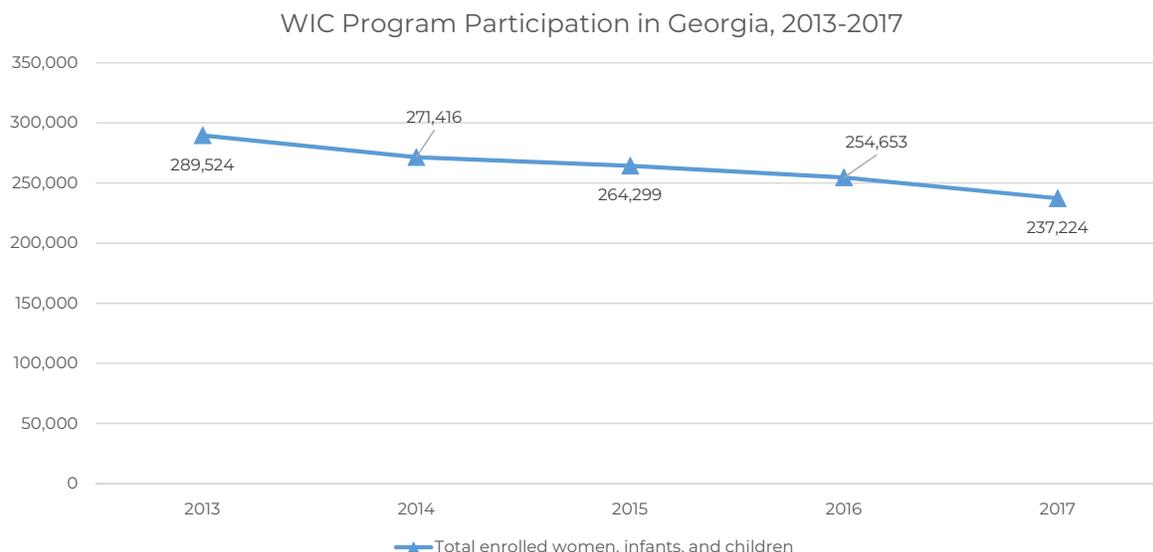


Figure 27. Total enrolled mothers, infants, and children in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in Georgia, for Fiscal Years 2013-2017¹²⁶
United States Department of Agriculture

In 2017, the Atlanta Community Food Bank conducted an exploratory study with participants regarding their utilization or lack thereof of WIC benefits¹²⁷. Participants generally viewed WIC as a valuable program that helped with formula and breastfeeding, nutritional education, and general support. The most common places where participants received information about WIC were at doctors' offices, in the hospital after delivery, and through friends and family¹²⁷.

While many parents were aware of the services provided by WIC, most felt that the food was inadequate, and not inclusive of foods they would normally eat or enjoy¹²⁷. Participants also cited long clinic waits, negative customer service, and vouchers with little flexibility (complicating the shopping experience) as negatives of the program. The fact that participants perceived the value of WIC to decrease once an infant was no longer on formula, was the primary identified barrier to increased participation. Participants felt that the challenges that came with renewal were no longer worth the benefits of the program. Additionally, fear of being involved in a government program was a barrier to participation within the Hispanic community. When presented with the idea of switching from vouchers to an electronic benefits transfer (EBT) type card, participants responded positively as they all had personal smartphones and most had access to a computer or tablet¹²⁷.

Vaccinations

Vaccinations during pregnancy are important for mother and baby, in order to protect against preventable diseases. CDC recommends that women get flu and tetanus, diphtheria, and pertussis (Tdap) vaccines during pregnancy¹²⁸. There are only 3 vaccines that CDC does not recommend for pregnant women: Shingles Zoster (ZVL), measles/mumps/rubella (MMR), and Chickenpox (Varicella) based on contradicting data¹²⁸.

Influenza Vaccine

Influenza (flu) in children can result in pneumonia, an infection in the lungs³¹. The flu vaccine is recommended during pregnancy and can be received at any time to protect mothers and babies

against the virus. Mothers who breastfeed can also help protect infants via the sharing of antibodies through breast milk, which is important because infants 6 months and younger cannot be vaccinated against the flu¹²⁹.

Nationally, 35.6% of women reported getting a flu shot 6 months prior to or during pregnancy. While 97.9% reported going to a doctor's visit while they were pregnant, 25.7% reported not receiving a recommendation or being offered the flu vaccine¹³⁰. Women who are offered a flu vaccine by their health provider are nine times more likely to receive the flu vaccine during pregnancy than those who were not offered or given a recommendation to get a flu vaccine¹³⁰. The most common reasons women received the flu shot were because (1) they wanted to protect their baby, (2) they wanted to protect themselves, and (3) a healthcare provider made the recommendation¹³⁰. The most common reasons a woman did not receive the flu vaccine were: (1) lack of belief in the effectiveness of the vaccine, (2) fear of side effects and becoming sick from the vaccine, and (3) concerns about their baby's safety¹³⁰.

In Georgia, in 2017 33.8% of women received a flu shot during pregnancy and 8.4% before their pregnancy⁶. Of women who received flu shots, there was a statistically significant difference by race/ethnicity. Non-Hispanic Asian (47.6%) and non-Hispanic White (40.4%) mothers had higher rates of flu shot uptake compared to non-Hispanic multiracial (25.7%) and non-Hispanic Black (26.9%) mothers⁶. There are also difference in flu vaccination between insurance groups. In 2017, among pregnant Georgia Medicaid patients, only 7% received a flu vaccine during pregnancy, although there was an increase in vaccinations of 3% between 2012-2017¹¹².

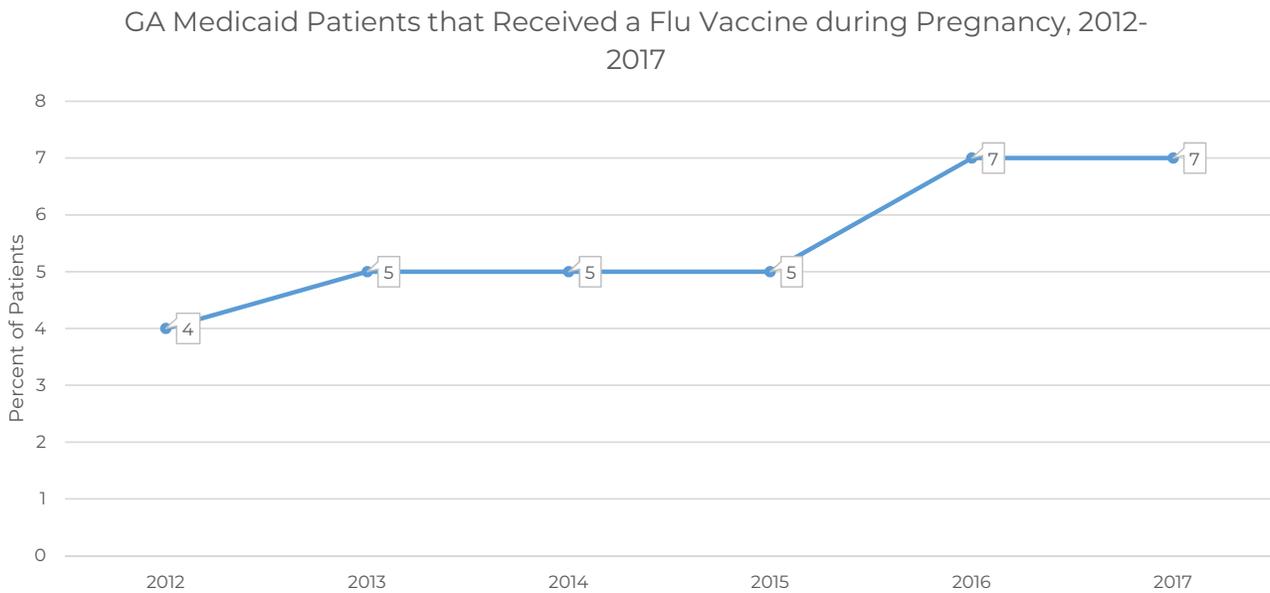


Figure 28. Percent of GA Medicaid Patients that Received a Flu Vaccine during Pregnancy, 2012-2017¹¹²
Georgia Department of Community Health

TDaP Vaccine Rate Among Highest in Nation

Diphtheria, pertussis, whooping cough, and tetanus are three diseases that are prevented by the TDaP vaccine. In some cases, children have died from these diseases, making protection against them important in infancy¹³¹. The CDC recommends pregnant mothers receive the TDaP vaccine between the 27th and 36th week of pregnancy to protect against whooping cough¹³¹. Infants should receive their first TDaP vaccine at 2 months and a 4th dose by 18th months¹³¹.

Nationally, 83.4% of U.S. children receive 4 doses of TDaP by their 3rd year¹³². Uptake in TDaP has remained relatively stable since 1998 in the U.S.¹³². Overall Georgia ranks in the top 10% of TDaP vaccination rates across the country and, following national trends, coverage has also remained steady since 1998¹³². In Georgia, 90.6% of 3 month olds received their first dose of TDaP, 85.5% of 5 month olds received their 2nd dose, and 90% of 3 year olds have had at least 4 or more doses in 2016¹³². Of child WIC participants, 88.9% also received 4 or more TDaP vaccines by year 3¹³². Between 2012-2017, there was a

drastic increase in the percent of pregnant Georgia patients receiving a Tdap vaccine, with a rise from 1% in 2012 to 97% in 2017¹¹².

Nationally, Tdap frequency varies by race and ethnicity; 84.8% of White children, 83.3% of Hispanic children, 76.8% of Black (non-Hispanic) children, and 83.6% of mixed-race children received 4 or more Tdap vaccines in 2016¹³². In Georgia, 90.4% of Black (non-Hispanic) children, 90.9% Hispanic, 89.8% of White children received at least 4 more Tdap vaccines by age 3¹³².

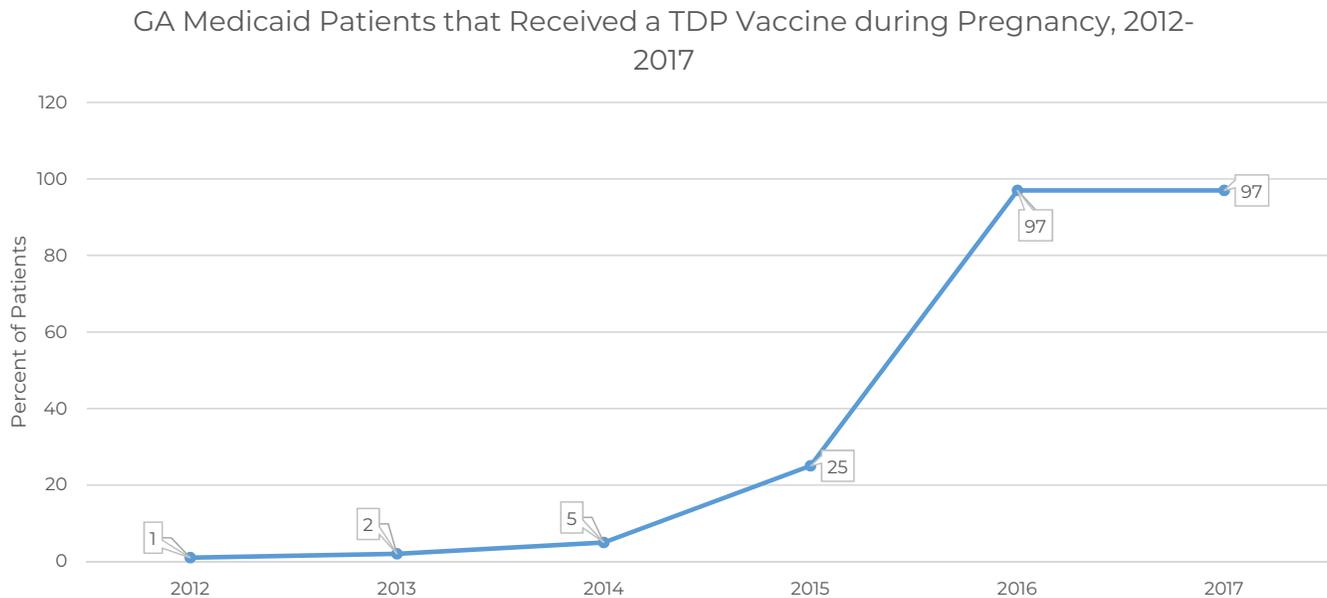


Figure 29. Percent of GA Medicaid Patients that Received a TDP Vaccine during Pregnancy, 2012-2017¹¹²
Georgia Department of Community Health

Social Support

Parental Roles in Managing Child's Health Care

Social support is an important factor to address when attempting to understand health risks for pregnant women. Social support can include a spouse, partner, family, friends, employer, or health care provider. Among heterosexual two-parent households in the United States, mothers are considerably more likely to manage a child's health care needs than fathers (about 75% of mothers compared to about 20% of fathers)¹³³. Notably, 33% of mothers reported sharing the responsibility of caring for a sick child with their spouse or partner equally¹³³. The majority (56%) of working mothers do not get paid when they take time off from work to care for their sick child or children¹³³. Notably, mothers on Medicaid (40%) or uninsured (44%) are offered paid sick leave significantly less often than privately insured mothers (73%)¹³³.

Among divorced and never married mothers, approximately 90% responded that they usually made decisions about selecting their child(ren)'s doctor, made sure their child(ren) get the care their doctor recommended, and take their child(ren) to doctor's appointments¹³³. These responses were statistically significant for both groups when compared to about 75% for married mothers¹³³. Unemployed mothers are significantly less likely to make decisions about selecting a child's doctor compared to mothers who are employed full- and part-time¹³³. Additionally, mothers who work part time are more likely to miss work when their children are ill¹³³. Since 2002, the percentage of married mothers nationally has decreased (62.3% to 50.1%), whereas the number of cohabiting mothers has nearly doubled (12.4% to 25.8%) and the number of unmarried and not cohabitating mothers has remained roughly the same (25.3% to 24.1%)¹³⁴.

Abuse During Pregnancy

Emotionally and/or physically abusive reactions should be taken seriously by family, friends, employers, and providers. Abuse during pregnancy can come in several forms. Some common triggers of abuse during pregnancy include: a partner being upset about the pregnancy being unplanned, the financial burden of supporting children, and jealousy when attention shifts from the partner to the new baby¹³⁵. The National Domestic Violence Hotline and the ACOG recommend healthcare providers ask partners to leave the room briefly during prenatal check-ups to privately discuss partner support, screen for domestic violence, and provide resources if necessary^{136,84}.

Among all adult U.S. women, 27% have discussed domestic violence with their provider, with 18-24 year olds reporting the lowest frequency of discussions at 23%¹³⁷. It is estimated that 1 in 3 adult women have experienced rape, physical violence, or stalking by an intimate partner in their lifetime¹³⁷. There is a significant difference in patient reporting of domestic violence based on insurance status, with women using Medicaid reporting domestic violence significantly more to their providers than women using private insurance (38%)¹³⁷. Additionally, women living <200% FPL report domestic violence to their providers significantly more than those living >200% FPL¹³⁷.

Georgia ranks 8th in the nation for highest rate of death of women by men¹³⁸. In 2016, there were over 53,000 reports of domestic violence and over 11,000 reports of rape and sexual assault in Georgia¹³⁸. Approximately 70% of domestic violence deaths in Georgia are committed with firearms¹³⁸. In Georgia, 1.5% of pregnant women reported being physically hurt by a partner or spouse in the year before their pregnancy and 1.1% reported being physically hurt by a partner or spouse during their most recent pregnancy⁶. There are significant differences before pregnancy by maternal age, with teen mothers experiencing less physical harm by a partner or spouse compared to mothers aged 20 and older⁶. In regard to rates of physical abuse by a partner or spouse in Georgia, there were no statistical differences by race among women who were physically abused the year before becoming pregnant or during their most recent pregnancy⁶.

Racial and Ethnic Disparities

Fetal and Infant Health

No Improvement in Disparity Ratio of Preterm Births

Georgia was ranked 32nd of all U.S. states for preterm birth racial and ethnic disparities by the March of Dimes²⁰. The disparity ratio of preterm births between all women of color and White women in Georgia is 1.32 and has not improved since 2016²³. The March of Dimes disparity ratio is derived from the Healthy People 2020 methodology which compares the group with the lowest preterm birth rate to the average for all other groups. Improvement is measured by comparing the current disparity ratio to a baseline disparity ratio. A disparity ratio of one signifies no disparity, and a lower disparity ratio is better²³. Moreover, when broken down by race, the risk of preterm birth among Black women in Georgia is 53% higher than that of all other racial categories and 48% higher than that of all other racial categories at the national level^{20,23}. The lowest incidence rate of preterm birth from 2013-2015 was seen among Asian/Pacific Islanders at a rate of 8.2%, while the highest was among Black women at a rate of 13.7%²³.

Black women in Georgia also experience the highest percentage of low birthweight births at 13.9%, compared to Hispanic women at the lowest percentage (7%); the second highest percentage of low birthweight babies in Georgia occurs among American Indian/Alaska Natives at 10.4%¹⁷.

Infant and Fetal Mortality Rate Highest Among Black/African American Infants

From 2013-2017 in Georgia, non-Hispanic Black live births resulted in the highest rate of infant death at 12.2 per 1,000; the lowest rate of infant death is among non-Hispanic Asian infants at 3.5 per 1,000 live births². In 2017, the fetal mortality rate told a similar story with the highest rate of fetal mortality among non-Hispanic Black/African Americans at 11.5 per 1,000, above the state average (7.8 per 1,000)². Non-Hispanic White and Asian women are below the Georgia state average (5.2 and 4.6 per 1,000, respectively)². Hispanic/Latino fetal death rate is also below the state average at 5.9 per 1,000². In Georgia, the highest frequency of infant mortality is seen among African American males (13.1 per 1,000), followed by African American females (11.3 per 1,000)².

The CDC has found the highest prevalence of SIDS to be among non-Hispanic Black (172.5 per 1,000) and American Indian/Alaskan Native (169.6 per 1,000) infants¹⁵. On the contrary, Mexican, Puerto Rican, and Asian/Pacific Islander rates of SIDS were lower than those of non-Hispanic White infants (44% versus 53%, 64% lower, respectively)¹⁵. The reasons for these discrepancies is uncertain, but can provide the basis for targeted intervention programs to reduce the rate of SIDS in Georgia.

Maternal Health

Unintended Pregnancy Rates Highest for Non-Hispanic Black/African American and Hispanic Women

Although the frequency of unintended pregnancy is 54.8% across the state, there are disparities by race in the frequency of unintended pregnancy in Georgia⁹. In Georgia, 73.4% of non-Hispanic Black women and 57.9% of Hispanic women reported that their pregnancies were unplanned, while non-Hispanic White women reported unplanned pregnancies under the state average at 42.6%⁹.

Maternal Mortality Rates Highest Among Black/African-American Women

The national rate of maternal mortality for all women has been on the rise since 1994. However, from 2012-2014, maternal mortality was highest among Black, non-Hispanic women at 47 deaths per 100,000 live births compared to White women at 14.3 per 100,000⁷⁸. Of the 43 pregnancy-related deaths in 2014, 49% were deaths of Black/African-Americans⁷⁸. From 2012-2014, 60% of pregnancy-related deaths were among African American⁷⁸. The CDC recognizes that nationally,

“African American women are 3 to 4 times more likely to die of pregnancy complications than white women”⁴⁶.

Alcohol and Tobacco Use Highest Among White Women

In Georgia, in 2017, the percent of births to women who reported drinking alcohol during pregnancy was highest among non-Hispanic White women, followed by non-Hispanic Black women (0.3% compared to 0.2%, respectively)². Also in 2017, the percentage of births to Hispanic or Latino women who reported drinking alcohol during pregnancy was 0.1%, compared to 0.2% among non-Hispanic or Latina women². Moreover, the percentage of births to women who reported using tobacco during pregnancy in Georgia in 2017 was highest among non-Hispanic White women at 6.4%. This is followed by American Indian or Alaska Natives at 5.1%, multiracial Georgians at 4.9%, and Asians at 0.2%. Among Hispanic or Latinos, 1% of births were to women who reported drinking alcohol during pregnancy, compared to 5.3% of non-Hispanic or Latino births. Moreover, the highest opioid prescription claims among Medicaid-enrolled women are seen among non-Hispanic Whites compared to other racial and ethnic groups⁷⁰.

Breastfeeding Rates Lowest Among Black/African American Women

There is a racial disparity in breastfeeding rates between Black/African American mothers and White women. According to the CDC, “Black infants are 15% less likely to have ever been breastfed than white infants”⁹¹. In Georgia, there is significant association between race/ethnicity and breastfeeding rates, with non-Hispanic Black (81.1%) and non-Hispanic Asian (77%) mothers breastfeeding less than non-Hispanic White mothers (86.7%)⁶.

Prenatal Care by Racial/Ethnic Group

In Georgia, the highest frequency of less than five prenatal visits in 2017 was seen among non-Hispanic Native Hawaiian and Pacific Islanders at 14.9%, followed by non-Hispanic American Indian or Alaskan Native mothers at 13.5%, non-Hispanic Black/African American mothers at 11.2%, and Hispanic or Latino mothers at 9.7%². In 2017, the highest frequency of late or no prenatal care was seen among Native Hawaiian and Pacific Islanders at 9.6% followed by multiracial women at 8.6%, Black/African Americans at 8%, and American Indian or Alaskan Natives at 5.1%².

Distance to hospitals becomes a barrier to accessing prenatal care when public transport is absent or unreliable. This barrier disproportionately affects women of color, who are less likely to have access to personal vehicles¹³⁹. Moreover, when looking at the most common reasons women report delaying or going without medical care, white women report not being able to find time to go to the doctor, compared to black and Latina women who report being unable to take time off of work¹¹³. Black and Latina women were significantly more likely to have delays or lack of medical care due to transportation than White women¹¹³.

Perinatal Regional Statistics

Defined by the Georgia Department of Public Health, there are six Perinatal Regions across the state of Georgia which have been strategically formed based on “regional need and available funding” . The six regions are as follows: Albany, Atlanta, Augusta, Columbus, Macon, and Savannah. Each Perinatal Region has its own unique “collaborative system of hospitals [and] providers striving to assure that deliveries happen in the hospital with the appropriate level of care for the mother and the infant”¹⁴¹. Within each region, there is a Regional Perinatal Center that provides comprehensive prenatal care in any risk category, medical consultation, inter-hospital transport assistance to high-risk mothers and infants, and education for regional hospital staff and providers¹⁴¹. Each perinatal center enters into a yearly contract with DPH to ensure guidelines for each Regional Perinatal Center (RPC) are met¹⁴⁰.

For the following tables, data for birth rate, low birthweight, preterm birth, fetal mortality, and infant mortality are from 2013-2017. Inadequate prenatal care is measured by Kotelchuck index data from 2015-2017. White, Black, multiracial, American Indian or Alaskan Native, and Native Hawaiian or Pacific Islander race is non-Hispanic or Latino ethnicity.

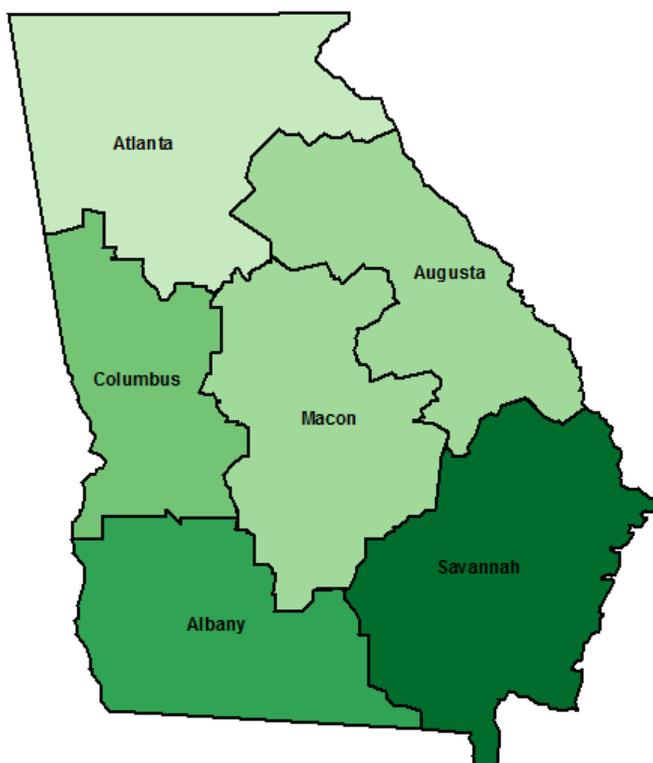


Figure 30. Georgia's Regional Perinatal Centers¹⁴¹

Region	% Rural	Birth Rate (per 1,000)	Low Birthweight (%)	Premature Birth (%)	Inadequate Kotelchuck Index (%)	Fetal Mortality (per 1,000)	Infant Mortality (per 1,000)
Albany	90%	42.9	11.2% ^a	12.2% ^a	21.4% ^a	9.4 ^a	9.9 ^a
Atlanta	49% ^b	38.6 ^b	9.2% ^b	10.5% ^b	19.9%	7.9	6.7 ^b
Augusta	75%	39.5	9.5%	11.1%	14.7%	7.4 ^b	8.1
Columbus	76%	41.5	10.4%	11.7%	19.7%	7.9	8.1
Macon	93% ^a	40.1	11.1% ^a	12.2% ^a	14.5% ^b	8	9.7
Savannah	83%	44.9 ^a	9.8%	11.3%	21.1%	8.5	7.8

a. indicates highest ranking in that category

b. indicates lowest ranking in that category

Table 19. Perinatal Region Abbreviated Table

Region	Race	Birth Rate (per 1,000)	Low Birth-weight (%)	Premature Birth (%)	Inadequate Kotelchuck Index (%)
Albany	White (NHL)	39.1	7.4	10.2	13.3 ^b
	Black/African American (NHL)	45.1	15.8 ^a	14.8 ^a	25.4
	Asian (NHL)	33.5	8.6	6.9 ^b	23.3
	Multiracial (NHL)	40.3	11.9	11.6	25.4
	American Indian/Alaskan Native (NHL)	10.2 ^b	*	*	*
	Native Hawaiian/Pacific Islander (NHL)	30	*	*	*
	Hispanic or Latina	61.3 ^a	7.1 ^b	9.1	42 ^a
Atlanta	White (NHL)	33.3	7.1	9.3	10.7 ^b
	Black/African American (NHL)	36.4	13.1 ^a	13.2	28.3

Region	Race	Birth Rate (per 1,000)	Low Birth-weight (%)	Premature Birth (%)	Inadequate Kotelchuck Index (%)
	Asian (NHL)	37.8	8.6	8 ^b	16.8
	Multiracial (NHL)	48.2	9.1	9.8	26.5
	American Indian/Alaskan Native (NHL)	13.7 ^b	9.4	8.6	18.8
	Native Hawaiian/Pacific Islander (NHL)	43.8	11.1	15.4 ^a	36.2 ^a
	Hispanic or Latina	56.8 ^a	7 ^b	9.2	25.3
Augusta	White (NHL)	37	6.9	9.6	10.5 ^b
	Black/African American (NHL)	41.3	14.7 ^a	14.5	20.1
	Asian (NHL)	33.9	7	7.3 ^b	16.2
	Multiracial (NHL)	47.8	8.8	10.5	19.3
	American Indian/Alaskan Native (NHL)	12.9 ^b	10.2	14.3	14.7
	Native Hawaiian/Pacific Islander (NHL)	51.2 ^a	8.5	15.9 ^a	40.8 ^a
	Hispanic or Latina	47.5	6.7 ^b	8.6	18.6
Columbus	White (NHL)	39.5	7.5	10.2	14 ^b
	Black/African American (NHL)	41.7	15.8	14.8 ^a	26.2
	Asian (NHL)	36.3	10.6	10.3	22.9
	Multiracial (NHL)	54.4 ^a	9.5	10.5	22

Region	Race	Birth Rate (per 1,000)	Low Birth-weight (%)	Premature Birth (%)	Inadequate Kotelchuck Index (%)
	American Indian/Alaskan Native (NHL)	13.4 ^b	18.4 ^a	14.3	40.9 ^a
	Native Hawaiian/Pacific Islander (NHL)	52.1	*	8.1 ^b	32.4
	Hispanic or Latina	51.6	6.8 ^b	8.9	30.8
Macon	White (NHL)	35.9	7.3 ^b	9.6	9.7
	Black/African American (NHL)	43.1	15.9 ^a	15.5	17.8
	Asian (NHL)	34.9	8.1	8.7	13.3
	Multiracial (NHL)	54.9	12.1	12.1	13.9
	American Indian/Alaskan Native (NHL)	12.9 ^b	*	16.2 ^a	*
	Native Hawaiian/Pacific Islander (NHL)	33.2	0 ^b	0 ^b	0 ^b
	Hispanic or Latina	55 ^a	7.5	10	26.2 ^a
Savannah	White (NHL)	41.7	7.7	10.1	15.8 ^b
	Black/African American (NHL)	44.7	14.3 ^a	14 ^a	26.9
	Asian (NHL)	35.7	10.3	9.8	21.8
	Multiracial (NHL)	62 ^a	9.1	10	23.5
	American Indian/Alaskan Native (NHL)	24.1 ^b	6.4 ^b	9.1 ^b	20.9

Region	Race	Birth Rate (per 1,000)	Low Birth-weight (%)	Premature Birth (%)	Inadequate Kotelchuck Index (%)
	Native Hawaiian/Pacific Islander (NHL)	60.1	10	10	43.5 ^a
	Hispanic or Latina	62.1 ^a	7.5	9.9	30.3

* indicates no data was available

a. indicates highest for that region, for that category

b. indicates lowest for that region, for that category

Table 20. Racial and Ethnic Disparities by Perinatal Region 2013-2017

Limitations

This report has some limitations that impact how the findings should be interpreted. Firstly, the data included in this report comes from a number of sources, some of which include contradicting points. For the purpose of this report, the most recent and reliable data source was chosen. Additionally, the statistics for the Hispanic/Latino population obtained from OASIS are only available as a combined category, labeled as “Ethnicity”. This category encompasses all races. Moreover, data within the “Maternal Mental Health” section of the report is self-reported, fairly new, and does not include information on anxiety. Data within the Maternal Mortality section of the report is only available through 2014, the latest case review completed by the Georgia Maternal Mortality Review. In addition, there is likely substantial under-reporting of fetal deaths, particularly at earlier gestational ages. Because records are often missing data for fetal deaths, the breakdowns listed in the “Fetal Mortality” section may not be entirely accurate. Finally, data for Medicaid enrollees is often under-reported, affecting the accuracy of the data.

Conclusions

This report concludes that maternal and infant health in Georgia is evolving, with both challenges and prospects for a bright future for Georgia’s mothers and infants. As noted in the *2016 State of the State* report, teen pregnancy rates continue to improve across the state, as well as infant and childhood vaccination rates for Tdap and HPV. Georgia still faces challenges, however, particularly regarding maternal opioid use which is of national concern. Additionally, challenges continue with preterm birth, low birthweight infants, unintended pregnancy, cesarean sections, and maternal mortality in Georgia. There are numerous known maternal and infant health disparities and inequities in Georgia by race, age, insurance status, ethnicity, education, region, etc. In particular, Black and African American women and infants in Georgia experience worse maternal and infant outcomes than all other races and ethnicities.

We conclude this report with recommendations in the following areas: (1) infant health, (2) prenatal/perinatal health, (3) maternal substance prevention, (4) neonatal abstinence syndrome, (5) maternal mental health, (6) maternal mortality prevention, (7) patient education, (8) increasing breastfeeding duration, (9) social support during prenatal and postpartum periods, (10) legislative advocacy, and (11) data collection and needs assessment.

Recommendations

This section will discuss recommended maternal and infant health improvement initiatives. Moreover, this section will provide general recommendations for improving maternal and infant health, propose public and private partnership, recommend certain legislative and advocacy action to improve health outcomes, and suggest future areas of data collection needed to provide valuable insight.

It should be noted that HMHBGA is working with key stakeholders across Georgia to promote policies and interventions that will address persistent disparities for the following groups:

- Families living in rural communities versus urban communities
- Women of color
- Women covered by Medicaid

This list is not exhaustive. HMHBGA works to address disparities for a number of groups.

Infant Health Recommendations

- Families should be connected with programs such as Cribs for Kids to provide them with resources to reduce unsafe-sleep environments¹⁴².
- Providers should partner with the Georgia Department of Public Health's Safe to Sleep hospital-based program, which provides families with education and travel bassinets³⁷.
- The Healthy Mothers, Healthy Babies Coalition of Georgia 2017 Infant Mortality Strategic Plan recommended an increase in the number of in-home safety assessments conducted¹⁴³. The *Direct On-Site Education (DOSE)* program uses First Responders to assess and educate families on safe sleep within the home¹⁴⁴. We recommend partners and practitioners advocate for this program with the first responders in their communities.
- The American Academy of Pediatrics endorses room-sharing during the first six months of life. Room-sharing involves having the infant in the same room as his or her parents/caregivers and close to them, but on their own separate sleep surface. This allows the infant to be within sensory proximity of the parents and in easy reach for breastfeeding and soothing without risks of accidental overlay or entrapment⁹⁰.

Prenatal/Perinatal Health Recommendations

- All pregnant women should be connected with the free Georgia Tobacco Quit Line at 1-877-270-STOP (Spanish: 1-877-2NO-FUME). See Appendix B for a link to the CDC's tobacco use and pregnancy resources page¹⁴⁵.
- Given the importance of oral health during pregnancy, it is recommended that perinatal providers give handouts at their front desk and/or during prenatal education workshops. See Appendix B for examples¹⁴⁶. It is also recommended that for providers seeing Medicaid patients, a DMA635 form and oral health referral are proactively given to all pregnant Medicaid patients to increase the number of women receiving an oral exam and cleaning.
- Through the American College of Nurse-Midwives' *Healthy Birth Initiative: Reducing Primary Cesareans Project*, maternity care professionals and health systems can make system changes aimed at reducing the incidence of primary cesarean births in the United States¹⁴⁷. Since the collaborative began in 2016, 25 multi-disciplinary hospital teams nationwide have engaged in the implementation of models aimed at reducing preventable cesarean deliveries¹⁴⁷. We recommend that providers utilize this collaborative model to reduce cesarean sections for their patients.
- The National Accreta Foundation recommends five steps hospitals should carry out in order to safely reduce their cesarean rate including the *Safe Reduction of Primary Cesarean Birth* safety bundle (Appendix B), provider education, quality improvement, and support from academic centers¹⁴⁸. We support use of this bundle in Georgia hospitals.
- In order to increase the number of pregnant women receiving their flu shot, we recommend that obstetric providers consider providing this service in-office. While some providers may make a referral for a flu shot, the additional step makes it less likely that she will get the shot

during pregnancy. Moreover, when a referral is made to a drugstore or additional site for the shot, there is no way to access the data showing the uptake rate.

Maternal Substance Abuse Prevention Recommendations

- A trauma-informed approach is an effective way in which clinicians can treat maternal substance abuse without judgement or stigma. This approach begins with clinicians understanding the emotional, social, and physical impact of trauma on both the affected individuals and on the professionals who assist them¹⁴⁹. We recommend that providers connect with Resilient Georgia – a multi-sector group focused on assisting family-focused programs to become trauma-informed.
- Clinicians should carry out early universal substance abuse screenings. This screening should be a regular part of comprehensive obstetric care and should be carried out during the first prenatal visit.
- Clinicians should carry out brief interventions (such as having conversations with patients and providing feedback/advice) and referrals to treatment and recovery resources as appropriate.
- Mental health/behavioral health treatment for pregnant and postpartum women who struggle with opioid use is essential to prevent a potential overdose. Pregnant and postpartum women with opioid use disorder should have overdose training and ideally be co-prescribed naloxone¹⁵⁰.
- It is essential for clinicians to screen all women for postpartum depression and substance abuse during the perinatal and postpartum period and provide referrals and treatment as necessary¹⁵⁰. The ACOG's *Committee Opinion on Opioid Use and Opioid Use Disorder in Pregnancy* provides in-depth guidelines for clinicians to further address patients struggling with opioid use (see Appendix B).
- Discussion of contraceptive options and counseling on appropriate use of contraception should begin prenatally among women with substance abuse disorders. Unintended pregnancy rates among this population are nearly 80% and literature shows that women with opioid and other substance use disorders have a higher unmet need for contraception than the general population¹⁵⁰.
- Family planning counseling should continue through the postpartum period. For women with current substance use disorder who have a desire to conceive, it is important for clinicians to educate on the effects of substances on the fetus¹⁵⁰.
- Peer support services should be provided for women in the prenatal or postpartum period with opioid use disorder. Through this intervention, peer support workers, people who have had a successful recovery process, assist those struggling with opioid use. *Bringing Recovery Supports to Scale: Technical Assistance Center Strategy*, run by the Substance Abuse and Mental Health Services Administration, provides several resources related to this intervention¹⁵¹.

Neonatal Abstinence Syndrome

- State governments and health agencies could improve neonatal outcomes by partnering with structured systematic quality improvement collaboratives, such the Georgia Perinatal Quality Collaborative^{152,154}.
- It is recommended that institutions with nurseries that treat infants with neonatal abstinence syndrome establish standardized treatment protocols¹⁵³. Initiation of a standardized neonatal abstinence treatment protocol can significantly improve neonatal response and decrease length of hospital stay among neonates.
 - To date, 44 hospitals have implemented , the *Georgia Perinatal Quality Collaborative's Neonatal Abstinence Syndrome Program*, through the Vermont Oxford Network¹⁵⁴.

Maternal Mental Health

- Universal screening for the presence of prenatal or postpartum mood and anxiety disorders, using an evidence-based tool such as the Edinburgh Postnatal Depression Screen or Patient Health Questionnaire is recommended.
- Consistent depression screening of pregnant women is now recommended by an

increasing number of professional organizations, such as the American College of Obstetrics and Gynecology, the American Academy of Pediatrics, the American Medical Association, and the United States Preventive Services Task Force.

- Postpartum Support International recommends screening during the first prenatal visit, at least once during the second trimester, and during the six-week postpartum visit (or at the first postpartum visit)¹⁵⁵. They also recommend repeated screening at six and/or twelve months in obstetric and primary care settings, and at three, nine, and twelve months during pediatric visits¹⁵⁵.
- Resources for and education about perinatal mood and anxiety disorders should be provided to women and families during multiple time points during the pregnancy and postpartum period. Community health centers, childbirth classes, and free support groups have the ability to reduce the stigma surrounding maternal mental health issues and close the treatment gap among women of various backgrounds^{156,157}.
- Education should also be implemented for providers to build capacity in their ability to provide screenings, treatment, resources, referrals and psychiatric consultations for pregnant and postpartum women with maternal depression and related behavioral disorders.
- Postpartum Support International, Georgia Chapter (PSI-GA) developed a strategic plan to improve maternal mental health in the State. These include decreasing stigma, improving service access, increasing the number of trained professionals, creating statewide universal screening, and leveraging resources to support service delivery¹⁵⁸.
- Nationally, more work is needed to determine an effective screening tool for universal screening of perinatal anxiety and OCD. The lack of a standardized tool has been a barrier for Georgia providers in identifying and treating these common disorders.
- The PRAMS Survey for Georgia should include more specific questions related to perinatal mood and anxiety disorder prevalence and treatment frequency. HMHBGA and PSI-GA worked with DPH to add these questions to PRAMS, which should be incorporated by the end of 2020.

Maternal Mortality Prevention

- Between 2012-2014, in Georgia, 61% of the pregnancy-related deaths were considered preventable⁷⁸. There have since been many initiatives to combat these preventable maternal deaths that clinicians and healthcare organizations are encouraged to implement¹⁵⁹.
 - ▷ The Alliance for Innovation on Maternal Healthcare hemorrhage bundle initiative was launched by the Georgia Perinatal Quality Collaborative in April 2018. This initiative aims to increase readiness, recognition, and response to hemorrhages, one of the leading causes of pregnancy-related deaths.
 - ▷ The Georgia General Assembly appropriated \$2,000,000 towards to establishment of quality improvement projects in rural birthing hospitals.
 - ▷ The *Maternal and Neonatal Care Designation Program* was developed by DPH to establish a mechanism for level of care designation and ongoing site verification of Georgia birthing hospitals. Upon implementation, hospitals can request level of care designation for maternal and/or neonatal level of care, to increase facilities recognition of their own risk level capacity and promote consistent use of national recommendations for levels of care.
 - ▷ Morehouse School of Medicine will be opening a Center of Excellence on Maternal Mortality, which will serve as a resource center for training of providers and students on comorbidities contributing to maternal mortality, and implementing best practices/safety bundles.
 - ▷ Healthy Mothers, Healthy Babies Coalition of Georgia will open three rural perinatal satellite centers in Meriwether, Randolph, and Wilcox counties to support and amplify maternal infant health services in rural Georgia through prenatal/postpartum education, support services, breastfeeding support, and the provision of needed maternal and infant supplies.
- The Georgia Maternal Mortality Review Committee outlines several recommendations that can be implemented across various levels of healthcare⁷⁸. While all recommendations are important we would like to highlight the following:

- ▷ Provide resources for prenatal and postpartum care
- ▷ Mandate an autopsy for every maternal death
- ▷ Extend pregnancy Medicaid coverage from 60 days to one year postpartum
- ▷ Refer patients to a Maternal Fetal Medicine provider when initially indicated
- ▷ Provide education on the importance of early prenatal care, compliance with medication regime when indicated, keeping all appointments, and postpartum follow-up¹⁶⁰.

Patient Education

- In 2018, Healthy Mothers, Healthy Babies Coalition of Georgia (HMHBGA) published An Evaluation of Current Prenatal Education Availability and Receptivity to Online Education in the State of Georgia¹⁶⁰.
 - ▷ HMHBGA created a Prenatal Education Toolkit for prenatal educators that reviews these topics. Moreover, it provides additional resources for educators to incorporate these topics. Educators can utilize the toolkit to ensure curricula are inclusive of priority topics.
- Patient education materials should be disseminated in a variety of spaces including hospitals, obstetric and pediatric practices, Divisions of Family and Children Services, WIC clinics, health departments, daycare centers, places of worship, and other such places should be equipped with the prenatal education materials found in Appendix C.
- Public service announcements regarding the benefits of breastfeeding should be promoted to the public via radio, television, billboards, and social media channels.
- We recommend providers refer patients to *Pickles & Ice Cream Georgia*, a project of HMHBGA. P&I (picklesandicecreamga.org) is an online platform, focused on providing friendly, accessible, evidence-based, pregnancy information & resources to expecting moms. Additionally, P&I will have toolkits and referral guides available for providers and educators who need Georgia-specific maternal health resources.

Increasing Breastfeeding Duration

- Breastfeeding educators should prioritize breastfeeding education for employers on providing adequate space and time to pump and store breastmilk at work.
- Breastfeeding educators should continue efforts to increase the capacity of childcare facilities to store and administer breastmilk for their clients.
- Providers should encourage eligible patients to enroll in WIC where they will receive additional breastfeeding support and guidance.
- In late 2020, WIC Georgia expects to unroll its electronic benefit card which should alleviate much of the stigma and frustration for clients utilizing WIC vouchers. We recommend that all organizations serving WIC eligible clients be engaged prior to this roll-out to assist with a statewide awareness campaign on the new card and other improvements for WIC clients.
- Healthcare systems should provide patient guidance on how to use ZipMilk.org to locate breastfeeding professionals who can provide in-home care post-discharge.
- The Care Management Organizations administering Pregnancy Medicaid should consider covering the cost of in-home visits from breastfeeding professionals for their clients in the postpartum period.

Social Support During Prenatal and Postpartum Periods

- ACOG suggests group prenatal care for certain populations and settings when feasible. Group prenatal care provides more opportunities for support and education compared to other models of care¹⁶¹. Centering Pregnancy is an evidence-based, cost-effective, and patient centered model¹⁶².
 - ▷ In February 2019, DCH established a pilot program that provides Medicaid reimbursement to four “shovel ready” group prenatal care programs at Grady Health System, Upson Women’s Services, Southside Medical Center in Lovejoy, and Dougherty County Health Department¹⁵⁹.
 - ▷ We recommend that more health systems, especially those serving women of color, pilot a Centering Pregnancy or group prenatal care model.

- The Maternal, Infant, and Early Childhood Home Visiting Program provides pregnant women and their families with the essential skills and resources to improve their family's health and provide better opportunities for their children¹⁶³. We recommend providers connect with available home visiting programs in their community to connect families when needed.
- Postpartum Support International-Georgia Chapter is an organization that works to increase social support among pregnant and postpartum women by delivering encouragement, support, information, and resources and connects mothers, fathers, and families to local providers who are trained to treat perinatal mood and anxiety disorders¹⁵⁸. Providers are encouraged to utilize this as a resource when addressing maternal mental health.
- Embrace Refugee Birth Support is a program of Friends of Refugees, that offers courses for refugees that provide an overview of what they will experience during pregnancy, birth, and the postpartum period in the United States. Organizations and providers working with clients of a refugee background should contact this resource¹⁶⁴.

Legislative & Policy Advocacy

- Currently in the state of Georgia, mothers are covered by Medicaid up to 60 days after delivery. Extending this coverage to a year postpartum is recommended by the Georgia Maternal Mortality Review Committee, given that a majority of pregnancy-related deaths occur in the postpartum period⁷⁸.
- We recommend adopting statewide legislation for workplace accommodations to support healthy pregnancy and postpartum periods within the workplace. Accommodations can include providing additional water and food breaks, access to seating during the day, and temporary restrictions on lifting¹⁶⁶. Such legislation has been passed in 27 states including Louisiana, Texas, North Carolina, South Carolina, Kentucky, and West Virginia.
- Due to maternal smoking, tobacco use contributes to Georgia's crisis of pre-term birth, infant mortality and low birthweight. Raising the cost of tobacco can lower tobacco usage and improve health. Yet, Georgia has one of the lowest tobacco tax rates in the nation, ranking 49th of the 50 states and alternatives such as vaping are not taxed at all. HMHBGA supports legislation that would increase the minimum age of purchase to 21, increase the state tobacco tax, and create an equity tax on tobacco alternative products such as vaping.
- We support the continuation of funding for the maternal and infant health measures mentioned that were appropriated by the Georgia General Assembly to combat infant and maternal mortality.
- In 2017, the Department of Community Health rolled all Medicaid program eligibility and screening into an online application portal called the Gateway. The hours for the Gateway are currently limited to 8AM to 4PM. We support the extension of these hours to 24/7 or at least until 9PM so that working families may access the eligibility screening tool.
- Expansion of Medicaid would improve maternal and infant health outcomes in the State of Georgia by increasing general health care access for at risk populations. Expansion would increase the amount of people that are eligible for Medicaid-covered services. This has the potential to improve access to maternal health care, considering about half of births in Georgia are covered by Medicaid¹⁶⁵.

Data Collection and Needs Assessment

- Data on the following was not included in this report due to lack of reporting or availability, but has the potential to provide valuable maternal infant health insight:
 1. WIC participation by race/ethnicity for the state of Georgia
 2. WIC participation by perinatal region or county for the state of Georgia
 3. Perinatal mood and anxiety instance by race/ethnicity for the state of Georgia
 4. Insurance type by race/ethnicity for the state of Georgia
 5. Postpartum visits by region and race/ethnicity for the state of Georgia
 6. Reviewed data is not currently available for maternal deaths from 2015-2018
 7. Prevalence of perinatal anxiety and other related disorders
- While the CDC continues to define being 'unmarried' as an additional social risk factor for

poor maternal and infant health outcomes, HMHBGA would recommend that this be analyzed at the national level now that the marriage rate has fallen substantially. More parents are co-habiting or partnering without becoming married. It would be an important insight for maternal and infant health advocates to know if the true risk factor is having one consistent parent versus two, or if it is truly the marital status that impacts health outcomes.

- HMHBGA encourages maternal and child health professionals and advocates to engage in their local health system's Community Health Needs Assessment (CHNA) process¹⁶⁷.
 - ▷ Unfortunately, of the 108 hospitals that are required to conduct a CHNA in Georgia, only 21 (19%) prioritized maternal and infant health during their last assessment (2016).
 - ▷ Of those that did not prioritize maternal and infant health specifically, 70 of these hospitals have labor and delivery programs.
 - ▷ Local health systems must prioritize maternal and infant health in their CHNA to ensure that community benefits will address Georgia's poor perinatal outcomes. This process occurs every three years.
 - ▷ HMHBGA has reached out to hospitals that did not prioritize maternal & infant health in their 2016 CHNA assessment to provide technical data assistance on health outcomes and recommendations for their service area. These assessments must be completed in 2019 to meet Internal Revenue Services (IRS) and ACA guidelines.

Appendices

Appendix A: Breastfeeding Barriers in Georgia, PRAMS, 2012-2015⁶

Barriers To Breastfeeding		%
Reason for not initiating breastfeeding	Mom didn't want to	51.5%
	Mom didn't like it	18.6%
	Tried but it was too hard	13.9%
	Other	13.7%
	Mom sick or on medicine	11.1%
	Other children to care for	10.4%
	Went back to work or school	9.7%
	Too many household duties	6.7%
	Baby was sick	1.5%
	Mom wanted her body back to herself	2.6%
	Embarrassed to breastfeed	2%
Breastfeeding continuation barriers	Not producing milk	39.2%
	Milk didn't satisfy baby	38.3%
	Difficulty latching	28.2%
	Too hard/painful	19.2%
	Returned to work/school	19.1%
	Baby not gaining weight	15.8%
	Nipples sore	15.7%
	Other reason	12.1%
	Mom is sick	8.3%
	Other household duties	6.5%
	Was the right time to stop	6.3%
Jaundice	3.9%	

Appendix B: Resourced from Recommendations Section

1. CDC's Tobacco Use and Pregnancy Resource Page: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/tobaccousepregnancy/resources.htm>
2. Example Oral Health Care during Pregnancy Handout: <https://www.mchoralhealth.org/PDFs/OralHealthPregnancyHandout.pdf>
3. American College of Obstetrics and Gynecologists "Oral Health Care during Pregnancy and Throughout Lifespan" committee opinion and recommendations: <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Oral-Health-Care-During-Pregnancy-and-Through-the-Lifespan>
4. Safe Reduction of Primary Cesarean Birth safety bundle: <https://safehealthcareforeverywoman.org/patient-safety-bundles/safe-reduction-of-primary-cesarean-birth/>
5. American College of Obstetricians and Committee Opinion on Opioid Use and Opioid Use Disorder in Pregnancy: <https://www.acog.org/-/media/Committee-Opinions/Committee-on-Obstetric-Practice/co711.pdf?dmc=1>

Appendix C: Prenatal Education Materials

1. Family Health Line brochure for healthcare information and referrals: www.hmhbga.org or 1-800-300-9003.
2. Text4Baby brochure: Text "Baby" to 511411 to receive regular gestational appropriate education message from conception to baby's first birthday. https://partners.text4baby.org/images/2016/Text4babyConsumerBrochure_updated2016.pdf
3. Postpartum depression peer support resource: www.postpartumprogress.com/ppd-support-groups-in-the-u-s-canada
4. Prevent Child Abuse Georgia brochure / 1-800-CHILDREN Helpline: <https://abuse.publichealth.gsu.edu/files/2019/01/1-800-CHILDREN-half-page-flyer.pdf>
5. Planning for Healthy Babies Informational postcard: https://medicaid.georgia.gov/sites/medicaid.georgia.gov/files/related_files/document/P4HB_Post_card_2017_7_10.pdf
6. The American College of Obstetricians and Gynecologists' Breastfeeding Benefits infographic handout: <https://www.acog.org/-/media/Departments/Toolkits-for-Health-Care-Providers/images/BreastfeedingBenefits.ashx>
7. Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger: <https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf>
8. AAP print out of recommended safe sleep practices: <https://www.healthychildren.org/English/ages-stages/baby/sleep/Pages/A-Parents-Guide-to-Safe-Sleep.aspx>

End Notes

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