



Reducing Infant Mortality in Georgia

2013
Annual Report



Reducing Infant Mortality in Georgia

Dear Commissioner Fitzgerald:

IT IS MY PLEASURE TO PRESENT *Reducing Infant Mortality in Georgia - 2013 Annual Report*. With an infant mortality rate of 7.3 deaths per 1000 live births in our state between 2007 and 2011, this initiative enhances Georgia's overall effort to provide better outcomes for women and children in Georgia. The number one cause of infant mortality in Georgia is disorders related to preterm birth and low birth weight. Although the preterm birth rate has dropped 17.7 percent between 2007 and 2011, preterm birth is still the leading cause of infant mortality.

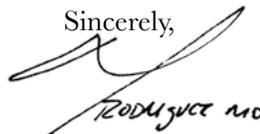
Since the 2012 report, *From Preconception to Infant Protection: A Regional Look at Periods of Risk for Georgia's Newborns*, our infant mortality rate has declined from 8.4 deaths per 1000 live births to 7.3 deaths. Although progress has been made in terms of reducing the infant mortality rate, there is still work to be done. To build on the findings of the 2012 report, our focus remains on efforts to address the six cluster areas with the highest rates of infant mortality in our state.

These efforts include a three-fold strategic plan through 2016:

- Strengthen the regional perinatal system of care
- Develop targeted educational campaigns on infant mortality related issues
- Develop external collaborations to support infant mortality initiatives

We thank you for the opportunity to serve our state by addressing this important challenge and would like to acknowledge the work of our task force members, state office and stakeholders. Strong, long-term collaborations between public health, policy makers, community members, health care providers, payers and others is crucial for successfully addressing infant mortality in our state. We are committed to finding ways to prevent losing another 5,175 babies over the next five years. Even one preventable death of a child is one too many.

Sincerely,



Mitch Rodriguez, MD

Chair, Infant Mortality Task Force and DPH Board Member

email: rodriguez.mitch@mccg.org

Table of Contents

Executive Summary	4
Overview.....	7
Infant Mortality Task Force	12
Infant Mortality Strategic Plan.....	12
Appendices	18
Index.....	26



Executive Summary

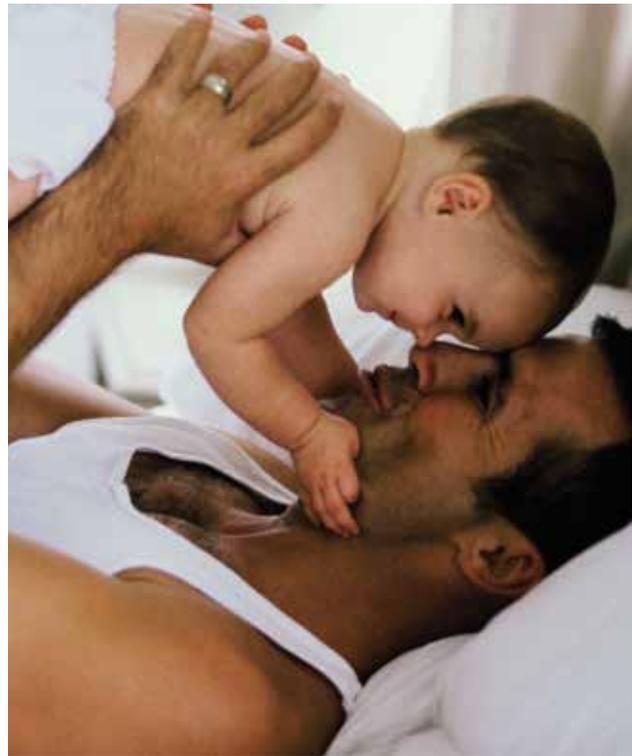
FROM PRECONCEPTION TO INFANT PROTECTION: A REGIONAL LOOK AT PERIODS OF RISK FOR GEORGIA'S NEWBORNS (2002-2006), a report distributed by the Department of Public Health (DPH), painted a very dismal view of maternal and child health in Georgia. With an infant mortality rate of 8.4 deaths per 1000 live births it was clear that work needed to be done to positively impact the care of our most vulnerable population.

With the creation of the Georgia Department of Public Health (DPH) in 2011, there was a renewed focus on improving the health outcomes for mothers and infants in our state. As a priority for the new Department, the Georgia Infant Mortality Reduction Initiative was established. In 2012, DPH announced the creation of the Infant Mortality Task Force, with Mitch Rodriguez, M.D., neonatologist, named as chairperson. The Task Force has focused its efforts on reviewing current data, resources, practices and strategies to reduce infant mortality in Georgia and improve outcomes for all mothers and babies.

The Online Analytical Statistical Information System (OASIS), a Georgia web-based tool for data analysis, provides the source for most of the data and charts used in this report. OASIS provides a level of transparency of the data housed by the Georgia Department of Public Health and makes it accessible to the citizens of the state.

No easy answer exists and, often, the potential interventions are not met with an immediately positive response. Infant mortality is impacted by maternal demographics, and the importance of access to quality health care cannot be understated. Addressing infant mortality requires a concerted effort at all levels of care: preconception care, pregnancy, time of delivery, and the neonatal and post-natal periods.

According to 2007-2011 data, Georgia's infant mortality rate (IMR) improved to a rate of 7.3 deaths



per 1000 live births. Although the factors contributing to this decline are not fully understood, the rate is heading in the right direction.

However, there is still work to be done. With Healthy People 2020 setting a target goal of an infant mortality rate of 6.0 by 2020, DPH has put a strategic plan in place to help Georgia reach this goal. This annual report outlines the strategic plan, with descriptions of the work being done.

The Infant Mortality Reduction Initiative was established to enhance Georgia's overall effort to provide better outcomes for women and children in Georgia. Georgia is working to strengthen our regional perinatal system and review maternal mortality cases to identify trends and ways of improving perinatal care. In addition, Georgia has launched a quality improvement collaborative to monitor and improve perinatal quality care as well as other initiatives to continue identifying ways to improve the overall infant mortality rate in our state. Our Georgia Infant Mortality Task Force provides guidance and oversight for our strategic plan.





ABOUT **25,000** INFANTS DIE EACH YEAR IN THE UNITED STATES.

Overview

INFANT MORTALITY is a surrogate measure of how well a society ensures the health of its people, particularly its women and children. According to the World Health Organization, infant mortality is defined as the number of deaths occurring in the first year of life per 1000 live births. In the United States, substantial progress has been made throughout the last 50 years in reducing the Infant Mortality Rate (IMR); however further reduction of preventable infant deaths remains a challenge. As of 2011, the United States was ranked 31 among the Organization for Economic Cooperation and Development (OECD) ranking for industrialized nations with an IMR of 6.6 (Appendix 4).

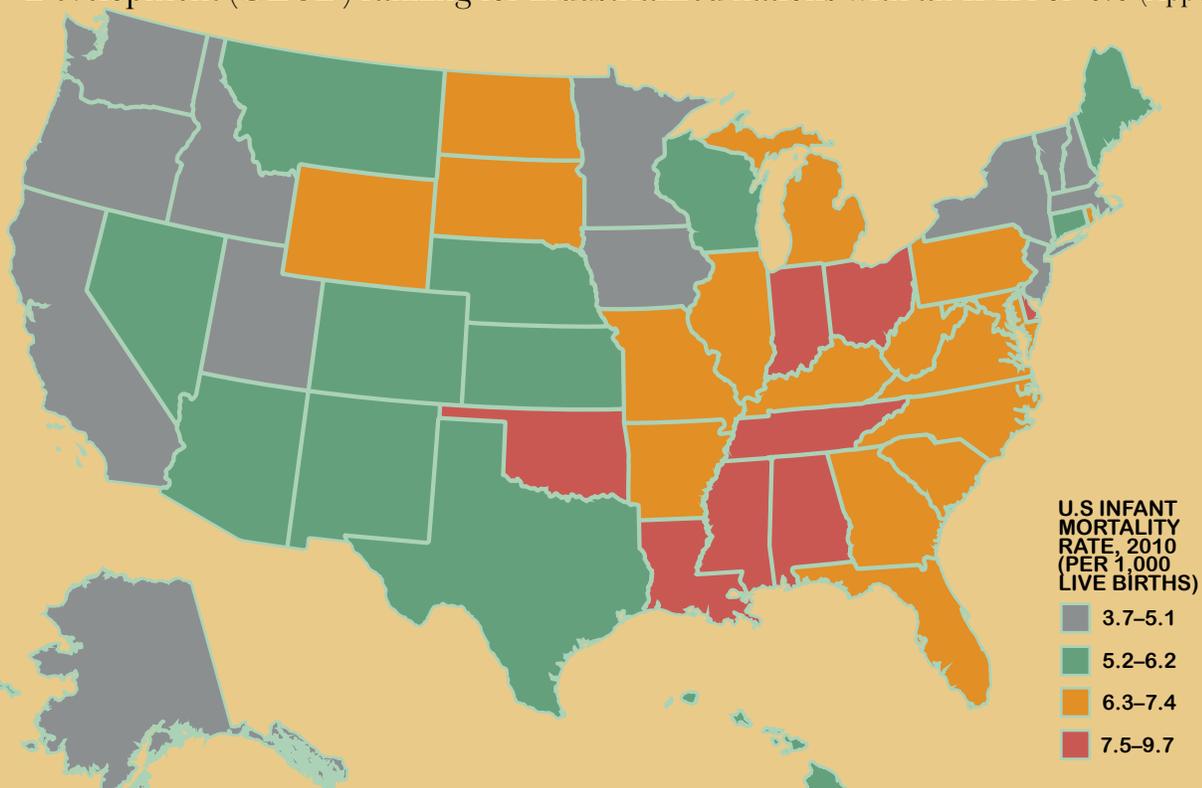


FIGURE 1: INFANT MORTALITY IN THE UNITED STATES

WITHIN THE UNITED STATES, the Infant Mortality Rate fell by 12 percent between 2005 and 2011. Some of the most impressive improvements were in the Southern states, although the rates in the South are still among the highest in the nation. Within the United States, the primary reason that

explains the relatively high IMR as compared to other industrialized countries is the high prematurity rate in the United States. Unfortunately, about 25,000 infants die each year in the U.S. In addition, approximately 650 women die each year in the U.S. as a result of pregnancy or delivery complications.

INFANT MORTALITY IN GEORGIA

Georgia is a large state with both a large urban and rural population. The state has 159 counties (Appendix 1) and 18 health districts. Twenty-nine (29) counties account for 71% of the births in Georgia and 70% of the infant deaths in the state (Appendix 1). In 2009, 58% of the births in the state were covered by Medicaid.

Yet from a historical perspective, the infant mortality rate in our state has improved tremendously throughout the last 20 years. Figure 2 shows the infant mortality rate in Georgia from 1994 to 2011.

In taking a deeper look at Georgia's infant mortality data, the Maternal and Child Health Section published a report in 2012, *From Preconception To Infant Protection: A Regional Look at Periods of Risk for Georgia's Newborns*. The report outlined the Infant Mortality Rate (IMR) for Georgia, which was 8.4 infant deaths per 1000 live births during 2002-2006.

For the same time period, the United States IMR decreased by 10% while Georgia's IMR remained 15-20% greater than the national average and 42% higher than the Healthy People 2010 goal of reducing the average to 4.5 deaths per 1000 live births.

FIGURE 2: Georgia Infant Mortality Rate

(IMR) 1994-2011

SOURCE: ONLINE ANALYTICS STATISTICS INFORMATION SYSTEM (OASIS), GEORGIA DEPARTMENT OF PUBLIC HEALTH

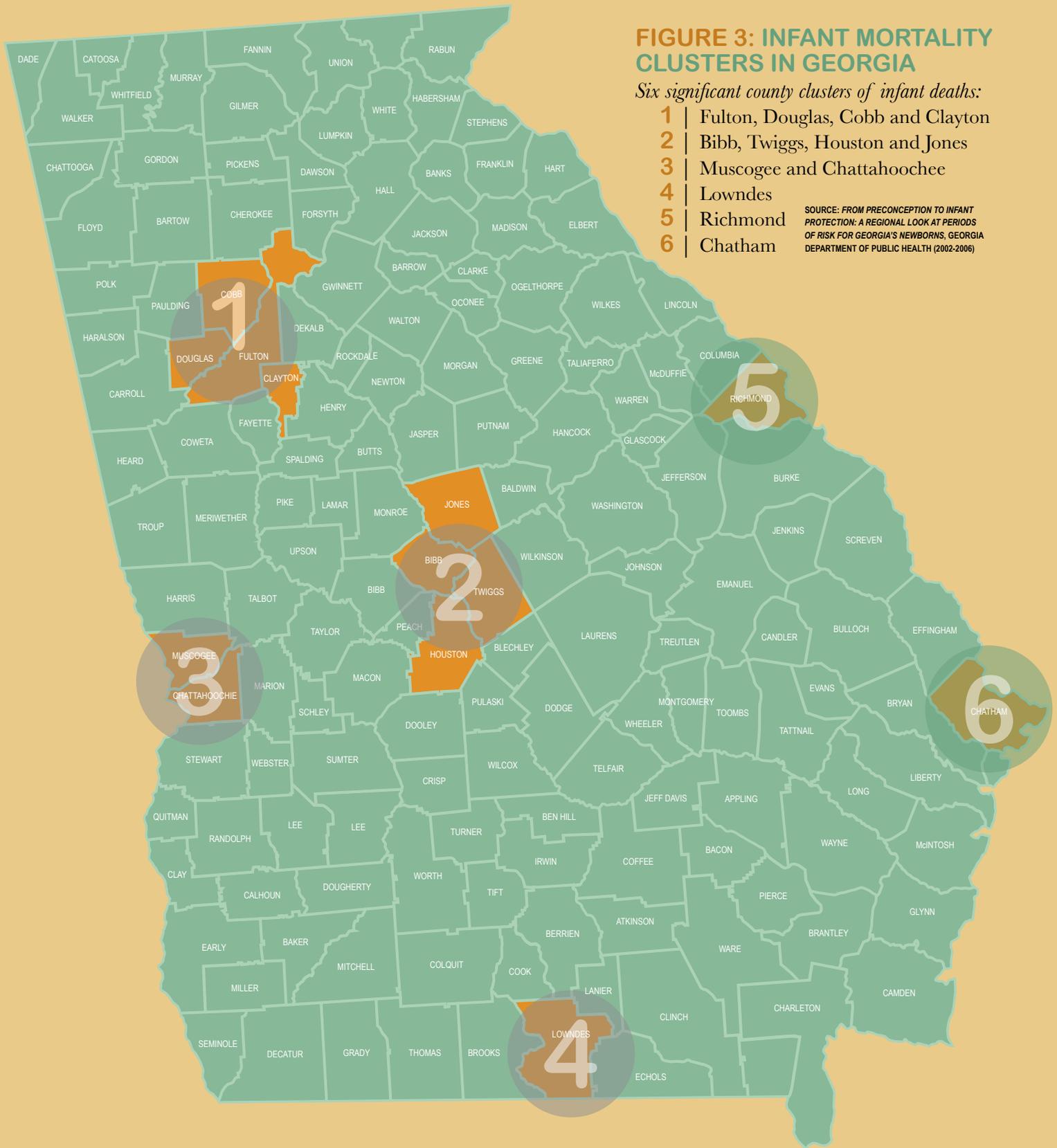


The report outlines six significant clusters of infant deaths across the state. Each of the six clusters is characterized by demographic information, causes of infant death, demographic and behavioral factors related to infant death and a Perinatal Periods of Risk (PPOR) analysis. The six clusters are depicted on the State of Georgia map in Figure 3.

Between 2007-2011 there was a substantial decrease in Georgia's infant mortality rate to 7.3 deaths per 1000 live births. The chart below compares Georgia's Infant Mortality rate over a 10-year period.

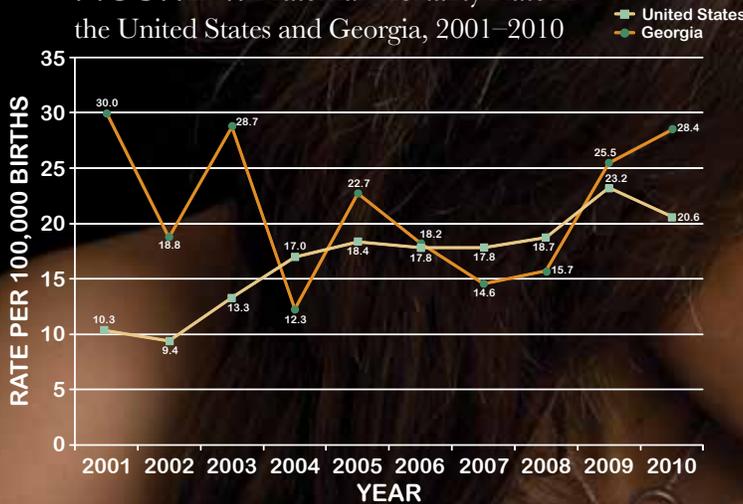
INFANT MORTALITY RATE BETWEEN 2002-2006	INFANT MORTALITY RATE BETWEEN 2007-2011
Georgia's IMR rate was 8.4 deaths per 1000 live births	Georgia's IMR rate was 7.3 deaths per 1000 live births
5743 infant deaths	5175 infant deaths
Healthy People Goal 2010 target goal for the U.S. infant mortality rate was 4.5 infant deaths per 1,000 live births.	Healthy People Goal 2020 target goal for the U.S. infant mortality rate is 6.0 infant deaths per 1,000 live births

GEORGIA HAD **7.3** INFANT DEATHS PER 1000 LIVE BIRTHS DURING 2007-2011.



GEORGIA'S MATERNAL MORTALITY RATE HAS INCREASED FROM **14.6** DEATHS PER 100,000 LIVE BIRTHS IN 2007 TO **35.5** PER 100,000 IN 2011.

FIGURE 4: Maternal Mortality Rate in the United States and Georgia, 2001–2010



Preterm birth and low birth weight are the primary causes of infant mortality in Georgia (Appendix 2). Between 2007 and 2011, 9.5% of births in Georgia resulted in a low birth weight (LBW) baby, or 67,248 LBW babies. Preterm and low birth weight births result in many health, social-emotional and economic consequences. Not only is it the leading cause of infant death, it is also a major cause of childhood disabilities and contributes substantially to the rising cost of healthcare.

In regards to the economic consequences, the average direct cost of medical care for preterm infant in the United States is \$33,200. In addition to the direct cost, there are many indirect costs such as maternal medical care, early intervention, special education and lost household productivity that are estimated to equal \$51,600 (\$33,200 plus indirect cost). The Institute of Medicine estimates that the annual cost of preterm birth to society is at least \$26.2 billion (Behrman & Butler, 2007).

Georgia's maternal mortality rate is one of the worst in the nation. Maternal mortality, in this report, is defined as the death of a woman while pregnant or within one year of termination of pregnancy with

the cause of death being pregnancy-associated, not from accidental or incidental causes. The maternal mortality rate has increased from 14.6 per 100,000 live births in 2007 to 35.5 per deaths per 100,000 in 2011. Georgia's maternal mortality rate is almost twice as high (35.5 per 100,000 in 2011) as the U.S. high of 17.8 deaths per 100,000 live births in 2009.

Centers for Disease Control and Prevention (CDC), implemented the Pregnancy Mortality Surveillance System (PMSS) in the United States in 1986. Since then, the number of reported pregnancy-related deaths in the United States steadily increased from 7.2 deaths per 100,000 live births in 1987 to a high of 17.8 deaths per 100,000 live births in 2009. Figure 4 shows trends in pregnancy-related mortality rates defined as the number of pregnancy-related deaths per 100,000 live births in the United States from 1987 to 2010.

Infants who were Black, non-Hispanic experienced an IMR nearly two and a half times higher than infants who were White, non-Hispanic. When considering all Georgia births, two-thirds of infant deaths happened in the first 28 days of life, 54% of which occurred within the first week of life.

PRETERM, LOW BIRTH WEIGHT BIRTH IS THE PRIMARY CAUSE OF INFANT MORTALITY IN GA.

TO IMPROVE THE BIRTH OUTCOMES and reduce infant mortality and preterm birth rates in our state, the Georgia Department of Public Health has convened partners from across the state, created an Infant Mortality Task Force and outlined a strategic plan to identify measurable objectives.

OBJECTIVE #1: Strengthen the regional perinatal system of care.

OBJECTIVE #2: Develop targeted educational campaigns on infant mortality related issues.

OBJECTIVE #3: Develop external collaborations to support infant mortality initiatives.



Infant Mortality Task Force

THE INFANT MORTALITY TASK FORCE, created July 2012, reviews current data, resources and practices to identify strategies to reduce the infant mortality rate and make recommendations to improve health and birth outcomes for all mothers and babies. The Task Force is comprised of members from across the state in a variety of organizations including the Georgia Department of Public Health, regional perinatal centers, Georgia Hospital Association, Georgia Chapter of the American Academy of Pediatrics, Georgia Academy of Family Physicians, Georgia Obstetrical and Gynecological Society (GOGS), private foundations, March of Dimes Georgia Chapter, private industry, the Georgia Affiliate of the American College of Nurse Midwives, hospitals, academia, Georgia Department of Community Health and care management organizations (CMOs).

Infant Mortality Strategic Plan Initiatives

OBJECTIVE #1: Strengthen the regional perinatal systems of care

GEORGIA'S REGIONAL PERINATAL SYSTEM contains six designated Regional Perinatal Centers (RPCs) strategically located across the state. The purpose of a regionalized perinatal system is to ensure a coordinated, cooperative system of care for maternal and perinatal health. The six RPCs include Grady Memorial (Atlanta), Medical Center of Central Georgia (Macon), Georgia Regents University (Augusta), Phoebe Putney Memorial Hospital (Albany), Columbus Regional Health System (Columbus) and Memorial University Health System (Savannah).

Each RPC is responsible for complying with the core requirements and recommended guidelines of the standards of care for perinatal health. In April 2013, the Perinatal Standards of Care were revised to reflect the following:

- 1) Advances in technology and care practices
- 2) Current editions of the American Academy of Pediatrics and American Congress of Obstetricians and Gynecologist Guidelines for Perinatal Care
- 3) Rules and regulations for hospitals through the Department of Community Health (DCH), Office of Regulatory Services.

In 2012, Health Management Associates (HMA) produced a study commissioned by GOGS and funded by DPH to review the regional system of care in Georgia. Their findings outlined the following recommendations to help strengthen the regionalization of perinatal care in the state:

- Establish verifiable perinatal hospital designation criteria
- Establish a perinatal advisory committee
- Expand perinatal quality assurance committees within the perinatal region
- Consider requiring equivalence between hospital obstetrics and neonatal services
- Incentivize hospitals and providers to direct very low birth weight (VLBW) deliveries to appropriate levels of care
- Provide for policies and procedures that ensure early risk factor identification and access to case management services for pregnant women
- Eliminate elective deliveries prior to 39 weeks

INFANTS WHO WERE BLACK, NON-HISPANIC EXPERIENCE AN IMR NEARLY **2.5** TIMES HIGHER THAN INFANTS WHO WERE WHITE, NON-HISPANIC.



FIGURE 5: Infant mortality by race/ethnicity, Georgia, 2002–2006

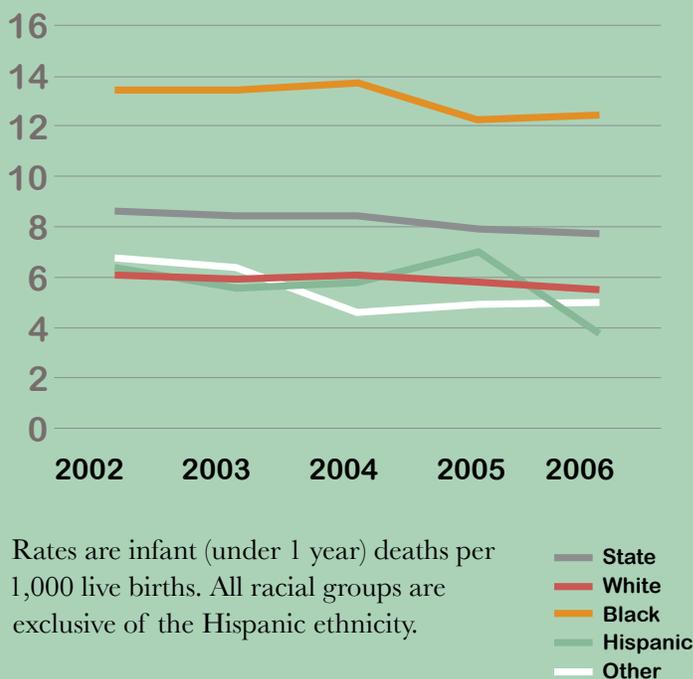
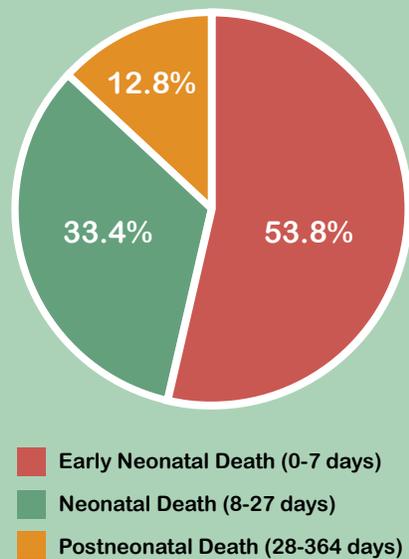


FIGURE 6: Percent of early neonatal, neonatal and postneonatal deaths, Georgia, 2002–2006



GEORGIA PERINATAL QUALITY COLLABORATIVE (GaPQC) is working to improve health outcomes for mothers and infants in Georgia by engaging key stakeholders in a perinatal quality collaborative. GaPQC is a network of perinatal care providers, public health professionals and community partners that will identify opportunities to optimize birth outcomes and implement data-driven, provider and community-based performance improvement initiatives.

GEORGIA MATERNAL MORTALITY REVIEW COMMITTEE (GA MMRC) was created in partnership with GOGS to review maternal death cases and make recommendations on ways to improve care. The mission of the Georgia Maternal Mortality Review Committee is to identify pregnancy-associated deaths (deaths during or within a year of pregnancy), review those caused by pregnancy complications and other selected deaths, identify problems contributing to these deaths and interventions that may reduce these deaths. GA MMRC began reviewing 2012 cases of maternal death in March 2013 and will release its first report summarizing findings and making recommendations for preventable actions.

Other activities addressing maternal mortality in Georgia:

- **CDC COLLABORATIVE FOR MATERNAL MORTALITY** is a 15-state collaborative to help create national guidelines for the development and structure of Maternal Mortality Review Committees. Georgia was one of 15 states asked to participate.
- **EVERY MOTHER INITIATIVE** is a three-year grant initiative launched by the Association of Maternal and Child Health Programs (AMCHP), with the support of Merck, to help states address maternal health issues in their communities through strengthening and enhancing state maternal mortality surveillance systems. The data from these systems will be used to take action in developing and implementing population-based strategies and policy changes to prevent maternal death and improve maternal health outcomes. Georgia was one of six states to be awarded this grant including North Carolina, New York, Colorado, Delaware and Ohio.





CENTERING PREGNANCY is a multi-faceted model of group health care that integrates three major components – health assessment, education and support – into a group setting by a care provider. DPH promoted the Centering Pregnancy programs in Georgia that include the two sites in the Albany public health district – Dougherty and Colquitt public health departments. DPH also promoted the reestablishment of the Centering Pregnancy program at Grady Hospital and is working with the March of Dimes Georgia Chapter, United Way of Greater Atlanta, GOGS and others to support implementation of other Centering Pregnancy sites across the state.

COMMUNITY-BASED HOME VISITING PROGRAMS focus on improving the health and well-being of the mother and child by sending public health nurses, social workers or other trained professionals to meet with families in their homes. Currently, DPH is working with a number of local initiatives promoting case management of high-risk pregnant women to improve pregnancy outcomes (Lowndes, Chatham, Fulton, and Laurens counties). All four of these communities use the same curriculum, Florida State University's Partners for

a Healthy Baby. It is a nationally recognized, evidence-based curriculum used in a home visiting setting to meet goals such as improving birth outcomes, reducing child abuse rates, strengthening families and promoting family stability and economic self-sufficiency.

OBJECTIVE #2: Develop targeted educational campaigns on infant mortality and related issues. Research shows breastfeeding promotes the health and development of infants and their immunity to disease, and offers many maternal health benefits. In 2011, only 66.4% of Georgia mothers started breastfeeding after delivery. Healthy People 2020 has an initiation rate goal of 81.9%.

5-STAR HOSPITAL INITIATIVE IN GEORGIA

DPH and Georgia SHAPE invited hospitals to participate in its 5-STAR Hospital Initiative. Participating hospitals received technical support, education and financial support to promote breastfeeding among staff and patients.

The initiative is based on the premise that a mother's milk is the best choice for feeding newborns and infants, because it positively affects factors related to boosting immunity and health and preventing obesity. The 5-STAR Hospital Initiative is charged with championing and implementing the breastfeeding message in hospitals throughout Georgia.

Participating hospitals:

- Gwinnett Medical Center, Gwinnett County
- Medical Center of Central Georgia, Bibb County
- Phoebe Putney Memorial Hospital, Dougherty County
- Southeast Georgia Health System, Glynn County
- Midtown Medical Center, Muscogee County
- Tift Regional Medical Center, Tift County
- Wellstar Kennestone Hospital, Cobb County



FIGURE 7: Safe Sleep for Babies educational poster

SAFE SLEEP CAMPAIGN

Georgia Department of Public Health joined the Georgia Children’s Cabinet and First Lady Deal along with the Georgia Chapter American Academy of Pediatrics to launch the Safe Sleep Campaign in Georgia in October 2012. The coalition distributed educational posters (Figure 7) and flyers across the state to help raise awareness.

BREASTFEEDING FRIENDLY WORKSITES

In trying to better understand Georgia’s mother-friendly breastfeeding work environments, a survey was given to employers in the state. A baseline was established and additional information on the level of breastfeeding support provided to employees working in major organizations in Georgia was gathered.

According to the preliminary data only 54% of the 158 businesses that completed the survey had provided a space other than a restroom for breastfeeding or expressing breast milk. Next steps are to further analyze the data to give a more complete picture of the level of worksite lactation support employers provide and the need for technical assistance in developing lactation support programs.

OBJECTIVE #3: Develop external collaborations to support infant mortality initiatives

EARLY ELECTIVE DELIVERIES

In order to support hospitals in eliminating non-medically indicated deliveries before 39 weeks, DPH collaborated with Georgia Hospital Association, March of Dimes, GOGS and others to reduce early elective deliveries in Georgia.

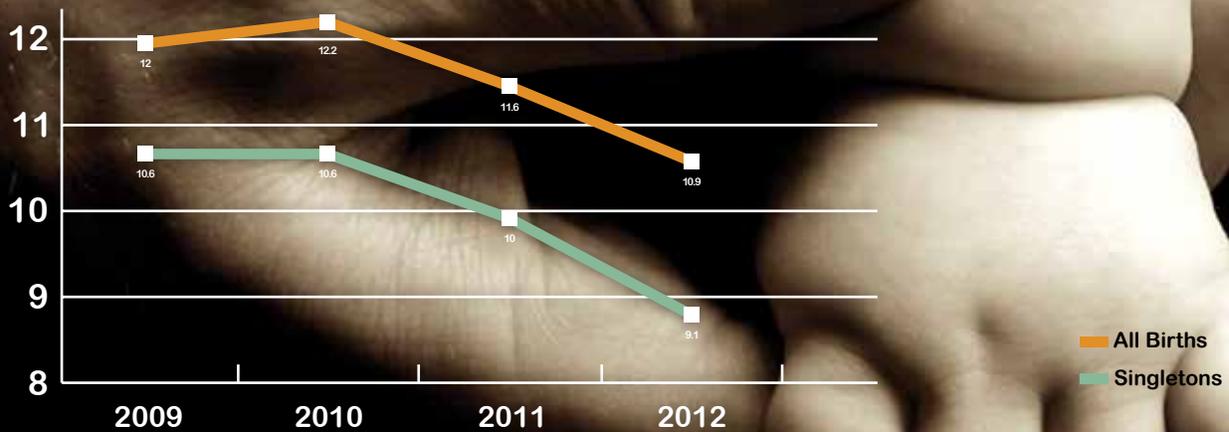
NATIONAL INITIATIVES

Collaborative Improvement & Innovation Network (CoIIN) was initiated by the Health Resources and Services Administration (HRSA) in March 2012 to encourage states to collaborate on specific evidence-based strategies to reduce infant mortality. The initiative aims to facilitate collaborative learning and adoption of proven quality improvement principles and practices across 13 states to reduce infant mortality and improve birth outcomes. The initiative provides a platform for states to learn from one another as well as from national experts, to share best practices and lessons learned and to track progress. It was designed to help states use the science of quality improvement and collaborative learning to improve birth outcomes. The CoIIN is focused on five strategies, and Georgia participates in each of the five CoIIN strategies.

- Reduce early elective deliveries < 39 weeks of pregnancy
- Expand access to interconception care through Medicaid
- Promote smoking cessation among pregnant women
- Promote infant safe sleep practices
- Improve perinatal regionalization

GEORGIA'S PRETERM BIRTH RATE WAS REDUCED FROM 12% TO 10.9%

FIGURE 8: Percent of preterm births among singletons and all births for Georgia, 2009-2012*,
*2012 preterm birth rate is based on preliminary data.



ASTHO CHALLENGE

In May 2012, the Georgia Department of Public Health accepted a challenge from the Association of State and Territorial Health Officials (ASTHO) and March of Dimes to work towards reducing premature births and ensuring more healthy births in our state. The challenge is to reduce the preterm birth rate in Georgia by 8% by 2014. In 2009, Georgia's preterm birth rate was 12%. In order to meet the challenge Georgia would need to reduce it to 11% by 2014 as illustrated in Figure 8.



CONCLUSION:

Thanks to the leadership of Dr. Fitzgerald, substantial achievements have been made at the state and local level, although there is still a lot of work to be done. The focus of the task force and the Department of Public Health will continue to revolve around two principles:

- Reduce the infant mortality rate
- Reduce the prematurity rate

This will require commitment as a state agency to provide the framework for progress as well as individual accountability. At DPH, we are committed to improving the overall health and well-being of mothers and infants in Georgia, and strive to educate, inform and engage our fellow citizens.

As Georgia continues to work towards improving the rate of infant mortality in our state, the Department of Public Health will continue to provide updates on our progress.

Appendix 1 INFANT MORTALTY BY COUNTY

County	Births	% State Population	Infant Deaths 2000-2010	IMR 2000-2010
Appling	2,988	0.2	35	11.7
Atkinson	1,649	0.1	13	7.9
Bacon	1,757	0.1	16	9.1
Baker	385	0	5	13.0
Baldwin	6,044	0.4	56	9.3
Banks	2,335	0.2	20	8.6
Barrow	11,170	0.7	65	5.8
Bartow	15,791	1	104	6.6
Ben Hill	3,312	0.2	38	11.5
Berrien	2,719	0.2	24	8.8
Bibb	26,945	1.8	356	13.2
Bleckley	1,609	0.1	14	8.7
Brantley	2,022	0.1	18	8.9
Brooks	2,492	0.2	26	10.4
Bryan	4,546	0.3	21	4.6
Bulloch	8,860	0.6	80	9.0
Burke	4,327	0.3	45	10.4
Butts	3,302	0.2	30	9.1
Calhoun	988	0.1	8	8.1
Camden	8,633	0.6	50	5.8
Candler	1,887	0.1	20	10.6
Carroll	17,267	1.1	117	6.8
Catoosa	8,180	0.5	54	6.6
Charlton	1,377	0.1	22	16.0
Chatham	41,736	2.7	410	9.8
Chattahoochee	2,469	0.2	18	7.3
Chattooga	3,567	0.2	31	8.7
Cherokee	32,843	2.1	163	5.0
Clarke	16,123	1.1	112	6.9
Clay	466	0	7	15.0
Clayton	51,887	3.4	458	8.8
Clinch	1,219	0.1	11	9.0
Cobb	115,784	7.5	736	6.4
Coffee	7,141	0.5	76	10.6
Colquitt	8,265	0.5	70	8.5
Columbia	15,413	1	98	6.4
Cook	2,808	0.2	27	9.6
Coweta	18,030	1.2	91	5.0
Crawford	1,650	0.1	9	5.5
Crisp	3,818	0.2	45	11.8

County	Births	% State Population	Infant Deaths 2000-2010	IMR 2000-2010
Dade	1,875	0.1	15	8.0
Dawson	2,702	0.2	17	6.3
Decatur	4,581	0.3	40	8.7
Dekalb	124,380	8.1	1,019	8.2
Dodge	2,879	0.2	28	9.7
Dooly	1,809	0.1	18	10.0
Dougherty	17,023	1.1	194	11.4
Douglas	18,989	1.2	134	7.1
Early	1,928	0.1	22	11.4
Echols	797	0.1	5	6.3
Effingham	7,294	0.5	64	8.8
Elbert	2,963	0.2	23	7.8
Emanuel	4,054	0.3	49	12.1
Evans	2,152	0.1	17	7.9
Fannin	2,606	0.2	19	7.3
Fayette	9,966	0.6	53	5.3
Floyd	15,280	1	168	11.0
Forsyth	25,398	1.7	106	4.2
Franklin	3,089	0.2	25	8.1
Fulton	145,512	9.5	1,111	7.6
Gilmer	4,166	0.3	38	9.1
Glascocock	364	0	4	*
Glynn	11,552	0.8	114	9.9
Gordon	8,976	0.6	70	7.8
Grady	4,454	0.3	37	8.3
Greene	2,133	0.1	22	10.3
Gwinnett	139,449	9.1	842	6.0
Habersham	6,214	0.4	29	4.7
Hall	32,479	2.1	221	6.8
Hancock	1,176	0.1	17	14.5
Haralson	4,215	0.3	33	7.8
Harris	3,400	0.2	29	8.5
Hart	3,122	0.2	21	6.7
Heard	1,543	0.1	17	11.0
Henry	27,273	1.8	208	7.6
Houston	21,139	1.4	202	9.6
Irwin	1,438	0.1	17	11.8
Jackson	8,688	0.6	73	8.4
Jasper	2,057	0.1	22	10.7
Jeff Davis	2,497	0.2	27	10.8

*data unavailable

County	Births	% State Population	Infant-Deaths 2000-2010	IMR 2000-2010
Jefferson	2,884	0.2	32	11.1
Jenkins	1,408	0.1	14	9.9
Johnson	1,177	0.1	6	5.1
Jones	3,846	0.3	37	9.6
Lamar	2,334	0.2	23	9.9
Lanier	1,327	0.1	17	12.8
Laurens	7,742	0.5	60	7.7
Lee	3,890	0.3	31	8.0
Liberty	15,635	1	150	9.6
Lincoln	908	0.1	11	12.1
Long	1,759	0.1	19	10.8
Lowndes	17,817	1.2	229	12.9
Lumpkin	3,556	0.2	13	3.7
McDuffie	3,643	0.2	47	12.9
McIntosh	1,588	0.1	16	10.1
Macon	2,021	0.1	21	10.4
Madison	3,851	0.3	22	5.7
Marion	1,133	0.1	12	10.6
Meriwether	3,495	0.2	23	6.6
Miller	943	0.1	5	5.3
Mitchell	3,814	0.2	43	11.3
Monroe	3,111	0.2	29	9.3
Montgomery	1,233	0.1	13	10.5
Morgan	2,405	0.2	16	6.7
Murray	6,795	0.4	43	6.3
Muscogee	34,481	2.2	466	13.5
Newton	15,343	1	106	6.9
Oconee	3,841	0.2	20	5.2
Oglethorpe	1,818	0.1	13	7.2
Paulding	21,080	1.4	134	6.4
Peach	3,808	0.2	42	11.0
Pickens	3,801	0.2	31	8.2
Pierce	2,758	0.2	14	5.1
Pike	2,010	0.1	21	10.4
Polk	7,527	0.5	52	6.9
Pulaski	1,278	0.1	6	4.7
Putnam	2,879	0.2	31	10.8
Quitman	370	0	10	27.0
Rabun	1,957	0.1	14	7.2
Randolph	1,126	0.1	16	14.2
Richmond	35,289	2.3	402	11.4

County	Births	% State Population	Infant Deaths 2000-2010	IMR 2000-2010
Rockdale	12,085	0.8	74	6.1
Schley	617	0	3	*
Screven	2,235	0.1	35	15.7
Seminole	1,274	0.1	8	6.3
Spalding	10,543	0.7	115	10.9
Stephens	3,655	0.2	23	6.3
Stewart	661	0	13	19.7
Sumter	5,616	0.4	47	8.4
Talbot	847	0.1	14	16.5
Taliaferro	217	0	1	*
Tattnall	3,795	0.2	40	10.5
Taylor	1,237	0.1	8	6.5
Telfair	1,833	0.1	16	8.7
Terrell	1,754	0.1	24	13.7
Thomas	6,807	0.4	60	8.8
Tift	7,068	0.5	59	8.3
Toombs	4,902	0.3	34	6.9
Towns	935	0.1	7	7.5
Treutlen	951	0.1	11	11.6
Troup	10,310	0.7	101	9.8
Turner	1,566	0.1	14	8.9
Twiggs	1,360	0.1	15	11.0
Union	2,033	0.1	13	6.4
Upson	3,941	0.3	32	8.1
Walker	8,500	0.6	65	7.6
Walton	12,065	0.8	88	7.3
Ware	5,710	0.4	54	9.5
Warren	920	0.1	10	10.9
Washington	2,968	0.2	31	10.4
Wayne	4,782	0.3	60	12.5
Webster	246	0	4	*
Wheeler	792	0.1	8	10.1
White	3,079	0.2	22	7.1
Whitfield	19,293	1.3	121	6.3
Wilcox	1,137	0.1	12	10.6
Wilkes	1,395	0.1	14	10.0
Wilkinson	1,674	0.1	18	10.8
Worth	3,132	0.2	26	8.3
Summary	1,535,005		12,379	8.1

*data unavailable

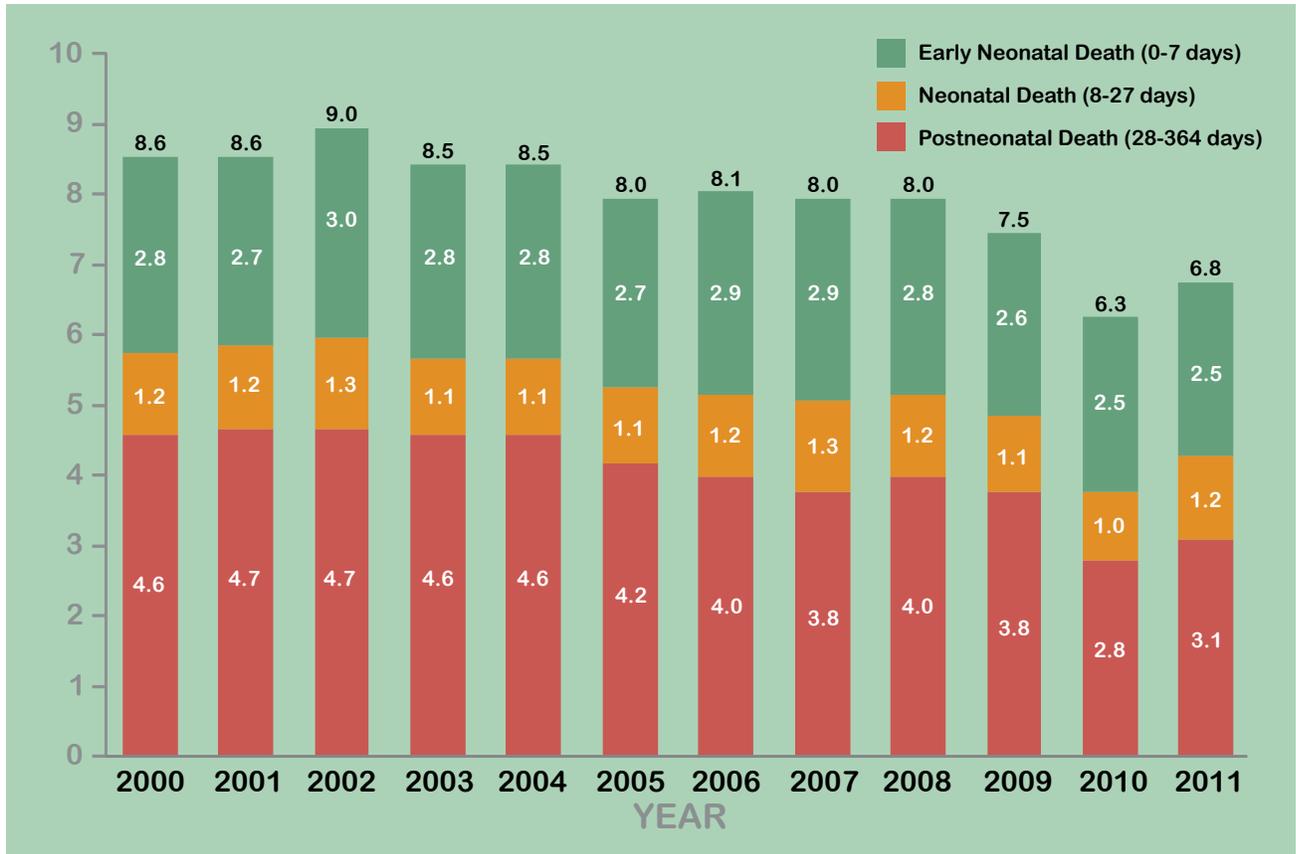
Appendix 2 **INFANT MORTALITY RATES FOR THE 10 LEADING CAUSES OF INFANT DEATH, GEORGIA 2002–2006**

CAUSE OF DEATH	NUMBER	% OF TOTAL DEATHS	MORTALITY RATE	RANK
All causes	5743	100	8.24	—
Disorders related to short gestation and low birth weight, not elsewhere classified	1117	19.5	1.62	1
Congenital malformations, deformations and chromosomal abnormalities	964	16.8	1.39	2
Sudden infant death syndrome	621	10.8	0.90	3
Newborn affected by complications due to pregnancy	321	5.6	0.46	4
Respiratory distress of newborn	245	4.3	0.35	5
Accidental/unintentional injuries	181	3.2	0.26	6
Bacterial sepsis of newborn	169	2.9	0.24	7
Newborn affected by complications of placenta, cord and membranes	164	2.9	0.24	8
Necrotizing enterocolitis of newborn	134	2.3	0.19	9
Disease of circulatory system	131	2.3	0.19	10

RATES ARE INFANT (UNDER 1 YEAR) DEATHS PER 1,000 LIVE BIRTHS.

Appendix 3

INFANT MORTALITY RATE BY TIME OF DEATH, GEORGIA, 2000-2011



Appendix 4 INTERNATIONAL IMR RANKING 2011

COUNTRY	IMR	RANK
Iceland	0.9	1
Sweden	2.1	2
Japan	2.3	3
Finland	2.4	4
Norway	2.4	4
Estonia	2.5	6
Czech Republic	2.7	7
Italy	2.9	8
Slovenia	2.9	8
Korea	3.0	10
Portugal	3.1	11
Spain	3.2	12
Belgium	3.4	13
Greece	3.4	13
Denmark	3.5	15
France	3.5	15
Israel	3.5	15
Austria	3.6	18
Germany	3.6	18
Netherlands	3.6	18
Australia	3.8	21
Switzerland	3.8	21
Luxembourg	4.3	23
United Kingdom	4.3	23
Poland	4.7	25
Canada	4.8	26
Hungary	4.9	27
Slovak Republic	4.9	27
New Zealand	5.2	29
United States	6.1	30
Chile	7.7	31
Turkey	7.7	31
Mexico	13.7	33

SOURCE: Adapted from Organization for Economic Cooperation and Development, Health at a Glance

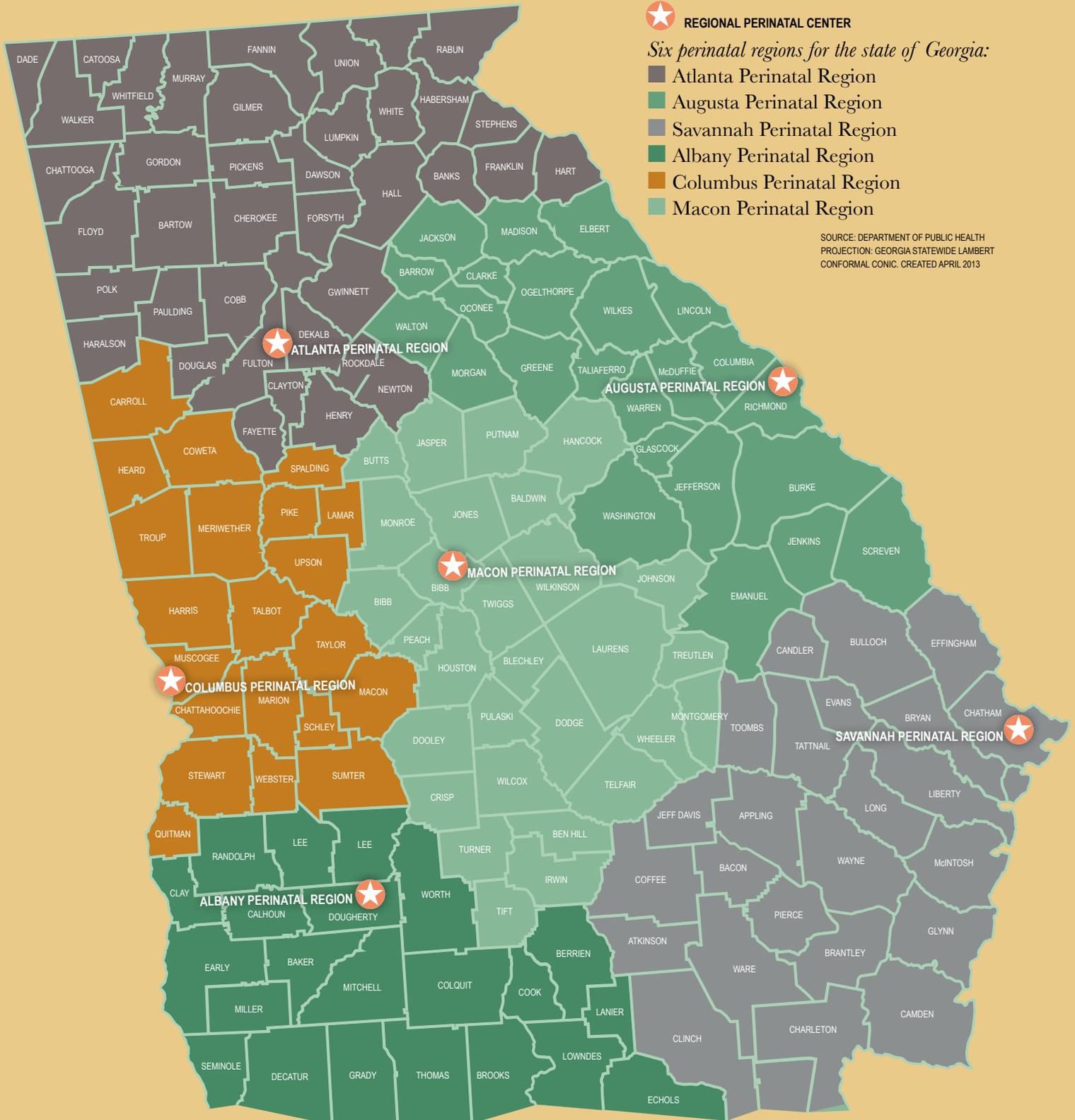
Appendix 5 KEY DEFINITIONS

TERM	DEFINITION
Infant death	Death of an infant before his or her first birthday
Maternal mortality	Death of a woman (ages 10-49) during pregnancy or up to one year after delivery
Maternal mortality rate	Number of maternal deaths per 100,000 births from any cause that is pregnancy associated
Infant mortality rate	Number of infant deaths under 1 year of age per 1,000 live births.
Neonatal mortality rate	Number of deaths occurring during the first 28 days of life
Early neonatal death	Number of death from birth to 6 days per 1,000 live births
Late neonatal death	Number of deaths from day 7 to 27 days per 1,000 live births
Postneonatal mortality rate	Number of deaths between 28 days and 1 year of age per 1,000 live births
Preterm birth	Birth before 37 completed weeks of pregnancy
Low Birth Weight (LBW)	Birth weight less than 2,500 grams
Very Low Birth Weight (VLBW)	Birth weight less than 1,500 grams
Extremely Low Birth Weight (ELBW)	Birth weight less than 1,000 grams
Early Elective Deliveries	Neonates delivered before 39 weeks of pregnancy that were non-medically indicated. Elective deliveries may occur either by induction or cesarean section (c-section)

Appendix 6 INFANT MORTALITY TASK FORCE MEMBERS

NAME	TITLE	ORGANIZATION
Barbara Walker, MD, MPH	Family Physician	Georgia Academy of Family Physicians
Catherine Bonk, MD, MPH, FACOG	Obstetrician	Georgia OBGyn Society (GOGS)
Christine Scott, MD	Medical Director	Peach State Health Plan
Fay Brown, MHS	Executive Vice President	Georgia Academy of Family Physicians
Gary Nelson, PhD	President and CEO	Healthcare Georgia Foundation
Jacqueline Grant, MD, MPH, MPA	District Health Director (Albany)	Georgia Department of Public Health Districts
Janice Carson, MD, MSA	Deputy Director	Georgia Department of Community Health
Jerry Dubberly, PharmD, MBA	Division Chief of Medicaid	Georgia Department of Community Health
Karen Timberlake, MD	Pediatrician	Georgia Chapter American Academy of Pediatrics
Lynne Hall, RN	Quality Improvement Specialist	Georgia Hospital Association (GHA)
Mark Wilson	Vice President, Human Resources	Langdale Industries
Mitch Rodriguez, MD	Chairman, Georgia's Infant Mortality Task Force, Regional Perinatal Medical Director	Medical Center of Central Georgia (MCCG)
Pat Cota, RN, MS	Executive Director	Georgia OBGyn Society (GOGS)
Rick Ward, CAE	Executive Director	American Academy of Pediatrics-Georgia Chapter
Sandra White, MD, FACR, MBA	Vice President and Senior Medical Director	Wellcare of Georgia, Inc.
Sarah Owens, CNM, MPH	President	Georgia Affiliate of the American College of Nurse Midwives
Seema Csukas, MD, PhD	Director, Maternal and Child Health	Georgia Department of Public Health
Sheila Ryan	State Director	March of Dimes, Georgia Chapter
William Alexander, MD	Chief Medical Officer	Amerigroup RealSolutions in Healthcare, Georgia

Appendix 7 MAP OF REGIONAL PERINATAL CENTERS



Index

FIGURE 1: Infant mortality in the United States

Map Source: Kid's Count Data Center, www.kidscount.org
A Project of the Annie E. Casey Foundation

FIGURE 2: Georgia infant mortality rate 1994-2011

Source: Online Analytics Statistics Information System (OASIS), Georgia Department of Public Health

FIGURE 3: Infant mortality clusters in Georgia

Source: From Preconception to Infant Protection: A Regional Look at Periods of Risk for Georgia's Newborns (2002-2006), Georgia Department of Public Health

FIGURE 4: Maternal mortality rate in the United States and Georgia, 2001-2010

Source: National Center for Health Statistics and Online Analytics Statistics Information System (OASIS), Georgia Department of Public Health

FIGURE 5: Infant mortality by race and ethnicity in Georgia, 2002-2006

Source: From Preconception to Infant Protection: A Regional Look at Periods of Risk for Georgia's Newborns (2002-2006), Georgia Department of Public Health

FIGURE 6: Early neonatal death, neonatal death, postneonatal deaths, Georgia, 2002-2006

Source: From Preconception to Infant Protection: A Regional Look at Periods of Risk for Georgia's Newborns (2002-2006), Georgia Department of Public Health

FIGURE 7: Safe Sleep for Babies educational poster

Source: American Academy of Pediatrics

FIGURE 8: Preterm births among singletons and all births for Georgia, 2009-2012

Source: Online Analytics Statistics Information System (OASIS), Georgia Department of Public Health

Appendices

APPENDIX 1: Infant mortality by county

APPENDIX 2: Infant mortality rates for the 10 leading causes of infant death, Georgia, 2002–2006

APPENDIX 3: Timing of infant mortality rate

APPENDIX 4: International IMR Ranking 2011

APPENDIX 5: Key definitions

APPENDIX 6: List of Task Force members

APPENDIX 7: Map of regional perinatal centers



2013 ANNUAL REPORT

Reducing
Infant Mortality
in Georgia

GEORGIA DEPARTMENT OF PUBLIC HEALTH