



# 2016 State of the State of Maternal & Infant Health in Georgia

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*Where We Have Been, Where We Are Now,  
and What We Can Do*



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**HEALTHY MOTHERS, HEALTHY BABIES**

*Coalition of Georgia*

**Healthy Mothers, Healthy Babies Coalition of Georgia**

improves maternal and child health through advocacy,  
education and access to vital resources.

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## INTRODUCTION

Healthy Mothers, Healthy Babies Coalition of Georgia's (HMHB) mission is to improve maternal and child health through advocacy, education and access to vital resources. As a service to many interested private and public stakeholders, HMHB has summarized pertinent health data<sup>1</sup> in the following areas: prenatal care, fetal mortality, live births, premature and low birthweight babies, infant mortality, maternal disease, maternal obesity, maternal use of alcohol and illicit drugs, maternal mortality, postpartum visits, perinatal mood and anxiety disorders, and breastfeeding. Our goal is to illuminate where we have been, where we are now, and what we can do in collaborative action.

The current state of Georgia's maternal and infant health presents ongoing challenges as well as signs of promise for the future. Based on the most current data available, there is reason to be hopeful as teen pregnancy rates continue to improve and Georgia continues to beat the national averages for maternal smoking, alcohol and apparent illicit drug use during pregnancy. Areas of challenge include unintended pregnancies, the prevalence of low birthweight infants, maternal mortality and duration of breastfeeding. As demonstrated, there are often disparities by age, education, race/ethnicity, geographic location and insurance/payment type.

We conclude this report with recommendations in four key implementation areas: (1) prenatal care; (2) legislation; (3) public/private partnerships, and (4) data collection and needs assessment. The evidence-based recommendations aim to improve the accuracy of future data as well as the health outcomes for many of Georgia's mothers and babies.

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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](mailto:thecoalition@hmhbga.org).

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# Prenatal Care

## Medical Care

Prenatal care is an important factor in optimizing birth outcomes. “Babies born to mothers who received no prenatal care are three times more likely to be born at low birthweight, and five times more likely to die, than those whose mothers received prenatal care.”<sup>2</sup> A mother without prenatal care is 7.4 times more likely to enter labor prematurely,<sup>3</sup> and “the pregnancy-related mortality ratio [is] 3–4 times higher among women who received no prenatal care compared with women who received any prenatal care.”<sup>4</sup>

The date that a woman started prenatal care, how many visits she had, or whether she had no prenatal care at all during the pregnancy are data points that are collected on birth certificates.<sup>5</sup> Up through 2006, a combined measure was published on Georgia’s Department of Public Health (DPH) OASIS data system quantifying the number of “Births with Late or no Prenatal Care,” but that measure is not currently being reported because of high percentages of “missing, unknown, or invalid data entries.”<sup>6</sup> Of all the 50 states in the nation, a federal publication of 2013 birth data identifies Georgia as the state with the highest rate of missing prenatal care data from its birth certificates with 15.95% missing that measure.<sup>7</sup>

Georgia last publically reported the measure of “Births with Late or no Prenatal Care” in 2006 with 4.1% (5,771) either starting prenatal care in the third trimester or not getting any prenatal care at all.<sup>8</sup> A Kaiser Family Foundation analysis of all states’ 2007 data has Georgia’s late to care or no prenatal care measure at 15.8%.<sup>9</sup> In 2007, Georgia had 150,804 births,<sup>10</sup> 15.8% of those equates to 23,827 births with late or no prenatal care.

Even though not publicly reported, DPH has provided the latest data (table below) it has available going back to 2008 for birth certificates indicating that the mother received no prenatal care. The data also details the number and percent of birth certificates that do not have prenatal care data recorded.<sup>11</sup>

Prenatal Care, Georgia, 2008-2014					
Year	Total Births	Prenatal Care Data Missing	% of Total Births	“No Prenatal Care”	% of Total Births
2008	146,464	44,014	30.1%	2,034	1.4%
2009	141,332	34,064	24.1%	2,181	1.5%
2010	133,668	28,858	21.6%	1,851	1.4%
2011	132,239	23,413	17.7%	1,903	1.4%
2012	130,112	17,988	13.8%	1,633	1.3%
2013	128,511	20,702	16.1%	2,437	1.9%
2014	130,776	21,995	16.8%	960	0.7%

Source: GA DPH (Vital Records)

**Of all the 50 states in the nation, a federal publication of 2013 birth data identifies Georgia as the state with the highest rate of missing prenatal care data from its birth certificates with 15.95% missing that measure.**

Easy access to prenatal healthcare in rural counties continues to challenge Georgia as well as other states. The American College of Obstetricians and Gynecologists (ACOG) indicates that national data shows that the rate of initiation of prenatal care in the first trimester is lower for rural mothers than their urban counterparts with less than half of rural women living within a 30-minute drive to the nearest hospital offering perinatal services. ACOG also notes that as of 2010, 49% of U.S. counties do not have an obstetrician-gynecologist.<sup>12</sup> Georgia is on par with that national statistic. In 2010, 79 of Georgia's 159 counties did not have an obstetrician-gynecologist;<sup>13</sup> in 2012 that number increased to 80.<sup>14</sup> Some of those counties do have obstetrical care through family medicine physicians, nurse midwives, and nurse practitioners. However, of further alarm for Georgia is the fact that within the last 21 years, at least 31 Labor & Delivery Units have closed—with 19 of those closures being in rural counties.<sup>15</sup> In 2015, it was reported that only 46 of Georgia's 159 counties have Labor & Delivery units with fewer than 75 hospitals delivering babies out of more than 180 hospitals in the state.<sup>16</sup> As of June 2016, DPH reports 77 birthing hospitals in Georgia.<sup>17</sup>

A review of Georgia birth records from 1999-2009 found that “women were at an incrementally increased risk of delivering before 37 weeks estimated gestational age with each additional 15 minutes of driving time to [the delivering hospital]; for instance, women who drove more than 45 minutes had 50% more preterm deliveries than women who drove 15 minutes or less.”<sup>18</sup> While transports from one hospital to another hospital were captured and accounted for, a large number of birth certificates were missing prior obstetrical history, which may have accounted for prenatal referrals to a more distant facility. The study also did not adjust or control for behavioral risk factors.<sup>19</sup>

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## Dental Care

Oral health is an important part of a person's overall health, especially in the gravid patient. In a collaborative research project conducted by Aetna with Columbia University, researchers reviewed three years of claims data for dental care rendered to pregnant patients (29,000) who had both medical and dental coverage with Aetna during their pregnancies. The National Institute for Health Care Management has summarized the results showing that the preterm birth rate was 42% higher for the babies of women who did not receive dental treatment during pregnancy and the low birthweight rate was 33% higher for the babies of women who did not receive dental



treatment during pregnancy.<sup>20</sup>

In several studies, periodontal (“gum”) disease has been associated with preterm births.<sup>21</sup> Periodontal disease can be detected in up to 30 percent of pregnant women.<sup>22</sup> Even though studies have shown a strong correlation between periodontal disease and preterm deliveries, a few recent studies involving the actual dental treatment of periodontal disease during pregnancy have failed to statistically improve those birth outcomes.<sup>23</sup>

While the results of invasive dental treatment of periodontal disease during pregnancy have been disappointing in improving birth outcomes, a study using alcohol-free mouthwash has yielded impressive results. Of the patients with periodontal disease who used the rinse twice daily, only 5.6% delivered their babies before 35 weeks gestation while 21.9% of the control group with periodontal disease delivered their babies before 35 weeks gestation.<sup>24</sup>

Recognizing the broad health benefits of dental care, ACOG recommends an oral health inquiry at the first prenatal visit. ACOG also recommends encouraging pregnant women to see their dentist if it has been longer than six months since their last exam or if they have any oral health problems. However, ACOG also acknowledges that a PRAMS (Pregnancy Risk Assessment Monitoring System) survey of ten states shows that 59% of women did not get any oral health counseling during their pregnancies.<sup>25</sup>

### **DPH PRAMS data for 2013 reveals that only 29.3% of pregnant women had a dental visit during pregnancy.**

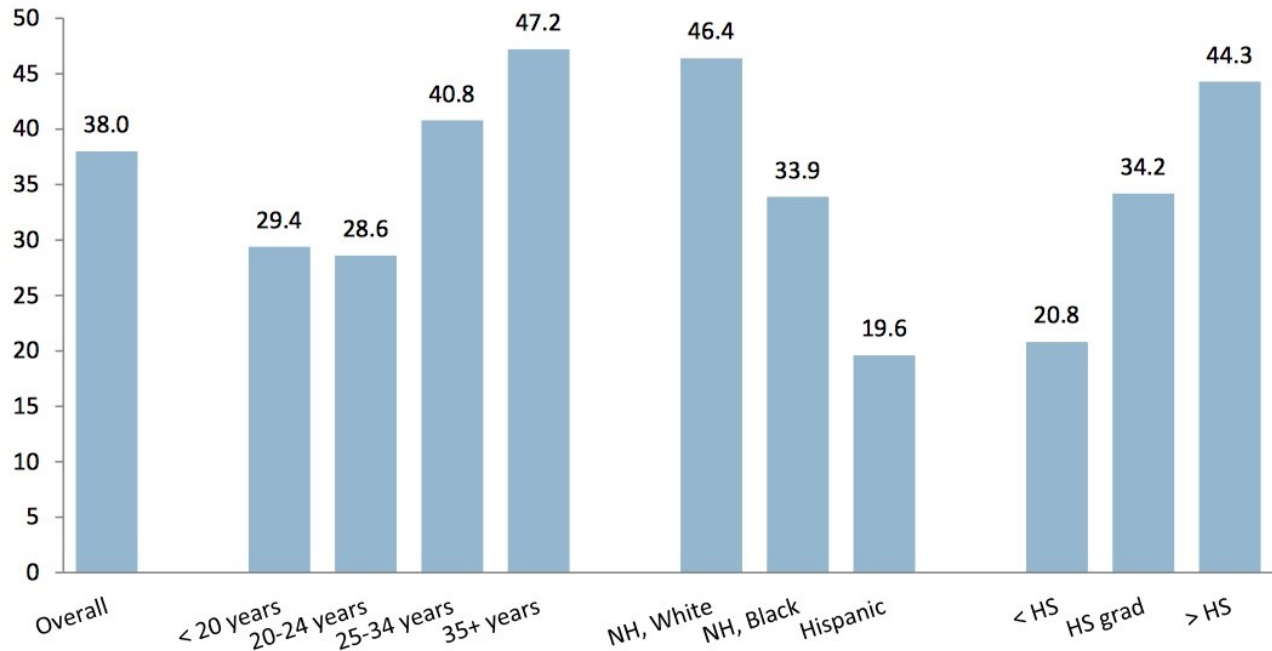
A separate “analysis of [1998] PRAMS data in four states found that only 23 to 35 percent of women accessed dental care during pregnancy, compared to 44 percent of all women between the ages of 20 and 49.” Further, of women reporting dental problems during pregnancy, “one-half did not receive care.”<sup>26</sup>

PRAMS data reported by DPH, as outlined in the table on the next page, shows that in 2012 only 38% of Georgia’s pregnant mothers had a routine teeth cleaning during pregnancy with age, race, and education all showing disparities.<sup>27</sup>

DPH PRAMS data for 2013 reveals that only 29.3% of pregnant women had a dental visit during pregnancy.<sup>28</sup> Georgia Medicaid covers dental care for pregnant women, but in 2011, only 13%, 14% and 35% of pregnant women enrolled with each of the three Medicaid Care Management Organizations (CMOs) received dental care while they were pregnant. Interestingly, the CMO at 35% had been at 15% the prior year, but in the interim, that CMO implemented a new policy of verbally communicating with each new enrollee the importance of dental care in pregnancy.<sup>29</sup> The increase in care by more than 100% in just one year is evidence that simple education does affect compliance. The current education policy for each CMO is not known; however, the 2015 statistics for pregnant women receiving dental care from each CMO are 18.3%, 10.65%, and 13.2% respectively (the same comparative order as for the 2011 data).<sup>30</sup>



Percent of women who had their teeth cleaned during pregnancy, Georgia, 2012



Source: PRAMS 2012

Reprinted from GA DPH Cross-Cutting Issues in MCH, Georgia Title V Needs Assessment (2015)<sup>31</sup>

## Influenza Vaccination (Flu shot)

Changes in immune, heart, and lung function during pregnancy make women more likely to get seriously ill from the flu. “Seasonal influenza-related hospitalization in healthy pregnant women occurs at a rate of 1 to 2 per 1,000, a risk that is 18-fold greater than that for healthy nonpregnant women.”<sup>32</sup> The CDC and ACOG recommend seasonal flu shots for pregnant women in every trimester.<sup>33</sup> In addition to providing protection to the mother, the antibodies created by the pregnant woman are passed to the unborn baby providing protection to the infant for months after birth. The antibodies are also in breast milk, giving even extra protection to breastfeeding infants (who cannot themselves be immunized until six months of age).<sup>34</sup>

In 2009 there was an H1N1 flu pandemic with early case reports showing more serious illness among pregnant women. While pregnant women account for roughly 1% of the population at any given time, looking at 120 studies of the H1N1 season in 29 countries, pregnant women accounted for approximately “6% of the individuals who were hospitalized, were admitted to the ICU, and died as a result of H1N1.” In the US, pregnant women were 5% of the 2009 H1N1 deaths.<sup>35</sup>

Internationally, including Georgia, obstetrical practices took extra measures to get their patients immunized during the 2009-10 season. In at least two retrospective case studies from that 2009-10 scare, the babies of immunized mothers had improved fetal and birth outcomes. A Canadian study looking at more than 55,000 births (with almost half of those mothers having received the

vaccine) found that “pregnant women who received a vaccination were less likely to have a very preterm infant, an SGA (small for gestational age) infant, or a fetal death.”<sup>36</sup>

Similarly, Kaiser Permanente reviewed over 3,000 of their births in the months following the '09 immunizations, including their Georgia babies. Kaiser found that pregnant women who received the H1N1 influenza vaccine “were less likely to give birth preterm and gave birth to heavier infants.” Notably, their data suggests that every 24 maternal immunizations prevented one preterm birth.<sup>37</sup>

Intrigued with 2009-10 data, researchers in Australia followed with a retrospective study of over 58,000 births from April 2012 to December 2013 comparing the incidence of stillbirth for those mothers receiving a seasonal flu vaccine to those who had not received a vaccine. After adjusting for confounders the results were significant; “stillbirth was 51% less likely among vaccinated vs. unvaccinated mothers.”<sup>38</sup>

**“Infants born to influenza-immunized mothers had risk reductions of 70% for laboratory-confirmed influenza and 81% for influenza hospitalizations in their first six months of life.”**

But the benefits of prenatal influenza immunization do not stop at birth for the infant. Researchers at Yale University published their nine-year, 2000-2009, study of infants less than six months old who were hospitalized with the flu. Clinicians found that maternal vaccination was 91.5% effective in preventing infant influenza hospitalization.<sup>39</sup> In a study spanning from 2005-2014 of nearly 250,000 infants, researchers concluded that infants born to influenza-immunized mothers had risk reductions of 70% for laboratory-confirmed influenza and 81% for influenza hospitalizations in their first six months of life. Their May 2016 publication concludes, “Maternal influenza immunization during pregnancy is a public health priority.”<sup>40</sup>

Researchers have also recently concluded, “to achieve better infant protection, vaccination during pregnancy should not be delayed until the third trimester.”<sup>41</sup>

Georgia made progress in its influenza immunization rates of pregnant women, primarily due to the H1N1 effect. However, as time passes, that progress is waning. Georgia PRAMS survey data shows the following percent of women receiving a flu shot during pregnancy:

<b>Women Receiving Flu Shot During Pregnancy in Georgia (2004-2013 PRAMS Data)</b>		
2004: 10.4%	2009: 41.2%	2012: 24.4%
2005: 16.9%	2010: 45.4%	2013: 17.0% <sup>44</sup>
2006: 15.5% <sup>42</sup>	2011: 35.8% <sup>43</sup>	

While the 2009-10 flu immunization rates increased in Georgia, those rates were still near the bottom for all of the 29 states that participate in PRAMS. Georgia took the 28th spot for the measure with the overall national immunization average being 56.8%.<sup>45</sup>

Georgia’s raw data appears to track the studies showing improved fetal and infant outcomes with higher rates of maternal immunization. Looking at Georgia’s raw infant mortality numbers, Georgia went from an infant mortality rate of 7.5 in 2009 to a rate of 6.3 in 2010, following the H1N1 scare, with the most significant drop being in the medical related deaths category. In addition, Georgia’s fetal mortality rate also had a drop in 2010.

After the 2010-2011 influenza season, a CDC survey found that pregnant women who had been offered a flu vaccine by their healthcare provider were five times more likely to be vaccinated compared to those who were not offered vaccination. If offered a flu shot by their obstetric clinician, 71% were vaccinated. If not offered a flu shot by their obstetric clinician, only 14% were vaccinated.<sup>46</sup>

A CDC survey of approximately 1,700 responding women who were pregnant during the 2014-15 influenza season found that 50.5% received a flu vaccination, a decrease from 52.2% the previous year. “Overall, 64.9% of respondents reported receiving a provider offer of influenza vaccination, 14.8% received a recommendation but no offer, and 20.3% received no recommendation. Vaccination coverage among these groups of women was 67.9%, 33.5%, and 8.5%, respectively.”<sup>47</sup>

## Fetal Mortality

Fetal Mortality is the death of a fetus prior to birth, but for data collection purposes, only those deaths occurring at or beyond 20 weeks gestation are reportable. “Causes of fetal death include preterm labor, birth defects, infection, placental problems, such as abruption or inadequate blood flow, and chronic conditions, such as hypertension and diabetes.”<sup>48</sup>

<b>Fetal Mortality Rates in Georgia (2003-2014)</b>									
<b>Fetal Mortality Rate</b>	<b>2003</b>	<b>2005</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2013 Nat'l Rate</b>
<b>Overall rate per 1,000 births+ fetal deaths (#)</b>	9.2 (1263)	8.4 (1196)	7.6 (1078)	7.3 (979)	8.2 (1087)	7.6 (997)	8.1 (1054)	7.8 (1023)	5.96
Black	14.9	13.2	11.9	10.9	13.3	12.4	13.0	12.2	10.53
Hispanic	6.7	5.5	4.7	4.4	6.3	5.6	6.9	5.7	5.22
White	6.5	6.1	5.1	5.1	5.0	4.9	5.3	5.0	4.88
Asian	6.2	6.8	5.4	4.8	4.9	3.3	4.3	4.1	
Rural*	9.3	8.5	7.4	7.3	7.6	7.0	7.9	7.0	
Non-Rural*	9.2	8.4	7.6	7.3	8.3	7.7	8.2	7.9	

Sources: GA Data – GA DPH OASIS<sup>49</sup>; National Data - CDC National Vital Statistics System<sup>50</sup>

\*Rural = 108 counties in Georgia having less than 35,000 residents per the 2000 Census

\*Non-rural = 51 counties in Georgia having 35,000 or more residents per the 2000 Census

National data released by the CDC in July 2015 indicates that for the first time, in 2013, the United States had more fetal mortalities (23,595) than infant mortalities (23,446).<sup>51</sup>

## Live Births

Live Births in Georgia (2003-2014)								
	2003	2005	2009	2010	2011	2012	2013	2014
<b>Total Births in GA</b>	135,831	140,903	141,332	133,668	132,239	130,112	128,511	130,776
Non-Rural Residence	113,651 (83.7%)	117,957 (83.7%)	118,648 (83.9%)	112,207 (83.9%)	111,473 (84.3%)	109,558 (84.2%)	108,481 (84.4%)	110,467 (84.5%)
Rural Residence	22,180 (16.3%)	22,946 (16.3%)	22,684 (16.1%)	21,461 (16.1%)	20,766 (15.7%)	20,554 (15.8%)	20,030 (15.6%)	20,309 (15.5%)
Black	42,820	45,457	45,997	44,132	43,907	43,213	43,219	44,348
Hispanic	18,180	21,786	24,471	21,053		17,320	16,938	17,183
White	87,873	89,695	68,651	65,085	64,960	65,509	64,437	67,600
Asian	4,334	4,805	4,450	4,383	4,671	4,813	4,631	5,334
Young mothers (ages 10-19 yrs old)	16,134	16,754	16,463	14,469	13,087	11,623	10,389	9,736
Unmarried mothers	51,804 (38.2%)	57,295 (40.7%)	63,759 (45.2%)	60,810 (45.6%)	59,613 (45.1%)	57,888 (45.0%)	57,744 (45.4%)	58,774 (45.1%)
Tobacco use	10,010 (7.5%)	10,418 (7.5%)	9,201 (6.5%)	8,397 (6.3%)	7,964 (6.0%)	7,851 (6.1%)	7,727 (6.0%)	7,795 (6.0%)

Source: GA DPH OASIS<sup>52</sup>

Nationally only 1% of births occur at home, but the number was the highest in 2014 since reporting began for this item in 1989. In 2014, Georgia had 662 documented home births.<sup>53</sup>

CDC data shows that Georgia was the only state in the country with a higher cesarean delivery rate in 2013 (34.2%) than in 2012 (33.8%). All other states had decreased their rates from 2012 to 2013. In 2013, the national C-Section rate was 32.7%.<sup>54</sup> In 2014, the national C-section rate was 32.2% with Georgia being at 33.8%. The states with the highest rates for C-Section in 2014 were Florida (37.2%), New Jersey (37.4%), Mississippi (37.7%) and Louisiana (38.3%).<sup>55</sup>

**For 2011, the Guttmacher Institute reports the national average at 45%, while reporting Georgia's 2010 unintended pregnancy rate at 60%.**

In 2014, certified nurse midwives attended 8% of hospital births across the country.<sup>56</sup> In 2012, certified nurse midwives attended 15.3% of Georgia's births.<sup>57</sup>

The 2014 U.S. teen birth rate for girls 15-19 years old was 24.2 per 1,000 births, the lowest rate ever recorded, and a 9% decline from 2013 (26.5).<sup>58</sup> The Georgia teen birth rate for 15-19 year olds declined as well from a rate of 30.3 in 2013 to 28.3 in 2014.<sup>59</sup>

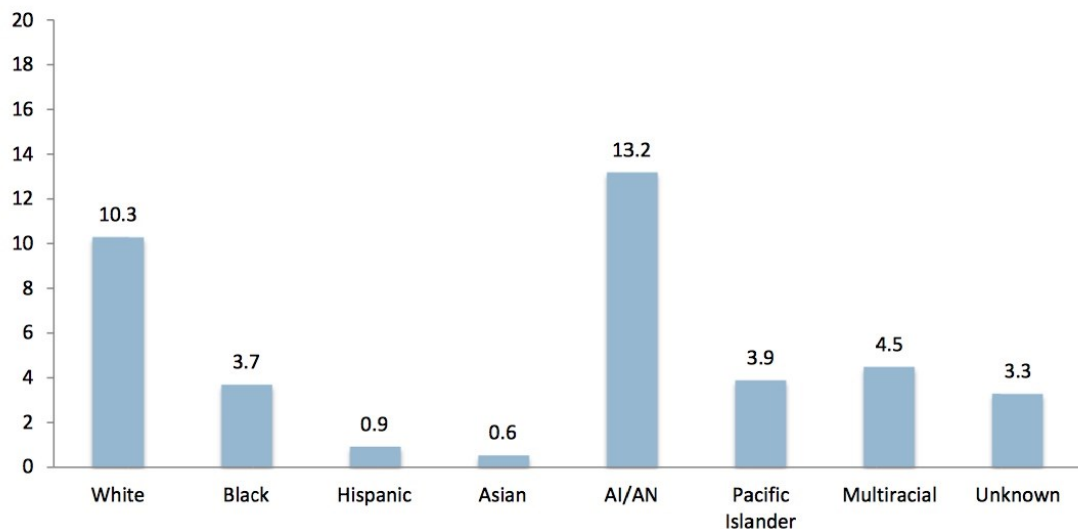
Nationally, the percentage of births to unmarried women was down slightly to 40.2% in 2014,<sup>60</sup> while Georgia's remained above 45%. "Births to unmarried women are at greater risk for adverse outcomes, including low birth weight, preterm births, and infant mortality."<sup>61</sup>

Nationally, in 2006 49% of all pregnancies (including miscarriages, abortions, fetal losses, and live births) were unintended.<sup>62</sup> For 2011, the Guttmacher Institute reports the national average at 45%,<sup>63</sup> while reporting Georgia's 2010 unintended pregnancy rate at 60% (this data includes births, abortions, and fetal losses).<sup>64</sup> GA DPH recently reported 2009-2011 PRAMS survey data (of mothers who delivered live babies) showing those Georgia mothers' unintended pregnancies at 52.6%, 51.4%, and 54.8% respectively.<sup>65</sup>

## Cigarette Smoking/Tobacco Use in Pregnancy

Smoking is an addiction that targets youth. National data shows that nearly 90% of all smokers began smoking in their teens.<sup>66</sup> Smoking during pregnancy increases risks to mother and baby, including placental abruptions, low birthweight, small for gestational age babies, oral clefts and nonsyndromic heart defects.<sup>67</sup> Cigarette smoking is a self-reported data measure on birth certificate forms. Given the stigma of smoking, it is a data point that is likely underreported. Research in Ohio found that although 8.6% of mothers reported smoking in the third trimester of pregnancy on their baby's birth certificate, 16.5% had high levels of nicotine in their hospital admission urine and another 7.5% had lower levels of nicotine (likely from second-hand smoke) in their hospital admission urine.<sup>68</sup> Annually, more than 7,500 of Georgia's pregnant mothers report that they smoked cigarettes during pregnancy. While Georgia's data shows that is about 6% of pregnant women, general survey data of adult women in Georgia for 2013 shows that 15.4% smoke regularly.<sup>69</sup> 2011 PRAMS survey data from 24 states shows that 10% of women reported smoking during the last three months of pregnancy.<sup>70</sup> Additional Georgia maternal smoking data based on race/ethnicity is below.

Percent of mothers who smoked during pregnancy by race/ethnicity, Georgia, 2009 to 2012



Source: Vital Records 2008-2012

Reprinted from GA DPH Cross-Cutting Issues in MCH, Georgia Title V Needs Assessment (2015)<sup>71</sup>

The table below shows the percent of mothers who smoked during pregnancy from 2008-2012 in each of Georgia’s public health districts.

<b>% of Mothers who Smoked During Pregnancy (2008-2012)</b>	
<b>Georgia’s Pubic Health Districts</b>	<b>%</b>
Northwest Health District (Rome)	14.4%
North Georgia Health District (Dalton)	5.9%
North Health District (Gainesville)	6.3%
Cobb/Douglas Health District	2.9%
Fulton Health District	2.7%
Clayton County Health District (Jonesboro)	3.5%
East Metro Health District (Lawrenceville)	2.5%
DeKalb Health District	1.8%
LaGrange Health District	10.0%
South Central Health District (Dublin)	12.6%
North Central Health District (Macon)	10.4%
East Central Health District (Augusta)	6.9%
West Central Health District (Columbus)	7.1%
South Health District (Valdosta)	5.3%
Southwest Health District (Albany)	4.4%
Southeast Health District (Waycross)	13.4%
Coastal Health District (Savannah)	7.0%
Northeast Health District (Athens)	9.5%
Unknown	20.3%

Source: GA DPH from Vital Records <sup>72</sup>

## Premature Births

A premature baby is an infant who is born before the completion of 37 weeks gestation.

**NOTE:** Beginning with the 2014 data year (and retroactively going back to 2008 data), the estimated gestational age at birth, the “obstetric estimate of gestation” box on the birth certificate is being used nationally to calculate prematurity rather than the traditional LMP (last menstrual period) box. This new measurement is generating about a 2% lower rate of prematurity compared to the old method of measurement.<sup>73</sup>

**Risk factors for giving birth prematurely include:**

- Having had a previous premature baby
- Carrying multiples (twins, triplets, or more)
- Problem with the uterus or cervix
- Medical condition of the mother (high blood pressure, diabetes, clotting disorder, etc.)
- Certain infections during pregnancy
- Cigarette smoking, alcohol use or illicit drug use during pregnancy<sup>74</sup>

A recent Harvard study also found that “depressive symptoms significantly increased the risk of preterm birth, very preterm birth, and SGA at birth among women who were not treated for depression with an antidepressant medication.” The study also notes that depression may affect up to 15% of pregnant women.<sup>75</sup>

Group prenatal care has also been associated with a reduction in preterm delivery in women with high-risk demographics.<sup>76</sup>

“On average, the medical care for premature babies is nearly \$50,000 in the first year of life compared to just \$4,000 for full term babies.”<sup>77</sup>

Georgia DPH reports that “it costs more than \$27,000 per pound to raise a low or very low birth-weight baby to normal weight. Improved birthweight reduces Medicaid cost on average by \$12,000 to \$15,000 per infant.”<sup>78</sup>

Georgia’s birth certificate data shows that in 2012 at least 45% of all of Georgia’s births were covered by Medicaid.<sup>79</sup>

The OASIS team has recalculated Georgia data starting with birth year 2008 using the “obstetric estimate” for determining prematurity; therefore, data older than 2008 is not presented.

Premature Births in Georgia (2008-2014)								
	2008	2009	2010	2011	2012	2013	2014	2014 Nati'l Rate
Percent of total Births	11.9%	11.4%	11.4%	11.0%	11.0%	10.7%	10.8%	9.57%
Black	14.9%	14.5%	14.2%	14.0%	14.0%	13.6%	13.7%	13.23%
Hispanic	9.3%	8.9%	9.2%	8.7%	8.9%	8.7%	9.2%	9.03%
White	10.6%	10.1%	10.4%	9.7%	9.6%	9.4%	9.3%	8.91%
Asian	7.9%	8.8%	8.4%	9.5%	8.9%	7.8%	8.4%	
Rural	12.5%	11.9%	12.1%	11.8%	11.4%	10.8%	11.6%	
Non-Rural	11.7%	11.3%	11.3%	10.9%	10.9%	10.7%	10.6%	

Sources: GA Data - DPH OASIS;<sup>80</sup> National Data - CDC<sup>81</sup>



Georgia DPH reports that “it costs more than \$27,000 per pound to raise a low or very low birthweight baby to normal weight.”

In 1990 Georgia ranked 47th for its preterm births, in 2000 the state held the 33rd spot, in 2010 Georgia ranked 44th, and the latest 2014 Kids Count Data has Georgia holding the 38th spot,<sup>82</sup> but the CDC data puts Georgia in the 43rd spot for 2014.<sup>83</sup>

OASIS shows the 2014 percentages of premature births for the mother’s age to be as follows:

Less than 20 years old: **11.0%**                      30-34 years old: **10.4%**  
 20-24 years old: **10.7%**                              35-39 years old: **12.2%**  
 25-29 years old: **10.0%**                              40 years and older: **16.1%**

In 2014, the twin birth rate hit a new high for the nation, 33.9 per 1,000 births; Georgia’s twin birth rate was 33.1.<sup>84</sup>

In 2014, OASIS shows that 16.7% (2,353) of all of Georgia’s premature babies were born to mothers residing in rural counties while 83.3% (11,706) of all of Georgia’s premature babies were born to mothers residing in non-rural counties.

Rural County	Percent of Premature Births in 2014	Total # of Premature Births in the County in 2014
Berrien	16.1%	44
Calhoun	22.2%	10
Clay	16.7%	6
Clinch	16.3%	17
Dooly	16.0%	15
Evans	18.3%	26
Glascocock	18.5%	5
Hancock	19.2%	14
Montgomery	17.2%	15
Randolph	24.0%	18
Seminole	18.5%	20
Twiggs	17.0%	16

Source: GA DPH OASIS

In 2014, the following **non-rural Georgia counties** had prematurity percentages of ≥13% (*next page*):

Non-Rural County	Percent of Premature Births in 2014	Total # of Premature Births in the County in 2014
Bibb	14.5%	327
Dougherty	14.4%	183
Glynn	13.7%	137
Spalding	16.6%	136
Tift	15.4%	95

Source: GA DPH OASIS

## Low Birthweight Babies

A low birthweight (LBW) baby is a baby born weighing less than 2500gms/5.51 pounds. The most common risk factors for giving birth to LBW babies are generally the same as for premature babies. However, LBW babies can be “term” babies who are small for gestational age (SGA). Risk factors for term babies who are small for gestational age include, small maternal stature, poor nutrition, smoking, illicit drug use, hypertension, and short inter-pregnancy interval (inadequate birth spacing).<sup>85</sup>

Georgia Low Birthweight Babies (2003-2014)									
	2003	2005	2009	2010	2011	2012	2013	2014	2014 Nat'l Rate
Overall	9.0%	9.4%	9.5%	9.8%	9.4%	9.4%	9.5%	9.5%	8.0%
Black	13.1%	14.4%	13.7%	13.9%	13.5%	13.5%	13.6%	14.0%	13.2%
Hispanic	5.6%	5.9%	6.4%	6.4%	6.4%	6.4%	6.8%	6.8%	7.1%
White	7.0%	7.0%	7.5%	7.9%	7.4%	7.3%	7.2%	6.9%	7.0%
Asian	7.9%	8.3%	8.6%	8.6%	9.4%	8.7%	8.4%	8.5%	
Rural	9.9%	10.3%	10.4%	10.3%	9.9%	9.7%	9.6%	10.0%	
Non-Rural	8.8%	9.3%	9.3%	9.7%	9.3%	9.3%	9.4%	9.4%	

Sources: GA Data- DPH OASIS;<sup>86</sup> National Data- CDC <sup>87</sup>

For the last five years of data (as noted in the table below), consistently, babies born to mothers utilizing Medicaid have had lower rates of low birthweight than the overall state rate.<sup>88</sup>

Low Birthweight Babies for Georgia CMOs					
CMO	2010	2011	2012	2013	2014
Amerigroup	7.81%	7.00%	8.45%	8.84%	8.87%
Peach State	7.45%	7.00%	8.53%	8.73%	9.04%
WellCare	7.53%	7.70%	8.02%	8.32%	9.21%
<b>GA overall %</b>	<b>9.8%</b>	<b>9.4%</b>	<b>9.4%</b>	<b>9.5%</b>	<b>9.5%</b>

Source: Georgia Department of Community Health

## 2016 State of the State of Maternal & Infant Health in Georgia

In 1990 Georgia ranked 47th for its low birthweight babies, in 2000 the State held the 41st spot, in 2010 Georgia ranked 46th, and the latest 2014 data has Georgia holding the 47th spot once again.<sup>89</sup>

OASIS shows the 2014 percentages of LBW births for the mother's age to be as follows:

Less than 20 years old: **11.2%**    25-29 years old: **8.6%**    35-39 years old: **10.0%**  
 20-24 years old: **10.4%**    30-34 years old: **8.3%**    40 years and older: **13.2%**

In 2014, OASIS shows that 15.5% (2,027) of all of Georgia's LBW babies were born to mothers residing in rural counties while 84.5% (10,380) of all of Georgia's LBW babies were born to mothers residing in non-rural counties.

In 2014, the following **rural Georgia counties** had LBW percentages of  $\geq 14\%$ :

Rural County	Percent of LBW Births in 2014	Total # of LBW Births in the County in 2014
Ben Hill	15.3%	37
Berrien	14.6%	40
Calhoun	15.6%	7
Dooly	16.0%	15
Hancock	16.4%	12
Montgomery	18.4%	16
Randolph	20.0%	15
Seminole	15.7%	17
Turner	15.3%	17
Twiggs	16.0%	15
Warren	14.0%	8
Wilkinson	14.9%	18

Source: GA DPH OASIS

In 2014, the following **non-rural Georgia counties** had LBW percentages of  $\geq 11\%$ :

Non-Rural County	Percent of LBW Births in 2014	Total # of LBW Births in the County in 2014
Bibb	14.2%	320
Dougherty	14.1%	179
Glynn	12.8%	128
Laurens	11.3%	68
Muscogee	11.2%	349
Richmond	12.2%	357
Spalding	14.8%	121
Thomas	12.0%	72
Tift	11.4%	70

Source: GA DPH OASIS

# Infant Mortality

An infant death is the death of a child before 12 months of age/first birthday. As outlined in the following chart, while most babies grow and thrive, in the United States, for every 1,000 babies born, six will die—but in Georgia seven to eight will die. According to the CDC, in 2014, the most common reasons for infant deaths nationally, in order of prevalence, were birth defects (20.4%), short gestation/low birth weight (18.0%), maternal complications (6.8%), SIDS (6.7%), unintentional injuries (5.0%), complications of cord, placenta, and membranes (4.2%), sepsis of newborn (2.3%), respiratory distress of newborn (2.0%), diseases of the circulatory system (1.9%), and neonatal hemorrhage (1.9%).<sup>90</sup>

Georgia Infant Mortality Rates (2003-2014)									
	2003	2005	2009	2010	2011	2012	2013	2014	Nat'l Rate 2014
Overall rate per 1,000 births (#)	8.5 (1,153)	8.0 (1,124)	7.5 (1,060)	6.3+ (836)	6.8 (904)	6.7 (878)	7.2 (931)	7.7 (1,004)	5.82
Black	13.8	12.4	13.1	10.0	11.4	10.5	11.6 (502)	13.3 (589)	
Hispanic	5.1	3.9	3.4	3.6	3.3	4.9	4.9 (83)	4.9 (84)	
White	6.2	5.7	6.5	5.7	5.8	5.3	6.3 (403)	5.5 (374)	
Asian	2.5	6.2	2.2	2.3	4.3	2.5	3.7 (17)	3.9 (21)	
Rural	*	9.4	8.2	7.4	7.1	7.7	8.1 (162)	8.6 (174)	
Non-Rural	2.2	7.7	7.4	6.0	6.8	6.6	7.1 (769)	7.5 (830)	
Medical Condition	4.6 (629)	4.1 (583)	3.8 (544)	3.0 (398)	3.4 (447)	3.4 (446)	4.1 (527)	4.1 (535)	
{Prematurity}	{{(231)}}	{{(177)}}	{{(199)}}	{{(143)}}	{{(156)}}	{{(205)}}	{{[222]}}	{{(231)}}	
Birth Defects	(159)	(198)	(191)	(149)	(165)	(138)	(142)	(183)	
SIDS	(104)	(125)	(102)	(123)	(128)	(102)	(91)	(109)	
External Causes	(41)	(27)	(44)	(22)	(15)	(16)	(13)	(49)	

Sources: GA Data- DPH OASIS;<sup>91</sup> National Data- CDC<sup>92</sup>

\*Rates based on 1-4 deaths are not shown.

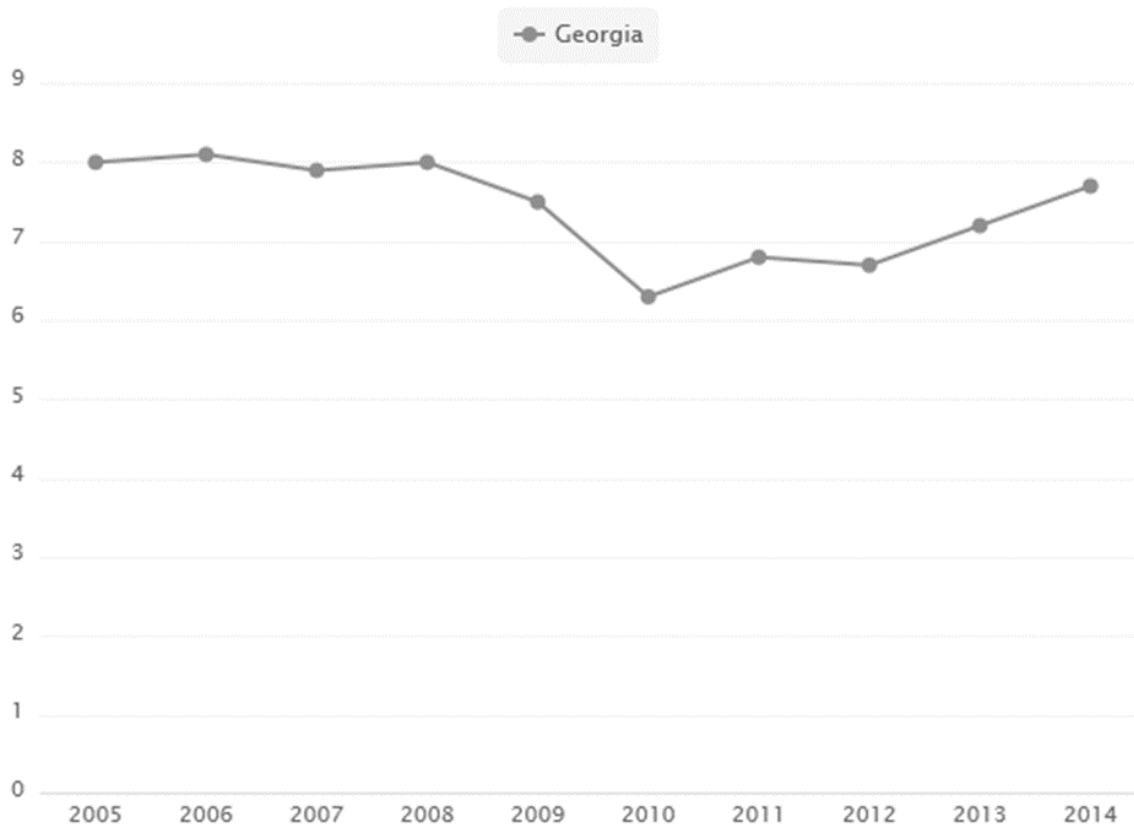
{OASIS has the prematurity figures as a subcategory under “conditions”}

+DPH believes 2010 data is under reported and estimates the actual rate to be 6.5.

The CDC reports that the national infant mortality rate for 2014 of 5.82 was a historic low.<sup>93</sup>

## 2016 State of the State of Maternal & Infant Health in Georgia

In 1990 Georgia ranked 50th for its infant mortality, in 2000 the state held the 41st spot, in 2010 Georgia ranked 26th, and the latest 2014 data has Georgia holding the 45th spot.<sup>94</sup>



## INFANT MORTALITY (PER 1,000) (RATE PER 1,000)

Georgia Family Connection Partnership  
KIDS COUNT Data Center, [datacenter.kidscount.org](http://datacenter.kidscount.org)  
A project of the Annie E. Casey Foundation

In 2014, OASIS indicates that the following counties in Georgia had 15 or more resident infant deaths:

Bibb 34	DeKalb 91	Henry 19
Chatham 30	Dougherty 18	Muscogee 34
Clayton 39	Fulton 109	Paulding 15
Cobb 57	Gwinnett 75	Richmond 31
Columbia 15	Hall 15	Rockdale 17

In 2014, OASIS indicates the following counties in Georgia had Infant Mortality Rates of  $\geq 16.0$  infant deaths per 1,000 live births:

<b>County</b>	<b>Rate of Death/1,000</b>	<b>Total # of Deaths</b>
Butts	20.3	5
Crisp	21.1	6
Decatur	17.5	6
Jefferson	28.8	6
Rockdale	17.3	17

Source: GA DPH OASIS

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.” “The members of the Georgia Child Fatality Review Panel are experts in the fields of child abuse prevention, mental health, family law, death investigation, and injury prevention.”<sup>95</sup> So while OASIS data is generated from the cause of death as listed on death certificates, the Panel looks deeper into the records, describing trends and patterns, and importantly, identifying potential prevention strategies for averting future similar deaths.

Of the 1,515 Georgia child (birth to age 17) deaths in 2014, the Panel reviewed 503. Of those, they reviewed 202 infant deaths (of the 1,004 infant deaths). The report indicates that **158** of the infant cases reviewed were sleep related deaths and provides the following details:

- **95** occurred in an adult bed
- **33** occurred in a crib or bassinette
- **96** (61%) were SUID (sudden unexplainable/undetermined infant death—but had one or more risk factors in the setting such as pillows, blankets, bumper pads, toys, other people, or on a sofa or chair)
- **52** (33%) were asphyxia/suffocation
- **8** were sleep-related medical deaths
- **2** were determined to be SIDS (sudden infant death-no risk factors in setting)
- Racial Demographics:
  - 61% were African-American
  - 31% were white
  - 6% were Hispanic
- **31** caregivers had a history of substance abuse with 22 of those persons bed sharing at the time of death
- **11** caregivers were under the influence at the time of death
- **52** (33%) infants had prenatal maternal tobacco exposure

Unfortunately, data as to whether the infant was fed breast milk or formula substitute just before death was not reported.<sup>96</sup>

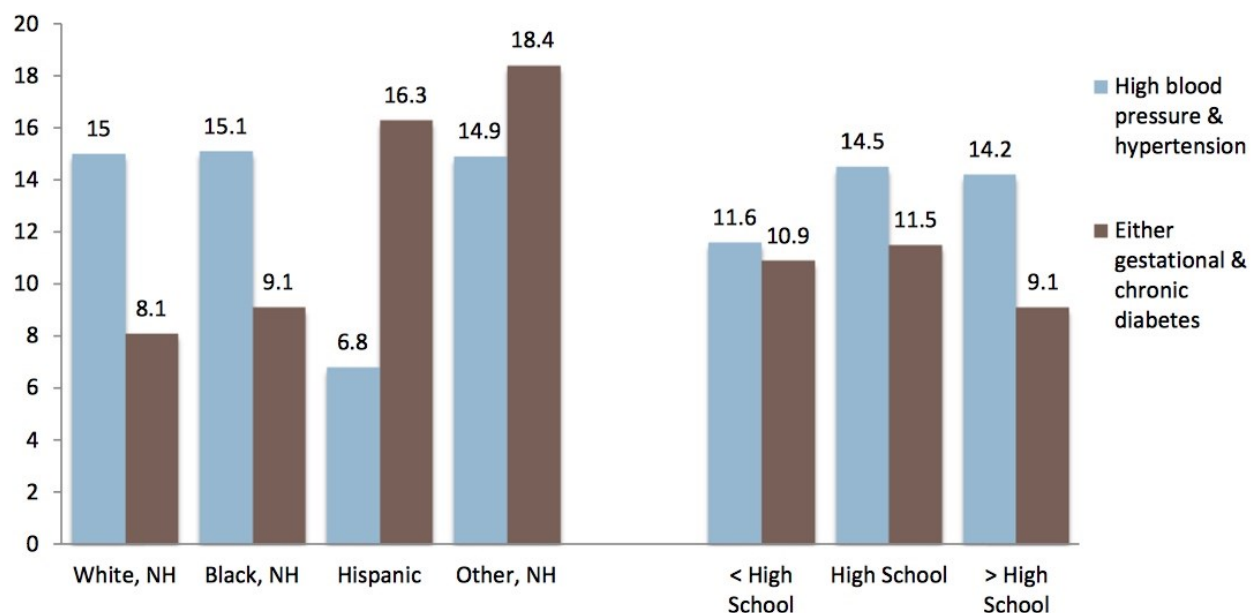
Another factor that may increase an infant’s risk of SIDS is swaddling. Families are attracted to this practice of wrapping a baby tightly in a blanket because of the belief that babies feel comforted and will sleep longer and better. It is unknown whether this has been a factor in any Georgia deaths since swaddling is not mentioned in the Georgia report, but a recent review published in the *Pediatrics* journal found that “the risk of SIDS from swaddling increased with age, with the highest risk associated with infants age ≥ 6 months.”<sup>97</sup>

In 2014, the Panel determined that maltreatment was the direct cause or contributing factor in 99 Georgia child deaths, including 30 infant deaths.<sup>98</sup> In 2013, of the total Georgia child death cases (not just infants), maltreatment by 14 biological fathers, 31 biological mothers, 8 stepfathers, and 1 stepmother caused or contributed to the child’s death.<sup>99</sup> That data was not included in the 2014 report.

## Maternal Disease

Chronic disease increases risk for pregnant mothers and their unborn babies. Moreover, “women with a history of preeclampsia have a twofold increased risk of ischemic heart disease, stroke, or thromboembolic event in the five to 15 years following pregnancy.”<sup>100</sup> The charts below detail maternal hypertension and diabetes during pregnancy and are excerpted from the Georgia DPH Maternal Women’s Health, Georgia Title V Needs Assessment (2015).<sup>101</sup>

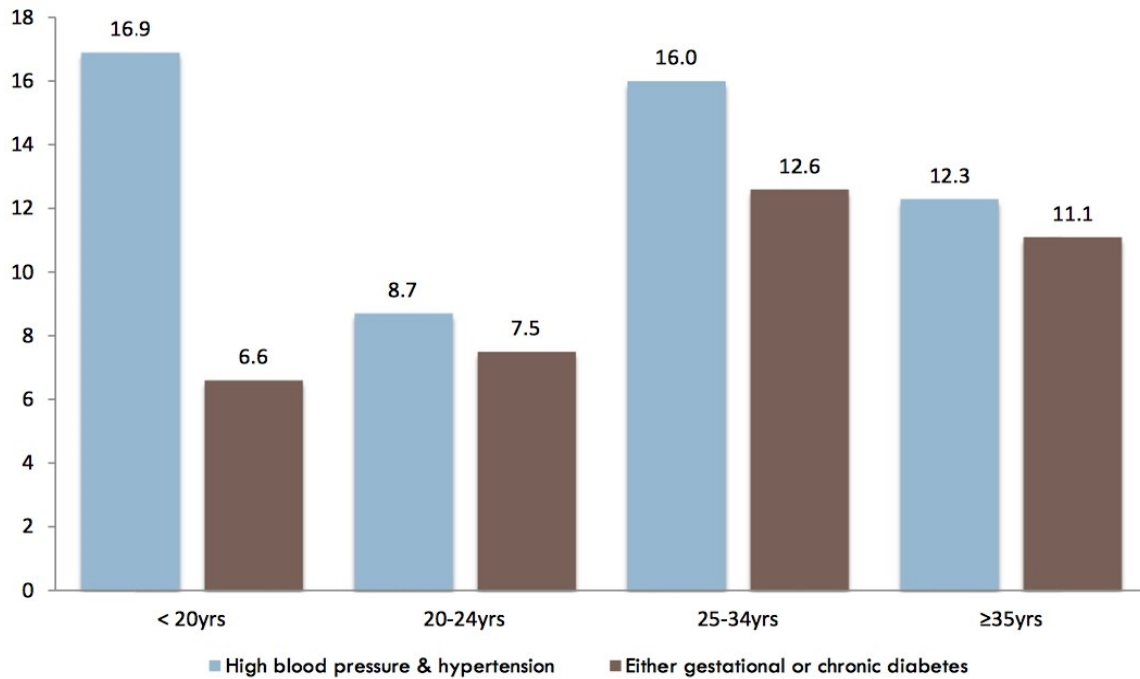
Percent of women reporting high blood pressure, hypertension, preeclampsia, toxemia or diabetes during pregnancy by race/ethnicity and education, Georgia, 2009 to 2011



Source: PRAMS 2009-2011



Percent of women reporting high blood pressure, hypertension, preeclampsia, toxemia or diabetes during pregnancy by maternal age, Georgia, 2009 to 2011



Source: PRAMS 2009-2011

Cardiology consults are recommended for women with a personal history of pre-pregnancy type 2 diabetes mellitus, hypertension, morbid obesity (BMI>40), cardiac disease, repaired heart defect, arrhythmia, stroke TIA, heart is at “poor functional class,” or if there is a family history of heart failure, sudden death, hypertrophic cardiomyopathy, arrhythmogenic right ventricular dysplasia, or long QT syndrome.<sup>102</sup>

## Maternal Obesity

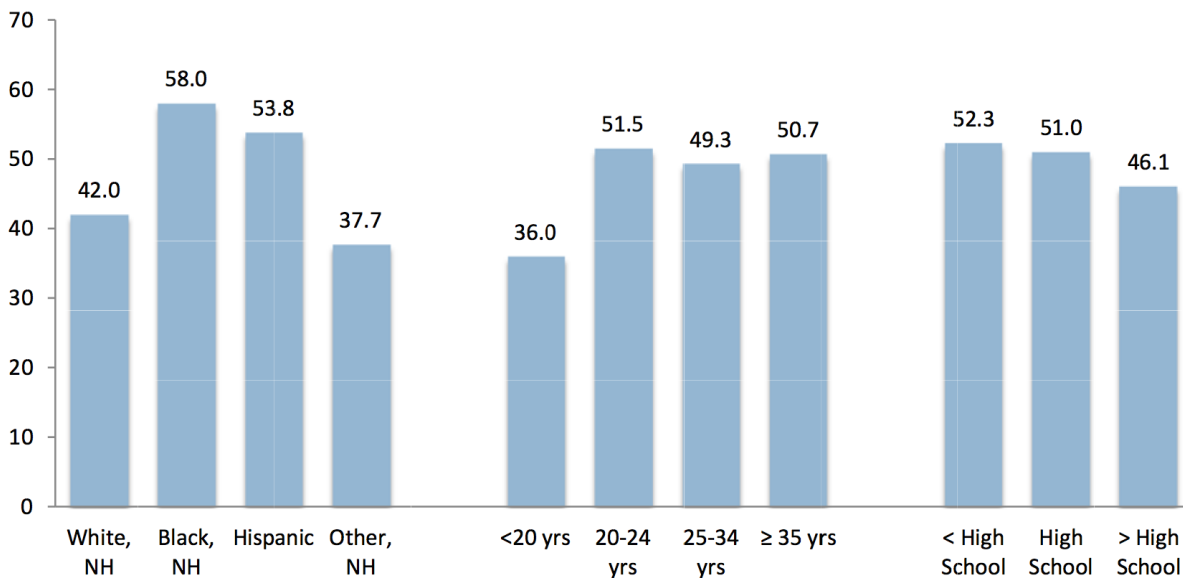
A BMI (body mass index)  $\geq 25$  is overweight,  $\geq 30$  is obese, and  $\geq 40$  is severe obesity.<sup>103</sup> Recent CDC national survey data for 2013-2014 showed that the age-adjusted prevalence of obesity for adult women was 40.4% and that 9.9% of women had a BMI  $\geq 40$ .<sup>104</sup> CDC data from 2011-2014 shows that “the average U.S. woman stands 5’ 3 ¾ “ and weighs 168.5 pounds,” which is more than 16 pounds heavier than in 1988-94.<sup>105</sup>

“Obesity is a risk factor for many medical conditions, including type 2 diabetes mellitus, hypertension, coronary artery disease, and stroke. Pregnancy adds an additional stressor to the already compromised endocrine and cardiovascular system of the obese patient. Obese gravidas are at higher personal risk for antepartum complications as well as difficulties during delivery and post partum.”<sup>106</sup>

Nearly 50% of women in Georgia are entering pregnancy overweight or obese. Appropriate weight gain during pregnancy varies according to pre-pregnancy BMI.

Georgia’s maternal weight data from the DPH PRAMS data is detailed below.

Percent of women entering pregnancy overweight or obese by race/ethnicity, maternal age and education level, Georgia 2009 to 2011



Source: PRAMS 2009-2011  
GA DPH, Maternal and Women’s Health, Georgia Title V Needs Assessment (2015) <sup>107</sup>

## Maternal Use of Alcohol and Illicit Drugs

As of 2008, maternal use of alcohol during pregnancy stopped being collected on birth certificates.<sup>108</sup> However, alcohol intake is part of other survey data collection. Although more Georgia mothers reported alcohol intake during the last three months of pregnancy in 2011 (6.2%) when compared to 2007 (4.9%), for at least the fifth consecutive year, Georgia remains below the national average (which in 2011 was 7.5%). “Neonatal Abstinence Syndrome” (newborn babies exhibiting symptoms of opiate drug withdrawal from maternal exposure) also remains at less than half the national average with Georgia having a rate of 3.1 per 1,000 births in 2012 compared to the national average rate of 8.2.<sup>109</sup> However, better data collection may change Georgia’s ranking. Neonatal Abstinence Syndrome became a reportable condition for surveillance purposes in Georgia on January 1, 2016. Within seven days of identification, healthcare providers are to make a report to DPH when a baby is born to a mother with a history of substance abuse during pregnancy, a newborn shows symptoms of withdrawal or a newborn has a positive drug screen.<sup>110</sup>

**Neonatal Abstinence Syndrome became a reportable condition for surveillance purposes in Georgia on January 1, 2016.**

# Maternal Mortality

The risk of death from complications of pregnancy decreased substantially during the twentieth century, from 850 maternal deaths per 100,000 live births in 1900 to 7.5 in 1982.<sup>111</sup> However, since the early 1980's, the United States maternal death data has shown an upward trajectory.

According to the World Health Organization (WHO), while developing countries still account for 99% (286,000) of the global maternal deaths, the United States has seen a steady rise, going from a Maternal Mortality Ratio of 12 in 1990 to an estimated 28 in 2013 (per 100,000 births with deaths during pregnancy or within 42 days of pregnancy ending).<sup>112</sup> Better data may account for some of the increase, but the preconception health of our mothers has declined as well.

**Two completely different measures are being used to calculate maternal mortality ratios.** It is important not to mix these two different measures when comparing data. Each of the two measures is examining pregnancy-related deaths, but the two have different time frames and perhaps different sources of data.

**One measure**, created by the World Health Organization, looks at pregnancy-related deaths either while pregnant or within 42 days of the pregnancy ending. This is the measure that states typically collect and report to the National Center for Health Statistics (a division of the CDC).<sup>113</sup> In Georgia, this is the measure calculated and reported by DPH on the OASIS system. This system only uses very specific pregnancy-related death within 42 days of delivery ICD-10 diagnosis codes that are recorded on death certificates.

**The second measure**, created collaboratively by the CDC and ACOG in 1987, looks at pregnancy-related deaths either while pregnant or within one year of the pregnancy ending. This wider view was designed to capture conditions caused by pregnancy (particularly cardiac) that can be the cause of death months later. The CDC and state Maternal Mortality Review Committees (MMRCs) review and separately report pregnancy-related deaths within one year of the pregnancy ending.<sup>114</sup> MMRCs collect data using diagnosis codes, the death within a year of pregnancy “check box” on death certificates, charts and other sources.

The Georgia data in the table on the next page is from OASIS and is generated by death certificate diagnosis codes only—not chart reviews. In 2015, OASIS explained that “the number of maternal deaths does not include all deaths occurring to pregnant women, but only those deaths reported on the death certificate that were assigned to causes related to or aggravated by pregnancy or pregnancy management. Furthermore, the number excludes deaths occurring more than 42 days after the termination of pregnancy and deaths of pregnant women due to external causes (unintentional injuries, homicides, and suicides).”<sup>115</sup> OASIS has since removed this explanation and now merely indicates that since 1999 maternal deaths have been identified by the ICD-10 codes A34, O00-095, and O98-O99—which exclude deaths 43 days or more after delivery.<sup>116</sup>

2016 State of the State of Maternal & Infant Health in Georgia

Maternity Mortality Ratios for Georgia (2003-2014)												
	2003	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	U.S. Ratio 2014
Overall rate per 100,000 (actual #)	27.2 (37)	21.3 (30)	14.2 (21)	13.9 (21)	14.3 (21)	24.8 (35)	23.2 (31)	28.7 (38)	17.7 (23)	43.6 (56)	68.8 (90)	23.8
Black	44.4 (19)	50.6 (23)	32.6 (16)	23.5 (12)	27.4 (13)	54.4 (25)	40.8 (18)	50.1 (22)	37.0 (16)	60.2 (26)	87.9 (39)	
Hispanic	33.0 (6)	* (2)	0	* (3)	* (3)	* (2)	* (2)	* (2)	* (1)	* (3)	34.9 (6)	
White	15.9 (14)	6.7 (6)	5.4 (5)	8.9 (8)	10.1 (7)	13.1 (9)	16.9 (11)	20.0 (13)	9.2 (6)	38.8 (25)	72.7 (49)	
Asian	* (3)	* (1)	0	* (1)	0	* (1)	0	* (2)	0	0	* (2)	
Rural	* (3)	* (3)	29.2 (7)	20.7 (5)	* (1)	26.5 (6)	* (4)	43.3 (9)	24.3 (5)	79.9 (16)	39.4 (8)	
Non-Rural	16.5 (34)	22.9 (27)	11.3 (14)	12.6 (16)	16.3 (20)	24.4 (29)	24.1 (27)	26.0 (29)	16.4 (18)	36.9 (40)	74.2 (82)	

Sources: GA Data - DPH OASIS<sup>117</sup> National Data (excluding California and Texas)<sup>118</sup>  
 Rates based on 1-4 deaths are not shown and are indicated by an \*

In 2014, OASIS indicates the following **non-rural** counties had one or more resident maternal deaths:

- |            |             |            |            |             |
|------------|-------------|------------|------------|-------------|
| Baldwin 2  | Cobb 3      | Fulton 5   | Muscogee 2 | Ware 1      |
| Bibb 1     | Coweta 1    | Glynn 1    | Newton 2   | Whitfield 2 |
| Camden 2   | DeKalb 10   | Gordon 1   | Paulding 3 |             |
| Carroll 1  | Dougherty 1 | Gwinnett 7 | Polk 1     |             |
| Chatham 1  | Douglas 1   | Hall 3     | Richmond 3 |             |
| Cherokee 3 | Effingham 1 | Henry 4    | Thomas 3   |             |
| Clarke 3   | Fayette 1   | Liberty 2  | Troup 2    |             |
| Clayton 5  | Forsyth 1   | Murray 2   | Walton 1   |             |

In 2014, OASIS indicates the following **rural** counties had one or more resident maternal deaths:

- |           |          |           |           |
|-----------|----------|-----------|-----------|
| Berrien 1 | Gilmer 1 | Jones 1   | Morgan 1  |
| Crisp 1   | Harris 1 | Madison 1 | Pickens 1 |

While rural mothers only account for 15-16% of our annual live births, in 2011-2013 they disproportionately claimed a higher percent of our maternal deaths at 23.6%, 21.7% and 28.5% respectively. “However, the disparity seen in the higher rural maternal mortality percentage fail[ed] to reach statistical significance, possibly due to small sample sizes.”<sup>119</sup> In 2014, rural resident maternal deaths dropped to only 8.8% of all the maternal deaths in Georgia while rural resident mothers still accounted for 15.5% of the State’s babies.

A 2010 report by Amnesty International lists Georgia at the bottom of the nation with a state rank of 50 for its maternal mortality rate. The report indicates that it used 2006 data with Georgia’s ratio at 20.5 while the national ratio was at 13.3.<sup>120</sup> Amnesty International’s original website citation for their data, from the National Women’s Law Center (NWLC), can no longer be accessed. While Georgia OASIS data for 2006 shows a ratio of only 14.2, perhaps the calculation was using “death within one-year” time frame data and/or possibly aggregating several years of data.

Currently, the NWLC posts the maternal death ratios for each state covering the aggregated years 2001-2006 and lists Georgia at a rate of 20.9 with a ranking of 49th in the country, with only Michigan buffering the bottom.<sup>121</sup> However, again the NWLC does not define which time frame it is using (42 days or one year).

In 2003 the CDC revised the standard death certificate to include check box questions regarding pregnancy within a year of death. Slowly over time, states have moved to the new form. Georgia was an early adopter of the check box questions, likely in 2005, but adopted the entire form in 2008.<sup>122</sup> In 2014, a CDC spokesperson indicated that with state transitions in progress, the rates being reported are not accurate and not comparable year-to-year. It was stated that once all the states are using the updated form, the CDC would begin reporting maternal mortality for the U.S. again.<sup>123</sup>

The most recent data published by the CDC gives only a national ratio using the death within one year of pregnancy time frame. Of the 1,751 deaths within a year of pregnancy that occurred in 2011 and were reported to CDC, the CDC found 702 to actually be “pregnancy-related.” The national pregnancy-related maternal mortality ratio was 17.8 deaths per 100,000 live births in 2011.<sup>124</sup> Extrapolating from the combined 2011-2012 measures now posted on the CDC website, for the year 2012, 1,653 national cases of death within a year of pregnancy were reported with 627 determined to actually be “pregnancy-related.” The CDC reports that the resulting national pregnancy-related maternal mortality ratio was 15.9 deaths per 100,000 live births for the year 2012.<sup>125</sup>

**In 2014, rural resident maternal deaths dropped to only 8.8% of all the maternal deaths in Georgia while rural resident mothers still accounted for 15.5% of the State’s babies.**

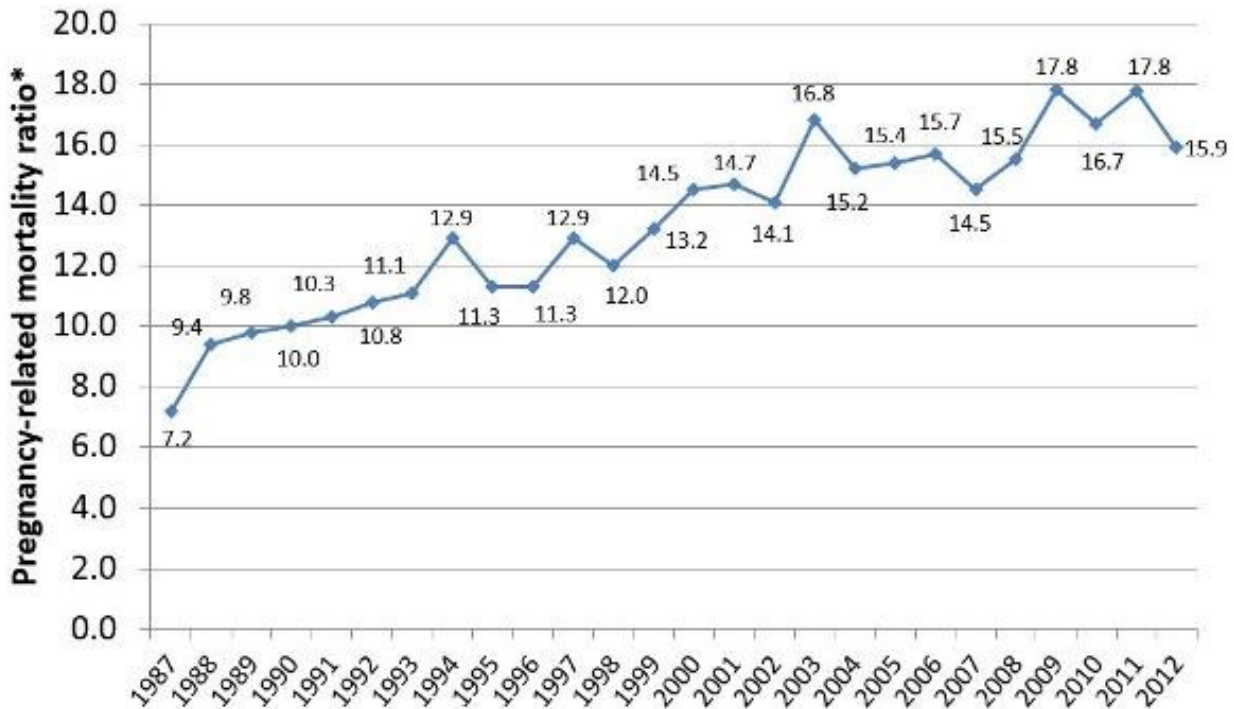
The CDC found considerable racial disparities in pregnancy-related mortality. Per the combined published national data for 2011-2012, the pregnancy-related mortality ratios were:

- 11.8 deaths per 100,000 live births for white women.
- 41.1 deaths per 100,000 live births for black women.
- 15.7 deaths per 100,000 live births for women of other races.

SOURCE: CDC<sup>126</sup>

The graph on the next page shows pregnancy-related mortality ratios (defined as the number of pregnancy-related deaths within a year of pregnancy) per 100,000 live births in the United States between 1987 to 2012.<sup>127</sup>

### Trends in pregnancy-related mortality in the United States: 1987–2012



\*Note: Number of pregnancy-related deaths per 100,000 live births per year.

For every one maternal death there are approximately 50 cases of severe morbidity.<sup>128</sup> Thus, initiatives aimed at reducing maternal mortality will also likely reduce severe morbidity too.

Several years ago Georgia created a Maternal Mortality Review Committee (MMRC) to review maternal deaths where death certificates or other sources indicate that the woman was pregnant within a year of death. Under the leadership of Dr. Michael Lindsay, the Georgia OBGyn Society, DPH, and the CDC, the Committee started its review work with deaths occurring in the year of 2012 and released its first report for those 2012 deaths in June 2015.

The MMRC report, as amended,<sup>129</sup> reflects that of **123** deaths reviewed for the year 2012:

- **26** were “pregnancy-related” deaths within a year of pregnancy being that the cause of death was related to, or aggravated by, the pregnancy.
- **60** were only “pregnancy-associated” deaths within a year of pregnancy. The pregnancy did not cause or directly contribute to the death (the death may have been accidental, homicide, suicide, cancer, cardiac, drug toxicity, etc).
- **37** were not cases. There was no evidence of pregnancy within a year of death. The “pregnant within a year of death” box on the death certificate may have been marked in error,<sup>130</sup> or perhaps some of these represent unrelated miscarriages/abortions.



The causes of death for the “pregnancy-related” deaths as found by the Georgia MMRC were:

Hemorrhage (8) (2 of those ectopic)	Pre-existing Seizure Disorder (3)
Hypertension (4)	Other (2)
Cardiac (4)	Suicide* (1)
Thromboembolism (4)	

Nearly half of all the prenatal records reviewed by the MMRC were missing pre-pregnancy weight and/or height measurements needed for BMI calculation, but of the “pregnancy-related” death records for which the data was available, seven (58%) were overweight or obese with a BMI  $\geq$  25.0 while four were either normal weight or underweight.

**SIDE NOTE:** The latest Georgia PRAMS data shows that from 2009-2011, on average, almost 50% of Georgia’s mothers self-reported a pre-pregnancy height and weight indicating that they began their pregnancies overweight or obese with a BMI of  $\geq$  25.0.<sup>131</sup>

Of the 26 “pregnancy-related” deaths in 2012, the MMRC found that five died while pregnant, four died within one day of the end of pregnancy, and an additional 12 died sometime between day 1 and day 42. Thus, 21 of the 26 deaths (80.7%) occurred either while the woman was pregnant or within 42 days of pregnancy. (OASIS reports that 23 women died either while pregnant or within 42 days of pregnancy.)

The Race/Ethnicity of the 26 women who had pregnancy-related deaths per the MMRC report were as follows:

- Black/African American 18 (69%)
- White 6 (23%)
- Hispanic 1 (4%)
- Unknown 1 (4%)

Georgia’s 26 “pregnancy-related” deaths within a year of pregnancy in 2012 as determined by the MMRC is a maternal mortality ratio of 19.98. This ratio can be compared to the 2012 CDC national ratio of 15.9. Thus, Georgia had 4 more deaths for every 100,000 deliveries than the national average.

The MMRC is close to finishing its chart reviews of maternal deaths in 2013. The final 2013 case report will be posted on the DPH website.<sup>132</sup> For 2013, OASIS is showing 56 “pregnancy-related” deaths within 42 days of delivery with a maternal mortality ratio of 43.6.

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\*Suicides and overdoses  $\geq$  6 months from pregnancy were excluded from review.

The 2014 cases have not yet been reviewed. OASIS shows 90 “pregnancy-related” deaths within 42 days of delivery with a maternal mortality ratio of 68.8. That ratio is more than three times the most recent national ratio reported (22.0 in 2013) for that measure, and it far exceeds, by more than five times, the CDC’s 2012 “pregnancy-related” deaths within one-year of pregnancy ratio (15.9).

## **Postpartum Visits**

Postpartum visits are an important part of obstetrical care for the assessment of healing, management of any chronic medical conditions, discussion of postpartum depression, discussion of any breastfeeding concerns, and providing for a woman’s birth spacing/family planning/contraceptive needs. Published data shows significant disparities between Medicaid mothers and all sources of payment in the rates of postpartum visits. The Department of Community Health Reports that for the year 2013 the rates of postpartum visits for women in each of the three Medicaid CMOs were 60.78%, 61.81% and 63.24%.<sup>133</sup> In 2014, those rates were all improved at 62.94%, 70.3%, and 64.56% respectively.<sup>134</sup> However, 2011 Georgia PRAMS survey data shows that overall 92.3% of women (from all methods of payment) attended their postpartum visit.<sup>135</sup>

## **Perinatal Mood and Anxiety Disorders**

Perinatal Mood and Anxiety Disorders are evidenced by mood and anxiety symptoms that can occur during pregnancy and/or after delivery. The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) notes that 50% of perinatal depressive episodes actually begin prior to delivery and that women may experience anxiety and panic attacks with depression or separately.<sup>136</sup> According to the University of North Carolina at Chapel Hill, School of Medicine, “postpartum anxiety disorders such as panic disorder, obsessive compulsive disorder, and generalized anxiety disorder appear to be as common as postpartum depression and even coincide with depression.”<sup>137</sup>

In addition to depression and anxiety symptoms, postpartum psychosis (characterized by delusions and hallucinations), although rare, can also occur.<sup>138</sup> The DSM-5 estimates that psychosis occurs once in every 500 - 1,000 deliveries and is perhaps more common for women delivering their first baby. The risk of psychosis is increased if the woman has experienced prior postpartum mood episodes, has a prior history of depression or bipolar disorder, or has a family history of bipolar disorders. “Once a woman has had a postpartum episode with psychotic features, the risk of recurrence with each subsequent delivery is between 30% and 50%.”<sup>139</sup>

In the realm of perinatal mood disorders, depression is the most studied and discussed. The American Psychological Association estimates that postpartum depression affects 9-16% of postpartum women,<sup>140</sup> and untreated prenatal depressive symptoms has been associated with a 27% increase in the relative risk of preterm birth.<sup>141</sup> In July 2015, ACOG released a statement regarding the importance of perinatal depression screening. In part, the statement said, “the

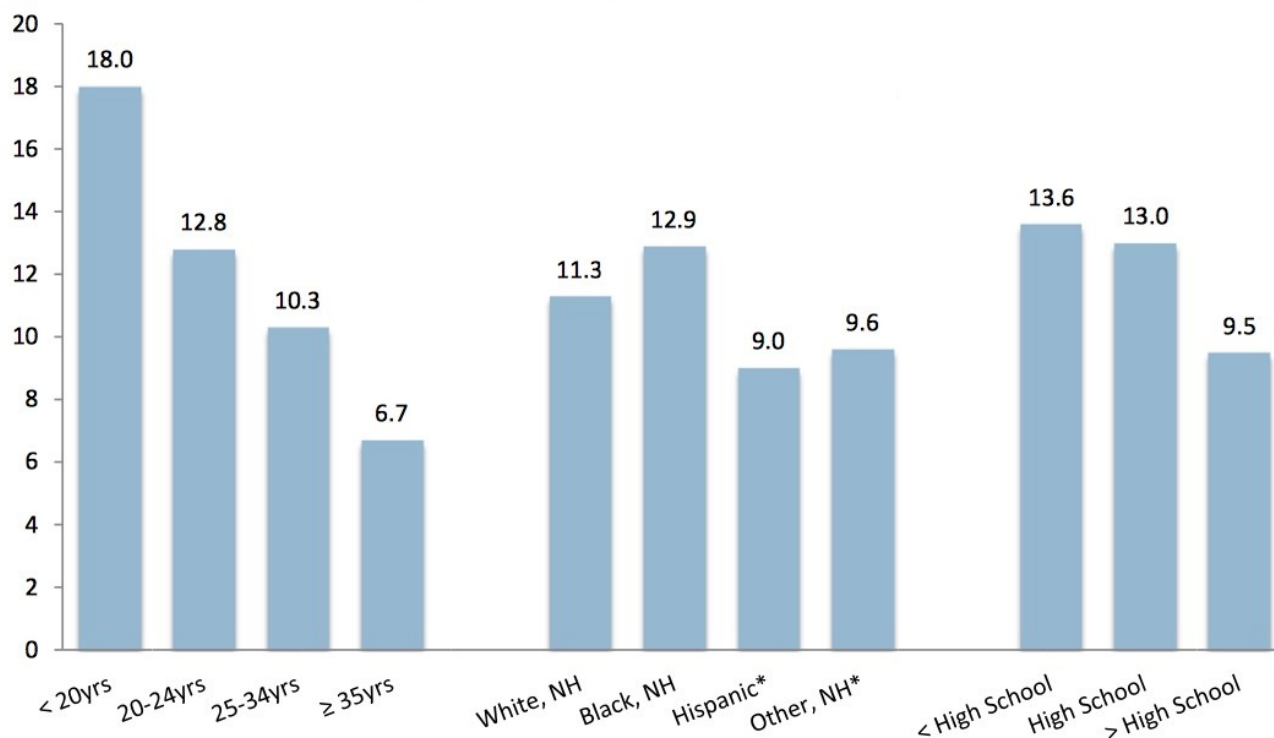
impact of untreated perinatal depression can have a devastating effect on families. Among the common causes of maternal mortality, suicide exceeds both hemorrhage and hypertensive disorders. Clearly, it is essential that perinatal depression be recognized as a serious medical condition with long-term implications for the mother and for her family.”<sup>142</sup>

**The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) notes that 50% of perinatal depressive episodes actually begin prior to delivery and that women may experience anxiety and panic attacks with depression or separately.**

Of note, the Georgia Maternal Mortality 2012 Case Review Report (pub 2015) indicates that there was one pregnancy-related suicide death and nine pregnancy-associated suicide deaths within a year of pregnancy.<sup>143</sup>

Currently, Georgia only publishes data on postpartum depression. Georgia 2009 – 2011 PRAMS survey data shows the percentages of self-reported depression to be 11.6%, 14.5% and 8.1% respectively, with depression being most prevalent among teen mothers.<sup>144</sup>

Percent of mothers who reported postpartum depression symptoms in Georgia, by maternal age, race/ethnicity, and education level, 2009 to 2011



Source: PRAMS 2009-2011

Reprinted from GA DPH Maternal and Women’s Health, Georgia Title V Needs Assessment (2015).<sup>145</sup>

# Breastfeeding

“Milk produced by mammals to feed their young is species-specific in composition. The major proteins in human milk are whey (60%-80%) and casein (20%-40%). Human milk also contains growth factors, immune factors, cytokines, and other substances shown to be beneficial to the newborn infant that cannot be replicated in artificial feedings.”<sup>146</sup>

Breastfeeding has significant health benefits for both the baby and mother. For the baby, breastfeeding is associated with a reduction in the risk of many illnesses including the risk of ear infections by 50%, lower respiratory infections by 72%, SIDS by 36%, gastrointestinal infections by 64%, gluten intolerance by 52%, obesity by 24%, and more (see table below).<sup>147</sup> Additionally, in premature babies, breast milk is associated with a substantial reduction in the risk of necrotizing enterocolitis, and retinopathy of prematurity,<sup>148</sup> and it has been associated with improved cardiac development and function into adulthood.<sup>149</sup> Breastfeeding reduces the risk of oral caries and supports the natural structural growth within the infant’s mouth reducing the risk of crowded or misaligned teeth and reducing need for later orthodontic treatment.<sup>150</sup> Improved brain development with higher IQs, education, and income has also been associated with breastfeeding.<sup>151</sup>

<b>Childhood Illness and Disease Risk Reduction with Breastfeeding</b>	
Sudden Infant Death Syndrome	36%
Otitis Media (Ear Infections)	50%
Upper Respiratory Infections	63%
Lower Respiratory Infections	72%
RSV Bronchiolitis	74%
Asthma w/family hx / w/out family hx	40% / 26%
Atopic Dermatitis	42%
Gastrointestinal Infections	64%
Gluten Intolerance (Celiac Disease)	52%
Type 1 Diabetes / Type 2 Diabetes	30% / 40%
Obesity (4% reduction for each mo breast-fed)	24%

SOURCE: American Academy of Pediatrics

For the mother, breastfeeding is associated with reductions in the risk of breast cancer, ovarian cancer, diabetes, and cardiovascular disease.<sup>152</sup> Successful breastfeeding, when the mother planned breastfeeding prenatally, has also been correlated with lower rates of postpartum depression.<sup>153</sup>

**Georgia's share of the savings in direct medical costs with optimal breastfeeding is estimated to be at least \$99 million annually: \$76 million in pediatric care costs and \$23 million in maternal care costs.**

Another important benefit of breastfeeding is the bonding created between the mother and child which has been associated with a substantial decrease in the risk of maternal maltreatment. In a 15-year Australian study of nearly 6000 children, researchers found “an inverse relationship between breastfeeding duration and maternally perpetrated maltreatment. The prevalence of maternal maltreatment increased as the duration of breastfeeding decreased. Children with no substantiated maltreatment were more often breastfed for  $\geq 4$  months. After adjusting for multiple confounders, there was a nearly fourfold increase in the odds of maternal neglect for non-breastfed children, compared with children who were breastfed for  $\geq 4$  months.”<sup>154</sup>

Because of the significant health benefits of breastfeeding, the American Academy of Pediatrics (AAP) recommends exclusive breastfeeding for the first six months, with breastfeeding continuing thereafter with the introduction of foods, until the infant is at least 12 months old.<sup>155</sup>

The health benefits, however, are not the only reasons to support breastfeeding. Sustained breastfeeding provides substantial dollar savings too. If 90% of mothers in the U.S. followed the AAP breastfeeding recommendations, \$14 billion in pediatric care costs, and \$18 billion in maternal care costs would be saved annually.<sup>156</sup>

Georgia's share of the savings in direct medical costs with optimal breastfeeding is estimated to be at least \$99 million annually: \$76 million in pediatric care costs and \$23 million in maternal care costs.<sup>157</sup>

Using 2014 dollars, it is estimated that each baby who is breastfed for just three months will save at least \$750 in medical care expenses (compared to formula fed babies) in the first year of life.<sup>158</sup>

Georgia's WIC Department reports that an exclusively breastfed WIC infant saves Medicaid and WIC \$160 per month in the first six months of life.<sup>159</sup>

**SIDE NOTE:** Every year, the formula companies garner **\$4 billion** from the U.S. economy.<sup>160</sup>

While breastfeeding is highly important for optimum health and dollar savings, Georgia lags considerably in breastfeeding data measures.

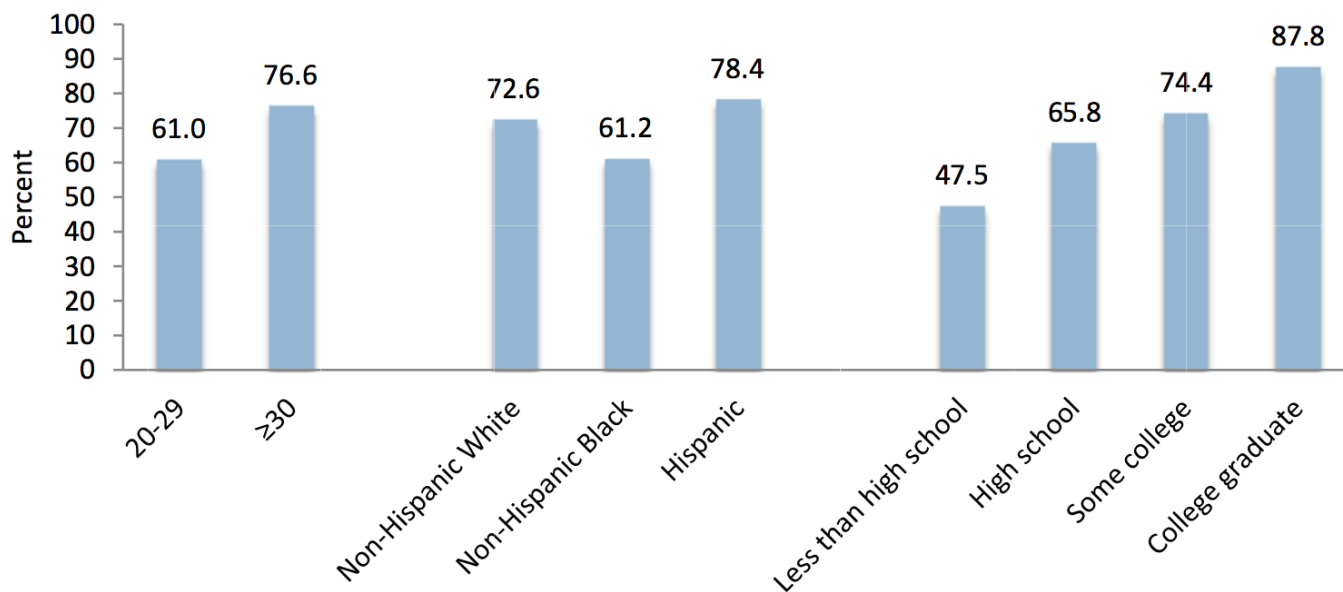
<b>How Georgia compares to the rest of the nation as of 2012 (with 2011 data where indicated because 2012 data is not available for the measure)</b>				
<b>Breastfeeding</b>	<b>Georgia % in 2012</b>	<b>Nat'l Ave % as of 2011</b>	<b>GA Ranking in 2012</b>	<b>Healthy People 2020 Goals</b>
Initiation	73.7%	79.2%	39 <sup>th</sup>	81.9%
Exclusive @ 3 months	35.5%	40.7%	41 <sup>st</sup>	46.2%
Exclusive @ 6 months	18.9%	18.8%	31 <sup>st</sup>	25.5%
Any to 6 months	45.8%	49.4%	35 <sup>th</sup>	60.6%
Any to 12 months	21.7%	26.7%	41 <sup>st</sup>	34.1%
Babies Born in Baby-Friendly Hospital in <b>2011</b>	0%	7.79%	Last w/5 other states	8.1%
Breastfeeding babies getting formula w/in first 2 days of life in <b>2011</b>	27.1%	19.4%	48 <sup>th</sup>	14.2%
IBCLCs/ 1,000 births in <b>2011</b>	2.50	3.48	42 <sup>nd</sup>	

Source: 2011 data from CDC 2014 Breastfeeding Report Card.<sup>161</sup> 2012 data from CDC Immunization Survey<sup>162</sup>

<b>Georgia's Breastfeeding rates through the years 2004-2011</b>								
<b>Breastfeeding</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Initiation	68.2%	72%	62.5%	64.8%	71.6%	70.9%	68.2%	70.3%
Exclusive @ 3 mos	25.6%	23.9%	28.0%	25.1%	27.1%	27.8%	22.2%	27.2%
Exclusive @ 6 mos	11.0%	11.7%	14.8%	9.7%	10.1%	12.9%	6.2%	14.5%
Any @ 12 mos	16.8%	18.2%	18.1%	17.9%	18.5%	17.6%	12.9%	20.7%

Source: CDC Breastfeeding Report Cards 2007-2014<sup>163</sup>

Percent of infants who were ever breastfed by maternal age, race/ethnicity and education, Georgia, 2011



Source: National Immunization Survey 2011

Reprinted from GA DPH Perinatal Health, Georgia Five Year Needs Assessment (2015)<sup>164</sup>

While the CDC has Georgia’s overall initiation rate at 73.7% as of 2012, CDC data for low-income infants in Georgia shows an initiation (“ever breastfed”) rate of only 53.2% as of 2011.<sup>165</sup> Georgia WIC reported a higher initiation rate of 57.19% for their clients in 2012.<sup>166</sup>

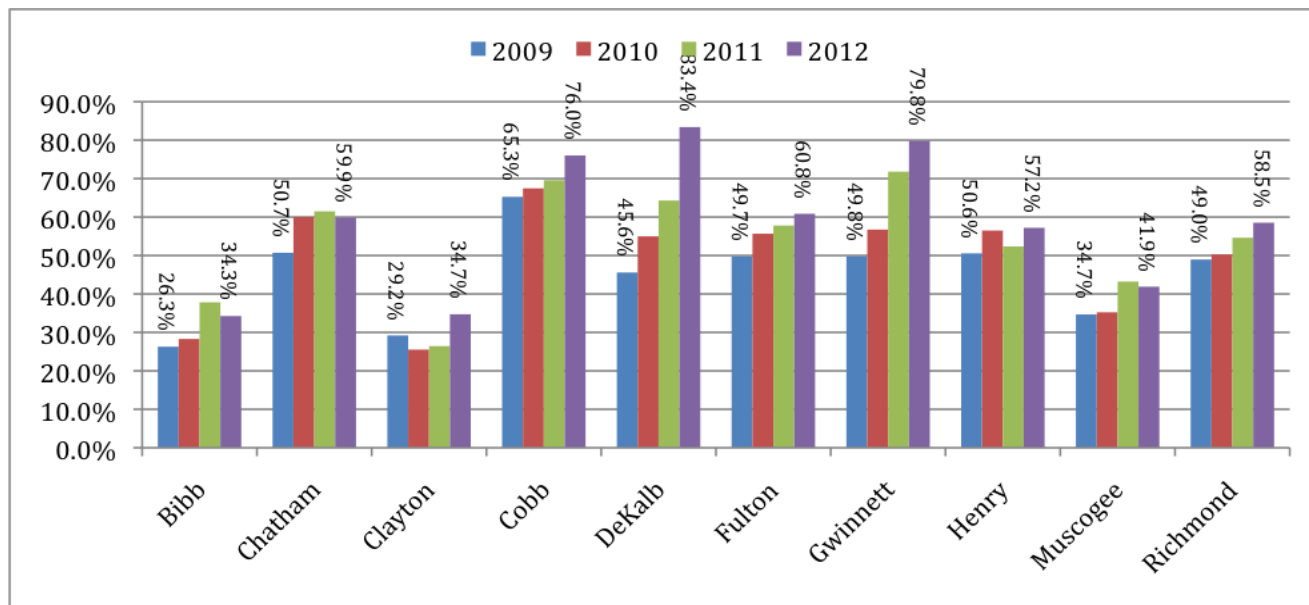
Georgia’s Birth Certificates also provide data for breastfeeding initiation rates. The last box on the birth certificate asks “Is the infant being breastfed at discharge?” Detailed by payment or insurance type, breastfeeding initiation rates are increasing each year across each sector, but significant disparities continue with only privately insured mothers meeting the Healthy People 2020 initiation goal.

“Yes” to Breastfeeding at Discharge by Insurance Type and Year				
Payment Type	2009	2010	2011	2012
Medicaid	43.19%	45.91%	50.42%	58.37%
Private Insurance	71.15%	71.83%	75.36%	82.05%
Self-Pay	57.19%	58.71%	63.84%	70.87%
Other	58.17%	63.41%	67.99%	70.99%
Unknown	24.45%	22.61%	32.57%	44.33%

Source: Kibbe et al.<sup>167</sup>



**Percent of “Yes” Responses on Breastfeeding at Discharge Question for Medicaid Births by Year for Georgia Counties with Highest Number of Annual Births\***



Source: Kibbe, et al.<sup>168</sup>

\*Hall county results have been excluded because of inconsistent data.

Georgia can expect that breastfeeding initiation rates will continue to rise as more hospitals adopt policies and practices that fully support the breastfeeding dyad. Currently, Georgia has five hospitals that have been designated as “Baby-Friendly.”<sup>169</sup>

- DeKalb Medical (Decatur) designated 12/2014
- Emory University Hospital Midtown (Atlanta) designated 1/2015
- Doctor’s Hospital (Augusta) designated 3/2015
- Grady Health System (Atlanta) designated 9/2015
- Piedmont Henry Hospital (Stockbridge) designated 10/2015

Early evaluation from “Baby-Friendly” hospitals reveals that the most difficult steps have been the prenatal breastfeeding education and breastfeeding support after hospital discharge.<sup>170</sup>

Although nearly 3/4 of Georgia’s mothers initiate breastfeeding, less than 19% are making it to the AAP recommendation of exclusively breastfeeding for six months. Thus, it is Georgia’s duration rate that needs critical attention. Sustained breastfeeding is what provides the health benefits for both mother and baby, and sustained breastfeeding is what provides cost savings too.

The 2011 CDC National Pediatric Nutrition Surveillance data of low-income children shows that of the babies who initiated breastfeeding, within only six weeks, 62% had already stopped breastfeeding.<sup>171</sup>

Additional research shows that most mothers quit breastfeeding their babies before they had intended because of unexpected difficulties.<sup>172</sup>

The following CDC data demonstrates when and why mothers stop breastfeeding:

REASONS WHY MOTHERS STOPPED BREASTFEEDING <sup>1</sup>  
 Reasons vary depending on the infant's age.

INFANT AGE	Baby had trouble suckling or latching on	Baby began to bite	Baby lost interest in nursing or began to wean	Baby old enough that difference between breast milk and formula no longer mattered	Breast milk alone didn't satisfy baby	Thought baby was not gaining enough weight	Health professional said baby not gaining enough weight	Had trouble getting the milk to flow	Didn't have enough milk	Nipples were sore, cracked, or bleeding	Breasts were overfull or engorged	Breasts leaked too much	Breastfeeding was too painful	Breastfeeding was too tiring	Mother was sick or had to take medicine	Breastfeeding was too inconvenient	Mother did not like breastfeeding	Mother wanted to be able to leave baby for several hours at a time	Mother had too many household duties	Mother could not or did not want to pump or breastfeed at work	Mother no longer seemed worth the effort if required	Someone else wanted to feed the baby	Mother did not want to breastfeed in public	Mother wanted her body back to herself	Mother became pregnant or wanted to become pregnant again		
Less than 1 month	53.7	5.2	13.2	5.2	49.7	23	19.8	41.4	51.7	36.8	23.9	14.1	29.3	19.8	14.4	20.4	16.4	11.2	6.6	12.6	11.2	16.7	16.4	13.5	14.9	8.9	1.7
1 to 2 months	27.1	5.7	19.7	11.4	55.6	18.3	15.2	23.2	52.1	23.2	12.3	8	15.8	17.2	16.3	22.3	10.9	24.1	7.2	14	22.3	21.2	23.2	15.5	18.6	13.2	3.4
3 to 5 months	11	13.4	33.1	16.5	49.1	11	8.6	19.6	54	7.2	4.8	3.8	3.4	11	14.8	18.6	6.2	18.2	10.3	9.6	21.3	23.7	21	12	15.1	16.8	3.4
6 to 8 months	2.6	38.5	47.9	26.6	49.5	14.1	9.9	14.6	43.8	5.7	1.6	1.6	3.6	7.8	12.5	12.5	3.1	15.6	10.9	5.2	13.5	17.7	17.2	5.7	4.7	18.8	6.8
9 months or more	1.5	31.7	47.3	28.2	43.5	8.4	5	5.7	26	4.2	1.1	1.9	4.2	5.3	8	4.2	1.9	7.3	6.5	3.8	4.6	11.5	6.1	3.4	4.6	15.6	12.2

Source: Table prepared by Carson Research Consulting with data acquired from the CDC (Multiple answers were acceptable) <sup>173</sup>

The latest available data indicates that every day in Georgia, on average, **185** breastfeeding mothers give up breastfeeding their infants and switch to formula. <sup>174</sup>

The most common reasons cited by women for quitting breastfeeding within the first three months are all clinical issues that can usually be effectively addressed by an International Board Certified Lactation Consultant (IBCLC). <sup>175</sup> The IBCLC is the internationally certified clinical provider of care for breastfeeding issues. Women's breastfeeding problems remain unresolved because they cannot access care from IBCLCs.

Currently, the CDC data indicates that Georgia needs approximately 1,125 IBCLCs to care for its mother/baby dyads, <sup>176</sup> but Georgia has only 364 IBCLCs. <sup>177</sup> Hospitals seeking Baby-Friendly designation are unable to locate sufficient numbers of skilled IBCLCs for their patients. IBCLCs are not routinely part of physician practices either. The numbers are deficient and IBCLCs have not been accessible because, until this year, they have not been licensed in Georgia. State licensing of IBCLCs was one of the recommendations of the U.S. Surgeon General in 2011 because, without licensure, most insurance companies (Kaiser Permanente and Aetna being notable exceptions) and Medicaid will not pay for outpatient clinical services of IBCLCs. <sup>178</sup> Under the leadership of Representative Sharon Cooper (Chair of the House Health and Human Services Committee), on April 26, 2016, Georgia became the second state in the country to license IBCLCs. With licensure, significant improvement in access to clinical breastfeeding care is anticipated over the next several years as IBCLCs become part of the healthcare team, insurance companies make them "in-network" providers, physicians hire them, job vacancies create interest in the profession, and community colleges develop IBCLC educational and clinical training programs across the state to fill the deficits.

# Recommendations

Currently there are many good maternal and infant health initiatives being implemented across the State by governmental agencies, medical associations, hospitals, non-profits, and the like. We offer some additional suggestions to complement the on-going efforts to improve the health outcomes of Georgia's mothers and babies. We look forward to convening and collaborating regarding these recommendations and to being a resource to individuals and organizations across the State. Recommendations may be implemented in four key impact areas: (1) prenatal care; (2) legislation; (3) private/public partnerships; and (4) data collection and needs assessment.

## Recommended Prenatal Initiatives:

- 1.** We recommend that every "welcome packet" for the pregnant woman from obstetrical offices and insurance companies contain education on the importance of dental care during pregnancy. Welcome packets for Medicaid/CMO recipients should also contain information that dental care is a covered service. We also recommend that every obstetrical practice add "dental care" to the education/counseling section of the prenatal record so that every pregnant patient, at her first visit, gets verbal dental counseling from a healthcare provider. WIC intake should do the same if it is not already part of the WIC process. Referrals may be made to the **POWERLINE** for a listing of area dentists who accept Medicaid. **POWERLINE @ 1-800-300-9003.**
- 2.** We recommend that every obstetrical practice record the patient's pre-pregnancy weight and measure and record each patient's height. It appears that most practices are not acquiring or documenting the data. Such information is helpful for anesthesia assessments and for chart reviews when obesity may be a factor for morbidity or mortality. Patient self-reports are not typically an accurate source for height information. SECA makes an excellent wall-mounted height-measuring device.<sup>179</sup> For those patients who are overweight, we recommend consideration of referral to a dietitian for nutrition education during and after the pregnancy.
- 3.** We recommend referral of all smoking pregnant women into high-risk case management. A woman is never more motivated to quit smoking than when she is pregnant, but she may need extra support from professionals. We also recommend the free Georgia Tobacco Quit Line for additional assistance and coaching. 1-877-270-STOP (Spanish: 1-877-2NO-FUME).

## Recommended Legislative Initiatives:

4. We recommend legislation that would increase the tobacco tax in Georgia to the national average by increasing the current rate by \$1.23 per pack and/or legislation to raise the age for purchase of tobacco products to 21 years old. Research shows that fewer teens will obtain cigarettes at higher prices,<sup>180</sup> and a recent analysis by the Institute of Medicine predicts substantially less access for teens with a purchasing age of 21.<sup>181</sup>
5. We recommend legislation for incremental increases in the Medicaid/Peachcare reimbursement rates for medical and dental services. Medicaid still pays less than the cost to provide the services. Low reimbursement discourages provider participation and is especially problematic in obtaining and retaining rural clinicians.
6. We recommend that the State consider ACOG's recommendation of making birth control pills available to women in pharmacies without physician prescriptions. Two states have passed such legislation,<sup>182</sup> and four other states have bills pending.

## Recommended Initiatives for Public/Private Partnership:

7. We recommend a collaborative pilot project among Georgia's medical insurance carriers and Medicaid to pay an extra incentive fee per injection of \$15-20 to obstetrical practices when providing an on-site flu shot to a pregnant patient. As previously noted, survey data shows better patient compliance when the injections are provided in the obstetrical practice (as opposed to pharmacies), but the current reimbursement fee has not enticed practices to provide the service. In practices where in-house administration still does not occur, we recommend that healthcare providers give each pregnant patient a written prescription for the immunization as a way to impress upon her the importance of the inoculation.
8. We recommend that the state consider a Medicaid incentive fee for obstetrical practices that use a group prenatal care model of service, such as the "Centering" model, as data is showing improved birth outcomes in disadvantaged populations.<sup>183</sup>
9. We recommend that the State consider a Medicaid incentive fee for obstetrical practices for the postpartum visit—perhaps similar to the North Carolina model with the requirement that depression screening be included at such visit. We note and applaud that Peach State Health Plan has recently announced an additional payment for the postpartum visit.
10. We recommend expanding telemedicine options with medical professionals who specialize in the clinical management of depression and anxiety issues affecting pregnant and postpartum women. Such services should then be marketed to perinatal clinicians and patients.

**11.** We recommend collaboration of public and private stakeholders to develop a Strategic Plan for reducing Georgia’s high (60%) unintended pregnancy rate. Reducing unintended pregnancies will improve the physical and emotional health of women and their affected children, will improve birth spacing thus improving the birth outcomes of future babies, will avert numerous pregnancies from being exposed to Zika, and will provide substantial cost savings within the economy.

**12.** We recommend a collaborative partnership with the Department of Public Health, GA OBGyn Society, the Academy of Breastfeeding Medicine, the GA-AAP, Georgia nurse midwives, Georgia IBCLCs and others to create a web-based continuing education video for obstetrical clinicians covering prenatal breastfeeding education, prenatal clinical assessment of breasts for indications of lactation difficulty, medications compatible with breastfeeding, and referrals for clinical lactation care.

**13.** We recommend that every hospital obstetrical unit have a copy of the current edition of Medications & Mother’s Milk by Thomas Hale, PhD, and that every clinician providing care to a lactating mother or breastfeeding baby also have the free National Institute of Health (NIH) LactMed App on their phones.

**14.** We recommend collaboration to support hospital NICUs by providing technical assistance for the creation of “Milk Labs” within their hospitals and expanding the presence of “Milk Depots” throughout Georgia.

**15.** We recommend that all insurance carriers and Medicaid follow the lead of Kaiser Permanente and Aetna of covering the clinical services of IBCLCs so that mother-baby dyads who are having difficulty with breastfeeding can have access to clinical assistance.

**16.** We recommend that foundations and other financial supporters team with HMHB to provide educational scholarships for aspiring IBCLCs in need of financial assistance.

**17.** We recommend public service announcements by radio, television, and billboards regarding the importance of breastfeeding.

**18.** We recommend dissemination of patient education materials into every venue where young families are touched such as hospitals, obstetrical practices, pediatric practices, DFCS, WIC, health departments, day care centers, places of worship, etc. with the following:

- **POWERLINE** brochure for healthcare information and referrals via internet database and/or phone assistance at [www.hmhbga.org](http://www.hmhbga.org) or 1-800-300-9003 (Attachment 1)
- Text4Baby brochure: Text “Baby” to 511411 to receive regular gestational appropriate educational messages from conception to baby’s first birthday (Attachment 2)
- Postpartum depression peer support resource: [www.postpartumprogress.org](http://www.postpartumprogress.org)
- Prevent Child Abuse Georgia brochure 1-800-CHILDREN (Attachment 3)
- Planning for Healthy Babies (P4HB) Coverage brochure for women ages 18-44 for annual exams, preconception counseling, family planning, and more (Attachment 4)

- Chart outlining the benefits of breastfeeding (Attachment 5)
- NIH LactMed website and cell phone app for determining medication compatibility with breastfeeding
- The revised AAP safe sleep recommendations once those have been published (expected in the fall of 2016)

**HMHB/POWERLINE** can assist with these materials, and others, upon request.

**19.** We recommend the convening of interested stakeholders to create a Breastfeeding Strategic Plan for Georgia to include measureable outcomes for our State in the areas of increasing breastfeeding initiation and duration.

## **Recommended Initiatives for Improvement of Data Collection/Needs Assessment:**

**20.** We recommend statewide educational resources (whether in-person classes, on-line webinars, etc) for the administrative staff and healthcare professionals who are charged with completing birth certificates and death certificates. The accuracy of the data they collect and record is critically important since resources are prioritized according to those aggregated results. Moreover, it is important that mothers understand that very little of the information collected on birth certificates, much of which is personal/private in nature, actually shows up on the birth certificate that is later issued for the baby. A related recommendation, with perhaps a longer horizon, would be for the electronic medical record to be interfaced with the birth certificate form so that the data fields, when available in the record, are automatically populated into the birth certificate form.

**21.** We recommend that the state link Medicaid claims data to birth certificates. The linked data could be used to analyze various cost measures. For example, the state could analyze the cost of care for the mother and baby for those mothers who were uninsured in pregnancy and who did not receive any prenatal care. The state could then evaluate the potential fiscal benefit of amending its State Plan under the Children's Health Insurance Program ("S-CHIP," Georgia's "Peachcare for Kids") to cover prenatal services for the "unborn child" in those cases (as more than a dozen other states have implemented).<sup>184</sup> An alternate consideration for prenatal care coverage could be to reinstitute the "Babies Born Healthy" program.

**22.** We recommend that the Child Fatality Review Panel consider adding a medical pediatric specialist to its Panel and to county committees where possible. A pediatric physician, physician assistant, nurse practitioner or registered nurse may be able to spot trends in medical conditions leading to child deaths that might not be recognized by others. Such persons could also build connections with the medical community for the implementation of the Panel's recommendations. With regard to SIDS and SUIDS, we recommend that the Review Panel collect data regarding

infant swaddling and the type of feeding just before death, whether the feeding was breast milk or formula substitute. When autopsies are done, we recommend including in the report whether breast milk or formula substitute was found in the GI tract of the infant.

***Have a recommendation that would improve maternal and infant health in Georgia not listed here? Please share with us by emailing: [thecoalition@hmhbga.org](mailto:thecoalition@hmhbga.org).***



## ENDNOTES

1. Much of the data presented in this document has been assimilated 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. Some historical data and the most recent national data are also shown for benchmark comparisons. Literature is cited for context and application purposes.
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health. <http://mchb.hrsa.gov/maternal-child-health-initiatives/mchb-programs> Accessed on May 21, 2015.
3. Ludomirsky, A. Access to Prenatal Care for Undocumented Immigrants Under Medicaid and CHIP: A Review of State Prenatal Care Programs (2010). [http://www.princeton.edu/~pphr/Avital\\_Ludomirsky\\_10.pdf](http://www.princeton.edu/~pphr/Avital_Ludomirsky_10.pdf) Chang J. et al. Pregnancy-Related Mortality Surveillance—United States, 1991-1999. Also of interest, the publication notes that women who received no prenatal care were more likely to have had >5 previous live births and have fewer years of education. <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5202a1.htm#tab3> Accessed July 5, 2016.
4. <http://www.cdc.gov/nchs/data/dvs/birth11-03final-acc.pdf> (Box 29).
5. GA DPH OASIS <https://oasis.state.ga.us/oasis/oasis/help/MCHDataReportingIssues.html> It used to be that no more than 5% of birth certificates were missing the prenatal care data; however, since at least 2008 substantially more have been missing that information. 2008: 30.1%; 2009: 24.1%; 2010: 21.65; 2011:17.7%; 2012: 13.8%; 2013: 16.1%; and 2014: 16.8%. Informal communication from GA DPH . June 10, 2016.
6. Births: Final Data for 2013, National Vital Statistics Reports, Volume 64, Number 1. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_01.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_01.pdf)
7. GA DPH OASIS <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx>
8. James c et al. Putting women’s health care disparities on the map: Examining racial and ethnic disparities at the state level. Menlo Park, CA: Kaiser Family Foundation. (2009) <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/7886.pdf> Accessed May 4, 2016.
9. DPH OASIS <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed May 10, 2016.
10. Calder, T. GA DPH Informal Communication. July 13, 2016.
11. ACOG, Committee Opinion, Health Disparities in Rural Women, No. 586, Feb 2014 <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Health-Disparities-in-Rural-Women>
12. Georgia Board for Physician Workforce December 2013. Georgia Physician and Physician Assistant Data Book 2010/2011 [https://gbpw.georgia.gov/sites/gbpw.georgia.gov/files/related\\_files/document/2010-2011%20Physician%20and%20Physician%20Assistant%20Data%20Book.pdf](https://gbpw.georgia.gov/sites/gbpw.georgia.gov/files/related_files/document/2010-2011%20Physician%20and%20Physician%20Assistant%20Data%20Book.pdf) See also, Miller A. Georgia Health News, Doctor Shortage Remains Acute in Rural Areas, Jan 2, 2014. <http://www.georgiahealthnews.com/2014/01/doctor-shortage-acute-rural-areas/>



14. Pinto M et al. Bridging the Gaps in Obstetric Care: Perspectives of Service Delivery Providers on Challenges and Core Components of Care in Rural Georgia Maternal Child Health J 2016. <http://link.springer.com/article/10.1007/s10995-016-1995-z>
15. Spelke B et al. Georgia Obstetrical and Gynecological Society, Inc., OBGyn News, Exploring the Causes and Consequences of Georgia's Obstetric Provider Shortage, Vol 8 No 3, June 2014 [http://www.house.ga.gov/Documents/CommitteeDocuments/2014/Medical Education/GMIHRG Pres GME HouseCmte 101514 Final noNotes.pdf](http://www.house.ga.gov/Documents/CommitteeDocuments/2014/Medical%20Education/GMIHRG%20Pres%20GME%20HouseCmte%20101514%20Final%20noNotes.pdf) and Roberts C. Poverty and Pregnancy should not be fatal in Georgia, Georgia Health News, Sept 4, 2015. <http://www.georgiahealthnews.com/2015/09/poverty-pregnancy-fatal/>
16. Roberts C. Poverty and Pregnancy Should Not Be Fatal in Georgia, Georgia Health News, Sept. 4, 2015 <http://www.georgiahealthnews.com/2015/09/poverty-pregnancy-fatal/>
17. GA DPH MCH Title V Perinatal Infant Health 2016. [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Perinatal Infant%20Health%202016%20Title%20V%20State%20Action%20Plan.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Perinatal%20Infant%20Health%202016%20Title%20V%20State%20Action%20Plan.pdf) Accessed July 7, 2016.
18. Zertuche A et al. Georgia Maternal and Infant Health Research Group (GMIHRG): Mobilizing Allied Health Students and Community Partners to Put Data into Action. Pub online April 2016. <http://www.ncbi.nlm.nih.gov/pubmed/27072049>
19. Anderson A. The Influence of Proximity of Perinatal Services on Preterm Birth Rates in Non-Metropolitan Georgia, 1999-2009. Master of Public Health Thesis Abstract. Emory University (2013).
20. National Institute for Health Care Management, Improving Access to Perinatal Oral Health Care: Strategies & Considerations for Health Plans Issue Brief July 2010. <http://www.nihcm.org/pdf/NIHCM-OralHealth-Final.pdf>. See also Aetna News at <https://news.aetna.com/news-releases/american-journal-of-public-health-publishes-aetna-columbia-university-study-on-oral-health-care-and-pregnancy-outcomes/> Accessed May 27, 2015.
21. Offenbacher S. et al. Periodontal Infection as a Possible Risk Factor for Preterm Low Birth Weight, J Periodontol 1996; 67: 1103-13 <http://www.ncbi.nlm.nih.gov/pubmed/8910829> ; Jeffcoat M et al. Periodontal Infection and Preterm Birth: Results of a Prospective Study, J Am Dent Assoc 2001; 132:875-80 <http://www.ncbi.nlm.nih.gov/pubmed/11480640> ; Offenbacher S et al. Maternal Periodontitis and Prematurity. Part I: Obstetric Outcome of Prematurity and Growth Restriction, Ann Periodontol 2001; 6:164-74. <http://www.ncbi.nlm.nih.gov/pubmed/11887460>
22. National Institute for Health Care Management, Improving Access to Perinatal Oral Health Care: Strategies & Considerations for Health Plans Issue Brief July 2010. <http://www.nihcm.org/pdf/NIHCM-OralHealth-Final.pdf>
23. See e.g. Fogacci M et al. The Effect of Periodontal Therapy On Preterm Low Birth Weight: A Meta-Analysis. Obstetrics & Gynecology, 2011; 117: 153-65. <http://www.ncbi.nlm.nih.gov/pubmed/21173658>
24. Jeffcoat M et al. Use of alcohol-free antimicrobial mouth rinse is associated with decrease incidence of preterm birth in a high-risk population. Am J Obstetrics & Gynecology, 2011 Oct; 205(4):382 <http://www.ncbi.nlm.nih.gov/pubmed/22083060>

25. ACOG Committee Opinion Number 569, August 2013. <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Oral-Health-Care-During-Pregnancy-and-Through-the-Lifespan#21>
26. National Institute for Health Care Management, Improving Access to Perinatal Oral Health Care: Strategies & Considerations for Health Plans Issue Brief July 2010. <http://www.nihcm.org/pdf/NIHCM-OralHealth-Final.pdf> See also Gaffield M et al. Oral health during pregnancy: analysis of information collected by the pregnancy risk assessment monitoring system. J American Dental Association 2001 Jul; 132(7):1009-16. <http://www.ncbi.nlm.nih.gov/pubmed/11480627>
27. Georgia DPH, Cross-Cutting Issues in Maternal and Child Health, Georgia Title V Needs Assessment (2015). [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
28. GA DPH Cross Cutting Life Course 2016 Title V State Action Plan [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross-Cutting\\_Life%20Course%202016%20Title%20V%20State%20Action%20Plan-5.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross-Cutting_Life%20Course%202016%20Title%20V%20State%20Action%20Plan-5.pdf) Accessed July 7, 2016.
29. Georgia Department of Community Health. Informal Communication, August 21, 2012.
30. Carson J. Georgia Department of Community Health. Informal communication, June 23, 2016.
31. [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross\\_Cutting\\_Issues\\_MCH.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross_Cutting_Issues_MCH.pdf)
32. Schlaudecker E et al, Helping Mothers Prevent Influenza Illness in Their Infants, Pediatrics, Nov 2010, vol 126, issue 5. <http://pediatrics.aappublications.org/content/126/5/1008>
33. Since 1997 a flu shot has been recommended for women in their second and third trimesters, but in 2004 the recommendation was expanded to include women in the first trimester as well. Id.
34. CDC Pregnant Women Need a Flu Shot Fact Sheet [http://www.cdc.gov/flu/pdf/freeresources/pregnant/flushot\\_pregnant\\_factsheet.pdf](http://www.cdc.gov/flu/pdf/freeresources/pregnant/flushot_pregnant_factsheet.pdf) Accessed May 31, 2015. See also Schlaudecker E. et al. IgA and Neutralizing Antibodies to Influenza A Virus in Human Milk: A Randomized Trial of Antenatal Influenza Immunization August 14, 2013. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0070867>
35. Yudin M. Risk management of seasonal influenza during pregnancy: current perspectives, International Journal of Women's Health 2014;6 681-689. <https://www.dovepress.com/risk-management-of-seasonal-influenza-during-pregnancy-current-perspec-peer-reviewed-article-IJWH>
36. Fell D et al. H1N1 Influenza Vaccination During Pregnancy and Fetal and Neonatal Outcomes. Am J Public Health (2012) June; 102(6): e33-e40. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3483960/>
37. Richards, J et al. Neonatal Outcomes After Antenatal Influenza Immunization During the 2009 H1N1 Influenza Pandemic: Impact on Preterm Birth, Birth Weight, and Small for Gestational Age Birth. Clinical Infect Dis (2013) May; 56(9):1216-22 <http://www.ncbi.nlm.nih.gov/pubmed/23378281>
38. Regan A et al. Seasonal Trivalent Influenza Vaccination During Pregnancy and the Incidence of Stillbirth: Population-Based Retrospective Cohort Study. Clinical Infect Dis. March 30, 2016 online. <http://cid.oxfordjournals.org/content/early/2016/03/10/cid.ciw082.abstract>

39. Benowitz I et al, Influenza vaccine given to pregnant women reduces hospitalization due to influenza in their infants. *Clinical Infect Dis.* 2010; 58:449-457. <http://cid.oxfordjournals.org/content/51/12/1355.full.pdf+html> For additional literature see also Yudin M. Risk management of seasonal influenza during pregnancy: current perspectives, *International Journal of Women's Health* 2014;6 681-689. <https://www.dovepress.com/risk-management-of-seasonal-influenza-during-pregnancy-current-perspec-peer-reviewed-article-IJWH>
40. Shakib J et al. Influenza in Infants Born to Women Vaccinated During Pregnancy, *Pediatrics*, May 2016. [http://pediatrics.aappublications.org/content/early/2016/04/30/peds.2015-2360?ss=1&ss\\_redirect\\_count=1&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token](http://pediatrics.aappublications.org/content/early/2016/04/30/peds.2015-2360?ss=1&ss_redirect_count=1&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token)
41. Nunes M. et al. Duration of Infant Protection Against Influenza Illness Conferred by Maternal Immunization Secondary Analysis of a Randomized Clinical Trial. *JAMA Pediatrics* July 5, 2016 <http://archpedi.jamanetwork.com/article.aspx?articleid=2531457>
42. CDC, Receipt of Influenza Vaccine During Pregnancy Among Women With Live Births—Georgia and Rhode Island, 2004-2007. *MMWR* September 11, 2009; 58(35);972-975. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5835a2.htm>
43. GA DPH, Maternal and Women's Health, Georgia Title V Needs Assessment (2015) [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
44. Kanu F Georgia Department of Public Health Informal Communication July 21, 2016. The 2012 sample size was 29,950 and the 2013 sample size was 10,803.
45. <http://www.cdc.gov/flu/fluview/prams-flu-tables.htm#table1> Accessed on June 22, 2015.
46. CDC Influenza vaccination coverage among pregnant women. US, 2010-11 influenza season. *MMWR Morb Mortal Wkly Rep.* 2011; 60:1078-1082. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6032a2.htm>
47. Influenza Vaccination Coverage Among Pregnant Women—United States, 2013-14 Influenza Season, *Morbidity and Mortality Weekly Report* (Sept 2015) [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6436a2.htm?s\\_cid=mm6436a2\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6436a2.htm?s_cid=mm6436a2_e) and Influenza Vaccination Coverage Among Pregnant Women—United States, 2013-14 Influenza Season, *Morbidity and Mortality Weekly Report* (Sept 2014) <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6337a3.htm>
48. Child Health USA 2013 <http://mchb.hrsa.gov/chusa13/perinatal-health-status-indicators/p/fetal-mortality.html> Accessed May 28, 2015.
49. <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed April 10, 2016.
50. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_08.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_08.pdf)
51. Reinberg S Stillbirths Now Outnumber Infant Deaths in U.S. <http://consumer.healthday.com/sexual-health-information-32/miscarriage-news-478/miscarriages-stillbirths-now-outnumber-infant-deaths-in-u-s-701587.html> Accessed on April 27, 2016.
52. <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed on May 20, 2015.
53. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12\\_tables.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12_tables.pdf)
54. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_01.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_01.pdf)
55. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12\\_tables.pdf#i02](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12_tables.pdf#i02)
56. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf)
57. The Georgia Affiliate of the American College of Nurse Midwives. <http://georgiamidwife.org/about-ga-acnm/> Accessed on July 19, 2016.

58. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf) and Romero L, Pazol K, Warner L, et al. Reduced Disparities in Birth Rates Among Teens Aged 15–19 Years — United States, 2006–2007 and 2013–2014. *MMWR Morb Mortal Wkly Rep* 2016;65:409–414. DOI: <http://dx.doi.org/10.15585/mmwr.mm6516a1> Accessed April 29, 2016.
59. GA DPH OASIS, <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed on April 10, 2016.
60. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12\\_tables.pdf#i02](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12_tables.pdf#i02)
61. CDC Recent Declines in Nonmarital Childbearing in the United States. NCHS Data Brief No. 162, August 2014. <http://www.cdc.gov/nchs/data/databriefs/db162.htm> Accessed July 19, 2016.
62. CDC, <http://www.cdc.gov/reproductivehealth/unintendedpregnancy/index.htm> Accessed on April 27, 2016.
63. Guttmacher Institute Unintended Pregnancy in the United States Fact Sheet March 2016. <https://www.guttmacher.org/fact-sheet/unintended-pregnancy-united-states> Accessed July 13, 2016.
64. Kost K, Unintended Pregnancy Rates at the State Level: Estimates for 2010, New York: Guttmacher Institute [https://www.guttmacher.org/sites/default/files/report\\_pdf/stateup10.pdf](https://www.guttmacher.org/sites/default/files/report_pdf/stateup10.pdf) January 2015. Accessed on April 27, 2016.
65. GA DPH, Maternal and Women’s Health, Georgia Title V Needs Assessment (2015) [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
66. CDC Youth and Tobacco Use Fact Sheet, [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/youth\\_data/tobacco\\_use/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm) Accessed August 5, 2015.
67. CDC <http://www.cdc.gov/reproductivehealth/tobaccousepregnancy/> Accessed June 30, 2015; Chambers C Approaches to smoking cessation before and during pregnancy *OBGYN News* October 26, 2015. <http://www.obgynnews.com/specialty-focus/obstetrics/single-article-page/approaches-to-smoking-cessation-before-and-during-pregnancy/7333c2203e5570c739c359ebce05cfe6.html> Assessed April 27, 2016.
68. Hall E. et al. Self-Reported and Laboratory Evaluation of Late Pregnancy Nicotine Exposure and Drugs of Abuse *Journal of Perinatology* July 7, 2016. <http://www.nature.com/jp/journal/vaop/ncurrent/abs/jp2016100a.html>
69. Kaiser Family Foundation <http://kff.org/other/state-indicator/smoking-adults-by-gender/> Accessed June 28, 2015.
70. <http://www.cdc.gov/reproductivehealth/tobaccousepregnancy/> Accessed June 30, 2015.
71. [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross\\_Cutting\\_Issues\\_MCH.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross_Cutting_Issues_MCH.pdf)
72. Cross-Cutting Issues in Maternal and Child Health, Georgia Title V Needs Assessment (2015) [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross\\_Cutting\\_Issues\\_MCH.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Cross_Cutting_Issues_MCH.pdf)
73. OASIS notes, <https://oasis.state.ga.us/oasis/oasis/help/MCHDataReportingIssues.html> Accessed on April 10, 2016.
74. <http://www.cdc.gov/features/prematurebirth/> Accessed May 27, 2015.
75. Venkatesh, K et al. Association of Antenatal Depression Symptoms and Antidepressant Treatment with Preterm Birth. *Obstetrics & Gynecology* May 2016, Vol 127 Issue 5 p 926-933. <http://journals.lww.com/greenjournal/Fulltext/2016/05000/>



76. Ickovics, J et al. Cluster Randomized Controlled Trial of Group Prenatal Care: Perinatal Outcomes Among Adolescents in New York City Health Centers. *Am J of Pub Health*; Feb 2016, Vol 106, No 2; 359-365. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302960>
77. Premie diapers mark 75th anniversary for March of Dimes. *On Common Ground News*. (2010). [https://issuu.com/ocgnews/docs/ocgn\\_3-15-13-final](https://issuu.com/ocgnews/docs/ocgn_3-15-13-final) Accessed May 28, 2015.
78. The Georgia Department of Public Health. WIC Program Fact Sheet. (June 2013) [https://dph.georgia.gov/sites/dph.georgia.gov/files/WIC\\_Resources/Publications/2013\\_WIC\\_Fact\\_Sheet.pdf](https://dph.georgia.gov/sites/dph.georgia.gov/files/WIC_Resources/Publications/2013_WIC_Fact_Sheet.pdf) Accessed May 28, 2015.
79. Kibbe D, Feng B, Snyder, A. A Report on the Impact of Lactation Consultant Services and Breastfeeding presented to Healthy Mothers, Healthy Babies Coalition of Georgia (2015).
80. <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed April 10, 2016.
81. Births: Final Data for 2014, National Vital Statistics Reports, [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf)
82. Kids Count Data Center a project of the Annie E. Casey Foundation. <http://datacenter.kidscount.org/data/tables/18-preterm-births?loc=1&loct=1#ranking/2/any/true/869/any/280> Accessed June 21, 2016.
83. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12\\_tables.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12_tables.pdf) Accessed April 16, 2016.
84. [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12\\_tables.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12_tables.pdf) While the report indicates the new national high for twins at a rate of 33.9, the table shows 33.6 for that number.
85. McCowan L Risk Factors for Small for Gestational Age Infants, *Best Pract Res Clin Obstet Gynaecol*, 2009 Dec; 23(6a):779-93. <http://www.ncbi.nlm.nih.gov/pubmed/19604726>
86. <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed May 20, 2015.
87. National Vital Statistics Reports, Births: Final Data for 2014, [http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64\\_12\\_tables.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12_tables.pdf)
88. GA Department of Community Health <https://dch.georgia.gov/sites/dch.georgia.gov/files/Final%20Validated%20CMO%20PMs%20CY10%20thru%20CY14%208-20-15.xlsx> Accessed July 15, 2016.
89. Kids Count Data Center. <http://datacenter.kidscount.org/data/tables/5425-low-birthweight-babies?loc=1&loct=1#ranking/2/any/true/869/any/11985> Accessed June 21, 2016.
90. Mortality in the United States, 2014, National Center for Health Statistics, <http://www.cdc.gov/nchs/products/databriefs/db229.htm> Accessed on April 16, 2016.
91. <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed May 20, 2015.
92. Mortality in the United States, 2014, National Center for Health Statistics, <http://www.cdc.gov/nchs/products/databriefs/db229.htm> Accessed on April 16, 2016.
93. Murphy SL, Kochanek KD, Xu JQ, Arias E. Mortality in the United States, 2014. NCHS data brief, no 229. Hyattsville, MD: National Center for Health Statistics. 2015. <http://www.cdc.gov/nchs/products/databriefs/db229.htm>
94. CDC/NCHS [http://www.cdc.gov/nchs/pressroom/states/INFANT\\_MORTALITY\\_RATES\\_STATE\\_2010.pdf](http://www.cdc.gov/nchs/pressroom/states/INFANT_MORTALITY_RATES_STATE_2010.pdf) and Kids Count Data Center <http://datacenter.kidscount.org/data/tables/6051-infant-mortality?loc=1&loct=1#ranking/2/any/true/869/any/12719> Accessed June 21, 2016.

95. Georgia Child Fatality Review Panel Annual Report Calendar Year 2014 (pub Jan 2016). [https://gbi.georgia.gov/sites/gbi.georgia.gov/files/related\\_files/site\\_page/2014%20CFR%20Annual%20Report.pdf](https://gbi.georgia.gov/sites/gbi.georgia.gov/files/related_files/site_page/2014%20CFR%20Annual%20Report.pdf)
96. Id.
97. Pease A et al. Swaddling and the Risk of Sudden Infant Death Syndrome: A Meta-analysis. Pediatrics May 2016. <http://pediatrics.aappublications.org/content/pediatrics/early/2016/05/05/peds.2015-3275.full.pdf>
98. Id.
99. Georgia Child Fatality Review Panel Annual Report Calendar Year 2013 (pub. 2015). [https://gbi.georgia.gov/sites/gbi.georgia.gov/files/related\\_files/site\\_page/2013%20CFR%20Annual%20Report.pdf](https://gbi.georgia.gov/sites/gbi.georgia.gov/files/related_files/site_page/2013%20CFR%20Annual%20Report.pdf)
100. Champney, K. Heart Disease in Women, ATLANTA Medicine, Vol. 83, No. 1 (2012). [http://c.ymcdn.com/sites/www.maa-assn.org/resource/resmgr/Atlanta\\_Medicine/2012,\\_Vol.\\_83\\_No.\\_1.pdf](http://c.ymcdn.com/sites/www.maa-assn.org/resource/resmgr/Atlanta_Medicine/2012,_Vol._83_No._1.pdf)
101. [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
102. Book W. Cardiologist Informal Communication May 23, 2016.
103. CDC Overweight and Obesity website. <http://www.cdc.gov/obesity/adult/defining.html> Accessed July 19, 2016.
104. Flegal K et al. Trends in Obesity Among Adults in the United States, 2005-2014 JAMA 2016;315(21):2284-2291. <http://jama.jamanetwork.com/article.aspx?articleid=2526639>
105. CDC Stat of the Day, August 3, 2016 <https://www.cdc.gov/nchs/> Accessed August 3, 2016; Vital and Health Statistics, Anthropometric Reference Data for Children and Adults: United States, 2011-2014, Series 3, No. 39. August 2016. [http://www.cdc.gov/nchs/data/series/sr\\_03/sr03\\_039.pdf](http://www.cdc.gov/nchs/data/series/sr_03/sr03_039.pdf) ; and Sifferlin A. Americans Weigh 15Lb. More Than They Used To, August 3, 2016. Time.com <http://time.com/4435152/obesity-overweight-height-americans/> Accessed August 3, 2016.
106. Korotkin, J Obesity in Pregnancy A National Dilemma, ATLANTA Medicine, Vol. 83, No.1 (2012). [http://c.ymcdn.com/sites/www.maa-assn.org/resource/resmgr/Atlanta\\_Medicine/2012,\\_Vol.\\_83\\_No.\\_1.pdf](http://c.ymcdn.com/sites/www.maa-assn.org/resource/resmgr/Atlanta_Medicine/2012,_Vol._83_No._1.pdf)
107. GA DPH, Maternal and Women's Health, Georgia Title V Needs Assessment (2015) [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
108. Georgia OASIS, <https://oasis.state.ga.us/oasis/oasis/help/MCHDataReportingIssues.html>
109. DPH, Perinatal Health, Georgia Five Years Needs Assessment (2015) [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Perinatal\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Perinatal_Health.pdf)
110. Fitzgerald, B. Georgia Department of Public Health Letter dated December 15, 2015. Published on the website of the Georgia OBGyn Society (No longer available online). Accessed on April 9, 2016.
111. Chang J. et al. Pregnancy-Related Mortality Surveillance—United States, 1991-1999. <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5202a1.htm#tab3> Accessed July 5, 2016.
112. WHO et al. Trends in Maternal Mortality: 1990 to 2013 (pub 2014) [http://apps.who.int/iris/bitstream/10665/112682/2/9789241507226\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/112682/2/9789241507226_eng.pdf)
113. 2013 Maternal Mortality Rates <http://www.cdph.ca.gov/data/statistics/documents/2013MaternalMortalityRates-SlideSet%20for%20MCAH%20Website.pdf>

114. Information provided informally to HMHB from CDC, May 2015. See also, <http://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>
115. GA DPH OASIS <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed May 20, 2015.
116. Id. Accessed on April 18, 2016.
117. <https://oasis.state.ga.us/oasis/oasis/qryMCH.aspx> Accessed April 16, 2016.
118. MacDorman M et al. Recent Increases in the U.S. Maternal Mortality Rate. Obstetrics & Gynecology Sept. 2016 (not yet pub)
119. Hayat, M. Georgia State University School of Public Health. Informal Communication August 20, 2015.
120. Amnesty International (2010). Deadly Delivery, The Maternal Health Care Crisis in the USA. <http://www.amnestyusa.org/sites/default/files/pdfs/deadlydelivery.pdf>
121. National Women's Law Center, Maternal Mortality Rate <http://hrc.nwlc.org/status-indicators/maternal-mortality-rate-100000> Accessed May 22, 2015.
122. Goodman, D CDC informal communication. May 10, 2016.
123. Heisel W., A Public Death: States blocking better data on pregnancy-related deaths, January 28, 2014. Center for Health Journalism <http://www.centerforhealthjournalism.org/2014/01/27/public-death-states-blocking-better-data-pregnancy-related-deaths> Accessed April 18, 2016.
124. CDC Pregnancy Mortality Surveillance System. <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PMSS.html> Accessed on May 22, 2015.
125. Id.
126. CDC Pregnancy Mortality Surveillance System. <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PMSS.html> Accessed on April 17, 2016.
127. Id
128. Callaghan, WM, Mackey AP, Berg CJ. Identification of severe maternal morbidity during delivery hospitalizations, United States, 1991-2003. American J Obstet Gynecol 2008: 199:133e1-133e8. [http://apps.elsevier.es/watermark/ctl\\_servlet?f=10&pident\\_articulo=90046567&pident\\_usuario=0&pcontactid=&pident\\_revista=615&ty=19&acion=L&origen=zonadelectura&web=www.elsevier.es&lan=es&fichero=615v199n02a90046567pdf001.pdf](http://apps.elsevier.es/watermark/ctl_servlet?f=10&pident_articulo=90046567&pident_usuario=0&pcontactid=&pident_revista=615&ty=19&acion=L&origen=zonadelectura&web=www.elsevier.es&lan=es&fichero=615v199n02a90046567pdf001.pdf)
129. Sibley, D. The original report identifies 25 pregnancy-related deaths. That report has been, or will be, amended to reflect an additional hemorrhage death, bringing the total to 26. Informal Communication, GA OBGyn Society, July 12, 2016.
130. Fitzgerald B. Women and Children's Healthcare in Georgia, Presentation, Midtown Medical Center, Columbus, GA April 28, 2015. (Pregnancy related death number increased by one per MMRC)
131. Georgia Department of Public Health, Maternal Women's Health, Title V Needs Assessment [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
132. Sibley D. Georgia OBGyn Society. Informal Communication. July 12, 2016.
133. Smith, P. Dept. Community Health. LBW Workgroup Meeting Minutes for March 17, 2015.
134. GA Department of Community Health <https://dch.georgia.gov/sites/dch.georgia.gov/files/Final%20Validated%20CMO%20PMs%20CY10%20thru%20CY14%208-20-15.xlsx> Accessed July 15, 2016.

135. GA DPH Maternal & Women's Health, Georgia Title V Needs Assessment (2015). [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
136. American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. (2013) pg 186-187.
137. Department of Psychiatry University on North Carolina School of Medicine. Website. [https://www.med.unc.edu/psych/wmd/mood-disorders/perinatal#md\\_postpartum\\_anx](https://www.med.unc.edu/psych/wmd/mood-disorders/perinatal#md_postpartum_anx) Accessed July 19, 2016.
138. Meltzer-Brody S et al. Optimizing the treatment of mood disorders in the perinatal period. Dialogues in Clinical Neuroscience June 2015 17(2) 207-218. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4518703>
139. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th edition. (2013) pg 186-187.
140. American Psychological Association. <http://www.apa.org/pi/women/programs/depression/postpartum.aspx> Accessed on June 16, 2015.
141. Venkatesh, K et al. Association of Antenatal Depression Symptoms and Antidepressant Treatment with Preterm Birth. Obstetrics & Gynecology May 2016 Vol 127 Issue 5 p 926-933. [http://journals.lww.com/greenjournal/Abstract/2016/05000/Association\\_of\\_Antenatal\\_Depression\\_Symptoms\\_and.17.aspx](http://journals.lww.com/greenjournal/Abstract/2016/05000/Association_of_Antenatal_Depression_Symptoms_and.17.aspx)
142. ACOG Statement on Depression Screening, July 27, 2015. <http://www.acog.org/About-ACOG/News-Room/Statements/2015/ACOG-Statement-on-Depression-Screening>
143. GA DPH [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/MMR\\_2012\\_Case\\_Review\\_June2015.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/MMR_2012_Case_Review_June2015.pdf)
144. DPH Maternal and Women's Health Georgia Title V Needs Assessment (2015). [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
145. [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal\\_Womens\\_Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Maternal_Womens_Health.pdf)
146. Burkey B et al. Evaluating Medication Use in Pregnancy and Lactation: What every Pharmacist Should Know. J Ped Pharmacol Ther 2013 Jul-Sep; 18(3): 247-258. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3775560/>
147. American Academy of Pediatrics Policy Statement, Breastfeeding and the Use of Human Milk. Pediatrics. 2012;129:e827–e841. <http://pediatrics.aappublications.org/content/129/3/e827.full> See also the “Childhood Illness and Disease Risk Reduction with Breastfeeding” Attachment 5 of this report.
148. American Academy of Pediatrics Policy Statement, Breastfeeding and the Use of Human Milk. Pediatrics. 2012;129:e827–e841. <http://pediatrics.aappublications.org/content/129/3/e827.full>
149. Lewandowski A. et al. Breast Milk Consumption in Preterm Neonates and Cardiac Shape in Adulthood. Pediatrics 2016; 138(1). <http://pediatrics.aappublications.org/content/early/2016/06/12/peds.2016-0050>
150. Moimaz S et al. Longitudinal study of habits leading to malocclusion development in childhood. BMC Oral Health. 2014 Aug 4; 14:96 <http://www.ncbi.nlm.nih.gov/pubmed/25091288> ; Robke F. Effects of nursing bottle misuse on oral health. Prevalence of caries, tooth malalignments, and malocclusions in North-German preschool children. J Orofac Orthop 2008 Jan; 69 (1):5-19. <http://www.ncbi.nlm.nih.gov/pubmed/18213457> See also ADA website, <http://www.mouthhealthy.org/en/az-topics/b/Breastfeeding>



151. Victoria C et al. Association Between Breastfeeding and Intelligence, Educational Attainment, and Income at 30 years of age: A Prospective Birth Cohort Study from Brazil, *The Lancet*, Vol. 3 April 2015. [http://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(15\)70002-1/fulltext](http://www.thelancet.com/journals/langlo/article/PIIS2214-109X(15)70002-1/fulltext) See also Deoni S et al. Breastfeeding and Early White Matter Development: A Cross-Sectional Study, *Neuroimage*, Vol. 82 15 Nov. 2013. <http://diyhpl.us/~bryan/papers2/paperbot/Breastfeeding%20and%20early%20white%20matter%20development:%20A%20cross-sectional%20study.pdf>
152. See also Belfort M. et al. Breast Milk Feeding, Brain Development, and Neurocognitive Outcomes: A 7-Year Longitudinal Study in Infants Born at Less Than 30 Weeks' Gestation. *The Journal of Pediatrics*, July 2016 DOI: [http://www.jpeds.com/article/S0022-3476\(16\)30411-5/fulltext](http://www.jpeds.com/article/S0022-3476(16)30411-5/fulltext) Accessed August 4, 2016.
152. Bartick, M et al. Cost Analysis of Maternal Disease Associated with Suboptimal Breastfeeding, *Obstet Gynecol* 2013;0:1-9. <http://www.ncbi.nlm.nih.gov/pubmed/23743465>
153. Borra C et al. New Evidence on Breastfeeding and Post Partum Depression: The Importance of Understanding Women's Intentions, *Maternal Child Health Journal* (2014) <http://www.ncbi.nlm.nih.gov/pubmed/25138629>
154. Strathearn L, Mamun AA, Najman JM, O'Callaghan MJ. Does Breastfeeding Protect Against Substantiated Child Abuse and Neglect? A 15-Year Cohort Study. *Pediatrics*. 2009; 123; 483. <https://www.ncbi.nlm.nih.gov/pubmed/19171613>
155. American Academy of Pediatrics Policy Statement, Breastfeeding and the Use of Human Milk. *Pediatrics*. 2012;129:e827–e841. <http://pediatrics.aappublications.org/content/129/3/e827.full>
156. Bartick M et al., Cost Analysis of Maternal Disease Associated with Suboptimal Breastfeeding, *Obstetrics & Gynecology* 122(1): 111-119, July 2013. <http://www.ncbi.nlm.nih.gov/pubmed/23743465> Bartick M et al. The Burden of Suboptimal Breastfeeding in the United States: A Pediatric Cost Analysis. *Pediatrics* 125, no. 5 (2010): e1048-e1056 <http://pediatrics.aappublications.org/content/125/5/e1048.short>
157. Gober, M. Calculation done under the guidance of M Bartick of the Harvard study above.
158. Kibbe D, Feng B, Snyder, A. A Report on the Impact of Lactation Consultant Services and Breastfeeding presented to Healthy Mothers, Healthy Babies Coalition of Georgia (2015).
159. The Georgia Department of Public Health. WIC Program Fact Sheet. [http://dph.georgia.gov/sites/dph.georgia.gov/files/WIC Resources/Publications/2013 WIC Fact Sheet.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/WIC%20Resources/Publications/2013%20WIC%20Fact%20Sheet.pdf) Published June 2013. Accessed June 1, 2015.
160. Bartick M. Breastfeeding and the U.S. Economy, *Breastfeeding Medicine* Vol 6 No 5 (2011) <http://online.liebertpub.com/doi/pdfplus/10.1089/bfm.2011.0057>
161. <http://www.cdc.gov/breastfeeding/pdf/2014breastfeedingreportcard.pdf>
162. National Immunization Survey, CDC, Dept of HHS [http://www.cdc.gov/breastfeeding/data/nis\\_data/rates-any-exclusive-bf-state-2012.htm](http://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-state-2012.htm)
163. <http://www.cdc.gov/breastfeeding/pdf/2014breastfeedingreportcard.pdf>
164. [http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Perinatal Health.pdf](http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/TitleV/Perinatal%20Health.pdf)
165. Nutrition, Physical Activity and Obesity Data, Trends and Maps web site. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity and Obesity, Atlanta, GA,. 2011 Data. Available at <https://www.cdc.gov/nccdphp/dnpao/> Accessed on June 30, 2015.

166. Stormant T. Georgia DPH Supplemental Nutrition Program for Women, Infants and Children. Georgia WIC Breastfeeding Gold Standard. Presented to Healthy Mothers, Healthy Babies Coalition of Georgia Annual Meeting. October 7, 2014. <http://www.slideshare.net/rebeccaforehayes/healthy-mothers-healthy-babies-breastfeeding-wic-presentation>
167. Analysis and Table by Kibbe D, Feng B, Snyder A. A Report on the Impact of Lactation Consultant Services and Breastfeeding presented to Healthy Mothers, Healthy Babies Coalition of Georgia (2015). Data from GA DPH State Office of Vital Records, Live Birth Certificate Data by Health and County, 2009-2012.
168. Id.
169. Baby-Friendly USA <https://www.babyfriendlyusa.org/find-facilities/designated-facilities--by-state> Accessed on June 21, 2016.
170. Munn A et al. The Impact in the United States of the Baby-Friendly Hospital Initiative on Early Infant Health and Breastfeeding Outcomes. Breastfeeding Medicine April 2016. <http://online.liebertpub.com/doi/abs/10.1089/bfm.2015.0135>
171. [http://www.cdc.gov/pednss/pednss\\_tables/pdf/national\\_table3.pdf](http://www.cdc.gov/pednss/pednss_tables/pdf/national_table3.pdf)
172. Perrine C et al., Baby-Friendly Hospital Practices and Meeting Exclusive Breastfeeding Intention, Pediatrics 130; 54, 2012 <http://pediatrics.aappublications.org/content/early/2012/05/29/peds.2011-3633.full.pdf+html>
173. Ruowei L et al., Why Mothers Stop Breastfeeding: Mothers' Self-Reported Reasons for Stopping During the First Year, Pediatrics Vol 122, Supplement 2 October 2008. [http://pediatrics.aappublications.org/content/122/Supplement\\_2/S69.long](http://pediatrics.aappublications.org/content/122/Supplement_2/S69.long)
174. Gober, M. Calculation performed using Georgia's breastfeeding initiation rate of 73.7% for the 130,112 babies born in 2012 (95,893) with only 21.7% (28,234) still breastfeeding at all at 12 months--thus losing 67,659 in between the year. 67,659 divided by 365 = 185 babies daily, on average, lost to formula.
175. Thurman SE, Allen PJ. Integrating Lactation Consultants into Primary Health Care Services: Are Lactation Consultants Affecting Breastfeeding Success? Pediatric Nursing. 2008 Sep Oct;34 (5):419-425 <http://www.ncbi.nlm.nih.gov/pubmed/19051846>; See also Castrucci B et al., Availability of Lactation Counseling Services Influences Breastfeeding Among Infants Admitted to Neonatal Intensive Care Units, Am J Public Health 21, no. 5 (2007): 410-415 <http://www.ncbi.nlm.nih.gov/pubmed/17515004>; Castrucci B et al., A Comparison of Breastfeeding Rates in an Urban Birth Cohort, Journal of Public Health Management 12, no. 6 (2006): 578-585 <http://www.ncbi.nlm.nih.gov/pubmed/17041307>.
176. <http://www.cdc.gov/breastfeeding/pdf/2014breastfeedingreportcard.pdf>
177. Data acquired from the IBCLC certification board, the IBCLE, by HMHB in 2016.
178. The Surgeon General's Call to Action to Support Breastfeeding, 2011 <http://www.surgeongeneral.gov/library/calls/breastfeeding/calltoactiontosupportbreastfeeding.pdf>
179. <http://www.quickmedical.com/seca/scales/206.html>
180. US Surgeon General, Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General, 2012. <http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/index.html>
181. Institute of Medicine, Health Implications of Raising the Minimum Age for Purchasing Tobacco Products (2015). [http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2015/TobaccoMinAge/tobacco\\_minimum\\_age\\_report\\_brief.pdf](http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2015/TobaccoMinAge/tobacco_minimum_age_report_brief.pdf)

182. Yang T et al. Pharmacist-Prescribed Birth Control in Oregon and Other States JAMA April 19, 2016 Vol 315, No 15 p 1567. <http://jama.jamanetwork.com/article.aspx?articleid=2506865>
183. Ickovics, J et al. Cluster Randomized Controlled Trial of Group Prenatal Care: Perinatal Outcomes Among Adolescents in New York City Health Centers. Am J of Pub Health; Feb 2016, Vol 106, No 2; 359-365. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302960>
184. See, Fabi R. Undocumented Immigrants in the United States: Access to Prenatal Care (2014) Hastings Center <http://www.undocumentedpatients.org/issuebrief/undocumented-immigrants-in-the-united-states-access-to-prenatal-care/> Accessed May 31, 2015 and Ludomirsky A. Access to Prenatal Care for Undocumented Immigrants Under Medicaid and CHIP: A Review of State Prenatal Care Programs (2010) [http://www.princeton.edu/~pphr/Avital\\_Ludomirsky\\_10.pdf](http://www.princeton.edu/~pphr/Avital_Ludomirsky_10.pdf) Accessed May 31, 2015.

# Attachment 1



## CONÉCTESE

Su Fuente de Referencias de Salud e Información en todo el Estado de Georgia

**1-800-300-9003** o

Busquenos en nuestra página web 24/7 [www.hmhbga.org](http://www.hmhbga.org) 

Si usted ó sus familiares requieren de un chequeo de rutina ó una referencia adicional para atención médica, usted puede confiar en *PowerLine* para ayudarle a encontrar los servicios que necesita. Las referencias incluyen, pero no se limitan a:

- Cuidado de Salud (Doctores)
- Salud Oral (Dentistas)
- Cuidado Prenatal
- WIC y Nutrición
- Salud y Desarrollo Infantil
- Control de la Natalidad
- Apoyo con la Lactancia Materna
- Sitios de Prueba para VIH/ETS

 Línea disponible en Español e intérpretes telefónicos en más de 170 idiomas

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HEALTHY MOTHERS, HEALTHY BABIES  
Coalition of Georgia



Georgia Department of Public Health

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Whether you or your family members require a routine checkup or a referral for additional medical care, you can trust our *PowerLine* to help you find the services you need. Referrals include, but are not limited to:

- Healthcare (Doctor)
- Oral Health (Dentist)
- Prenatal Care
- WIC and Nutrition Services
- Child Health and Development
- Birth Control
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- STD/HIV Testing Sites

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Georgia Department of Public Health

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# Attachment 2



**She's one smart mom**  
**She's got **text4baby****

**Text **BABY** to **511411****  
Get **FREE** messages on your cell phone to help you through your pregnancy and your baby's first year.



A free service of the  
National Healthy Mothers,  
Healthy Babies Coalition

**text4baby** [text4baby.org](http://text4baby.org)

Participating carriers include AT&T, Assurance Wireless, Boost Mobile, Cellular South, Cellcom, Commercial Cellular, Directv One, Cricket, Metro PCS, Nextel, Sprint Nextel, T-Mobile, U.S. Cellular, Verizon Wireless, and Virgin Mobile USA. If you believe you have been charged for text4baby messages in error, please contact your service provider.

**Text **BABY** to **511411** today to get **FREE** messages!**

**Safe Sleep**  
**Breastfeeding**  
**Car Seat Safety**  
**Nutrition**  
**Infant Care**

**FLU**  
Postpartum Depression  
quitting Smoking  
Milestones

**Prenatal Care**  
**Oral Health**  
Infant Feeding  
**Exercise**  
**Labor & Delivery**  
Immunization

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## Attachment 3



**Prevent Child Abuse**  
Georgia  
Healthy Childhoods  
Last a LIFETIME

**1-800-CHILDREN**

Designed to provide resources and information to help parents and caregivers.




Parenting is tough, even in the best of circumstances. The Helpline is a free, statewide, information and referral service. It's a voice on the other end of the line that can empathize and offer support to help you with simple questions or complex situations.

**The Helpline is:**

- **Toll Free**
- **Open Monday to Friday, 8 a.m. to 7 p.m.**
- **Staffed by professionals**
- **Bilingual (Spanish/English)**
- **A source of information and support**
- **A safe place to discuss options**

It provides programs supporting families, caregivers, and professionals to prevent child abuse. The Helpline is NOT a crisis hotline or a place to report suspected abuse.



**STRENGTHENING FAMILIES**  
**ENGAGING COMMUNITIES**

**1-800-CHILDREN**

**VALUING CHILDREN**

Strengthening Families™ is a research-informed approach to increase family strengths, enhance child development and reduce the likelihood of child abuse and neglect.

It is based on engaging families, programs and communities in building five protective factors:

- **Parental resilience:**  
Parents can bounce back
- **Social connections:**  
Parents have friends
- **Knowledge of parenting and child development:**  
Parents know how children grow and learn
- **Concrete support in times of need:**  
Parents know where to turn for help
- **Social and emotional competence of children:**  
Children learn to talk about and handle feelings



**Prevent Child Abuse**  
Georgia

PO Box 3995 • Atlanta, GA 30302-3995  
Phone: 404-413-1460 • Fax: 404-413-1299  
[preventchildabusega.org](http://preventchildabusega.org)



The Arthur M. Blank Family Foundation



The Division of Family and Children Services



Georgia State University



MARK CRAFTIN CENTER FOR HEALTHY DEVELOPMENT



# Attachment 4

Be Smart. Plan Before You Start!



## Planning for Healthy Babies<sup>SM</sup>

### What is the Planning for Healthy Babies program?

Planning for Healthy Babies provides no cost family planning services to eligible women in Georgia. You can enroll in either:

- Family planning
- Resource Mother – provides assistance to women who deliver a baby weighing less than 3 pounds, 5 ounces
- Inter-pregnancy care (IPC) – only for women who deliver a baby weighing less than 3 pounds, 5 ounces, and **includes family planning and Resource Mother services**

### What's covered?

- Annual physical exams including pap smears
- Contraceptives and multivitamins with folic acid
- Family planning counseling
- IPC services including primary care and dental services, substance abuse treatment services, Resource Mother services and more

### Who is eligible?

- Women ages 18 through 44 who meet monthly family income limits
- Women who **do not** receive Medicaid are eligible for family planning services
- Women who deliver a baby weighing less than 3 pounds, 5 ounces and **do not** receive Medicaid or are losing Medicaid coverage, are eligible for IPC services
- Women who receive Medicaid and deliver a baby weighing less than 3 pounds, 5 ounces are **only** eligible for Resource Mother services

See the other side to apply for Planning for Healthy Babies...



Be Smart. Plan Before You Start!



## Planning for Healthy Babies<sup>SM</sup>

### How do I apply?

You can apply online at: [www.planning4healthybabies.org](http://www.planning4healthybabies.org).

If you are unable to apply online, applications may be picked up at your local:

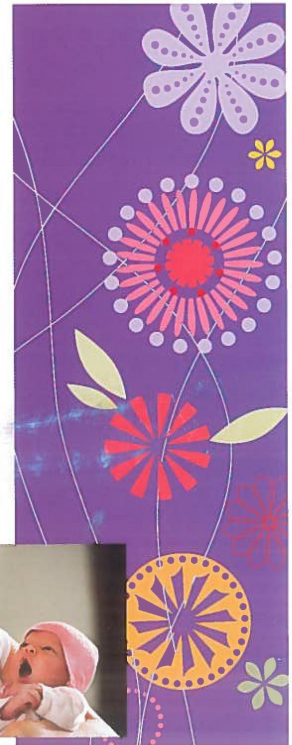
- Public health department
- Division of Family and Children Services (DFCS) office

Completed applications and required documents should be faxed to **888-744-2102** or mailed to:

Planning for Healthy Babies  
Post Office Box 1810  
Atlanta, GA 30301-1810

### Where can I go for more information?

For more information, visit [dch.georgia.gov/p4hb](http://dch.georgia.gov/p4hb) or call **877-P4H-B101** or **877-744-2101**.



## Attachment 5

### Childhood Illness and Disease Risk Reduction with Breastfeeding

Sudden Infant Death Syndrome	36%
Otitis Media (Ear Infections)	50%
Upper Respiratory Infections	63%
Lower Respiratory Infections	72%
RSV Bronchiolitis	74%
Asthma with family hx / without family hx	40% / 26%
Atopic Dermatitis	42%
Gastrointestinal Infections	64%
Gluten Intolerance (Celiac Disease)	52%
Type 1 Diabetes / Type 2 Diabetes	30% / 40%
Obesity (4% reduction for ea mo breastfed)	24%

American Academy of Pediatrics Policy Statement

**Breastfeeding and the Use of Human Milk**

*Pediatrics*, Volume 129, Number 3, March 2012

<http://pediatrics.aappublications.org/content/129/3/e827.full>







**HEALTHY MOTHERS, HEALTHY BABIES**

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**POWERLINE** *Maternal & Infant Health*

*Referrals: 1-800-300-9003*