Infant Mortality in Georgia

Data Gathered for 2017

Strategic Planning for the Atlanta Perinatal Region
Georgia Infant Mortality


Georgia Family Connection Partnership
KIDS COUNT Data Center, datacenter.kidscount.org
A project of the Annie E. Casey Foundation
Georgia Infant Mortality by Race

INFANT MORTALITY BY RACE: ALL (NUMBER)

National KIDS COUNT
KIDS COUNT Data Center, datacenter.kidscount.org
A project of the Annie E. Casey Foundation
Georgia Infant Mortality 2015

131,333 live births and 1,023 infant deaths (IMR=7.8)

Number of Infants Deaths

Infant Mortality Rate

Timing of Infant Deaths

Percent of early neonatal, neonatal and postneonatal deaths, Georgia, 2015

- Early Neonatal Death (0-7 days): 13%
- Neonatal Death (8-27 days): 52%
- Postneonatal Death (28-364 days): 35%

## Infant Deaths 2015

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal and Infant Conditions</td>
<td>504 (49%)</td>
</tr>
<tr>
<td>Birth Defects</td>
<td>191 (19%)</td>
</tr>
<tr>
<td>SIDS*</td>
<td>105 (10%)</td>
</tr>
<tr>
<td>External Causes</td>
<td>59 (06%)</td>
</tr>
<tr>
<td>Other</td>
<td>164 (16%)</td>
</tr>
</tbody>
</table>

* This number does not include the sleep related suffocations.

Infant Deaths by Gestational Age, 2014 Birth Cohort

Cohort of 2014 births who then subsequently died before their 1\textsuperscript{st} birthday

Total deaths captured: 932

653 (70.1\%) infant deaths were infants who were born < 36 weeks gestation

<table>
<thead>
<tr>
<th>GESTATION</th>
<th>MALES</th>
<th>FEMALES</th>
<th>TOTALS</th>
<th>RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-23 weeks</td>
<td>138</td>
<td>111</td>
<td>249</td>
<td>795.5</td>
</tr>
<tr>
<td>24-27 weeks</td>
<td>89</td>
<td>76</td>
<td>165</td>
<td>212.9</td>
</tr>
<tr>
<td>28-31 weeks</td>
<td>58</td>
<td>28</td>
<td>86</td>
<td>59.9</td>
</tr>
<tr>
<td>32-33 weeks</td>
<td>28</td>
<td>24</td>
<td>52</td>
<td>30.6</td>
</tr>
<tr>
<td>34-36 weeks</td>
<td>65</td>
<td>36</td>
<td>101</td>
<td>10.3</td>
</tr>
<tr>
<td>37-38 weeks</td>
<td>57</td>
<td>62</td>
<td>119</td>
<td>3.5</td>
</tr>
<tr>
<td>39-40 weeks</td>
<td>89</td>
<td>59</td>
<td>148</td>
<td>1.9</td>
</tr>
<tr>
<td>41 weeks</td>
<td>8</td>
<td>3</td>
<td>11</td>
<td>1.8</td>
</tr>
<tr>
<td>42+ weeks</td>
<td>0</td>
<td>1</td>
<td>01</td>
<td>*</td>
</tr>
<tr>
<td>Total#</td>
<td>532</td>
<td>400</td>
<td>932</td>
<td>7.1</td>
</tr>
</tbody>
</table>

\# Total may not equal grand total due to missing values.

Rates based on 1-4 events are not shown and indicated by an *

Low Birth Weight Infant Deaths, 2014 Birth Cohort

In 2014, 971 Georgia residents were born who died before their first birthday.

• 538 of the 971 (55%) were VLBW (<1500 gms)
• 686 of the 971 (71%) were LBW (<2500 gms)

In 2010-2014, 4,314 Georgia residents were born who died before their first birthday

• 2,358 of the 4,314 (55%) were VLBW (<1500 gms)
• 2,993 of the 4,314 (69%) were LBW (<2500 gms)

VLBW babies are only 1.8% of all GA births, but 55% of deaths

LBW babies are only 9.5% of all GA births, but 70% of deaths

Cohort of 2014 births who then subsequently died before their 1\textsuperscript{st} birthday

- Infant mortality rates were higher among younger mothers aged 15-17 (IMR=11.8), aged 18-19 (IMR=9.0), aged 20-24 years old (IMR=8.6)
- Mothers 25-29 years old had an IMR of 6.4

Georgia Sleep Related Infant Deaths 2015

In 2015, a total of 170 infant deaths were sleep related (16.6% of total 1,023 infant deaths)

- 98 were SUID
- 3 were SIDS
- 61 were suffocation
- 8 were medical condition

Data Source: Georgia Bureau of Investigation. (Data from 2015). Unpublished Data.
Sleep Related Infant Deaths & LBW 2015

Of the 170 infant sleep related deaths, 17% were born low birthweight (LBW)

- 98 were SUID (13 LBW)
- 3 were SIDS (2 LBW)
- 61 were suffocation (10 LBW)
- 8 were medical condition (4 LBW)

LBW babies are only 9.5% of GA’s total births, but are 17% of total sleep related deaths.

Data Source: Georgia Bureau of Investigation. (Data from 2015). Unpublished Data. LBW Birth data from OASIS
Singleton Sleep Related Deaths by Birthweight, 2010-2014

Data from linked death birth file, a total of 656 sleep related infant deaths between 2010-2014:

• Risk of infant death while sleeping was higher among infants born with an extremely LBW (<500 gms) (n=8; IMR= 7.48).
• 31 (5%; IMR= 3.79) sleep related infant deaths were VLBW (500-1499 gms) babies.
• 111 (17%; IMR=2.83) sleep related infant deaths were LBW (1500-2499 gms) babies.
• 506 (77%; IMR=0.87) sleep related infant deaths were normal birthweight (2500+ gms) babies.

Data Source: Georgia Bureau of Investigation. (Data from 2010-2014). Unpublished Data.
Singleton Sleep Related Deaths by Gestational Age, 2010-2014

Data from linked death birth file, 2010-2014, includes 656 sleep related deaths:

• Risk of infant death while sleeping was higher among infants born very preterm (20-31 weeks) (n=38; IMR=3.87) and among infants born preterm (32-33 weeks) (n=31; IMR=4.92)

• 91 infants born late preterm (34-36 weeks) had an IMR of 2.20

• 196 infants born early term (37-38 weeks) had an IMR of 1.14

• 298 infants born at term (39+ weeks) had an IMR of 0.74

Data Source: Georgia Bureau of Investigation. (Data from 2010-2014). Unpublished Data.
Sleep Related Death Swaddling Data 2015

Sleep related deaths wherein the infant was wrapped or “swaddled” at the time of death.

40 (23.5%) unknown/missing data

Of the Known Data:

• 23 (17.7%) reported “yes”
• 107 (82.3%) reported “no”

Data Source: Georgia Bureau of Investigation. (Data from 2015). Unpublished Data.
Sleep Related Deaths with Maternal Tobacco Exposure in 2015

10 (5.9%) unknown/missing data

Of the known data:

- **60 (37.5%)** mothers reported smoking at any time during pregnancy
  - 49 of those 60 reported smoking during pregnancy and reported that the infant was exposed to second-hand smoke

- **100** reported no maternal smoking

- Only **5.7%** of all GA infants born in 2015 had prenatal maternal tobacco exposure reported on their birth certificate, yet they are 37.5% of the sleep related infant deaths

Data Source: Georgia Bureau of Investigation. (Data from 2015). Unpublished Data.

* Data from: Online Analytical Statistical Information System (OASIS), Infant Mortality Web Query, Georgia Department of Public Health, Office of Health Indicators for Planning (OHIP). Data from 2015.
Sleep Related Deaths with Second Hand Smoke Exposure in 2015

Of the 170 sleep related infant deaths in 2015:

- 74 (43.53%) reported “yes” to exposure to second-hand smoke
- 51 (30%) reported “no” to exposure to second hand smoke
- 45 (26.47%) unknown/missing

Of those who reported exposure, 48 of the 74 (64.9%) reported frequent exposure
  - 24 of the 74 (32.4%) unknown/missing

Data Source: Georgia Bureau of Investigation. (Data from 2015). Unpublished Data.
Last Meal Before Sleep Related Death in 2015

17 (10%) provided no data

Of the Data Provided:

• 115 (75.2%) formula exclusively as the last meal
• 19 (12.4%) breastfeeding exclusively as the last meal
• 3 (2.0%) breastfeeding and formula as the last meal before death

Data Source: Georgia Bureau of Investigation. (Data from 2015). Unpublished Data.
Singleton Sleep Related Deaths < 5 Prenatal Care Visits, 2010-2014

Data from linked death birth file, 2010-2014:

- 656 total infant deaths
- 134 (20%) missing data

Of the Known Data:

- Risk of infant death while sleeping was higher among those with less than 5 prenatal care visits (IMR=2.5) than the risk to those who had more than 5 prenatal care visits (IMR= 0.9)

Data Source: Georgia Bureau of Investigation. (Data from 2010-2014). Unpublished Data.
## 2015 Infant Mortality Data

<table>
<thead>
<tr>
<th>Region</th>
<th>Live Infant Births</th>
<th>Infant Deaths</th>
<th>Infant Mortality Rate (per 1,000 live births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta Perinatal Region Summary₁</td>
<td>78,456</td>
<td>540</td>
<td>6.9</td>
</tr>
<tr>
<td>Georgia₁</td>
<td>131,333</td>
<td>1,023</td>
<td>7.8</td>
</tr>
<tr>
<td>National₂</td>
<td>3,978,497</td>
<td>23,215</td>
<td>5.82*</td>
</tr>
</tbody>
</table>


* Data based on 2014 data records
Atlanta Perinatal Region LBW Infants
2014 Birth Cohort

- 278 (55%) infant deaths were to VLBW infants (<1500 gms)
- 353 (69%) infants deaths were to LBW infants (<2500 gms)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BIRTHWEIGHT</th>
<th>TOTAL MALES</th>
<th>TOTAL FEMALES</th>
<th>TOTAL</th>
<th>RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>200-499 grams</td>
<td>58</td>
<td>64</td>
<td>122</td>
<td>853.1</td>
</tr>
<tr>
<td>2014</td>
<td>500-749 grams</td>
<td>45</td>
<td>44</td>
<td>89</td>
<td>373.9</td>
</tr>
<tr>
<td>2014</td>
<td>750-999 grams</td>
<td>22</td>
<td>8</td>
<td>30</td>
<td>115.8</td>
</tr>
<tr>
<td>2014</td>
<td>1,000-1,249 grams</td>
<td>11</td>
<td>13</td>
<td>24</td>
<td>74.5</td>
</tr>
<tr>
<td>2014</td>
<td>1,250-1,499 grams</td>
<td>6</td>
<td>7</td>
<td>13</td>
<td>38.1</td>
</tr>
<tr>
<td>2014</td>
<td>1,500-1,749 grams</td>
<td>13</td>
<td>3</td>
<td>16</td>
<td>29.9</td>
</tr>
<tr>
<td>2014</td>
<td>1,750-1,999 grams</td>
<td>11</td>
<td>8</td>
<td>19</td>
<td>21.9</td>
</tr>
<tr>
<td>2014</td>
<td>2,000-2,249 grams</td>
<td>10</td>
<td>8</td>
<td>18</td>
<td>12.74</td>
</tr>
<tr>
<td>2014</td>
<td>2,250-2,499 grams</td>
<td>9</td>
<td>13</td>
<td>22</td>
<td>7.8</td>
</tr>
<tr>
<td>2014</td>
<td>2,500-3,999 grams</td>
<td>92</td>
<td>52</td>
<td>144</td>
<td>2.2</td>
</tr>
<tr>
<td>2014</td>
<td>4,000+ grams</td>
<td>8</td>
<td>5</td>
<td>13</td>
<td>2.4</td>
</tr>
<tr>
<td>2014</td>
<td>Total</td>
<td>285</td>
<td>225</td>
<td>510</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Data Source: Online Analytical Statistical Information System (OASIS), Infant Mortality Web Query, Georgia Department of Public Health, Office of Health Indicators for Planning (OHIP).
Jun 05, 2017 http://oasis.state.ga.us/
In 2010, the State estimated Georgia’s performance for delivery of VLBW infants in facilities for high-risk neonates as 72.9% (national goal is 83.7%) and reported in the low- to mid-70s range for the last several years.

Using the approach to measurement recommended by HMA, the all-payer statewide average for delivery of VLBW infants in facilities for high-risk neonates was 75% for CY 2009.

- Georgia Medicaid’s performance was 84%.
- Performance for all other payers was 67%.

### Complete Picture of VLBW in Georgia

<table>
<thead>
<tr>
<th>Table 11</th>
</tr>
</thead>
</table>

**CY 2008 VLBW Births in Georgia**

<table>
<thead>
<tr>
<th></th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide Total VLBW infants</td>
<td>2,531</td>
<td>100%</td>
</tr>
<tr>
<td>Born at RPCs</td>
<td>921</td>
<td>36%</td>
</tr>
<tr>
<td>VLBW infants transferred to RPCs</td>
<td>263</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total VLBW infants born and/or treated at RPCs</strong></td>
<td><strong>1,184</strong></td>
<td><strong>47%</strong></td>
</tr>
<tr>
<td>VLBW infants not born or treated at RPCs</td>
<td>1,347</td>
<td>53%</td>
</tr>
</tbody>
</table>

Source: Data submitted by GA RPCs to National Perinatal Information Center
Distribution of VLBW Deliveries

Table 5
CY 2009 In-State VLBW Deliveries by Facility Designation
Public Health Vital Records Data
(excludes cases where designation is unknown and does not account for transfers between regions)

<table>
<thead>
<tr>
<th>Perinatal Facility Level</th>
<th>Albany</th>
<th>Atlanta</th>
<th>Augusta</th>
<th>Columbus</th>
<th>Macon</th>
<th>Savannah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I</td>
<td>3%</td>
<td>2%</td>
<td>5%</td>
<td>1%</td>
<td>7%</td>
<td>13%</td>
</tr>
<tr>
<td>Level II</td>
<td>20%</td>
<td>18%</td>
<td>28%</td>
<td>21%</td>
<td>26%</td>
<td>17%</td>
</tr>
<tr>
<td>Level III</td>
<td>0%</td>
<td>72%</td>
<td>45%</td>
<td>13%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Level IV</td>
<td>77%</td>
<td>7%</td>
<td>21%</td>
<td>63%</td>
<td>65%</td>
<td>68%</td>
</tr>
<tr>
<td>Not in a Perinatal Facility</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

NPM # 17 (Levels III & IV)  
77% 79% 66% 76% 67% 69%

*Vital Records differentiates Regional Perinatal Centers as Level IV

Challenges

• In more than half (53%) of Georgia’s VLBW births, the birth occurs outside of the RPS and the neonate is not transferred to an RPC.

• Georgia hospitals self-designate level of perinatal care, and there is evidence pointing to potential inaccuracies in these designations, which would influence delivery of VLBW infants in facilities for high-risk neonates.

• Except for the RPCs, the state does not require hospitals to operate equivalent levels of OB and NICU services, which may increase transport of VLBW infants.

Pay Source

• Between CY 2006 and CY 2009, Medicaid paid for 57% of all Georgia births

• On average for 2008-2010, 65% of all Medicaid deliveries were through CMOs, 35% were covered through fee-for-service Medicaid

Births Covered by Medicaid

In 2009, Medicaid covered nearly 58% of births in the state and 45% of VLBW births.

## Medicaid and Other Payors

<table>
<thead>
<tr>
<th>Facility of Birth</th>
<th>Statewide Average</th>
<th>Vital Records Non-Medicaid Payors</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% of Payor Total</td>
<td>Number</td>
</tr>
<tr>
<td>Level I</td>
<td>94</td>
<td>4%</td>
<td>87</td>
</tr>
<tr>
<td>Level II</td>
<td>480</td>
<td>20%</td>
<td>312</td>
</tr>
<tr>
<td>Level III</td>
<td>1077</td>
<td>45%</td>
<td>626</td>
</tr>
<tr>
<td>Level IV</td>
<td>714</td>
<td>30%</td>
<td>188</td>
</tr>
<tr>
<td>Non Perinatal Facility</td>
<td>19</td>
<td>1%</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>2384</td>
<td>100%</td>
<td>1222</td>
</tr>
<tr>
<td>NPM #17 Indicator (Levels III &amp; IV)</td>
<td>1791</td>
<td>75%</td>
<td>814</td>
</tr>
</tbody>
</table>

Remaining Questions

1. Of the 263 VLBW infants transferred to RPCs, how many of them could/should have been born at the RPC but instead were born at another hospital and transferred later?

2. Of the 1,347 VLBW babies not born at or transferred to an RPC (53%), what were the outcomes of their birth location and/or transfers?