



**2002
South Carolina
Residence Data**



**Infant Mortality
Highlights**

January 2004

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Highlights of 2002 Infant Mortality

1. Changes from 2001 to 2002 in SC:

The 2002 South Carolina infant mortality rate is 9.3 infant deaths per 1,000 live births, a 4.5% increase from last year's rate of 8.9. This is largely due to a 6.2% increase of infant death in Black and Other group from 14.5% in 2001 to 15.4% in 2002.

The neonatal mortality rate for white infant remains the same. However, neonatal mortality for Black and Other increased by 7.92% from 10.1 in 2001 to 10.9 in 2002. Thus the neonatal mortality for all races rose by 6.67% from 6.0 in 2001 to 6.4 in 2002.

Very slight increase in post-neonatal mortality compared to 2001.

2. IMR Disparity and Trends in US and Select States:

Table 1. IMR by race in US and select states

| | 1999 | | | 2000 | | | 2001 | | | 2002 | | |
|-----------------------|-------------|------------|-------------|------------|------------|-------------|------------|------------|-------------|------------|------------|-------------|
| | Total | White | Black | Total | White | Black | Total | White | Black | Total | White | Black |
| United States | 7.1 | 5.8 | 14.6 | 6.9 | 5.7 | 14.0 | 6.9 | 5.7 | 14.2 | N/A | N/A | N/A |
| South Carolina | 10.3 | 6.8 | 16.4 | 8.7 | 5.5 | 14.2 | 8.9 | 5.8 | 14.5 | 9.3 | 5.9 | 15.4 |
| Alabama | 9.8 | 6.9 | 16.0 | 9.4 | 6.5 | 15.1 | 9.4 | 6.8 | 14.7 | N/A | N/A | N/A |
| Georgia | 8.2 | 5.4 | 13.8 | 8.5 | 5.9 | 13.9 | 8.5 | 6.2 | 13.2 | N/A | N/A | N/A |
| Mississippi | 10.1 | 6.8 | 14.2 | 10.6 | 6.7 | 15.1 | 10.5 | 6.9 | 14.7 | N/A | N/A | N/A |
| North Carolina | 9.1 | 6.9 | 15.5 | 8.6 | 6.3 | 14.4 | 8.5 | 6.1 | 14.8 | N/A | N/A | N/A |
| Tennessee | 7.7 | 5.7 | 15.2 | 9 | 6.6 | 18.1 | 8.7 | 6.7 | 16.2 | N/A | N/A | N/A |

*Including unknown race.

3. Race-adjusted IMR and crude IMR:

The following table shows comparison of race-adjusted IMR and crude IMR. South Carolina live births in 2000 are used as standard. And adjustment only applies to all-race IMR, while race specific IMR remains the same (race-specific IMR is not shown in this table).

Table 2. Race-adjusted infant mortality

| | 1999 | | | 2000 | | | 2001 | | |
|-----------------------|-------------------|--------------------|-------------|-------------------|--------------------|------------|-------------------|--------------------|------------|
| | Race-adjusted IMR | % of black infants | Crude IMR | Race-adjusted IMR | % of black infants | Crude IMR | Race-adjusted IMR | % of black infants | Crude IMR |
| United States | 9.1 | 15.3 | 7.1 | 8.8 | 15.3 | 6.9 | 8.9 | 15.1 | 6.9 |
| South Carolina | 10.4 | 34.8 | 10.3 | 8.7 | 35.2 | 8.7 | 9.0 | 33.9 | 8.9 |
| Alabama | 10.3 | 31.8 | 9.8 | 9.7 | 32.4 | 9.4 | 9.7 | 31.8 | 9.4 |
| Georgia | 8.5 | 33.2 | 8.2 | 8.9 | 33.5 | 8.5 | 8.8 | 32.7 | 8.5 |
| Mississippi | 9.5 | 45.5 | 10.1 | 9.8 | 45.1 | 10.6 | 9.8 | 44.5 | 10.5 |
| North Carolina | 10.1 | 25.0 | 9.1 | 9.3 | 24.4 | 8.6 | 9.3 | 24.0 | 8.5 |
| Tennessee | 9.2 | 21.2 | 7.7 | 10.9 | 21.2 | 9.0 | 10.2 | 21.2 | 8.7 |

Note: In 2000, SC residents had 55,964 live births. Among them 19,681 were black, 35,146 were white.

4. Neonatal Mortality

Table 3. Neonatal mortality

| Neonatal Mortality | | | |
|---------------------------|-------|-------|---------------|
| Year | Total | White | Black & Other |
| 2001 | 6.0 | 3.8 | 10.1 |
| 2002 | 6.4 | 3.8 | 10.9 |
| Percent Change | 6.67% | 0% | 7.92% |

Notes: Rates are per 1,000 live births, and race of mother is used

5. Leading cause of infant deaths in 2002:

The top three leading causes of infant death and their orders remain the same as in 2001. And in descending order for 2002, they are: “Congenital malformations, deformations, etc.” (ICD-10 codes Q00-Q99), “Disorders relating to short gestation and low birthweight (ICD-10 code P07)”, and “Newborn affected by maternal complications of pregnancy (ICD-10 code P01)”. However, infant death related to “Newborn affected by complications of placenta (ICD-10 code P02)” increased by 122.2% from 9 in 2001 to 20 in 2002. In a contrast, infant death related to “Accident (ICD-10 code V01-X59, Y85-Y86)” dropped by 35.7% from 28 in 2001 to 18 in 2002.

6. Changes in leading causes of deaths from 2001 to 2002

Table 4. Leading causes of death comparison

| Cause of Infant Death Ranked by 2002 Data (ICD-10 Codes) | 2001 | 2002 | % Change |
|--|------------|------------|-------------|
| Total Infant Death | 496 | 507 | 2.2% |
| Congenital malformations, deformations, etc. (Q00-Q99) | 75 | 77 | 2.7% |
| Disorders relating to short gestation and low birthweight, NEC (P07) | 74 | 72 | -2.7% |
| Newborn affected by maternal complications of pregnancy, etc (P01) | 44 | 47 | 6.8% |
| Sudden infant death syndrome (R95) | 38 | 37 | -2.6% |
| Respiratory distress of newborn (P22) | 29 | 24 | -17.2% |
| Newborn affected by complication of placenta, etc. (P02) | 9 | 20 | 122.2% |
| Bacterial sepsis of newborn (P36) | 15 | 19 | 26.7% |
| Accidents (V01-X59, Y85-Y86) | 28 | 18 | -35.7% |
| Diseases of Circulatory System (I00-I99) | 16 | 16 | 0.0% |
| Intrauterine hypoxia and birth asphyxia (P20-P21) | 16 | 14 | -12.5% |
| All other causes | 152 | 173 | 13.8% |

7. Infant Mortality Rate to Hispanic Mother

Infant mortality rate to Hispanic mother is 5.33 per 1,000 live births. Total number of Hispanic mothers were 3188, total number of infant deaths to Hispanic mother were 17.

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8. Breakdown of Infant Deaths due to Maternal Complications (P01)

Table 5. Breakdown of Infant Deaths due to Maternal Complications (P01)

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | Total (96-02) | Percent |
|--------------------------------|------|------|------|------|------|------|-----------|------------------|---------|
| Premature Rupture of Membranes | 9 | 15 | 17 | 9 | 10 | 17 | 18 | 95 | 37.55% |
| Multiple Pregnancy | 3 | 6 | 18 | 17 | 4 | 12 | 9 | 69 | 27.27% |
| Incompetent Cervix | 7 | 7 | 9 | 11 | 4 | 13 | 12 | 63 | 24.90% |
| Others | 0 | 3 | 2 | 0 | 4 | 1 | 2 | 12 | 4.74% |
| Oligohydramnios | 1 | 0 | 1 | 1 | 2 | 1 | 5 | 11 | 4.35% |
| Polyhydramnios | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 1.19% |

9. Trends in Multiple Births in SC

Table 6. Multiple birth trend in SC, 1998 –2002, All Race

| Year | Singleton Births | Singleton Deaths | Infant Mortality Rate* | Twin Births*** | Twin Deaths | Infant Mortality Rate* | Higher Order (3+) Births | Higher Order (3+) Deaths | Infant Mortality Rate* | Total Births** | Total Deaths** | Infant Mortality Rate* |
|-------|------------------|------------------|------------------------|----------------|-------------|------------------------|--------------------------|--------------------------|------------------------|----------------|----------------|------------------------|
| 1998 | 52,238 | 436 | 8.3 | 1,505 | 61 | 40.5 | 88 | 8 | 90.9 | 53,833 | 511 | 9.5 |
| 1999 | 52,951 | 466 | 8.8 | 1,694 | 86 | 50.8 | 50 | 6 | 120.0 | 54,706 | 564 | 10.3 |
| 2000 | 54,270 | 431 | 7.9 | 1,593 | 45 | 28.2 | 94 | 2 | 21.3 | 55,964 | 488 | 8.7 |
| 2001 | 53,954 | 432 | 8.0 | 1,706 | 56 | 32.8 | 81 | 4 | 49.4 | 55,748 | 496 | 8.9 |
| 2002 | 52,746 | 430 | 8.2 | 1,620 | 62 | 38.3 | 83 | 10 | 120.5 | 54,453 | 507 | 9.3 |
| Total | 266,159 | 2,195 | 8.2 | 8,118 | 310 | 38.2 | 396 | 30 | 75.8 | 274,704 | 2566 | 9.3 |

* Rates are in per 1,000 births. Rates calculated with 20 or fewer deaths are unreliable and should be used cautiously

** Includes Unknown Birth Number

***Twin births do not include twin fetal deaths

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10. Statistically significant changes in maternal characteristics in SC from 2001 to 2002:

Table 7.

| | 2001 | | 2002 | | Z-TEST | P-VALUE |
|--|---------|--------|---------|--------|---------|---------|
| | Percent | Number | Percent | Number | | |
| MOTHER < 18 YEARS | | | | | | |
| TOTAL ² | 5.04 | 2,807 | 4.64 | 2,526 | -3.065 | 0.0022 |
| White | 3.46 | 1,236 | 3.27 | 1,149 | -1.4065 | 0.1596 |
| Black & Other | 7.85 | 1,571 | 7.13 | 1,375 | -2.7298 | 0.0063 |
| < 5 PRENATAL CARE VISITS | | | | | | |
| TOTAL ² | 4.22 | 2,354 | 4.08 | 2,222 | -1.1813 | 0.2375 |
| White | 2.82 | 1,007 | 2.89 | 1,015 | 0.5532 | 0.5801 |
| Black & Other | 6.73 | 1,347 | 6.24 | 1,204 | -1.9793 | 0.0478 |
| KESSNER INDEX: ADEQUATE | | | | | | |
| TOTAL ² | 70.76 | 39,448 | 69.97 | 38,101 | -2.8745 | 0.0041 |
| White | 76.68 | 27,398 | 74.74 | 26,273 | -6.0145 | 0.0000 |
| Black & Other | 60.21 | 12,046 | 61.3 | 11,828 | 2.2287 | 0.0258 |
| KOTELCHUCK INDEX: ADEQUATE PLUS | | | | | | |
| TOTAL ² | 37.72 | 21,030 | 41.65 | 22,677 | 13.3055 | 0.0000 |
| White | 38.05 | 13,595 | 41.44 | 14,567 | 9.2268 | 0.0000 |
| Black & Other | 37.15 | 7,432 | 42.03 | 8,109 | 9.8987 | 0.0000 |
| KOTELCHUCK INDEX: ADEQUATE | | | | | | |
| TOTAL ² | 36.5 | 20,346 | 33.51 | 18,246 | -10.398 | 0.0000 |
| White | 39.69 | 14,183 | 36.7 | 12,901 | -8.2001 | 0.0000 |
| Black & Other | 30.79 | 6,161 | 27.7 | 5,345 | -6.7297 | 0.0000 |
| KOTELCHUCK INDEX: INTERMEDIATE | | | | | | |
| TOTAL ² | 11.22 | 6,254 | 10.2 | 5,553 | -5.4765 | 0.0000 |
| White | 11.47 | 4,098 | 10.59 | 3,723 | -3.7299 | 0.0002 |
| Black & Other | 10.78 | 2,156 | 9.48 | 1,830 | -4.2379 | 0.0000 |
| KOTELCHUCK INDEX: INADEQUATE | | | | | | |
| TOTAL ² | 13.19 | 7,351 | 13.35 | 7,267 | 0.7796 | 0.4356 |
| White | 9.68 | 3,460 | 10.13 | 3,562 | 2.0036 | 0.0451 |
| Black & Other | 19.45 | 3,891 | 19.19 | 3,702 | -0.6524 | 0.5141 |
| HISPANIC MOTHER | | | | | | |
| TOTAL ² | 5.39 | 3,005 | 5.85 | 3,188 | 3.3458 | 0.0008 |
| White | 7.8 | 2,786 | 8.53 | 2,997 | 3.5435 | 0.0004 |
| Black & Other | 1.09 | 219 | 0.99 | 191 | -1.0205 | 0.3075 |

¹Race of mother

²Includes unknown races

(Narratives are on next page.)

Table 7 on previous page is about maternal characteristics selected from table 9 in “South Carolina 2002 Infant Mortality and Birth Characteristics”(another more detailed publication from us).

Z-test in table 7 in the second to the last column indicates the change in 2002 vs. 2001 is either increase or decrease. If Z-test value is positive, then there was an increase in 2002 vs. 2001; and a decrease otherwise.

And *P* value in the last column is for statistical evaluation. If *P* value is less than 0.05, then the conclusion of “a statistically significant change (either decrease or increase) ” can be derived.

For example, in “Mother < 18 year old” category, there was a statistically significant decrease in percent of mother less than 18 years old in 2002 vs. 2001 for All Races and Black & Other race group, with *P* values of 0.0022 and 0.0063 respectively. However, such decrease in White group was not statistically significant (with *P* value of 0.1596).

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11. Infant death leading causes of death, 2000 to 2002:

Table 8.1 South Carolina Infant Death, Resident Data, 2000-2002, All races

| Rank | Cause of death | Number | Mortality rate* |
|------|---|--------|-----------------|
| |Total Infant Deaths..... | 1,491 | 9.0 |
| 1 | Disorders Related To Short Gestation, Etc. (P07)..... | 241 | 1.5 |
| 2 | Congenital Malformations, Etc. (Q00-Q99)..... | 241 | 1.5 |
| 3 | Newborn Affected By Maternal Comp Of Pregnancy (P01)..... | 116 | 0.7 |
| 4 | Sudden Infant Death Syndrome (R95)..... | 112 | 0.7 |
| 5 | Respiratory Distress Of Newborn (P22)..... | 73 | 0.4 |
| 6 | Accidents (V01-X59,Y85-Y86)..... | 68 | 0.4 |
| 7 | Bacterial Sepsis Of Newborn (P36)..... | 54 | 0.3 |
| 8 | Newborn Affected By Comp Of Placenta, Etc. (P02)..... | 47 | 0.3 |
| 9 | Intrauterine Hypoxia And Birth Asphyxia (P20-P21)..... | 45 | 0.3 |
| 10 | Disease Of Circulatory System (I00-I99)..... | 41 | 0.2 |
| |All Other Causes..... | 453 | 2.7 |

Table 8.2 South Carolina Infant death, Resident Data, 2000-2002,White

| Rank | Cause of death | Number | Mortality rate* |
|------|---|--------|-----------------|
| |All White Infant Deaths..... | 606 | 5.7 |
| 1 | Congenital Malformations, Etc. (Q00-Q99)..... | 130 | 1.2 |
| 2 | Disorders Related To Short Gestation, Etc. (P07)..... | 62 | 0.6 |
| 3 | Sudden Infant Death Syndrome (R95)..... | 56 | 0.5 |
| 4 | Newborn Affected By Maternal Comp Of Pregnancy (P01)..... | 44 | 0.4 |
| 5 | Accidents (V01-X59,Y85-Y86)..... | 37 | 0.3 |
| 6 | Intrauterine Hypoxia And Birth Asphyxia (P20-P21)..... | 24 | 0.2 |
| 7 | Respiratory Distress Of Newborn (P22)..... | 24 | 0.2 |
| 8 | Bacterial Sepsis Of Newborn (P36)..... | 23 | 0.2 |
| 9 | Disease Of Circulatory System (I00-I99)..... | 16 | 0.2 |
| 10 | Newborn Affected By Comp Of Placenta, Etc. (P02)..... | 14 | 0.1 |
| |All Other Causes..... | 176 | 1.7 |

Table 8.3 South Carolina Infant death, Resident Data, 2000-2002,Black and others

| Rank | Cause of death | Number | Mortality rate* |
|------|---|--------|-----------------|
| |All Black And Other Infant Deaths..... | 884 | 14.7 |
| 1 | Disorders Related To Short Gestation, Etc. (P07)..... | 178 | 3.0 |
| 2 | Congenital Malformations, Etc. (Q00-Q99)..... | 111 | 1.8 |
| 3 | Newborn Affected By Maternal Comp Of Pregnancy (P01)..... | 72 | 1.2 |
| 4 | Sudden Infant Death Syndrome (R95)..... | 56 | 0.9 |
| 5 | Respiratory Distress Of Newborn (P22)..... | 49 | 0.8 |
| 6 | Newborn Affected By Comp Of Placenta, Etc. (P02)..... | 33 | 0.5 |
| 7 | Bacterial Sepsis Of Newborn (P36)..... | 31 | 0.5 |
| 8 | Accidents (V01-X59,Y85-Y86)..... | 31 | 0.5 |
| 9 | Disease Of Circulatory System (I00-I99)..... | 25 | 0.4 |
| 10 | Atelectasis (P28.0-P28.1)..... | 23 | 0.4 |
| |All Other Causes..... | 275 | 4.6 |

* Rates are per 1,000 live births.

(End Of This Highlight Package)