

Table 19. Neonatal mortality rates, by race and Hispanic origin of mother, and state: United States, average annual 1989-1991, 2003-2005, and 2006-2008

(Data are based on linked birth and death certificates for infants)

| State | Not Hispanic or Latina | | | | | | | | |
|----------------------------------|--|------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------|------------------------|------------------------|
| | All races | | | White | | | Black or African American | | |
| | 1989-1991 ¹ | 2003-2005 ² | 2006-2008 ² | 1989-1991 ¹ | 2003-2005 ² | 2006-2008 ² | 1989-1991 ¹ | 2003-2005 ² | 2006-2008 ² |
| | Neonatal ³ deaths per 1,000 live births | | | | | | | | |
| United States..... | 5.7 | 4.6 | 4.4 | 4.6 | 3.7 | 3.6 | 11.1 | 9.2 | 8.7 |
| Alabama..... | 7.5 | 5.4 | 6.0 | 5.7 | 4.0 | 4.6 | 11.1 | 8.5 | 9.0 |
| Alaska..... | 4.1 | 3.2 | 3.1 | 3.7 | *2.6 | *2.3 | * | * | * |
| Arizona..... | 5.3 | 4.5 | 4.4 | 4.9 | 4.0 | 4.0 | 11.0 | 7.4 | 8.9 |
| Arkansas..... | 5.4 | 5.1 | 4.5 | 4.5 | 4.3 | 3.6 | 8.5 | 8.9 | 8.5 |
| California..... | 4.6 | 3.5 | 3.5 | 4.1 | 3.0 | 3.0 | 9.2 | 7.2 | 7.1 |
| Colorado..... | 5.0 | 4.6 | 4.3 | 4.7 | 3.8 | 3.6 | 10.9 | 11.9 | 8.5 |
| Connecticut..... | 5.7 | 4.0 | 4.8 | 4.2 | 2.8 | 3.8 | 12.5 | 8.3 | 9.9 |
| Delaware..... | 7.5 | 6.4 | 5.7 | 5.8 | 4.5 | 4.1 | 12.4 | 12.1 | 10.3 |
| District of Columbia..... | 14.1 | 8.6 | 8.4 | *5.2 | * | *3.9 | 16.7 | 11.9 | 12.3 |
| Florida..... | 6.2 | 4.7 | 4.6 | 4.7 | 3.5 | 3.5 | 10.5 | 8.4 | 8.0 |
| Georgia..... | 7.9 | 5.6 | 5.2 | 5.5 | 3.9 | 3.7 | 12.0 | 9.2 | 8.3 |
| Hawaii..... | 4.3 | 4.7 | 4.1 | 3.5 | *3.1 | *3.1 | * | * | *16.4 |
| Idaho..... | 5.3 | 3.9 | 4.4 | 5.2 | 4.0 | 4.0 | * | * | * |
| Illinois..... | 7.0 | 5.1 | 4.8 | 5.1 | 4.1 | 3.9 | 12.7 | 10.0 | 8.5 |
| Indiana..... | 6.0 | 5.3 | 4.6 | 5.2 | 4.6 | 4.0 | 11.5 | 10.7 | 10.2 |
| Iowa..... | 4.8 | 3.4 | 3.4 | 4.5 | 3.2 | 3.2 | *10.5 | *6.4 | *5.6 |
| Kansas..... | 4.9 | 4.6 | 4.7 | 4.6 | 4.4 | 4.3 | 8.3 | 9.6 | 9.2 |
| Kentucky..... | 5.0 | 4.0 | 4.2 | 4.6 | 3.7 | 4.0 | 8.9 | 7.0 | 7.1 |
| Louisiana ⁴ | 6.3 | 5.8 | 5.5 | 4.8 | 4.0 | 3.5 | 8.5 | 8.5 | 8.6 |
| Maine..... | 4.5 | 4.4 | 4.1 | 4.2 | 4.3 | 4.1 | * | * | * |
| Maryland..... | 5.9 | 5.8 | 5.8 | 3.9 | 3.7 | 3.9 | 10.2 | 10.1 | 9.5 |
| Massachusetts..... | 4.9 | 3.7 | 3.7 | 4.1 | 3.0 | 3.0 | 10.4 | 7.5 | 8.0 |
| Michigan..... | 6.9 | 5.6 | 5.3 | 4.9 | 4.3 | 4.1 | 14.0 | 11.6 | 10.1 |
| Minnesota..... | 4.3 | 3.2 | 3.6 | 3.9 | 2.9 | 3.2 | 10.7 | 5.5 | 7.5 |
| Mississippi..... | 7.1 | 6.2 | 6.1 | 4.9 | 3.5 | 4.0 | 9.5 | 9.7 | 8.6 |
| Missouri..... | 6.0 | 5.1 | 4.8 | 5.0 | 4.4 | 3.8 | 10.6 | 9.4 | 10.2 |
| Montana..... | 4.6 | 3.5 | 3.4 | 4.2 | 3.4 | 3.1 | * | * | * |
| Nebraska..... | 4.5 | 3.7 | 3.8 | 4.2 | 3.3 | 3.5 | *9.8 | *9.4 | *7.4 |
| Nevada..... | 4.3 | 3.7 | 3.9 | 3.8 | 3.6 | 3.3 | *8.3 | 7.7 | 7.4 |
| New Hampshire ⁴ | 4.3 | 3.9 | 3.4 | 4.4 | 3.6 | 3.2 | * | * | * |
| New Jersey..... | 5.8 | 3.8 | 3.6 | 4.5 | 2.6 | 2.7 | 11.4 | 8.2 | 7.4 |
| New Mexico..... | 5.0 | 3.6 | 3.5 | 4.8 | 4.1 | 3.9 | * | * | * |
| New York..... | 6.5 | 4.2 | 3.7 | 4.3 | 3.4 | 2.9 | 12.6 | 8.0 | 7.5 |
| North Carolina..... | 7.3 | 6.0 | 5.5 | 5.3 | 4.2 | 4.0 | 11.9 | 11.4 | 9.9 |
| North Dakota..... | 5.0 | 4.8 | 4.4 | 4.7 | 4.5 | 4.3 | * | * | * |
| Ohio..... | 5.5 | 5.3 | 5.2 | 4.8 | 4.2 | 4.1 | 9.8 | 10.7 | 10.4 |
| Oklahoma ⁴ | 4.4 | 4.6 | 4.6 | 4.1 | 4.3 | 4.3 | 6.3 | 8.8 | 8.9 |
| Oregon..... | 4.4 | 3.8 | 3.6 | 4.0 | 3.7 | 3.5 | *11.6 | * | * |
| Pennsylvania..... | 6.2 | 5.2 | 5.2 | 4.9 | 4.0 | 3.9 | 12.5 | 9.5 | 9.7 |
| Rhode Island..... | 6.4 | 4.8 | 5.0 | 5.3 | 3.5 | 3.1 | *9.8 | *7.6 | *8.9 |
| South Carolina..... | 7.7 | 6.1 | 5.4 | 5.4 | 4.2 | 3.7 | 11.3 | 9.8 | 8.7 |

| | | | | | | | | | |
|--------------------|-----|-----|-----|-----|-----|-----|------|------|-------|
| South Dakota..... | 5.1 | 4.3 | 4.2 | 4.5 | 4.1 | 3.6 | * | * | * |
| Tennessee..... | 6.5 | 5.7 | 5.3 | 4.9 | 4.0 | 3.9 | 11.8 | 11.7 | 10.5 |
| Texas..... | 4.7 | 4.2 | 3.9 | 4.1 | 3.7 | 3.2 | 8.5 | 8.0 | 7.3 |
| Utah..... | 3.7 | 3.4 | 3.4 | 3.6 | 3.1 | 3.2 | * | * | * |
| Vermont..... | 4.1 | 3.8 | 3.2 | 3.9 | 3.7 | 2.9 | * | * | * |
| Virginia..... | 6.8 | 5.2 | 4.9 | 4.8 | 3.9 | 3.6 | 13.0 | 9.6 | 9.4 |
| Washington..... | 4.3 | 3.4 | 3.1 | 3.8 | 2.9 | 2.5 | 9.7 | 5.6 | 4.9 |
| West Virginia..... | 5.8 | 4.8 | 4.3 | 5.6 | 4.7 | 4.0 | *9.7 | * | *11.0 |
| Wisconsin..... | 5.1 | 4.3 | 4.3 | 4.6 | 3.5 | 3.6 | 9.1 | 10.3 | 9.9 |
| Wyoming..... | 3.9 | 4.6 | 4.2 | 3.8 | 4.6 | 3.9 | * | * | * |

Hispanic or Latina⁵

American Indian or Alaska Native⁶

Asian or Pacific Islander⁶

1989-1991¹ 2003-2005² 2006-2008² 1989-1991¹ 2003-2005² 2006-2008² 1989-1991¹ 2003-2005² 2006-2008²

Neonatal³ deaths per 1,000 live births

| | | | | | | | | | |
|----------------------------------|------|------|------|------|------|------|------|------|------|
| United States..... | 4.8 | 3.9 | 3.7 | 5.9 | 4.3 | 4.3 | 3.9 | 3.3 | 3.2 |
| Alabama..... | * | *4.4 | 4.7 | * | * | * | * | * | * |
| Alaska..... | * | * | * | *5.7 | *4.2 | *4.2 | * | * | * |
| Arizona..... | 5.0 | 4.8 | 4.4 | 5.4 | 4.2 | 4.3 | * | *4.3 | *4.8 |
| Arkansas..... | * | *3.8 | *3.7 | * | * | * | * | * | * |
| California..... | 4.4 | 3.5 | 3.3 | 6.3 | *3.1 | *4.2 | 3.6 | 2.9 | 3.0 |
| Colorado..... | 4.4 | 5.3 | 5.1 | * | * | * | * | *4.0 | *4.1 |
| Connecticut..... | 5.3 | 6.1 | 4.6 | * | * | * | * | * | *4.4 |
| Delaware..... | * | *4.4 | *4.3 | * | * | * | * | * | * |
| District of Columbia..... | * | * | * | * | * | * | * | * | * |
| Florida..... | 5.1 | 3.5 | 3.7 | * | * | * | *4.4 | 3.9 | 4.0 |
| Georgia..... | *5.7 | 3.8 | 3.3 | * | * | * | *5.3 | 4.1 | 3.2 |
| Hawaii..... | *6.6 | *5.7 | *3.3 | * | * | * | 4.2 | 4.8 | 4.1 |
| Idaho..... | * | *3.8 | 5.5 | * | * | * | * | * | * |
| Illinois..... | 6.4 | 4.3 | 4.3 | * | * | * | 3.9 | 3.3 | 4.0 |
| Indiana..... | *4.7 | 4.9 | 3.8 | * | * | * | * | * | * |
| Iowa..... | * | *3.7 | *4.3 | * | * | * | * | * | * |
| Kansas..... | *5.4 | 3.4 | 4.9 | * | * | * | * | * | * |
| Kentucky..... | * | *5.5 | *3.9 | * | * | * | * | * | * |
| Louisiana ⁷ | --- | * | *2.3 | * | * | * | * | * | *6.3 |
| Maine..... | * | * | * | * | * | * | * | * | * |
| Maryland..... | *4.7 | 3.8 | 4.0 | * | * | * | *4.5 | *3.4 | 4.1 |
| Massachusetts..... | 5.8 | 4.9 | 4.5 | * | * | * | *3.9 | *2.8 | *2.2 |
| Michigan..... | 5.2 | 5.1 | 4.9 | 4.9 | * | * | * | 3.7 | *3.6 |
| Minnesota..... | * | *2.9 | 2.9 | *4.9 | * | *4.6 | *3.2 | *2.4 | 3.9 |
| Mississippi..... | * | * | *4.8 | * | * | * | * | * | * |
| Missouri..... | * | 4.6 | *3.6 | * | * | * | * | *4.0 | * |
| Montana..... | * | * | * | *7.6 | * | *4.8 | * | * | * |
| Nebraska..... | * | *3.6 | *3.5 | * | * | * | * | * | * |
| Nevada..... | *4.1 | 2.6 | 3.8 | * | * | * | * | *4.0 | *3.2 |
| New Hampshire ⁷ | --- | * | * | * | * | * | * | * | * |
| New Jersey..... | 5.1 | 3.7 | 3.6 | * | * | * | *3.4 | 3.4 | 2.0 |
| New Mexico..... | 4.9 | 3.3 | 3.4 | 4.9 | *3.5 | *2.8 | * | * | * |
| New York..... | 6.4 | 3.8 | 3.3 | 7.7 | * | * | 4.1 | 2.7 | 2.3 |
| North Carolina..... | *5.5 | 4.7 | 4.5 | *7.7 | *8.2 | 10.2 | * | *4.4 | *3.4 |
| North Dakota..... | * | * | * | * | *7.5 | * | * | * | * |
| Ohio..... | *5.4 | 4.8 | 4.4 | * | * | * | * | *3.3 | *3.4 |
| Oklahoma ⁷ | --- | 4.0 | 3.2 | *3.7 | 3.6 | 4.4 | * | * | *2.4 |
| Oregon..... | 6.5 | 3.8 | 3.8 | * | * | * | *5.3 | *3.9 | *2.4 |
| Pennsylvania..... | 7.3 | 5.5 | 5.7 | * | * | * | *5.2 | 3.7 | 4.5 |

| | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|
| Rhode Island..... | *4.9 | *5.8 | *5.9 | * | * | * | * | * | * |
| South Carolina..... | * | 4.7 | 4.3 | * | * | * | * | * | * |
| South Dakota..... | * | * | * | *8.2 | *5.6 | *6.0 | * | * | * |
| Tennessee..... | * | 5.0 | 3.7 | * | * | * | * | *4.7 | *4.3 |
| Texas..... | 4.2 | 3.8 | 3.7 | * | * | * | 4.0 | 2.8 | 2.8 |
| Utah..... | *3.6 | 4.2 | 3.6 | * | * | * | * | *5.3 | *4.4 |
| Vermont..... | * | * | * | * | * | * | * | * | * |
| Virginia..... | *4.8 | 4.0 | 4.0 | * | * | * | *4.1 | 3.6 | 3.0 |
| Washington..... | 4.9 | 3.7 | 3.5 | *8.5 | *4.6 | *4.5 | *2.7 | 2.9 | 2.7 |
| West Virginia..... | * | * | * | * | * | * | * | * | * |
| Wisconsin..... | *3.9 | 4.4 | 4.1 | * | * | * | * | *5.3 | *4.1 |
| Wyoming..... | * | * | * | * | * | * | * | * | * |

*Estimates are considered unreliable.

Rates preceded by an asterisk are based on fewer than 50 deaths in the numerator.

Rates not shown are based on fewer than 20 deaths in the numerator.

---Data not available.

¹Rates based on unweighted birth cohort data.

²Rates based on period file using weighted data. See Appendix I, National Vital Statistics System (NVSS), Linked Birth/Infant Death Data Set.

³Infants under 28 days of age.

⁴Rates for white and black are substituted for non-Hispanic white and non-Hispanic black for Louisiana for 1989, Oklahoma for 1989-1990, and New Hampshire for 1989-1991.

⁵Persons of Hispanic origin may be of any race. See Appendix II, Hispanic origin.

⁶Includes persons of Hispanic origin.

⁷Rates for Hispanic origin exclude data from states not reporting Hispanic origin on the birth certificate for 1 or more years in a 3-year period.

NOTES: Starting with 2003 data, some states reported multiple-race data.

The multiple-race data for these states were bridged to the single-race categories

of the 1977 Office of Management and Budget standards for comparability with other states. See Appendix II, Race.

National linked files do not exist for 1992-1994.

SOURCE: CDC/NCHS,

National Vital Statistics System, Linked Birth/Infant Death Data Set.

See Appendix I, National Vital Statistics System (NVSS).

Health, United States, 2011 web updates