# Infant Mortality

### DEFINITION

*Infant mortality* is the number of deaths of infants under one year of age per 1,000 live births. The data are reported by place of mother's residence, not place of infant's birth.

### SIGNIFICANCE

Infant mortality rates are associated with maternal health, quality of and access to medical care, socioeconomic conditions, and public health practices.[1] Communities with high poverty and disadvantaged social conditions tend to have higher infant mortality rates than more advantaged neighborhoods.[2]

The five main causes of infant death in the U.S. — congenital malformations, low birthweight, sudden infant death syndrome (SIDS), maternal complications, and unintentional injuries — account for 56% of all infant deaths with congenital malformations as the leading cause of infant deaths.[3] While infant mortality has declined nationally across all racial and ethnic groups, disparities remain. Nationally between 2005 and 2014, non-Hispanic Black women (10.9 per 1,000 live births) had twice the infant mortality rate of non-Hispanic White women (4.9 per 1,000 live births) and Hispanic women, (5.0 per 1,000 live births).[4]

The U.S. infant mortality rate declined from 26.0 deaths per 1,000 live births in 1960 to a low of 5.9 deaths per 1,000 live births in 2015 due to improvements in healthier behaviors, medical advances, improved access to care, and economic growth.[5,6,7,8] Relative to other industrialized countries, the U.S. has higher rates of infant mortality due in part to a relatively high number of preterm births that result in infant mortality.[9,10]

The overall infant mortality rate in Rhode Island between 2012 and 2016 was 5.6 deaths per 1,000 live births. The infant mortality rate was 6.9 per 1,000 live births in the four core cities, compared with 4.3 per 1,000 live births in the remainder of the state. Mothers with a high school degree or less had a higher infant mortality rate (5.7 per 1,000 live births) than mothers with higher educational attainment (4.1 per 1,000 live births) between 2012 and 2016.[11]

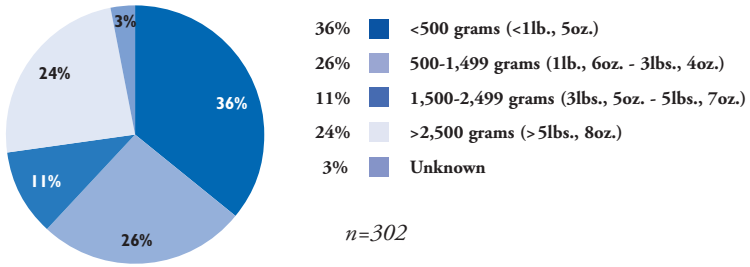
**Infant Mortality Rate**
(rate per 1,000 live births)

| | 2005 | 2015 |
|---|---|---|
| RI | 6.5 | 5.6 |
| US | 6.9 | 5.9 |
| National Rank* | | *18th* |
| New England Rank** | | *4th* |

**1st is best; 50th is worst*
***1st is best; 5th is worst*

Source: The Annie E. Casey Foundation, KIDS COUNT Data Center, datacenter.kidscount.org

**Infant Mortality by Birthweight, Rhode Island, 2012-2016**




Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2012-2016. Data for births in 2016 are provisional.

◆ **Between 2012 and 2016, 302 infants died in Rhode Island before their first birthday, a rate of 5.6 per 1,000 live births. This is an improvement from the 2011-2015 infant mortality rate of 5.9 per 1,000 live births (when there were 316 infant deaths). Between 2012 and 2016, 73% of infants who died were low birthweight (less than 2,500 grams), 24% were born at normal weights, and 3% had unknown birthweights.[12]**

◆ **Preterm birth is the leading cause of infant death in Rhode Island.[13] Between 2012 and 2016, 70% (212) of all infant deaths were preterm (born before the 37th week of pregnancy).[14]**

◆ **Of the 302 infant deaths between 2012 and 2016 in Rhode Island, 77% (234) occurred in the neonatal period (during the first 27 days of life).[15] Generally, infant deaths in the neonatal period are related to short gestation and low birthweight (less than 2,500 grams), malformations at birth, and/or conditions occurring in the perinatal period.[16]**

◆ **Between 2012 and 2016, 23% (68) of the 302 infant deaths in Rhode Island occurred in the post-neonatal period (between 28 days and one year after delivery).[17]**

◆ **Racial and ethnic disparities exist in infant mortality. In Rhode Island between 2012 and 2016, the Black infant mortality rate was 9.9 deaths per 1,000 live births, the Asian infant mortality rate was 9.3 per 1,000 live births, and the White infant mortality rate was 4.3 per 1,000 live births. The Hispanic infant mortality rate was 5.7 per 1,000 live births, compared with 5.0 deaths per 1,000 live births among non-Hispanics in Rhode Island.[18]**

## Reducing Infant Mortality

- Comprehensive state initiatives to reduce infant mortality should include the following seven broad strategies: improve health promotion efforts; ensure quality of care for all women and infants; improve maternal risk screening for all women of reproductive age; enhance service integration for women and infants; improve access to health care of women before, during and after pregnancy; develop data systems to understand and inform efforts; and promote social equity.[19]

- Infant mortality is a result of a variety of factors and interventions to prevent infant mortality should occur at multiple levels, including individual health education and counseling, ongoing evidence-based clinical interventions, long-lasting health protecting actions, creating health-promoting environments, and socioeconomic interventions to eliminate disparities.[20]

- Participation in enhanced prenatal and postnatal care programs, such as evidence-based family home visiting programs, have been shown to reduce the risk of infant death.[21] As of October 2017, there were 1,090 families enrolled in one of the evidence-based family home visiting programs coordinated by the Rhode Island Department of Health.[22]

*Table 21.* **Infant Mortality by City/Town, Rhode Island, 2012-2016**

| CITY/TOWN | # OF BIRTHS | # OF INFANT DEATHS | RATE PER 1,000 LIVE BIRTHS |
|---|---|---|---|
| Barrington | 537 | 1 | * |
| Bristol | 719 | 0 | * |
| Burrillville | 645 | 2 | * |
| Central Falls | 1,613 | 9 | * |
| Charlestown | 238 | 3 | * |
| Coventry | 1,480 | 3 | * |
| Cranston | 3,927 | 19 | 4.8^ |
| Cumberland | 1,661 | 10 | * |
| East Greenwich | 576 | 4 | * |
| East Providence | 2,347 | 17 | 7.2^ |
| Exeter | 246 | 2 | * |
| Foster | 166 | 0 | * |
| Glocester | 337 | 1 | * |
| Hopkinton | 288 | 4 | * |
| Jamestown | 115 | 0 | * |
| Johnston | 1,330 | 7 | * |
| Lincoln | 977 | 5 | * |
| Little Compton | 78 | 0 | * |
| Middletown | 804 | 5 | * |
| Narragansett | 330 | 0 | * |
| Newport | 1,305 | 6 | * |
| New Shoreham | 58 | 0 | * |
| North Kingstown | 1,081 | 2 | * |
| North Providence | 1,625 | 8 | * |
| North Smithfield | 415 | 3 | * |
| Pawtucket | 4,885 | 45 | 9.2 |
| Portsmouth | 583 | 2 | * |
| Providence | 12,511 | 84 | 6.7 |
| Richmond | 307 | 4 | * |
| Scituate | 385 | 3 | * |
| Smithfield | 641 | 2 | * |
| South Kingstown | 854 | 1 | * |
| Tiverton | 530 | 0 | * |
| Warren | 434 | 0 | * |
| Warwick | 3,831 | 11 | 2.9^ |
| Westerly | 873 | 3 | * |
| West Greenwich | 223 | 0 | * |
| West Warwick | 1,741 | 7 | * |
| Woonsocket | 2,890 | 14 | 4.8^ |
| *Unknown* | *166* | *15* | * |
| *Four Core Cities* | *21,899* | *152* | *6.9* |
| *Remainder of State* | *31,687* | *135* | *4.3* |
| *Total* | *53,752* | *302* | *5.6* |

### Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2012-2016.

The denominator is the total number of live births to residents between 2012 and 2016.

^ The data are statistically unstable and rates or percentages should be interpreted with caution.

* The data are statistically unreliable and rates are not reported and should not be calculated.

Unknown: Deaths were to Rhode Island residents, but specific city/town information was unavailable.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

### References


[1] Federal Interagency Forum on Child and Family Statistics. (2017). *America's children: Key national indicators of well-being, 2017.* Washington, DC: U.S. Government Printing Office.

[2] Centers for Disease Control and Prevention. (2013). Infant deaths – United States, 2005-2008. *Morbidity and Mortality Weekly Report, 62*(Suppl 3), 1-87.

[3,7] Kochanek, K.D., Murphy, S.L., Xu, J., & Arias, E. (2017). Mortality in the United States, 2016. *NCHS Data Brief, 293*, 1-7.

[4] Mathews, T. J. & Driscoll, A.K. (2017). Trends in infant mortality in the United States, 2005-2014. *NCHS Data Brief, 279*, 1-7.

[5] MacDorman, M. F. & Rosenberg, H. M. (1993). Trends in infant mortality by cause of death and other characteristics, 1960-88. *National Vital Statistics Reports, 20*(20), 1-51.

[6] The Annie E. Casey Foundation, KIDS COUNT Data Center, datacenter.kidscount.org

[8,10] *Child health USA 2014.* (2015). Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration.

[9] *Health at a glance 2017: OECD indicators.* (2018). Paris, FR: OECD Publishing.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