

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, maternal complications, sudden infant death syndrome (SIDS), and unintentional injuries — account for 57% of all infant deaths.³ Congenital malformations are the leading cause of infant death in the U.S. for all groups, except for non-Hispanic Black and Puerto Rican women, for whom low birthweight was the leading cause. These two ethnic groups also experienced high rates of infant deaths due to preterm-related causes. In both the U.S. and Rhode Island, non-Hispanic Black women had twice the infant mortality rate of non-Hispanic White women.⁴

The U.S. infant mortality rate declined from 26.0 deaths per 1,000

live births in 1960 to a record low of 5.8 deaths per 1,000 live births in 2014, due to improvements in health behaviors, medical advances, improved access to care, and economic growth.^{5,6,7,8} Relative to other industrialized countries, the U.S. has made slower progress in reducing infant mortality due in part to a relatively high number of preterm births resulting in infant mortality.^{9,10}

The overall infant mortality rate in Rhode Island between 2010 and 2014 was 6.2 deaths per 1,000 live births. The infant mortality rate was 8.0 per 1,000 live births in the four core cities, compared with 5.0 per 1,000 live births in the remainder of the state. Also during that time, mothers with a high school degree or less had a higher infant mortality rate (6.1 per 1,000 live births) than mothers with more advanced educational degrees (4.8 per 1,000 live births).¹¹

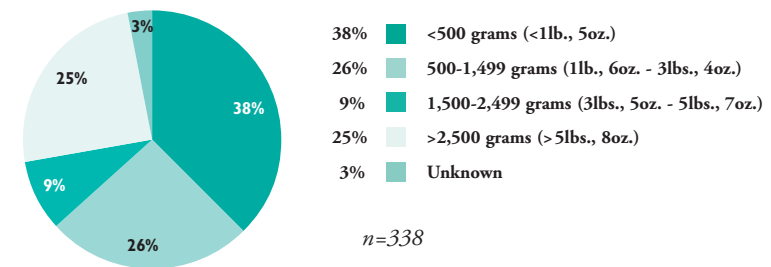
Infant Mortality Rate (rate per 1,000 live births)		
	2004	2014
RI	5.3	4.4
US	6.8	5.8
National Rank*		3rd
New England Rank**		2nd

*1st is best; 50th is worst

**1st is best; 6th is worst

Source: Population Reference Bureau calculations using CDC WONDER data, wonder.cdc.gov

Infant Mortality by Birthweight, Rhode Island, 2010-2014



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2010-2014. Data for births in 2014 are provisional. Totals may not sum to 100% due to rounding.

- ◆ Between 2010 and 2014, 338 infants died in Rhode Island before their first birthday, a rate of 6.2 per 1,000 live births. This is an improvement from the 2009-2013 infant mortality rate of 6.6 per 1,000 live births (when there were 362 infant deaths). Between 2010 and 2014, 72% of infants who died were low birthweight, 25% 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 2010 and 2014, 73% (242) of all infant deaths were preterm (occurring before the 37th week).¹⁴
- ◆ Of the 338 infant deaths between 2010 and 2014 in Rhode Island, 75% (253) 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 2010 and 2014, 25% (85) of the 338 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 2010 and 2014, the Black infant mortality rate was 10.8 deaths per 1,000 live births, the Asian infant mortality rate was 6.4 per 1,000 live births, and the White infant mortality rate was 4.8 per 1,000 live births. The Hispanic infant mortality rate was 6.1 per 1,000 live births, compared with 5.7 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 education and counseling, ongoing evidence-based clinical interventions, long-lasting health promoting 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 2015, there were 823 families enrolled in one of three MIECHV evidence-based home visiting programs in Rhode Island.²²

Table 21. Infant Mortality, Rhode Island, 2010-2014

CITY/TOWN	# OF BIRTHS	# OF INFANT DEATHS	RATE PER 1,000 LIVE BIRTHS
Barrington	503	0	NA
Bristol	778	2	NA
Burrillville	632	2	NA
Central Falls	1,619	8	NA
Charlestown	260	2	NA
Coventry	1,417	6	NA
Cranston	3,887	17	4.4
Cumberland	1,613	10	NA
East Greenwich	552	7	NA
East Providence	2,453	13	5.3
Exeter	256	0	NA
Foster	163	1	NA
Glocester	342	3	NA
Hopkinton	357	0	NA
Jamestown	117	0	NA
Johnston	1,282	8	NA
Lincoln	901	6	NA
Little Compton	79	0	NA
Middletown	834	2	NA
Narragansett	373	2	NA
New Shoreham	56	0	NA
Newport	1,295	7	NA
North Kingstown	1,020	3	NA
North Providence	1,582	9	NA
North Smithfield	412	4	NA
Pawtucket	4,941	40	8.1
Portsmouth	573	4	NA
Providence	12,890	108	8.4
Richmond	348	5	NA
Scituate	331	2	NA
Smithfield	593	1	NA
South Kingstown	897	2	NA
Tiverton	528	1	NA
Warren	458	3	NA
Warwick	3,831	24	6.3
West Greenwich	241	0	NA
West Warwick	1,789	9	NA
Westerly	959	3	NA
Woonsocket	2,946	24	8.1
Unknown	41	0	NA
Four Core Cities	22,396	180	8.0
Remainder of State	31,712	158	5.0
Rhode Island	54,149	338	6.2

Source of Data for Table/Methodology

Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2010-2014. Data for births in 2014 are provisional and do not include births among Rhode Island residents that occurred out-of-state.

The denominator is the total number of live births to Rhode Island residents between 2010 and 2014.

NA: Rates should not be calculated due to small numbers and the lack of statistical reliability.

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

References

- ¹ Federal Interagency Forum on Child and Family Statistics. (2015). *America's children: Key national indicators of well-being, 2015*. Washington, DC: U.S. Government Printing Office.
- ² MacDorman, M. F. & Mathews, T. J. (2013). Infant deaths – United States, 2005-2008. *Morbidity and Mortality Weekly Report*, 62(3), 171-174.
- ³⁷ Murphy, S. L., Kochanek, K. D., Xu, J., & Arias, E. (2015). Mortality in the United States, 2014. *NCHS Data Brief*, 229, 1-7.
- ⁴ Mathews, T. J., MacDorman, M. F., & Thoma, M. E. (2015). Infant mortality statistics from the 2013 period linked birth/infant death data set. *National Vital Statistics Reports*, 64(9), 1-29.
- 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 Population Reference Bureau calculations using CDC WONDER, wonder.cdc.gov, 2003-2014.
- ⁸¹⁰ *Child Health USA 2014*. (2015). Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration.
- ⁹ Organization for Economic Cooperation and Development. (2015). *Infant mortality. Health at a glance 2015: OECD indicators*. Paris, FR: OECD publishing.
- ^{11,12,14,15,17,18,22} Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2010-2014.

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