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, race and ethnicity, quality of and access to medical care, socioeconomic conditions, and public health practices. In the U.S., infant mortality rates are highest in the South.[1,2]

In 2021, the five main causes of infant death in the U.S. were congenital malformations, low birthweight, sudden infant death syndrome (SIDS), unintentional injuries, and maternal complications. The leading causes of infant death were the same in 2020.[3]

The U.S. infant mortality rate has declined from 26.0 deaths per 1,000 live births in 1960 to 5.4 deaths per 1,000 live births in 2021 due to improvements in nutrition, medical advances, improved access to care, economic growth, and safer sleep practices.[4,5,6] Despite this decline, the U.S. continues to have a higher rate of infant mortality than other industrialized countries, in part due to a relatively high number of preterm births.[7]

While infant mortality has declined in the U.S. across all racial and ethnic groups, disparities remain. Nationally in 2021, the non-Hispanic Black infant mortality rate was 10.6 deaths per 1,000 births, the American Indian/Alaska Native rate was 7.5, the Native Hawaiian or Other Pacific Islander rate was 7.8, the Hispanic rate was 4.8, the non-Hispanic white rate was 4.4, and the Asian rate was 3.7.[8]

Between 2018 and 2022, the overall infant mortality rate in Rhode Island was 4.6 deaths per 1,000 live births. Mothers with a high school degree or less had a higher infant mortality rate (5.4 per 1,000 live births) than mothers with higher educational attainment (3.1 per 1,000 live births). Mothers with public insurance had a higher infant mortality rate (5.6 per 1,000 live births) than mothers with private insurance (3.1 per 1,000 live births).[9]

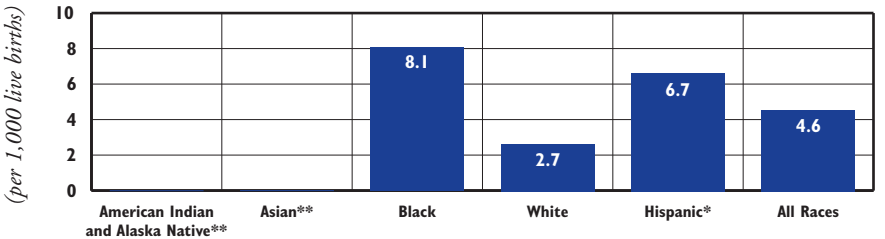
Infant Mortality Rate
(rate per 1,000 live births)

	2011	2021
RI	6.4	4.4
US	6.1	5.4
National Rank*		*10th*
New England Rank**		*3rd*

**1st is best; 49th is worst*
***1st is best; 5th is worst*

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

Infant Mortality Rate per 1,000 Live Births by Race/Ethnicity, Rhode Island, 2018-2022



Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2018-2022 *Hispanic infants can be of any race. **Rate or percentage is too unstable to report.

★ **In Rhode Island between 2018 and 2022, the Black infant mortality rate was 8.1 deaths per 1,000 live births, which is three times the white infant mortality rate of 2.7 deaths per 1,000 live births.[10] The Black infant mortality rate is the highest of any racial or ethnic group even after controlling for risk factors such as socioeconomic status and educational attainment.[11]**

★ **The overall 2018-2022 infant mortality rate in Rhode Island of 4.6 meets the Healthy People 2030 target of 5.0 per 1,000 live births. However, there are disparities by race/ethnicity with the non-Hispanic Black, and Hispanic infant mortality rates well above the target.[12,13]**

★ **Structural racism and the associated stresses are at the root of disparities in maternal and infant mortality, resulting in dramatically higher mortality rates among Black mothers and their babies. It is critical to acknowledge the cumulative effect of structural racism and work to remove systemic barriers that keep Black mothers and their babies from receiving needed care.[14]**

★ **Nationally, although the Asian population has the lowest infant mortality rate, there are significant differences within subgroups. The Filipino infant mortality rate is significantly higher than for all other Asian subgroups. Enhancing the availability of disaggregated data for Asian, Native Hawaiian, Pacific Islander, and Southeast Asian people is important for efforts to advance health equity.[15]**

Causes of Infant Mortality in Rhode Island

★ Between 2018 and 2022, 238 infants died in Rhode Island before their first birthday, a rate of 4.6 per 1,000 live births. Between 2018 and 2022, 66% of infants who died were low birthweight (less than 2,500 grams) and 26% were born at normal weights. Between 2018 and 2022, 66% (158) of all infant deaths were preterm (born before the 37th week of pregnancy).[16]

★ Of the 238 infant deaths between 2018 and 2022 in Rhode Island, 75% (178) occurred in the neonatal period (during the first 27 days of life). Generally, infant deaths in the neonatal period are related to short gestation and low birthweight, malformations at birth, and/or conditions occurring in the perinatal period. Between 2018 and 2022, 25% (60) of the 238 infant deaths in Rhode Island occurred in the post-neonatal period (between 28 days and one year after delivery).[17,18]

Infant Mortality by Core City Status, Rhode Island, 2018-2022

CITY/TOWN	# OF BIRTHS	# OF INFANT DEATHS	RATE PER 1,000 LIVE BIRTHS
Four Core Cities	20,167	120	6.0
Remainder of State	31,308	118	3.8
Rhode Island	*51,475*	*238*	*4.6*

Source: Rhode Island Department of Health, Center for Health Data and Analysis, Maternal and Child Health Database, 2018-2022. Core cities are Central Falls, Pawtucket, Providence, and Woonsocket. Unknown and missing counts were excluded and includes 16 infant deaths that did not link to a birth certificate.

★ The overall infant mortality rate in Rhode Island between 2018 and 2022 was 4.6 deaths per 1,000 live births. The infant mortality rate was higher in the four core cities (6.0 per 1,000 live births) than in the remainder of the state (3.8 per 1,000 live births).[19]

★ During 2018 and 2022, Providence had 79 infant deaths and an infant mortality rate of 6.7 per 1,000 live births, the highest of any city/town in Rhode Island.[20]

★ Two cities in Rhode Island had 16 or more infant deaths, 26 other cities and towns in Rhode Island had between one and 15 infant deaths and due to small numbers, the respective infant mortality rates are not reported or should be interpreted with caution. In Rhode Island, 10 cities and towns had no infant deaths between 2018 and 2022.[21]

Reducing Infant Mortality

★ Strategies to reduce the risk of infant mortality include reducing risk factors or causes of infant mortality (birth defects, preterm and low birthweight infants), improving preconception and prenatal care, improving safe sleep practices, and newborn screening.[22]

★ Comprehensive state initiatives to reduce infant mortality should improve access to critical services, improve the quality of care to pregnant women, address maternal and infant mental health, enhance supports for families before and after birth, and improve data collection and oversight.[23]

★ Strategies to reduce racial and ethnic disparities in infant mortality include improving the quality of perinatal health care for Black families, increasing support in navigating the health care system, increasing access to midwives and doulas, training providers to address implicit racial biases, increasing diversity of the health care workforce, and dismantling barriers to mental health care for Families of Color.[24]

★ Policies that address the racial inequities in the social determinants of health (economic well-being, education access, health care, community/environment, social context) are important in reducing disparities. Reducing environmental, social, and economic stressors through laws and policies can help eliminate disparities in infant mortality (e.g., expanding access to health insurance and improving paid family leave policies, economic support policies, and smoke free laws).[25,26]

★ Participation in evidence-based family home visiting programs has been shown to reduce the risk of infant death.[27,28] As of October 2023, there were 1,000 families enrolled in evidence-based family home visiting programs coordinated by the Rhode Island Department of Health.[29]

References

[1] Federal Interagency Forum on Child and Family Statistics. (2023). *America's children: Key national indicators of well-being, 2023.* Washington, DC: U.S. Government Printing Office.

[2] Centers for Disease Control and Prevention. (n.d.). *Infant mortality.* Retrieved February 29, 2024, from cdc.gov

[3,5,8] Ely D. M., & Driscoll A. K. (2023). Infant mortality in the United States, 2021: Data from the period linked birth/infant death file. *National Vital Statistics Reports, 72*(11), 1-19.

(continued on page 181)