

What is Infant Mortality?

Infant mortality is defined as the death of a baby before his or her first birthday. It is often used as an indicator of the health status of a society as well as maternal and infant health.¹ In 2020, the 10 leading causes of infant death that accounted for 67.5% of all infant deaths in the United States were:²

- Congenital malformations,
- Low birth weight,
- Sudden infant death syndrome,
- Unintentional injuries,
- Maternal complications,
- Cord and placental complications,
- Bacterial sepsis of newborn,
- Respiratory distress of newborn,
- Diseases of the circulatory system, and
- Neonatal hemorrhage.

Risk Factors for Infant Mortality

Women with one risk factor may often have other risk factors. For example, teen mothers are more likely to be unmarried and of a low-income status, while mothers who do not receive prenatal care are more likely to be of a low-income status and uninsured.³

Demographic Risk Factors

- *Maternal age*
 - Infant mortality rates are highest among births to individuals under the age of 20 and over the age of 40.³
 - Pregnant teens may be less likely to receive early and regular prenatal care.⁴
- *Race/Ethnicity*
 - Infants born to Black and Native Hawaiian/Pacific Islander women have twice the risk of infant mortality compared to those born to White women.⁴
 - Black, American Indian/Alaska Native, and Native Hawaiian/Pacific Islander women have higher rate of preterm births, low birthweight births, or births for which they received late or no prenatal care compared to White women.⁴
 - Among Hispanics, Puerto Ricans have the highest rate of infant mortality.³
- *Maternal Pregnancy Complications*
 - Women with hypertension are at a higher risk for poor birth outcomes, including preterm delivery, low birth weight, and infant death.⁵
- *Plural/multiple births*
 - Infant mortality rate increases with multiple births.³

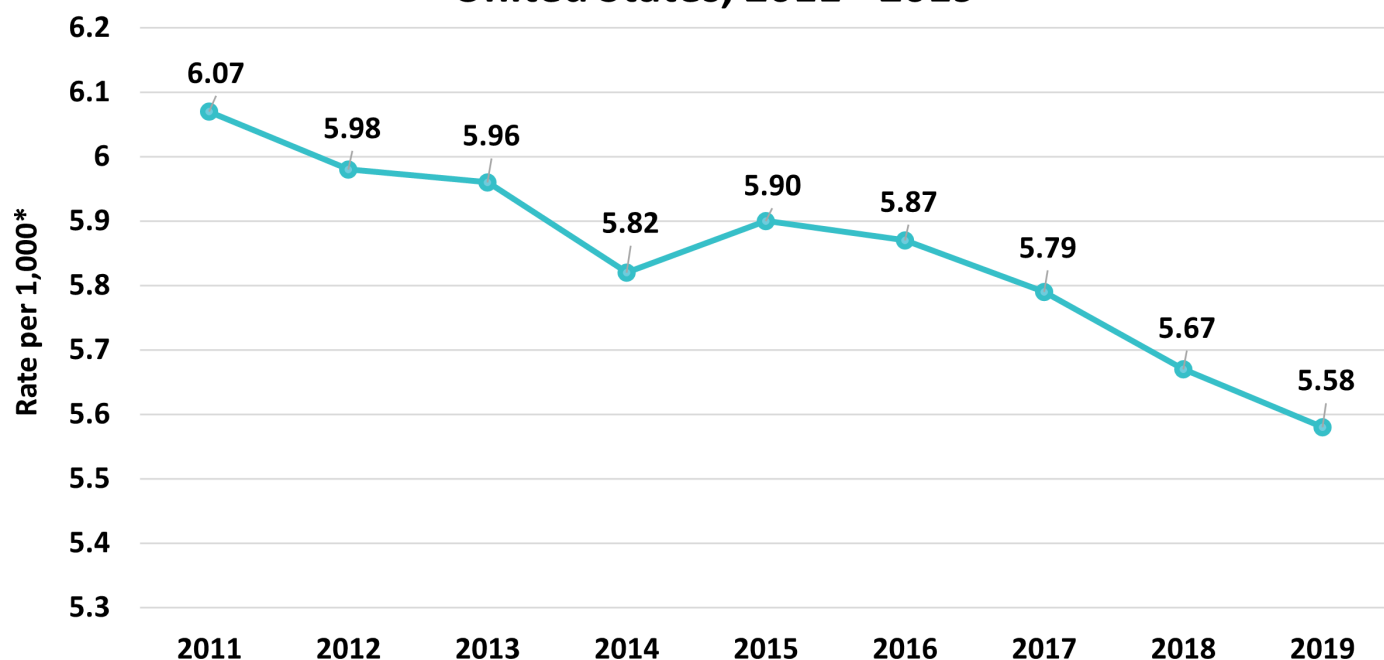
Social and Behavioral Risk Factors

- *Lack of prenatal care*^{3,4}
- *Smoking during pregnancy*
 - The risk for sudden unexpected infant death more than doubles with any maternal smoking during pregnancy.⁶
- *Poor nutrition*
 - Maternal malnutrition is a key contributor to short- and long-term infant morbidity and mortality.⁷
 - Obesity during pregnancy is associated with adverse maternal health and infant outcomes, including preterm delivery, low birthweight, and infant death.⁸
- *Alcohol use*
 - Maternal alcohol-use disorder increases the risk for sudden infant death syndrome (SIDS) and infant mortality excluding SIDS.⁹

National Statistics and Disparities

- In 2019, there were 20,927 infant deaths in the United States.¹⁰
- In 2019, infant mortality rates were higher than the U.S average in the South and Midwest regions of the U.S and lower than the U.S average in the Northeast and West regions.¹⁰

Infant Mortality Rates* United States, 2011 - 2019

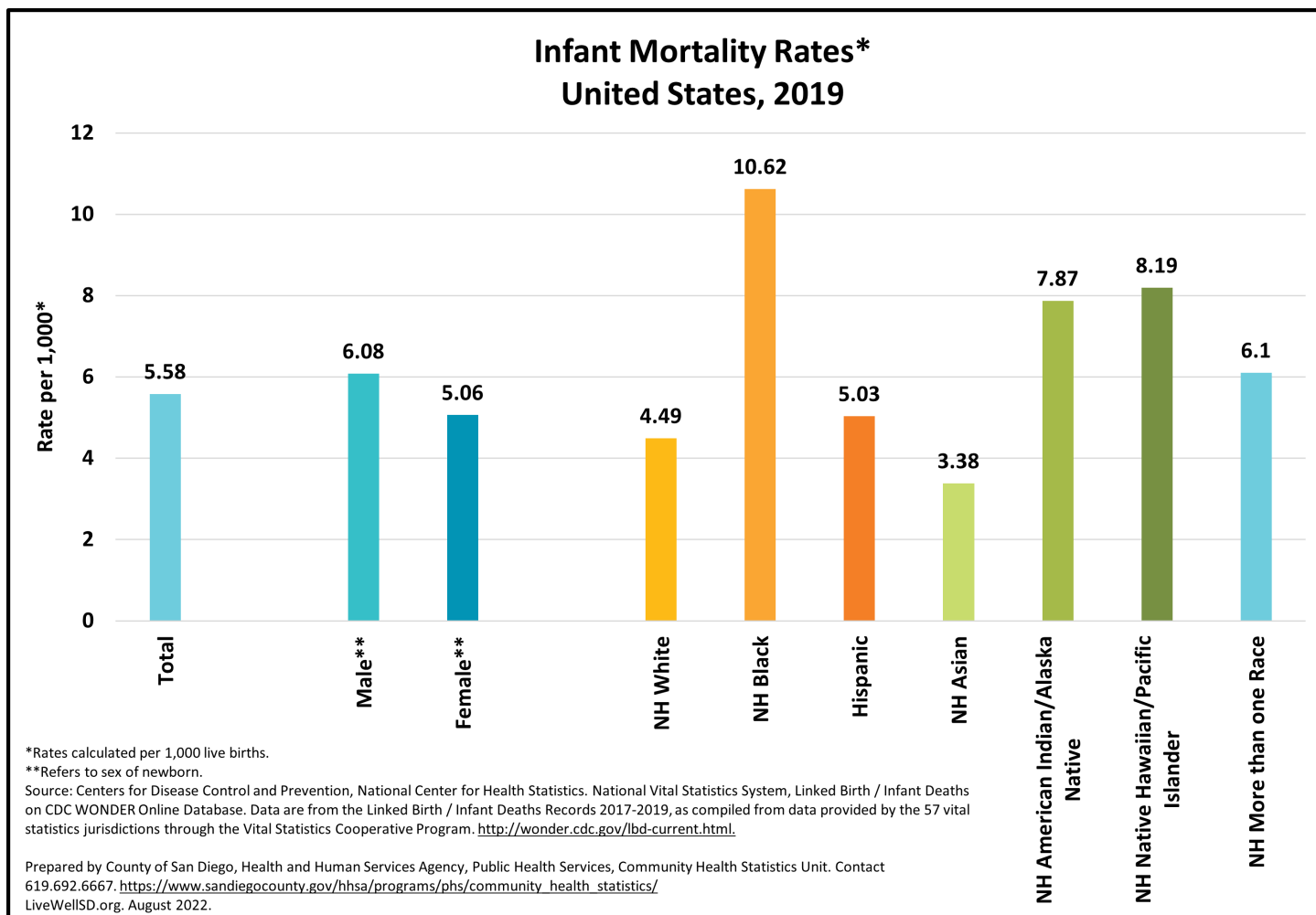


*Rates calculated per 1,000 live births.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Linked Birth / Infant Deaths on CDC WONDER Online Database. Data are from the Linked Birth / Infant Deaths Records 2007-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. <http://wonder.cdc.gov/lbd-current.html>.

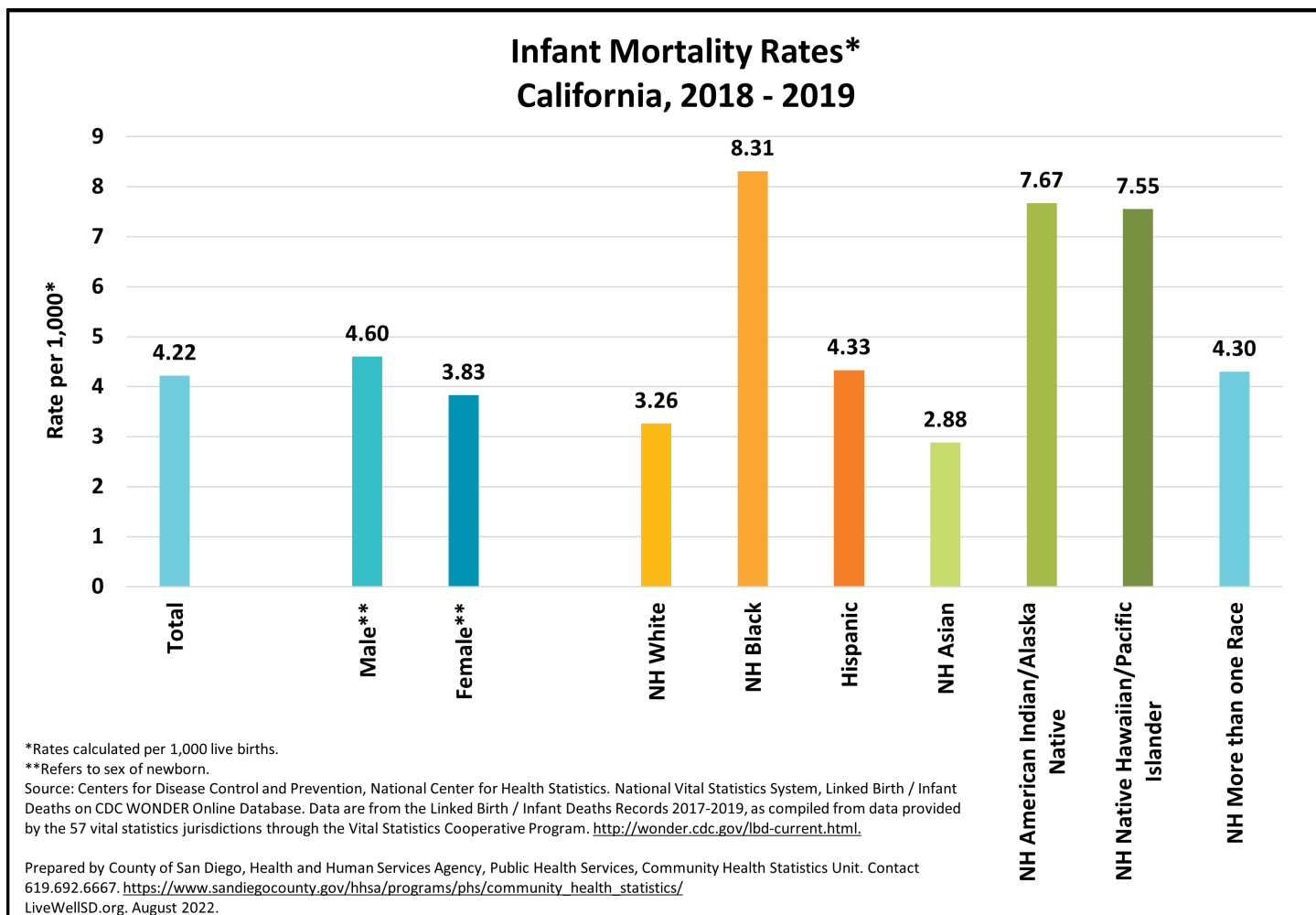
Prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. Contact 619.692.6667. https://www.sandiegocounty.gov/hhsa/programs/phs/community_health_statistics/ LiveWellSD.org. August 2022.

- Between 2011 and 2019, the infant mortality rate in the United States decreased every year except for between 2014 and 2015.¹¹



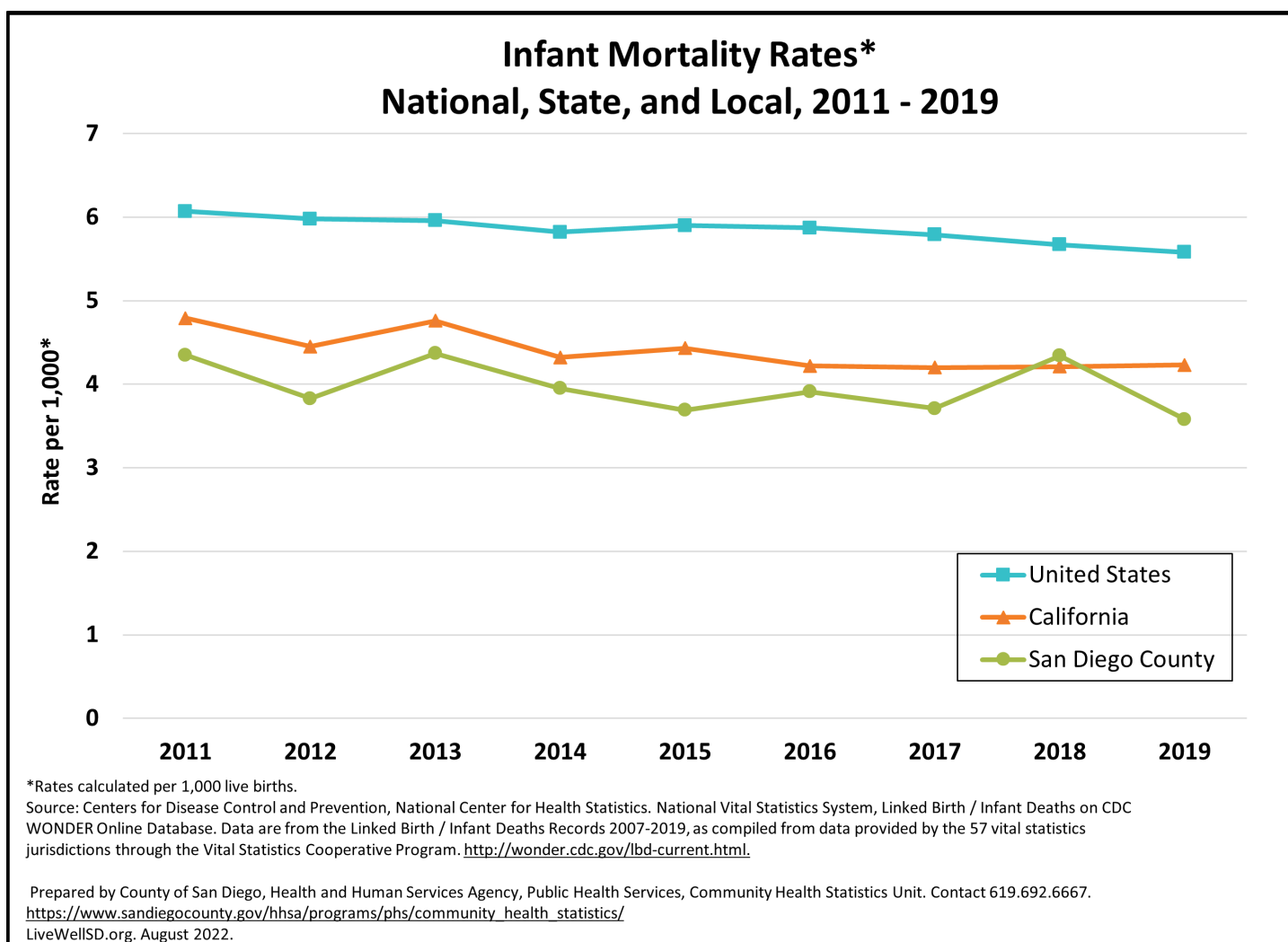
- In 2019, the infant mortality rate in the United States was higher among male infants (6.08 deaths per 1,000 live births) compared to female infants (5.06 deaths per 1,000 live births).¹⁰
- In 2019, the infant mortality rate in the United States was highest among infants born to non-Hispanic (NH) Black mothers (10.62 deaths per 1,000 live births) followed by infants born to NH Native Hawaiian/Pacific Islander mothers (8.19 deaths per 1,000 live births).¹⁰
- In 2019, the infant mortality rate in the United States was the lowest among infants born to NH Asian mothers (3.38 deaths per 1,000 live births).⁹
- In 2019, the infant mortality rate among infants born to NH Black mothers in the United States was nearly double the total infant mortality rate in the United States.¹⁰

State Statistics and Disparities



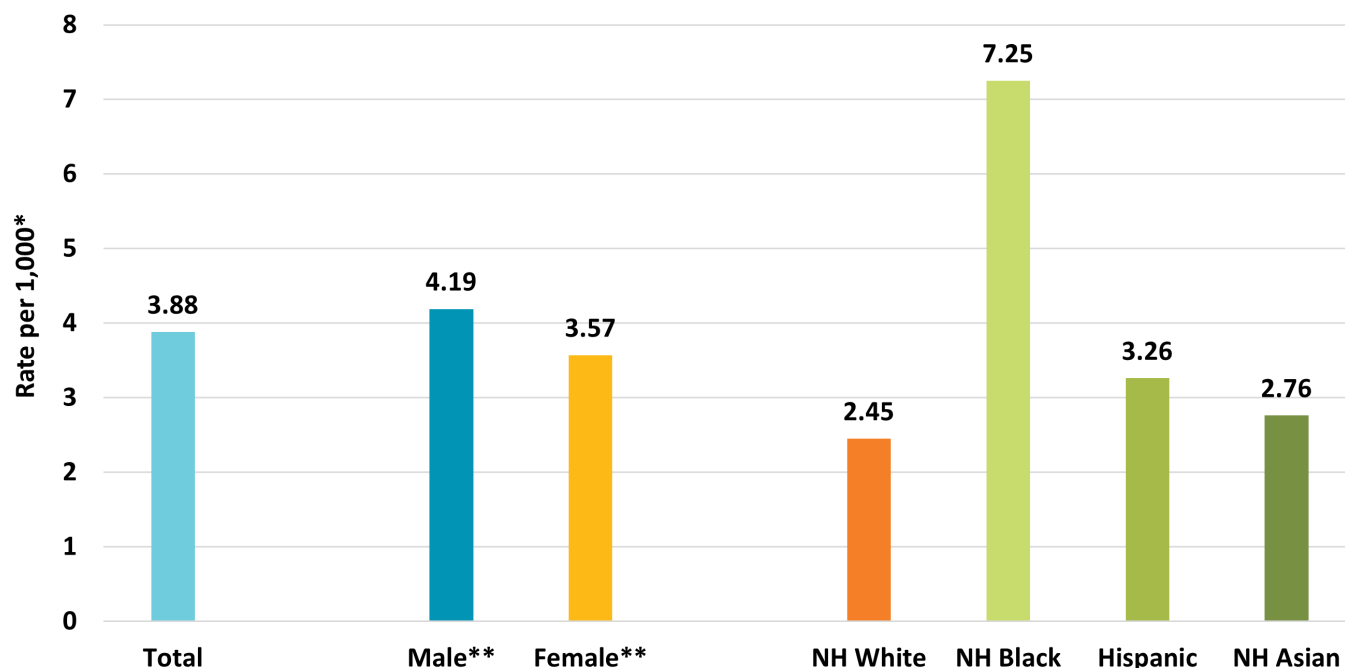
- In 2018-2019, the infant mortality rate in California was 4.22 deaths per 1,000 live births.¹⁰
- In 2018-2019, the infant mortality rate in California was higher among male infants (4.60 deaths per 1,000 live births) compared to female infants (3.83 deaths per 1,000 live births).¹⁰
- In 2018-2019, the infant mortality rate in California was highest among infants born to non-Hispanic (NH) Black mothers (8.31 deaths per 1,000 live births) and lowest among infants born to NH Asian mothers (2.88 deaths per 1,000 live births).¹⁰

Local Statistics and Disparities



- From 2011-2019, California and San Diego County both had lower infant mortality rates than the national rate.¹¹
- From 2011-2019, the infant mortality rate in San Diego was lower than the infant mortality rate in California every year except 2018.¹¹

Infant Mortality Rates* San Diego County, 2017 - 2019



*Rates calculated per 1,000 live births.

**Refers to sex of newborn.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Linked Birth / Infant Deaths on CDC WONDER Online Database. Data are from the Linked Birth / Infant Deaths Records 2017-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. <http://wonder.cdc.gov/lbd-current.html>.

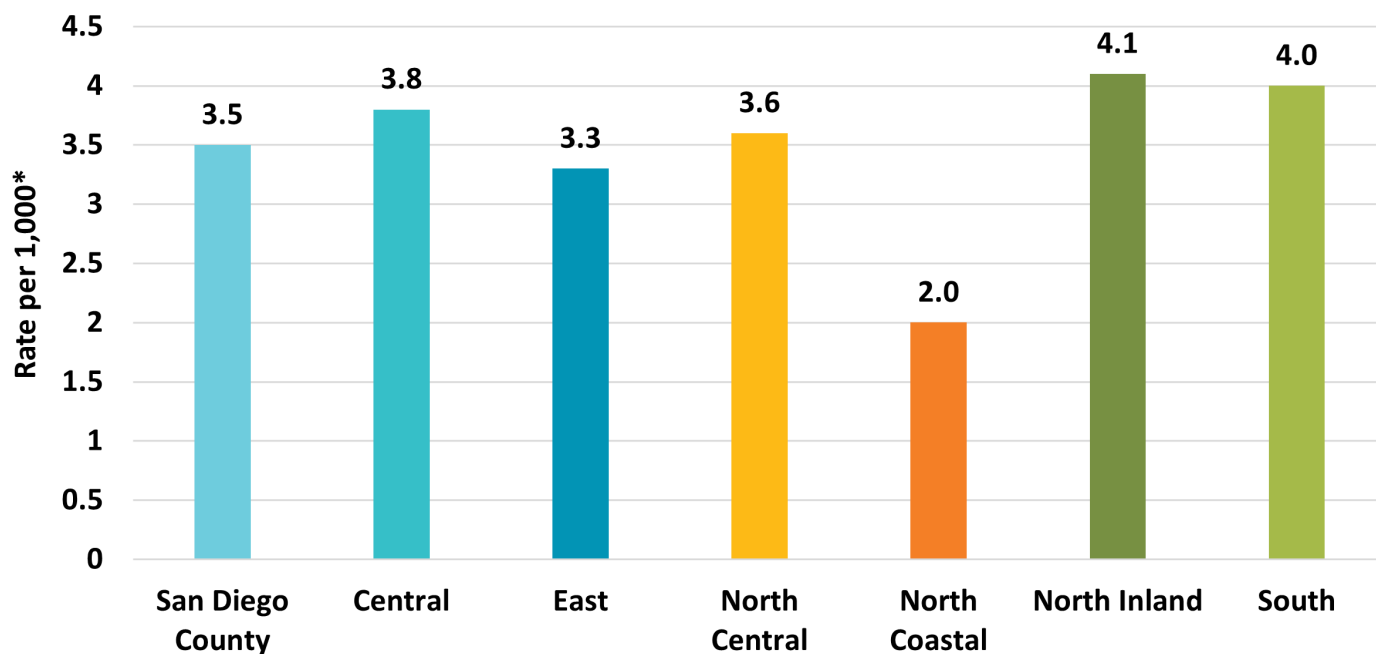
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- In 2017-2019, the infant mortality rate in San Diego County was 3.88 deaths per 1,000 live births.¹⁰
- In 2017-2019, the infant mortality rate in San Diego County was higher among male infants (4.19 deaths per 1,000 live births) compared to female infants (3.57 deaths per 1,000 live births).¹⁰
- In 2017-2019, the infant mortality rate in San Diego County was highest among infants born to non-Hispanic (NH) Black mothers (7.25 deaths per 1,000 live births) and lowest among infants born to NH White mothers (2.45 deaths per 1,000 live births).¹⁰
- In 2017-2019, the infant mortality rate among infants born to NH Black mothers in San Diego County was almost three times the infant mortality rate among infants born to NH White mothers in San Diego County.¹⁰

Infant Mortality Rates* by HHSA Region San Diego County, 2019



*Rates calculated per 1,000 live births.

Source: State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files.

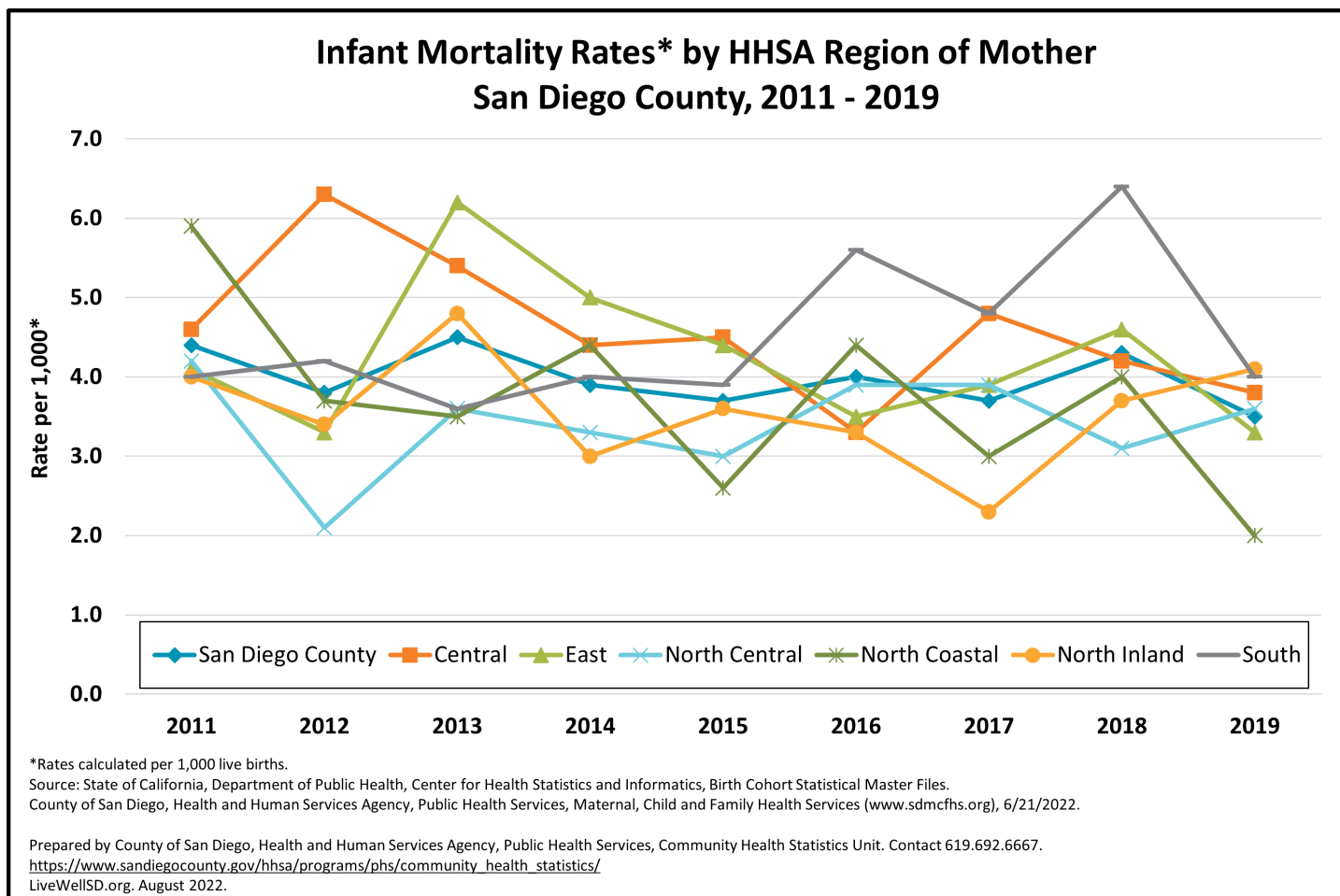
County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services (www.sdmcfhs.org), 6/21/2022.

Prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. Contact 619.692.6667.

https://www.sandiegocounty.gov/hhsa/programs/phs/community_health_statistics/

LiveWellSD.org. August 2022.

- In 2019, the infant mortality rate was the highest in North Inland Region (4.1 deaths per 1,000 live births) and the lowest in North Coastal Region (2.0 deaths per 1,000 live births).¹²



- Between 2011 and 2019, the infant mortality rate had an overall decrease in San Diego County and every HHSA region except North Inland and South Region.¹²
- Between 2011 and 2019, North Coastal Region had a nearly 3 times decrease in infant mortality rate.¹²

Infant Mortality and Its Complications: Prevention for Individuals

- *Seek pre-pregnancy and prenatal care*
 - Reaching a healthy weight, getting proper nutrition, managing chronic health conditions, and seeking help for substance use can help a woman achieve better health before getting pregnant.¹³
- *Prevent birth defects*
 - Avoid use of alcohol, tobacco, and drug to prevent the risk for birth defects.¹⁴
- *Create a safe infant sleep environment*
 - Always place a baby on their back to sleep and keep the sleep area clear of toys and loose bedding.¹³
- *Use newborn screening to detect conditions that are not noticeable at the time of birth¹³*

Prevention Tools for Public Health Professionals: Infant Mortality Critical Pathway

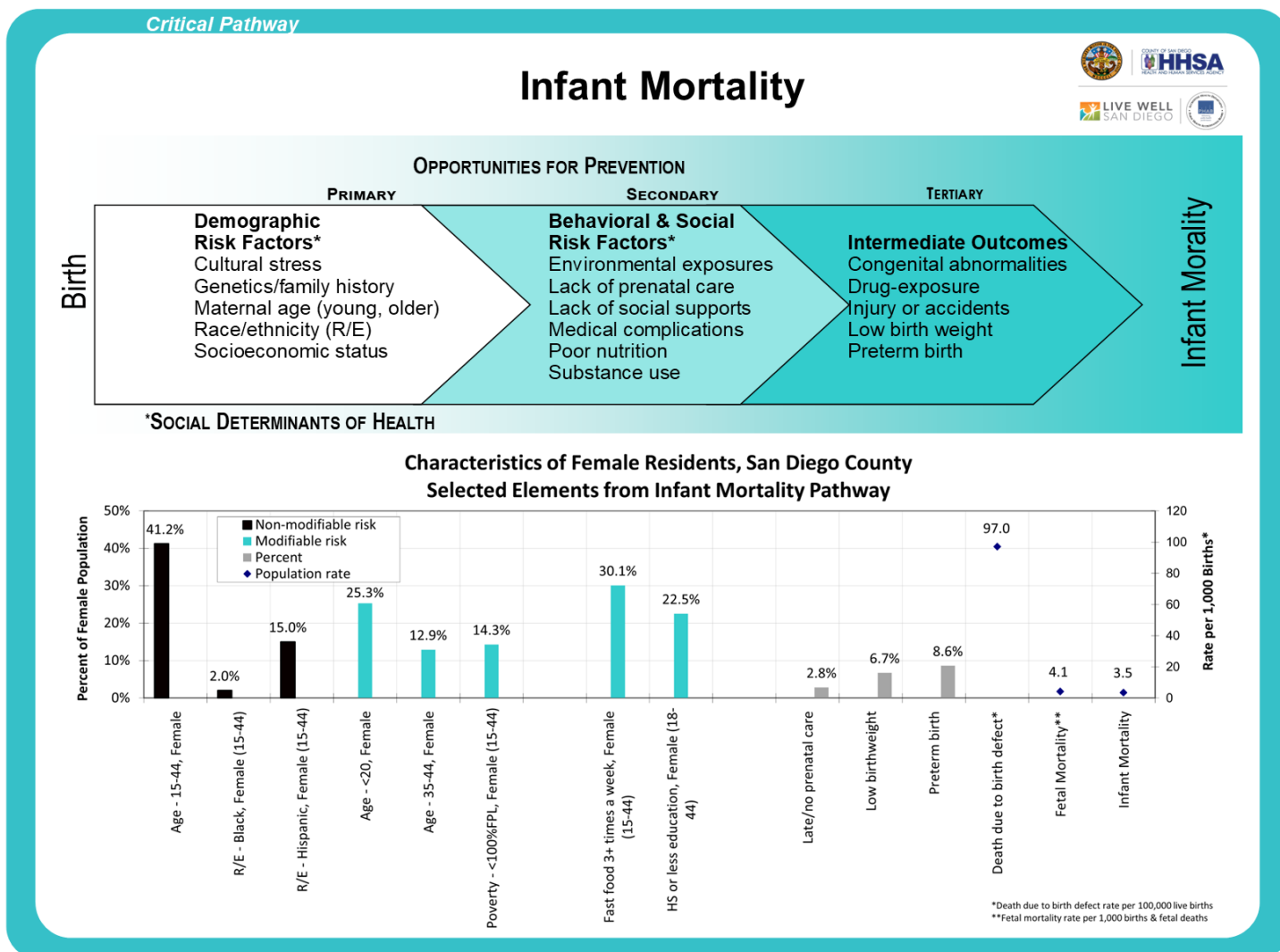
There are many opportunities for public health professionals in the community to help reduce the risk of infant mortality. To assist in community health efforts, an Infant Mortality Critical Pathway was developed.

The *Infant Mortality Critical Pathway* is a tool to be used in health promotion and disease prevention efforts. Its purpose is to identify populations at greater risk for infant mortality, and to identify prevention and early intervention opportunities. The Infant Mortality Critical Pathway displays a diagram of the major risk factors and intermediate outcomes or related diseases that have an impact on, or result from, infant mortality. Risk factors are marked as non-modifiable (black striped bars) such as race/ethnicity or sex and modifiable (solid colored bars) such as physical activity or high blood pressure.

Beneath the risk factors diagram is a data grid describing the San Diego resident population in relation to selected elements of the pathway. The data grid is designed to assist in quick identification of opportunities for interventions that might have a high impact on a particular disease. The data represent all San Diegans, not only those with a particular disease. The left axis (bar) indicates the percent of the population with a known risk factor or intermediate outcome. The right axis (diamond) indicates the rate of a particular medical encounter within the population that is specified. The data are described fully described fully in the complete version of the Critical Pathways.¹⁵

In addition, the Community Health Statistics Unit website (www.SDHealthStatistics.com) provides detailed demographic, health and facility data including maps of geographically formatted health data. Also available are links to other County data sources, state and national sites of interest. For further assistance with data or interpretation, please contact the Community Health Statistics Unit.

Infant Mortality Critical Pathway to Disease



Data Sources

- ¹ Centers for Disease Control and Prevention. (2022). *Infant Mortality*. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>.
- ² Murphy SL, Kochanek KD, Xu JQ, Arias E. Mortality in the United States, 2020. NCHS Data Brief, no 427. Hyattsville, MD: National Center for Health Statistics. 2021. DOI: <https://dx.doi.org/10.15620/cdc:112079>.
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- ⁵ Centers for Disease Control and Prevention. (2022). *Pregnancy Complications*. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-complications.html>.
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- ¹⁰ Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Linked Birth / Infant Deaths on CDC WONDER Online Database. Data are from the Linked Birth / Infant Deaths Records 2017-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. <http://wonder.cdc.gov/lbd-current.html>. Retrieved 08/2022.

¹¹ Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Linked Birth / Infant Deaths on CDC WONDER Online Database. Data are from the Linked Birth / Infant Deaths Records 2007-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. <http://wonder.cdc.gov/lbd-current.html>. Retrieved 08/2022.

¹² State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files. County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services (www.sdmcfhs.org), 6/21/2022.

¹³ National Institutes of Health. National Institute of Child Health and Human Development. (2021). *Are there ways to reduce the risk of infant mortality?* <https://www.nichd.nih.gov/health/topics/infant-mortality/topicinfo/reduce-risk#>.

¹⁴ National Institutes of Health. National Institute of Child Health and Human Development. (2022). *How many people are affected by/at risk for birth defects?* <https://www.nichd.nih.gov/health/topics/birthdefects/conditioninfo/risk>.

¹⁵ County of San Diego Health and Human Services Agency, Public Health Services. Community Health Statistics Unit. (2022). *Critical Pathways: Infant Mortality*. August 2022.