



LIVE WELL  
SAN DIEGO

# Health Equity:

## Reducing African-American Infant Mortality

County of San Diego  
Health and Human Services Agency  
Public Health Services  
Maternal, Child and Family Health  
Services

June 2024



Inquiries regarding this document may be directed to:

County of San Diego  
Health and Human Services Agency  
Public Health Services  
Maternal, Child and Family Health Services  
5469 Kearny Villa Rd., MS: P-511H  
San Diego, CA 92123  
[www.sdmcfhs.org](http://www.sdmcfhs.org)

All materials in this document are in the public domain and may be reproduced and copied without permission. However, citation to the source is appreciated. Suggested citation:

County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services. Health Equity: Reducing African-American Infant Mortality. June 13, 2024.

This paper was developed under the *Public Health Services Strategic Plan*, in the County of San Diego Health and Human Services Agency, to advance the vision of *Live Well San Diego*. Public Health Services department has maintained national public health accreditation, since May 17, 2016, and was re-accredited by the Public Health Accreditation Board on August 21, 2023.



COUNTY OF SAN DIEGO  
HEALTH AND HUMAN SERVICES AGENCY



LIVE WELL  
SAN DIEGO



# Health Equity: Reducing African-American Infant Mortality

## TABLE OF CONTENTS

- Executive Summary** ..... 1
- Introduction** ..... 6
  - Efforts by the County of San Diego ..... 7
- Methods** ..... 7
  - Focus Population ..... 7
  - Analysis of Infant Mortality Statistics ..... 7
- Results** ..... 9
  - Focus Population ..... 9
  - Analysis of Infant Mortality Statistics ..... 10
- Discussion** ..... 18
- Call to Action** ..... 19
- Conclusion** ..... 20
- References** ..... 21

*Page intentionally left blank.*

# Health Equity: Reducing African-American Infant Mortality

## EXECUTIVE SUMMARY

### Introduction

Infant mortality is the death of an infant before reaching one year of age.<sup>1</sup> Nationwide, infant mortality has largely declined over the past several decades, driven mainly by life-saving neonatal care, broader access to primary care, and better nutrition.<sup>2,3</sup> Still, despite being one of the wealthiest nations in the world, the United States' infant mortality rate is higher than that of many other industrialized countries.<sup>4,3,5</sup> One reason is the large disparity between racial and ethnic groups.<sup>3</sup> Even with improvements in both African-American and White rates, substantial (two- to three-fold) differences remain.<sup>2,6</sup>

The purpose of this white paper, titled *“Health Equity: Reducing African-American Infant Mortality,”* is to review contemporary infant mortality statistics in San Diego County and comparison geographies, with a special focus on African Americans. In this overview, a call to action is provided to raise awareness for and bring attention to this health equity issue.

### Methods

Birth cohort files were the source of most statistics in this report. National and California birth cohort file statistics were obtained from National Center for Health Statistics (NCHS) reports, while San Diego County data were obtained from the California Department of Public Health and analyzed by the County. In addition to the birth cohort files, infant mortality statistics from the NCHS' period linked birth/infant death files are also presented for the county, state, and nation, since subnational race/ethnic statistics were not available from NCHS' cohort files.

The most recent available birth cohort data are for 2020. Data for 2021 are expected to be available in spring of 2024.

### Results

Recent historical data show that overall infant mortality rates have been lower in California and San Diego County compared to the U.S.<sup>7,8</sup> Both the State and County have also met the Healthy People 2030 target of 5.0 deaths per 1,000 live births.<sup>7,8,9</sup> Among San Diego County's African Americans, the infant mortality rates have decreased by nearly 40% between the 2000-2002 (14.3) and 2018-2020 averages (8.7 deaths per 1,000 live births).<sup>8</sup> Still, the rate remains higher than that of other large race/ethnic groups, for which rates are available, and among them, is also the only one that has not met the Healthy People 2030 target.<sup>8,9</sup> County African-American rates were two to four times White rates between 2000 and 2020.<sup>8</sup>

### Discussion

The infant mortality rate is a reflection of a population's overall health, as it is a product of social well-being, rates of illness and disease, economic development, and general living conditions.<sup>1,10</sup> Although

socioeconomic factors play a large part in race/ethnic disparities, they cannot completely explain them.<sup>11</sup> Other social determinants of health associated with adverse perinatal outcomes are unequal treatment, institutionalized racism, and minority status stressors.<sup>3,11</sup> Race is not an indicator of biological weakness, but a proxy for exposure to racism. As evinced by the COVID pandemic, population inequities limit the individual choices that some people have available to them to affect their own health.<sup>12</sup>

Because social and economic issues underlie infant mortality rates and the disparity, they are “everyone’s” issues, and not just the domain of public health.<sup>3</sup> Still, the County and its partners have invested significant effort in raising public awareness of infant mortality and its related disparities, and implemented evidence-based programming aimed at directly improving birth outcomes among pregnant and postpartum African-American women and birthing people. The Black Infant Health (BIH) Program and Perinatal Equity Initiative (PEI) are two notable County efforts that are designed specifically to confront the disparities in African-American infant mortality and promote healthy pregnancy among its participants and the broader community. Current County activities to eliminate the disparity in infant mortality are also presented, along with a call to action to other agencies and organizations, providers, and women and birthing people.

### Call To Action

Infant mortality, in many ways, reflects the broader health and wellbeing of a community. Examples include the availability of quality health care and accessibility of social and built environments that promote positive health and social connection. In acknowledging the wide range of complex factors that contribute to infant mortality, efforts to improve outcomes require a multi-faceted approach across all segments of the community, including State and local health departments, providers, and clients.

---

### STATE AND LOCAL PUBLIC HEALTH DEPARTMENTS

- Continue monitoring current infant mortality data to identify trends in case counts, rates, and causes of infant death.
- Continue state funding for implementation of programs like the San Diego County Black Infant Health Program which aims to improve African-American infant and maternal/birthing parent health, as well as decrease health and social inequities for women and infants; and the Perinatal Care Network which expedites the process for linking pregnant women/people to access to care, health care providers, and other supportive services.
- Continue research efforts to collect population-based data on maternal/birthing person attitudes and experiences before, during, and after pregnancy (e.g., Maternal and Infant Health Assessment survey).
- Leverage change through multisector, public, and private collaboration.
- Advance systems coordination and service integration (e.g., health care services, social services, and behavioral health services).

---

## PROVIDERS

- Educate pregnant women/people about reducing the risk of infant mortality, such as: obtain early and continuous prenatal care, practice healthy behaviors, create safe sleep environments, and obtain newborn screening.
- Adopt policies and practices that eliminate medically unnecessary deliveries prior to 39 weeks of gestation.
- Devote extra time in providing care and education for mothers/pregnant parents who are at increased risk for infant mortality such as those with pre-existing health conditions, African-American mothers/birthing parents, etc.
- Refer pregnant African-American women/people to the San Diego County Black Infant Health program, home visiting programs, and other family support services.
- Increase education and improve training among OB/GYNs to establish trauma-informed practices/environments in clinic settings.
- Increase education and improve training among OB/GYNs to better convey risk factors of fetal and infant losses, post-loss options of care, and available resources/referrals to clients.
- Report all information on birth and death certificates, including race and ethnicity, so that complete statistics can be compiled.

---

## PREGNANT AND POSTPARTUM INDIVIDUALS

- Obtain care before and during pregnancy to reduce the risk of infant mortality from causes including birth defects, preterm birth, low birthweight, and certain pregnancy complications.
- Increase education and awareness among pregnant women/people to advocate for self (e.g., obtaining referrals for mental health services, decisions regarding post-loss OB care, fetal monitoring, risk factors, and guidance on dealing with insurance companies).
- Practice behaviors to improve health by maintaining a healthy weight, getting proper nutrition and exercise, reducing stress, and managing chronic health conditions (e.g., diabetes and hypertension).
- Create safe infant sleep environments.
- Maintain healthy and supportive relationships.
- Seek help and support when needed.

## Conclusion

Decreases in infant mortality rates have been observed at national, State, and County levels thanks to improvements in medicine, pre- and interconception health, and public awareness of the importance of preventing premature birth and low birthweight, among other efforts. Despite these successes, disparities still exist among underrepresented and marginalized communities. African-American infant mortality rates remain stubbornly high relative to White rates, and efforts to address disparities warrant continued support and investment.

Evidence-informed client-level interventions such as BIH are essential to promoting protective factors among pregnant and postpartum African-American women/people and offer valuable opportunities for

social connection, support, and empowerment. PEI engages community members and key stakeholders through collaboration and collective impact to address systems-level barriers to positive birth outcomes among the African-American community. The synergy between these client and community-level interventions is critical to ensuring infant mortality rates continue to improve across all race/ethnic groups in San Diego County.

Following the infant mortality trends over the past two decades, the rates for all groups have declined. However, the rate for African-American birthing people remains high. While the gap is narrowing, strategies outlined in the “call to action” are imperative to leveling this gap. These efforts will support the health equity goal to reduce disproportionate African-American infant mortality.



*Page intentionally left blank.*

# Health Equity: Reducing African-American Infant Mortality

## INTRODUCTION

Infant mortality is the death of a live-born infant before his or her first birthday.<sup>1</sup> In 2020, the five leading causes of infant mortality in the United States were: 1) congenital malformations, deformations and chromosomal abnormalities (21% of infant deaths); 2) disorders related to short gestation and low birthweight, not elsewhere classified (16%); 3) sudden infant death syndrome (SIDS, 7%); 4) accidents (unintentional injuries, 6%); and 5) newborn affected by maternal complications of pregnancy (6%).<sup>13</sup> More specifically, the infant mortality rate is the number of infant deaths for every 1,000 live births.<sup>1</sup> It is an indicator of a population's overall health, as it is a product of social well-being, as well as rate of illness and disease, economic development, and general living conditions.<sup>1,10</sup> It also reflects access to and quality of pre- and postnatal medical care, for both the mother/birthing parent and infant.<sup>14</sup>

Because infant mortality reflects overall population health, it also shines a light on health equity. Social determinants of health, such as job security, availability of healthy food, transportation, and quality education, intertwine with and influence health disparities between different populations.<sup>15</sup> In 2020, infant mortality continued to vary by race/ethnicity in the U.S.<sup>6</sup> African-American infant mortality rates appear to have been about 1.5 to 2.5-fold higher than White rates since the 1950s even though both groups have considerably improved.<sup>2</sup> Similarly, since 2000, San Diego County's African-American infant mortality rates have been about two to four times higher than White rates.<sup>8</sup>

Many factors are responsible for the gap between African American and White birth outcomes. Socioeconomic factors play a large part but cannot completely explain it. Studies have found that disparities remain or widen even after controlling for socioeconomic status and health conditions.<sup>11,3</sup> For instance, in the U.S., infant mortality rates tend to decrease with increasing maternal/birthing parent education. But even among births to mothers/birthing parents with advanced degrees, African-American infant mortality is worse than White infant mortality.<sup>6</sup> Race is not an indicator of biological weakness, but a proxy for exposure to racism. As evinced by the COVID pandemic, population inequities limit the individual choices that some people have available to them to affect their own health.<sup>12</sup> Historical and contemporary structural discrimination (e.g., redlining, criminal justice policies) restrict access to quality housing and education, employment, and political participation among African-American mothers/birthing parents.<sup>3,16</sup> Upstream issues like this, class oppression, and gender discrimination have trickle down effects which influence social determinants of health.<sup>15</sup> Life course theory implies that birth outcomes are not the end product of just nine months of pregnancy but the entire life of the mother/birthing parent before their pregnancy, even when they were a fetus themselves.<sup>17,3</sup>

In the [Public Health Services Strategic Plan](#), the health equity goal for Maternal, Child and Family Health Services is to reduce the disproportionate African-American infant mortality.<sup>18</sup> According to [Healthy People 2030](#), achieving health equity requires addressing societal inequalities, historical and contemporary injustices, and health care disparities.<sup>19</sup>

## Efforts by the County of San Diego

In an effort to reduce the risk to African-American infants, the Maternal, Child and Family Health Services Branch of the Public Health Services Department of the County of San Diego Health and Human Services Agency, contracts with Neighborhood House Association to implement the Black Infant Health (BIH) program. BIH offers targeted resources and services to Black women/birthing people who are pregnant or up to six weeks postpartum. Their group-based approach and client-centered case management specifically encourage access to quality health care and social connection, two important social determinants of health constructs. Improvements in these two areas promote the health and wellbeing of the mother/birthing parent as well as reduce the rate of infant mortality among the African-American community.

In 2018, the California legislature passed Assembly Bill 1810 which established, as an enhancement to the BIH program, the Perinatal Equity Initiative (PEI).<sup>20</sup> PEI promotes innovative strategies aimed at further reducing racial health disparities in birth outcomes among Black women/birthing people. In San Diego County, PEI convenes a Community Advisory Board (CAB) tasked with informing and providing feedback on the County's African-American birth equity efforts, such as the PEI Fatherhood Initiative, implicit bias training, and "[Black Legacy Now](#)" media campaign.

The purpose of this white paper, titled "*Health Equity: Reducing African-American Infant Mortality*," is to review contemporary infant mortality statistics in San Diego County and comparison geographies, with a special focus on African Americans. In this overview, a call to action is provided to raise awareness for and bring attention to this health equity issue.

## METHODS

### Focus Population

Infant mortality is the death of a live-born infant before his or her first birthday.<sup>1</sup> Infant mortality statistics are based on data from birth and death certificates. In San Diego County, birth information is submitted primarily by hospitals, while deaths are the responsibility of funeral homes and medical examiners. Certificates are then registered by County and State vital records registrars.

These data include important demographics, such as age at death, race (up to three can be reported in California), ethnicity (Hispanic/non-Hispanic), and place (e.g., county) of residence. This report focuses on infant deaths among births to African-American birthing people who reside in San Diego County.

### Analysis of Infant Mortality Statistics

Using vital records data, for example, San Diego County can calculate its African-American infant mortality rate (infant deaths per 1,000 live births) by dividing the number of African-American infant deaths (numerator) by the number of births to African-American mothers/birthing parents (denominator) in the same year and multiplying by 1,000. To be consistent with the denominator, infant deaths of mothers/birthing parents who are African American should also be used for the numerator (since infant

and maternal/birthing parent race/ethnicity can differ), but only race/ethnicity of the decedent is available on death certificates, not parental race/ethnicity.

A better alternative to using the *separate* death and birth files to calculate infant mortality rates is the birth cohort data file. This contains records for all births in a given year, with infant deaths that may have occurred linked to the corresponding birth record, whether the death occurred in that same year or the year after.<sup>21</sup> Although there is a longer lag time for file production, maternal/birthing parent race/ethnicity from the birth certificate can be used for both deaths and births, yielding more accurate infant mortality rates by race/ethnicity. Birth cohort files were the source of most statistics in this report. National and California birth cohort file statistics were obtained from National Center for Health Statistics (NCHS) reports, while San Diego County data were obtained from the California Department of Public Health and analyzed by the County. The most recent available County birth cohort data are for 2020. Data for 2021 are expected to be available in spring of 2024.

In addition to the birth cohort files, infant mortality statistics from the NCHS' period linked birth/infant death files are also presented for the county, state, and nation, since subnational race/ethnic statistics were not available from NCHS' cohort files. For rates from the period linked files, the denominator is all births occurring in a given year while the numerator is all infant deaths occurring in the same year linked to their corresponding birth certificate, whether the birth occurred in that year or the year prior.<sup>21</sup> These data are cross-sectional, unlike the cohort file, but there is a shorter lag time for file production.<sup>7,21</sup>

---

## LIMITATIONS

Based on availability, as described above, multiple data sources with differing methodology were used. Because this may affect comparability of statistics, every attempt is made to draw comparisons using the same data source.

“Single” race statistics are presented in this report whenever they were available. “Single” race means mothers/birthing parents of “two or more races” were placed in a separate category. Persons reporting Hispanic ethnicity were categorized as Hispanic, regardless of race. Although California allowed reporting of more than one race on birth certificates starting in 2000, nationally, not all states did until 2017. To permit local comparisons with the U.S. before all states had transitioned, “bridged” race statistics are presented. This takes into account only the race reported first, for states that collected more than one race. “Bridged” race statistics were available from NCHS only up to 2019. “Single” race statistics should not be compared with “bridged” race statistics (e.g., in Figures 3 and 8).

Statistics are based on place of residence of mother/birthing parent on the birth certificate. Births and infant deaths of California residents that occur in other states/territories are also included in State and local statistics but reporting of them is known to be incomplete. For California residents, county of residence was determined by geocoding rather than reporting of county starting in 2020.

Maternal/birthing parent race/ethnicity is missing for a large proportion of births in San Diego County's birth cohort file – 9.5% in 2020, larger than several actual race/ethnic groups. Among just the infants that

died, it is missing for 23.5%.<sup>8</sup> This can greatly affect the accuracy of rates for all race/ethnic groups, since these deaths and births are absent from their actual categories.

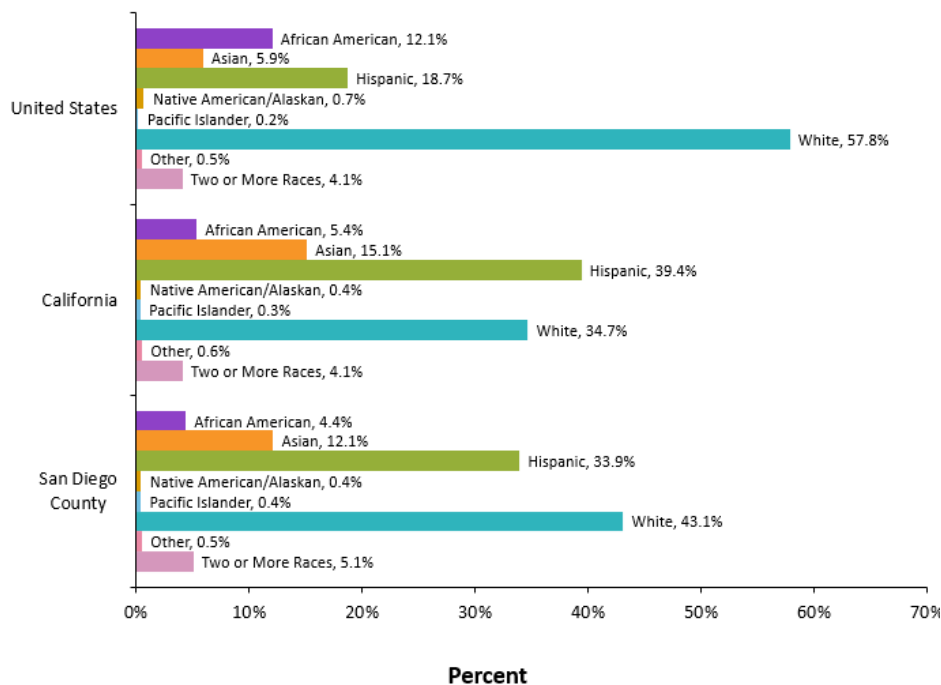
The number of deaths and births in a single year can be small, so in addition to presenting single year statistics, multiple years are often aggregated to increase rate reliability, or national statistics are shown instead of local. Combining three years provided sufficient precision when comparing rates between race/ethnic groups (African-American vs. White) but up to five years were combined when comparing African-Americans in different geographies over time, or when there were additional breakouts, such as, education levels within race/ethnic groups. Additionally, some race/ethnic groups are not shown in figures when their numbers are too low to calculate reliable rates. Rates shown that are based on small numbers (e.g., 20 events) are considered statistically unreliable and should be interpreted with caution as there can be large fluctuations due to chance that are not significant.

## RESULTS

### Focus Population

**Figure 1** shows each race/ethnic group’s proportion out of the total 2020 population in the U.S., California, and County, respectively. Nationwide, just over 1 in 10 people (12.1%) were African American. In San Diego, fewer than 1 in 20, or 4.4% of the population, were African American, slightly lower than the proportion in the State (5.4%).<sup>22</sup>

**Figure 1. Population by Race/Ethnicity for United States, California, and San Diego County, 2020.**



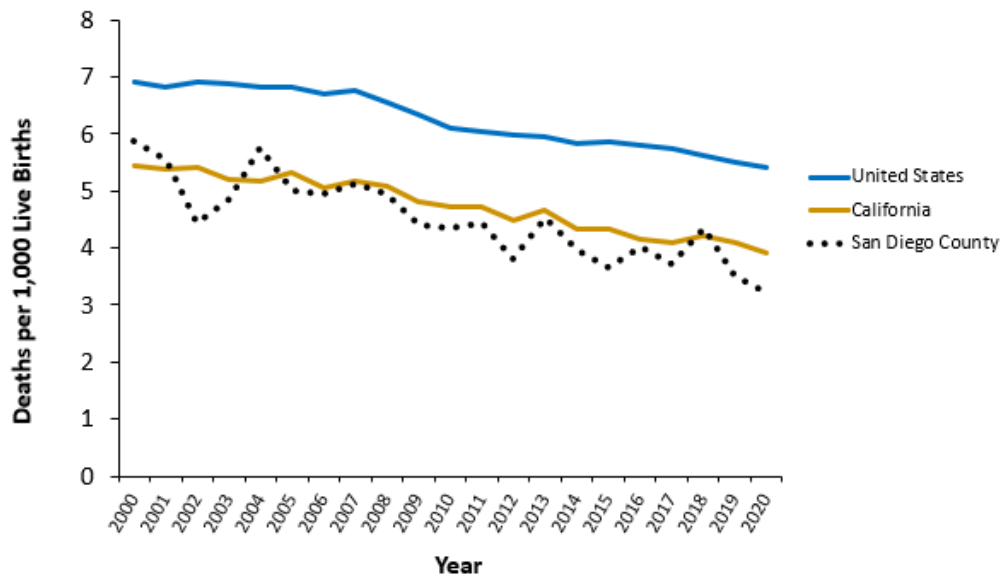
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File (DHC), Table P9.

## Analysis of Infant Mortality Statistics

**Figure 2** shows the overall rate (all race/ethnic groups) for the U.S., California, and San Diego County from 2000 to 2020. San Diego's rate was nearly halved between 2000 and 2020 (going from 5.9 to 3.2 infant deaths per 1,000 live births).<sup>8</sup>

Rates have been higher nationwide than in California and San Diego County. In 2020, San Diego's rate was 3.2 and not significantly different from the State's 3.9, but lower than the nation's 5.4 deaths per 1,000 live births.<sup>8,7</sup> California and San Diego County have met the Healthy People 2030 target of 5.0 deaths per 1,000 live births.<sup>7,8,9</sup>

**Figure 2. Infant Mortality Rate (All Races/Ethnicities) for United States, California, and San Diego County Residence, 2000-2020.**



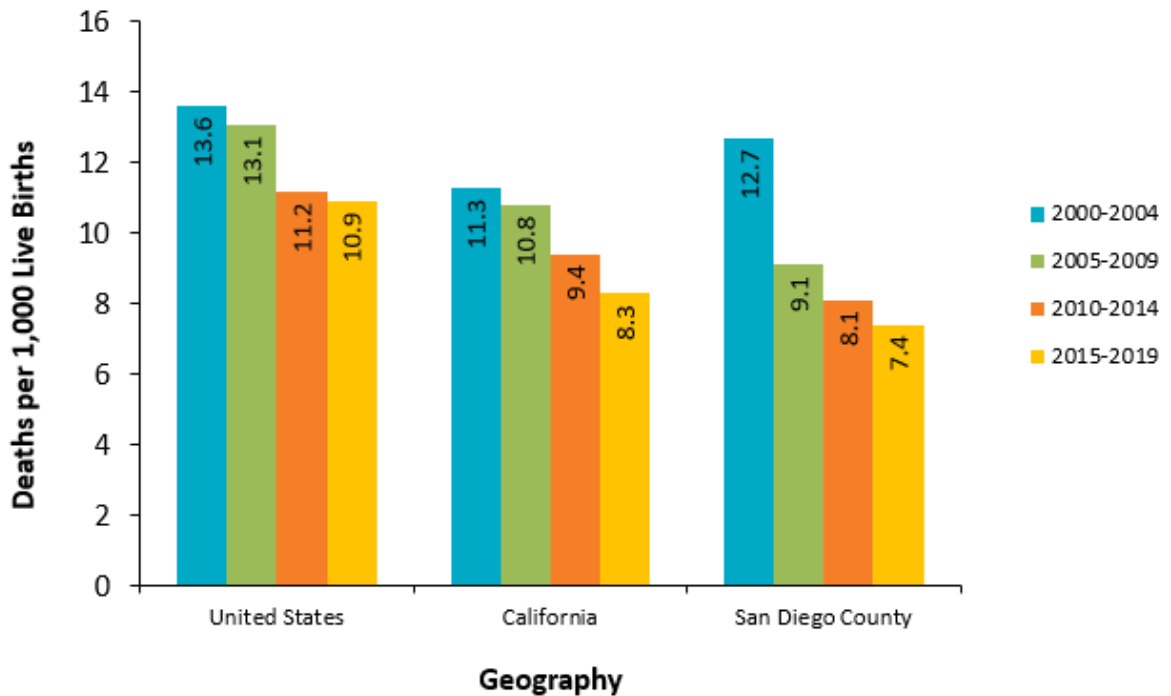
Source for U.S. and California: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Division of Vital Statistics, User Guide to the Period/Cohort Linked Birth/Infant Death Public Use File.

Source for San Diego: State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files; prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services.

In all three geographies, African-American rates have also improved. **Figure 3** shows each area’s African-American infant mortality rates for five-year periods between 2000 and 2019. The national rate decreased 20% from 13.6 in 2000-2004 to 10.9 deaths per 1,000 live births in the most recent 2015-2019 period. At the same time, the State rate decreased by 26% from 11.3 to 8.3, and the San Diego rate decreased by over 40% from 12.7 to 7.4.<sup>6</sup>

San Diego County and California rates were comparable in all four periods. The San Diego rate was also similar to the U.S. rate in the initial 2000-2004 period (12.7 vs. 13.6 deaths per 1,000 live births, respectively), but significantly lower afterwards.<sup>6</sup>

**Figure 3. African-American\* Infant Mortality Rates for United States, California, and San Diego County Residence, 2000-2019, 5-Year Periods.**



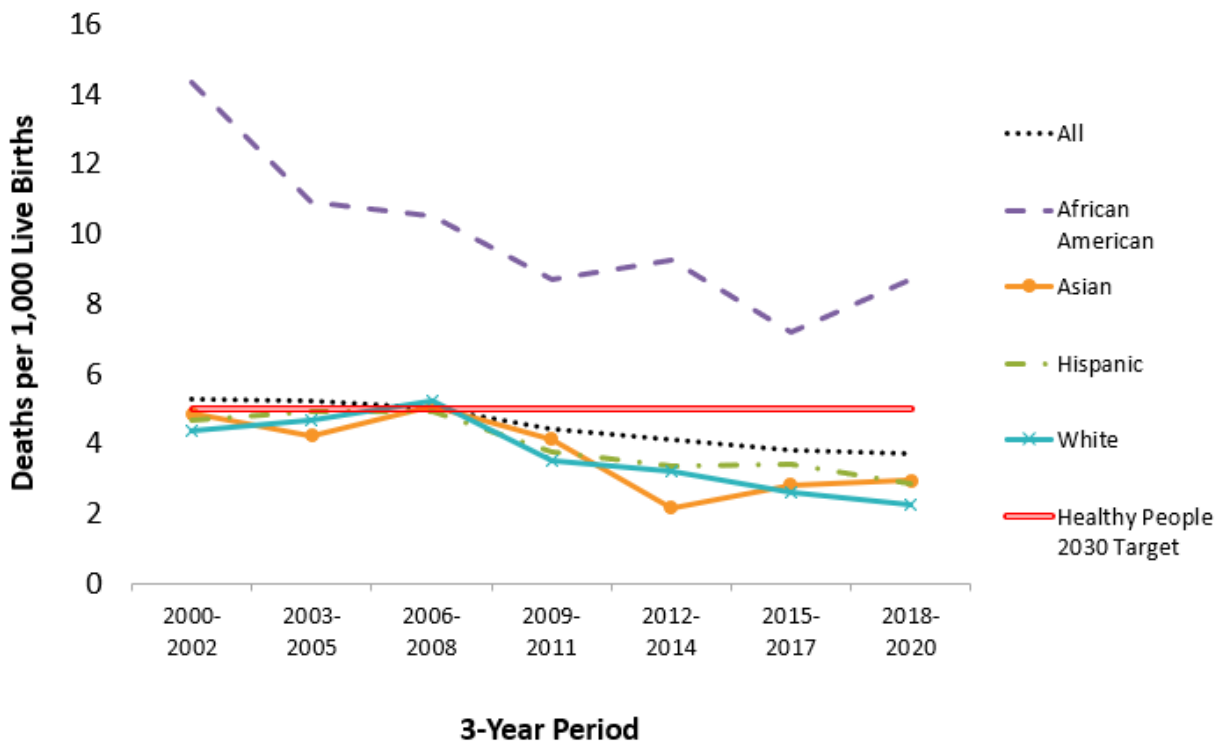
Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Division of Vital Statistics, Linked Birth/Infant Death Records, on CDC WONDER Online Database.

\*Bridged race statistics shown.

**Figure 4** shows San Diego County infant mortality rates by race/ethnicity for three-year periods between 2000 and 2020. The African-American rate decreased by nearly 40% between 2000-2002 (14.3) and 2018-2020 (8.7 deaths per 1,000 live births). Still, it remains higher than that of other race/ethnic groups for which reliable rates are available. In the most recent 2018-2020 period, the White rate was 2.3 deaths per 1,000 births. This means San Diego County’s African-American infants were 3.9 times as likely to die in their first year of life compared to White infants (8.7 vs. 2.3, respectively).<sup>8</sup> It is also the only group that has not met the Healthy People 2030 target – it is more than 3 deaths per 1,000 live births above the target of 5.0.<sup>8,9</sup>

Unknown race/ethnicity is not shown in Figure 4, as well as groups with fewer than 20 deaths in any period because reliable rates could not be calculated: Native American/Alaskan, Pacific Islander, Other, and Two or more races.<sup>8</sup> However, nationwide rates are available for additional groups. In 2018-2020, U.S. African-Americans had the highest mortality rate (10.6 infant deaths per 1,000 live births), followed by infants of Pacific Islander (8.2), Native American (8.1), multiple race (6.6), Hispanic (4.9), White (4.6), and Asian (3.5) women/birthing people. The African-American rate was 2.3 times higher than the White rate (10.6 vs. 4.6, respectively).<sup>6</sup>

**Figure 4. Infant Mortality Rates by Race/Ethnicity, San Diego County Residence, 2000-2020, 3-Year Periods.**

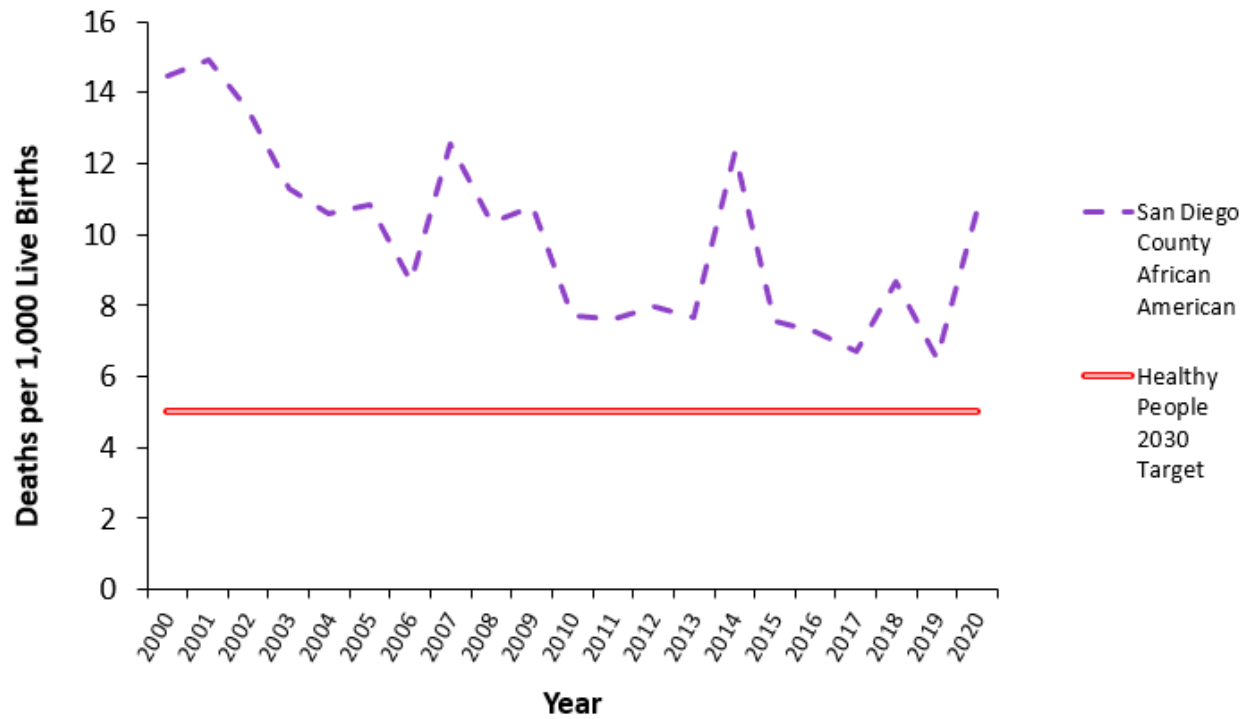


Source: State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files; prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services.



**Figure 5** shows San Diego County African-American infant mortality rates from 2000 to 2020 (single years) compared to the Healthy People 2030 target of 5 infant deaths per 1,000 live births.<sup>9</sup> The African-American rate declined from 14.5 in 2000 to 10.8 in 2020.<sup>8</sup> Because these rates are based on small numbers, they should be interpreted with caution, as they are subject to acute spikes due to random fluctuation.

**Figure 5. African-American Infant Mortality Rates, San Diego County Residence, 2000-2020.**

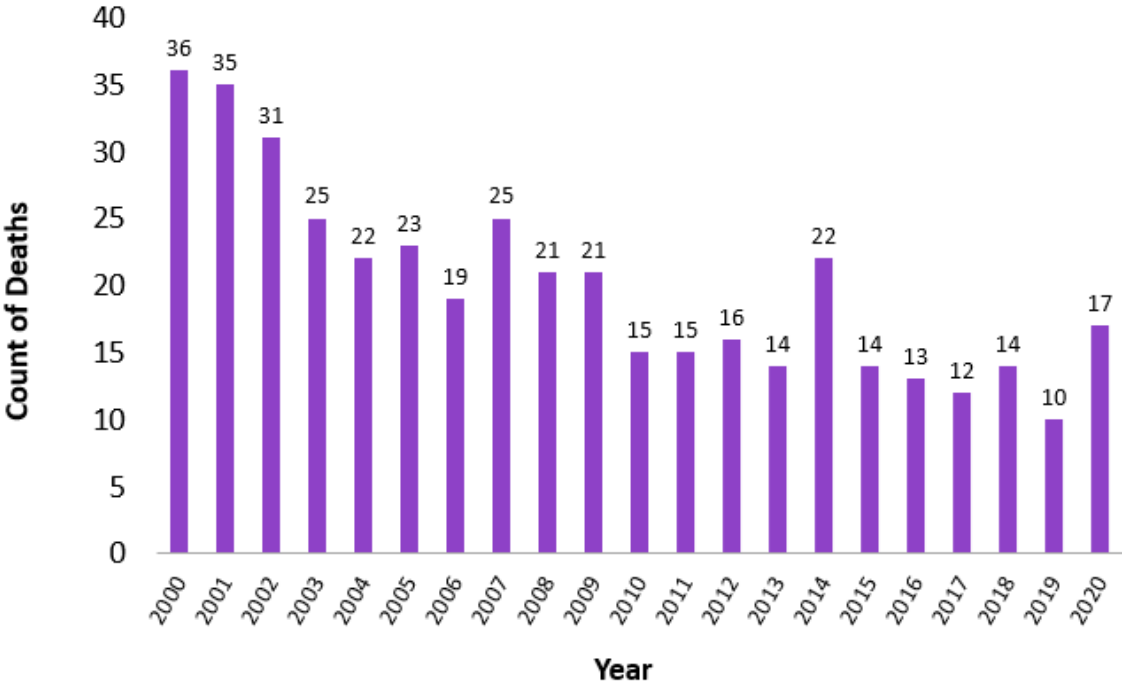


Source for San Diego: State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files; prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services.

Source for Healthy People 2030 target: U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People 2030.

The actual number of African-American infant deaths in the County has decreased. **Figure 6** shows the counts from 2000 to 2020. In 2000, 36 infants died, compared to 17 in 2020. In the 2016-2020 5-year period, the three leading causes of African-American infant death in the County were: 1) newborn affected by maternal complications of pregnancy (14 deaths); 2) disorders related to short gestation and low birthweight, not elsewhere classified (11 deaths); and 3) congenital malformations, deformations, and chromosomal abnormalities (7 deaths).<sup>8</sup>

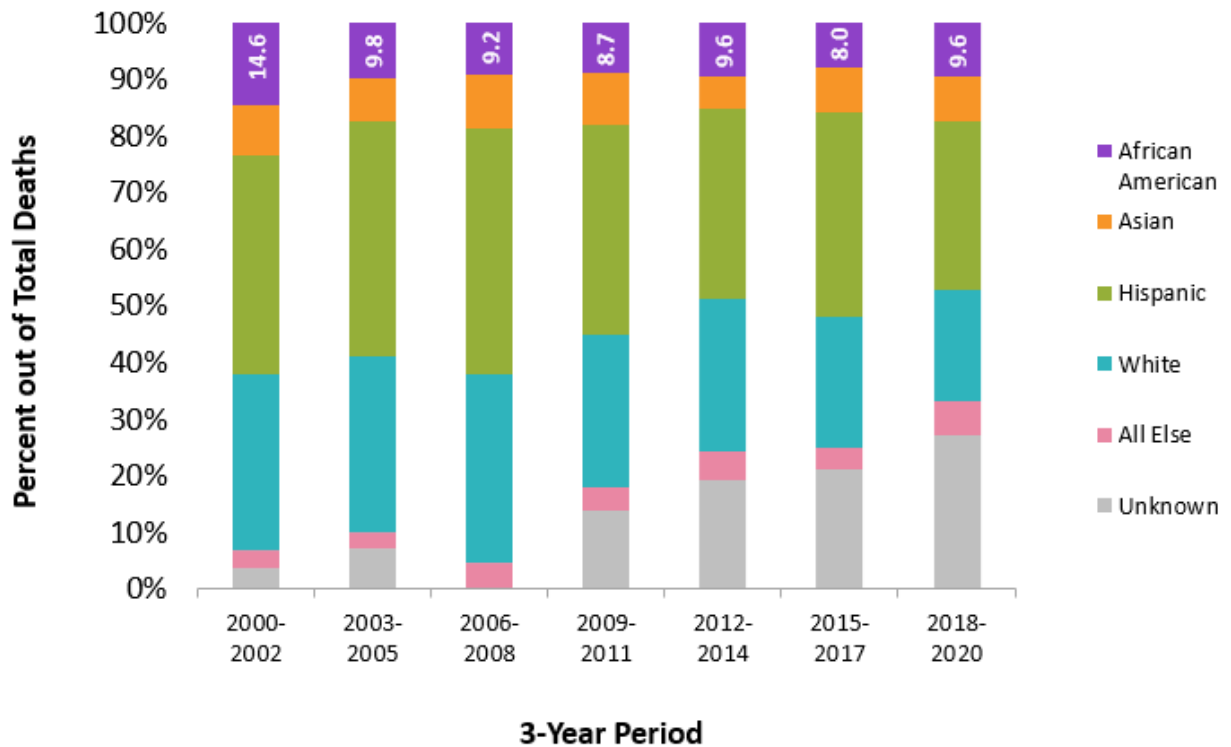
**Figure 6. African-American Infant Mortality Counts, San Diego County Residence, 2000-2020.**



Source: State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files; prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services.

African Americans are overrepresented among infant deaths. **Figure 7** shows the proportion of deaths by race/ethnicity in San Diego County for three-year periods between 2000 and 2020. During this time, births to African American mothers/birthing people comprised only 4% to 6% of the County’s total births, but about 2 to 3 times that proportion of its infant deaths (8% to 15%).<sup>8</sup>

**Figure 7. Proportion of Infant Deaths by Race/Ethnicity, San Diego County Residence, 2000-2020, 3-Year Periods.**

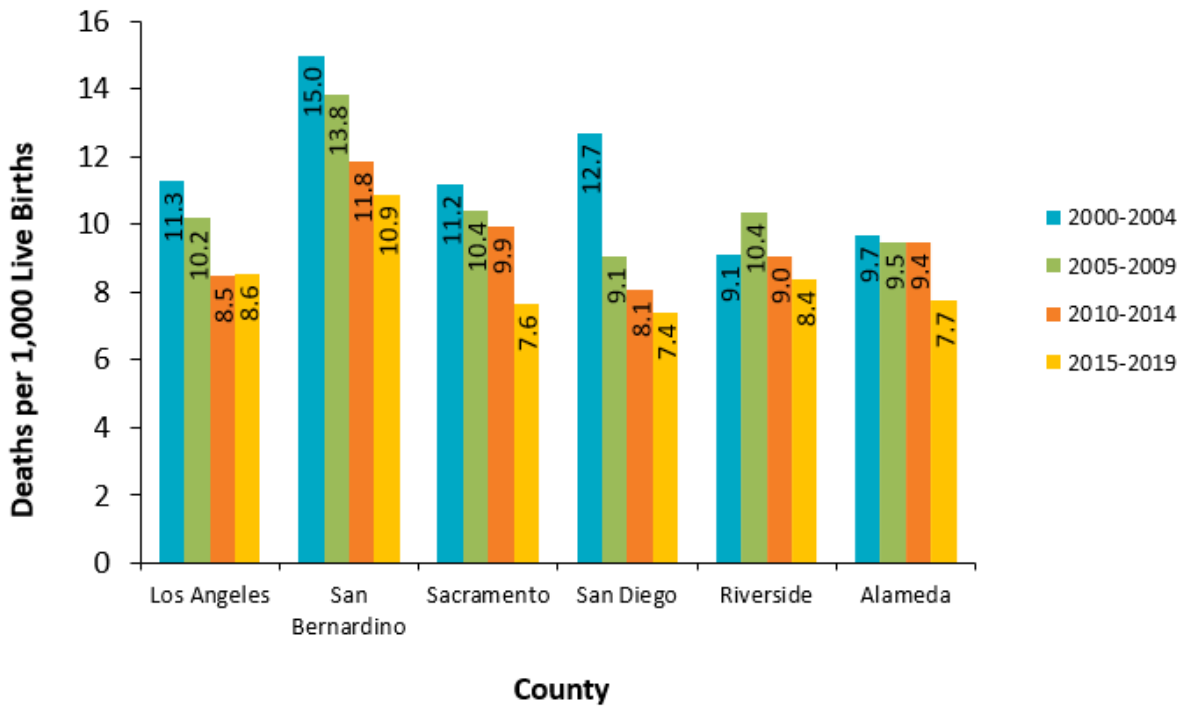


Source: State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files; prepared by County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services.

Note: Race/ethnic groups in the “all else” category include: Native American/Alaskan, Pacific Islander, Other, and Two or more races.

**Figure 8** shows African-American infant mortality rates for five-year periods between 2000 and 2019, by county. Shown, in order of rank, are the top six California counties by number of African-American births in 2019. All had between 1,700 and 2,800 births, except Los Angeles, with 8,269. Looking at the earliest and most recent periods, most counties' rates were comparable to San Diego's. But in 2000-2004, rates were significantly lower in Riverside (9.1) and Alameda (9.7) than San Diego (12.7 deaths per 1,000 live births). And in 2015-2019, San Bernardino's rate (10.9) was higher than San Diego's (7.4).<sup>6</sup> No counties' African-American rates have met the Healthy People 2030 target of 5.0 infant deaths per 1,000 live births.<sup>6,9</sup>

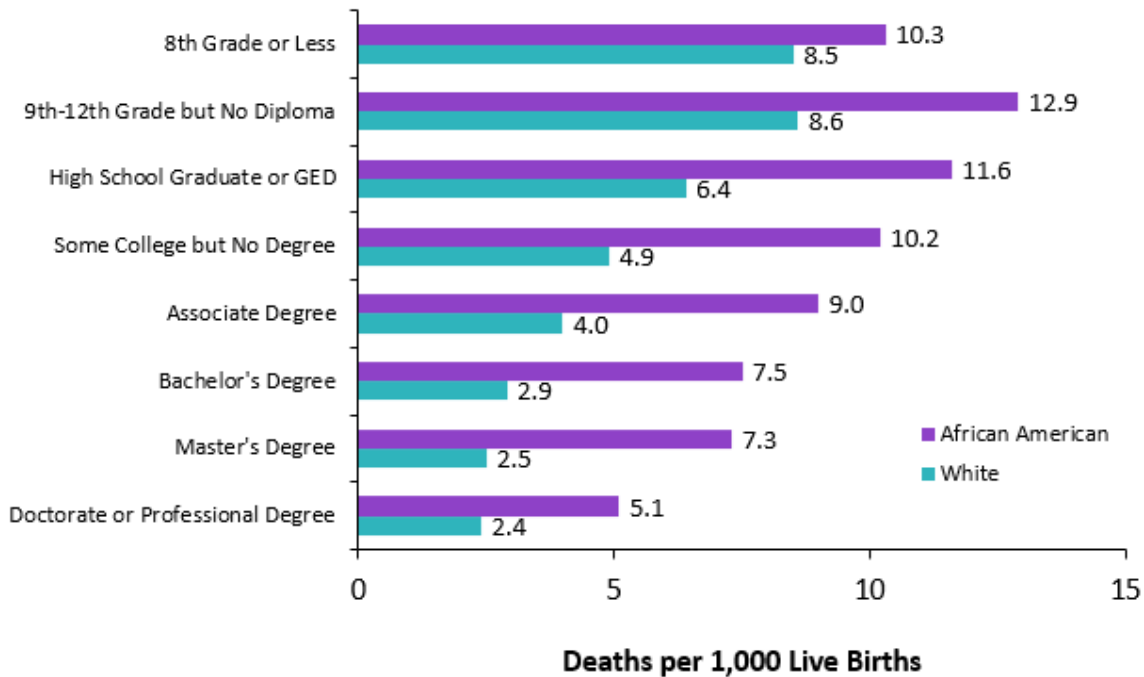
**Figure 8. African-American\* Infant Mortality Rates by County, for the Six California Counties with the Most African-American Births (in 2019), 2000-2019, 5-Year Periods.**



Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Division of Vital Statistics, Linked Birth/Infant Death Records, on CDC WONDER Online Database.  
 \*Bridged race statistics shown.

**Figure 9** shows African-American and White infant mortality rates by mother’s/birthing parent’s educational attainment in the United States for 2017 to 2020. (San Diego mortality counts were too small to produce reliable rates.) Beginning with the “9<sup>th</sup> to 12<sup>th</sup> grade but no diploma” education level, mortality rates for both race/ethnic groups tended to decrease with increasing education. But within each education level, African American rates were higher than White rates. And the gap between them widened, from 1.2-fold for women/birthing people with an “8<sup>th</sup> grade or less” education to 2.9-fold for those with a “Master’s Degree.” Furthermore, the mortality rate among infants whose mothers/birthing parents are African-American with a “Master’s Degree” (7.3 deaths per 1,000 live births) was higher than that of infants whose mothers/birthing parents are White and had only a high school education (6.4).<sup>6</sup>

**Figure 9. African-American and White Infant Mortality Rates by Mother’s/Birthing Parent’s Education, United States Residence, 2017-2020, 4-Year Period.**



Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Division of Vital Statistics, Linked Birth/Infant Death Records, on CDC WONDER Online Database.

## DISCUSSION

Although one of the wealthiest countries in the world, infant mortality remains a public health problem in the United States.<sup>4,3</sup> In 2020, there were 5.4 infant deaths per 1,000 live births, giving it a rank of 32 among countries in the Organization for Economic Cooperation and Development (OECD), between the Slovak Republic and Chile.<sup>5</sup> Within the U.S., sixteen states had rates significantly higher than the national 2020 rate: Alabama, Arkansas, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, North Carolina, Ohio, South Carolina, South Dakota, Tennessee, and West Virginia. Among all states, rates ranged from a low of 3.9 in California to a high of 8.1 in Mississippi.<sup>13</sup>

In the last two decades, the infant mortality rate has improved overall locally and nationally, including improvement in African-American infant mortality rates. In general, San Diego County rates remain lower than the nation's rates. But in both geographies, there is still a large disparity between African-American and White rates.<sup>8,6,7,2</sup> Overall, San Diego meets the Healthy People 2030 target, however, the County's African-American rate does not.<sup>8,9</sup>

Factors that might explain the gap include chronic conditions like hypertension, poor nutrition, stress, and environmental exposures.<sup>11,14,3</sup> Barriers to quality medical care as well as social and economic risk factors may also play a role.<sup>23</sup> However, socioeconomic factors do not completely explain the disparities.<sup>11</sup> Research has shown that structural racism, the “totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care, and criminal justice”, drives the disparities in birth outcomes. This occurs through several pathways: 1) discriminatory societal level policies that affect neighborhood conditions, like access to resources; 2) racism and racist policies that cause chronic stress, which leads to biological changes; and 3) lack of access to high quality respectful health care.<sup>24</sup>

The Maternal, Child, and Family Health Services (MCFHS) branch of the Public Health Services department, of the County of San Diego Health and Human Services Agency, has a health equity goal to “Reduce preventable fetal and infant morbidity and mortality with a focus on the disproportionate African-American infant mortality rate.” One of the objectives supporting this goal is: “Ensure infants born who are served by the Black Infant Health (BIH) Program have positive health outcomes.”<sup>18</sup> Programs like San Diego County's BIH and its sister program, Perinatal Equity Initiative (PEI), are well-positioned to address factors associated with perinatal health disparities. The client-level interventions offered to families enrolled in BIH help to increase protective factors, confront barriers to care, and empower new and expectant mothers/parents to make informed health decisions that align with their needs and values and encourage healthy pregnancy. The persistent gap that exists between mortality rates for African-American infants compared to infants of other races and the steady increase of preterm births drove the passage of AB 1810, by the California Legislature, establishing the Perinatal Equity Initiative (PEI).<sup>20</sup> The PEI collaborative model and community-led advocacy efforts serve to build awareness of health disparities and improve systems of care for African-American mothers/birthing parents and their families.

## CALL TO ACTION

Infant mortality, in many ways, reflects the broader health and wellbeing of a community. Examples include the availability of quality health care and accessibility of social and built environments that promote positive health and social connection. In acknowledging the wide range of complex factors that contribute to infant mortality, efforts to improve outcomes require a multi-faceted approach across all segments of the community, including State and local health departments, providers, and clients.

---

### STATE AND LOCAL PUBLIC HEALTH DEPARTMENTS

- Continue monitoring current infant mortality data to identify trends in case counts, rates, and causes of infant death.
- Continue state funding for implementation of programs like the San Diego County Black Infant Health Program which aims to improve African-American infant and maternal/birthing parent health, as well as decrease health and social inequities for women and infants; and the Perinatal Care Network which expedites the process for linking pregnant women/people to access to care, health care providers, and other supportive services.
- Continue research efforts to collect population-based data on maternal/birthing person attitudes and experiences before, during, and after pregnancy (e.g., Maternal and Infant Health Assessment survey).
- Leverage change through multisector, public, and private collaboration.
- Advance systems coordination and service integration (e.g., health care services, social services, and behavioral health services).

---

### PROVIDERS

- Educate pregnant women/people about reducing the risk of infant mortality, such as: obtain early and continuous prenatal care, practice healthy behaviors, create safe sleep environments, and obtain newborn screening.
- Adopt policies and practices that eliminate medically unnecessary deliveries prior to 39 weeks of gestation.
- Devote extra time in providing care and education for mothers/pregnant parents who are at increased risk for infant mortality such as those with pre-existing health conditions, African-American mothers/birthing parents, etc.
- Refer pregnant African-American women/people to the San Diego County Black Infant Health program, home visiting programs, and other family support services.
- Increase education and improve training among OB/GYNs to establish trauma-informed practices/environments in clinic settings.
- Increase education and improve training among OB/GYNs to better convey risk factors of fetal and infant losses, post-loss options of care, and available resources/referrals to clients.
- Report all information on birth and death certificates, including race and ethnicity, so that complete statistics can be compiled.

---

## PREGNANT AND POSTPARTUM INDIVIDUALS

- Obtain care before and during pregnancy to reduce the risk of infant mortality from causes including birth defects, preterm birth, low birthweight, and certain pregnancy complications.
- Increase education and awareness among pregnant women/people to advocate for self (e.g., obtaining referrals for mental health services, decisions regarding post-loss OB care, fetal monitoring, risk factors, and guidance on dealing with insurance companies).
- Practice behaviors to improve health by maintaining a healthy weight, getting proper nutrition and exercise, reducing stress, and managing chronic health conditions (e.g., diabetes and hypertension).
- Create safe infant sleep environments.
- Maintain healthy and supportive relationships.
- Seek help and support when needed.

## CONCLUSION

Decreases in infant mortality rates have been observed at national, State, and County levels thanks to improvements in medicine, pre- and interconception health, and public awareness of the importance of preventing premature birth and low birthweight, among other efforts. Despite these successes, disparities still exist among underrepresented and marginalized communities. African-American infant mortality rates remain stubbornly high relative to White rates, and efforts to address disparities warrant continued support and investment.

Evidence-informed client-level interventions such as BIH are essential to promoting protective factors among pregnant and postpartum African-American women/people and offer valuable opportunities for social connection, support, and empowerment. PEI engages community members and key stakeholders through collaboration and collective impact to address systems-level barriers to positive birth outcomes among the African-American community. The synergy between these client and community-level interventions is critical to ensuring infant mortality rates continue to improve across all race/ethnic groups in San Diego County.

Following the infant mortality trends over the past two decades, the rates for all groups have declined. However, the rate for African-American birthing people remains high. While the gap is narrowing, strategies outlined in the “call to action” are imperative to leveling this gap. These efforts will support the health equity goal to reduce disproportionate African-American infant mortality.



## REFERENCES

1. *Reproductive Health, Infant Mortality*. (2022). (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC)) Retrieved May 12, 2023, from <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>
2. (2023). *Health, United States, 2020-2021: Annual Perspective*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. Retrieved from <https://dx.doi.org/10.15620/cdc:122044>
3. (2013, January). *Report of the Secretary's Advisory Committee on Infant Mortality: Recommendations for Department of Health and Human Services Action and Framework for a National Strategy*. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration. Retrieved from <https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/infant-mortality/reports/final-recommendations.pdf>
4. *IMF DataMapper, GDP, Current Prices*. (2023). (International Monetary Fund) Retrieved May 12, 2023, from <https://www.imf.org/external/datamapper/NGDPD@WEO/OEMDC/ADVEC/WEOORLD>
5. *OECD Data, Infant mortality rates (indicator)*. (2023). (Organization for Economic Co-operation and Development) doi:10.1787/83dea506-en
6. *CDC WONDER Online Database, Linked Birth/Infant Death Records*. (2000-2020). (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics) Retrieved August 14, 2023, from <https://wonder.cdc.gov/lbd.html>
7. (2000-2020). *User Guide to the Period/Cohort Linked Birth/Infant Death Public Use File*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. Retrieved from [https://www.cdc.gov/nchs/data\\_access/vitalstatsonline.htm](https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm)
8. (2000-2020). *State of California, Department of Public Health, Center for Health Statistics and Informatics, Birth Cohort Statistical Master Files*. (H. a. County of San Diego, Compiler) County of San Diego, Health and Human Services Agency, Public Health Services, Maternal, Child and Family Health Services. Retrieved from [https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/maternal\\_child\\_family\\_health\\_services/MCFHSstatistics.html](https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/maternal_child_family_health_services/MCFHSstatistics.html)
9. *Healthy People 2030, Reduce the rate of infant deaths – MICH-02*. (n.d.). (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion) Retrieved May 12, 2023, from <https://health.gov/healthypeople/objectives-and-data/browse-objectives/infants/reduce-rate-infant-deaths-mich-02>
10. Reidpath, D. D., & Allotey, P. (2003). Infant Mortality Rate as an Indicator of Population Health. *Journal of Epidemiology and Community Health*, 57(5), 344-346. doi:10.1136/jech.57.5.344
11. Braveman, P., Dominguez, T. P., Burke, W., Dolan, S. M., Stevenson, D. K., Jackson, F. M., . . . Waddell, L. (2021, September 2). Explaining the Black-White Disparity in Preterm Birth: A Consensus Statement From a Multi-Disciplinary Scientific Work Group Convened by the March of Dimes. *Frontiers in Reproductive Health*, 3, 684207. doi: 10.3389/frph.2021.684207.

12. Wallis, C. (2020, June). Why Racism, Not Race, Is a Risk Factor for Dying of COVID-19: Public health specialist and physician Camara Phyllis Jones talks about ways that jobs, communities and health care leave Black Americans more exposed and less protected. *Scientific American*. Retrieved from <https://www.scientificamerican.com/article/why-racism-not-race-is-a-risk-factor-for-dying-of-covid-191/>
13. Ely, D. M., & Driscoll, A. K. (2022). *Infant mortality in the United States, 2020: Data from the Period Linked Birth/Infant Death File*. Hyattsville, MD: National Center for Health Statistics. Retrieved from <https://dx.doi.org/10.15620/cdc:120700>
14. Fry-Johnson, Y. W., Levine, R., Rowley, D., Agboto, V., & Rust, G. (2010). United States Black:White Infant Mortality Disparities are not Inevitable: Identification of Community Resilience Independent of Socioeconomic Status. *Ethnicity & Disease*, 20, 131-5. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2914622>
15. Crear-Perry, J. (2017). *National Birth Equity Collaborative, Health Equity to Address Black Infant Mortality*. Retrieved May 15, 2023, from Healthy Start EPIC Center: NBECNYCRegionalHealthyStart17.pdf
16. *Healthy People 2030, Discrimination*. (n.d.). (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion) Retrieved May 15, 2023, from <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/discrimination>
17. Lu, M. C., Kotelchuck, M., Hogan, V., Jones, L., Wright, K., & Halfon, N. (2010). Closing the Black-White Gap in Birth Outcomes: A Life-Course Approach. *Ethnicity & Disease*, 20, 62-76. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4443479/>
18. (2022). *Public Health Services Strategic Plan, FY 2021-22 and 2022-23*. San Diego, CA: County of San Diego. Retrieved from <https://www.sandiegocounty.gov/content/dam/sdc/hhsa/programs/phs/documents/PHS%20Strat%20Plan%202021-22%20and%2022-23.pdf>
19. *Healthy People 2030, Healthy People 2030 Questions and Answers*. (n.d.). (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion.) Retrieved May 12, 2023, from <https://health.gov/our-work/national-health-initiatives/healthy-people/healthy-people-2030/questions-answers#q9>
20. *California Legislative Information*. (2018, June 27). (State of California) Retrieved April 12, 2024, from [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180AB1810](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1810)
21. *National Vital Statistics System, Linked Birth and Infant Death Data*. (2022, September 29). (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics) Retrieved May 12, 2023, from [https://www.cdc.gov/nchs/nvss/linked-birth.htm#Two\\_Formats](https://www.cdc.gov/nchs/nvss/linked-birth.htm#Two_Formats)
22. U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File (DHC), Table P9. Retrieved April 10, 2024, from [https://data.census.gov/table/DECENNIALDHC2020.P9?q=population by race and ethnicity&g=010XX00US\\_040XX00US06\\_050XX00US06073](https://data.census.gov/table/DECENNIALDHC2020.P9?q=population%20by%20race%20and%20ethnicity&g=010XX00US_040XX00US06_050XX00US06073)
23. Williams, M. A., & Platt, R. W. (2011). Pregnancy Complications. In G. M. Buck Louis, & R. W. Platt, *Reproductive and Perinatal Epidemiology*. Oxford Academic. doi:<https://doi.org/10.1093/acprof:oso/9780195387902.003.0035>

24. (2023). *Centering Black Mothers in California: Insights into Racism, Health, and Well-being for Black Women and Infants*. Sacramento, CA: State of California, Department of Public Health, Maternal, Child and Adolescent Health Division. Retrieved from [https://www.cdph.ca.gov/Programs/CFH/DMCAH/CDPH Document Library/Centering-Black-Mothers/Centering-Black-Mothers-Report-2023.pdf](https://www.cdph.ca.gov/Programs/CFH/DMCAH/CDPH%20Document%20Library/Centering-Black-Mothers/Centering-Black-Mothers-Report-2023.pdf)