

DELAWARE VITAL STATISTICS ANNUAL REPORT, 2008



INFANT MORTALITY

Photo courtesy of the Delaware Tourism Office

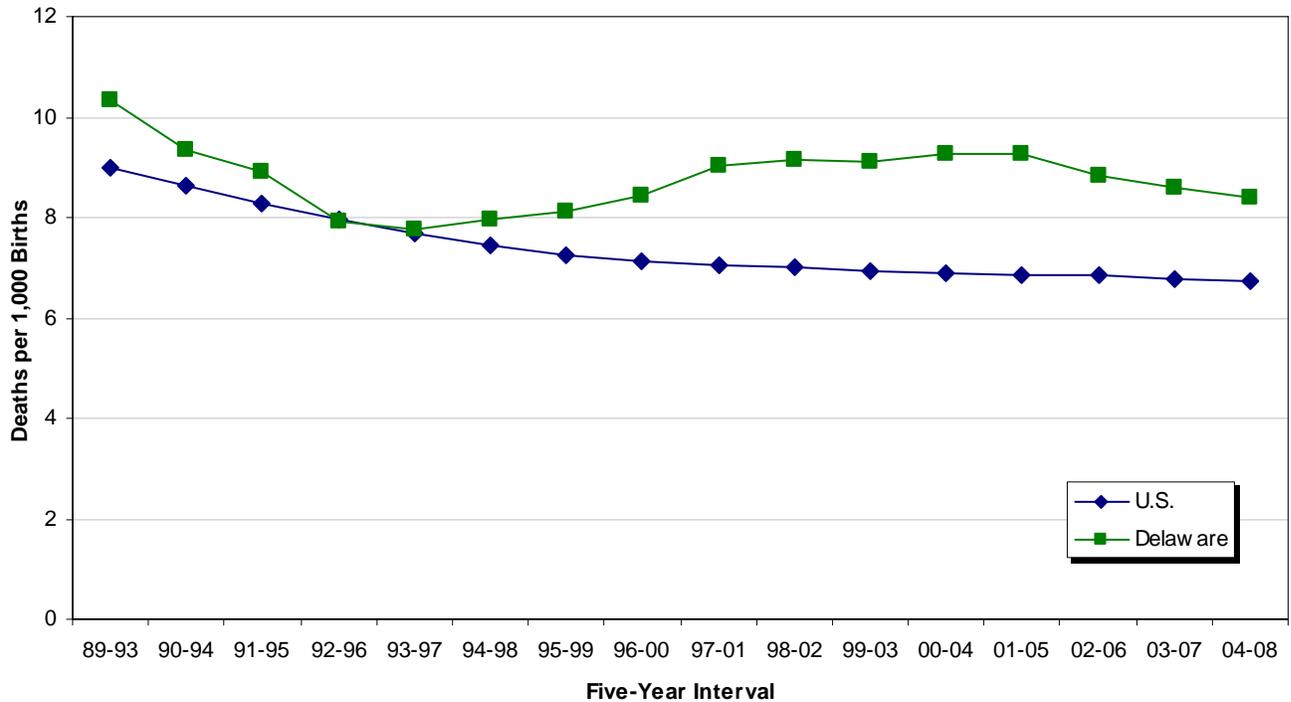
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INFANT MORTALITY

Delaware's infant mortality rate (IMR) decreased for the third consecutive time period. From its 2000-2004 peak of 9.3, it declined 10 percent to 8.4 infant deaths per 1000 live births in 2004-2008. At 6.7, the U.S. rate remained significantly lower than the Delaware rate.

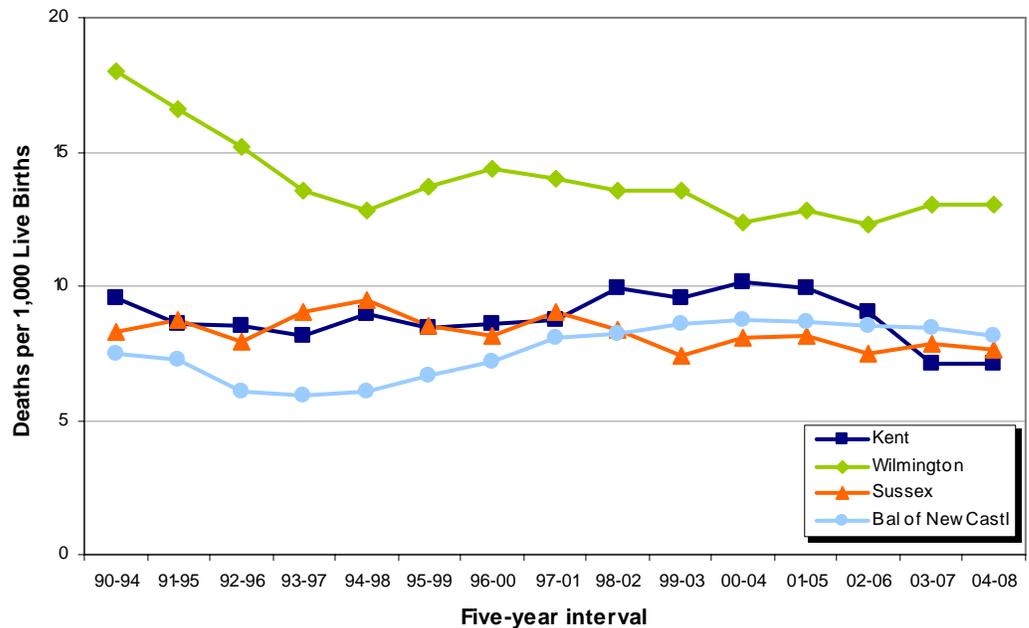
**Five-year Average Infant Mortality Rates
Delaware and U.S., 1980-2008**



Source: Delaware health Statistics Center

Between 2003-2007 and 2004-2008, IMRs for each of Delaware's counties decreased slightly or remained stable. Overall, IMRs for the city of Wilmington were unchanged, while those for the balance of New Castle County experienced a small decline.

**Five-year Average Infant Mortality Rates
Delaware Counties and City of Wilmington, Delaware, 1990-2008**

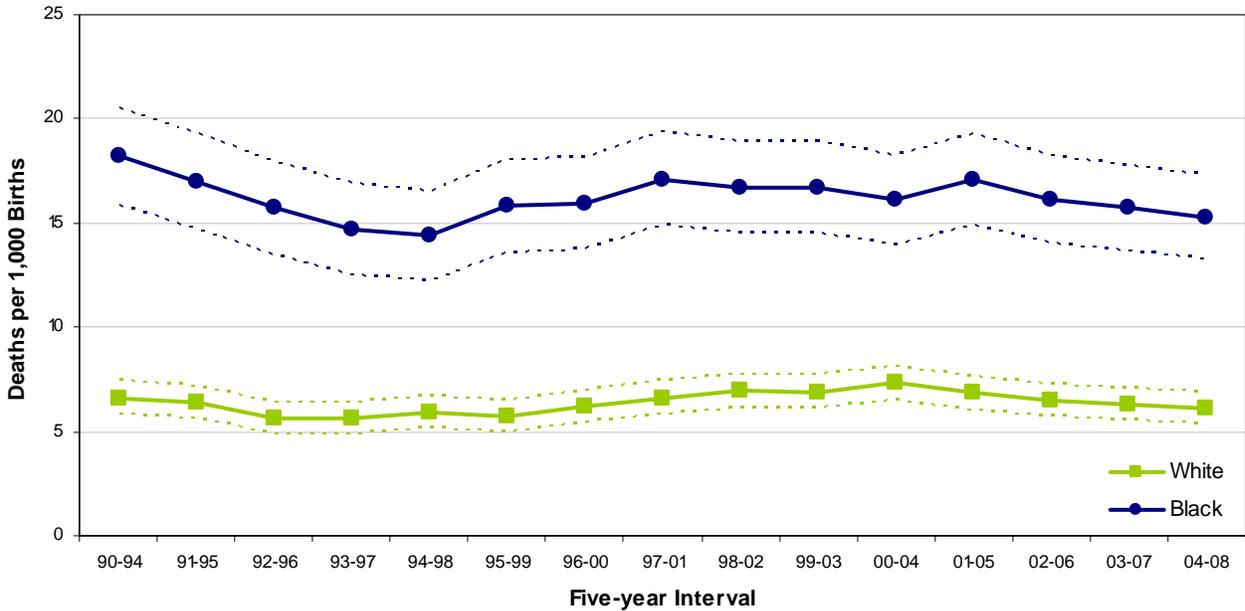


Source: Delaware health Statistics Center

INFANT MORTALITY

As shown in the graph below, black infants experienced significantly higher mortality rates than white infants, and from 1990-1994 to 2004-2008, black IMRs were anywhere from 2.2 to 2.8 times that of white IMRs.

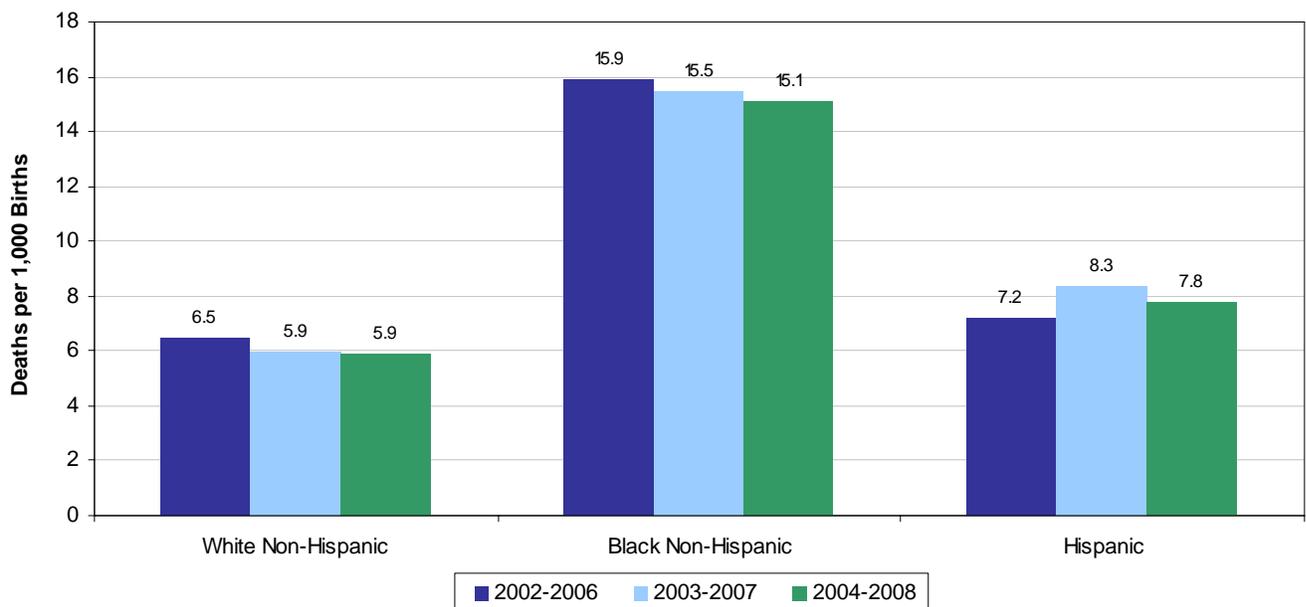
**Five-year Average Black and White Infant Mortality Rates with Confidence Intervals
Delaware, 1990-2008**



Source: Delaware health Statistics Center

Significant disparities existed between black non-Hispanic IMRs and each of the two other groups, white non-Hispanic and Hispanic. Black non-Hispanics had the highest IMRs in all three time periods, and their rate of 15.1 deaths per 1,000 live births in 2004-2008, was 2.6 times the white non-Hispanic rate of 5.9 and nearly twice the Hispanic rate of 7.8.

**Five-year Average Infant Mortality Rates by Race and Hispanic Origin
Delaware, 2002-2008**



Source: Delaware health Statistics Center

INFANT MORTALITY

Not only did IMRs vary between counties, but also between races within each county. Black IMRs were consistently higher than white IMRs in all three counties, for every time period. To gauge the disparity between black and white IMRs, disparity ratios¹ were used.

However, as is shown in the graphs to the right, both the disparity ratio and the rates should be considered when examining the issue of infant mortality.

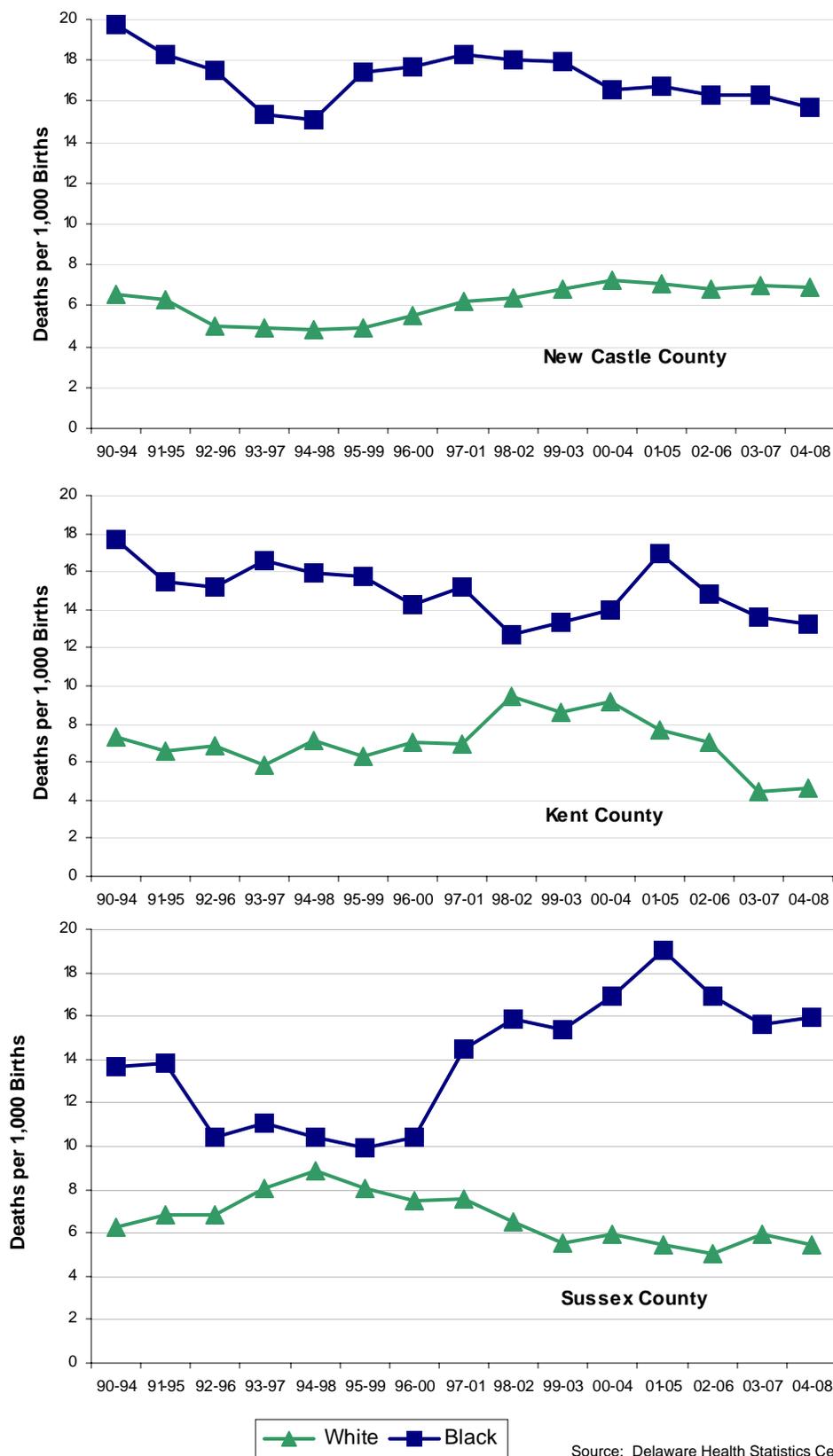
In New Castle County, rates for both races changed very little from 2003-2007 to 2004-2008, and the disparity ratio remained stable at 2.3.

Black and white IMRs remained relatively stable in Kent County; likewise, the disparity ratio changed very little, moving from 3.1 to 2.9.

Sussex County's disparity ratio widened to 2.9 due to a slight decrease in the white IMR and a small increase in the black IMR.

Of the three counties, Sussex had the highest single IMR (15.9 infant deaths per 1,000 live births to black mothers), while Kent had the lowest (4.6 infant deaths per 1,000 live births to white mothers).

Five-year Average Infant Mortality Rates by Race
Delaware Counties, 1990-2008



Source: Delaware Health Statistics Center

1. Disparity ratios were calculated by dividing the black IMR by the white IMR; the resulting number demonstrated the magnitude of difference between black and white.

INFANT MORTALITY- Leading Cause of Death

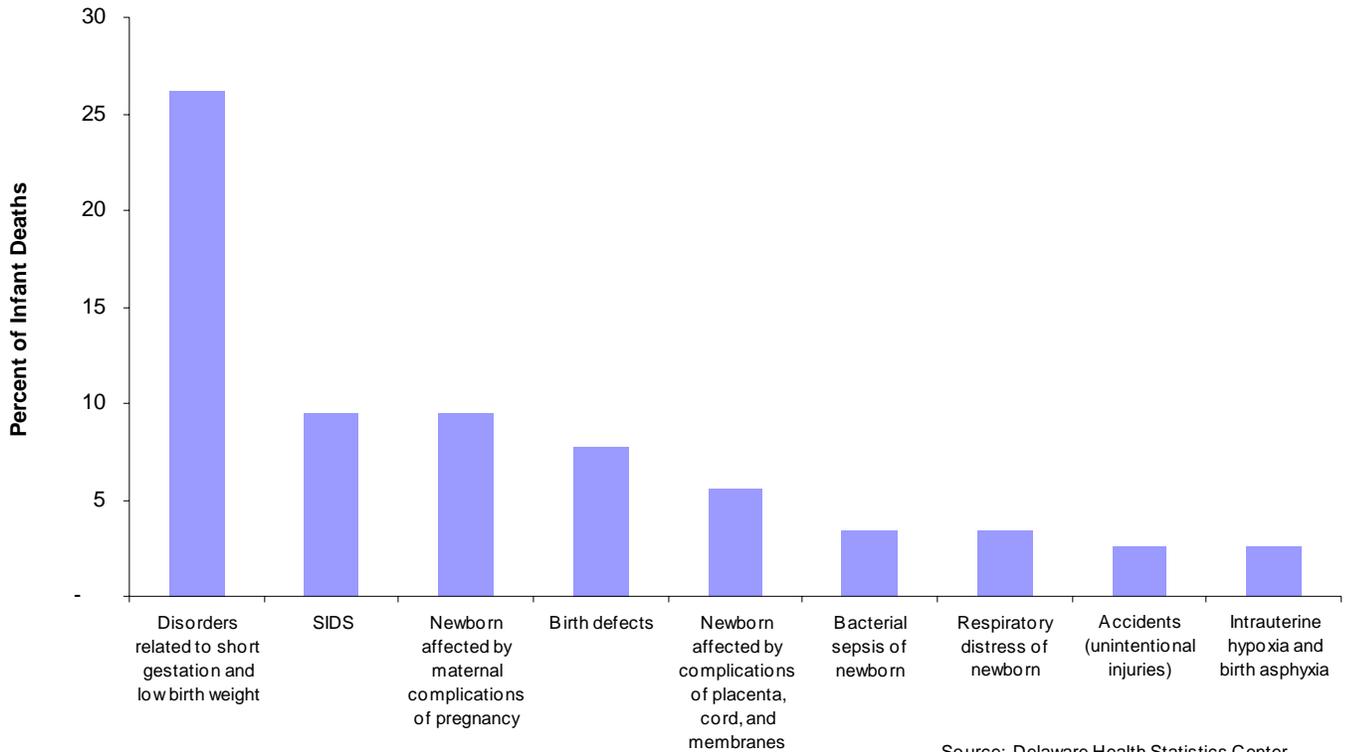
In 2004-2008 the three leading causes of infant death were:

- Disorders related to short gestation and fetal malnutrition (prematurity and low birthweight), which accounted for 24.1 percent of infant deaths,
- Congenital anomalies (birth defects), which accounted for 13.2 percent of infant deaths, and
- Sudden infant death syndrome (SIDS), which accounted for 8.9 percent of infant deaths.

Shown in the graphs below and on the following page are the most frequent causes of death by race. Disorders related to short gestation and low birthweight was the most frequent cause of death for both black and white infants.

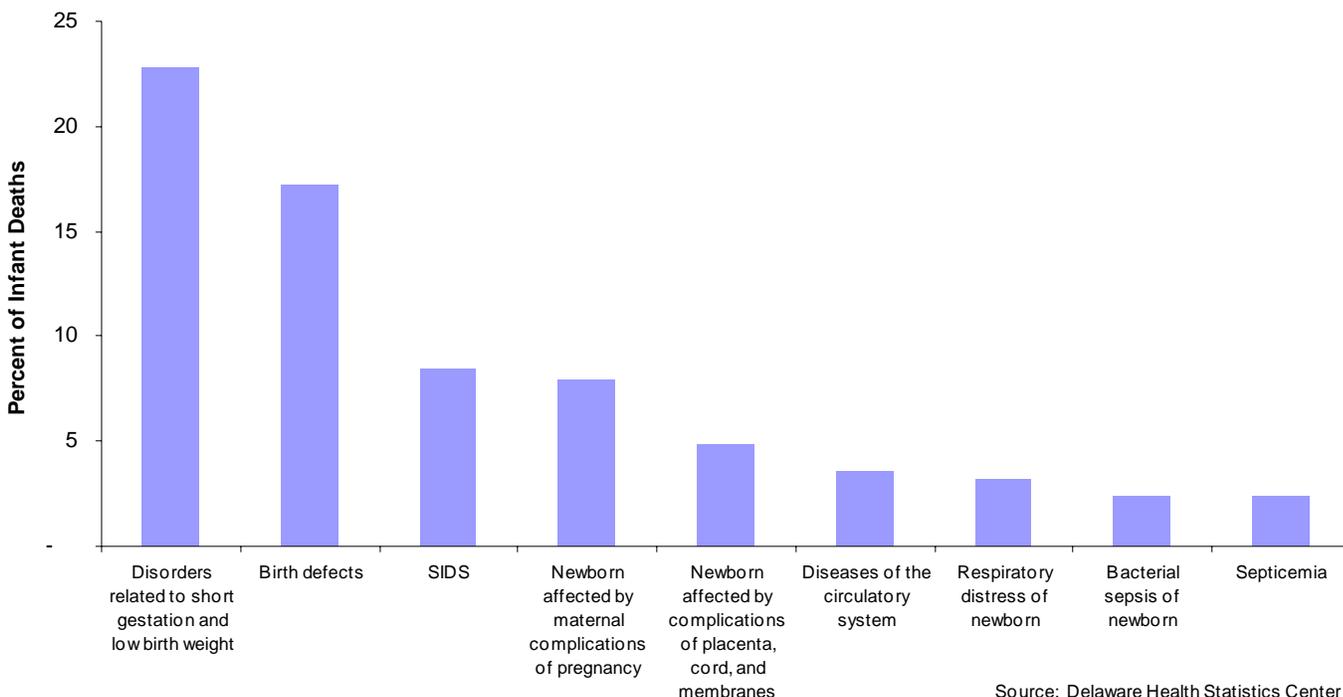
Though the proportions of deaths by race were similar for many of the causes of death, a notable exception was birth defects. While birth defects were responsible for 17.2 percent of all white infant deaths, they accounted for only 7.7 percent of black infant deaths.

**Most Frequent Causes of Black Infant Death
Delaware, 2004-2008**



INFANT MORTALITY- Leading Cause of Death

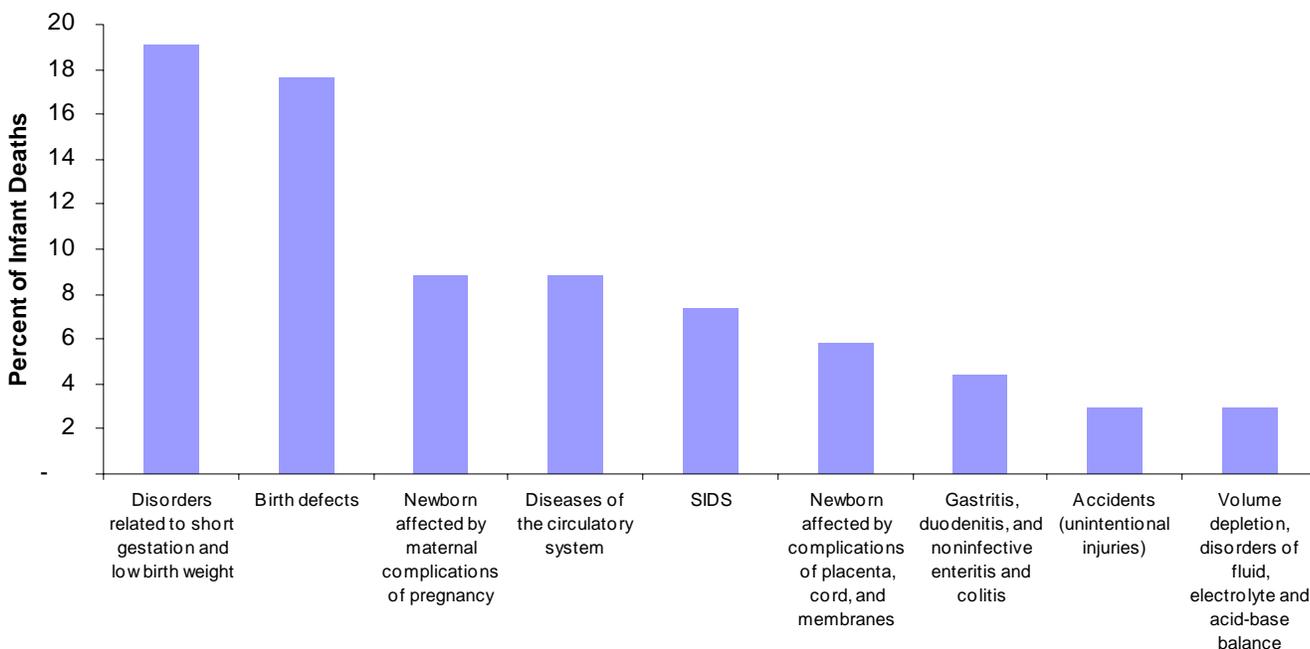
Most Frequent Causes of White Infant Death Delaware, 2004-2008



In the 1989-1993 time period, Hispanics accounted for 3.6 percent of all live births and 3.4 percent of infant deaths, since that time the proportion of births to Hispanic mothers has been increasing. In the most recent five year period, 2004-2008, 15.1 percent of all live births were to Hispanic mothers, and 13.8 percent of all infant deaths were of Hispanic origin.

The leading cause of death for infants of Hispanic origin was disorders related to short gestation and low birthweight, followed by birth defects.

Most Frequent Causes of Hispanic Infant Death Delaware, 2004-2008

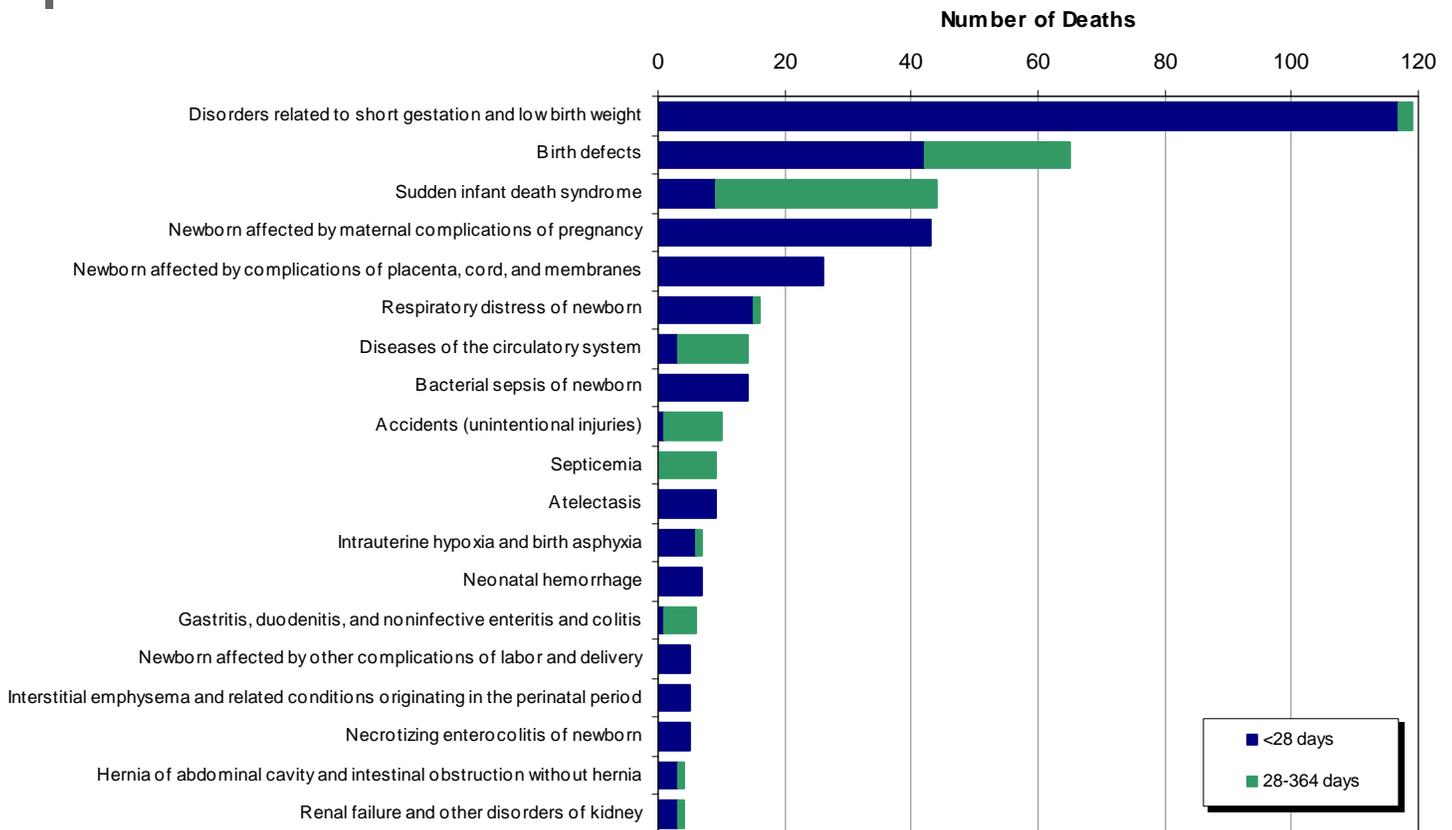


INFANT MORTALITY - Leading Cause of Death

Ninety-four percent of all infant deaths occurred within the first six months of life, 70 percent of all infant deaths occurred within the first 28 days of life, and 41 percent occurred within 24 hours of birth.

The graph below displays deaths by specific cause and the infant's age classification at death, neonatal (<28 days) or postneonatal (28-364 days).

**Most Frequent Causes of Infant Death
Delaware, 2004-2008**



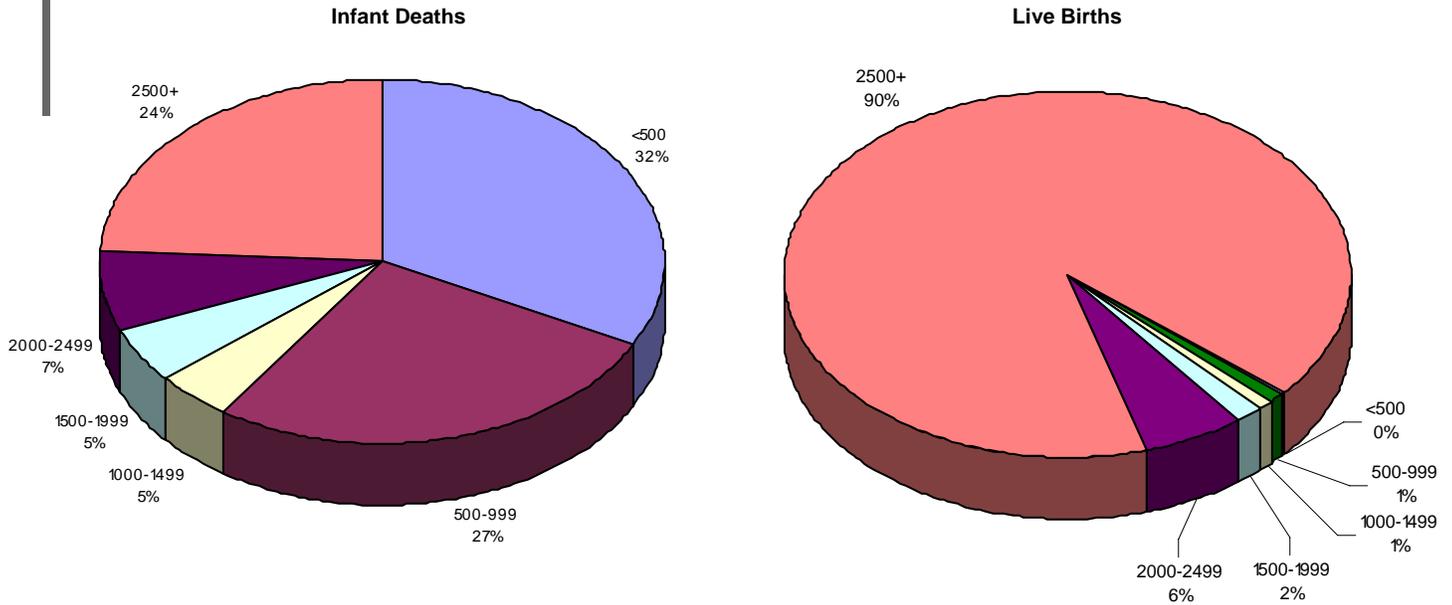
Source: Delaware Health Statistics Center

- Disorders related to short gestation and fetal malnutrition accounted for the greatest number of infant deaths in 2004-2008; all but two of these deaths occurred in the neonatal period.
- Sudden infant death syndrome (SIDS) was the only one of the top five causes of death that had the majority of deaths occurring in the postneonatal period, with a mean age at death of 83 days.
 - ⇒ 43 percent of the SIDS deaths were associated with co-sleeping with adults and/or sleeping on soft surfaces, such as couches and adult beds.
 - ⇒ During that same time period, there were 13 additional infant deaths, coded under a different cause of death, that were associated with co-sleeping and/or sleeping on a soft surface. In total, 6.5 percent of all infant deaths in 2004-2008 were associated with co-sleeping and/or sleeping on a soft surface.

INFANT MORTALITY - Live Birth Cohort

Just over 1 percent of all live births were infants weighing less than 1000 grams, but they accounted for over half (58.9 percent) of all infant deaths in 2003-2007. In total, 9.3 percent of all live births in 2003-2007 were infants of low birthweight (under 2500 grams) and 75.2 percent of infant deaths were low birthweight.

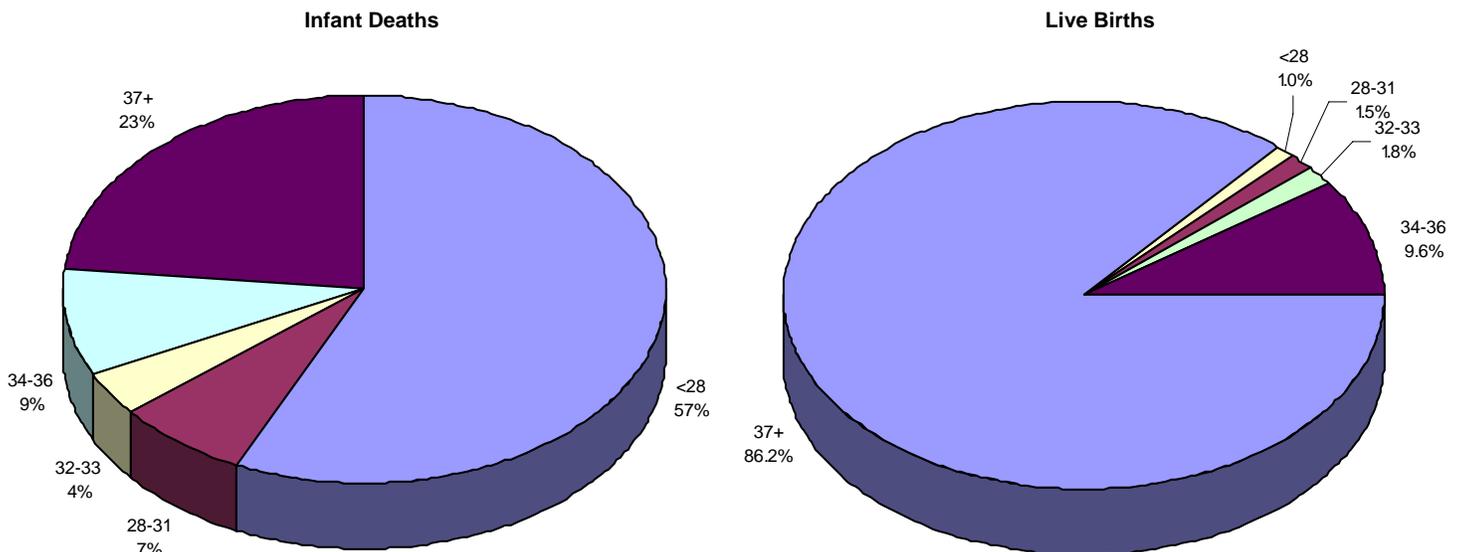
Distribution by Birthweight, Delaware Live Birth Cohort, 2003-2007



Source: Delaware Health Statistics Center

One percent of live births in 2003-2007 were less than 28 weeks gestation at birth, but they accounted for 57 percent of all infant deaths. In total, 13.8 percent of all live births in 2003-2007 were born preterm (<37 weeks of gestation) and 76.2 percent of infant deaths were born preterm.

Distribution by Gestation, Delaware Live Birth Cohort, 2003-2007



Source: Delaware Health Statistics Center

INFANT MORTALITY - Live Birth Cohort

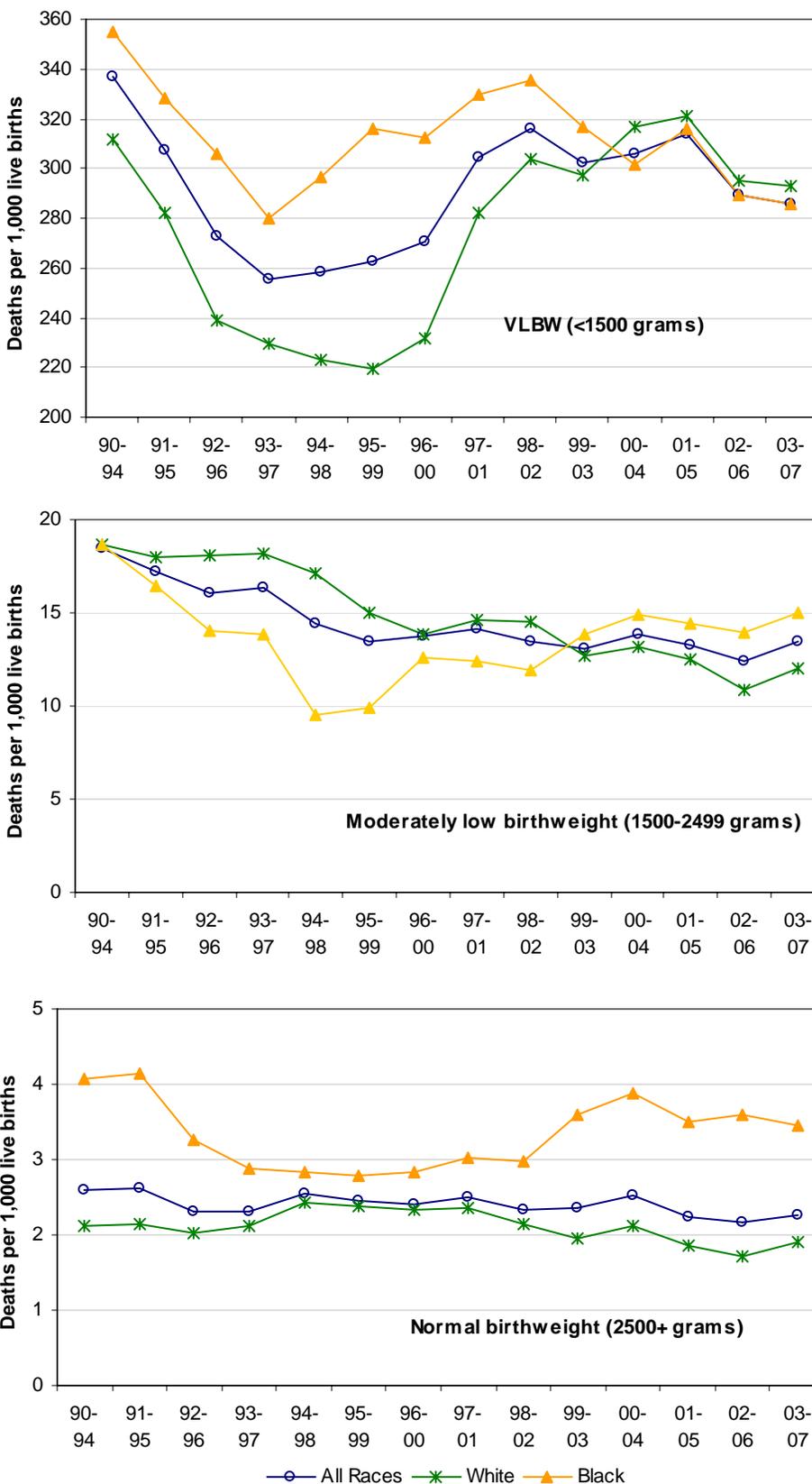
Birthweight and gestation are considered to be the most important predictors of infant health and mortality risk. Infants born too small or too early have a much greater risk of mortality than those who reach a normal birthweight (2500+ grams) or full-term gestation (37+ weeks).

IMRs for very low birthweight (VLBW) infants demonstrated no significant change from 2002-2006 to 2003-2007. Overall, IMRs declined 9.5 percent between 1998-2002 and 2003-2007, with most of the decrease occurring in the black infant mortality rates. By 2003-2007, IMRs for white and black VLBW infants were 293 and 286 infant deaths per 1,000 live births.

Though IMRs of moderately low birthweight infants of both races exhibited slight upward movement from 2002-2006 to 2003-2007; between 1998-2002 and 2003-2007, IMRs for black moderately low birthweight infants increased 26 percent, while those of white moderately low birthweight infants decreased 17 percent.

Most recently, IMRs for normal birthweight infants remained stable, though the overall change from 1998-2002 to 2003-2007 differed by race, with white IMRs decreasing by 11 percent and black IMRs increasing by 16 percent. In 2003-2007, the black IMR for normal birthweight infants was nearly double that of whites (3.5 vs. 1.9).

Five-year Average Infant Mortality Rate by Birthweight and Race Delaware, 1990-2007 Live Birth Cohort

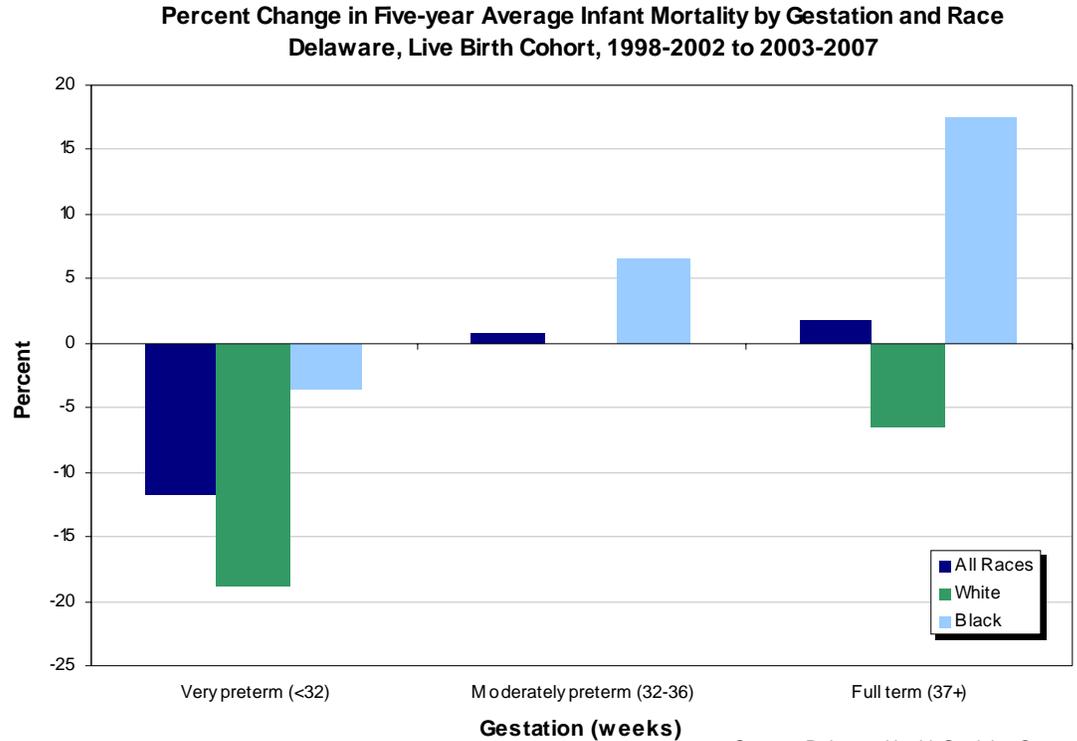


Source: Delaware Health Statistics Center

INFANT MORTALITY - Live Birth Cohort

The change in IMRs by gestation and race for moderately premature (32-36 weeks) and full-term (37+ weeks) infants followed a pattern similar to that of moderately low and normal birthweight infants.

IMRs for very preterm infants of both races declined, though white rates dropped 19 percent while black rates decreased only 3.5 percent.



From 1992-1996 to 1997-2001, IMRs for plural births increased 77 percent, to 53.1 deaths per 1000 live births; during the same time, IMRs for singleton births increased by 4 percent. Since then, plural IMRs have decreased a total of 17.3 percent, with most of that occurring in the most recent time period. IMRs for singleton births remained stable. In 2003-2007, the infant mortality rate for plural births was 6 times that of singleton births (44 vs. 7.2).

