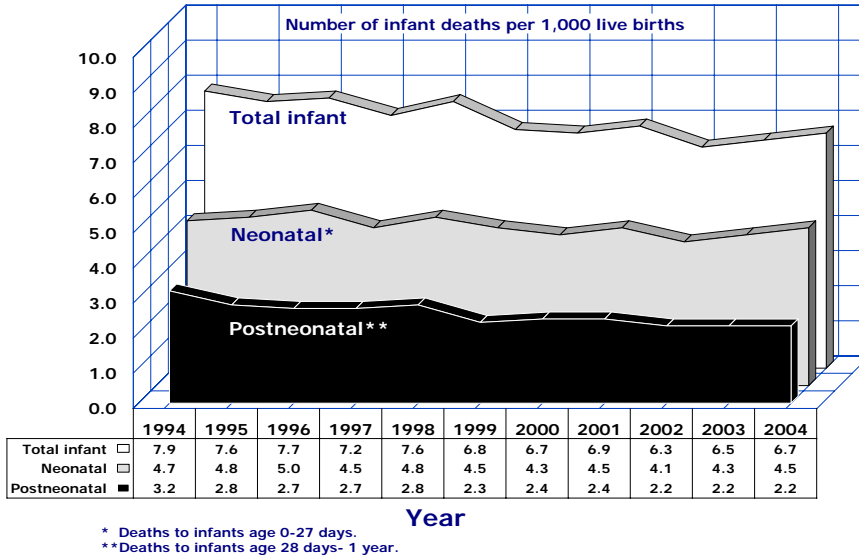


2C. AGE-SPECIFIC MORTALITY
Infant mortality

Figure 2C-1
Infant Mortality Rates By Neonatal/Postneonatal Age and Year, Arizona, 1994-2004



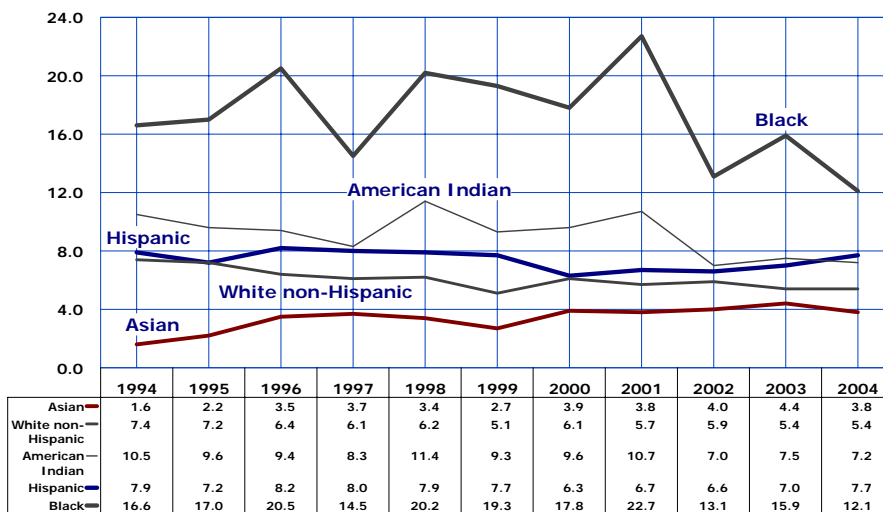
Infant mortality is defined as the number of deaths within the first year of life. The infant mortality rate (IMR) is computed as the number of infant deaths in a calendar year per 1,000 live births recorded for the same period.

The Arizona infant mortality rate increased for the second consecutive year from 6.3 in 2002 to 6.5 in 2003 and 6.7 in 2004 (**Figure 2C-1**). In 2004, 622 infants died before reaching their first birthday, the highest number of infant deaths since 1988.

The 2002-2004 infant mortality increase was concentrated among neonatal deaths (**Figure 2C-1**), with the postneonatal rate remained stable at 2.2.

More-detailed infant mortality data from the linked birth/infant death data set are used below to analyze some of the factors contributing to the increase. In the linked file, the information from the death certificate is linked to information from the birth certificate for each infant under 1 year of age who died in Arizona in 2004.

Figure 2C-2
Infant Mortality Rates* by Race/Ethnicity and Year, Arizona, 1994-2004



*Number of infant deaths per 1,000 live births in specified group.

The mortality risk for infants varies by race/ethnicity. Infants of Asian mothers, followed by babies of White non-Hispanic mothers had the lowest infant mortality rates among the ethnic groups in 2004 (**Figure 2C-2**, **Table 2C-2**).

In 2004, Black infants continued to have the worst survival chances among the ethnic groups (**Figure 2C-2**). However, the Black IMR decreased by 23.9 percent from 15.9/1,000 in 2003 to 12.1/1,000 in 2004.

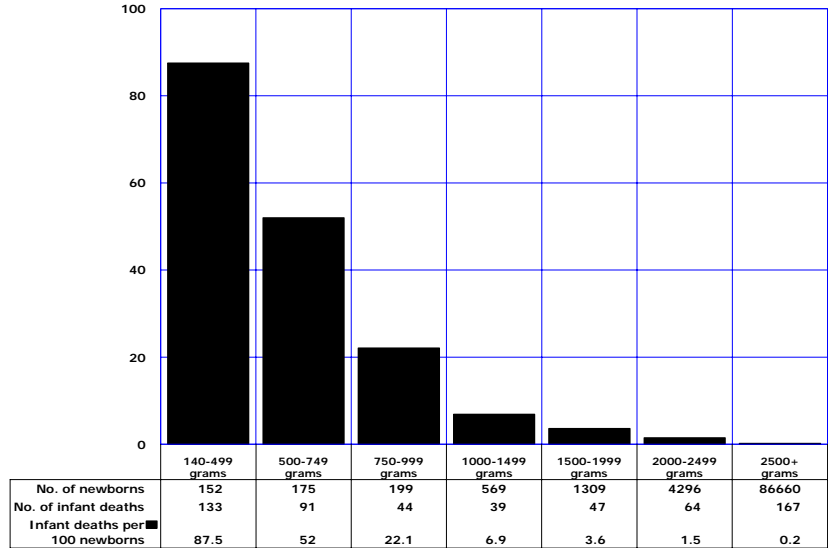
In contrast, the risk of dying among Hispanic infants substantially increased for the second consecutive year from 6.6 in 2002 to 7.0 in 2003 and 7.7 in 2004. The 2004 IMR of American Indian infants (7.2/1,000) was the second lowest rate since 1994. In 2004, Asian infants continued to have the best survival chances among race/ethnic groups in Arizona.

2C. AGE-SPECIFIC MORTALITY
Infant mortality

Birthweight is one of the most important predictors of an infant's survival chances. In 2004, the infant mortality rate for low birthweight infants (LBW: less than 2,500 grams) was 63.2 deaths per 1,000 live births. Similarly, the infant mortality rate for very low birthweight infants (VLBW: less than 1,500 grams) was 283.5 deaths per 1,000 live births.

The proportion of low birthweight births increased from 6.8 in 2002 to 7.2 in 2004; the latter being the highest LBW ratio in Arizona since 1970. Changes in the distribution of LBW births by birthweight also contributed to the 2003-2004 infant mortality increase. From 2003 to 2004, the number of infants with birthweight of 1,000 – 1,499 grams increased by 10.7 percent, and the number of infants with birthweight of less than 500 grams increased by 9.5 percent. Births at less than 500 grams have very high mortality rate of 87.5 percent (**Figure 2C-3**), so small changes in the numbers can have a large impact on the overall infant mortality rate.

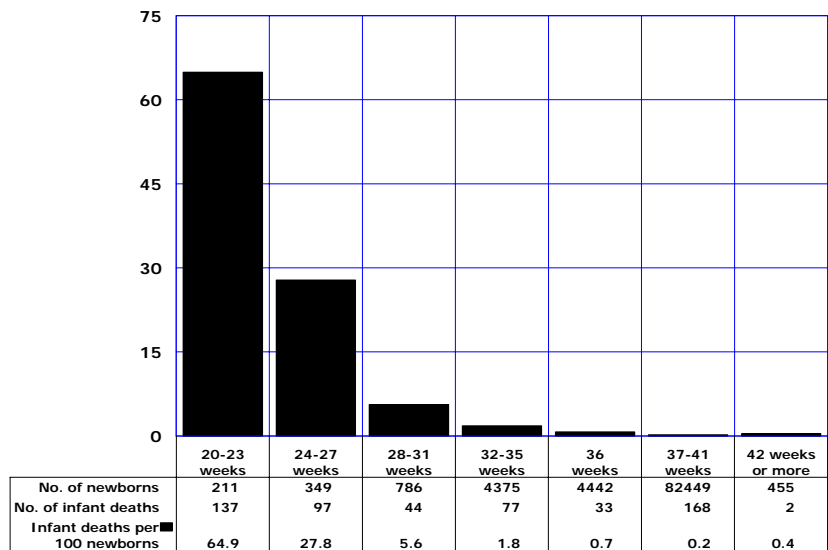
Figure 2C-3
Proportion of Infant Deaths by Birthweight, Arizona, 2004



As with low birthweight, preterm and very preterm infants have a large impact on the total infant mortality rate because of their much higher risk of infant mortality. For example, in 2004 the infant mortality rate of 41.1 for preterm (less than 37 completed weeks of gestation) infants was 21 times the rate for term infant (2.0). As with birthweight, a more detailed examination of gestational age distribution between 2003 and 2004 shows increases at the shortest gestations – from 227 to 286 births at less than 24 weeks of gestation (an increase of 26 percent), and from 302 to 349 births for 24-27 weeks of gestation (an increase of 15.6 percent).

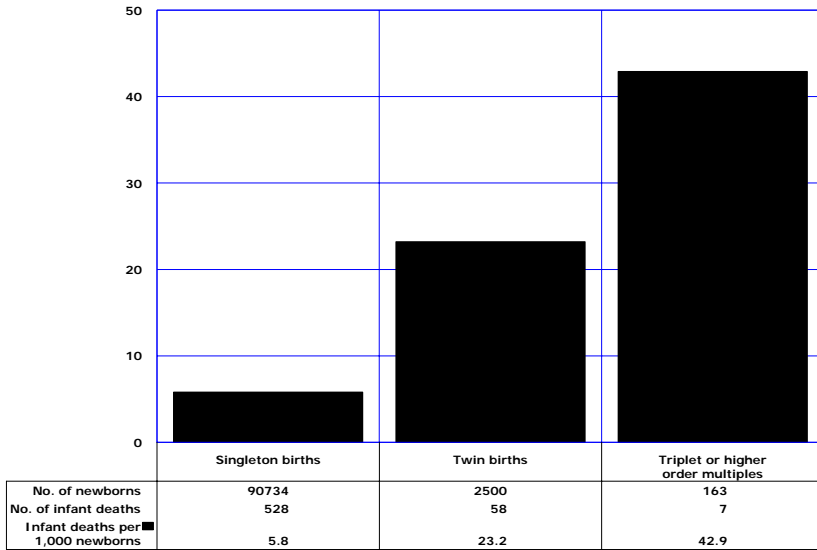
Births at less than 24 weeks of gestation have very high infant mortality rate of 64.9 percent (**Figure 2C-4**). Even small increases in the number of very preterm infants can affect the overall infant mortality rate.

Figure 2C-4
Proportion of Infant Deaths by Gestational Age, Arizona, 2004



2C. AGE-SPECIFIC MORTALITY
Infant mortality

Figure 2C-4.2
Infant Mortality Rates for Singleton and Multiple Births, Arizona, 2004

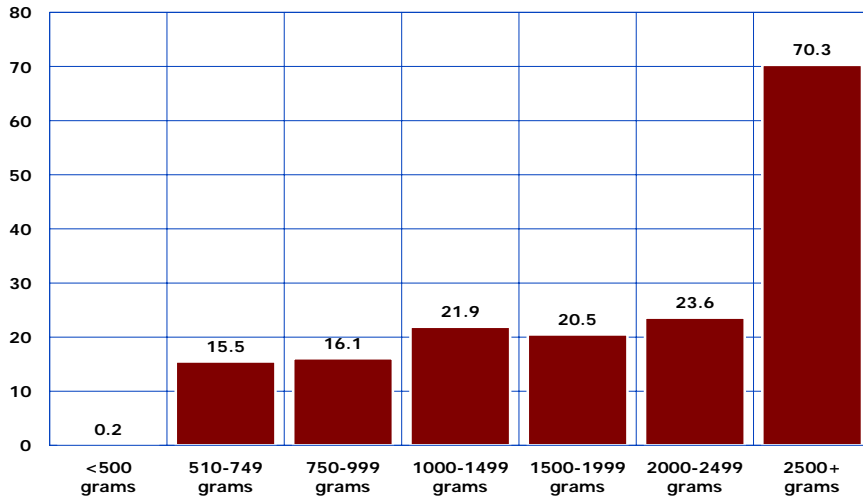


Increases in the number and percentage of multiple births have contributed to increases in the percentage of preterm and low birthweight births. The number of multiple births increased by 11.2 percent from 2,395 in 2002 to 2,663 in 2004 (**Table 1B-16**). In contrast, the number of singleton births increased by 6.8 percent over this period, from 84,984 in 2002 to 90,732 in 2004.

As already noted in Section 1B, infants born in multiple deliveries tend to be born at shorter gestations and smaller than those in singleton deliveries. In 2004, infants born in multiple deliveries were 13.4 times more likely (52.1 vs. 3.9 percent) to be born earlier than expected (at less than 37 completed weeks of gestation) and smaller (at less than 2,500 grams) than singleton births (**Figure 1B-10**).

The infant mortality rate for single births was 5.8 in 2004 (**Figure 2C-4.2**). The infant mortality rate for twin births was 23.2, and for triplets or higher order multiples it was 42.9.

Figure 2C-4.3
Average Number of Days Lived by Arizona Infants Who Died in 2004 by Their Weight At Birth



The arithmetic mean value for the number of days lived.

The definition of infant mortality as the death of a newborn within the first year of life shouldn't imply that infants who die, survive most of the year after birth, only to die before their first birthday.

In fact, infants who died in 2004 lived on average only 1.21 months or approximately 36 days. Forty-two percent of all infant deaths (260 out of 622) occurred within the first day after birth; 51.3 percent (319 out of 622) before the end of the first week of life, and two out of three (67.7 percent; 421/622) within the first month (**Table 5E-15**).

The life expectancy of an infant who died in 2004 was very closely associated with birthweight. At less than 500 grams, infant's survival was measured in hours (.2 days, **Figure 2C-4.3**). Only one infant whose weight at birth was below 500 grams survived more 28 days.