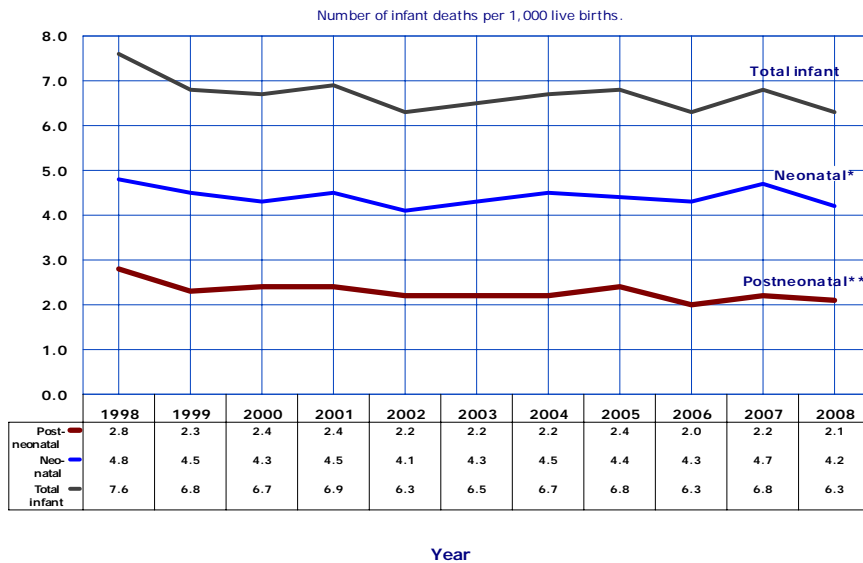


2C. AGE-SPECIFIC MORTALITY
Infant mortality

Figure 2C-1
Infant Mortality Rates by Neonatal/Postneonatal Age and Year,
Arizona, 1998-2008



Deaths to infants age 0-27 days.
 **Deaths to infants age 28 days-1 year.

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.

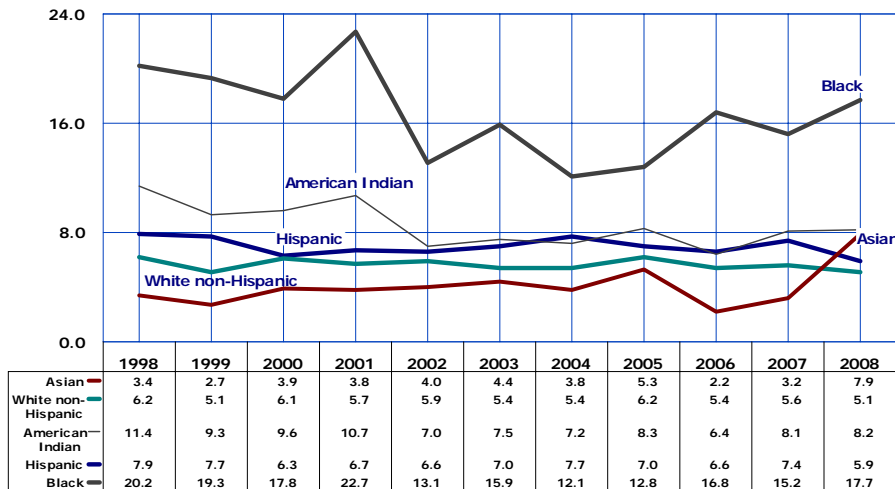
In 2008, 625 Arizona infants died before reaching their first birthday, 76 fewer than in 2007. Even if the risk of infant mortality remained the same as it was in 2007, 24 fewer infant deaths can be attributed to the absolute reduction in the number by 3,472 from 2007 to 2008 ($(3,472 \times 6.8)/1,000 = 23.6$).

Based on the actual number of infant deaths and live births in 2008, the infant mortality rate decreased by 7.4 percent from 6.8 infant deaths per 1,000 live births in 2007 to 6.3/1,000 in 2008, matching the IMRs seen both in 2002 and 2006 (**Figure 2C-1**)

The infants' survival chances improved in both the neonatal (within the first 27 days) and the postneonatal (28 days to first birthday) periods in 2008 (**Figure 2C-1, Table 2C-3**).

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 resident infant less than 1 year of age who died in Arizona in 2008.

Figure 2C-2
Infant Mortality Rates* by Race/Ethnicity and Year,
Arizona, 1998-2008



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

In 2008, 96.0 percent* of all infant death records were successfully matched to their corresponding birth records. Among the 625 infants who died in 2008, 92 were born in 2007.

The mortality risk for infants varies by race/ethnicity. Infants of White non-Hispanic mothers, followed by babies of Hispanic or Latino mothers had the lowest infant mortality rates among the race/ethnic groups in 2008 (**Figure 2C-2, Table 2C-2**). The infant mortality rose sharply for infants of Asian or Pacific Islander mothers from 3.2/1,000 in 2007 to 7.9/1,000 in 2008.

In 2008, Black infants continued to have the worst survival chances among the ethnic groups (**Figure 2C-2**). The Black IMR increased by 16.4 percent from 15.2/1,000 in 2007 to 17.7/1,000 in 2008. In contrast, the IMR of White non-Hispanic infants decreased by 8.9 percent from 5.6 in 2007 to 5.1 in 2008.

*Infant death records that were not linked to their corresponding birth certificates include unrecorded home births (i.e., no birth certificates was issued) and out-of-State births (i.e., the State issuing the certificate of birth did not send a copy to Arizona).

2C. AGE-SPECIFIC MORTALITY
Infant mortality

Newborn weight at birth is one of the most important predictors of an infant's survival chances. In 2008, the infant mortality rate for low birthweight infants (LBW: less than 2,500 grams) was 54.4 deaths per 1,000 live births. Similarly, the infant mortality rate for very low birthweight infants (VLBW: less than 1,500 grams) was 242.3 deaths per 1,000 live births.

The absolute number of low birthweight births actually declined from 7,285 in 2007 to 7,026 in 2008; the former being the highest number of LBW births ever. Moreover, the proportion of babies whose weight at birth was less than 1,000 grams decreased from 8.1 percent of all low birthweight births in 2007 to 7.7 percent in 2008 (**Table 1B-3**). Both factors are chiefly responsible for the improved infants' survival chances in 2008.

Together, births of infants weighing less than 1,000 grams accounted for 0.6 percent of births, and 39.0 percent of all infant deaths. Infants weighing less than 500 grams in 2008 had a very high mortality rate of 82.0 percent (**Figure 2C-3**).

Figure 2C-3
Proportion of Infant Deaths by Birthweight, Arizona, 2008

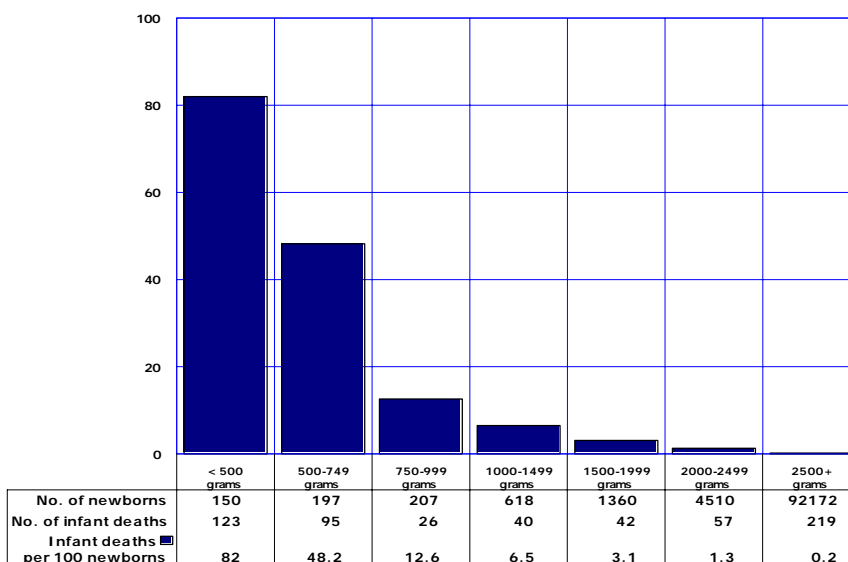
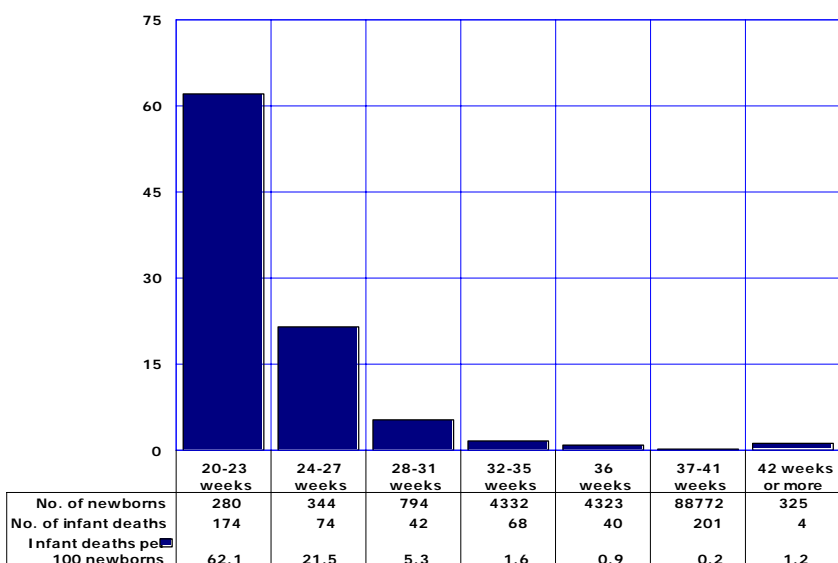


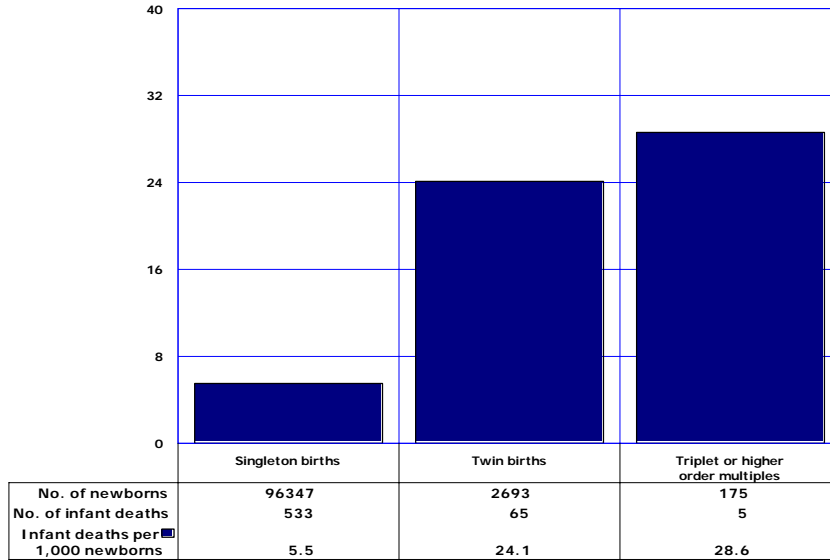
Figure 2C-4
Proportion of Infant Deaths by Gestational Age, Arizona, 2008

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, births at less than 27 weeks of gestation accounted for only 0.6 percent of all births but 39.7 percent of infant deaths in Arizona in 2008. Births at less than 24 weeks of gestation have a very high infant mortality rate of 62.1 percent (**Figure 2C-4**). Overall, preterm infants (those born at less than 37 weeks of gestation) accounted for 10.2 percent of births (**Table 1B-2**) and 63.7 percent of all infant deaths.



2C. AGE-SPECIFIC MORTALITY
Infant mortality

Figure 2C-4.2
Infant Mortality Rates for Single and Multiple Births, Arizona, 2008

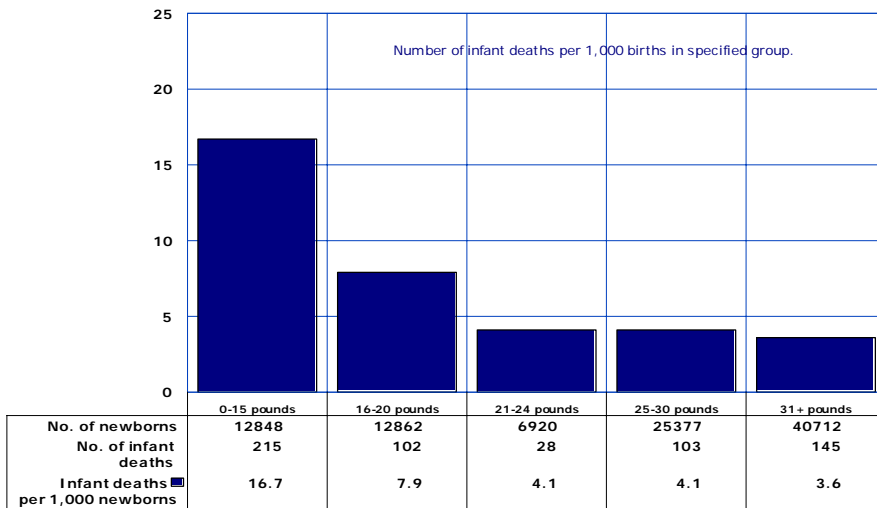


As already noted in Section 1B, infants born in multiple deliveries tend to be born at shorter gestations and smaller than those in singleton deliveries. In 2008, infants born in multiple deliveries were 12.8 times more likely (48.8 vs. 3.8 percent) to be born earlier than expected (at less than 37 completed 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 5.5 in 2008 (**Figure 2C-4.2**). The infant mortality rate for twin births was 24.1, and for triplets or higher order multiples it was 28.6 (the latter rate, based on only 5 infant deaths, is not statistically reliable).

Babies born in multiple deliveries accounted for 2.9 percent of births (**Table 1B-2**), but 11.2 percent of all infant deaths in Arizona in 2008.

Figure 2C-4.3
Infant Mortality Rates by Maternal Weight Gain during Pregnancy, Arizona, 2008



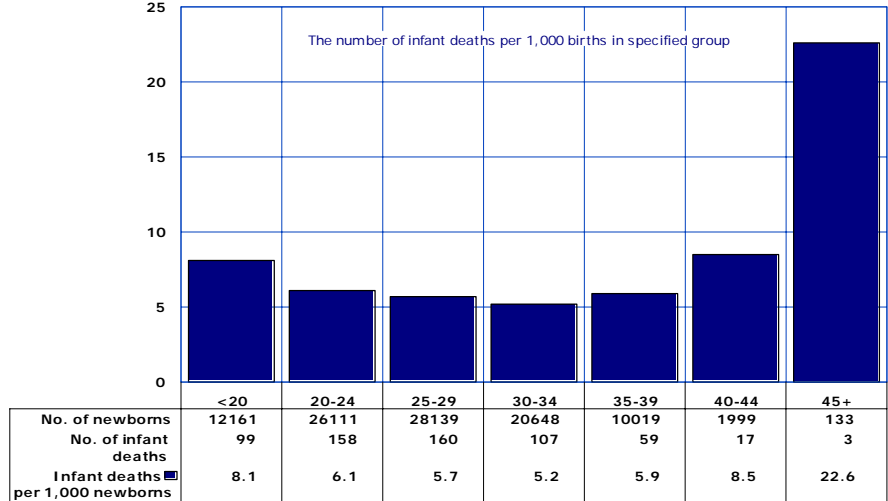
Infant mortality rates vary with maternal weight gain during pregnancy. Insufficient or excessive weight gain during pregnancy can negatively impact both maternal and pregnancy outcome. In 2008, as in previous years, the risk of infant death decreased with increasing maternal weight gain, including maternal weight gain of 31 or more pounds (**Figure 2C-4.3**). Among the 40,712 women giving birth in 2008 who gained 31 or more pounds, 41.3 percent (compared to 61.7 percent in 2007) had weight gains of more than 40 pounds, considered excessive for all women regardless of their body mass index.

There is no coincidence that mother's weight gain has been shown to have a positive correlation with infant birthweight (**Figure 1B-22**).

2C. AGE-SPECIFIC MORTALITY
Infant mortality

Figure 2C-4.4
Infant Mortality Rates by Mother's Age Group, Arizona, 2008

Infant mortality rates vary with maternal age. In 2008, infant mortality decreased with increasing maternal age through 30-34 years of age but increased for infants born to women 35 years of age or older. Optimal maternal age was 30-34 years (**Figure 2C-4.4**). The number of births to women 45 years or older decreased by 10.1 percent from 148 in 2007 to 133 in 2008.



Infants born to unmarried mothers accounted for the absolute majority of infant deaths in 2008 (315 vs. 283); while the number of births to married mothers exceeded by 19.8 percent the number of births to unmarried mothers (53,567 vs. 44,728; **Table 1B-26**). In 2008, infants of married mothers had an infant mortality rate of 5.3 deaths per 1,000 live births, 24.3 percent lower than the rate for infants of unmarried mothers (7 infant deaths per 1,000 live births; **Figure 2C-4.5**). The effect of marital status on infant mortality suggests that marital status is a proxy measure of factors traditionally related to infant mortality such as poverty conditions, access to health care or social support. Mother's marital status may signify the presence or absence of emotional, social, and financial resources.

Additional information is available in our recent report on "Marital Status and Health, Arizona Residents, 2006" at www.azdhs.gov/plan/report/ms/ms06/index.htm

Figure 2C-4.5
Infant Mortality Rates by Mother's Marital Status, Arizona, 2008

