

2C. AGE-SPECIFIC MORTALITY  
**Infant mortality**

**Figure 2C-1**  
**Infant Mortality Rates by Neonatal/Postneonatal Age and Year, Arizona, 2006-2016**



Notes: Neonatal deaths are those infants age 0-27 days; Post-neonatal are deaths to infants age 28 days-1 year.

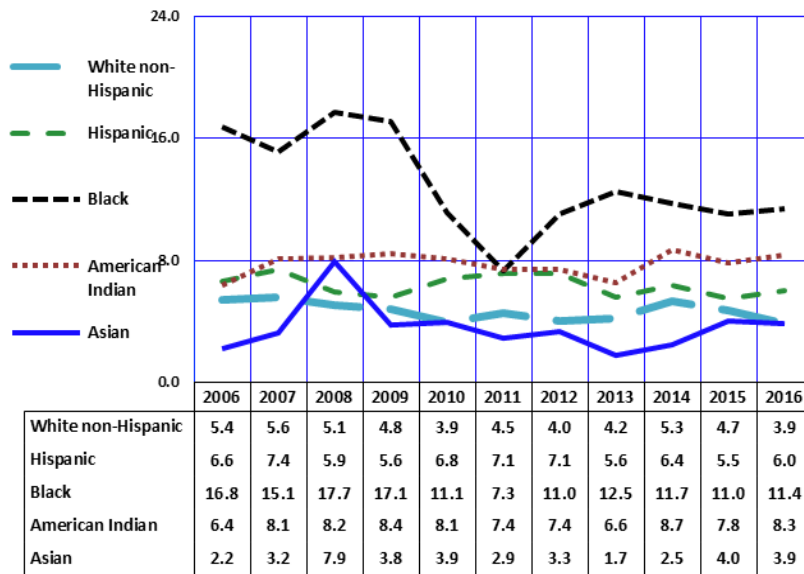
Infant mortality is defined as the number of deaths within the first year of life. The infant mortality rate is computed as the number of infant deaths in a calendar year per 1,000 live births recorded for the same period.

In 2016, 454 Arizona infants died before reaching their first birthday, 247 fewer than the latest peak of 701 infant deaths in 2007, and a decrease of 19 deaths in comparison to 2015 (**Table 2C-2**).

Even if the infant mortality rate remained the same as it was in 2007, 120 fewer infant deaths can be attributed to the absolute reduction in the number of births by 18,283 from 2007 to 2016  $((18,283 \times 6.8)/1,000) = 124$ .

Based on the actual number of infant deaths and live births in 2016, the infant mortality decreased by 3.3 percent from 5.6/1,000 in 2015 to 5.4/1,000 in 2016 (**Figure 2C-1**).

**Figure 2C-2**  
**Infant Mortality Rates<sup>a</sup> by Race/Ethnicity and Year, Arizona, 2006-2016**



Note: <sup>a</sup> Number of infant deaths per 1,000 live births in specified group.

In 2016, 89.2 percent (405/454)\* of all infant death records were successfully matched to their corresponding birth records.

The mortality risk for infants varies by race/ethnicity. Infants of Asian or Pacific Islander mothers, followed by infants of White non-Hispanic mothers had the lowest infant mortality rates among the racial/ethnic groups in 2016 (**Figure 2C-2, Table 2C-2**).

In 2016, Black or African American infants had the worst survival chances among the ethnic groups (**Figure 2C-2**). American Indian and Hispanic or Latino infants also had elevated mortality rates.

\* 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).

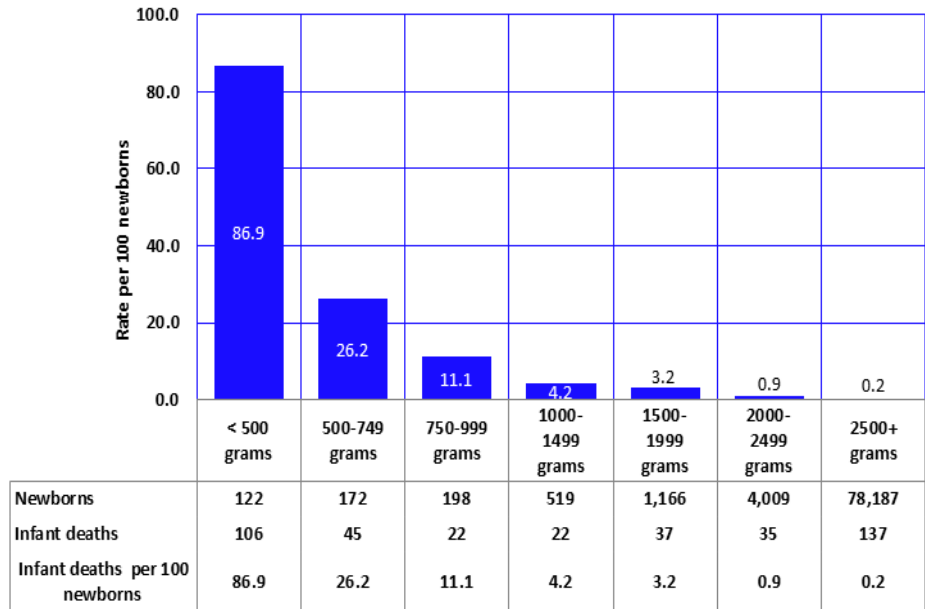
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**Figure 2C-3**  
**Proportion of Infant Deaths by Birthweight, Arizona, 2016**

Newborn weight at birth is one of the most important predictors of an infant's survival chances. In 2016, the mortality rate among babies weighing less than 500 grams at birth was 86.9 per 100 live births (**Figure 2C-3**).

The absolute number of low birthweight births remained lower in 2016 at 6,186 than at its peak in 2007 (7,285). The proportion of babies whose weight at birth was less than 1,000 grams increased from 7.4 percent of all low birthweight births in 2015 to 8.0 percent in 2016 (**Table 1B-3**).

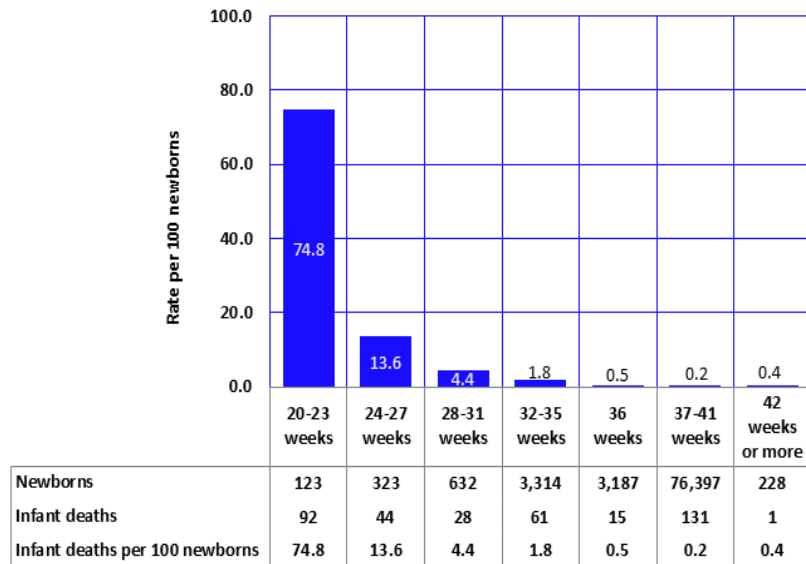
Together, infants weighing less than 1,500 grams accounted for 1.2 percent of births and 48.1 percent of all infant deaths with a matching birth record.



Note: 31 cases in the complete 2016 birth file had missing birthweight estimates.

**Figure 2C-4**  
**Proportion of Infant Deaths by Gestational Age, Arizona, 2016**

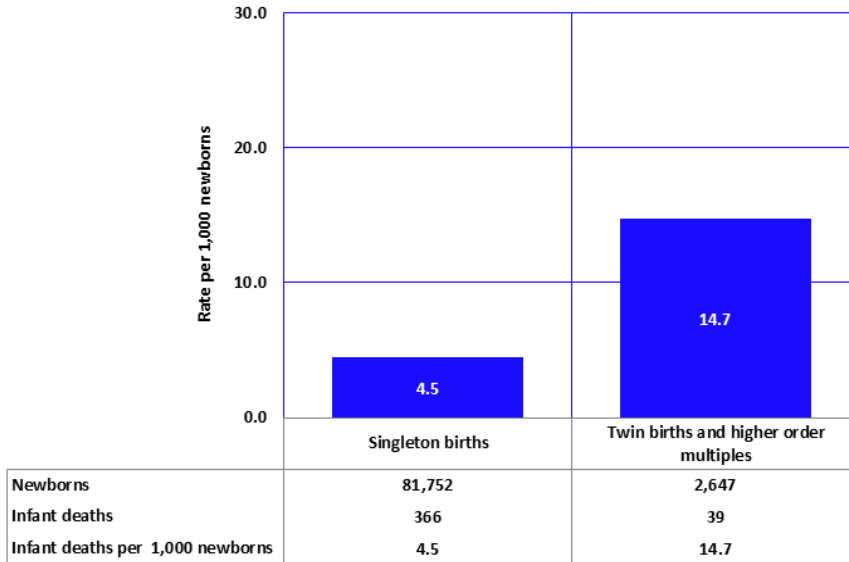
As with low birthweight infants, preterm and very preterm babies contribute greatly to the total infant mortality rate because of their higher risk of mortality. For example, births occurring between 20-27 weeks of gestation accounted for only 0.5 percent of all births but 33.6 percent of infant deaths with a matching death record. Births at less than 24 weeks of gestation have a very high infant mortality rate of 74.8 per 100 live births (**Figure 2C-4**). Overall, preterm infants (those born at less than 37 weeks of gestation) accounted for 9.0 percent of all births (**Table 1B-2**) and 59.3 percent of all infant deaths (only those with matching death records).



Note: 200 cases in the complete 2016 birth file had missing gestational age estimates and <20 weeks gestation, 33 of which were missing in the linked infant death file.

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**Figure 2C-4.2**  
**Infant Mortality Rates for Single and Multiple Births, Arizona, 2016**



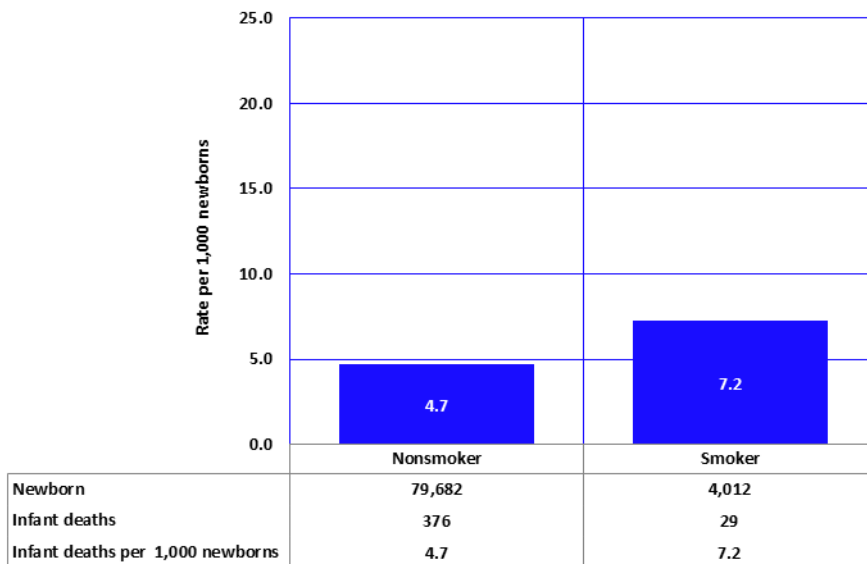
As already noted in Section 1B, infants born in multiple deliveries tend to be born at shorter gestations and smaller than those in singleton deliveries. In 2016, infants born in multiple deliveries were 12.0 times more likely (45.3 vs. 3.7 percent) to be born earlier than expected (at less than 37 completed 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 4.5/1,000 live births in 2016 (**Figure 2C-4.2**). The infant mortality rate for twin births or higher order multiples was 14.7/1,000 live births.

Babies born in multiple deliveries accounted for 3.1 percent of births (**Table 1B-16**), but 14.7 percent of all infant deaths in Arizona in 2016 (only those with matching birth and death records).

Note: 5 cases in the complete 2016 birth file were missing plurality.

**Figure 2C-4.3**  
**Infant Mortality Rates by Mother's Smoking Status during Pregnancy, Arizona, 2016**

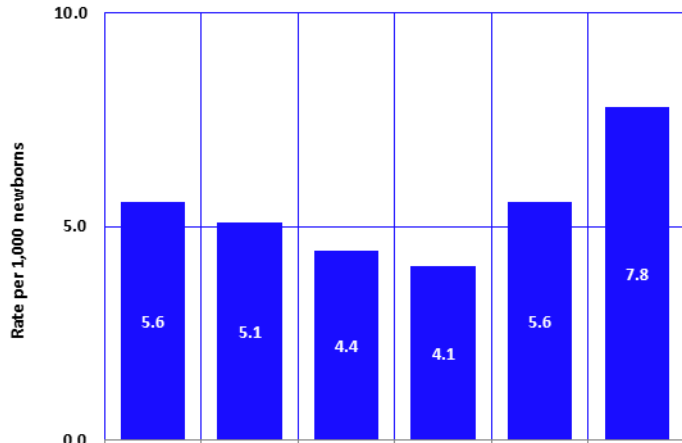


Smoking during pregnancy has been shown to increase the risk of preterm delivery, low birth weight and infant mortality. In 2016, among the 4,012 mothers who smoked during pregnancy, the risk of infant mortality was 1.5 times higher than among nonsmoker mothers (**Figure 2C-4.3**).

Note: 710 cases in the complete 2016 birth file were missing mothers' smoking status.

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**Figure 2C-4.4**  
**Infant Mortality Rates by Mother's Age Group, Arizona, 2016**

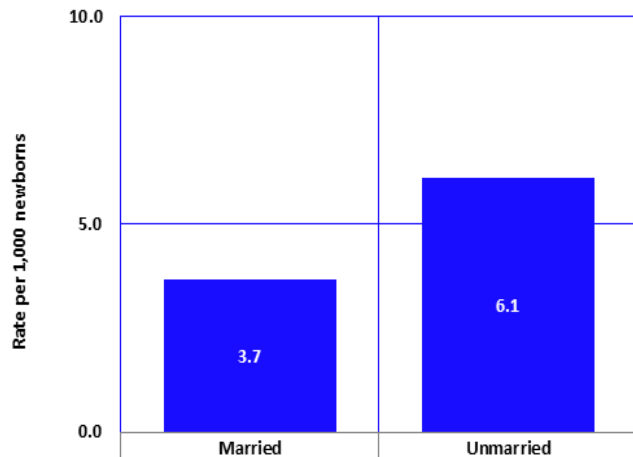


Infant mortality rates vary with maternal age. In 2016, infant mortality decreased with increasing maternal age through 30-34, but increased somewhat for infants born to women 35 years or older. Infants born to mothers aged 40 and above had the highest infant mortality rate (**Figure 2C-4.4**).

Newborns	5,390	19,775	25,328	21,394	10,209	2,308
Infant deaths	30	101	112	87	57	18
Infant deaths per 1,000 newborns	5.6	5.1	4.4	4.1	5.6	7.8

Note: 0 cases in the complete 2016 birth file were missing mother's age.

**Figure 2C-4.5**  
**Infant Mortality Rates by Mother's Marital Status, Arizona, 2016**



Infants born to unmarried mothers accounted for the absolute majority of infant deaths in 2016 (232 infant deaths) compared to married mothers (167 infant deaths). The number of births to married mothers exceeded by 20.4 percent the number of births to unmarried mothers (45,553 vs. 37,843; **Table 1B-25**). In 2016, infants of unmarried mothers had an infant mortality rate of 6.1 deaths per 1,000 live births, 1.7 times higher than the rate for infants of married mothers (3.7 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 and social support. Mother's marital status may signify the presence or absence of emotional, social, and financial resources.

Newborns	45,553	37,843
Infant deaths	167	232
Infant deaths per 1,000 newborns	3.7	6.1

Note: 1,008 cases in the complete 2016 birth file were missing mother's marital status.