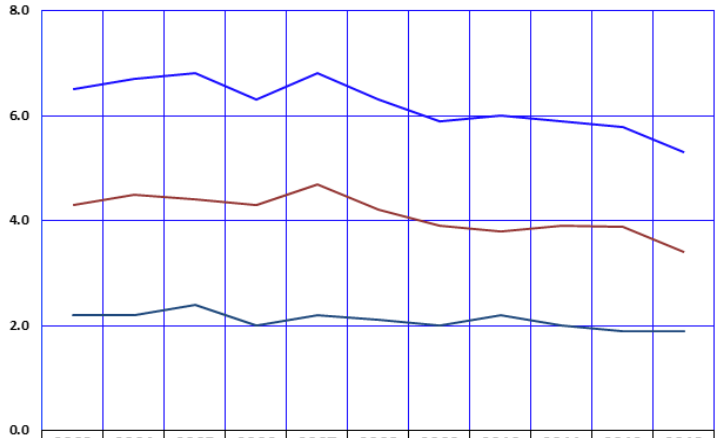
Figure 2C-1
Infant Mortality Rates by Neonatal/Postneonatal Age and Year, Arizona, 2003-2013



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total infant	6.5	6.7	6.8	6.3	6.8	6.3	5.9	6.0	5.9	5.8	5.3
Neonatal	4.3	4.5	4.4	4.3	4.7	4.2	3.9	3.8	3.9	3.9	3.4
Post-neonatal	2.2	2.2	2.4	2.0	2.2	2.1	2.0	2.2	2.0	1.9	1.9

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

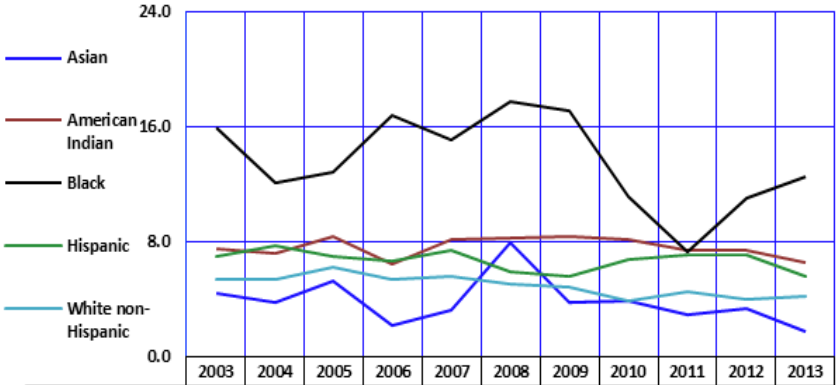
Infant mortality is defined as the number of deaths within the first year of life. The infant mortality rate (IMR) is computed as the number of infant deaths in a calendar year per 1,000 live births recorded for the same period.

In 2013, 447 Arizona infants died before reaching their first birthday, 254 fewer than the latest peak of 701 infant deaths in 2007 (**Table 2C-2**).

Even if the risk of infant mortality remained the same as it was in 2007, 121 fewer infant deaths can be attributed to the absolute reduction in the number births by 17,724 from 2007 to 2013 ((17,724 x 6.8)/1,000) = 121).

Based on the actual number of infant deaths and live births in 2013, the infant mortality rate of 5.3/1,000 was the lowest IMR recorded in the past decade (**Figure 2C-1**).

Figure 2C-2
Infant Mortality Rates[a] by Race/Ethnicity and Year, Arizona, 2003-2013



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Asian	4.4	3.8	5.3	2.2	3.2	7.9	3.8	3.9	2.9	3.3	1.7
American Indian	7.5	7.2	8.3	6.4	8.1	8.2	8.4	8.1	7.4	7.4	6.6
Black	15.9	12.1	12.8	16.8	15.1	17.7	17.1	11.1	7.3	11.0	12.5
Hispanic	7.0	7.7	7.0	6.6	7.4	5.9	5.6	6.8	7.1	7.1	5.6
White non-Hispanic	5.4	5.4	6.2	5.4	5.6	5.1	4.8	3.9	4.5	4.0	4.2

Notes: [a] Number of infant deaths per 1,000 live births in specified group.

In 2013, 93.1 percent (416/447)* 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 2012 (**Figure 2C-2, Table 2C-2**).

In 2013, 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 IMRs.

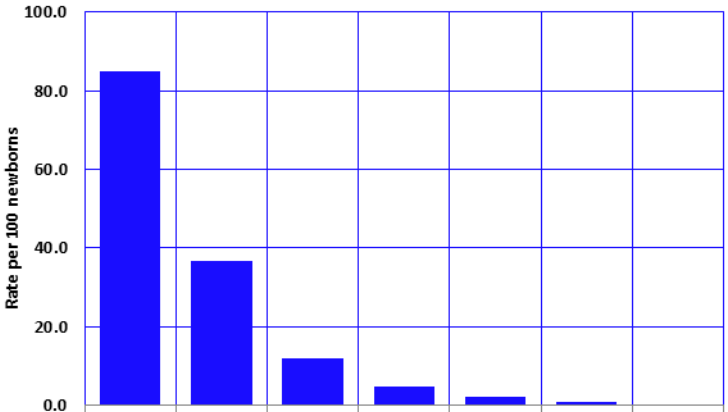
*Infant death records that were not linked to their corresponding birth certificates include unrecorded home births (i.e., no birth certificates was issued) and out-of-State births (i.e., the State issuing the certificate of birth did not send a copy to Arizona).

Newborn weight at birth is one of the most important predictors of an infant's survival chances. In 2013, the mortality rate among babies weighing less than 500 grams at birth was 84.8 percent (**Figure 2C-3**).

The absolute number of low birthweight births actually declined for the sixth consecutive year from 7,285 in 2007 to 5,849 in 2013. In 2013 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 2012 to 7.4 percent in 2013 (**Table 1B-3**).

Together, births of infants weighing less than 1,500 grams accounted for 1.1 percent of births, and 47.4 percent of all infant deaths with a matching birth record.

Figure 2C-3
Proportion of Infant Deaths by Birthweight, Arizona, 2013

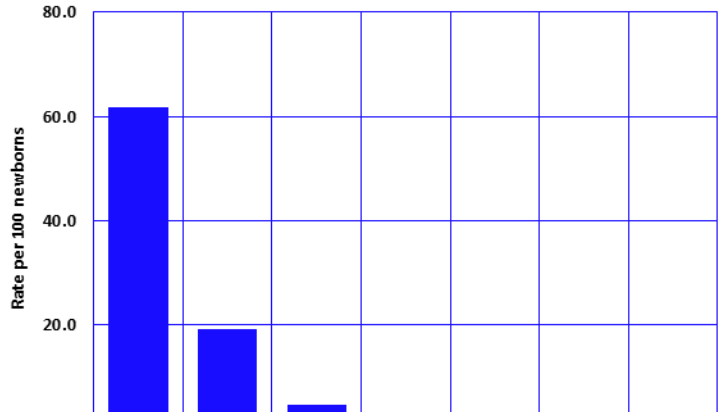


	< 500 grams	500-749 grams	750-999 grams	1000-1499 grams	1500-1999 grams	2000-2499 grams	2500+ grams
No. of newborns	112	161	160	494	1,152	3,770	79,032
No. of infant deaths	95	59	19	24	26	38	150
Infant deaths per 100 newborns	84.8	36.6	11.9	4.9	2.3	1.0	0.2

Notes: 82 cases in the complete 2013 birth file had missing birthweight estimates.

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 27 weeks or less of gestation accounted for only 0.5 percent of all births but 35.3 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 61.7 percent (**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-26**) and 54.6 percent of all infant deaths (only those with matching death records).

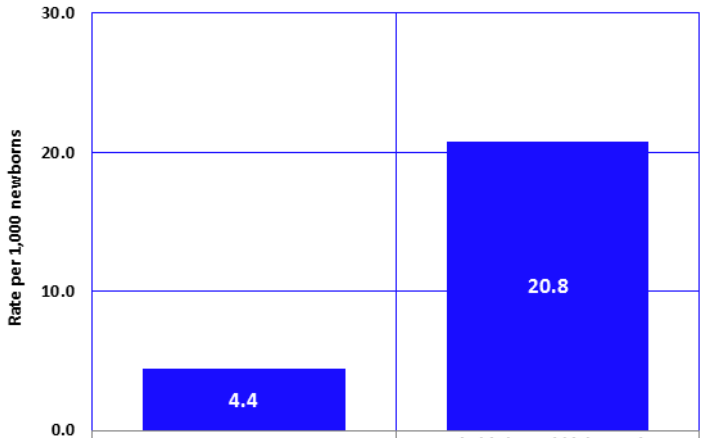
Figure 2C-4
Proportion of Infant Deaths by Gestational Age, Arizona, 2013



	20-23 weeks	24-27 weeks	28-31 weeks	32-35 weeks	36 weeks	37-41 weeks	42 weeks or more
No. of newborns	149	286	633	3,372	3,181	76,992	254
No. of infant deaths	92	55	30	33	17	157	1
Infant deaths per 100 newborns	61.7	19.2	4.7	1.0	0.5	0.2	0.4

Notes: 45 cases in the complete 2013 birth file had missing gestational age estimates, 31 of which were missing in the linked infant death file.

Figure 2C-4.2
Infant Mortality Rates for Single and Multiple Births, Arizona, 2013



	Singleton births	Twin births and higher order multiples
No. of newborns	82,415	2,547
No. of infant deaths	363	53
Infant deaths per 1,000 newborns	4.4	20.8

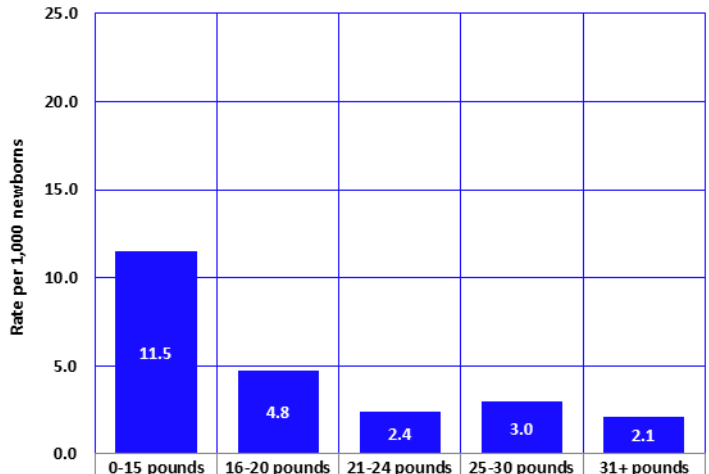
Notes: 1 case in the complete 2013 birth file was missing plurality.

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 2013, infants born in multiple deliveries were 12.7 times more likely (45.6 vs. 3.6 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 4.4 in 2013 (**Figure 2C-4.2**). The infant mortality rate for twin births or higher order multiples was 20.8.

Babies born in multiple deliveries accounted for 3.0 percent of births (**Table 1B-16**), but 12.7 percent of all infant deaths in Arizona in 2013 (only those with matching birth and death records).

Figure 2C-4.3
Infant Mortality Rates by Maternal Weight Gain during Pregnancy, Arizona, 2013



	0-15 pounds	16-20 pounds	21-24 pounds	25-30 pounds	31+ pounds
No. of newborns	12,936	10,504	7,126	18,439	35,394
No. of infant deaths	149	50	17	55	75
Infant deaths per 1,000 newborns	11.5	4.8	2.4	3.0	2.1

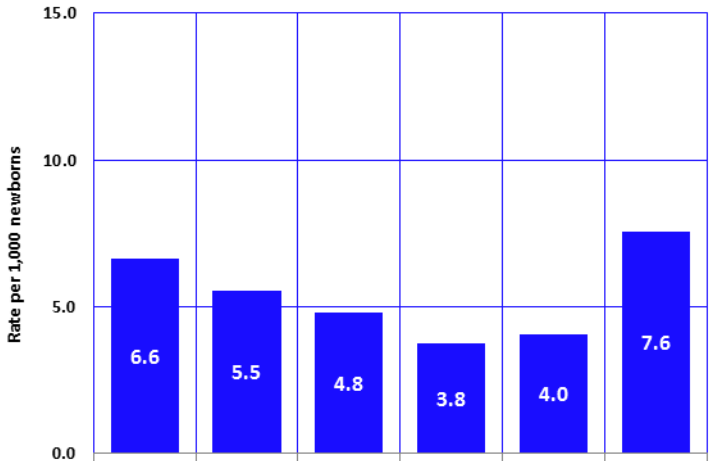
Notes: 564 cases in the complete 2013 birth file were missing maternal weight gain.

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 2013, 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 35,394 women giving birth in 2013 who gained 31 or more pounds, the risk of infant mortality was 2.1/1,000.

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

Infant mortality rates vary with maternal age. In 2013, infant mortality decreased with increasing maternal age through 34 years of age, but increased somewhat among mothers age 35-39. Infants born to mothers aged 40 and above had the highest infant mortality rate (**Figure 2C-4.4**).

Figure 2C-4.4
Infant Mortality Rates by Mother's Age Group, Arizona, 2013

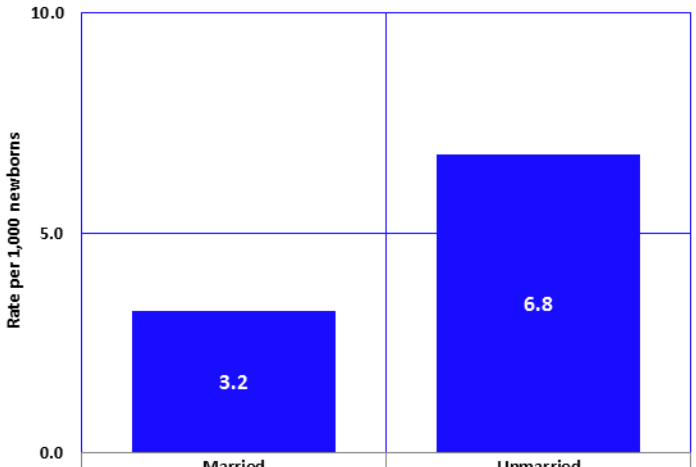


	<20	20-24	25-29	30-34	35-39	40+
No. of newborns	7,222	21,464	24,666	19,969	9,397	2,243
No. of infantdeaths	48	119	118	75	38	17
Infant deaths per 1,000 newborns	6.6	5.5	4.8	3.8	4.0	7.6

Note: 2 cases in the complete 2013 birth file were missing mother's age.

Infants born to unmarried mothers accounted for the absolute majority of infant deaths in 2013 (260 vs. 148). The number of births to married mothers exceeded by 18.9 percent the number of births to unmarried mothers (45,605 vs. 38,352; **Table 1B-26**). In 2013, infants of unmarried mothers had an infant mortality rate of 6.8 deaths per 1,000 live births, 112.5 percent higher than the rate for infants of married mothers (3.2 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.

Figure 2C-4.5
Infant Mortality Rates by Mother's Marital Status, Arizona, 2013



	Married	Unmarried
No. of newborns	45,605	38,352
No. of infant deaths	148	260
Infant deaths per 1,000 newborns	3.2	6.8

Note: 1,006 cases in the complete 2013 birth file were missing mother's marital status.