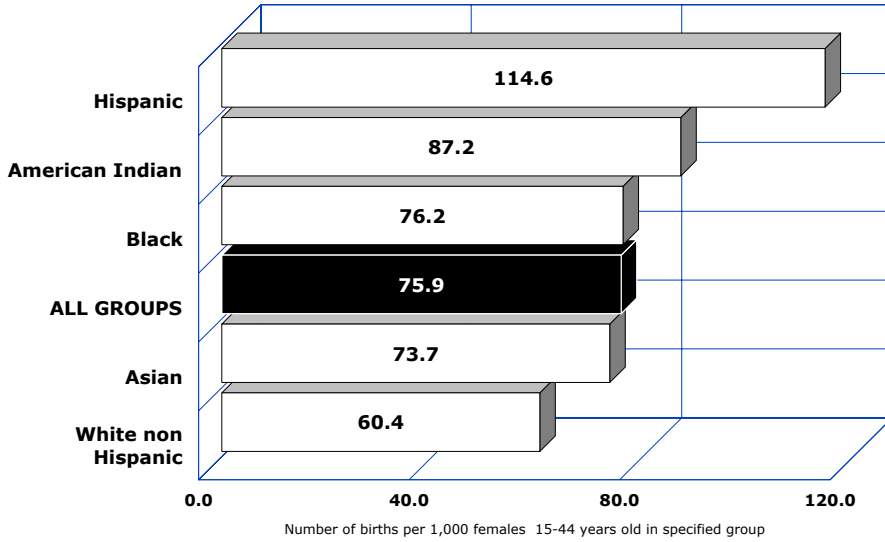


1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

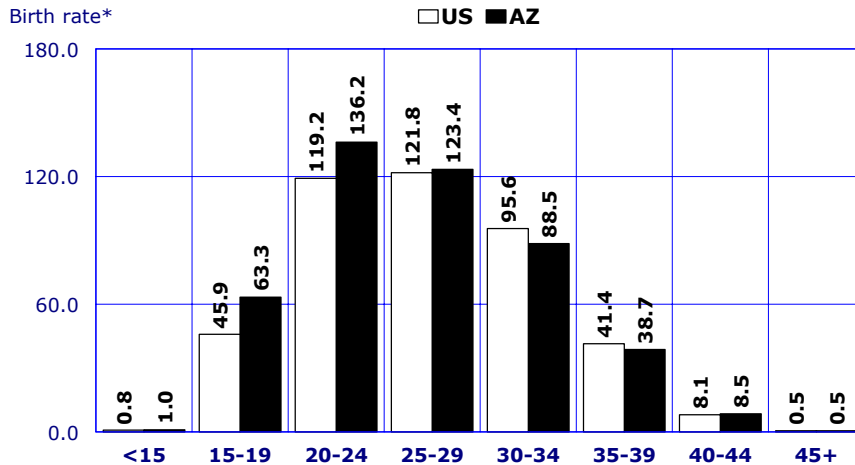
Figure 1B-1
Fertility Rates by Race/Ethnic Group Among
Females of All Ages, Arizona, 2001



From among 1,121,957 women of childbearing age (15-44 years), 7.6 percent gave birth in 2001 compared to 7.8 percent in 2000. The fertility rate was the highest for Hispanic women (114.6 births per 1,000) followed by rates for American Indian (87.2/1,000), and Black women (76.7/1,000). Fertility rates for Asian and White non-Hispanic women were lower than the average for all groups of 75.9/1,000 (**Figure 1B-1**).

White non-Hispanic, Black and American Indian mothers each accounted for smaller share of all births in 2001 than in 1991 (**Table 1B-2**). Compared to 1991, Hispanic women accounted for a 39 percent larger share of births in 2001.

Figure 1B-2
Birth Rates by Age of Mother, Arizona
and United States, 2001



* Number of births per 1,000 females in specified group.

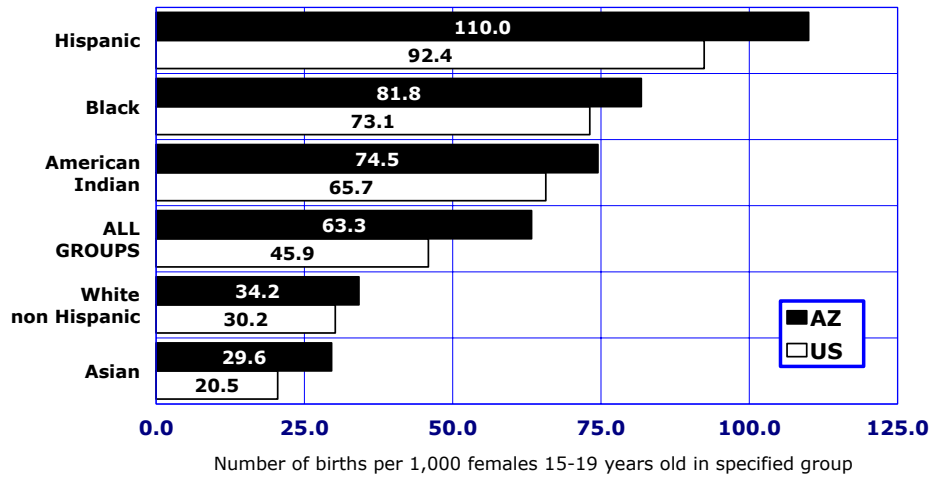
In 2001, birth rates for women in age groups 10-29 years were higher in Arizona than they were nationally (**Figure 1B-2**, **Table 1B-1**). In contrast, the birth rates for women aged 30-44 in Arizona were lower than the birth rates of their age peers in the nation.

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The birth rate for teenagers 15-19 years old in 2001 was 63.3 births per 1,000 women in this age group, 6.4 percent lower than in 2000 and 23.5 percent lower than in 1994 when it reached its latest peak of 82.8/1,000.

Arizona birth rates for every race/ethnic group among teens aged 15-19 in 2001 were greater than among their respective national peers (Figure 1B-3).

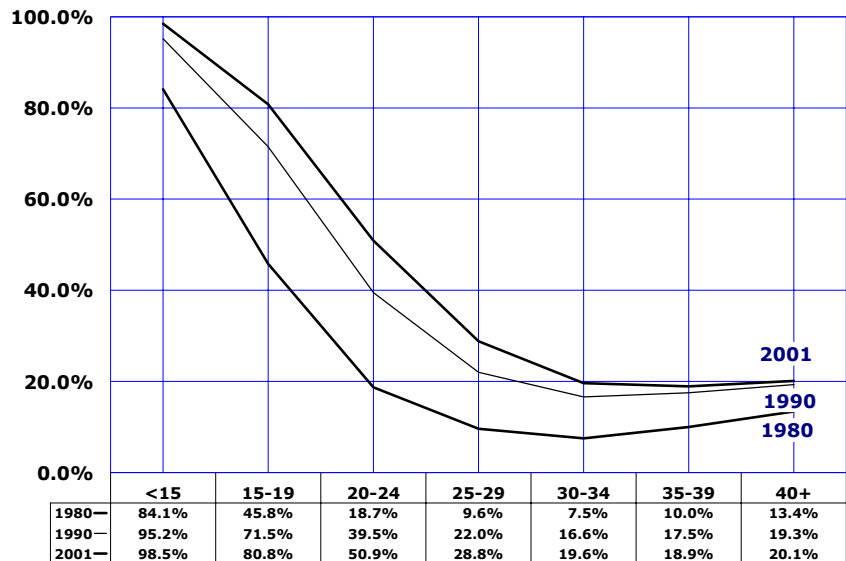
Figure 1B-3
Birth Rates by Race/Ethnic Group Among Females 15-19 Years Old, Arizona and United States, 2001



Unwed mothers have accounted for an increasing annual proportion of births throughout the 1980s and 1990s, with their 39.4 percent in 2001 marking a new historical high (Table 1B-2). Fewer than 10,000 babies were born to unwed mothers in 1980 compared to 33,583 in 2001.

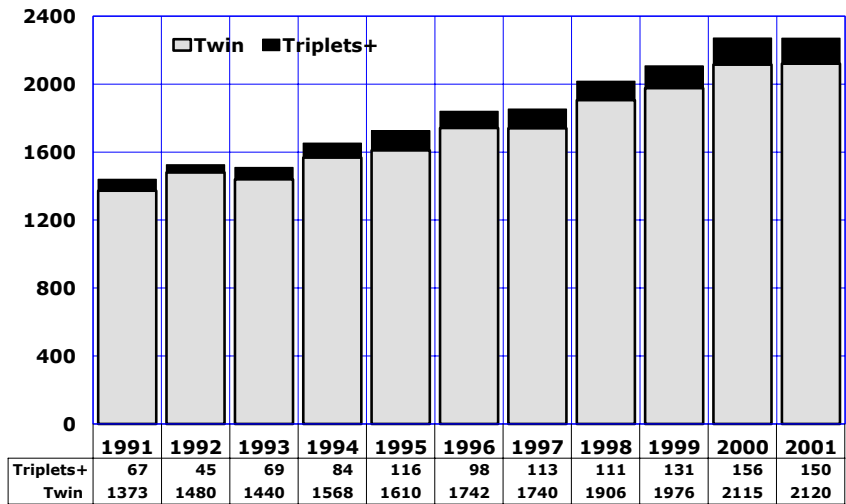
Two decades ago, the proportion of nonmarital births among teenagers aged 15-19 years was below 50 percent (Figure 1B-4). This proportion rose to 71.5 percent from 1980 to 1990. In 2001, nonmarital births accounted for eight out of ten births to mothers 15-19 years old (80.8 percent).

Figure 1B-4
Percent Births to Unmarried Mothers by Age Group, Arizona, 1980, 1990 and 2001



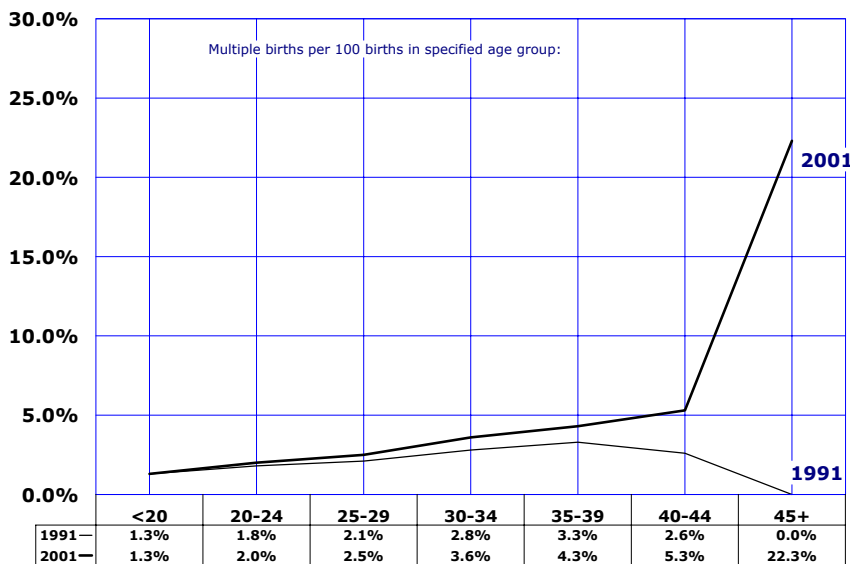
1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

Figure 1B-5
Number of Multiple Births by Year,
Arizona, 1991-2001



For the first time since 1993, the number of multiple births was essentially unchanged at 2,270 in 2000 and 2001 (**Table 1B-16**). The number of twin births slightly increased from 2,115 in 2000 to 2,120 in 2001 (**Figure 1B-5**), but the number of triplet+ births declined from 156 in 2000 to 150 in 2001.

Figure 1B-6
Risk for Multiple Births by Mother's Age Group,
Arizona, 1991 and 2001

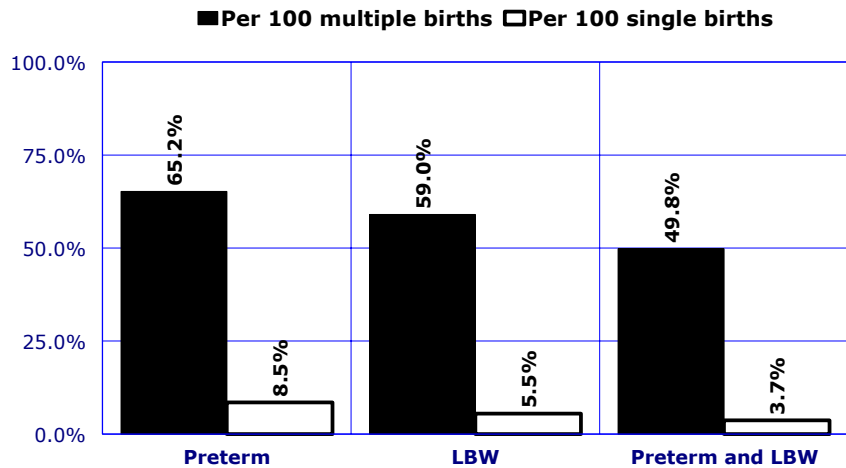


The rise in multiple births has been associated with two related trends: 1) advances in, and greater access to, assisted reproductive technology, and 2) the older age of childbearing (women in their thirties are more likely to have a multiple birth than younger women even without the use of fertility therapies).

Historically, multiple birth rates have been highest for women aged 35-39 years (see data for 1991, **Figure 1B-6**). For recent years, multiple birth rates have risen steadily with maternal age, with a precipitous rise at age 45 years and over. In 2001, 22 percent of all births to women aged 45 years and over were twins or triplets (**Figure 1B-6**).

Figure 1B-7
Infants Born Too Early (Preterm) and Infants Born Too Small (LBW) Among Multiple and Single Births, Arizona, 2001

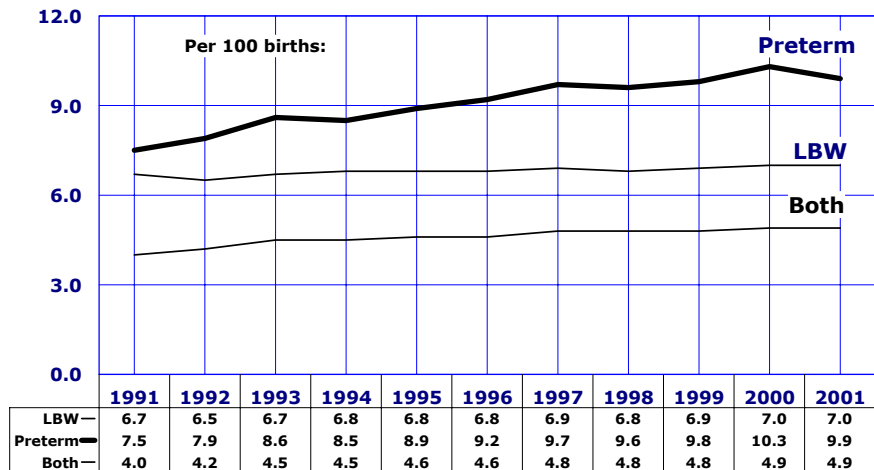
Infants born in multiple deliveries tend to be born at shorter gestations and smaller than those born in singleton deliveries (**Figure 1B-7**). In 2001, babies born in multiple deliveries were 13.5 times more likely (49.6 vs. 3.7 percent) to be born too early (at less than 37 completed weeks of gestation) and too small (at less than 2,500 grams) than singleton births.



Preterm = < 37 weeks of gestation;
 LBW = low birthweight (less than 2,500 grams or 5 pounds 8 ounces)

Figure 1B-8
Preterm and Low Birthweight (LBW) Births by Year, Arizona, 1991-2001

The proportion of preterm births declined from 10.3 to 9.9 percent for 2001. The percent of births born preterm (at less than 37 completed weeks of gestation) has risen fairly steadily over the last decade, from 7.5 percent in 1991. The proportion of babies born too early and too small (at less than 2,500 grams) increased from four percent in 1991 to 4.9 percent in both 2000 and 2001 (**Figure 1B-8**).

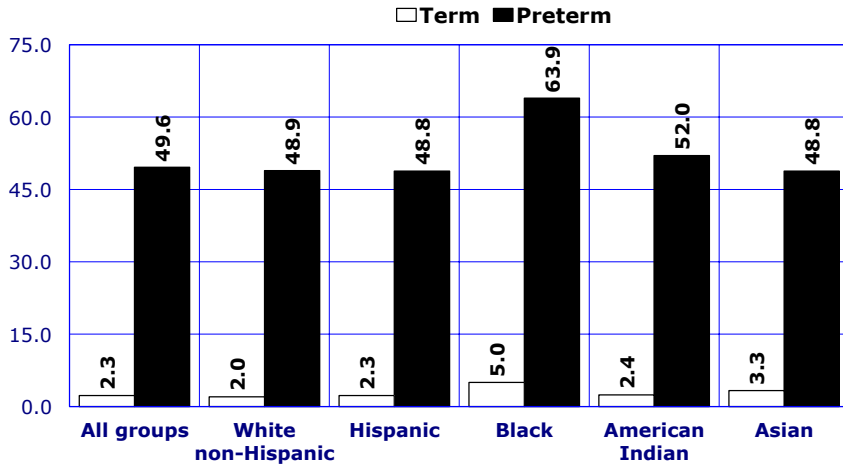


Preterm is less than 37 weeks of gestation;
 Low birthweight (LBW) is less than 2,500 grams (less than 5 pounds 8 ounces).

1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

Figure 1B-9
Low-Birthweight (LBW) Births by Length of Gestation and
Mother's Race/Ethnicity, Arizona, 2001

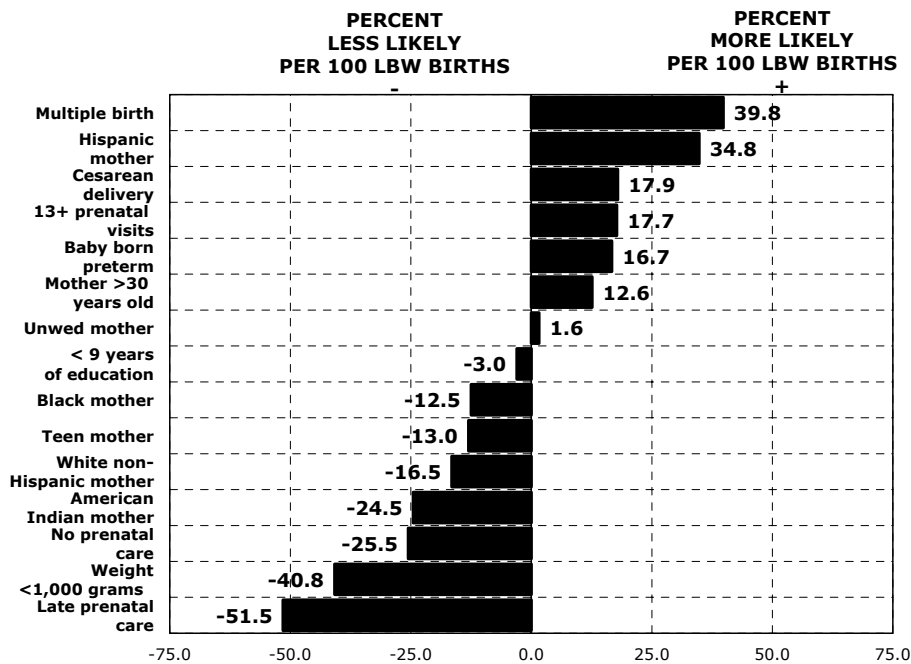
Number of LBW babies per 100 births in specified group:



Preterm is less than 37 weeks of gestation;
 Low birthweight (LBW) is less than 2,500 grams (less than 5 pounds 8 ounces).

In 2001, 7 percent of all infants were born low birthweight (LBW), or at less than 2,500 grams, unchanged from 2000. Preterm delivery is the strongest risk factor for LBW. Babies born at less than 37 completed weeks of gestation are nearly 22 times (49.6 vs. 2.3 percent) more likely to be LBW than babies born at term (**Figure 1B-9**).

Figure 1B-10
Percent Increase or Decrease from 1991 to 2001 in Birth Ratios*
for Selected Characteristics of Women Giving Birth to and of
Low Birthweight Newborns in Arizona



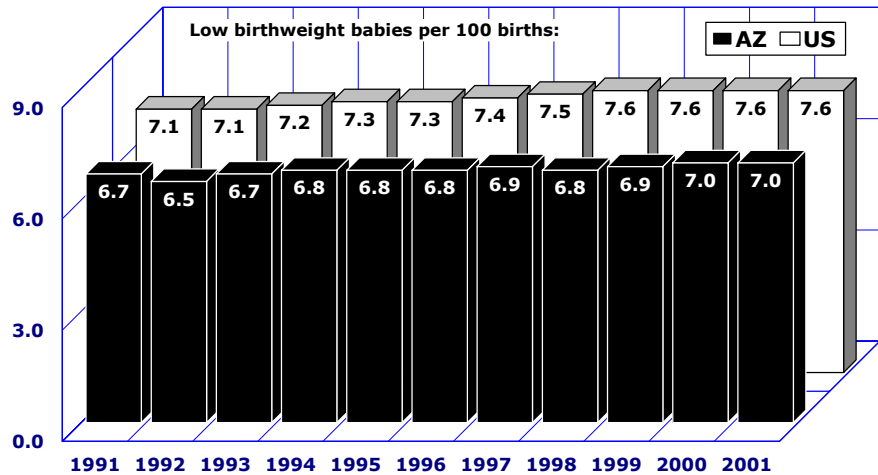
Birth ratio = the occurrence of a specified characteristic per 100 LBW births. See Table 1B-3.

The low birthweight (LBW) infants were 40 percent more likely to be born in a multiple delivery in 2001 than in 1991 (**Figure 1B-10**). Compared to 1991, the LBW babies in 2001 were also more likely to be born at less than 37 weeks of gestation, to older mothers who had 13 or more prenatal visits. The proportion of LBW infants born to mothers who received late or no prenatal care declined from 1991 to 2001.

1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

Figure 1B-11
Percent Low Birthweight,* Arizona and United States,
1991-2001

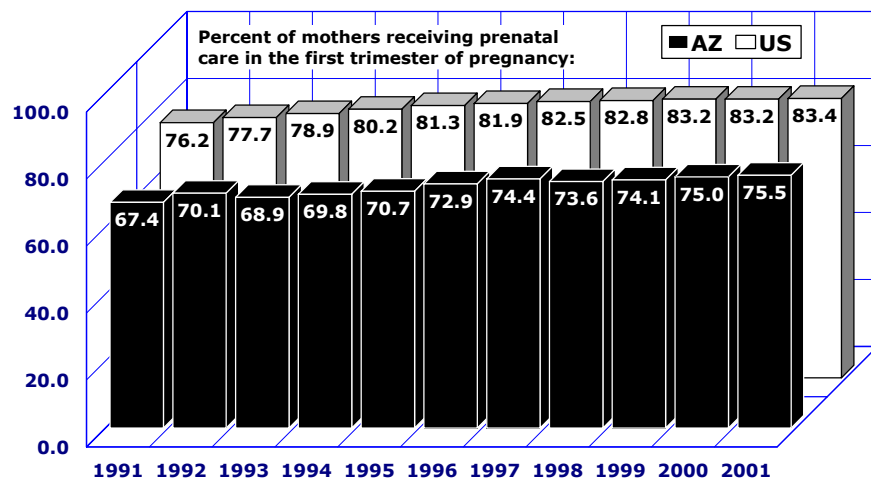
In 2001, 7 percent of all infants were born low birthweight (LBW), or at less than 2,500 grams, unchanged from 2000. In each year from 1991 to 2001, the annual incidence of LBW babies was lower in Arizona compared to the nation (**Figure 1B-11**).



*Low birthweight is less than 2,500 grams (less than 5 pounds 8 ounces).

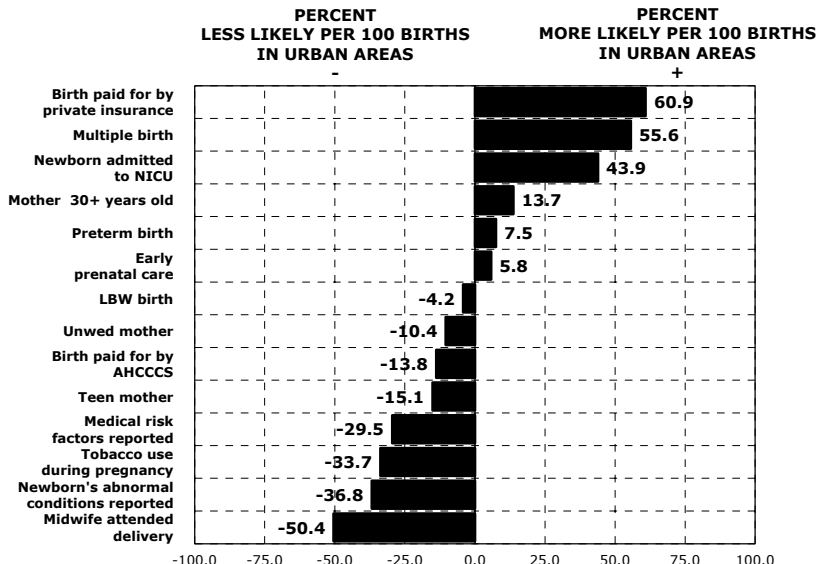
Figure 1B-12
First Trimester Prenatal Care, Arizona and United States,
1991-2001

The percent of mothers who did receive early prenatal care (i.e., in the first trimester of pregnancy) increased from 67.4 percent in 1991 to 75.5 percent in 2001. In each year from 1991 to 2001, the percent of women giving birth who had received prenatal care in the first trimester was lower in Arizona compared to the nation (**Figure 1B-12**).



1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

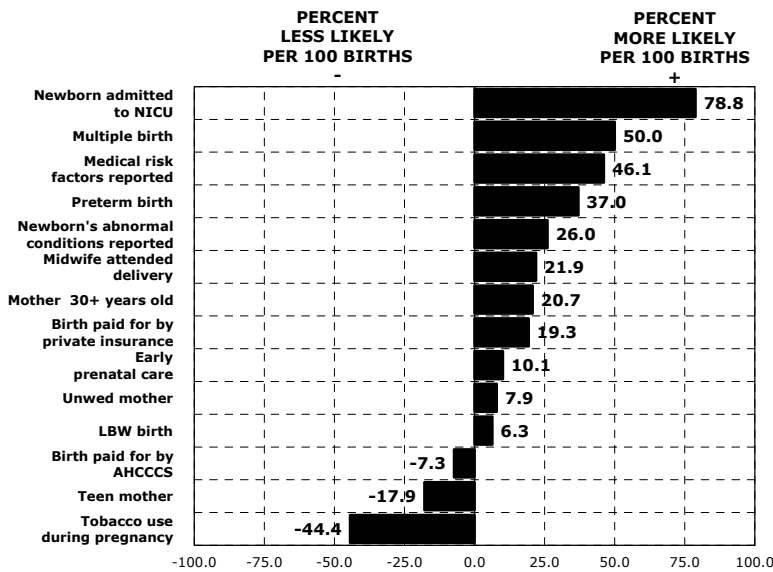
Figure 1B-13
Percent Difference in Birth Ratios* for Selected Characteristics of Mothers Giving Birth and Newborns in Urban* and Rural Areas, Arizona, 2001



Urban = Maricopa, Pima, Pinal and Yuma counties. The remaining counties comprise Arizona's rural areas.
 Birth ratio = the occurrence of a specified characteristic per 100 births. See Tables 1B-25, 1B-4, 1B-5.

Compared to babies born in rural Arizona, the deliveries of urban babies in 2001 were 61 percent more likely to be paid for by private insurance and less likely to be paid for by the Arizona Health Care Cost Containment Systems (AHCCCS), or the State's Medicaid program (Figure 1B-13).

Figure 1B-14
Percent Increase or Decrease from 1991 to 2001 in Birth Ratios* for Selected Characteristics of White non-Hispanic Mothers Giving Birth and Newborns in Arizona



Birth ratio = the occurrence of a specified characteristic per 100 births. See Tables 1B-25, 1B-8.

Compared to 1991, the White non-Hispanic babies in 2001 were more likely to be admitted to newborn intensive care units (NICU), and to be born in multiple deliveries (Figure 1B-14). The proportion of White non-Hispanic infants born to mothers who used tobacco during pregnancy declined from 19.8 percent in 1991 to 11 percent in 2001.

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Figure 1B-15
Percent Increase or Decrease from 1991 to 2001 in Birth Ratios
for Selected Characteristics of Hispanic Mothers
Giving Birth and Newborns in Arizona

The proportion of Hispanic infants admitted to newborn intensive care units (NICU) increased from 3 percent in 1991 to 5.4 percent in 2001. Compared to 1991, the Hispanic babies in 2001 were less likely to be born to teen mothers or, to mothers who used tobacco during pregnancy (**Figure 1B-15**).

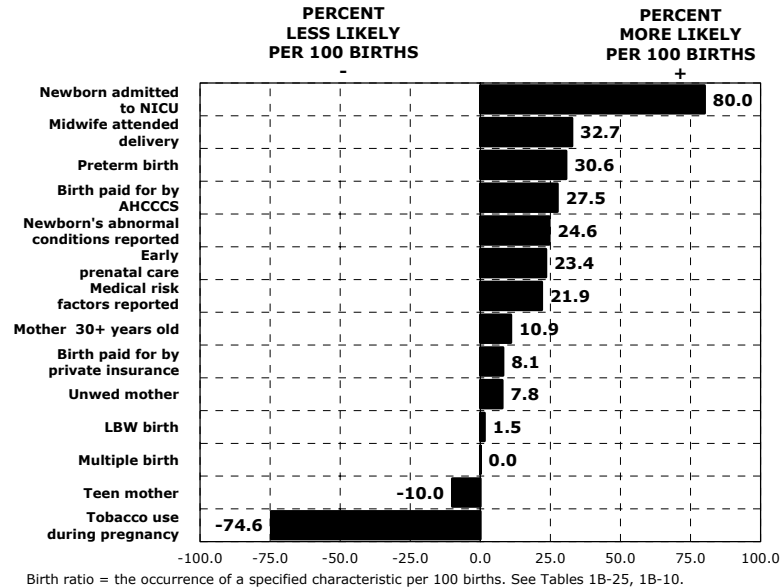
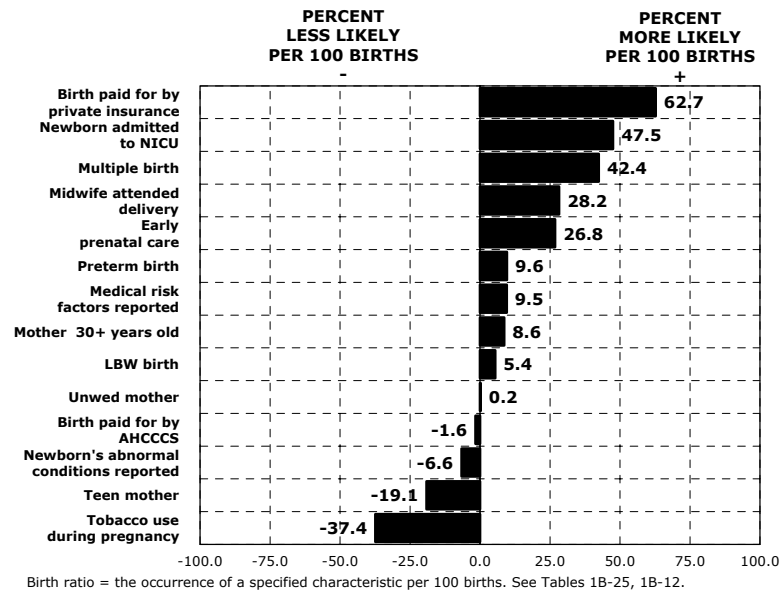


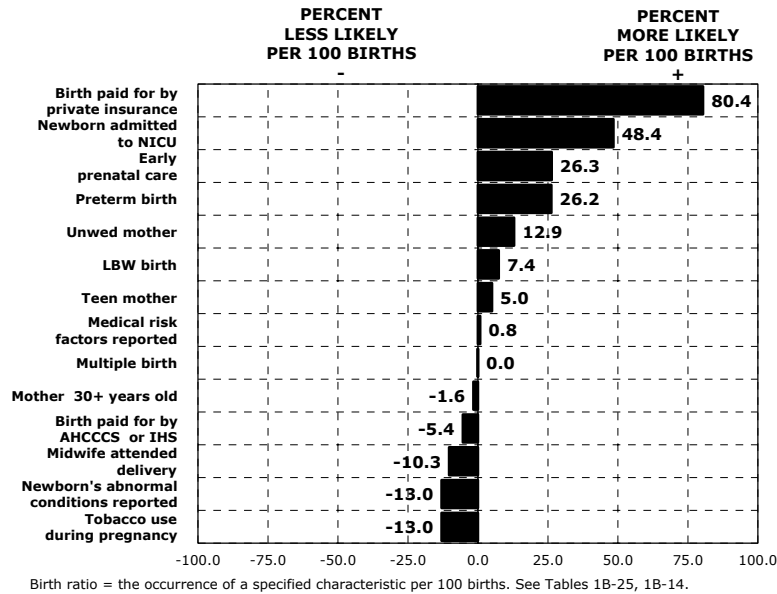
Figure 1B-16
Percent Increase or Decrease from 1991 to 2001 in Birth Ratios
for Selected Characteristics of Black Mothers
Giving Birth and Newborns in Arizona

The proportion of Black babies born in multiple deliveries increased from 3.3 percent in 1991 to 4.7 percent in 2001. The increase in the proportion of Black admitted to newborn intensive care units (NICU) was even more pronounced (47.5 percent). The Black mothers were less likely to be in their teens or, to use tobacco during pregnancy in 2001 than in 1991 (**Figure 1B-16**).



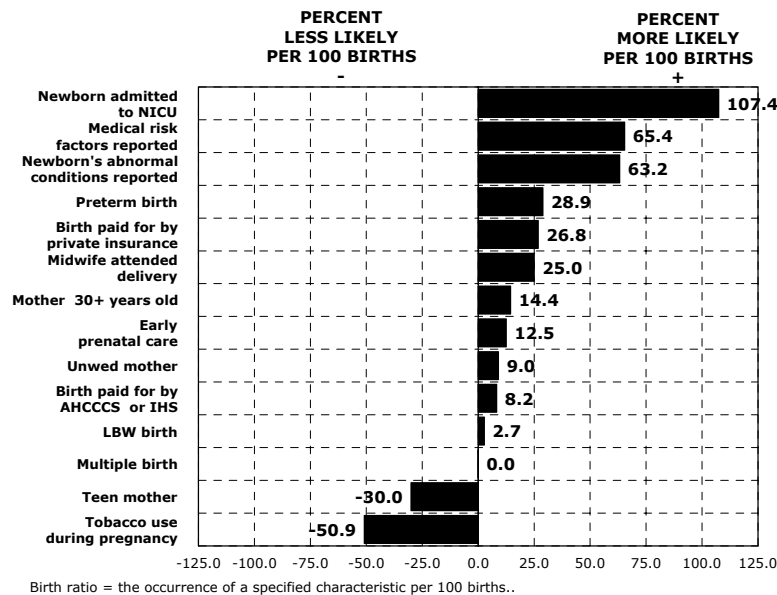
1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

Figure 1B-17
Percent Increase or Decrease from 1991 to 2001 in Birth Ratios for Selected Characteristics of American Indian Mothers Giving Birth and Newborns in Arizona



The proportion of American Indian births paid for by private insurance increased from 9.2 percent in 1991 to 16.6 percent in 2001. Compared to 1991, the American Indian infants in 2001 were more likely to be admitted to newborn intensive care units (NICU), to mothers who received early prenatal care (**Figure 1B-17**). The proportion of American Indian infants born in multiple deliveries was unchanged from 1991.

Figure 1B-18
Percent Increase or Decrease from 1991 to 2001 in Birth Ratios* for Selected Characteristics of Asian Mothers Giving Birth and Newborns in Arizona

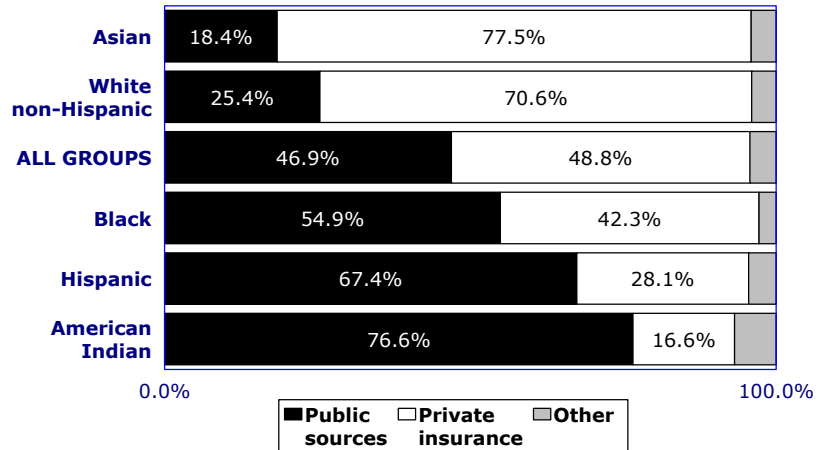


The proportion of Asian infants admitted to newborn intensive care units (NICU) more than doubled (**Figure 1B-18**), from 2.7 percent in 1991 to 5.6 percent in 2001. In contrast, the number of Asian mothers who reported tobacco use during pregnancy declined from 5.5 percent in 1991 to 2.7 percent in 2001.

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Figure 1B-19
Payee for Delivery by Mother's Race/Ethnicity,
Arizona, 2001

In 2001, private insurance was the largest payor for deliveries of Asian (at 77.5 percent) and White non-Hispanic women (at 70.5 percent). In contrast, the Arizona Health Care Cost Containment System (AHCCCS) was the largest payor for deliveries of Black and Hispanic women (54.9 and 67.4 percent respectively). The Indian Health Service of AHCCCS covered the largest share (76.6 percent) of American Indian births (**Figure 1B-19**).



Public sources = AHCCCS or IHS. The Arizona Health Care Cost Containment System (AHCCCS) is the State's Medicaid program. IHS is the Indian Health Service.

Figure 1B-20
Maternal Medical Risk Factors per 100 Births
by Mother's Race/Ethnicity, Arizona, 2001

Maternal medical risk factors can contribute to serious pregnancy complications and infant deaths, particularly if not treated properly. In 2001, American Indian women giving birth had the highest proportion of medical risk factors (39.5 percent, **Figure 1B-20**), followed by Black and White non-Hispanic women.

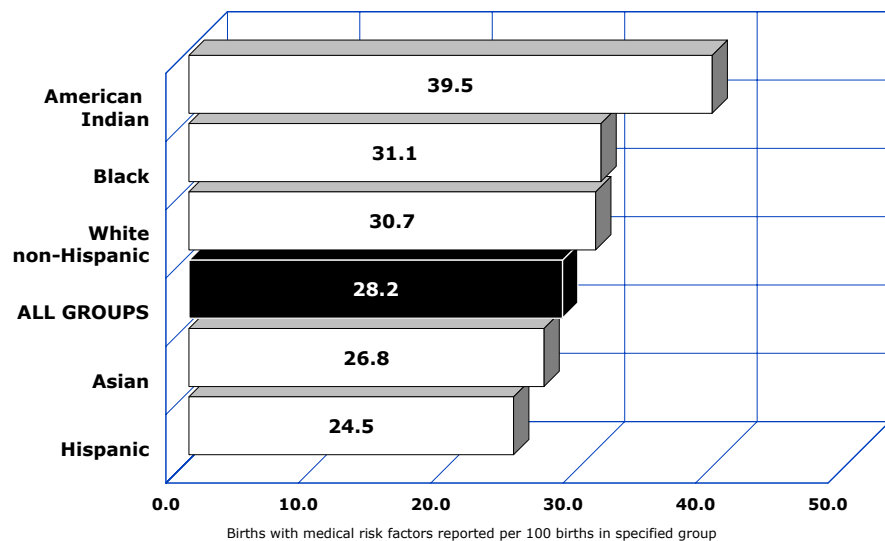
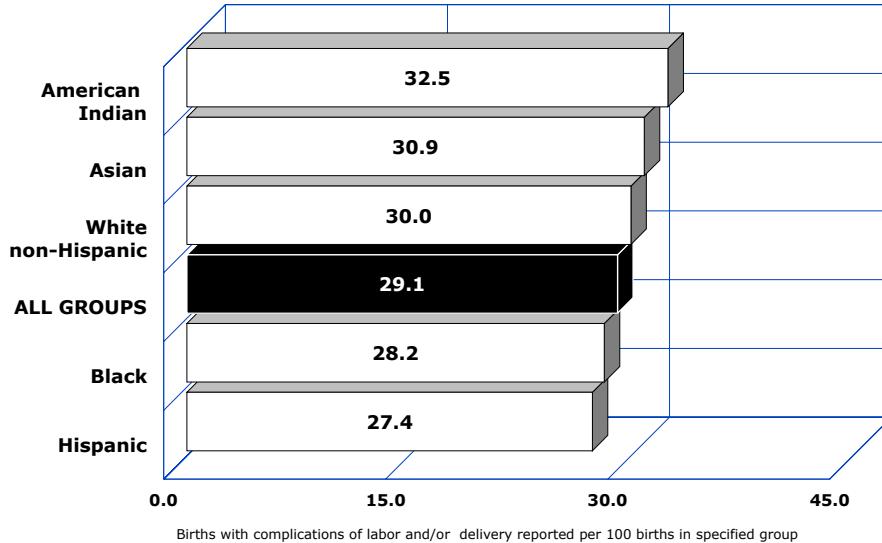
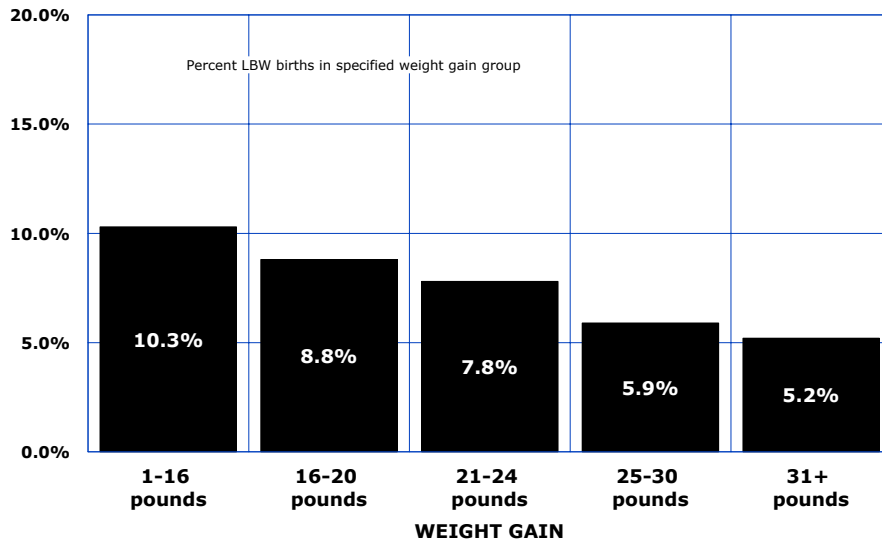


Figure 1B-21
Complications of Labor and/or Delivery per 100 Births
by Race/Ethnicity, Arizona, 2001



In 2001, of the 15 complications of labor and delivery reported on the birth certificate, the three most frequently reported were *meconium moderate/ heavy* (4.1 percent), *breech malpresentation* (3.3 percent), and *fetal distress* (2.8 percent). Complications rates vary among racial/ethnic groups, with the highest rates reported for American Indian, Asian, and White non-Hispanic women (Figure 1B-21).

Figure 1B-22
Risk for Low-Birthweight by Maternal Weight Gain
During Pregnancy, Arizona, 2001

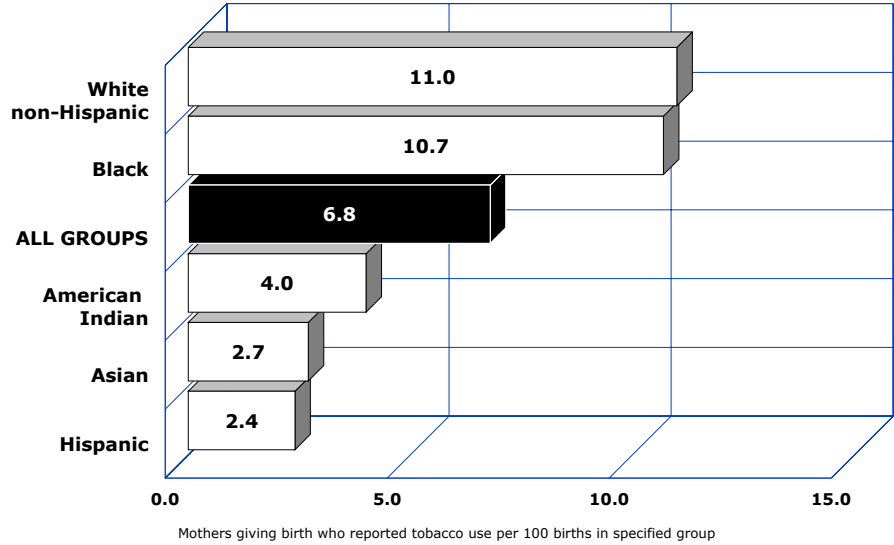


Maternal weight gain during pregnancy is an important determinant of both fetal growth and birthweight. Women who are of normal weight (average body mass index or BMI) should gain 21-35 pounds during a normal pregnancy. Women who are underweight should gain more (28-40 pounds), and women who are overweight should gain less (15 to 25 pounds). Unfortunately, it is not possible to determine whether the weight gain was within the recommendations for the mother's BMI, because information of the mother's pre-pregnancy weight and height is not collected on the birth certificate.

Maternal weight gain has been shown to have a positive correlation with infant birthweight. In 2001, as in previous years, the percent of infants with low birthweight decreased with increasing maternal weight gain (Figure 1B-22).

Cigarette smoking during pregnancy has been associated with reduced infant birthweight, intrauterine growth retardation and preterm births. Smoking during pregnancy was reported by 6.8 percent of women giving birth in 2001 (Table 1B-26, Table 5B-30), compared to 14.2 percent in 1991. As in the past, it is unclear, whether this decline means that women giving birth in Arizona are less likely to use tobacco during pregnancy or, perhaps, less likely to report it when they use. White non-Hispanic and Black mothers were more likely to report smoking than American Indian, Asian and Hispanic (Figure 1B-23).

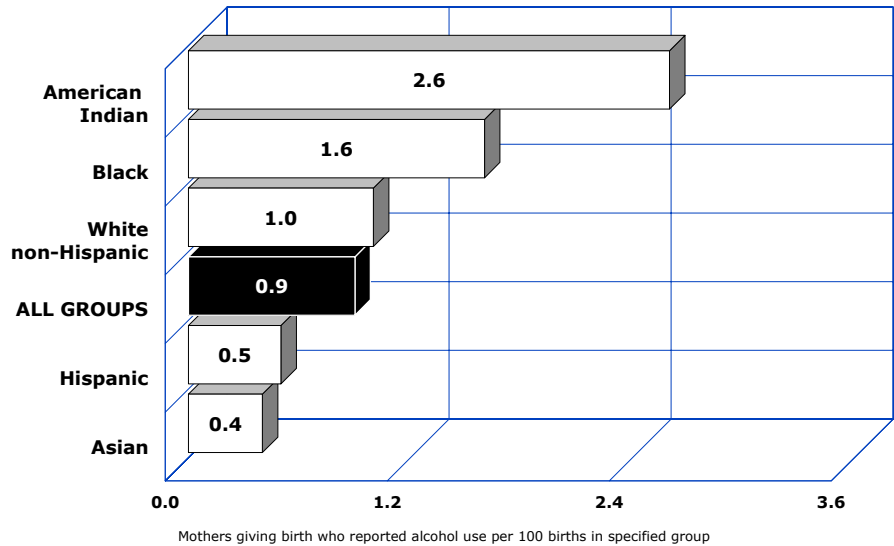
Figure 1B-23
Self-reported Tobacco Use During Pregnancy
by Race/Ethnicity, Arizona, 2001



In 2001, 0.9 percent of all live births were to mothers who reported alcohol use (Table 1B-26, Table 5B-30). American Indian, Black, and White non-Hispanic mothers were more likely than Asian and Hispanic mothers to report the use of alcohol.

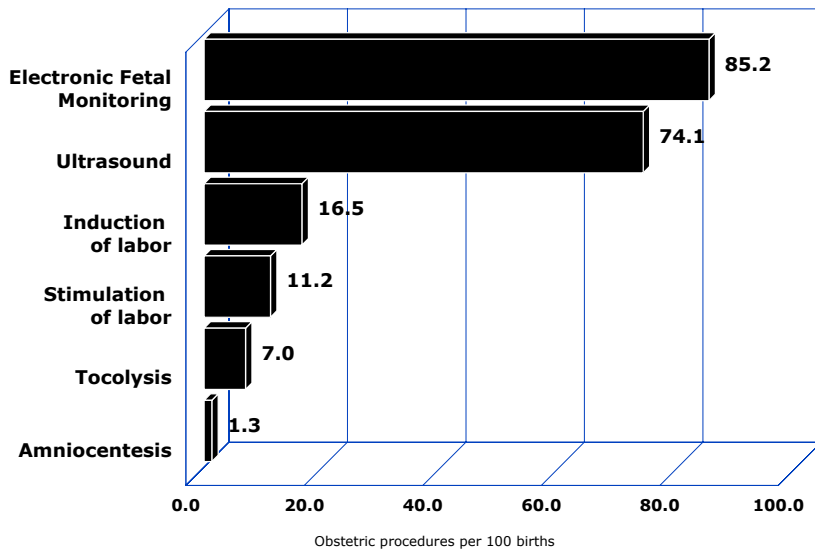
The stigma of maternal alcohol use likely contributes to the underreporting of this behavior.

Figure 1B-24
Self-reported Alcohol Use During Pregnancy
by Race/Ethnicity, Arizona, 2001



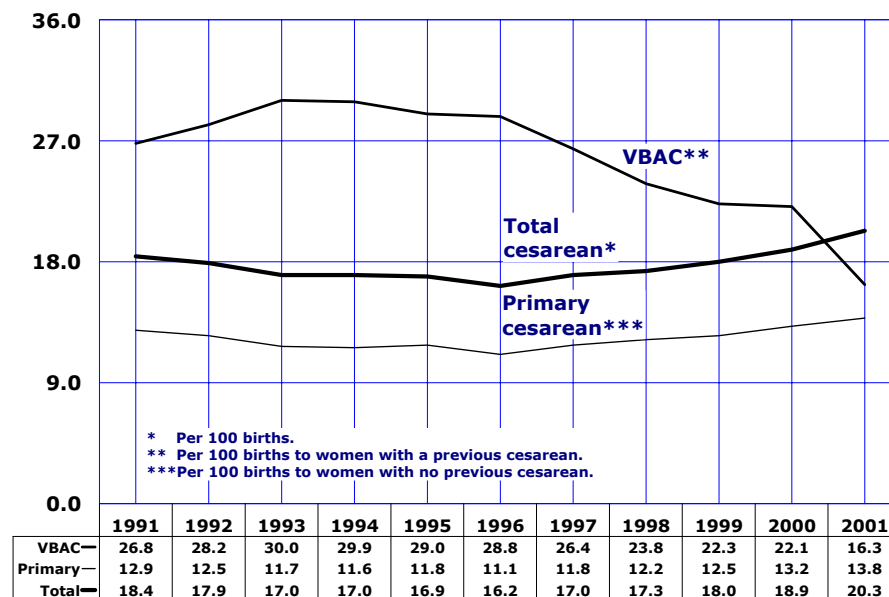
1B. NATALITY: MATERNAL CHARACTERISTICS AND NEWBORN'S HEALTH

Figure 1B-25
Obstetric Procedures Reported per 100 Births,
Arizona, 2001



Of the six specific obstetric procedures listed on the birth certificate, *electronic fetal monitoring* and *ultrasound* are most frequently reported (**Figure 1B-25**). In 2001, *electronic fetal monitoring* was the most prevalent procedure, reported for 85.2 percent of all births to Arizona residents. The overall rate of *amniocentesis* decreased to 1.3 percent of births in 2001, from 2.6 percent in 1991. *Ultrasound* and other less invasive screening may be replacing the use of *amniocentesis*.

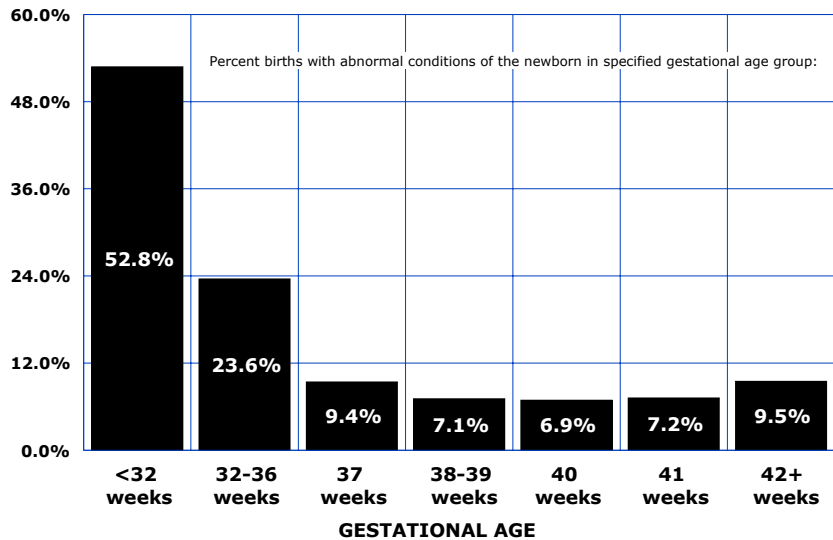
Figure 1B-26
Total and Primary Cesarean Deliveries and
Vaginal Births After Previous Cesarean (VBAC),
Arizona, 1991-2001



The rate of cesarean delivery increased for the fourth consecutive year to 20.3 percent of all births (**Figure 1B-26, Table 1B-2**). The rise in the total rate is due to both an increase in the primary cesarean rate and a decrease in the rate of vaginal birth after cesarean delivery (VBAC). The primary cesarean rate in 2001 (13.8 per 100 live births to women who had no previous cesarean) was 4.5 percent higher than in 2000 (13.2), and 24.3 percent higher than the low reported in 1996 (11.1). The rate of vaginal birth after previous cesarean delivery (VBAC) declined 45.7 percent from a high of 30.0 in 1993 to 16.3 in 2001.

Figure 1B-27
Abnormal Conditions of the Newborn by Gestational Age, Arizona, 2001

Since the first year these data were collected, three of the eight specific abnormal conditions listed on the birth certificate have been reported most frequently: *assisted ventilation less than 30 minutes, assisted ventilation of 30 minutes or longer, and hyaline membrane disease/respiratory distress syndrome (RDS)*. *Hyaline membrane disease/RDS* is a common cause of morbidity in preterm infants. The rates of abnormal conditions are the highest among very preterm (less than 32 weeks of gestation) and moderately preterm (32-36 weeks of gestation) infants (**Figure 1B-27**).



Congenital anomalies (birth defects) are the leading cause of infant deaths in Arizona and nationally. They are also cause of physical defects and metabolic diseases. Many of the congenital anomalies tracked on birth certificates occur rarely and are not very well reported.

For various anomalies, rates vary widely with maternal age. For example, in 2001 as in 2000, the rate of Down's syndrome, the most frequently recognized cause of mental retardation, was substantially higher for births to mothers aged 35 years and over.

Figure 1B-28
The Incidence of Down's Syndrome by Mother's Age Group, Arizona, 2001

