

## Births: Preliminary Data for 2001

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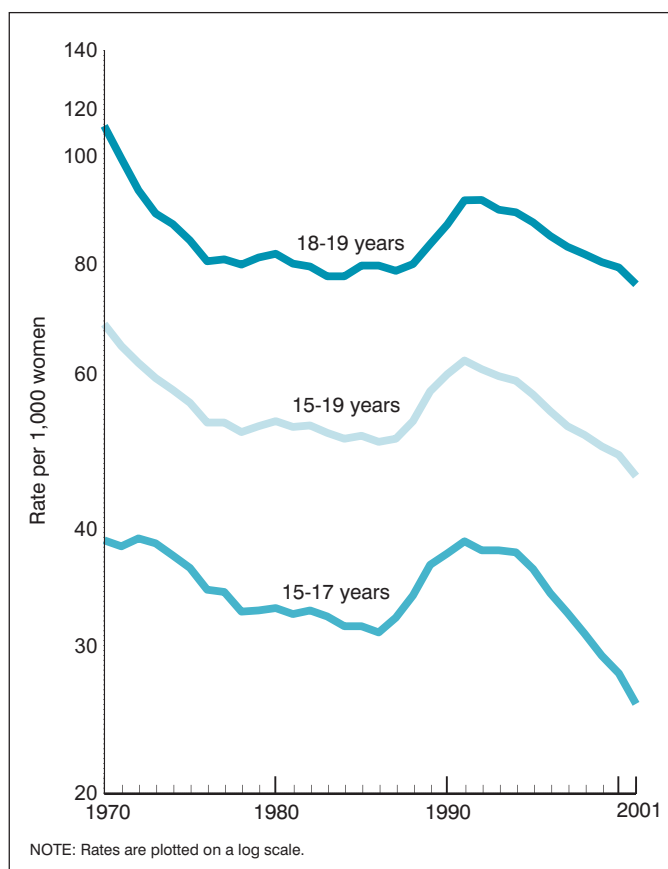
### Abstract

**Objectives**—This report presents preliminary data for 2001 on births in the United States. U.S. data on births are shown by age, race, and Hispanic origin of mother. Data on marital status, prenatal care, cesarean delivery, and low birthweight are also presented.

**Methods**—Data in this report are based on more than 96 percent of births for 2001. The records are weighted to independent control counts of all births received in State vital statistics offices in 2001. Comparisons are made with 2000 final data.

**Results**—The number of births, the crude birth rate, and the fertility rate all declined slightly between 2000 and 2001. The number of births was down by less than 1 percent, the crude birth rate declined 1 percent to 14.5 per 1,000 population, and the fertility rate was down slightly to 67.2 births per 1,000 women aged 15–44 years. Teenagers were less likely to give birth in 2001; the teen birth rate continued to fall, dropping 5 percent between 2000 and 2001 to 45.9 births per 1,000 females aged 15–19 years, another record low. The teen birth rate has fallen 26 percent since 1991. The birth rate for teenagers 15–17 years fell 8 percent, and the rate for teenagers 18–19 years was down 4 percent for 2000–2001. Since 1991 rates have fallen 35 percent for teenagers 15–17 years, and 20 percent for teenagers 18–19 years. Birth rates for women aged 20–24 declined by 2 percent, whereas rates for women 25–44 years increased. Childbearing among women aged 40–54 years was stable. The birth rate for unmarried women decreased modestly to 44.9 births per 1,000 unmarried women 15–44 years in 2001, still remaining below the peak reached in 1994. The number of births to unmarried women was up very slightly, but births to unmarried teens were down. The proportion of women who began prenatal care in the first trimester of pregnancy improved slightly to 83.4 percent, but the rate of low birthweight held at 7.6 percent. The total cesarean delivery rate jumped 7 percent between 2000 and 2001 to 24.4 percent of all births, the highest level ever reported from this data source; the primary rate of cesarean deliveries rose 5 percent, and the rate of vaginal births after previous cesarean delivery tumbled 20 percent.

**Keywords:** births • vital statistics



**Figure 1. Birth rates for teenagers by age: United States, 1970–2001**

### Introduction

This report presents preliminary data on births based on a substantial proportion of vital records for births occurring in 2001. For data years 1995–98, reports in the preliminary series included data for both births and deaths. Beginning with data year 1999, birth and death data are published separately. The preliminary report series includes detailed tabulations from the preliminary natality file. For most measures, trends shown in the preliminary reports for 1995–2000 births were confirmed by the final statistics for each year (1–4).

## Sources and methods

The preliminary data in this series are based on records of births that occurred during 2001 and were received and had undergone quality control by the Centers for Disease Control and Prevention's National Center for Health Statistics as of March 14, 2002. This represents over 96 percent of the births that occurred in the United States during this 12-month period.

To produce the preliminary estimates shown in this report, records in the file were weighted using independent control counts of all 2001 births by State of occurrence. Preliminary estimates are subject to sampling variation as well as random variation.

In addition to national and State estimates of total births and birth and fertility rates, this report includes preliminary statistics on births by maternal age, marital status, race, Hispanic origin, live-birth order, and selected maternal and infant health characteristics, including receipt of prenatal care, cesarean delivery, and low birthweight.

Race and Hispanic origin are reported as separate items on the birth certificate. Therefore, births shown by race may be of Hispanic or non-Hispanic origin, and births of Hispanic origin may be of any race. All tabulations in this report show data separately for the non-Hispanic white population as well as for the white population as a whole. Although the overwhelming majority of Hispanic-origin births (approximately 98 percent in 2001) are to white women, there are notable differences in child-bearing patterns between Hispanic and non-Hispanic white women. About one in four white births are to Hispanic women. For this preliminary report, data are not shown separately for non-Hispanic black persons because the great majority (more than 95 percent) of black births are to non-Hispanic persons and, thus, the difference in the statistics for the two groups is minimal. The report, "Births: Final Data for 2000," shows data for these groups separately (1).

State-specific preliminary data are shown only for those States and areas for which at least 75 percent of the records for 2001 were received and had undergone quality control by March 14, 2002 (i.e., were processed). (See [Technical notes](#).) All States met this requirement for 2001. The proportion of records processed is shown by State in [table I](#) in the [Technical notes](#). Preliminary data for 2001 are not available for American Samoa and the Northern Marianas; final data for 2000 for these territories are available and shown in the State-specific tables. Data for the territories are shown separately but are not included in the data for the United States, which includes information for the 50 States and the District of Columbia. Detailed information on the nature, sources, and qualifications of the preliminary data is given in the [Technical notes](#).

All population denominators for this report are estimates projected from the 1990 census because detailed populations from the 2000 census were not available when this report was prepared. When intercensal and postcensal estimates based on the 2000 census become available, population-based rates for the 1990s, 2000, and 2001 will be recalculated and presented in an upcoming report. Because of differences in projections and counts, it is expected that rates based on the 2000 census denominators will differ from those based on the 1990 census. Comparisons indicate that birth and fertility rates for the Hispanic population based on the 1990 census are overstated. Less pronounced effects may be found for other groups; see [Technical notes](#) for more detail.

## Results

### Trends in numbers and rates

The number of **births** (preliminary) in the United States was 4,040,121 in 2001, down less than 1 percent from the final number for 2000 (4,058,814) ([tables A](#) and [1](#)). The number of births to non-Hispanic white and black women declined 1 to 3 percent; numbers for Asian or Pacific Islander and American Indian women were essentially unchanged, and the number of births to Hispanic women increased 4 percent. The **crude birth rate** in 2001 was 14.5 per 1,000 population, matching the record lows of 1997 and 1999 (1). The 2001 rate was 1 percent lower than in 2000 (14.7). The crude rate has generally trended downward over the past decade (1). The *fertility rate* relates births to the population at risk of giving birth (women aged 15–44 years) and is thus more indicative of changes in fertility behavior than is the crude birth rate. The fertility rate was 67.2 in 2001, less than 1 percent lower than the rate for 2000 (67.5). (See [tables 1–4](#) for number of births, birth rates, and fertility rates.) Following declines for 1991–97, the fertility rate had increased for 1998–2000 (1). The majority of States (37), the District of Columbia, Puerto Rico, and Guam, reported declines in their crude birth rates between 2000 and 2001, rates increased in 6 States and the Virgin Islands, and were unchanged in 7. Fertility rates were down for 31 States, Puerto Rico, and Guam, up for 17 States, the District of Columbia, and the Virgin Islands, and were unchanged for 2 States.

Fertility rates declined for 2000–2001 among non-Hispanic white women (58.0 per 1,000 for 2001), black women (69.3), American Indian women (70.7), and Asian or Pacific Islander women (69.4), but rose for Hispanic women (107.4). Compared with 1990, fertility has declined for non-Hispanic white, black, and American Indian women, and has risen among Asian or Pacific Islander and Hispanic women. As a result of recent increases in Hispanic fertility, the current year's rate approaches the peak reported for 1992 (107.7). Twenty-one percent of all births in the United States were to Hispanic women in 2001, compared with 14 percent in 1989 when national data became available for this group.

The **birth rate for teenagers** fell again in 2001 to 45.9 births per 1,000 females aged 15–19 years, a 5-percent decline from 2000 (48.5), and 26 percent lower than the recent high for 1991 (62.1) ([tables B, 1](#), and [figure 1](#)). The 2001 rate for teenagers is the lowest rate in more than six decades for which comparable data have been available. The rate for the youngest teenage group, **10–14 years**, declined slightly between 2000 and 2001, from 0.9 to 0.8 births per 1,000 females. The number of births to females aged 10–14 years fell 9 percent from 8,519 to 7,791 (preliminary), the lowest number since 1965 (7,768). **Rates for teenagers 15–17 and 18–19 years** continued their steady decline. The 2001 rate for teenagers 15–17 years (25.3) fell 8 percent from 2000 and the rate for teenagers 18–19 years (75.8) dropped 4 percent. Between 1991 and 2001, the rate for teenagers 15–17 years has fallen 35 percent and for teenagers 18–19 years by 20 percent—historic lows for both groups (1).

**Teenage birth rates declined for all race and Hispanic origin groups** for 2001. The largest reductions between 2000 and 2001 were for black (8 percent, with a 2001 rate of 73.1 per 1,000), and non-Hispanic white teenagers (7 percent, with a 2001 rate of 30.2), followed by a 5-percent decline for Asian or Pacific Islander (20.5), 3 percent

**Table A. Total births and percent of births with selected demographic and health characteristics, by race and Hispanic origin of mother: United States, final 2000 and preliminary 2001**

[Figures for 2001 are based on weighted data rounded to the nearest individual]

| Characteristic   | All races <sup>1</sup> |           | White, total <sup>2</sup> |           | Non-Hispanic White |           | Black <sup>2</sup> |         | Hispanic <sup>3</sup> |         |
|--|------------------------|-----------|---------------------------|-----------|--------------------|-----------|--------------------|---------|-----------------------|---------|
|  | 2001                   | 2000      | 2001                      | 2000      | 2001               | 2000      | 2001               | 2000    | 2001                  | 2000    |
|  | Number                 |           |                           |           |                    |           |                    |         |                       |         |
| Births . . . . .   | 4,040,121              | 4,058,814 | 3,192,985                 | 3,194,005 | 2,336,033          | 2,362,968 | 604,834            | 622,598 | 849,800               | 815,868 |
|  | Percent                |           |                           |           |                    |           |                    |         |                       |         |
| Births to unmarried mothers . . . . .                              | 33.4                   | 33.2      | 27.6                      | 27.1      | 22.5               | 22.1      | 68.3               | 68.5    | 42.4                  | 42.7    |
| Low birthweight <sup>4</sup> . . . . .                             | 7.6                    | 7.6       | 6.7                       | 6.5       | 6.7                | 6.6       | 12.9               | 13.0    | 6.5                   | 6.4     |
| Very low birthweight <sup>5</sup> . . . . .                        | 1.43                   | 1.43      | 1.15                      | 1.14      | 1.16               | 1.13      | 3.02               | 3.06    | 1.13                  | 1.14    |
| Total cesarean delivery rate <sup>6</sup> . . . . .                | 24.4                   | 22.9      | 24.2                      | 22.8      | 24.5               | 23.1      | 25.8               | 24.3    | 23.5                  | 22.1    |
| Primary cesarean rate <sup>7</sup> . . . . .                       | 16.9                   | 16.1      | 16.7                      | 15.9      | 17.2               | 16.4      | 18.2               | 17.3    | 15.2                  | 14.5    |
| VBAC rate <sup>8</sup> . . . . .                                   | 16.5                   | 20.6      | 16.4                      | 20.4      | 16.9               | 21.1      | 16.8               | 20.5    | 14.8                  | 18.5    |
| Prenatal care beginning<br>in first trimester . . . . .            | 83.4                   | 83.2      | 85.2                      | 85.0      | 88.5               | 88.5      | 74.5               | 74.3    | 75.7                  | 74.4    |
| Prenatal care beginning in third<br>trimester or no care . . . . . | 3.8                    | 3.9       | 3.2                       | 3.3       | 2.3                | 2.3       | 6.6                | 6.7     | 5.9                   | 6.3     |

<sup>1</sup>Includes races other than white and black.<sup>2</sup>Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.<sup>3</sup>Includes all persons of Hispanic origin of any race; see Technical notes.<sup>4</sup>Birthweight of less than 2,500 grams (5 lb 8 oz).<sup>5</sup>Birthweight of less than 1,500 grams (3 lb 4 oz).<sup>6</sup>Total births by cesarean as percent of all births.<sup>7</sup>Number of primary cesareans per 100 live births to women who have not had a previous cesarean.<sup>8</sup>Number of vaginal births after previous cesarean delivery per 100 live births to women with a previous cesarean delivery.**Table B. Birth rates for women aged 15–19 years, by age, race, and Hispanic origin: United States, final 1991–2000 and preliminary 2001, and percent change in rates, 1991–2001**

[Rates per 1,000 women in specified group]

| Age and race and Hispanic<br>origin of mother | 2001  | 2000  | 1999  | 1998  | 1997  | 1996  | 1995  | 1994  | 1993  | 1992  | 1991  | Percent change<br>1991–2001 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------------------|
| 15–19 years                                   |       |       |       |       |       |       |       |       |       |       |       |                             |
| All races <sup>1</sup> . . . . .              | 45.9  | 48.5  | 49.6  | 51.1  | 52.3  | 54.4  | 56.8  | 58.9  | 59.6  | 60.7  | 62.1  | –26                         |
| White total <sup>2</sup> . . . . .            | 41.7  | 43.6  | 44.6  | 45.4  | 46.3  | 48.1  | 50.1  | 51.1  | 51.1  | 51.8  | 52.8  | –21                         |
| Non-Hispanic white . . . . .                  | 30.2  | 32.5  | 34.0  | 35.2  | 36.0  | 37.6  | 39.3  | 40.4  | 40.7  | 41.7  | 43.4  | –30                         |
| Black total <sup>2</sup> . . . . .            | 73.1  | 79.4  | 81.0  | 85.4  | 88.2  | 91.4  | 96.1  | 104.5 | 108.6 | 112.4 | 115.5 | –37                         |
| Hispanic <sup>3</sup> . . . . .               | 92.4  | 94.4  | 93.4  | 93.6  | 97.4  | 101.8 | 106.7 | 107.7 | 106.8 | 107.1 | 106.7 | –13                         |
| 15–17 years                                   |       |       |       |       |       |       |       |       |       |       |       |                             |
| All races <sup>1</sup> . . . . .              | 25.3  | 27.4  | 28.7  | 30.4  | 32.1  | 33.8  | 36.0  | 37.6  | 37.8  | 37.8  | 38.7  | –35                         |
| White total <sup>2</sup> . . . . .            | 21.9  | 23.6  | 24.8  | 25.9  | 27.1  | 28.4  | 30.0  | 30.7  | 30.3  | 30.1  | 30.7  | –29                         |
| Non-Hispanic white . . . . .                  | 14.2  | 15.8  | 17.1  | 18.4  | 19.4  | 20.6  | 22.0  | 22.8  | 22.7  | 22.7  | 23.6  | –40                         |
| Black total <sup>2</sup> . . . . .            | 45.6  | 50.4  | 52.0  | 56.8  | 60.8  | 64.7  | 69.7  | 76.3  | 79.8  | 81.3  | 84.1  | –46                         |
| Hispanic <sup>3</sup> . . . . .               | 56.9  | 60.0  | 61.3  | 62.3  | 66.3  | 69.0  | 72.9  | 74.0  | 71.7  | 71.4  | 70.6  | –19                         |
| 18–19 years                                   |       |       |       |       |       |       |       |       |       |       |       |                             |
| All races <sup>1</sup> . . . . .              | 75.8  | 79.2  | 80.3  | 82.0  | 83.6  | 86.0  | 89.1  | 91.5  | 92.1  | 94.5  | 94.4  | –20                         |
| White total <sup>2</sup> . . . . .            | 70.1  | 72.7  | 73.5  | 74.6  | 75.9  | 78.4  | 81.2  | 82.1  | 82.1  | 83.8  | 83.5  | –16                         |
| Non-Hispanic white . . . . .                  | 53.4  | 56.8  | 58.9  | 60.6  | 61.9  | 63.7  | 66.1  | 67.4  | 67.7  | 69.8  | 70.5  | –24                         |
| Black total <sup>2</sup> . . . . .            | 113.0 | 121.3 | 122.8 | 126.9 | 130.1 | 132.5 | 137.1 | 148.3 | 151.9 | 157.9 | 158.6 | –29                         |
| Hispanic <sup>3</sup> . . . . .               | 143.1 | 143.6 | 139.4 | 140.1 | 144.3 | 151.1 | 157.9 | 158.0 | 159.1 | 159.7 | 158.5 | –10                         |

<sup>1</sup>Includes races other than white and black.<sup>2</sup>Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.<sup>3</sup>Includes all persons of Hispanic origin of any race; see Technical notes.

for American Indian (65.7), and 2 percent for Hispanic teenagers (92.4). Between 1991 and 2001, rates have fallen most steeply for black teenagers (37 percent) (table B).

**Birth rates for women in their twenties**, the ages at which rates are historically the highest, were 110.2 per 1,000 for women aged

20–24 years and 121.8 for women aged 25–29 years in 2001 (table 1). The rate for women aged 20–24 years decreased 2 percent for 2001, from 112.3, and the rate for women aged 25–29 years increased less than 1 percent, from 121.4. Rates for women aged 20–24 years declined for all racial and Hispanic origin groups. Birth rates for Hispanic

women aged 25–29 years were up 2 percent, whereas those for non-Hispanic white, black, and American Indian women were down slightly. The rate for Asian or Pacific Islander women was unchanged.

**Birth rates for women in age groups 30–44 years** continued to increase in 2001. The rates rose 2 percent each for women aged 30–34 years (from 94.1 to 95.6) and for women 35–39 years (from 40.4 to 41.4 per 1,000). The **birth rate for women aged 40–44 years** also increased between 2000 and 2001, rising from 7.9 to 8.1. The **rate for women aged 45–54 years** was stable at 0.5. Birth rates for women 30 years of age and over were the highest in three decades.

As a result of the continued decline in teenage birth rates and increases in the birth rates for most older age groups, the proportion of all births to women under 20 years of age declined from 11.8 to 11.3 between 2000 and 2001 (table 1).

The first birth rate for women aged 15–44 years decreased moderately between 2000 and 2001, from 27.1 to 26.7 first births per 1,000 (table 3). The first birth rate had fallen for most of the 1990s, but increased slightly for 1999 and 2000 (5). The first birth rate for teenagers, however, continued to decline to the lowest level ever (36.2), 5 percent lower than the previous year (38.1) and 22 percent lower than 1991 (46.5). Reductions were also found for teenagers for each race and Hispanic origin group.

The **total fertility rate** (TFR) for 2001 was 2,121.5, slightly lower than the 30-year high of 2,120.0 for 2000. The TFR indicates the number of births that a hypothetical group of 1,000 women would have if they experienced throughout their childbearing years the age-specific birth rates observed in a given year. Between 2000 and 2001, the TFRs for most race and Hispanic origin groups echoed the overall decline in the TFR—non-Hispanic white and American Indian declined 1 percent to 1,867.0 and 2,072.0, respectively; Asian or Pacific Islander declined 2 percent to 2,038.0 and the TFR for black women declined 3 percent to 2,119.0. In contrast, the TFR for Hispanic women increased 2 percent in 2001 to 3,156.5, the highest TFR reported for this group since national data have been available (1989) (tabular data not shown).

The **number of births to unmarried women** (preliminary) increased very slightly in 2001, to 1,350,154, compared with 1,347,043 in 2000. The small increase from 2000 to 2001 is entirely due to the 1 percent rise in the number of unmarried women of childbearing age (6). The **birth rate for unmarried women** declined modestly to 44.9 births per 1,000 unmarried women aged 15–44 years in 2001 compared with 45.2 in 2000. The birth rate has remained below the peak reached in 1994 (46.9).

The **proportion of births to unmarried women** rose slightly in 2001, to 33.4 percent, compared with 33.2 percent in 2000. Since 1994, the proportion has changed very little, ranging from 32.2 to 33.4 percent. Among population groups, the proportion increased between 2000 and 2001 from 22.1 to 22.5 percent for non-Hispanic white births, and declined for black births from 68.5 to 68.3 percent and for Hispanic births, from 42.7 to 42.4 percent (tables A and 5).

The number of nonmarital births to teenagers declined again in 2001, as it did in 2000. The declines were substantial for teenagers under 15 years (down 9 percent) and aged 15–17 years (down 7 percent). The number of births to older unmarried teenagers 18–19 years fell as well, by 3 percent (table C).

Despite the reductions in the number of nonmarital births to teenagers, the proportions of nonmarital births among teenagers rose

**Table C. Number and percent of births to unmarried women, all ages and women under 20 years: United States, final 2000 and preliminary 2001**

[Figures for 2000 are based on weighted data rounded to the nearest individual]

| Age of mother            | Number    |           | Percent |      |
|--------------------------|-----------|-----------|---------|------|
|                          | 2001      | 2000      | 2001    | 2000 |
| All ages . . . . .       | 1,350,154 | 1,347,043 | 33.4    | 33.2 |
| Under 20 years . . . . . | 360,463   | 377,675   | 79.2    | 79.1 |
| Under 15 years . . . . . | 7,510     | 8,219     | 96.4    | 96.5 |
| 15–19 years . . . . .    | 352,953   | 369,456   | 78.9    | 78.8 |
| 15–17 years . . . . .    | 127,876   | 137,906   | 87.8    | 87.7 |
| 18–19 years . . . . .    | 225,077   | 231,550   | 74.6    | 74.3 |

slightly in 2001 compared with 2000 because total births to teenagers declined even more than births to unmarried teenagers (see table 1). Birth rates for unmarried teenagers for 2001 are not yet available; see [Technical notes](#).

The **proportions of births to unmarried women by State** are shown in table 5. Between 2000 and 2001, the proportions increased in 39 States, Puerto Rico, and the Virgin Islands, and declined in 8 States, the District of Columbia, and Guam. In most cases, these changes were small. The proportions in three States did not change.

The rate of **low birthweight** (LBW) (infants born at less than 2,500 grams per 100 live births) was 7.6 percent for 2001, unchanged since 1998. The national low birthweight level declined in the 1970s and early 1980s, but has risen 12 percent since the mid-1980s (1). (See tables A and 6 for 2000 and 2001 data.) The percent of infants born **very low birthweight** (VLBW) (infants born at less than 1,500 grams) was 1.43, the same level reported for 2000. The VLBW rate has risen from less than 1.2 percent in the 1970s and early 1980s.

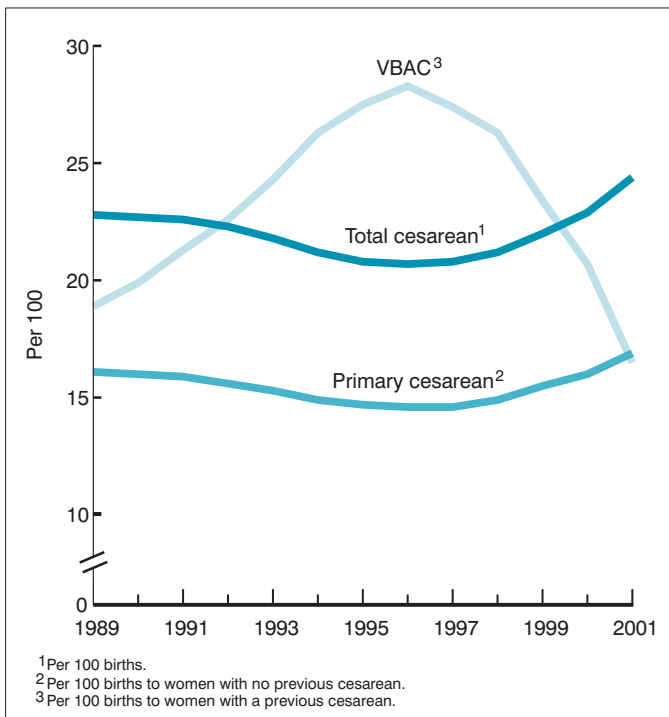
Among infants born to non-Hispanic white women, LBW increased slightly between 2000 and 2001 from 6.6 to 6.7 percent. Much of the increase in LBW among white births over the last two decades (5.7 percent in 1981) can be attributed to the rise in multiple births whose risk of LBW is nearly 10 times that of singletons (7). LBW was also up slightly among Hispanic births (from 6.4 to 6.5 percent), but declined somewhat among births to black women (from 13.0 to 12.9 percent). LBW among black births is down from a peak of 13.6 percent reported for 1991.

The **cesarean delivery** rate rose sharply for 2001, by 7 percent, from 22.9 percent of all births for 2000 to 24.4 percent. The total cesarean rate declined steadily between 1989 and 1996 (tables A, 7, and figure 2), but has climbed 17 percent in 5 years (from 20.8 percent in 1996). The current level is the highest reported since these data have been available from birth certificates (1989).

The 2001 **primary cesarean rate** (births to women with no previous cesarean) was 16.9, a 5-percent increase over 2000 (16.1 percent). The primary cesarean rate has risen 16 percent from the low of 14.6 percent reported for 1996 and 1997. The 2001 rate of first cesareans is also the highest reported from this data source.

The **rate of vaginal births after previous cesarean (VBAC) delivery** tumbled 20 percent for 2000–2001, from 20.6 to 16.5 per 100 women with a previous cesarean delivery. The VBAC rate had risen 50 percent between 1989 and 1996, but has fallen 72 percent since the 1996 high (1).





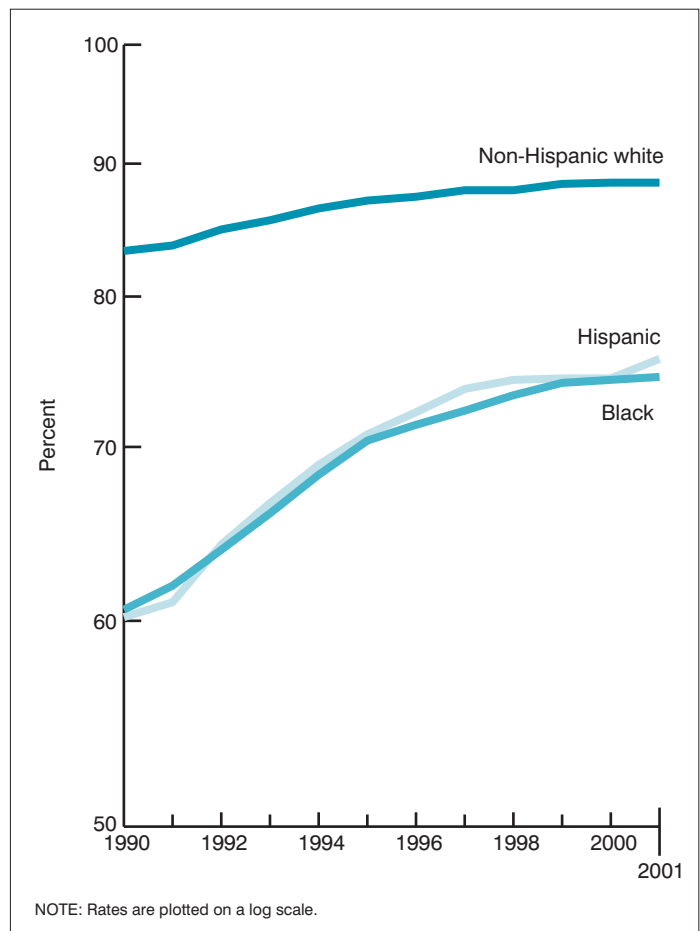
**Figure 2. Total and primary cesarean rate and vaginal birth after previous cesarean (VBAC) rate: United States, 1989–2001**

Between 2000 and 2001, overall cesarean rates increased 6 percent for non-Hispanic white, black, and Hispanic women. The 2001 rates were the highest levels reported for each group: non-Hispanic white (24.5 percent), black (25.8 percent), and Hispanic (23.5 percent) (table 7). Between 1996 and 2001, increases of 18 to 19 percent have been reported for each. A recent report covering the period 1996–99, has also shown increases in cesarean rates for all age groups (8).

The 2001 preliminary cesarean rates for **every State and the District of Columbia** were higher than those reported for the previous year.

The percent of women who began **prenatal care in their first trimester of pregnancy** increased slightly for 2000–2001, from 83.2 to 83.4 percent. The proportion of women with timely prenatal care has improved 10 percent since 1990 (75.8 percent) (1). The percent of women with **late** (care beginning in the third trimester of pregnancy) or **no care** was 3.8 percent, compared with 3.9 percent for 2000. The proportion of late or no care has dropped from 6.4 percent since 1989. (See tables A and 8 for 2000 and 2001 data.)

For 2000–2001, no change was observed in **prenatal care utilization among non-Hispanic white women**; 88.5 percent received first trimester care and 2.3 percent late or no care. Improvements for 2001, however, were noted for black and Hispanic women. The percent of **black mothers with first trimester care** increased slightly, rising from 74.3 to 74.5 percent; the proportion of black mothers receiving late or no care was 6.6 percent (2001), an improvement from the level for 2000 of 6.7 percent. **Among Hispanic mothers**, timely care rose 2 percent for the current year to 75.7 from 74.4 percent, and late or no care dropped markedly from 6.3 to 5.6 percent; late or no care has dropped by 50 percent (from 12 percent) since 1990 for this group. Since 1990, fairly large gains in timely prenatal care utilization have been observed for black and Hispanic women; see figure 3.



**Figure 3. Percent of mothers with first trimester prenatal care by race and Hispanic origin of mother: United States, 1990–2001**

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**Table 1. Births and birth rates, by age, race and Hispanic origin of mother: United States, final 2000 and preliminary 2001**

[Data for 2001 are based on a continuous file of records received from the States. Figures for 2001 are based on weighted data rounded to the nearest individual, so categories may not add to totals. Rates per 1,000 women in specified age and racial group]

| Age and race/Hispanic origin                 | 2001      |       | 2000      |       |
|--|-----------|-------|-----------|-------|
|  | Number    | Rate  | Number    | Rate  |
| <b>All races</b>                             |           |       |           |       |
| Total <sup>1</sup> .....                     | 4,040,121 | 67.2  | 4,058,814 | 67.5  |
| 10-14 years .....                            | 7,791     | 0.8   | 8,519     | 0.9   |
| 15-19 years .....                            | 447,367   | 45.9  | 468,990   | 48.5  |
| 15-17 years .....                            | 145,646   | 25.3  | 157,209   | 27.4  |
| 18-19 years .....                            | 301,721   | 75.8  | 311,781   | 79.2  |
| 20-24 years .....                            | 1,024,933 | 110.2 | 1,017,806 | 112.3 |
| 25-29 years .....                            | 1,062,590 | 121.8 | 1,087,547 | 121.4 |
| 30-34 years .....                            | 946,598   | 95.6  | 929,278   | 94.1  |
| 35-39 years .....                            | 452,960   | 41.4  | 452,057   | 40.4  |
| 40-44 years .....                            | 92,805    | 8.1   | 90,013    | 7.9   |
| 45-54 years <sup>2</sup> .....               | 5,076     | 0.5   | 4,604     | 0.5   |
| <b>White, total <sup>3</sup></b>             |           |       |           |       |
| Total <sup>1</sup> .....                     | 3,192,985 | 66.6  | 3,194,005 | 66.5  |
| 10-14 years .....                            | 4,075     | 0.5   | 4,439     | 0.6   |
| 15-19 years .....                            | 320,148   | 41.7  | 333,013   | 43.6  |
| 15-17 years .....                            | 99,586    | 21.9  | 106,786   | 23.6  |
| 18-19 years .....                            | 220,562   | 70.1  | 226,227   | 72.7  |
| 20-24 years .....                            | 783,180   | 106.7 | 772,811   | 107.9 |
| 25-29 years .....                            | 854,931   | 125.2 | 874,180   | 124.3 |
| 30-34 years .....                            | 781,475   | 99.5  | 764,708   | 97.4  |
| 35-39 years .....                            | 370,147   | 42.0  | 368,711   | 40.7  |
| 40-44 years .....                            | 74,907    | 8.0   | 72,414    | 7.8   |
| 45-54 years <sup>2</sup> .....               | 4,120     | 0.5   | 3,729     | 0.4   |
| <b>White, non-Hispanic</b>                   |           |       |           |       |
| Total <sup>1</sup> .....                     | 2,336,033 | 58.0  | 2,362,968 | 58.5  |
| 10-14 years .....                            | 1,605     | 0.3   | 1,840     | 0.3   |
| 15-19 years .....                            | 191,547   | 30.2  | 204,056   | 32.5  |
| 15-17 years .....                            | 53,029    | 14.2  | 58,759    | 15.8  |
| 18-19 years .....                            | 138,518   | 53.4  | 145,297   | 56.8  |
| 20-24 years .....                            | 525,550   | 87.5  | 523,971   | 89.6  |
| 25-29 years .....                            | 625,505   | 112.2 | 651,445   | 112.8 |
| 30-34 years .....                            | 627,549   | 95.4  | 617,371   | 94.0  |
| 35-39 years .....                            | 300,441   | 40.0  | 302,576   | 39.0  |
| 40-44 years .....                            | 60,474    | 7.4   | 58,631    | 7.2   |
| 45-54 years <sup>2</sup> .....               | 3,362     | 0.4   | 3,078     | 0.4   |
| <b>Black, total <sup>3</sup></b>             |           |       |           |       |
| Total <sup>1</sup> .....                     | 604,834   | 69.3  | 622,598   | 71.7  |
| 10-14 years .....                            | 3,484     | 2.2   | 3,808     | 2.4   |
| 15-19 years .....                            | 110,667   | 73.1  | 118,954   | 79.4  |
| 15-17 years .....                            | 40,774    | 45.6  | 44,618    | 50.4  |
| 18-19 years .....                            | 69,893    | 113.0 | 74,336    | 121.3 |
| 20-24 years .....                            | 198,849   | 138.1 | 202,596   | 144.2 |
| 25-29 years .....                            | 137,015   | 103.8 | 141,968   | 105.3 |
| 30-34 years .....                            | 94,361    | 66.8  | 94,808    | 67.5  |
| 35-39 years .....                            | 48,977    | 32.1  | 49,295    | 32.2  |
| 40-44 years .....                            | 10,972    | 7.3   | 10,699    | 7.2   |
| 45-54 years <sup>2</sup> .....               | 508       | 0.4   | 470       | 0.4   |
| <b>American Indian, total <sup>3,4</sup></b> |           |       |           |       |
| Total <sup>1</sup> .....                     | 41,809    | 70.7  | 41,668    | 71.4  |
| 10-14 years .....                            | 145       | 1.2   | 160       | 1.3   |
| 15-19 years .....                            | 7,902     | 65.7  | 8,055     | 67.8  |
| 15-17 years .....                            | 2,678     | 36.5  | 2,897     | 39.6  |
| 18-19 years .....                            | 5,224     | 111.5 | 5,158     | 113.1 |
| 20-24 years .....                            | 14,048    | 133.8 | 13,633    | 135.6 |
| 25-29 years .....                            | 9,879     | 105.4 | 10,053    | 106.9 |
| 30-34 years .....                            | 6,200     | 68.1  | 6,097     | 68.3  |
| 35-39 years .....                            | 2,933     | 32.4  | 2,983     | 32.5  |
| 40-44 years .....                            | 667       | 7.4   | 658       | 7.3   |
| 45-54 years <sup>2</sup> .....               | 35        | 0.4   | 29        | 0.4   |

See footnotes at end of table.

**Table 1. Births and birth rates, by age, race and Hispanic origin of mother: United States, final 2000 and preliminary 2001 — Continued**

[Data for 2001 are based on a continuous file of records received from the States. Figures for 2001 are based on weighted data rounded to the nearest individual, so categories may not add to totals. Rates per 1,000 women in specified age and racial group]

| Age and race/Hispanic origin                         | 2001    |       | 2000    |       |
|--|---------|-------|---------|-------|
|  | Number  | Rate  | Number  | Rate  |
| <b>Asian or Pacific Islander, total <sup>3</sup></b> |         |       |         |       |
| Total <sup>1</sup> .....                             | 200,493 | 69.4  | 200,543 | 70.7  |
| 10-14 years .....                                    | 86      | 0.2   | 112     | 0.3   |
| 15-19 years .....                                    | 8,649   | 20.5  | 8,968   | 21.6  |
| 15-17 years .....                                    | 2,608   | 10.3  | 2,908   | 11.5  |
| 18-19 years .....                                    | 6,042   | 35.8  | 6,060   | 37.0  |
| 20-24 years .....                                    | 28,855  | 70.2  | 28,766  | 72.0  |
| 25-29 years .....                                    | 60,765  | 125.8 | 61,346  | 125.8 |
| 30-34 years .....                                    | 64,561  | 118.3 | 63,665  | 120.8 |
| 35-39 years .....                                    | 30,903  | 59.2  | 31,068  | 60.4  |
| 40-44 years .....                                    | 6,260   | 12.5  | 6,242   | 12.7  |
| 45-54 years <sup>2</sup> .....                       | 413     | 0.9   | 376     | 0.9   |
| <b>Hispanic <sup>5</sup></b>                         |         |       |         |       |
| Total <sup>1</sup> .....                             | 849,800 | 107.4 | 815,868 | 105.9 |
| 10-14 years .....                                    | 2,509   | 1.7   | 2,638   | 1.9   |
| 15-19 years .....                                    | 129,798 | 92.4  | 129,469 | 94.4  |
| 15-17 years .....                                    | 47,091  | 56.9  | 48,423  | 60.0  |
| 18-19 years .....                                    | 82,708  | 143.1 | 81,046  | 143.6 |
| 20-24 years .....                                    | 257,842 | 185.5 | 247,552 | 184.6 |
| 25-29 years .....                                    | 227,307 | 174.4 | 218,167 | 170.8 |
| 30-34 years .....                                    | 150,025 | 113.5 | 141,493 | 109.0 |
| 35-39 years .....                                    | 67,728  | 51.3  | 62,993  | 48.7  |
| 40-44 years .....                                    | 13,899  | 11.8  | 12,987  | 11.6  |
| 45-54 years <sup>2</sup> .....                       | 691     | 0.7   | 569     | 0.6   |

<sup>1</sup> The total number includes births to women of all ages, 10-54 years. The rate shown for all ages is the fertility rate, which is defined as the total number of births, regardless of age of mother, per 1,000 women aged 15-44 years.

<sup>2</sup> The number of births shown is the total for women aged 45-54 years. The birth rate is computed by relating the number of births to women aged 45-54 years to women aged 45-49 years, because most of the births in this group are to women aged 45-49.

<sup>3</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are also included in the data for each race group, according to the mother's reported race; see Technical notes.

<sup>4</sup> Includes births to Aleuts and Eskimos.

<sup>5</sup> Includes all persons of Hispanic origin of any race; see Technical notes.

NOTE: For information on the relative standard errors of the data and further discussion; see Technical notes. Rates for some population groups, particularly Hispanic and Asian or Pacific Islander, may be overstated; see Technical notes.



**Table 2. Live births by age of mother, live-birth order, and race and Hispanic origin of mother: United States, preliminary 2001**

[Data are based on a continuous file of records received from the States. Figures are based on weighted data rounded to the nearest individual, so categories may not add to totals]

| Live-birth order and race/Hispanic origin of mother | All ages  | Age of mother  |             |             |             |             |             |             |             |
|---|-----------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|   |           | Under 15 years | 15-19 years | 20-24 years | 25-29 years | 30-34 years | 35-39 years | 40-44 years | 45-54 years |
| All races .....                                     | 4,040,121 | 7,791          | 447,367     | 1,024,933   | 1,062,590   | 946,598     | 452,960     | 92,805      | 5,076       |
| 1st child .....                                     | 1,600,806 | 7,625          | 350,871     | 469,989     | 378,138     | 272,622     | 100,935     | 19,403      | 1,223       |
| 2d child .....                                      | 1,314,707 | 129            | 79,666      | 353,191     | 365,661     | 342,033     | 146,836     | 25,963      | 1,227       |
| 3d child .....                                      | 677,700   | 7              | 12,986      | 143,687     | 198,470     | 195,600     | 106,534     | 19,562      | 853         |
| 4th child and over .....                            | 432,826   | 3              | 1,902       | 54,499      | 116,709     | 133,334     | 97,118      | 27,523      | 1,738       |
| Not stated .....                                    | 14,082    | 26             | 1,941       | 3,567       | 3,612       | 3,008       | 1,537       | 355         | 35          |
| White, total <sup>1</sup> .....                     | 3,192,985 | 4,075          | 320,148     | 783,180     | 854,931     | 781,475     | 370,147     | 74,907      | 4,120       |
| 1st child .....                                     | 1,265,963 | 3,982          | 255,234     | 371,481     | 309,731     | 225,479     | 83,073      | 15,964      | 1,018       |
| 2d child .....                                      | 1,057,561 | 73             | 54,520      | 273,633     | 301,378     | 286,168     | 119,776     | 20,977      | 1,037       |
| 3d child .....                                      | 537,938   | 4              | 7,886       | 102,530     | 158,651     | 163,829     | 88,543      | 15,816      | 678         |
| 4th child and over .....                            | 320,516   | 2              | 973         | 32,759      | 82,360      | 103,615     | 77,574      | 21,875      | 1,358       |
| Not stated .....                                    | 11,007    | 14             | 1,535       | 2,778       | 2,810       | 2,383       | 1,181       | 275         | 29          |
| White, non-Hispanic .....                           | 2,336,033 | 1,605          | 191,547     | 525,550     | 625,505     | 627,549     | 300,441     | 60,474      | 3,362       |
| 1st child .....                                     | 952,081   | 1,567          | 157,734     | 260,624     | 249,064     | 195,626     | 72,493      | 14,059      | 915         |
| 2d child .....                                      | 795,237   | 32             | 29,185      | 181,176     | 222,483     | 240,339     | 102,877     | 18,233      | 912         |
| 3d child .....                                      | 377,129   | 3              | 3,693       | 63,916      | 103,352     | 122,557     | 70,424      | 12,636      | 548         |
| 4th child and over .....                            | 205,318   | 1              | 385         | 18,464      | 48,916      | 67,402      | 53,839      | 15,342      | 968         |
| Not stated .....                                    | 6,269     | 2              | 549         | 1,370       | 1,690       | 1,626       | 808         | 205         | 19          |
| Black, total <sup>1</sup> .....                     | 604,834   | 3,484          | 110,667     | 198,849     | 137,015     | 94,361      | 48,977      | 10,972      | 508         |
| 1st child .....                                     | 226,247   | 3,420          | 82,652      | 75,800      | 33,273      | 20,362      | 8,843       | 1,807       | 90          |
| 2d child .....                                      | 177,886   | 49             | 22,240      | 66,782      | 42,992      | 29,096      | 13,870      | 2,755       | 102         |
| 3d child .....                                      | 107,691   | 3              | 4,597       | 36,101      | 31,531      | 21,645      | 11,412      | 2,315       | 87          |
| 4th child and over .....                            | 90,874    | 1              | 854         | 19,598      | 28,700      | 22,843      | 14,607      | 4,045       | 226         |
| Not stated .....                                    | 2,136     | 11             | 325         | 568         | 520         | 415         | 245         | 49          | 4           |
| American Indian, total <sup>1,2</sup> .....         | 41,809    | 145            | 7,902       | 14,048      | 9,879       | 6,200       | 2,933       | 667         | 35          |
| 1st child .....                                     | 14,615    | 139            | 5,993       | 5,169       | 1,960       | 945         | 340         | 66          | 3           |
| 2d child .....                                      | 11,618    | 5              | 1,578       | 4,972       | 2,878       | 1,496       | 562         | 123         | 3           |
| 3d child .....                                      | 7,542     | -              | 256         | 2,647       | 2,463       | 1,436       | 616         | 119         | 4           |
| 4th child and over .....                            | 7,785     | -              | 31          | 1,165       | 2,514       | 2,293       | 1,402       | 355         | 24          |
| Not stated .....                                    | 249       | 1              | 44          | 95          | 64          | 29          | 13          | 4           | -           |
| Asian or Pacific Islander, total <sup>1</sup> ..... | 200,493   | 86             | 8,649       | 28,855      | 60,765      | 64,561      | 30,903      | 6,260       | 413         |
| 1st child .....                                     | 93,981    | 84             | 6,992       | 17,539      | 33,174      | 25,836      | 8,679       | 1,566       | 112         |
| 2d child .....                                      | 67,642    | 2              | 1,329       | 7,804       | 18,413      | 25,272      | 12,629      | 2,108       | 86          |
| 3d child .....                                      | 24,529    | -              | 246         | 2,409       | 5,826       | 8,689       | 5,962       | 1,312       | 85          |
| 4th child and over .....                            | 13,651    | -              | 44          | 977         | 3,134       | 4,583       | 3,535       | 1,249       | 130         |
| Not stated .....                                    | 690       | -              | 38          | 126         | 219         | 181         | 99          | 26          | 1           |
| Hispanic <sup>3</sup> .....                         | 849,800   | 2,509          | 129,798     | 257,842     | 227,307     | 150,025     | 67,728      | 13,899      | 691         |
| 1st child .....                                     | 311,782   | 2,454          | 98,476      | 111,048     | 59,466      | 28,460      | 10,025      | 1,762       | 91          |
| 2d child .....                                      | 259,976   | 41             | 25,577      | 92,490      | 78,464      | 44,370      | 16,315      | 2,607       | 111         |
| 3d child .....                                      | 159,732   | 1              | 4,218       | 38,687      | 55,105      | 40,744      | 17,757      | 3,103       | 118         |
| 4th child and over .....                            | 114,430   | 1              | 596         | 14,381      | 33,362      | 35,919      | 23,416      | 6,387       | 370         |
| Not stated .....                                    | 3,881     | 12             | 931         | 1,236       | 911         | 533         | 216         | 40          | 2           |

- Quantity zero.

<sup>1</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.

<sup>2</sup> Includes births to Aleuts and Eskimos.

<sup>3</sup> Includes all persons of Hispanic origin of any race; see Technical notes.

NOTE: For information on the relative standard errors of the data and further discussion, see Technical notes.

**Table 3. Birth rates by age of mother, live-birth order, and race and Hispanic origin of mother: United States, preliminary 2001**

[Data are based on a continuous file of records received from the States. Rates per 1,000 women in specified age and racial group]

| Live-birth order and race/Hispanic origin of mother | Age of mother            |             |             |             |             |             |             |             |                          |
|---|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------|
|   | 15-44 years <sup>1</sup> | 10-14 years | 15-19 years | 20-24 years | 25-29 years | 30-34 years | 35-39 years | 40-44 years | 45-49 years <sup>2</sup> |
| All races .....                                     | 67.2                     | 0.8         | 45.9        | 110.2       | 121.8       | 95.6        | 41.4        | 8.1         | 0.5                      |
| 1st child .....                                     | 26.7                     | 0.8         | 36.2        | 50.7        | 43.5        | 27.6        | 9.2         | 1.7         | 0.1                      |
| 2d child .....                                      | 21.9                     | 0.0         | 8.2         | 38.1        | 42.1        | 34.6        | 13.5        | 2.3         | 0.1                      |
| 3d child .....                                      | 11.3                     | *           | 1.3         | 15.5        | 22.8        | 19.8        | 9.8         | 1.7         | 0.1                      |
| 4th child and over .....                            | 7.2                      | *           | 0.2         | 5.9         | 13.4        | 13.5        | 8.9         | 2.4         | 0.2                      |
| White, total <sup>3</sup> .....                     | 66.6                     | 0.5         | 41.7        | 106.7       | 125.2       | 99.5        | 42.0        | 8.0         | 0.5                      |
| 1st child .....                                     | 26.5                     | 0.5         | 33.4        | 50.8        | 45.5        | 28.8        | 9.5         | 1.7         | 0.1                      |
| 2d child .....                                      | 22.1                     | 0.0         | 7.1         | 37.4        | 44.3        | 36.5        | 13.6        | 2.2         | 0.1                      |
| 3d child .....                                      | 11.3                     | *           | 1.0         | 14.0        | 23.3        | 20.9        | 10.1        | 1.7         | 0.1                      |
| 4th child and over .....                            | 6.7                      | *           | 0.1         | 4.5         | 12.1        | 13.2        | 8.8         | 2.3         | 0.2                      |
| White, non-Hispanic .....                           | 58.0                     | 0.3         | 30.2        | 87.5        | 112.2       | 95.4        | 40.0        | 7.4         | 0.4                      |
| 1st child .....                                     | 23.7                     | 0.3         | 25.0        | 43.5        | 44.8        | 29.8        | 9.7         | 1.7         | 0.1                      |
| 2d child .....                                      | 19.8                     | 0.0         | 4.6         | 30.2        | 40.0        | 36.6        | 13.7        | 2.2         | 0.1                      |
| 3d child .....                                      | 9.4                      | *           | 0.6         | 10.7        | 18.6        | 18.7        | 9.4         | 1.5         | 0.1                      |
| 4th child and over .....                            | 5.1                      | *           | 0.1         | 3.1         | 8.8         | 10.3        | 7.2         | 1.9         | 0.1                      |
| Black, total <sup>3</sup> .....                     | 69.3                     | 2.2         | 73.1        | 138.1       | 103.8       | 66.8        | 32.1        | 7.3         | 0.4                      |
| 1st child .....                                     | 26.0                     | 2.1         | 54.8        | 52.8        | 25.3        | 14.5        | 5.8         | 1.2         | 0.1                      |
| 2d child .....                                      | 20.5                     | 0.0         | 14.7        | 46.5        | 32.7        | 20.7        | 9.1         | 1.8         | 0.1                      |
| 3d child .....                                      | 12.4                     | *           | 3.0         | 25.1        | 24.0        | 15.4        | 7.5         | 1.5         | 0.1                      |
| 4th child and over .....                            | 10.5                     | *           | 0.6         | 13.6        | 21.8        | 16.2        | 9.6         | 2.7         | 0.2                      |
| American Indian, total <sup>3,4</sup> .....         | 70.7                     | 1.2         | 65.7        | 133.8       | 105.4       | 68.1        | 32.4        | 7.4         | 0.4                      |
| 1st child .....                                     | 24.9                     | 1.1         | 50.1        | 49.6        | 21.0        | 10.4        | 3.8         | 0.7         | *                        |
| 2d child .....                                      | 19.8                     | *           | 13.2        | 47.7        | 30.9        | 16.5        | 6.2         | 1.4         | *                        |
| 3d child .....                                      | 12.8                     | *           | 2.1         | 25.4        | 26.4        | 15.9        | 6.8         | 1.3         | *                        |
| 4th child and over .....                            | 13.3                     | *           | 0.3         | 11.2        | 27.0        | 25.3        | 15.6        | 3.9         | 0.3                      |
| Asian or Pacific Islander, total <sup>3</sup> ..... | 69.4                     | 0.2         | 20.5        | 70.2        | 125.8       | 118.3       | 59.2        | 12.5        | 0.9                      |
| 1st child .....                                     | 32.7                     | 0.2         | 16.6        | 42.9        | 68.9        | 47.5        | 16.7        | 3.1         | 0.3                      |
| 2d child .....                                      | 23.5                     | *           | 3.2         | 19.1        | 38.3        | 46.4        | 24.3        | 4.2         | 0.2                      |
| 3d child .....                                      | 8.5                      | *           | 0.6         | 5.9         | 12.1        | 16.0        | 11.5        | 2.6         | 0.2                      |
| 4th child and over .....                            | 4.7                      | *           | 0.1         | 2.4         | 6.5         | 8.4         | 6.8         | 2.5         | 0.3                      |
| Hispanic <sup>5</sup> .....                         | 107.4                    | 1.7         | 92.4        | 185.5       | 174.4       | 113.5       | 51.3        | 11.8        | 0.7                      |
| 1st child .....                                     | 39.6                     | 1.7         | 70.6        | 80.3        | 45.8        | 21.6        | 7.6         | 1.5         | 0.1                      |
| 2d child .....                                      | 33.0                     | 0.0         | 18.3        | 66.9        | 60.4        | 33.7        | 12.4        | 2.2         | 0.1                      |
| 3d child .....                                      | 20.3                     | *           | 3.0         | 28.0        | 42.5        | 30.9        | 13.5        | 2.6         | 0.1                      |
| 4th child and over .....                            | 14.5                     | *           | 0.4         | 10.4        | 25.7        | 27.3        | 17.8        | 5.4         | 0.4                      |

0.0 Quantity more than zero but less than 0.05.

\* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

<sup>1</sup> The rate shown is the fertility rate, which is defined as the total number of births, regardless of age of mother, per 1,000 women aged 15-44 years.

<sup>2</sup> The birth rate for ages 45-49 years is computed by relating births to women aged 45-54 years to women aged 45-49 years, because most of the births in this group are to women aged 45-49.

<sup>3</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.

<sup>4</sup> Includes births to Aleuts and Eskimos.

<sup>5</sup> Includes all persons of Hispanic origin of any race; see Technical notes.

NOTE: For information on the relative standard errors of the data and further discussion; see Technical notes. Rates for some population groups, particularly Hispanic and Asian or Pacific Islander, may be overstated; see Technical notes.

**Table 4. Live births by race and Hispanic origin of mother: United States, each State and territory, preliminary 2001, and birth and fertility rates, final 2000 and preliminary 2001**

[By place of residence. Data are based on a continuous file of records received from the States. Birth rates are total births per 1,000 total population; fertility rates are total births per 1,000 women aged 15-44 years. Figures for 2001 are based on weighted data rounded to the nearest individual, so categories may not add to totals]

| Area                       | Number    |                           |                     |                    |                                |  |                       | Birth rate |      | Fertility rate |       |
|----------------------------|-----------|---------------------------|---------------------|--------------------|--------------------------------|--|-----------------------|------------|------|----------------|-------|
|                            | All races | White, total <sup>1</sup> | White, non-Hispanic | Black <sup>1</sup> | American Indian <sup>1,2</sup> | Asian or Pacific Islander <sup>1</sup> | Hispanic <sup>3</sup> | 2001       | 2000 | 2001           | 2000  |
| United States <sup>4</sup> | 4,040,121 | 3,192,985                 | 2,336,033           | 604,834            | 41,809                         | 200,493                                | 849,800               | 14.5       | 14.7 | 67.2           | 67.5  |
| Alabama                    | 60,464    | 40,611                    | 38,346              | 19,202             | 182                            | 469                                    | 2,258                 | 13.7       | 14.4 | 62.4           | 65.0  |
| Alaska                     | 10,004    | 6,389                     | 5,568               | 443                | 2,536                          | 635                                    | 652                   | 16.0       | 16.0 | 75.5           | 74.6  |
| Arizona                    | 85,859    | 75,515                    | 39,063              | 2,774              | 5,443                          | 2,126                                  | 36,315                | 17.2       | 17.5 | 84.2           | 84.4  |
| Arkansas                   | 37,155    | 28,942                    | 26,176              | 7,472              | 246                            | 495                                    | 2,661                 | 14.3       | 14.7 | 67.8           | 69.1  |
| California                 | 529,216   | 429,382                   | 167,738             | 33,643             | 2,934                          | 63,257                                 | 261,555               | 15.5       | 15.8 | 69.7           | 70.7  |
| Colorado                   | 66,995    | 61,047                    | 41,744              | 2,970              | 650                            | 2,328                                  | 19,732                | 15.9       | 15.8 | 74.5           | 73.1  |
| Connecticut                | 42,045    | 35,119                    | 28,122              | 5,061              | 171                            | 1,694                                  | 6,689                 | 12.7       | 13.0 | 60.2           | 61.2  |
| Delaware                   | 10,755    | 7,672                     | 6,603               | 2,711              | 26                             | 346                                    | 1,082                 | 13.9       | 14.5 | 61.5           | 63.5  |
| District of Columbia       | 7,595     | 2,714                     | 1,826               | 4,686              | 9                              | 187                                    | 898                   | 14.7       | 14.8 | 63.7           | 63.0  |
| Florida                    | 205,849   | 152,245                   | 104,087             | 47,200             | 1,231                          | 5,173                                  | 49,652                | 13.2       | 13.3 | 67.0           | 66.9  |
| Georgia                    | 133,492   | 85,630                    | 69,285              | 43,709             | 276                            | 3,876                                  | 15,703                | 16.5       | 16.7 | 71.1           | 71.4  |
| Hawaii                     | 17,058    | 3,807                     | 3,112               | 525                | 183                            | 12,543                                 | 2,236                 | 14.5       | 14.9 | 71.3           | 72.3  |
| Idaho                      | 20,687    | 19,943                    | 16,857              | 84                 | 361                            | 298                                    | 2,752                 | 16.0       | 16.0 | 75.4           | 74.8  |
| Illinois                   | 184,035   | 143,170                   | 102,602             | 32,720             | 249                            | 7,896                                  | 40,718                | 15.0       | 15.2 | 69.5           | 69.5  |
| Indiana                    | 86,577    | 75,487                    | 69,343              | 9,664              | 163                            | 1,263                                  | 5,921                 | 14.4       | 14.7 | 66.2           | 66.8  |
| Iowa                       | 37,744    | 35,443                    | 33,180              | 1,269              | 232                            | 799                                    | 2,240                 | 13.1       | 13.3 | 63.6           | 64.0  |
| Kansas                     | 38,884    | 34,636                    | 29,372              | 2,781              | 458                            | 1,008                                  | 4,913                 | 14.5       | 14.9 | 68.1           | 69.2  |
| Kentucky                   | 54,688    | 49,014                    | 47,538              | 4,918              | 103                            | 654                                    | 1,502                 | 13.6       | 14.1 | 62.3           | 63.6  |
| Louisiana                  | 66,771    | 37,706                    | 36,173              | 27,640             | 387                            | 1,038                                  | 1,583                 | 15.3       | 15.5 | 68.7           | 69.1  |
| Maine                      | 13,764    | 13,284                    | 13,079              | 154                | 110                            | 216                                    | 173                   | 10.9       | 10.8 | 50.1           | 49.5  |
| Maryland                   | 74,619    | 45,967                    | 40,593              | 24,673             | 216                            | 3,762                                  | 5,405                 | 14.2       | 14.2 | 62.1           | 61.9  |
| Massachusetts              | 81,097    | 67,804                    | 59,420              | 8,207              | 144                            | 4,942                                  | 9,442                 | 13.0       | 13.2 | 59.1           | 59.2  |
| Michigan                   | 133,812   | 105,744                   | 96,822              | 23,467             | 643                            | 3,958                                  | 7,358                 | 13.4       | 13.7 | 61.2           | 62.0  |
| Minnesota                  | 67,588    | 57,998                    | 53,162              | 4,769              | 1,314                          | 3,506                                  | 4,550                 | 13.9       | 14.0 | 63.6           | 63.8  |
| Mississippi                | 42,277    | 22,812                    | 22,075              | 18,811             | 263                            | 392                                    | 717                   | 15.1       | 15.8 | 67.6           | 70.3  |
| Missouri                   | 75,741    | 62,786                    | 59,817              | 11,125             | 341                            | 1,489                                  | 2,961                 | 13.7       | 13.9 | 63.4           | 64.0  |
| Montana                    | 10,956    | 9,427                     | 8,785               | 42                 | 1,369                          | 117                                    | 375                   | 12.3       | 12.3 | 61.7           | 61.3  |
| Nebraska                   | 24,821    | 22,496                    | 19,056              | 1,373              | 433                            | 518                                    | 2,946                 | 14.8       | 14.8 | 69.7           | 68.9  |
| Nevada                     | 31,383    | 26,303                    | 15,337              | 2,496              | 482                            | 2,103                                  | 10,853                | 16.1       | 16.4 | 79.4           | 79.8  |
| New Hampshire              | 14,661    | 13,960                    | 12,850              | 208                | 39                             | 454                                    | 512                   | 11.9       | 12.0 | 52.0           | 52.2  |
| New Jersey                 | 115,429   | 84,874                    | 63,092              | 20,419             | 161                            | 9,975                                  | 23,418                | 14.0       | 14.1 | 66.1           | 65.8  |
| New Mexico                 | 27,070    | 22,760                    | 8,762               | 511                | 3,396                          | 402                                    | 14,089                | 15.4       | 15.6 | 72.7           | 72.7  |
| New York                   | 257,446   | 185,179                   | 125,174             | 52,506             | 717                            | 19,044                                 | 54,876                | 14.0       | 14.2 | 65.2           | 65.0  |
| North Carolina             | 118,157   | 85,302                    | 70,844              | 28,387             | 1,688                          | 2,780                                  | 14,563                | 15.1       | 15.5 | 70.4           | 71.6  |
| North Dakota               | 7,629     | 6,624                     | 6,298               | 102                | 806                            | 96                                     | 140                   | 12.2       | 12.2 | 59.3           | 58.7  |
| Ohio                       | 158,493   | 132,004                   | 127,233             | 23,315             | 335                            | 2,840                                  | 4,759                 | 14.0       | 13.8 | 64.7           | 63.0  |
| Oklahoma                   | 50,051    | 39,228                    | 34,375              | 4,606              | 5,197                          | 1,019                                  | 4,931                 | 14.8       | 14.7 | 70.7           | 69.9  |
| Oregon                     | 45,325    | 41,286                    | 33,392              | 944                | 795                            | 2,300                                  | 7,900                 | 13.5       | 13.7 | 65.3           | 65.8  |
| Pennsylvania               | 146,193   | 121,390                   | 112,736             | 20,473             | 363                            | 3,966                                  | 8,324                 | 12.2       | 12.2 | 58.8           | 58.2  |
| Rhode Island               | 12,704    | 10,960                    | 7,794               | 1,090              | 125                            | 528                                    | 2,129                 | 12.7       | 12.6 | 59.2           | 58.1  |
| South Carolina             | 55,750    | 35,868                    | 32,961              | 18,917             | 150                            | 815                                    | 2,961                 | 14.1       | 14.3 | 62.8           | 63.3  |
| South Dakota               | 10,485    | 8,476                     | 8,255               | 101                | 1,777                          | 131                                    | 257                   | 14.1       | 14.0 | 67.7           | 66.7  |
| Tennessee                  | 78,351    | 60,220                    | 56,365              | 16,605             | 180                            | 1,345                                  | 3,909                 | 14.0       | 14.4 | 64.3           | 65.2  |
| Texas                      | 361,993   | 310,973                   | 140,929             | 38,731             | 871                            | 11,417                                 | 169,580               | 17.5       | 17.8 | 79.1           | 80.0  |
| Utah                       | 47,935    | 45,414                    | 38,659              | 345                | 740                            | 1,436                                  | 6,542                 | 21.8       | 21.9 | 94.9           | 94.5  |
| Vermont                    | 6,369     | 6,239                     | 6,022               | 32                 | 7                              | 90                                     | 34                    | 10.6       | 10.9 | 47.9           | 48.8  |
| Virginia                   | 98,943    | 70,995                    | 61,915              | 22,279             | 120                            | 5,549                                  | 9,150                 | 14.0       | 14.2 | 60.9           | 61.2  |
| Washington                 | 79,540    | 67,409                    | 54,484              | 3,335              | 1,904                          | 6,891                                  | 12,080                | 13.6       | 13.9 | 61.9           | 63.2  |
| West Virginia              | 20,475    | 19,621                    | 19,498              | 704                | 19                             | 130                                    | 82                    | 11.4       | 11.6 | 55.8           | 55.9  |
| Wisconsin                  | 69,082    | 59,393                    | 54,357              | 6,570              | 988                            | 2,132                                  | 5,151                 | 12.9       | 13.1 | 60.2           | 60.4  |
| Wyoming                    | 6,110     | 5,714                     | 5,158               | 65                 | 269                            | 62                                     | 570                   | 12.7       | 13.0 | 61.9           | 62.7  |
| Puerto Rico                | 55,371    | 50,898                    | ---                 | 4,472              | ---                            | ---                                    | ---                   | 14.1       | 15.2 | 60.7           | 64.9  |
| Virgin Islands             | 1,668     | 367                       | 79                  | 1,229              | 72                             | ---                                    | 386                   | 13.6       | 12.9 | 63.3           | 59.8  |
| Guam                       | 3,574     | 241                       | 217                 | 41                 | 4                              | 3,288                                  | 55                    | 22.7       | 24.4 | 114.1          | 120.8 |
| American Samoa             | ---       | ---                       | ---                 | ---                | ---                            | ---                                    | ---                   | ---        | 26.4 | ---            | 121.9 |
| Northern Marianas          | ---       | ---                       | ---                 | ---                | ---                            | ---                                    | ---                   | ---        | 19.9 | ---            | 58.8  |

--- Data not available.

<sup>1</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.

<sup>2</sup> Includes births to Aleuts and Eskimos.

<sup>3</sup> Includes all persons of Hispanic origin of any race; see Technical notes.

<sup>4</sup> Excludes data for the territories.

NOTE: For information on the relative standard errors of the data and further discussion, see Technical notes.

**Table 5. Percent of live births to unmarried mothers by race and Hispanic origin of mother: United States, each State and territory, final 2000 and preliminary 2001**

[By place of residence. Data are based on a continuous file of records received from the States]

| Area                             | All races <sup>1</sup> |      | White, total <sup>2</sup> |      | White, non-Hispanic |      | Black, total <sup>2</sup> |      | Hispanic <sup>3</sup> |      |
|----------------------------------|------------------------|------|---------------------------|------|---------------------|------|---------------------------|------|-----------------------|------|
|                                  | 2001                   | 2000 | 2001                      | 2000 | 2001                | 2000 | 2001                      | 2000 | 2001                  | 2000 |
| United States <sup>4</sup> ..... | 33.4                   | 33.2 | 27.6                      | 27.1 | 22.5                | 22.1 | 68.3                      | 68.5 | 42.4                  | 42.7 |
| Alabama .....                    | 34.4                   | 34.3 | 18.8                      | 18.0 | 18.5                | 17.7 | 67.9                      | 68.1 | 24.7                  | 24.8 |
| Alaska .....                     | 32.7                   | 33.0 | 22.2                      | 23.4 | 21.6                | 22.8 | 44.6                      | 45.5 | 34.3                  | 35.0 |
| Arizona .....                    | 39.5                   | 39.3 | 37.0                      | 36.9 | 24.4                | 24.6 | 64.0                      | 61.8 | 50.9                  | 51.4 |
| Arkansas .....                   | 36.1                   | 35.7 | 26.2                      | 25.3 | 25.1                | 24.5 | 75.8                      | 74.8 | 37.1                  | 34.6 |
| California .....                 | 32.7                   | 32.7 | 33.0                      | 33.0 | 20.0                | 19.8 | 62.6                      | 62.7 | 41.5                  | 42.1 |
| Colorado .....                   | 25.0                   | 25.0 | 24.0                      | 23.9 | 17.3                | 17.4 | 51.3                      | 51.6 | 38.6                  | 39.1 |
| Connecticut .....                | 28.9                   | 29.3 | 24.5                      | 24.6 | 15.9                | 16.2 | 65.9                      | 67.3 | 61.6                  | 63.0 |
| Delaware .....                   | 39.9                   | 37.9 | 30.0                      | 28.4 | 25.9                | 25.2 | 72.0                      | 71.0 | 55.3                  | 51.4 |
| District of Columbia ...         | 57.1                   | 60.3 | 27.1                      | 25.1 | 13.5                | 8.7  | 76.1                      | 77.8 | 54.8                  | 54.0 |
| Florida .....                    | 39.0                   | 38.2 | 30.9                      | 29.7 | 27.5                | 26.5 | 67.4                      | 67.5 | 38.9                  | 38.3 |
| Georgia .....                    | 37.3                   | 37.0 | 24.0                      | 22.7 | 20.8                | 20.1 | 65.7                      | 66.4 | 39.3                  | 38.0 |
| Hawaii .....                     | 33.0                   | 32.2 | 18.4                      | 17.1 | 16.9                | 15.2 | 20.8                      | 23.7 | 44.2                  | 45.6 |
| Idaho .....                      | 22.0                   | 21.6 | 21.5                      | 21.0 | 19.3                | 19.1 | 41.7                      | 48.0 | 34.3                  | 32.9 |
| Illinois .....                   | 34.1                   | 34.5 | 26.0                      | 25.9 | 19.8                | 19.8 | 76.1                      | 76.4 | 41.8                  | 42.3 |
| Indiana .....                    | 35.5                   | 34.7 | 30.8                      | 29.9 | 29.3                | 28.5 | 75.6                      | 75.9 | 47.8                  | 47.5 |
| Iowa .....                       | 28.8                   | 28.0 | 27.2                      | 26.4 | 26.2                | 25.5 | 74.4                      | 74.0 | 41.5                  | 41.7 |
| Kansas .....                     | 29.9                   | 29.0 | 26.9                      | 25.9 | 24.6                | 23.5 | 70.0                      | 69.3 | 42.1                  | 41.7 |
| Kentucky .....                   | 31.6                   | 31.0 | 27.7                      | 26.9 | 27.4                | 26.7 | 71.8                      | 73.4 | 39.4                  | 37.4 |
| Louisiana .....                  | 46.2                   | 45.6 | 26.0                      | 25.4 | 25.7                | 25.1 | 74.7                      | 73.8 | 34.1                  | 33.4 |
| Maine .....                      | 31.8                   | 31.0 | 31.7                      | 30.8 | 31.6                | 30.8 | 40.3                      | 43.8 | 37.6                  | 32.6 |
| Maryland .....                   | 34.4                   | 34.6 | 23.1                      | 22.4 | 20.4                | 20.2 | 59.5                      | 60.7 | 43.5                  | 42.2 |
| Massachusetts .....              | 26.7                   | 26.5 | 23.5                      | 23.4 | 18.6                | 18.5 | 58.9                      | 58.9 | 61.0                  | 62.4 |
| Michigan .....                   | 34.2                   | 33.3 | 26.3                      | 25.1 | 25.2                | 23.3 | 73.5                      | 72.7 | 41.9                  | 40.7 |
| Minnesota .....                  | 26.3                   | 25.8 | 22.7                      | 22.2 | 20.6                | 20.9 | 57.1                      | 60.1 | 47.9                  | 47.0 |
| Mississippi .....                | 46.3                   | 46.0 | 22.4                      | 21.7 | 21.8                | 21.2 | 75.6                      | 75.1 | 40.3                  | 40.3 |
| Missouri .....                   | 34.6                   | 34.6 | 27.7                      | 27.2 | 27.0                | 26.5 | 76.3                      | 77.2 | 42.2                  | 43.0 |
| Montana .....                    | 31.4                   | 30.8 | 25.9                      | 25.4 | 24.9                | 24.4 | 61.9                      | *    | 40.8                  | 38.8 |
| Nebraska .....                   | 27.7                   | 27.2 | 24.6                      | 24.1 | 22.1                | 21.6 | 68.4                      | 67.3 | 41.2                  | 41.8 |
| Nevada .....                     | 37.1                   | 36.4 | 34.4                      | 34.0 | 28.7                | 28.2 | 68.9                      | 67.4 | 42.6                  | 43.0 |
| New Hampshire .....              | 24.2                   | 24.7 | 24.5                      | 24.8 | 23.7                | 24.2 | 40.9                      | 37.9 | 37.5                  | 37.3 |
| New Jersey .....                 | 29.0                   | 28.9 | 23.2                      | 22.6 | 13.2                | 13.2 | 64.7                      | 64.8 | 52.5                  | 52.4 |
| New Mexico .....                 | 46.2                   | 45.6 | 42.5                      | 41.9 | 27.3                | 26.5 | 57.8                      | 59.6 | 52.2                  | 52.0 |
| New York .....                   | 35.6                   | 36.6 | 28.8                      | 29.4 | 17.8                | 18.8 | 66.4                      | 67.8 | 59.1                  | 60.9 |
| North Carolina .....             | 34.3                   | 33.3 | 24.1                      | 22.5 | 19.5                | 19.1 | 65.8                      | 65.8 | 46.2                  | 42.7 |
| North Dakota .....               | 27.9                   | 28.3 | 22.7                      | 23.3 | 22.2                | 22.8 | 28.4                      | *    | 30.0                  | 33.3 |
| Ohio .....                       | 35.1                   | 34.6 | 28.4                      | 27.6 | 27.6                | 26.9 | 75.7                      | 75.5 | 49.5                  | 49.2 |
| Oklahoma .....                   | 34.7                   | 34.3 | 29.0                      | 28.6 | 27.4                | 27.3 | 70.3                      | 70.0 | 40.8                  | 38.9 |
| Oregon .....                     | 30.4                   | 30.1 | 29.8                      | 29.6 | 27.2                | 27.3 | 64.5                      | 64.6 | 41.2                  | 40.3 |
| Pennsylvania .....               | 33.7                   | 32.7 | 27.2                      | 26.0 | 24.7                | 23.5 | 76.4                      | 76.0 | 60.6                  | 61.8 |
| Rhode Island .....               | 33.8                   | 35.5 | 30.2                      | 31.9 | 23.6                | 25.1 | 66.8                      | 63.9 | 56.9                  | 59.7 |
| South Carolina .....             | 39.9                   | 39.8 | 23.9                      | 23.0 | 22.3                | 22.0 | 71.3                      | 70.9 | 41.9                  | 37.8 |
| South Dakota .....               | 33.6                   | 33.5 | 24.2                      | 25.0 | 23.7                | 24.6 | 43.6                      | 34.0 | 52.1                  | 48.0 |
| Tennessee .....                  | 35.7                   | 34.5 | 25.9                      | 24.6 | 24.7                | 23.7 | 72.7                      | 72.3 | 43.4                  | 39.7 |
| Texas .....                      | 30.6                   | 30.5 | 27.6                      | 27.2 | 20.7                | 19.7 | 61.4                      | 61.4 | 33.4                  | 33.7 |
| Utah .....                       | 17.4                   | 17.3 | 16.7                      | 16.5 | 12.9                | 13.0 | 44.6                      | 52.7 | 38.8                  | 39.3 |
| Vermont .....                    | 31.0                   | 28.1 | 31.1                      | 28.1 | 31.0                | 27.9 | *                         | *    | *                     | *    |
| Virginia .....                   | 30.3                   | 29.9 | 21.8                      | 21.0 | 19.1                | 18.8 | 62.9                      | 62.8 | 39.9                  | 40.3 |
| Washington .....                 | 28.7                   | 28.2 | 27.4                      | 26.9 | 24.6                | 24.2 | 53.1                      | 53.6 | 40.7                  | 40.9 |
| West Virginia .....              | 32.6                   | 31.7 | 31.1                      | 30.0 | 31.1                | 30.0 | 77.0                      | 75.7 | 38.3                  | *    |
| Wisconsin .....                  | 29.9                   | 29.3 | 24.1                      | 23.6 | 22.3                | 22.0 | 82.4                      | 82.1 | 44.7                  | 45.1 |
| Wyoming .....                    | 29.6                   | 28.8 | 27.9                      | 27.3 | 26.5                | 25.5 | 44.6                      | 38.6 | 41.6                  | 45.4 |
| Puerto Rico .....                | 50.7                   | 49.7 | 49.4                      | 48.3 | ---                 | ---  | 65.6                      | 66.6 | ---                   | ---  |
| Virgin Islands .....             | 67.0                   | 66.7 | 58.4                      | 55.9 | 37.2                | 36.4 | 72.7                      | 72.0 | 66.1                  | 64.9 |
| Guam .....                       | 54.4                   | 54.8 | 13.8                      | 21.6 | 12.3                | 21.2 | *                         | *    | 39.0                  | *    |
| American Samoa .....             | ---                    | 35.5 | ---                       | *    | ---                 | ---  | ---                       | *    | ---                   | ---  |
| Northern Marianas .....          | ---                    | ---  | ---                       | ---  | ---                 | ---  | ---                       | ---  | ---                   | ---  |

\* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

--- Data not available.

<sup>1</sup> Includes races other than white and black.<sup>2</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.<sup>3</sup> Includes all persons of Hispanic origin of any race; see Technical notes.<sup>4</sup> Excludes data for the territories.

NOTE: For information on the relative standard errors of the data and further discussion, see Technical notes.

**Table 6. Percent low birthweight by race and Hispanic origin of mother: United States, each State and territory, final 2000 and preliminary 2001**

[By place of residence. Data are based on a continuous file of records received from the States. Low birthweight is less than 2,500 grams]

| Area                             | All races <sup>1</sup> |      | White, total <sup>2</sup> |      | White, non-Hispanic |      | Black, total <sup>2</sup> |      | Hispanic <sup>3</sup> |      |
|----------------------------------|------------------------|------|---------------------------|------|---------------------|------|---------------------------|------|-----------------------|------|
|                                  | 2001                   | 2000 | 2001                      | 2000 | 2001                | 2000 | 2001                      | 2000 | 2001                  | 2000 |
| United States <sup>4</sup> ..... | 7.6                    | 7.6  | 6.7                       | 6.5  | 6.7                 | 6.6  | 12.9                      | 13.0 | 6.5                   | 6.4  |
| Alabama .....                    | 9.6                    | 9.7  | 7.6                       | 7.7  | 7.6                 | 7.8  | 14.0                      | 14.0 | 6.9                   | 6.5  |
| Alaska .....                     | 5.7                    | 5.6  | 5.3                       | 4.9  | 5.0                 | 4.8  | 10.9                      | 11.7 | 6.3                   | 5.4  |
| Arizona .....                    | 7.0                    | 7.0  | 6.7                       | 6.8  | 6.7                 | 7.0  | 13.7                      | 12.8 | 6.6                   | 6.7  |
| Arkansas .....                   | 8.8                    | 8.6  | 7.5                       | 7.2  | 7.6                 | 7.3  | 14.0                      | 13.7 | 5.9                   | 5.9  |
| California .....                 | 6.3                    | 6.2  | 5.8                       | 5.6  | 5.9                 | 5.7  | 11.6                      | 11.6 | 5.7                   | 5.6  |
| Colorado .....                   | 8.5                    | 8.4  | 8.2                       | 8.0  | 8.1                 | 8.0  | 13.9                      | 14.8 | 8.4                   | 8.1  |
| Connecticut .....                | 7.5                    | 7.4  | 6.8                       | 6.8  | 6.4                 | 6.4  | 12.2                      | 12.0 | 8.3                   | 8.6  |
| Delaware .....                   | 9.3                    | 8.6  | 7.7                       | 7.1  | 7.9                 | 7.2  | 13.7                      | 13.2 | 6.4                   | 6.5  |
| District of Columbia ...         | 12.0                   | 11.9 | 7.3                       | 7.4  | 7.8                 | 6.8  | 14.7                      | 14.0 | 6.4                   | 8.3  |
| Florida .....                    | 8.2                    | 8.0  | 6.8                       | 6.6  | 7.0                 | 6.6  | 12.5                      | 12.3 | 6.5                   | 6.5  |
| Georgia .....                    | 8.8                    | 8.6  | 6.7                       | 6.6  | 7.0                 | 6.7  | 12.9                      | 12.7 | 5.7                   | 5.6  |
| Hawaii .....                     | 8.1                    | 7.5  | 6.4                       | 5.3  | 6.7                 | 5.0  | 11.5                      | 10.4 | 7.6                   | 7.3  |
| Idaho .....                      | 6.4                    | 6.7  | 6.4                       | 6.7  | 6.3                 | 6.5  | *                         | *    | 6.8                   | 7.5  |
| Illinois .....                   | 7.9                    | 7.9  | 6.6                       | 6.4  | 6.6                 | 6.5  | 13.6                      | 14.1 | 6.5                   | 6.2  |
| Indiana .....                    | 7.6                    | 7.4  | 7.0                       | 6.7  | 7.0                 | 6.9  | 12.9                      | 12.6 | 6.6                   | 5.3  |
| Iowa .....                       | 6.4                    | 6.1  | 6.1                       | 5.9  | 6.1                 | 5.9  | 13.7                      | 11.7 | 6.2                   | 5.5  |
| Kansas .....                     | 7.0                    | 6.9  | 6.5                       | 6.5  | 6.6                 | 6.6  | 12.4                      | 12.2 | 5.9                   | 5.9  |
| Kentucky .....                   | 8.3                    | 8.2  | 7.8                       | 7.7  | 7.8                 | 7.7  | 13.2                      | 13.7 | 7.9                   | 7.3  |
| Louisiana .....                  | 10.4                   | 10.3 | 7.6                       | 7.4  | 7.7                 | 7.4  | 14.3                      | 14.3 | 6.6                   | 7.3  |
| Maine .....                      | 6.0                    | 6.0  | 6.0                       | 6.0  | 6.1                 | 6.0  | *                         | *    | *                     | *    |
| Maryland .....                   | 9.0                    | 8.6  | 7.0                       | 6.4  | 7.0                 | 6.4  | 12.9                      | 12.8 | 6.9                   | 6.4  |
| Massachusetts .....              | 7.2                    | 7.1  | 6.8                       | 6.7  | 6.5                 | 6.4  | 10.2                      | 10.7 | 8.3                   | 8.4  |
| Michigan .....                   | 8.0                    | 7.9  | 6.6                       | 6.4  | 6.7                 | 6.3  | 14.0                      | 14.5 | 6.2                   | 6.3  |
| Minnesota .....                  | 6.3                    | 6.1  | 5.9                       | 5.7  | 5.9                 | 5.8  | 9.8                       | 11.0 | 6.2                   | 5.8  |
| Mississippi .....                | 10.7                   | 10.7 | 7.8                       | 7.9  | 7.8                 | 8.0  | 14.3                      | 14.0 | 7.0                   | 7.4  |
| Missouri .....                   | 7.6                    | 7.6  | 6.7                       | 6.6  | 6.7                 | 6.6  | 12.6                      | 13.2 | 5.7                   | 6.4  |
| Montana .....                    | 6.9                    | 6.2  | 6.9                       | 6.1  | 7.0                 | 6.1  | *                         | *    | 8.0                   | 7.9  |
| Nebraska .....                   | 6.6                    | 6.8  | 6.3                       | 6.4  | 6.3                 | 6.4  | 12.4                      | 13.0 | 6.2                   | 6.7  |
| Nevada .....                     | 7.6                    | 7.2  | 7.0                       | 6.7  | 7.5                 | 7.1  | 12.9                      | 12.9 | 6.3                   | 6.1  |
| New Hampshire .....              | 6.5                    | 6.3  | 6.4                       | 6.3  | 6.1                 | 6.1  | 13.9                      | *    | 5.9                   | *    |
| New Jersey .....                 | 7.9                    | 7.7  | 6.8                       | 6.5  | 6.6                 | 6.2  | 12.6                      | 12.8 | 7.0                   | 7.3  |
| New Mexico .....                 | 7.9                    | 8.0  | 7.9                       | 8.2  | 7.8                 | 8.1  | 13.4                      | 13.1 | 7.9                   | 8.2  |
| New York .....                   | 7.6                    | 7.7  | 6.6                       | 6.7  | 6.4                 | 6.5  | 11.3                      | 11.4 | 7.4                   | 7.3  |
| North Carolina .....             | 9.0                    | 8.8  | 7.3                       | 7.1  | 7.6                 | 7.3  | 13.8                      | 13.6 | 6.1                   | 6.1  |
| North Dakota .....               | 6.2                    | 6.4  | 6.1                       | 6.5  | 6.0                 | 6.3  | *                         | *    | *                     | *    |
| Ohio .....                       | 7.7                    | 7.9  | 6.8                       | 7.0  | 6.8                 | 7.0  | 13.2                      | 13.1 | 6.5                   | 7.4  |
| Oklahoma .....                   | 7.8                    | 7.5  | 7.2                       | 6.9  | 7.4                 | 7.1  | 13.9                      | 13.1 | 5.9                   | 6.3  |
| Oregon .....                     | 5.5                    | 5.6  | 5.4                       | 5.4  | 5.3                 | 5.3  | 10.1                      | 11.0 | 5.6                   | 5.7  |
| Pennsylvania .....               | 7.9                    | 7.7  | 6.9                       | 6.7  | 6.8                 | 6.6  | 13.7                      | 13.5 | 8.8                   | 8.9  |
| Rhode Island .....               | 7.2                    | 7.2  | 6.7                       | 6.5  | 6.4                 | 6.4  | 11.1                      | 13.1 | 8.0                   | 6.5  |
| South Carolina .....             | 9.6                    | 9.7  | 7.3                       | 7.2  | 7.4                 | 7.2  | 13.9                      | 14.2 | 6.6                   | 7.4  |
| South Dakota .....               | 6.4                    | 6.2  | 6.3                       | 5.9  | 6.2                 | 5.9  | *                         | *    | 8.2                   | *    |
| Tennessee .....                  | 9.2                    | 9.2  | 8.0                       | 7.8  | 8.1                 | 7.8  | 13.5                      | 14.6 | 6.5                   | 6.6  |
| Texas .....                      | 7.5                    | 7.4  | 6.8                       | 6.7  | 6.8                 | 6.5  | 12.7                      | 12.7 | 6.8                   | 6.8  |
| Utah .....                       | 6.4                    | 6.6  | 6.4                       | 6.5  | 6.2                 | 6.4  | 10.7                      | 12.5 | 7.4                   | 7.8  |
| Vermont .....                    | 5.9                    | 6.1  | 5.9                       | 6.0  | 5.9                 | 5.9  | *                         | *    | *                     | *    |
| Virginia .....                   | 7.9                    | 7.9  | 6.5                       | 6.5  | 6.6                 | 6.5  | 12.5                      | 12.6 | 5.8                   | 6.3  |
| Washington .....                 | 5.8                    | 5.6  | 5.5                       | 5.2  | 5.6                 | 5.2  | 9.8                       | 10.6 | 5.3                   | 5.4  |
| West Virginia .....              | 8.5                    | 8.3  | 8.4                       | 8.1  | 8.4                 | 8.1  | 11.6                      | 15.4 | *                     | *    |
| Wisconsin .....                  | 6.6                    | 6.5  | 5.9                       | 5.8  | 5.9                 | 5.7  | 13.1                      | 13.3 | 6.2                   | 6.6  |
| Wyoming .....                    | 8.4                    | 8.3  | 8.0                       | 8.3  | 7.9                 | 8.2  | *                         | *    | 9.1                   | 8.6  |
| Puerto Rico .....                | 11.3                   | 10.8 | 11.2                      | 10.7 | ---                 | ---  | 12.3                      | 12.1 | ---                   | ---  |
| Virgin Islands .....             | 9.8                    | 9.1  | 9.2                       | 8.8  | *                   | *    | 9.6                       | 9.2  | 9.4                   | 9.8  |
| Guam .....                       | 8.6                    | 7.6  | *                         | *    | *                   | *    | *                         | *    | *                     | *    |
| American Samoa .....             | ---                    | 2.7  | ---                       | *    | ---                 | ---  | ---                       | *    | ---                   | ---  |
| Northern Marianas .....          | ---                    | 8.9  | ---                       | ---  | ---                 | ---  | ---                       | ---  | ---                   | ---  |

\* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

--- Data not available.

<sup>1</sup> Includes races other than white and black.<sup>2</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.<sup>3</sup> Includes all persons of Hispanic origin of any race; see Technical notes.<sup>4</sup> Excludes data for the territories.

NOTE: For information on the relative standard errors of the data and further discussion, see Technical notes.



**Table 7. Percent of live births by cesarean delivery by race and Hispanic origin of mother: United States, each State and territory, final 2000 and preliminary 2001**

[By place of residence. Data are based on a continuous file of records received from the States]

| Area                             | All races <sup>1</sup> |      | White, total <sup>2</sup> |      | White, non-Hispanic |      | Black, total <sup>2</sup> |      | Hispanic <sup>3</sup> |      |
|----------------------------------|------------------------|------|---------------------------|------|---------------------|------|---------------------------|------|-----------------------|------|
|                                  | 2001                   | 2000 | 2001                      | 2000 | 2001                | 2000 | 2001                      | 2000 | 2001                  | 2000 |
| United States <sup>4</sup> ..... | 24.4                   | 22.9 | 24.2                      | 22.8 | 24.5                | 23.1 | 25.8                      | 24.3 | 23.5                  | 22.1 |
| Alabama .....                    | 27.6                   | 26.4 | 28.1                      | 26.8 | 28.5                | 27.0 | 26.7                      | 25.5 | 21.5                  | 22.4 |
| Alaska .....                     | 19.0                   | 17.0 | 21.5                      | 19.0 | 21.4                | 19.4 | 22.2                      | 23.3 | 21.9                  | 16.3 |
| Arizona .....                    | 20.0                   | 18.6 | 20.1                      | 18.7 | 21.7                | 20.2 | 22.2                      | 20.2 | 18.3                  | 17.1 |
| Arkansas .....                   | 27.6                   | 26.4 | 27.0                      | 26.0 | 27.5                | 26.5 | 30.3                      | 28.3 | 22.9                  | 20.8 |
| California .....                 | 25.1                   | 23.4 | 25.0                      | 23.3 | 25.9                | 24.3 | 28.2                      | 26.5 | 24.4                  | 22.7 |
| Colorado .....                   | 19.6                   | 18.3 | 19.5                      | 18.3 | 20.1                | 18.9 | 20.1                      | 20.2 | 18.3                  | 16.9 |
| Connecticut .....                | 24.0                   | 21.8 | 24.0                      | 21.9 | 24.5                | 22.4 | 23.6                      | 22.0 | 21.9                  | 19.8 |
| Delaware .....                   | 25.5                   | 24.8 | 25.0                      | 24.6 | 25.5                | 25.3 | 26.5                      | 25.6 | 23.2                  | 20.5 |
| District of Columbia ...         | 25.0                   | 22.6 | 24.3                      | 21.7 | 28.1                | 25.2 | 25.4                      | 23.0 | 16.8                  | 15.7 |
| Florida .....                    | 26.4                   | 25.0 | 26.7                      | 25.3 | 25.9                | 24.3 | 26.0                      | 24.5 | 28.4                  | 27.6 |
| Georgia .....                    | 24.3                   | 22.6 | 24.1                      | 22.5 | 25.3                | 23.6 | 24.8                      | 23.0 | 18.9                  | 16.5 |
| Hawaii .....                     | 20.0                   | 14.7 | 19.9                      | 16.9 | 19.8                | 17.1 | 19.4                      | 16.2 | 20.5                  | 14.3 |
| Idaho .....                      | 18.7                   | 18.3 | 18.5                      | 18.3 | 18.3                | 18.1 | *                         | *    | 19.5                  | 19.5 |
| Illinois .....                   | 22.2                   | 21.0 | 22.1                      | 20.8 | 23.1                | 21.7 | 22.3                      | 21.4 | 19.7                  | 18.6 |
| Indiana .....                    | 23.4                   | 21.6 | 23.2                      | 21.5 | 23.3                | 21.7 | 24.4                      | 21.9 | 22.0                  | 20.0 |
| Iowa .....                       | 23.1                   | 20.9 | 23.0                      | 21.0 | 23.1                | 21.1 | 24.6                      | 20.6 | 21.5                  | 20.0 |
| Kansas .....                     | 23.8                   | 22.3 | 23.8                      | 22.2 | 24.3                | 22.6 | 24.8                      | 25.3 | 21.2                  | 19.5 |
| Kentucky .....                   | 26.1                   | 24.8 | 26.2                      | 24.8 | 26.2                | 24.9 | 25.1                      | 25.1 | 25.6                  | 21.7 |
| Louisiana .....                  | 29.9                   | 26.6 | 31.0                      | 27.2 | 31.1                | 27.2 | 28.7                      | 26.0 | 29.8                  | 28.2 |
| Maine .....                      | 24.1                   | 22.9 | 24.1                      | 22.9 | 24.1                | 22.9 | 22.7                      | 23.2 | 26.0                  | 28.4 |
| Maryland .....                   | 25.4                   | 24.1 | 24.4                      | 23.2 | 24.9                | 23.5 | 27.5                      | 26.0 | 20.7                  | 19.9 |
| Massachusetts .....              | 25.4                   | 23.7 | 25.5                      | 24.0 | 26.1                | 24.5 | 26.7                      | 23.5 | 21.9                  | 20.5 |
| Michigan .....                   | 23.4                   | 22.0 | 23.6                      | 22.2 | 23.7                | 22.3 | 22.4                      | 21.4 | 22.1                  | 20.4 |
| Minnesota .....                  | 21.1                   | 19.9 | 21.5                      | 20.4 | 21.5                | 20.5 | 21.5                      | 19.1 | 20.7                  | 19.2 |
| Mississippi .....                | 29.7                   | 28.3 | 30.6                      | 29.4 | 30.9                | 29.6 | 28.7                      | 27.1 | 23.8                  | 22.9 |
| Missouri .....                   | 23.9                   | 22.5 | 24.1                      | 22.8 | 24.2                | 22.8 | 22.8                      | 21.1 | 22.5                  | 21.4 |
| Montana .....                    | 21.7                   | 19.0 | 21.2                      | 18.7 | 21.1                | 18.8 | *                         | *    | 25.1                  | 18.0 |
| Nebraska .....                   | 24.1                   | 22.6 | 24.3                      | 22.7 | 24.8                | 22.9 | 22.0                      | 23.2 | 20.9                  | 21.6 |
| Nevada .....                     | 23.6                   | 21.9 | 23.0                      | 21.4 | 25.2                | 22.9 | 27.7                      | 25.9 | 20.2                  | 19.4 |
| New Hampshire .....              | 23.0                   | 21.1 | 22.9                      | 21.1 | 22.9                | 21.1 | 32.4                      | 23.6 | 22.5                  | 22.0 |
| New Jersey .....                 | 28.9                   | 27.5 | 28.9                      | 27.4 | 29.3                | 27.6 | 29.7                      | 28.4 | 28.0                  | 27.2 |
| New Mexico .....                 | 18.6                   | 17.2 | 19.1                      | 17.6 | 19.8                | 18.5 | 23.9                      | 18.3 | 18.6                  | 17.0 |
| New York .....                   | 25.9                   | 24.7 | 25.9                      | 24.7 | 26.5                | 25.3 | 26.5                      | 25.7 | 25.1                  | 23.9 |
| North Carolina .....             | 24.9                   | 23.1 | 24.5                      | 22.7 | 25.5                | 23.6 | 26.5                      | 24.4 | 19.5                  | 17.5 |
| North Dakota .....               | 21.1                   | 20.9 | 21.2                      | 20.3 | 21.2                | 20.4 | 22.5                      | 28.0 | 26.2                  | 19.1 |
| Ohio .....                       | 21.5                   | 20.1 | 21.5                      | 20.2 | 21.5                | 20.2 | 21.7                      | 20.0 | 19.9                  | 20.2 |
| Oklahoma .....                   | 25.9                   | 24.2 | 25.9                      | 24.0 | 26.4                | 24.4 | 26.6                      | 26.0 | 22.4                  | 21.8 |
| Oregon .....                     | 21.0                   | 19.5 | 20.7                      | 19.3 | 21.1                | 19.6 | 26.3                      | 21.4 | 19.2                  | 18.3 |
| Pennsylvania .....               | 23.0                   | 21.7 | 23.0                      | 21.8 | 23.1                | 21.9 | 23.1                      | 21.5 | 21.3                  | 20.2 |
| Rhode Island .....               | 24.0                   | 22.0 | 24.3                      | 22.0 | 25.0                | 22.8 | 23.5                      | 23.4 | 22.6                  | 19.7 |
| South Carolina .....             | 26.4                   | 25.3 | 26.2                      | 25.6 | 26.6                | 25.8 | 27.0                      | 25.1 | 21.6                  | 21.9 |
| South Dakota .....               | 23.0                   | 22.8 | 23.0                      | 22.9 | 23.0                | 22.9 | 25.0                      | 28.3 | 20.1                  | 22.0 |
| Tennessee .....                  | 26.2                   | 24.9 | 26.4                      | 24.9 | 26.7                | 25.1 | 25.7                      | 24.9 | 22.4                  | 21.7 |
| Texas .....                      | 26.2                   | 24.9 | 25.9                      | 24.7 | 26.4                | 25.7 | 28.7                      | 26.9 | 25.5                  | 23.8 |
| Utah .....                       | 17.2                   | 16.8 | 17.2                      | 16.8 | 16.6                | 16.4 | 19.7                      | 21.4 | 20.5                  | 18.9 |
| Vermont .....                    | 17.8                   | 17.3 | 17.7                      | 17.3 | 17.9                | 17.4 | *                         | *    | *                     | *    |
| Virginia .....                   | 24.6                   | 23.2 | 24.2                      | 22.8 | 24.5                | 23.1 | 25.3                      | 23.8 | 22.1                  | 20.6 |
| Washington .....                 | 22.6                   | 20.7 | 22.5                      | 20.6 | 22.6                | 20.8 | 26.1                      | 24.0 | 22.0                  | 19.6 |
| West Virginia .....              | 26.6                   | 25.5 | 26.4                      | 25.5 | 26.5                | 25.5 | 29.8                      | 27.1 | *                     | *    |
| Wisconsin .....                  | 19.1                   | 17.5 | 19.6                      | 18.0 | 19.7                | 18.0 | 16.9                      | 15.1 | 18.5                  | 16.6 |
| Wyoming .....                    | 20.1                   | 19.4 | 19.8                      | 19.2 | 19.6                | 19.0 | *                         | *    | 22.3                  | 21.1 |
| Puerto Rico .....                | 41.7                   | 39.1 | 41.8                      | 39.3 | ---                 | ---  | 40.2                      | 37.2 | ---                   | ---  |
| Virgin Islands .....             | 25.2                   | 23.1 | 28.1                      | 28.9 | 26.3                | 38.7 | 23.9                      | 21.5 | 26.6                  | 25.7 |
| Guam .....                       | 22.3                   | 18.0 | 16.8                      | 20.4 | 18.0                | 20.2 | *                         | *    | *                     | *    |
| American Samoa .....             | ---                    | ---  | ---                       | ---  | ---                 | ---  | ---                       | ---  | ---                   | ---  |
| Northern Marianas ....           | ---                    | 20.4 | ---                       | *    | ---                 | ---  | ---                       | *    | ---                   | ---  |

\* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

--- Data not available.

<sup>1</sup> Includes races other than white and black.<sup>2</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.<sup>3</sup> Includes all persons of Hispanic origin of any race; see Technical notes.<sup>4</sup> Excludes data for the territories.

NOTE: For information on the relative standard errors of the data and further discussion, see Technical notes.

**Table 8. Percent of mothers receiving prenatal care in first trimester of pregnancy by race and Hispanic origin of mother: United States, each State and territory, final 2000 and preliminary 2001**

[By place of residence. Data are based on a continuous file of records received from the States]

| Area                             | All races <sup>1</sup> |      | White, total <sup>2</sup> |      | White, non-Hispanic |      | Black, total <sup>2</sup> |      | Hispanic <sup>3</sup> |      |
|----------------------------------|------------------------|------|---------------------------|------|---------------------|------|---------------------------|------|-----------------------|------|
|                                  | 2001                   | 2000 | 2001                      | 2000 | 2001                | 2000 | 2001                      | 2000 | 2001                  | 2000 |
| United States <sup>4</sup> ..... | 83.4                   | 83.2 | 85.2                      | 85.0 | 88.5                | 88.5 | 74.5                      | 74.3 | 75.7                  | 74.4 |
| Alabama .....                    | 82.4                   | 82.8 | 87.4                      | 88.1 | 89.5                | 89.6 | 71.7                      | 72.0 | 52.3                  | 55.8 |
| Alaska .....                     | 80.5                   | 80.1 | 84.3                      | 84.2 | 84.4                | 84.4 | 82.1                      | 81.8 | 82.6                  | 80.6 |
| Arizona .....                    | 76.7                   | 76.5 | 77.4                      | 77.0 | 87.3                | 87.1 | 75.7                      | 74.1 | 66.7                  | 65.4 |
| Arkansas .....                   | 79.8                   | 79.7 | 82.4                      | 82.6 | 84.0                | 83.9 | 69.9                      | 69.1 | 67.3                  | 66.9 |
| California .....                 | 85.4                   | 84.5 | 85.4                      | 84.5 | 90.0                | 89.9 | 82.5                      | 81.9 | 82.4                  | 80.7 |
| Colorado .....                   | 79.8                   | 80.7 | 80.2                      | 81.0 | 87.3                | 87.8 | 72.7                      | 75.2 | 65.1                  | 65.4 |
| Connecticut .....                | 88.5                   | 89.4 | 89.5                      | 90.6 | 92.3                | 93.0 | 81.9                      | 81.8 | 77.9                  | 79.7 |
| Delaware .....                   | 87.2                   | 85.3 | 88.9                      | 87.8 | 91.5                | 90.0 | 81.5                      | 77.4 | 73.1                  | 72.1 |
| District of Columbia ...         | 74.6                   | 75.3 | 82.4                      | 85.5 | 87.8                | 90.4 | 69.5                      | 70.2 | 70.7                  | 76.0 |
| Florida .....                    | 84.1                   | 83.7 | 87.0                      | 86.8 | 89.3                | 89.1 | 75.1                      | 73.6 | 81.7                  | 81.0 |
| Georgia .....                    | 86.2                   | 86.9 | 88.9                      | 89.8 | 91.4                | 91.8 | 80.6                      | 81.1 | 76.5                  | 77.9 |
| Hawaii .....                     | 84.2                   | 85.5 | 88.5                      | 89.5 | 89.2                | 90.0 | 91.9                      | 89.3 | 83.3                  | 84.0 |
| Idaho .....                      | 81.9                   | 80.9 | 82.0                      | 81.2 | 84.0                | 83.5 | 80.8                      | 74.0 | 69.5                  | 66.1 |
| Illinois .....                   | 84.0                   | 82.4 | 86.5                      | 84.9 | 90.4                | 89.5 | 72.8                      | 71.3 | 76.7                  | 72.6 |
| Indiana .....                    | 80.8                   | 80.8 | 82.3                      | 82.3 | 83.9                | 83.8 | 69.0                      | 68.5 | 63.1                  | 62.0 |
| Iowa .....                       | 88.4                   | 88.2 | 88.9                      | 88.7 | 89.9                | 89.7 | 79.1                      | 77.4 | 74.7                  | 73.6 |
| Kansas .....                     | 86.9                   | 86.9 | 87.6                      | 87.6 | 90.2                | 90.6 | 79.5                      | 79.1 | 71.0                  | 68.7 |
| Kentucky .....                   | 86.8                   | 86.8 | 87.6                      | 87.6 | 88.2                | 88.0 | 79.5                      | 78.6 | 67.6                  | 68.0 |
| Louisiana .....                  | 83.3                   | 83.3 | 90.4                      | 90.5 | 90.7                | 90.7 | 73.4                      | 73.6 | 84.1                  | 85.3 |
| Maine .....                      | 88.1                   | 88.7 | 88.3                      | 89.0 | 88.4                | 89.0 | 79.2                      | 75.9 | 77.4                  | 80.7 |
| Maryland .....                   | 83.7                   | 86.4 | 87.7                      | 90.8 | 89.6                | 92.1 | 76.5                      | 77.7 | 72.6                  | 79.1 |
| Massachusetts .....              | 89.7                   | 89.3 | 91.3                      | 90.9 | 92.6                | 92.3 | 79.5                      | 79.4 | 81.6                  | 79.7 |
| Michigan .....                   | 84.7                   | 84.2 | 87.9                      | 87.2 | 89.1                | 88.8 | 69.6                      | 70.1 | 71.2                  | 71.7 |
| Minnesota .....                  | 82.2                   | 84.8 | 85.2                      | 87.3 | 87.5                | 88.7 | 62.0                      | 67.5 | 59.6                  | 64.7 |
| Mississippi .....                | 82.7                   | 81.3 | 89.3                      | 88.8 | 89.9                | 89.2 | 74.9                      | 72.4 | 71.0                  | 75.2 |
| Missouri .....                   | 87.7                   | 87.8 | 89.3                      | 89.4 | 89.9                | 89.8 | 78.8                      | 79.0 | 78.0                  | 79.1 |
| Montana .....                    | 82.6                   | 83.3 | 85.4                      | 86.1 | 85.6                | 86.5 | 82.9                      | 86.4 | 79.7                  | 81.6 |
| Nebraska .....                   | 83.2                   | 83.2 | 84.5                      | 84.5 | 87.0                | 86.8 | 68.0                      | 68.0 | 68.3                  | 67.3 |
| Nevada .....                     | 75.7                   | 74.4 | 76.2                      | 75.0 | 85.9                | 84.3 | 67.7                      | 65.9 | 62.7                  | 60.6 |
| New Hampshire .....              | 90.6                   | 91.1 | 91.0                      | 91.4 | 91.5                | 91.9 | 79.5                      | 76.7 | 81.3                  | 78.9 |
| New Jersey .....                 | 79.9                   | 80.6 | 83.4                      | 84.5 | 88.8                | 89.4 | 63.6                      | 64.0 | 67.4                  | 68.6 |
| New Mexico .....                 | 69.0                   | 68.6 | 70.3                      | 70.1 | 76.7                | 76.7 | 65.7                      | 65.8 | 66.3                  | 65.8 |
| New York .....                   | 80.6                   | 80.9 | 83.9                      | 84.3 | 87.9                | 88.2 | 70.3                      | 71.4 | 73.2                  | 72.9 |
| North Carolina .....             | 84.4                   | 84.6 | 87.3                      | 87.7 | 90.9                | 91.0 | 75.9                      | 75.9 | 69.9                  | 68.4 |
| North Dakota .....               | 85.8                   | 86.3 | 88.4                      | 88.8 | 88.8                | 89.3 | 78.4                      | 78.0 | 78.1                  | 72.9 |
| Ohio .....                       | 87.4                   | 86.4 | 89.1                      | 88.4 | 89.5                | 88.8 | 77.4                      | 75.3 | 77.3                  | 75.2 |
| Oklahoma .....                   | 77.6                   | 79.1 | 79.7                      | 81.3 | 81.8                | 82.9 | 69.1                      | 70.7 | 65.2                  | 66.9 |
| Oregon .....                     | 81.5                   | 81.3 | 81.8                      | 81.6 | 84.6                | 84.3 | 76.6                      | 76.2 | 69.9                  | 69.0 |
| Pennsylvania .....               | 85.3                   | 85.4 | 87.4                      | 87.6 | 88.4                | 88.5 | 73.1                      | 72.6 | 73.2                  | 73.4 |
| Rhode Island .....               | 91.6                   | 90.8 | 92.6                      | 91.7 | 93.9                | 93.1 | 85.4                      | 85.9 | 87.2                  | 86.6 |
| South Carolina .....             | 78.9                   | 79.4 | 84.0                      | 84.2 | 85.8                | 85.8 | 69.4                      | 70.9 | 63.6                  | 59.1 |
| South Dakota .....               | 78.3                   | 78.7 | 82.2                      | 82.6 | 82.5                | 82.8 | 59.0                      | 70.5 | 66.5                  | 70.9 |
| Tennessee .....                  | 82.8                   | 83.1 | 85.7                      | 86.0 | 87.6                | 87.6 | 72.2                      | 72.2 | 57.1                  | 56.1 |
| Texas .....                      | 80.5                   | 78.8 | 80.6                      | 78.8 | 88.1                | 87.6 | 77.0                      | 76.3 | 74.2                  | 71.2 |
| Utah .....                       | 79.3                   | 79.4 | 80.3                      | 80.4 | 83.5                | 83.4 | 61.9                      | 56.6 | 60.9                  | 60.3 |
| Vermont .....                    | 89.2                   | 88.5 | 89.3                      | 88.6 | 89.5                | 88.8 | 75.0                      | 74.2 | 84.4                  | 84.4 |
| Virginia .....                   | 85.1                   | 85.2 | 87.8                      | 88.2 | 90.5                | 90.1 | 76.5                      | 76.0 | 69.7                  | 71.9 |
| Washington .....                 | 83.2                   | 82.6 | 83.8                      | 83.4 | 86.2                | 85.9 | 77.0                      | 74.8 | 73.1                  | 71.0 |
| West Virginia .....              | 86.3                   | 86.1 | 86.7                      | 86.7 | 86.8                | 86.8 | 76.4                      | 70.2 | 62.5                  | 71.4 |
| Wisconsin .....                  | 83.9                   | 84.2 | 86.2                      | 86.5 | 87.8                | 88.0 | 69.6                      | 69.9 | 69.8                  | 68.6 |
| Wyoming .....                    | 82.9                   | 82.7 | 83.4                      | 83.4 | 84.6                | 84.4 | 83.1                      | 73.7 | 71.8                  | 74.2 |
| Puerto Rico .....                | 79.5                   | 78.1 | 80.2                      | 78.9 | ---                 | ---  | 71.0                      | 68.3 | ---                   | ---  |
| Virgin Islands .....             | 65.5                   | 63.8 | 64.9                      | 61.4 | 80.8                | 80.5 | 65.2                      | 63.9 | 59.3                  | 60.2 |
| Guam .....                       | 64.8                   | 62.6 | 88.9                      | 87.6 | 89.5                | 87.9 | 87.1                      | 80.6 | 71.8                  | 80.5 |
| American Samoa .....             | ---                    | ---  | ---                       | ---  | ---                 | ---  | ---                       | ---  | ---                   | ---  |
| Northern Marianas ....           | ---                    | 24.9 | ---                       | *    | ---                 | ---  | ---                       | *    | ---                   | ---  |

--- Data not available.

\* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

<sup>1</sup> Includes races other than white and black.<sup>2</sup> Race and Hispanic origin are reported separately on the birth certificate. Data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race; see Technical notes.<sup>3</sup> Includes all persons of Hispanic origin of any race; see Technical notes.<sup>4</sup> Excludes data for the territories.

NOTE: For information on the relative standard errors of the data and further discussion, see Technical notes.

## Technical notes

### Nature and sources of data

Preliminary data for 2001 are based on a substantial proportion (96.4 percent) of birth records for that year. The data for 2001 are based on a continuous receipt and processing of statistical records through March 14, 2002, by the National Center for Health Statistics (NCHS). NCHS receives the data from the States' vital registration systems through the Vital Statistics Cooperative Program. In this report, U.S. totals include only events occurring within the 50 States and the District of Columbia. Data for Puerto Rico, the Virgin Islands, and Guam are included in tables showing data by State, but are not included in U.S. totals. Tables by State generally show entries for American Samoa and the Northern Marianas, but preliminary data for these areas were not available by March 14, 2002, and are not presented in this report. Final data for 2000 for these areas are presented where available.

For 2001, individual records of births are weighted to independent counts of all births occurring in each State. These State-specific counts serve as control totals and are the basis for the record weights in the preliminary file. If the number of records in the preliminary file is greater than the count received from the State, the State-specific number of records in the preliminary file is used instead and the weight is set at 1.0.

Each birth record has one weight specific to the State where the birth occurred. [Table I](#) shows the percent completeness of the preliminary file by place of occurrence. The percent completeness is obtained by dividing the number of records in the preliminary file by the control total and multiplying by 100. Although data by place of occurrence are used to compute the weights, all data in this report are tabulated by place of residence.

For selected variables in the natality file, unknown or not-stated values are imputed. Detailed information on reporting completeness and imputation procedures may be found in *Technical Appendix of Vital Statistics of the United States, Natality* (9).

Race and Hispanic origin are reported separately on the birth certificate. Therefore, data shown by race include persons of Hispanic or non-Hispanic origin, and data for Hispanic origin include persons of any race. In this report, births of Hispanic origin are included in the totals for each race group—white, black, American Indian, and Asian or Pacific Islander—according to the mother's race as reported on the birth certificate. Data shown for Hispanic persons include all persons of Hispanic origin of any race. In 2001, approximately 98 percent of Hispanic-origin births were to white women. Data are shown separately for non-Hispanic white women because there are substantial differences in childbearing patterns between Hispanic and non-Hispanic white women. Roughly 1 in 4 white births were to Hispanic women in 2001.

From 1964 to 1996, mother's age was edited for ages 10–49 years: births reported to occur to mothers younger than age 10 or older than 49 years had age imputed according to the age of mother from the previous record with the same race and total birth order (total of live births and fetal deaths). Beginning in 1997, age of mother is imputed for ages 9 years or under and 55 years or over. A review and verification of unedited birth data for 1996 showed that the vast majority of births reported as occurring to women aged 50 years and over were to women aged 50–54 years. The numbers of births to women aged

50–54 years are too small for computing age-specific birth rates and have been included with births to women aged 45–49 years for computing birth rates.

National estimates of births to unmarried women are based on two methods of determining marital status. For 2000 and 2001, birth certificates in 48 States and the District of Columbia included a direct question about mother's marital status; in California and Nevada, the direct question is part of the electronic birth registration process but does not appear on certified or paper copies of the birth certificate. The question in most States is: "Mother married? (At birth, conception, or any time between) (Yes or no)".

Marital status is inferred in Michigan and New York. A birth is inferred as nonmarital if the father's name is missing from the birth certificate or if a paternity acknowledgment was filed.

The birth rate for unmarried women for 2001 is estimated on the basis of population distributions by marital status provided by the U.S. Census Bureau as of March 2001 (6) applied to the national population estimates as of July 1 (10). The nonmarital birth rate shown here for 2001 thus differs from those published by NCHS in the annual final reports, which are based on populations estimated from 3-year averages of the marital status distributions, rather than a single year as shown here (11,12). Population estimates for a single year are not an adequate basis for computing age-specific birth rates for unmarried women—these rates are available only in the final reports.

### Population denominators

Birth and fertility rates for 2000 and 2001 are based on populations projected from the 1990 census, estimated as of July 1, 2001, and July 1, 2000, provided by the U.S. Census Bureau (10,13,14). Rates by State and for the territories are computed on the basis of populations on July 1, 2001, and July 1, 2000, also projected from the 1990 census (15–17).

The United States and State-level birth and fertility rates in this report are based on estimates projected from the 1990 census because detailed populations based on the 2000 census were not available when the report was prepared. A comparison of summary 2000 census counts and estimates for 2000 based on the 1990 census indicate that the 1990-based estimates of the U.S. Hispanic population were 8 percent lower than the 2000 census count (10,18,19). The underestimate for Hispanic women aged 15–44 years was 9.5 percent (compared with an underestimate of 2 percent for all women aged 15–44 years). Therefore, the birth and fertility rates for Hispanic women presented here are overstated because the population base is too small. There may be similar, but less pronounced effects for other population groups. When the intercensal and postcensal estimates based on the 2000 census become available, population-based rates between 1990 and 2001 will be recalculated and presented in an upcoming report. Meanwhile, considerable caution should be used in interpreting the rates and trends for the Nation and States, particularly for Hispanic women.

### Computing rates and percents

For calculating birth rates, age and race of mother are imputed if they are not stated (0.01 percent and 0.1 percent, respectively, for 2001). In computing birth rates by live-birth order, births with live-birth order not stated are distributed in proportion to stated data. Births with marital status not reported (0.03 percent for 2001) are included

**Table I. Total count of records and percent completeness of preliminary file of live births: United States, each State and territory, preliminary 2001**

[By place of occurrence]

| Area                                 | Live births      |                      |
|--------------------------------------|------------------|----------------------|
|                                      | Count of records | Percent completeness |
| United States <sup>1</sup> .....     | 4,045,884        | 96.4                 |
| Alabama .....                        | 59,770           | 100.0                |
| Alaska .....                         | 9,899            | 99.7                 |
| Arizona .....                        | 86,000           | 99.4                 |
| Arkansas .....                       | 36,359           | 100.0                |
| California .....                     | 530,000          | 99.2                 |
| Colorado .....                       | 67,085           | 100.0                |
| Connecticut .....                    | 42,507           | 90.1                 |
| Delaware .....                       | 11,360           | 100.0                |
| District of Columbia .....           | 15,001           | 98.9                 |
| Florida .....                        | 206,042          | 100.0                |
| Georgia .....                        | 134,364          | 100.0                |
| Hawaii .....                         | 17,114           | 100.0                |
| Idaho .....                          | 20,162           | 100.0                |
| Illinois .....                       | 181,087          | 90.9                 |
| Indiana .....                        | 86,740           | 97.7                 |
| Iowa .....                           | 37,880           | 99.6                 |
| Kansas .....                         | 39,053           | 100.0                |
| Kentucky .....                       | 53,226           | 93.0                 |
| Louisiana .....                      | 67,053           | 96.8                 |
| Maine .....                          | 13,569           | 100.0                |
| Maryland .....                       | 70,138           | 97.9                 |
| Massachusetts .....                  | 82,248           | 100.0                |
| Michigan .....                       | 132,500          | 99.2                 |
| Minnesota .....                      | 67,425           | 100.0                |
| Mississippi .....                    | 41,123           | 100.0                |
| Missouri .....                       | 77,000           | 99.2                 |
| Montana .....                        | 10,920           | 100.0                |
| Nebraska .....                       | 25,105           | 100.0                |
| Nevada .....                         | 31,000           | 99.1                 |
| New Hampshire .....                  | 14,066           | 100.0                |
| New Jersey .....                     | 112,381          | 98.6                 |
| New Mexico .....                     | 26,757           | 100.0                |
| New York .....                       | 258,546          | 97.3                 |
| New York excluding New York City ... | 134,541          | 95.9                 |
| New York City .....                  | 124,005          | 98.7                 |
| North Carolina .....                 | 119,101          | 100.0                |
| North Dakota .....                   | 8,837            | 100.0                |
| Ohio .....                           | 159,183          | 75.5                 |
| Oklahoma .....                       | 48,805           | 90.8                 |
| Oregon .....                         | 46,202           | 100.0                |
| Pennsylvania .....                   | 146,650          | 97.7                 |
| Rhode Island .....                   | 13,319           | 84.4                 |
| South Carolina .....                 | 53,248           | 99.0                 |
| South Dakota .....                   | 10,785           | 100.0                |
| Tennessee .....                      | 83,548           | 100.0                |
| Texas .....                          | 367,190          | 85.9                 |
| Utah .....                           | 49,011           | 100.0                |
| Vermont .....                        | 6,148            | 99.7                 |
| Virginia .....                       | 96,565           | 100.0                |
| Washington .....                     | 79,048           | 100.0                |
| West Virginia .....                  | 21,004           | 99.1                 |
| Wisconsin .....                      | 68,005           | 100.0                |
| Wyoming .....                        | 5,755            | 100.0                |
| Puerto Rico .....                    | 55,498           | 83.4                 |
| Virgin Islands .....                 | 1,772            | 99.3                 |
| Guam .....                           | 3,593            | 75.0                 |
| American Samoa .....                 | ---              | ---                  |
| Northern Marianas .....              | ---              | ---                  |

-- Data not available.

<sup>1</sup> Excludes data for Puerto Rico, Virgin Islands, Guam, American Samoa, and Northern Marianas.NOTE: Percent completeness =  $\frac{\text{Number of records in preliminary file} \times 100}{\text{Count of records}}$ 

with births to married mothers. Percents were computed using only events for which the characteristic is reported. The "Not stated" category is subtracted from the total before the percent is computed for birthweight, prenatal care, and method of delivery. Birth rates for the Hispanic population are based only on events to persons reported as Hispanic. Rates for non-Hispanic white persons are based on the sum of all white events reported as non-Hispanic and white events with origin not stated. Hispanic origin is not imputed if it is not reported.

An asterisk indicates that the figure does not meet standards of reliability or precision. In this report, three sets of criteria determine whether a figure meets these standards:

- The State-specific sample is complete enough to provide reliable estimates. For example, a criterion of at least 75 percent of a State's records for the 12-month period is used as a basis for providing State-specific estimates (see [table I](#)).
- Reporting for any particular variable is at least 80 percent complete. In this report, no data were suppressed based on this criterion.
- A rate or percent is based on at least 20 births in the numerator.

Rates based on fewer than 20 births have a relative standard error (RSE) of about 23 percent or more and, therefore, are considered highly variable. However, some birth rates (based on data files that are less than 100 percent complete and based on 20 to 31 births) may have RSEs of 23 percent or more but are still shown instead of asterisks. As a result, caution should be exercised in analyzing rates based on 20 to 31 events. Additional information on random variation in numbers of events, rates, ratios, and percents may be found in "Reliability of estimates."

### Reliability of estimates

Preliminary estimates of births in this report are subject to variability because they are based on files that may not be complete. Record weights are used to adjust record counts to independent control totals. The lack of completeness of the vital statistics files is due to delays in receiving and processing the live-birth records.

In addition, the natality file is subject to nonsampling errors or biases. Records that were delayed and were not included in this report are assumed to have the same characteristics as the records that were included in this report. Seasonal bias may occur because file completeness is greater during the early part than during the later part of the 12-month period for which the data are processed and tabulated.

Even if the number of vital events in this report were 100 percent complete, it might be affected by random variation. Thus, when the number of events is small and the probability of such an event is small, considerable caution must be observed in interpreting the data. Such infrequent events may be assumed to follow a Poisson probability distribution. The first column of [table II](#) shows the estimated RSEs of a file that is nearly 100 percent complete. The estimated RSEs of the 2000 final data, the preliminary 2001 control totals, and the preliminary 2001 data (based on nearly 100 percent of a file) are shown in the first column of [table II](#).

Columns 2–6 of [table II](#) show estimated RSEs for various levels of file completeness (i.e., incorporate both sources of variability). The estimated RSEs in [table II](#) were computed using this formula:

**Table II. Relative standard errors for preliminary number of live births by percent of file completeness**

[Relative standard errors are expressed as a percent of the estimate]

| Estimated number of live births | Percent of file completeness      |       |       |       |       |       |
|---------------------------------|-----------------------------------|-------|-------|-------|-------|-------|
|                                 | 100                               | 95    | 90    | 80    | 70    | 60    |
|                                 | Relative standard error (percent) |       |       |       |       |       |
| 1..                             | 100.0                             | 102.6 | 105.4 | 111.8 | 119.5 | 129.1 |
| 5..                             | 44.7                              | 45.9  | 47.1  | 50.0  | 53.5  | 57.7  |
| 10..                            | 31.6                              | 32.4  | 33.3  | 35.4  | 37.8  | 40.8  |
| 20..                            | 22.4                              | 22.9  | 23.6  | 25.0  | 26.7  | 28.9  |
| 30..                            | 18.3                              | 18.7  | 19.2  | 20.4  | 21.8  | 23.6  |
| 40..                            | 15.8                              | 16.2  | 16.7  | 17.7  | 18.9  | 20.4  |
| 50..                            | 14.1                              | 14.5  | 14.9  | 15.8  | 16.9  | 18.3  |
| 60..                            | 12.9                              | 13.2  | 13.6  | 14.4  | 15.4  | 16.7  |
| 70..                            | 12.0                              | 12.3  | 12.6  | 13.4  | 14.3  | 15.4  |
| 80..                            | 11.2                              | 11.5  | 11.8  | 12.5  | 13.4  | 14.4  |
| 90..                            | 10.5                              | 10.8  | 11.1  | 11.8  | 12.6  | 13.6  |
| 100..                           | 10.0                              | 10.3  | 10.5  | 11.2  | 12.0  | 12.9  |
| 200..                           | 7.1                               | 7.3   | 7.5   | 7.9   | 8.5   | 9.1   |
| 300..                           | 5.8                               | 5.9   | 6.1   | 6.5   | 6.9   | 7.5   |
| 400..                           | 5.0                               | 5.1   | 5.3   | 5.6   | 6.0   | 6.5   |
| 500..                           | 4.5                               | 4.6   | 4.7   | 5.0   | 5.3   | 5.8   |
| 600..                           | 4.1                               | 4.2   | 4.3   | 4.6   | 4.9   | 5.3   |
| 700..                           | 3.8                               | 3.9   | 4.0   | 4.2   | 4.5   | 4.9   |
| 800..                           | 3.5                               | 3.6   | 3.7   | 4.0   | 4.2   | 4.6   |
| 900..                           | 3.3                               | 3.4   | 3.5   | 3.7   | 4.0   | 4.3   |
| 1,000..                         | 3.2                               | 3.2   | 3.3   | 3.5   | 3.8   | 4.1   |
| 2,000..                         | 2.2                               | 2.3   | 2.4   | 2.5   | 2.7   | 2.9   |
| 5,000..                         | 1.4                               | 1.5   | 1.5   | 1.6   | 1.7   | 1.8   |
| 10,000..                        | 1.0                               | 1.0   | 1.1   | 1.1   | 1.2   | 1.3   |
| 20,000..                        | 0.7                               | 0.7   | 0.7   | 0.8   | 0.8   | 0.9   |
| 50,000..                        | 0.4                               | 0.5   | 0.5   | 0.5   | 0.5   | 0.6   |
| 100,000..                       | 0.3                               | 0.3   | 0.3   | 0.4   | 0.4   | 0.4   |
| 200,000..                       | 0.2                               | 0.2   | 0.2   | 0.2   | 0.3   | 0.3   |
| 500,000..                       | 0.1                               | 0.1   | 0.1   | 0.2   | 0.2   | 0.2   |
| 1,000,000..                     | 0.1                               | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   |
| 2,000,000..                     | 0.1                               | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   |
| 4,000,000..                     | 0.1                               | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   |

$$RSE = 100 \sqrt{\frac{1}{X} + \frac{(1-f)(N-X)}{fX(N-\frac{1}{f})}}$$

$$\text{Upper limit: } X_1 + 1.96 \cdot X_1 \cdot \frac{RSE(X_1)}{100}$$

where

$f$  = the sampling fraction or the percent of file completeness/100 from table I.

$X$  = the estimated number of live births.

$N$  = the total count of live births for the United States or any State. (NOTE: The RSEs shown in table II are based on  $N = 4,000,000$ . If  $N$  is smaller, the RSEs may be slightly smaller than those shown.)

RSEs may be used to compute 95 percent confidence intervals for the number of events ( $X$ ), for a rate ( $R$ ), or for a percent ( $P$ ) and to compute statistical tests concerning the equality of two rates ( $R_1$  and  $R_2$ ) or two percents ( $P_1$  and  $P_2$ ).

For the number of live births, the 95 percent confidence interval may be computed as follows:

$$\text{Lower limit: } X_1 - 1.96 \cdot X_1 \cdot \frac{RSE(X_1)}{100}$$

As a hypothetical example, assume the number of births,  $X_1$ , is 70 from a file with 80 percent completeness. Then

$$\text{Lower limit: } 70 - 1.96 \cdot 70 \cdot \frac{13.4}{100} = 51.6$$

$$\text{Upper limit: } 70 + 1.96 \cdot 70 \cdot \frac{13.4}{100} = 88.4$$

This means that the chances are 95 times out of 100 that the confidence interval (51.6–88.4) will cover the “true” number of births.

For rates based on population estimates in the denominator, the 95 percent confidence interval may be computed as follows:

$$\text{Lower limit: } R_1 - 1.96 \cdot R_1 \cdot \frac{RSE(R_1)}{100}$$

$$\text{Upper limit: } R_1 + 1.96 \cdot R_1 \cdot \frac{RSE(R_1)}{100}$$

As a hypothetical example, assume the birth rate,  $R_1$ , is 20.0, which is based on 70 births from a file with 80 percent completeness.



$$\text{Lower limit: } 20.0 - 1.96 \cdot 20.0 \cdot \frac{13.4}{100} = 14.7$$

$$\text{Upper limit: } 20.0 + 1.96 \cdot 20.0 \cdot \frac{13.4}{100} = 25.3$$

This means that the chances are 95 times out of 100 that the confidence interval (14.7–25.3) will cover the “true” rate.

For testing the equality of two rates,  $R_1$  and  $R_2$ , the following z-test may be used to define a significance test statistic:

$$z = \frac{R_1 - R_2}{\sqrt{R_1^2 \left(\frac{\text{RSE}(R_1)}{100}\right)^2 + R_2^2 \left(\frac{\text{RSE}(R_2)}{100}\right)^2}}$$

The two-tailed 0.95 critical value for a z statistic is 1.96. Therefore, if  $|z|$  is greater than or equal to 1.96, the difference is significant at the 0.05 level. If  $|z|$  is less than 1.96, then the difference would be considered not statistically significant at the 0.05 level.

As a hypothetical example, assume  $R_1$  is the same as the above example for the current 12-month period and that  $R_2$ , 15.0, is based on 50 births occurring in the prior 12-month period (which implies that the file is approximately 100 percent complete for  $R_2$ ). The z-test may be determined as follows:

$$z = \frac{20.0 - 15.0}{\sqrt{(20.0)^2 \left(\frac{13.4}{100}\right)^2 + (15.0)^2 \left(\frac{14.1}{100}\right)^2}} = 1.46$$

Because  $|z|$  is less than 1.96, there is not a statistically significant difference between the two rates at the 0.05 level of significance.

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