

TECHNICAL APPENDIX FROM

**VITAL STATISTICS OF
THE UNITED STATES**

2000

NATALITY

**U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES**

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Statistics contact:

Data Dissemination Branch
National Center for Health Statistics
Centers for Disease Control and Prevention
6525 Belcrest Road, Room 1064
Hyattsville, MD 20782-2003
(301) 458-4636
Internet: www.cdc.gov/nchs

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Introduction

This report, published by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS), is an abridged version of the annually produced Technical Appendix and focuses on information for the 2000 data file (1). This Appendix is also included in "Vital Statistics of the United States, 2000, Volume I, Natality" (in preparation). Frequent reference will be made to the report for the 1999 data file for a historical discussion of the variables, definitions, quality, and completeness of the birth data (2). This report supplements the Technical notes section of "Births: Final Data for 2000" (3) and is recommended for use with the public-use file for 2000 births, available on CD-ROM from NCHS and the tabulated data of "Vital Statistics of the United States, 2000, Volume I, Natality" (in preparation).

Definition of live birth

Every product of conception that gives a sign of life after birth, regardless of the length of the pregnancy, is considered a live birth. This concept is included in the definition set forth by the World Health Organization in 1950 and revised in 1988 by a working group formed by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists (4, 5, 6):

Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered liveborn.

This definition distinguishes in precise terms a live birth from a fetal death (see section on fetal deaths in the Technical Appendix of volume II, *Vital Statistics of the United States*). In the interest of comparable natality statistics, both the Statistical Commission of the United Nations and CDC's NCHS have adopted this definition (7, 8, 9).

History of birth-registration area

Currently the birth-registration system of the United States covers the 50 States, the District of Columbia, the independent registration area of New York City and Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. However, in the statistical tabulations, "United States" refers only to the aggregate of the 50 States (including New York City) and the District of Columbia. Information on the history and development of the birth-registration area is available elsewhere (2).

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Sources of data

Natality statistics

Since 1985 natality statistics for all States and the District of Columbia have been based on information from the total file of records. The information is received on electronic files of individual records processed by the States and provided to NCHS through the Vital Statistics Cooperative Program. NCHS receives these files from the registration offices of all States, the District of Columbia, and New York City. Information for Puerto Rico and the Virgin Islands is also received through the Vital Statistics Cooperative Program. Information for Guam is obtained from microfilm copies of original birth certificates and is based on the total file of records for all years. Data from American Samoa first became available in 1997. Data from the Commonwealth of the Northern Mariana Islands (referred to as Northern Marianas) first became available in 1998. Similar to data from Guam, the data are obtained from microfilm copies of original birth certificates and are based on the total file of records.

U.S. natality data are limited to births occurring within the United States, including those occurring to U.S. residents and nonresidents. Births to nonresidents of the United States have been excluded from all tabulations by place of residence beginning in 1970 (for further discussion see "Classification by occurrence and residence"). Births occurring to U.S. citizens outside the United States are not included in any tabulations in this report. The data for Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Marianas are limited to births registered in these areas.

Standard certificate of live birth

The U.S. Standard Certificate of Live Birth, issued by the Public Health Service, has served for many years as the principal means of attaining uniformity in the content of the documents used to collect information on births in the United States. It has been modified in each State to the extent required by the particular State's needs or by special provisions of the State's vital statistics law. However, most State certificates conform closely in content to the standard certificate.

1989 revision--Effective January 1, 1989, a revised U.S. Standard Certificate of Live Birth (figure 4-A) replaced the 1978 revision. This revision provided a wide variety of new information on maternal and infant health characteristics, representing a significant departure from previous versions in both content and format. The most significant format change was the use of check boxes to obtain detailed medical and health information about the mother and child. Details of the nature and content of the 1989 revision are available elsewhere (2).

Classification of data

One of the principal values of vital statistics data is realized through the presentation of rates that are computed by relating the vital events of a class to the population of a similarly defined class. Vital statistics and population statistics, therefore, must be classified according to similarly defined systems and tabulated in comparable groups. Even when the variables common to both,

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such as geographic area, age, race, and sex, have been similarly classified and tabulated, differences between the enumeration method of obtaining population data and the registration method of obtaining vital statistics data may result in significant discrepancies.

The general rules used to classify geographic and personal items for live births are set forth in "Vital Statistics Classification and Coding Instructions for Live Birth Records, 1999-2001," *NCHS Instruction Manual*, Part 3a (10). This material is incorporated in the basic file layout on the CD-ROM. The instruction materials are for States to use in coding the data items; they do not include any NCHS recodes. So, the file layout is a better source of information on the code structure, since it provides the exact codes and re-codes that are available. The classification of certain important items is discussed in the following pages. Information on the completeness of reporting of birth certificate data is shown in table A, which presents a listing of items and the percent of records that were not stated for each State, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Marianas.

Classification by occurrence and residence

In tabulations by place of residence, births occurring within the United States to U.S. citizens and to resident aliens are allocated to the usual place of residence of the mother in the United States, as reported on the birth certificate. Beginning in 1970 births to nonresidents of the United States occurring in the United States are excluded from these tabulations. Births to U.S. residents occurring outside this country are not included in tabulations by place of residence.

The total count of births for the United States by place of residence and by place of occurrence will not be identical. Births to nonresidents of the United States are included in data by place of occurrence but excluded from data by place of residence, as previously indicated. See table B for the number of births by residence and occurrence for the 50 States and the District of Columbia for 2000.

Residence error--A nationwide test of birth-registration completeness in 1950 provided measures of residence error for natality statistics. According to the 1950 test (which has not been repeated), errors in residence reporting for the country as a whole tend to overstate the number of births to residents of urban areas and to understate the number of births to residents of other areas (3). Recent experience demonstrates that this is still a concern based on anecdotal evidence from the States. This tendency has assumed special importance because of a concomitant development--the increased utilization of hospitals in cities by residents of nearby places--with the result that a number of births are erroneously reported as having occurred to residents of urban areas. Another factor that contributes to this overstatement of urban births is the customary practice of using "city" addresses for persons living outside the city limits. Residence error should be taken into consideration in interpreting data for small areas and for cities. Both birth and infant mortality patterns can be affected.

Incomplete residence--Beginning in 1973 where only the State of residence is reported with no city or county specified and the State named is different from the State of occurrence, the birth is allocated to the largest city of the State of residence. Before 1973 such births were allocated to the exact place of occurrence.

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Geographic classification

The rules followed in the classification of geographic areas for live births are contained in the instruction manual mentioned previously. The geographic code structure itself for 2000 is given in another manual, "Vital Records Geographic Classification, 1995," *NCHS Instruction Manual*, Part 8, which is included with the documentation file on CD-ROM (1). The geographic code structure in 2000 is based on results of the 1990 Census of Population.

United States--In the statistical tabulations, "United States" refers only to the aggregate of the 50 States and the District of Columbia. Alaska has been included in the U.S. tabulations since 1959 and Hawaii since 1960.

Details of the classification of births for metropolitan statistical areas, metropolitan and nonmetropolitan counties, and population size groups for cities and urban places are presented elsewhere (2).

Places of less than 100,000 population are not separately identified on the public-use file because of confidentiality limitations.

Race or national origin

Beginning with the 1989 data year, birth data are tabulated primarily by race of mother. In 1989 the criteria for reporting the race of the parents did not change and continues to reflect the response of the informant (usually the mother). Beginning with the 1992 issue of *Vital Statistics of the United States*, Volume I, Natality, trend data for years beginning with 1980 have been retabulated by race of mother. The factors influencing the decision to tabulate births by race of the mother have been discussed in detail elsewhere (2, 11). Information on tabulation procedures for data by race prior to 1989 is presented elsewhere (2, 13).

The change in the tabulation of births by race presents some problems when analyzing birth data by race, particularly trend data. The problem is likely to be acute for races other than white and black.

The categories for race or national origin are "White," "Black," "American Indian" (including Aleuts and Eskimos), "Chinese," "Japanese," "Hawaiian," "Filipino," and "Other Asian or Pacific Islander" (including Asian Indian). Before 1992 there was also an "other" category, which is now combined with the "Not stated" category. Before 1978 the category "Other Asian or Pacific Islander" was not identified separately but included with "Other" races. The separation of this category from "other" allows identification of the category "Asian or Pacific Islander" by combining the new category "Other Asian or Pacific Islander" with Chinese, Japanese, Hawaiian, and Filipino.

Since 1992, States with the highest Asian or Pacific Islander (API) populations have provided NCHS with data for additional API subgroups. The API subgroups include births to Vietnamese, Asian Indian, Korean, Samoan, Guamanian, and other API women. In 2000, 11 States were included in this reporting area: California, Hawaii, Illinois, Minnesota, Missouri, New Jersey, New York, Texas, Virginia, Washington, and West Virginia, . At least two-thirds of the U.S. population of each of these additional API groups lived in the 11-State reporting area (12). The data are available on the detailed natality tapes and CD-ROMs beginning with the 1992 data

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year. An analytic report based on the 1992 data year is also available upon request (13).

If the race or national origin of an Asian parent is ill-defined or not clearly identifiable with one of the categories used in the classification (for example, if “Oriental” is entered), an attempt is made to determine the specific race or national origin from the entry for place of birth. If the birthplace is China, Japan, or the Philippines, the race of the parent is assigned to that category. When race cannot be determined from birthplace, it is assigned to the category “Other Asian or Pacific Islander.”

Hispanic origin and race are reported independently on the birth certificate. Data for Hispanic subgroups are shown in most cases for five groups: Mexican, Puerto Rican, Cuban, Central and South American, and other (and unknown) Hispanic. In tabulations of birth data by race only, data for persons of Hispanic origin are included in the data for each race group according to the mother’s reported race. The category “White” comprises births reported as white and births where race, as distinguished from Hispanic origin, is reported as Hispanic. In tabulations of birth data by race and Hispanic origin, data for persons of Hispanic origin are not further classified by race because the vast majority of births to Hispanic women are reported as white (97 percent in 2000). In these tabulations, data for non-Hispanic persons are classified according to the race of the mother because there are substantial differences in fertility and maternal and infant health between Hispanic and non-Hispanic white women. A re-code variable is available that provides cross tabulations of race by Hispanic origin.

Race or national origin not stated--If the race of the mother is not defined or not identifiable with one of the categories used in the classification (0.5 percent of births in 2000) and the race of the father is known, the race of the father is assigned to the mother. Where information for both parents is missing, the race of the mother is allocated electronically according to the specific race of the mother on the preceding record with a known race of mother. Data for both parents were missing for only 0.4 percent of birth certificates for 2000. Nearly all statistics by race or national origin for the United States as a whole in 1962 and 1963 are affected by a lack of information for New Jersey, which did not report the race of the parents in those years. Birth rates by race for those years are computed on a population base that excluded New Jersey. For the method of estimating the U.S. population by age, sex, and race excluding New Jersey in 1962 and 1963, see page 4-8 in the Technical Appendix of volume I, *Vital Statistics of the United States*, 1963. The percent of records for which Hispanic origin of the parents was not reported in 2000 is shown by State in table A.

Age of mother

Beginning in 1989 an item on the birth certificate asks for “Date of Birth.” In previous years, “Age (at time of this birth)” was requested. Not all States revised this item and therefore the age of mother either is derived from the reported month and year of birth or coded as stated on the certificate. In 2000 the mother’s age was reported directly by five States (Kentucky, Nevada, North Dakota, Virginia, and Wyoming) and American Samoa. From 1964 to 1996, age of mother was imputed for ages under 10 years and 50 years and over. The age of mother was considered not stated for ages under 10 years or 50 years and over. In 1997 age of mother was considered

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not stated for ages under 10 years or 55 years and over. The numbers of births to women aged 50-54 years are too small for computing age-specific birth rates. These births have been included with births to women aged 45-49 years for computing birth rates.

Age-specific birth rates are based on populations of women by age, prepared by the U.S. Bureau of the Census. In census years the decennial census counts are used. In intercensal years, estimates of the population of women by age are published by the U.S. Bureau of the Census in *Current Population Reports*. The U.S. and State-level birth and fertility rates for the 2000 final report of natality data are based on estimates as of July 1 projected from the 1990 census because detailed populations based on the 2000 census were not available when the report was prepared. When the necessary population estimates based on the 2000 census and intercensal estimates become available, population-based rates for the 1990s and 2000 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.

Median age of mother--Median age is the value that divides an age distribution into two equal parts, one-half of the values being less and one-half being greater. Median ages of mothers for 1960 to the present have been computed from birth rates for 5-year age groups rather than from birth frequencies. This method eliminates the effects of changes in the age composition of the childbearing population over time. Changes in the median ages from year to year can thus be attributed solely to changes in the age-specific birth rates. Trend data on the median age is shown in table 1-5 of *Vital Statistics of the United States*, volume 1, natality (at <http://www.cdc.gov/nchs/datawh/statab/unpubd/natality/natab98.htm>).

Not stated date of birth of mother-- In 2000 age of mother was not reported on 0.02 percent of the records. Beginning in 1964 birth records with date of birth of mother and/or age of mother not stated have had age imputed according to the age of mother from the previous birth record of the same race and total-birth order (total of fetal deaths and live births). (See "Computer Edits for Natality Data, Effective 1993" *NCHS Instruction Manual*, Part 12, page 9; available on request from the Division of Vital Statistics.) Editing procedures for 1963 and earlier years are described elsewhere (2).

Age of father

Age of father is derived from the reported date of birth or coded as stated on the birth certificate. If the age is under 10 years, it is considered not stated and grouped with those cases for which age is not stated on the certificate. Information on age of father is often missing on birth certificates of children born to unmarried mothers, greatly inflating the number of "not stated" in all tabulations by age of father. In computing birth rates by age of father, births tabulated as age of father not stated are distributed in the same proportions as births with known age within each 5-year-age classification of the mother. This procedure is followed because, while father's age is missing in 14 percent of the birth certificates in 2000, one third of these were on records where the mother is a teenager. This distribution procedure is done separately by race. The resulting distributions are summed to form a composite frequency distribution that is the basis for computing birth rates by age of father. This procedure avoids the distortion in rates that would

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result if the relationship between age of mother and age of father were disregarded. Births with age of father not stated are distributed only for rates and means, not for frequency tabulations (4).

Live-birth order and parity

Live-birth order and parity classifications refer to the total number of live births the mother has had including the 2000 birth. Fetal deaths are excluded.

Live-birth order indicates what number the present birth represents; for example, a baby born to a mother who has had two previous live births (even if one or both are not now living) has a live-birth order of three. Parity indicates how many live births a mother has had. Before delivery a mother having her first baby has a parity of zero and a mother having her third baby has a parity of two. After delivery the mother of a baby who is a first live birth has a parity of one and the mother of a baby who is a third live birth has a parity of three.

Live-birth order and parity are determined from two items on the birth certificate, "Live births now living" and "Live births now dead." Editing procedures for live birth order are summarized elsewhere (2).

Not stated birth order—All births tabulated in the "Not stated birth order" category are excluded from the computation of percents. In computing birth rates by live-birth order, births tabulated as birth order not stated are distributed in the same proportion as births of known live-birth order.

Educational attainment

National data on educational attainment are currently available only for the mother (2). Beginning in 1995, NCHS ceased to collect information on the educational attainment of the father.

The educational attainment of the mother is defined as "the number of years of school completed." Only those years completed in "regular" schools are counted, that is, a formal educational system of public schools or the equivalent in accredited private or parochial schools. Business or trade schools, such as beauty and barber schools, are not considered "regular" schools for the purposes of this item. No attempt has been made to convert years of school completed in foreign school systems, ungraded school systems, and so forth, to equivalent grades in the American school system. Such entries are included in the category "not stated."

Women who have completed only a partial year in high school or college are tabulated as having completed the highest preceding grade. For those certificates on which a specific degree is stated, years of school completed is coded to the level at which the degree is most commonly attained; for example, women reporting B.A., A.B., or B.S. degrees are considered to have completed 16 years of school.

Education not stated--The category "Not stated" includes all records in reporting areas for which there is no information on years of school completed as well as all records for which the information provided is not compatible with coding specifications.

Births tabulated as education not stated are excluded from the computations of percents.

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Marital status

National estimates of births to unmarried women are based on two methods of determining marital status. Beginning in 1997, the marital status of women giving birth in California and Nevada is determined by a direct question in the birth registration process. Beginning June 15, 1998, Connecticut discontinued inferring the mother's marital status and added a direct question on mother's marital status to the State's birth certificate.

In the two States (Michigan and New York) which used inferential procedures to compile birth statistics by marital status in 1999, a birth is inferred as nonmarital if either of these factors is present: a paternity acknowledgment was received or the father's name is missing. The presence of a paternity acknowledgment is the most reliable indicator that the birth is nonmarital in the States not reporting this information directly; this is now the key indicator in the nonreporting States.

The procedures for reporting marital status in California, Nevada, New York City changed beginning January 1, 1997. The methods used to determine marital status and the impact of the procedures on the data were discussed in detail in a previous report (14).

The mother's marital status was not reported in 2000 on 0.04 percent of the birth records in States reporting this information from a direct question. Marital status was imputed as "married" for these records.

When births to unmarried women are reported as second or higher order births, it is not known whether the mother was married or unmarried when the previous deliveries occurred, because her marital status at the time of these earlier births is not available from the birth record.

Place of delivery and attendant at birth

The 1989 revision of the U.S. Standard Certificate of Live Birth included separate categories for freestanding birthing centers, the mother's residence, and clinic or doctor's office as the place of birth. Beginning in 1989 births occurring in clinics and in birthing centers not attached to a hospital are classified as "Not in hospital." This change in classification may account in part for the lower proportion of "In hospital" births compared with previous years. (The change in classification of clinics should have minor impact because comparatively few births occur in these facilities, but the effect of any change in classification of freestanding birthing centers is unknown.)

Beginning in 1975 the attendant at birth and place of delivery items were coded independently, primarily to permit the identification of the person in attendance at hospital deliveries. Additional information on these items is presented elsewhere (2).

The "Not in hospital" category includes births for which no information is reported on place of birth.

Babies born on the way to or on arrival at the hospital are classified as having been born in the hospital. This may account for some of the hospital births not delivered by physicians or midwives.

In 2000 Illinois collected data on certified nurse-midwives (CNM) and made corrections for "other midwife" and "other" categories for the first time. As a result, the number of CNMs

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significantly increased while “other midwife” sharply decreased when compared to the previous year.

Procedures in some hospitals may require that a physician be listed as the attendant for every birth and that a physician sign each birth certificate, even if the birth is attended by a midwife and no physician is physically present. Therefore, the number of live births attended by midwives may be understated in some areas.

Birthweight

Birthweight is reported in some areas in pounds and ounces rather than in grams. However, the metric system has been used in tabulating and presenting the statistics to facilitate comparison with data published by other groups. The categories for birthweight were changed in 1979 to be consistent with the recommendations in the *Ninth Revision of the International Classification of Diseases (ICD-9)* and remain the same for the Tenth Revision of the International Classification of Diseases (ICD-10) (6). The categories in gram intervals and their equivalents in pounds and ounces are as follows:

Less than 500 grams	= 1 lb 1 oz or less
500-999 grams	= 1 lb 2 oz-2 lb 3 oz
1,000-1,499 grams	= 2 lb 4 oz-3 lb 4 oz
1,500-1,999 grams	= 3 lb 5 oz-4 lb 6 oz
2,000-2,499 grams	= 4 lb 7 oz-5 lb 8 oz
2,500-2,999 grams	= 5 lb 9 oz-6 lb 9 oz
3,000-3,499 grams	= 6 lb 10 oz-7 lb 11 oz
3,500-3,999 grams	= 7 lb 12 oz-8 lb 13 oz
4,000-4,499 grams	= 8 lb 14 oz-9 lb 14 oz
4,500-4,999 grams	= 9 lb 15 oz-11 lb 0 oz
5,000 grams or more	= 11 lb 1 oz or more

The ICD-9 and ICD-10 define low birthweight as less than 2,500 grams. This is a shift of 1 gram from the previous criterion of 2,500 grams or less, which was recommended by the American Academy of Pediatrics in 1935 and adopted in 1948 by the World Health Organization in the *Sixth Revision of the International Lists of Diseases and Causes of Death*.

After data classified by pounds and ounces are converted to grams, median weights are computed and rounded before publication. To establish the continuity of class intervals needed to convert pounds and ounces to grams, the end points of these intervals are assumed to be half an ounce less at the lower end and half an ounce more at the upper end. For example, 2 lb 4 oz-3 lb 4 oz is interpreted as 2 lb 3 ½ oz-3 lb 4 ½ oz.

Births for which birthweight is not reported are excluded from the computation of percents and medians.

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Period of gestation

The period of gestation is defined as beginning with the first day of the last normal menstrual period (LMP) and ending with the day of the birth. The LMP is used as the initial date because it can be more accurately determined than the date of conception, which usually occurs 2 weeks after the LMP.

Births occurring before 37 completed weeks of gestation are considered to be “preterm” or “premature” for purposes of classification. At 37-41 weeks gestation, births are considered to be “term,” and at 42 completed weeks and over, “postterm.” These distinctions are according to the ICD-9 and ICD-10 (6) definitions.

The 1989 revision of the U.S. Standard Certificate of Live Birth included a new item, “clinical estimate of gestation,” that is being compared with length of gestation computed from the LMP date when the latter appears to be inconsistent with birthweight. This is done for normal weight births of apparently short gestations and very low birthweight births reported to be full term. The use of the clinical estimate in the 2000 data file is described in the Technical notes of “Births: Final Data for 2000” (4).

Before 1981, the period of gestation was computed only when there was a valid month, day, and year of LMP. However, length of gestation could not be determined from a substantial number of live-birth certificates each year because the day of LMP was missing. Beginning in 1981, weeks of gestation have been imputed for records with missing day of LMP when there is a valid month and year. The imputation procedure and the effect of this procedure on the data are described elsewhere (2,15).

Because of postconception bleeding or menstrual irregularities, the presumed date of LMP may be in error. In these instances the computed gestational period may be longer or shorter than the true gestational period, but the extent of such errors is unknown.

Month of pregnancy prenatal care began

For those records in which the name of the month is entered for this item, instead of first, second, third, and so forth, the month of pregnancy in which prenatal care began is determined from the month named and the month last normal menses began. For these births, if the item “Date last normal menses began” is not stated, the month of pregnancy in which prenatal care began is tabulated as not stated.

Number of prenatal visits

Tabulations of the number of prenatal visits were presented for the first time in 1972. Beginning in 1989 these data were collected from the birth certificates of all States. Percent distributions and the median number of prenatal visits exclude births to mothers who had no prenatal care.

Apgar score

The 1- and 5-minute Apgar scores were added to the U.S. Standard Certificate of Live Birth in 1978 to evaluate the condition of the newborn infant at 1 and 5 minutes after birth. The Apgar

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score is a useful measure of the need for resuscitation and a predictor of the infant's chances of surviving the first year of life. It is a summary measure of the infant's condition based on heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each of these factors is given a score of 0, 1, or 2; the sum of these 5 values is the Apgar score, which ranges from 0 to 10. A score of 10 is optimum, and a low score raises some doubts about the survival and subsequent health of the infant. Beginning in 1995, NCHS collected information only on the 5-minute Apgar score. Since 1991, the reporting area for the 5-minute Apgar score has been comprised of 48 States and the District of Columbia, accounting for 78 percent of all births in the United States in 2000. California and Texas did not have information on Apgar scores on their birth certificates.

Tobacco and alcohol use during pregnancy

The checkbox format allows for classification of a mother as a smoker or drinker during pregnancy and for reporting the average number of cigarettes smoked per day or drinks consumed per week. Procedures for determining the consistency between smoking and/or drinking status and the quantity of cigarettes or drinks reported are described elsewhere (2).

For 2000 information on number of cigarettes smoked per day was reported in a consistent manner for 46 States, the District of Columbia, and New York City (figure 4-A), accounting for 87 percent of U.S. births. Indiana and New York State (except for New York City) reported this information but in a format that was inconsistent with NCHS standards. Information was not available for California and South Dakota.

Weight gain during pregnancy

Weight gain is reported in pounds. A loss of weight is reported as zero gain. Computations of median weight gain were based on ungrouped data. This item was included on the certificates of 49 States and the District of Columbia; California did not report this information. This reporting area excluding California accounted for 87 percent of all births in the United States in 2000.

Medical risk factors for this pregnancy

An item on medical risk factors was included on the 1989 birth certificate, but 2 States did not report all of the 16 risk factors in 2000. Texas did not report genital herpes or uterine bleeding, and Kansas did not report Rh sensitization.

The format allows for the designation of more than one risk factor and includes a choice of "None." Accordingly, if the item is not completed, it is classified as "Not stated."

Definitions adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics are available elsewhere (4).

Obstetric procedures

This item includes six specific obstetric procedures. Birth records with "Obstetric procedures" left blank are considered "not stated." Data on obstetric procedures were reported by all States and the District of Columbia in 2000.

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Definitions adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the National Association for Public Health Statistics and Information Systems (NAPHSIS), formerly the Association for Vital Records and Health Statistics are available elsewhere (4).

Complications of labor and/or delivery

The checkbox format allows for the selection of 15 specific complications and for the designation of more than 1 complication where appropriate. A choice of “None” is also included. Accordingly, if the item is not completed, it is classified as “not stated.”

All States and the District of Columbia included this item on their birth certificates in 2000. However, Texas did not report all of the complications. Texas did not report anesthetic complications or fetal distress.

Definitions adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials are available elsewhere (4).

Abnormal conditions of the newborn

This item provides information on eight specific abnormal conditions. More than one abnormal condition may be reported for a given birth or “None” may be selected. If the item is not completed it is tabulated as “not stated.” This item was included on the birth certificates of all States and the District of Columbia in 2000. However, four areas did not include all conditions. Nebraska and Texas did not report birth injury, New York City did not report assisted ventilation less than 30 minutes or assisted ventilation of 30 minutes or more, and Wisconsin did not report fetal alcohol syndrome.

Definitions adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics are available elsewhere (4).

Congenital anomalies of child

The data provided in this item relate to 21 specific anomalies or anomaly groups. It is well documented that congenital anomalies, except for the most visible and most severe, are incompletely reported on birth certificates (16). The completeness of reporting specific anomalies depends on how easily they are recognized in the short time between birth and birth-registration. Forty-nine States and the District of Columbia included this item on their birth certificates (New Mexico did not). This reporting area included 99 percent of all births in the United States in 2000. The format allows for the identification of more than one anomaly including a choice of “None” should no anomalies be evident. The category “not stated” includes birth records for which the item is not completed.

Definitions adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials are available elsewhere (4).

Method of delivery

The birth certificate contains a checkbox item on method of delivery. The choices include

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vaginal delivery, with the additional options of forceps, vacuum, and vaginal birth after previous cesarean section (VBAC), as well as a choice of primary or repeat cesarean. When only forceps, vacuum, or VBAC is checked, a vaginal birth is assumed. In 2000 this information was collected from the birth certificates of all States and the District of Columbia.

Several rates are computed for method of delivery. The overall cesarean section rate or total cesarean rate is computed as the proportion of all births that were delivered by cesarean section. The primary cesarean rate is a measure that relates the number of women having a primary cesarean birth to all women giving birth who have never had a cesarean delivery. The denominator for this rate is the sum of women with a vaginal birth excluding VBACs and women with a primary cesarean birth. The rate for vaginal birth after previous cesarean (VBAC) delivery is computed by relating all VBAC deliveries to the sum of VBAC and repeat cesarean deliveries, that is, to women with a previous cesarean section. VBAC rates for first births are computed because the rates are computed on the basis of previous pregnancies, not just live births.

Hispanic parentage

The 1989 revision of the U.S. Standard Certificate of Live Births includes items to identify the Hispanic origin of the parents. All 50 States and the District of Columbia reported Hispanic origin of the parents for 2000.

In computing birth and fertility rates for the Hispanic population, births with origin of mother not stated are included with non-Hispanic births rather than being distributed. Thus, rates for the Hispanic population are underestimates of the true rates to the extent that the births with origin of mother not stated (1.1 percent in 2000) were actually to Hispanic mothers. The population with origin not stated was imputed. The effect on the rates is believed to be small.

Quality of data

Although vital statistics data are useful for a variety of administrative and scientific purposes, they cannot be correctly interpreted unless various qualifying factors and methods of classification are taken into account. The factors to be considered depend on the specific purposes for which the data are to be used. It is not feasible to discuss all the pertinent factors in the use of vital statistics tabulations, but some of the more important ones should be mentioned.

Most of the factors limiting the use of data arise from imperfections in the original records or from the impracticability of tabulating these data in very detailed categories. These limitations should not be ignored, but their existence does not lessen the value of the data for most general purposes.

Completeness of registration

An estimated 99 percent of all births occurring in the United States in 2000 were registered; for white births registration was 99.5 percent complete and for all other births, 98.6 percent complete. These estimates are based on the results of the 1964-68 test of birth-registration completeness according to place of delivery (in or out of hospital) and race. The primary purpose

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of the test was to obtain current measures of registration completeness for births in and out of hospital by race on a national basis. Data for States were not available as they had been from the previous birth-registration tests in 1940 and 1950. A detailed discussion of the method and results of the 1964-68 birth-registration test is available (17). Information on procedures for adjusting births for underregistration (for cohort fertility tables) is presented elsewhere in this report (2).

Completeness of reporting

Interpretation of these data must include evaluation of item completeness. The percent “not stated” is one measure of the quality of the data. Completeness of reporting varies among items and States. See table A for the percent of birth records on which specified items were not stated.

Quality control procedures

As electronic files are received at NCHS, they are automatically checked for completeness, individual item code validity, and unacceptable inconsistencies between data items. The registration area is notified of any problems. In addition, NCHS staff review the files on an ongoing basis to detect problems in overall quality such as inadequate reporting for certain items, failure to follow NCHS coding rules, and systems and software errors. Traditionally, quality assurance procedures were limited to review and analysis of differences between NCHS and registration area code assignments for a small sample of records. In recent years, as electronic birth registration became prevalent, this procedure was augmented by analyses of year-to-year and area-to-area variations in the data. These analyses are based on preliminary tabulations of the data that are cumulated by State on a year to date basis each month. All differences that are judged to have consequences for quality and completeness are investigated by NCHS. In the review process, statistical tests are used to call initial attention to differences for possible follow-up. As necessary, registration areas are informed of differences encountered in the tables and asked to verify the counts or to determine the nature of the differences. Missing records (except those permanently voided) and other problems detected by NCHS are resolved and corrections transmitted to NCHS in the same manner as for those corrections identified by the registration area.

Random variation and significance testing for natality data

A detailed discussion of random variation and significance testing for natality data is presented in the Technical notes of “Births: Final Data for 2000.” (4) This section presents information specifically for Hispanic subgroups.

Computing confidence intervals for Hispanic subgroups

Tables 6, 8, 9, and 14 in “Births: Final Data for 2000” and tables 1-4 and 1-12 in Vital Statistics of the United States, part 1 Natality show birth and fertility rates for Mexicans, Puerto Ricans, Cubans, and “Other” Hispanics. Population estimates are derived from the U.S. Census Bureau’s *Current Population Survey* and adjusted to resident population control totals as shown in Table 4-

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2. As a result, the rates are subject to the variability of the denominator as well as the numerator. For these Hispanic subgroups only (not for all origin, total Hispanic, total non-Hispanic, non-Hispanic white, or non-Hispanic black populations), the following formulas are used:

Approximate 95 percent Confidence Interval: 100 or more births

When the number of events in the numerator is greater than 100, the confidence interval for the birth rate can be estimated from the following formulas:

For crude and age-specific birth rates,

$$\text{Lower limit: } R \pm 1.96 \left(R \left(\sqrt{\left(\frac{1}{B}\right) \% f \left(a \% \frac{b}{P}\right)} \right)$$

$$\text{Upper limit: } R \pm 1.96 \left(R \left(\sqrt{\left(\frac{1}{B}\right) \% f \left(a \% \frac{b}{P}\right)} \right)$$

where

R = rate (births per 1,000 population).

B = total number of births upon which rate is based

f = factor that depends on whether the population estimate is based on demographic analysis or CPS and the number of years used, equals 0.670 for single year.

a and b are single year averages of the 1999 and 2000 CPS standard error parameters; a equals -0.000230 and b equals 7,486 (18, 19).

P = total estimated population upon which rate is based

Example

Suppose that the fertility rate of Cuban women 15-44 years of age was 51.2 per 1,000 based on 13,088 births in the numerator and an estimated resident population of 255,399 in the denominator. The 95 percent confidence interval would be:

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$$\begin{aligned}
 \text{Lower limit} &= 51.2 - 1.96 * 51.2 * \sqrt{\left(\frac{1}{13,088}\right) + 0.670 \left[-0.000230 + \left(\frac{7,486}{255,399}\right)\right]} \\
 &= 51.2 - 1.96 * 51.2 * \sqrt{0.000076405 + (0.670 * 0.029081)} \\
 &= 51.2 - 1.96 * 51.2 * \sqrt{0.019561} \\
 &= 51.2 - 1.96 * 51.2 * 0.139857 \\
 &= 37.17
 \end{aligned}$$

$$\begin{aligned}
 \text{Upper limit} &= 51.2 + 1.96 * 51.2 * \sqrt{\left(\frac{1}{13,088}\right) + 0.670 \left[-0.000230 + \left(\frac{7,486}{255,399}\right)\right]} \\
 &= 51.2 + 1.96 * 51.2 * \sqrt{0.000076405 + (0.670 * 0.029081)} \\
 &= 51.2 + 1.96 * 51.2 * \sqrt{0.019561} \\
 &= 51.2 + 1.96 * 51.2 * 0.139857 \\
 &= 65.23
 \end{aligned}$$

This means that the chances are 95 out of 100 that the actual fertility rate of Cuban women 15-44 years of age lies between 37.17 and 65.23.

Approximate 95 percent Confidence Interval: 1-99 births

When the number of events in the numerator is less than 20, an asterisk is shown in place of the rate. When the number of events in the numerator is greater than 20 but less than 100, the confidence interval for the birth rate can be estimated using the formulas that follow and the values in Table C.

For crude and age-specific birth rates,

$$\text{Lower: } R (L (1 \& \alpha ' .96, B) (\left(1 \& 2.576 \sqrt{ f \left(a \% \frac{b}{P} \right) } \right))$$

$$\text{Upper: } R (U (1 \& \alpha ' .96, B) (\left(1 \& 2.576 \sqrt{ f \left(a \% \frac{b}{P} \right) } \right))$$

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where

R = rate (births per 1,000 population).

B = total number of births upon which rate is based.

L = the value in Table C that corresponds to the number B , using the 96 percent CI column

U = the value in Table C that corresponds to the number B , using the 96 percent CI column

f = factor that depends on whether the population estimate is based on demographic analysis or CPS and the number of years used, equals 0.670 for single year.

a and b factors are CPS standard error parameters. (see previous section on 95 percent confidence interval for 100 or more births for description and specific values)

P = total estimated population upon which rate is based.

Example

Suppose that the birth rate of Puerto Rican women 45-49 years of age was 0.4 per 1,000, based on 35 births in the numerator and an estimated resident population of 87,892 in the denominator. Using Table C, the 95 percent confidence interval would be:

$$\begin{aligned} \text{Lower limit} &= 0.4 * 0.68419 * \left(1 - 2.576 \sqrt{0.670 \left(-0.000230 + \left(\frac{7,486}{87,892} \right) \right)} \right) \\ &= 0.4 * 0.68419 * (1 - 2.576 / .056912) \\ &= 0.4 * 0.68419 * (1 - 2.576 * 0.23856) \\ &= 0.4 * 0.68419 * 0.38547 \\ &= 0.1 \end{aligned}$$

$$\begin{aligned} \text{Upper limit} &= 0.4 * 1.41047 * \left(1 + 2.576 \sqrt{0.670 \left(-0.000230 + \left(\frac{7,486}{87,892} \right) \right)} \right) \\ &= 0.4 * 1.41047 * (1 + 2.576 / .056912) \\ &= 0.4 * 1.41047 * (1 + 2.576 * 0.23856) \\ &= 0.4 * 1.41047 * 1.61453 \\ &= 0.9 \end{aligned}$$

This means that the chances are 95 out of 100 that the actual birth rate of Puerto Rican women 45-49 years of age lies between 0.1 and 0.9.

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NOTE: In the formulas above, the confidence limits are estimated from the nonsampling error in the number of births, the numerator, and the sampling error in the population estimate, the denominator. A 96 percent standard error is computed for the numerator and a 99 percent standard error is computed for the denominator in order to compute a 95 percent confidence interval for the rate.

Significance Testing for Hispanic Subgroups

When both rates are based on 100 or more events, the difference between the two rates is considered statistically significant if it exceeds the statistic in the formula below. This statistic equals 1.96 times the standard error for the difference between two rates.

$$1.96 * \sqrt{R_1^2 * \left[\left(\frac{1}{B_1} \right) + f \left(a + \frac{b}{P_1} \right) \right] + R_2^2 * \left[\left(\frac{1}{B_2} \right) + f \left(a + \frac{b}{P_2} \right) \right]}$$

If the difference is greater than this statistic, then the difference would occur by chance less than 5 times out of 100. If the difference is less than this statistic, the difference might occur by chance more than 5 times out of 100. We would therefore conclude that the difference is not statistically significant at the 95-percent confidence level.

Example

Suppose the birth rate for Puerto Rican mothers 15-19 years of age (R_1) is 80.6, based on 11,978 births and an estimated population of 148,673, and the birth rate for Cuban mothers 15-19 years of age (R_2) is 27.1, based on 997 births and an estimated population of 36,782. Using the above formula, the z score is computed as follows:

$$1.96 * \sqrt{80.6^2 * \left[\left(\frac{1}{11,978} \right) + 0.670 \left(-0.000230 + \frac{7,486}{148,673} \right) \right] + 27.1^2 * \left[\left(\frac{1}{997} \right) + 0.670 \left(-0.000230 + \frac{7,486}{36,782} \right) \right]}$$

$$1.96 * \sqrt{6,496.36 * [0.000083486 + 0.670(-0.000230 + 0.050352)] + 734.41 * [0.0010030 + 0.670(-0.000230 + 0.20352)]}$$

$$1.96 * \sqrt{(6,496.36 * 0.033665) + (734.41 * 0.13721)}$$

$$1.96 * \sqrt{218.70 + 100.77}$$

$$1.96 * 17.87$$

$$= 35.03$$

Since the difference between the two rates of 53.5 is greater than the value above, the two rates are statistically significantly different at the 0.05 level of significance.

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Computation of rates and other measures

Population bases

The rates shown in this report were computed on the basis of population statistics prepared by the U.S. Bureau of the Census. Rates for 1940, 1950, 1960, 1970, 1980, and 1990 are based on the population enumerated as of April 1 in the censuses of those years. Rates for all other years are based on the estimated midyear (July 1) population for the respective years. The U.S. and State-level birth and fertility rates for 2000 are based on estimates as of July 1 projected from the 1990 census. This was necessary because detailed populations based on the 2000 census were not available when this report was prepared. (See Table 4-3) Birth rates for the United States, individual States, and metropolitan areas are based on the total resident populations of the respective areas (Table 4-4). Except as noted these populations exclude the Armed Forces abroad but include the Armed Forces stationed in each area. The resident population of the birth- and death-registration States for 1900-32 and for the United States for 1900-2000 is shown in table 4-1. In addition, the population including Armed Forces abroad is shown for the United States. Table D shows the sources for these populations. A detailed discussion of historical population bases is presented elsewhere (2).

Net census undercounts and overcounts

Studies conducted by the U.S. Bureau of the Census indicate that some age, race, and sex groups are more completely enumerated than others. These census miscounts can have consequences for vital statistics measures. For example, an adjustment to increase the population denominator would result in a smaller rate compared to the unadjusted rate. A more detailed discussion of census undercounts and overcounts can be found in the 1999 Technical appendix (2). Adjusted rates for 1990 can be computed by multiplying the reported rates by ratios of the 1990 census-level population adjusted for the estimated net census miscounts, which are shown in table E.

Cohort fertility tables

The various fertility measures shown for cohorts of women are computed from births adjusted for underregistration and population estimates corrected for under enumeration and misstatement of age. Data published after 1974 use revised population estimates prepared by the U.S. Bureau of the Census and have been expanded to include data for the two major racial groups. Heuser has prepared a detailed description of the methods used in deriving these measures as well as more detailed data for earlier years (20). These tables for current years are available at <http://www.cdc.gov/nchs/datawh/statab/unpubd/natality/natab98.htm>.

Parity distribution--The percent distribution of women by parity (number of children ever born alive to mother) is derived from cumulative birth rates by order of birth. The percent of zero-parity women is found by subtracting the cumulative first birth rate from 1,000 and dividing by 10. The proportions of women at parities one through six are found from the following

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formula:

$$\text{Percent at N parity} = ((\text{cum. rate, order N}) - (\text{cum. rate, order N} + 1)) / 10$$

The percent of women at seventh and higher parities is found by dividing the cumulative rate for seventh-order births by 10.

Birth probabilities—Birth probabilities indicate the likelihood that a woman of a certain parity and age at the beginning of the year will have a child during the year. Birth probabilities differ from central birth rates in that the denominator for birth probabilities is specific for parity as well as for age.

Total fertility rate

The total fertility rate is the sum of the birth rates by age of mother (in 5-year age groups) multiplied by 5. It is an age-adjusted rate because it is based on the assumption that there are the same number of women in each age group. The rate of 2,130 in 2000, for example, means that if a hypothetical group of 1,000 women were to have the same birth rates in each age group that were observed in the actual childbearing population in 2000, they would have a total of 2,130 children by the time they reached the end of the reproductive period (taken here to be age 50 years), assuming that all of the women survived to that age.

Seasonal adjustment of rates

The seasonally adjusted birth and fertility rates are computed from the X-11 variant of Census Method II (21). This method of seasonal adjustment used since 1964 differs slightly from the U.S. Bureau of Labor Statistics (BLS) Seasonal Factor Method, which was used for Vital Statistics of the United States, 1964. The fundamental technique is the same in that it is an adaptation of the ratio-to-moving-average method. Before 1964 the method of seasonal adjustment was based on the X-9 variant and other variants of Census Method II. A comparison of the Census Method II with the BLS Seasonal Factor Method shows the differences in the seasonal patterns of births to be negligible.

Computations of percents, percent distributions, and medians

Births for which a particular characteristic is unknown were subtracted from the figures for total births that were used as denominators before percents, percent distributions, and medians were computed. The percent of records with missing information for each item is shown by State in table A. The median number of prenatal visits also excludes births to mothers who had no prenatal care. Computations of the median years of school completed and the median number of prenatal visits were based on ungrouped data. The median age of mother is computed from birth rates in 5-year age groups, which eliminates the effects of changes in the age composition of the childbearing population over time. The procedures for distributing not stated age of father in order to compute mean ages are described in the section “age of father.” An asterisk is shown in place of any derived statistic based on fewer than 20 births in the numerator or denominator.

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U.S. STANDARD
CERTIFICATE OF LIVE BIRTH

LOCAL FILE NUMBER

BIRTH NUMBER

CHILD

1. CHILD'S NAME (First, Middle, Last)		2. DATE OF BIRTH (Month, Day, Year)	3. TIME OF BIRTH
4. SEX	5. CITY, TOWN, OR LOCATION OF BIRTH		6. COUNTY OF BIRTH
7. PLACE OF BIRTH: <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding Birthing Center <input type="checkbox"/> Clinic/Doctor's Office <input type="checkbox"/> Residence <input type="checkbox"/> Other (Specify)			8. FACILITY NAME (If not institution, give street and number)

CERTIFIER/
ATTENDANT

DEATH UNDER
ONE YEAR OF
AGE
Enter State File
Number of death
certificate for
this child

9. I certify that this child was born alive at the place and time and on the date stated. Signature	10. DATE SIGNED (Month, Day, Year)	11. ATTENDANT'S NAME AND TITLE (If other than certifier) (Type/Print) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify)
12. CERTIFIER'S NAME AND TITLE (Type/Print) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Hospital Admin. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify)		13. ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route Number, City or Town, State, Zip Code)

MOTHER

14. REGISTRAR'S SIGNATURE		15. DATE FILED BY REGISTRAR (Month, Day, Year)	
16a. MOTHER'S NAME (First, Middle, Last)	16b. MAIDEN SURNAME	17. DATE OF BIRTH (Month, Day, Year)	
18. BIRTHPLACE (State or Foreign Country)	19a. RESIDENCE—STATE	19b. COUNTY	19c. CITY, TOWN, OR LOCATION
19d. STREET AND NUMBER		19e. INSIDE CITY LIMITS? (Yes or no)	20. MOTHER'S MAILING ADDRESS (If same as residence, enter Zip Code on

FATHER

21. FATHER'S NAME (First, Middle, Last)	22. DATE OF BIRTH (Month, Day, Year)	23. BIRTHPLACE (State or Foreign Country)
---	--------------------------------------	---

INFORMANT

24. I certify that the personal information provided on this certificate is correct to the best of my knowledge and belief. Signature of Parent or Other Informant

INFORMATION FOR MEDICAL AND HEALTH USE ONLY

MOTHER

FATHER

25. OF HISPANIC ORIGIN? (Specify No or Yes—If yes, specify Cuban, Mexican, Puerto Rican, etc.)		26. RACE—American Indian, Black, White, etc. (Specify below)		27. EDUCATION (Specify only highest grade completed) Elementary/Secondary (0-12) | College (1-4 or 5+)	
25a. <input type="checkbox"/> No <input type="checkbox"/> Yes Specify:		26a.		27a.	
25b. <input type="checkbox"/> No <input type="checkbox"/> Yes Specify:		26b.		27b.	
28. PREGNANCY HISTORY (Complete each section)			29. MOTHER MARRIED? (At birth, conception, or any time between) (Yes or no)		30. DATE LAST NORMAL MENSTRUATION BEGAN (Month, Day, Year)
LIVE BIRTHS (Do not include this child)		OTHER TERMINATIONS (Spontaneous and induced at any time after conception)	31. MONTH OF PREGNANCY PRENATAL CARE BEGAN—First, Second, Third, etc. (Specify)		32. PRENATAL VISITS—Total Number (If none, so state)
28a. Now Living Number _____ <input type="checkbox"/> None	28b. Now Dead Number _____ <input type="checkbox"/> None	28d. Number _____ <input type="checkbox"/> None	33. BIRTH WEIGHT (Specify unit)		34. CLINICAL ESTIMATE OF GESTATION (Weeks)
28c. DATE OF LAST LIVE BIRTH (Month, Year)		28e. DATE OF LAST OTHER TERMINATION (Month, Year)	35a. PLURALITY—Single, Twin, Triplet, etc. (Specify)		35b. IF NOT SINGLE BIRTH—Born First, Second, Third, etc. (Specify)
36. APGAR SCORE			37a. MOTHER TRANSFERRED PRIOR TO DELIVERY? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, enter name of facility transferred from:		
36a. 1 Minute	36b. 5 Minutes	37b. INFANT TRANSFERRED? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, enter name of facility transferred to:			

MULTIPLE BIRTHS
Enter State File
Number for Mate(s)
LIVE BIRTH(S)

FETAL DEATH(S)

38a. MEDICAL RISK FACTORS FOR THIS PREGNANCY

(Check all that apply)

- Anemia (Hct. <30/Hgb. <10) 01
- Cardiac disease 02
- Acute or chronic lung disease 03
- Diabetes 04
- Genital herpes 05
- Hydramnios/Oligohydramnios 06
- Hemoglobinopathy 07
- Hypertension, chronic 08
- Hypertension, pregnancy-associated 09
- Eclampsia 10
- Incompetent cervix 11
- Previous infant 4000+ grams 12
- Previous preterm or small-for-gestational-age infant 13
- Renal disease 14
- Rh sensitization 15
- Uterine bleeding 16
- None 00
- Other _____ 17

(Specify)

38b. OTHER RISK FACTORS FOR THIS PREGNANCY

(Complete all items)

- Tobacco use during pregnancy Yes No
- Average number cigarettes per day _____
- Alcohol use during pregnancy Yes No
- Average number drinks per week _____
- Weight gained during pregnancy _____ lbs.

39. OBSTETRIC PROCEDURES

(Check all that apply)

- Amniocentesis 01
- Electronic fetal monitoring 02
- Induction of labor 03
- Stimulation of labor 04
- Tocolysis 05
- Ultrasound 06
- None 00
- Other _____ 07

(Specify)

40. COMPLICATIONS OF LABOR AND/OR DELIVERY

(Check all that apply)

- Febrile (>100°F. or 38°C.) 01
- Meconium, moderate/heavy 02
- Premature rupture of membrane (>12 hours) 03
- Abruptio placenta 04
- Placenta previa 05
- Other excessive bleeding 06
- Seizures during labor 07
- Precipitous labor (<3 hours) 08
- Prolonged labor (>20 hours) 09
- Dysfunctional labor 10
- Breech/Malpresentation 11
- Cephalopelvic disproportion 12
- Cord prolapse 13
- Anesthetic complications 14
- Fetal distress 15
- None 00
- Other _____ 16

(Specify)

41. METHOD OF DELIVERY *(Check all that apply)*

- Vaginal 01
- Vaginal birth after previous C-section 02
- Primary C-section 03
- Repeat C-section 04
- Forceps 05
- Vacuum 06

42. ABNORMAL CONDITIONS OF THE NEWBORN

(Check all that apply)

- Anemia (Hct. <39/Hgb. <13) 01
- Birth injury 02
- Fetal alcohol syndrome 03
- Hyaline membrane disease/RDS 04
- Meconium aspiration syndrome 05
- Assisted ventilation <30 min 06
- Assisted ventilation ≥30 min 07
- Seizures 08
- None 00
- Other _____ 09

(Specify)

43. CONGENITAL ANOMALIES OF CHILD

(Check all that apply)

- Anencephalus 01
- Spina bifida/Meningocele 02
- Hydrocephalus 03
- Microcephalus 04
- Other central nervous system anomalies
(Specify) _____ 05
- Heart malformations 06
- Other circulatory/respiratory anomalies
(Specify) _____ 07
- Rectal atresia/stenosis 08
- Tracheo-esophageal fistula/ Esophageal atresia 09
- Omphalocele/ Gastroschisis 10
- Other gastrointestinal anomalies
(Specify) _____ 11
- Malformed genitalia 12
- Renal agenesis 13
- Other urogenital anomalies
(Specify) _____ 14
- Cleft lip/palate 15
- Polydactyly/Syndactyly/Adactyly 16
- Club foot 17
- Diaphragmatic hernia 18
- Other musculoskeletal/integumental anomalies
(Specify) _____ 19
- Down's syndrome 20
- Other chromosomal anomalies
(Specify) _____ 21
- None 00
- Other _____ 22

(Specify)

Table A. Percent of birth records on which specified items were not stated: United States and each State and territory, 2000

Area	[Page 1 of 2] [By place of residence]													
	All births	Place of birth	Attendant at birth	Mother's birthplace	Father's age	Father's race	Hispanic Origin		Educational attainment of mother	Live-birth order	Length of gestation	Month prenatal care began	Number of prenatal visits	
							Mother	Father						
Total of reporting areas 1/	4,058,814	0.0	0.0	0.3	13.7	14.4	1.1	14.1	1.5	0.4	1.1	2.7	3.7	
Alabama	63,299	0.0	0.0	0.1	22.0	22.0	0.1	21.9	0.3	0.0	0.1	0.4	0.6	
Alaska	9,974	0.1	0.1	0.8	13.2	14.6	3.6	15.4	3.0	1.1	0.4	3.5	4.4	
Arizona	85,273	0.0	0.0	0.2	19.3	20.6	1.3	21.1	2.3	0.4	0.1	2.0	4.4	
Arkansas	37,783	0.0	0.0	0.2	19.3	20.5	0.3	19.9	0.4	0.1	0.3	2.3	2.5	
California	531,959	0.0	0.0	0.2	7.1	6.8	0.6	6.2	1.4	0.1	2/ 5.7	1.7	3.3	
Colorado	65,438	-	-	0.4	8.3	8.8	0.1	8.9	1.3	0.1	0.1	1.4	1.5	
Connecticut	43,026	-	0.0	0.2	10.4	11.7	2.2	12.2	2.3	5.7	0.2	3.4	5.9	
Delaware	11,051	-	0.0	0.3	29.7	30.6	0.2	29.6	0.3	0.1	0.1	0.3	0.6	
District of Columbia	7,666	-	-	0.1	41.8	50.2	0.4	41.6	7.7	0.0	0.5	17.1	18.6	
Florida	204,125	0.0	0.0	0.1	16.8	17.0	0.1	18.3	0.5	0.0	0.1	1.0	2.2	
Georgia	132,644	0.0	0.0	0.2	17.5	18.7	1.4	18.6	2.0	0.4	0.2	4.3	3.7	
Hawaii	17,551	-	-	0.1	9.4	9.5	0.1	9.1	0.5	0.0	2.5	2.4	2.5	
Idaho	20,366	0.0	0.0	0.4	7.7	11.4	0.5	10.5	2.9	0.5	0.4	2.6	3.3	
Illinois	185,036	0.0	0.0	0.1	13.8	15.4	0.0	15.4	0.9	0.1	0.2	2.1	2.3	
Indiana	87,699	0.0	0.0	0.1	13.1	13.1	0.4	13.1	0.8	0.1	0.1	0.9	1.9	
Iowa	38,266	0.0	0.0	0.1	12.8	14.1	0.6	14.2	1.0	0.0	0.1	1.3	3.4	
Kansas	39,666	0.0	0.1	0.0	10.0	10.6	1.1	11.5	0.4	0.0	0.1	0.7	1.1	
Kentucky	56,029	0.0	0.1	0.0	19.2	22.1	0.1	22.0	0.3	0.1	0.1	1.2	1.5	
Louisiana	67,898	0.0	0.1	0.0	21.5	21.6	0.1	21.6	0.2	0.1	0.1	0.4	0.4	
Maine	13,603	0.0	0.0	0.0	8.3	12.4	0.3	8.7	0.9	0.4	0.1	0.7	0.8	
Maryland	74,316	0.0	0.0	0.5	12.2	12.8	0.3	10.6	1.7	0.1	0.3	2.7	4.5	
Massachusetts	81,614	0.0	0.0	0.0	7.2	7.4	0.7	6.6	0.5	1.6	1.6	2.7	1.8	
Michigan	136,171	0.0	0.1	0.1	15.2	17.6	6.4	22.3	2.4	0.4	0.2	4.5	5.8	
Minnesota	67,604	-	0.2	0.2	8.9	11.8	3.8	14.4	2.3	0.4	0.8	5.7	5.4	
Mississippi	44,075	0.0	0.0	0.1	22.8	22.7	0.1	22.8	0.3	0.1	0.2	0.5	1.6	
Missouri	76,463	-	-	0.2	17.0	18.3	0.1	17.9	0.6	0.3	0.1	2.0	3.4	
Montana	10,957	0.0	0.1	0.0	9.6	10.4	3.4	13.2	0.3	0.0	0.1	0.6	0.4	
Nebraska	24,646	-	-	0.0	11.9	13.0	2.0	13.7	0.1	0.0	0.0	0.4	0.7	
Nevada	30,829	0.0	0.0	0.7	19.4	19.9	1.0	19.1	2.6	0.7	0.9	4.9	7.1	
New Hampshire	14,609	-	-	0.0	5.6	8.1	4.2	11.6	1.1	0.7	0.5	1.8	2.0	
New Jersey	115,632	0.0	0.0	0.2	8.5	10.3	0.4	9.3	3.3	0.1	0.1	4.3	5.4	
New Mexico	27,223	0.0	-	1.7	26.5	26.0	0.0	26.0	3.7	1.2	0.4	4.9	4.8	
New York	258,737	0.0	0.0	0.4	14.3	14.7	4.5	18.0	1.6	0.1	0.3	6.1	3.9	
North Carolina	120,311	-	0.0	0.0	16.2	16.2	0.1	16.2	0.3	0.1	0.1	0.7	0.7	
North Dakota	7,676	-	-	0.1	9.0	9.5	2.8	12.2	0.2	-	0.1	0.8	0.7	
Ohio	155,472	0.0	0.0	1.6	15.3	15.5	0.2	2.0	0.7	0.9	0.0	1.7	2.8	
Oklahoma	49,782	0.0	0.0	0.1	16.2	17.5	0.9	17.5	1.1	0.2	3.4	8.7	10.7	
Oregon	45,804	-	0.0	0.1	9.8	5.4	0.3	5.9	2.5	0.0	0.0	0.3	0.6	
Pennsylvania	146,281	0.0	0.0	0.9	5.4	4.7	0.5	3.8	2.7	0.7	0.3	4.4	6.0	
Rhode Island	12,505	0.0	0.0	0.7	13.3	13.8	8.1	19.2	1.7	0.9	0.3	1.8	2.0	
South Carolina	56,114	0.0	-	0.2	27.9	27.9	0.1	27.9	0.5	0.1	0.2	1.1	1.1	
South Dakota	10,345	-	-	0.0	13.3	13.4	0.1	13.6	0.2	0.0	0.1	0.3	0.4	
Tennessee	79,611	-	-	0.1	15.3	15.6	0.1	15.5	0.2	0.2	0.2	1.7	1.0	
Texas	363,414	0.0	0.0	0.5	14.6	14.8	0.4	14.8	2.1	1.1	0.9	3.4	7.5	
Utah	47,353	0.0	0.0	0.2	8.2	9.8	0.4	9.4	1.5	0.7	0.1	3.0	3.7	
Vermont	6,500	0.0	-	0.2	8.5	13.5	2.6	15.6	1.2	0.5	0.1	4.4	2.4	
Virginia	98,938	-	0.0	0.1	16.8	18.7	0.2	16.9	0.7	0.0	0.0	0.3	0.8	
Washington	81,036	0.0	0.1	0.6	10.8	14.0	2.9	14.7	7.5	2.5	1.2	7.8	10.9	
West Virginia	20,865	0.3	0.0	0.2	12.6	13.1	0.3	13.2	0.6	0.1	0.4	4.1	2.7	
Wisconsin	69,326	-	-	0.1	28.9	29.0	0.0	28.9	0.2	0.0	0.0	0.3	0.4	
Wyoming	6,253	-	-	0.1	13.0	13.4	0.1	13.3	0.4	0.0	0.1	0.5	0.5	
Puerto Rico	59,333	-	0.1	-	3.3	4.1	---	---	0.3	0.0	0.1	0.3	0.1	
Virgin Islands	1,564	-	0.1	-	19.7	21.5	2.6	23.9	0.7	0.3	0.7	0.1	1.7	
Guam	3,770	0.1	1.4	0.7	22.1	22.1	1.0	23.0	1.7	1.4	0.4	2.5	2.5	
American Samoa	1,731	-	0.1	5.1	35.5	36.0	---	---	---	-	---	---	---	
Commonwealth of the Northern Marianas Islands	1,431	0.1	1.0	0.5	8.0	11.3	---	---	31.4	26.4	10.8	13.2	12.5	

Table A. Percent of birth records on which specified items were not stated: United States and each State and territory, 2000

[Page 2 of 2]
[By place of residence]

Area	All births	Birth-weight	5-minute Apgar Score	Medical risk factors	Tobacco use	Alcohol use	Weight gain	Obstetric procedures	Complications of labor and/or delivery	Method of delivery	Abnormal conditions of newborn	Congenital anomalies
Total of reporting areas 1/	4,058,814	0.1	0.5	1.5	1.1	1.3	7.7	0.8	1.1	0.7	1.7	1.5
Alabama	63,299	0.1	0.2	0.0	0.1	0.1	4.5	0.0	0.0	0.3	0.0	0.0
Alaska	9,974	0.2	0.7	1.6	1.0	1.1	7.4	1.3	1.5	0.4	1.6	1.8
Arizona	85,273	0.1	0.3	0.0	1.0	1.1	13.6	0.0	0.0	0.3	0.0	0.3
Arkansas	37,783	0.1	3.4	0.2	0.4	0.5	7.1	0.1	0.2	0.4	0.2	0.2
California	531,959	0.0	---	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0
Colorado	65,438	0.1	0.3	0.0	0.3	0.4	3.4	0.0	0.0	0.0	0.0	0.1
Connecticut	43,026	0.0	2.0	8.6	4.6	4.8	13.5	8.2	8.8	1.2	13.0	13.4
Delaware	11,051	0.1	0.1	0.0	0.1	0.1	1.0	0.0	0.0	-	0.0	0.0
District of Columbia	7,666	0.1	0.6	0.0	0.1	1.0	13.5	-	-	0.1	-	-
Florida	204,125	0.0	0.2	0.0	0.1	1.0	4.8	0.0	0.0	0.7	0.0	0.0
Georgia	132,644	0.0	0.4	0.3	0.5	0.5	9.0	0.0	0.0	0.5	0.0	0.0
Hawaii	17,551	0.8	4.6	17.5	0.1	0.1	10.1	7.9	7.8	0.4	17.7	19.0
Idaho	20,366	0.1	0.7	0.8	0.5	0.6	7.8	0.7	0.8	0.4	0.6	0.7
Illinois	185,036	0.1	0.3	0.0	0.2	0.1	4.0	0.0	0.0	0.3	0.0	0.1
Indiana	87,699	0.5	0.4	0.3	4/ 0.3	0.4	2.7	0.1	0.4	0.6	0.7	0.7
Iowa	38,266	0.0	0.3	0.1	1.5	1.8	6.7	0.0	0.1	0.5	0.1	0.1
Kansas	39,666	0.0	0.3	3/ 0.2	0.2	0.2	0.4	0.1	0.1	0.3	0.1	0.2
Kentucky	56,029	0.2	0.4	15.0	4.1	4.8	9.2	4.4	15.4	4.5	22.4	22.3
Louisiana	67,898	0.1	0.4	0.1	0.2	0.2	5.5	0.1	0.1	0.2	0.2	0.2
Maine	13,603	0.1	0.2	0.1	1.2	1.6	1.9	0.1	0.1	0.1	0.1	0.1
Maryland	74,316	0.0	0.4	0.0	0.6	0.7	5.9	0.0	0.0	0.2	0.0	0.0
Massachusetts	81,614	1.7	1.7	2.6	0.4	0.4	2.8	2.5	2.5	1.9	3.1	2.8
Michigan	136,171	0.2	0.4	0.1	2.4	2.4	9.4	0.1	0.1	0.5	0.1	0.2
Minnesota	67,604	0.1	0.7	6.5	6.0	6.1	18.7	5.3	6.5	2.7	7.3	7.3
Mississippi	44,075	0.1	0.3	0.1	0.3	0.3	6.3	0.0	0.1	0.3	0.0	0.0
Missouri	76,463	0.0	0.5	0.1	0.3	0.4	2.9	0.1	0.1	0.6	0.1	0.1
Montana	10,957	0.1	0.3	0.0	0.5	0.7	1.7	0.0	0.0	0.3	0.0	0.1
Nebraska	24,646	0.1	0.2	0.1	0.1	0.1	1.5	0.0	0.1	0.3	7/ 0.1	0.1
Nevada	30,829	0.1	1.2	7.5	1.6	1.8	9.7	1.4	3.3	0.7	3.6	3.8
New Hampshire	14,609	0.4	0.6	0.3	0.4	0.4	4.2	0.3	0.3	0.6	0.3	0.3
New Jersey	115,632	0.1	0.3	0.9	0.7	0.8	6.1	0.1	0.6	0.6	9.4	1.1
New Mexico	27,223	0.2	3.6	0.1	1.2	1.3	8.9	0.0	0.0	0.5	0.0	---
New York	258,737	0.1	0.2	1.8	4/ 0.2	0.2	7.1	0.2	0.4	0.4	8/ 1.4	1.4
North Carolina	120,311	0.1	0.4	0.0	0.2	0.3	2.7	0.0	0.0	0.5	0.0	0.0
North Dakota	7,676	0.1	0.2	0.2	0.2	0.6	2.4	0.2	0.2	1.4	0.4	0.2
Ohio	155,472	0.1	0.2	0.1	0.3	0.3	3.0	0.1	0.1	0.6	0.1	0.1
Oklahoma	49,782	0.3	3.8	17.5	13.0	13.2	22.4	15.5	17.4	13.2	19.4	19.5
Oregon	45,804	0.0	0.4	1.0	1.0	1.0	3.9	0.0	0.0	0.4	0.0	0.1
Pennsylvania	146,281	0.1	0.4	0.0	0.8	0.8	9.8	0.0	0.0	0.0	0.3	0.2
Rhode Island	12,505	0.3	0.3	6.8	1.5	1.7	12.1	6.3	6.6	0.4	11.4	11.7
South Carolina	56,114	0.0	0.2	0.0	0.2	0.2	2.0	0.0	-	0.5	0.0	0.0
South Dakota	10,345	0.0	0.3	0.0	5/ 0.3	5/ 0.3	1.0	0.0	0.0	0.1	0.0	0.0
Tennessee	79,611	0.0	0.3	0.1	0.3	0.3	7.1	0.0	0.1	0.5	0.1	0.1
Texas	363,414	0.1	---	6/ 1.5	1.6	1.6	15.7	0.0	9/ 0.0	0.6	7/ 0.0	0.1
Utah	47,353	0.0	0.4	0.1	0.0	0.6	4.4	0.0	0.0	0.0	0.1	0.1
Vermont	6,500	0.2	0.4	0.7	0.8	0.4	2.4	0.6	0.7	0.1	0.6	0.7
Virginia	98,938	0.1	0.2	0.1	0.0	0.0	2.6	0.0	0.1	0.3	0.3	0.1
Washington	81,036	0.4	0.6	15.0	4.5	12.0	25.5	11.1	14.4	0.4	14.6	14.8
West Virginia	20,865	0.1	0.3	1.2	0.8	1.9	10.6	0.2	0.9	0.3	3.1	2.2
Wisconsin	69,326	0.0	0.4	0.1	0.1	0.1	2.2	0.0	0.1	0.0	10/ 0.1	0.1
Wyoming	6,253	0.0	0.4	0.0	0.2	0.2	1.7	0.0	0.0	0.1	0.0	0.0
Puerto Rico	59,333	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Virgin Islands	1,564	0.2	2.7	3.1	0.9	1.0	10.3	1.3	4.3	1.5	3.8	3.7
Guam	3,770	0.3	1.2	1.5	0.4	0.8	6.0	1.3	1.6	0.7	3.7	4.5
American Samoa	1,731	-	---	---	---	---	---	---	---	---	---	---
Commonwealth of the Northern Marianas Islands	1,431	10.1	12.6	---	5/ 45.8	5/ 46.0	---	---	---	17.0	---	---

0.0 Quantity more than zero but less than 0.05.

---Data not available.

-Quantity zero.

1/ Excludes data for Puerto Rico, Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas.

2/ California reports date last normal menses began but does not report clinical estimate of gestation.

3/ Kansas does not report Rh sensitization.

4/ Indiana and New York State report tobacco use but do not report the average number of cigarettes smoked per day in standard categories; data for New York City are reported in standard categories.

5/ South Dakota and the Commonwealth of the Northern Marianas report tobacco and alcohol use but do not report the average number of cigarettes smoked per day or the average number of drinks per week.

6/ Texas does not report genital herpes and uterine bleeding.

7/ Nebraska and Texas do not report birth injury.

8/ New York City does not report assisted ventilation less than 30 minutes and assisted ventilation of 30 minutes or more.

9/ Texas does not report anesthetic complications and fetal distress.

10/ Wisconsin does not report fetal alcohol syndrome.

Table B. Births by State of occurrence and residence for births occurring in the 50 States and the District of Columbia, 2000

Area	Occurrence	Residence
United States	4,063,823	4,058,814
Alabama	62,562	63,299
Alaska	9,866	9,974
Arizona	85,470	85,273
Arkansas	36,840	37,783
California	532,610	531,959
Colorado	65,679	65,438
Connecticut	43,370	43,026
Delaware	11,639	11,051
District of Columbia	15,159	7,666
Florida	204,305	204,125
Georgia	133,524	132,644
Hawaii	17,638	17,551
Idaho	19,863	20,366
Illinois	181,984	185,036
Indiana	87,891	87,699
Iowa	38,418	38,266
Kansas	39,232	39,666
Kentucky	54,423	56,029
Louisiana	68,275	67,898
Maine	13,462	13,603
Maryland	69,574	74,316
Massachusetts	82,673	81,614
Michigan	134,889	136,171
Minnesota	67,546	67,604
Mississippi	42,980	44,075
Missouri	78,302	76,463
Montana	10,927	10,957
Nebraska	24,961	24,646
Nevada	30,387	30,829
New Hampshire	13,987	14,609
New Jersey	112,311	115,632
New Mexico	26,809	27,223
New York State only	134,435	137,696
New York City only	125,560	121,041
North Carolina	121,347	120,311
North Dakota	8,847	7,676
Ohio	155,943	155,472
Oklahoma	48,650	49,782
Oregon	46,790	45,804
Pennsylvania	146,857	146,281
Rhode Island	13,180	12,505
South Carolina	53,562	56,114
South Dakota	10,589	10,345
Tennessee	84,832	79,611
Texas	368,019	363,414
Utah	48,454	47,353
Vermont	6,277	6,500
Virginia	96,755	98,938
Washington	80,453	81,036
West Virginia	21,620	20,865
Wisconsin	68,250	69,326
Wyoming	5,847	6,253
Occurrence in U.S. Territories or Foreign Countries	-	5,009
Puerto Rico	-	16
Virgin Islands	-	37
Guam	-	4
American Samoa	-	-
Northern Marianas	-	-
Canada	-	171
Cuba	-	1
Mexico	-	4,155
Remainder of world	-	625

- Quantity zero.

Table C. Lower and upper 95 percent and 96 percent confidence limit factors for a birth rate based on a Poisson variable of 1 through 99 births, B

B	$L(1 - \alpha = .95, B)$	$U(1 - \alpha = .95, B)$	$L(1 - \alpha = .96, B)$	$U(1 - \alpha = .96, B)$
1	0.02532	5.57164	0.02020	5.83392
2	0.12110	3.61234	0.10735	3.75830
3	0.20622	2.92242	0.18907	3.02804
4	0.27247	2.56040	0.25406	2.64510
5	0.32470	2.33367	0.30591	2.40540
6	0.36698	2.17658	0.34819	2.23940
7	0.40205	2.06038	0.38344	2.11666
8	0.43173	1.97040	0.41339	2.02164
9	0.45726	1.89831	0.43923	1.94553
10	0.47954	1.83904	0.46183	1.88297
11	0.49920	1.78928	0.48182	1.83047
12	0.51671	1.74680	0.49966	1.78566
13	0.53246	1.71003	0.51571	1.74688
14	0.54671	1.67783	0.53027	1.71292
15	0.55969	1.64935	0.54354	1.68289
16	0.57159	1.62394	0.55571	1.65610
17	0.58254	1.60110	0.56692	1.63203
18	0.59266	1.58043	0.57730	1.61024
19	0.60207	1.56162	0.58695	1.59042
20	0.61083	1.54442	0.59594	1.57230
21	0.61902	1.52861	0.60435	1.55563
22	0.62669	1.51401	0.61224	1.54026
23	0.63391	1.50049	0.61966	1.52602
24	0.64072	1.48792	0.62666	1.51278
25	0.64715	1.47620	0.63328	1.50043
26	0.65323	1.46523	0.63954	1.48888
27	0.65901	1.45495	0.64549	1.47805
28	0.66449	1.44528	0.65114	1.46787
29	0.66972	1.43617	0.65652	1.45827
30	0.67470	1.42756	0.66166	1.44922
31	0.67945	1.41942	0.66656	1.44064
32	0.68400	1.41170	0.67125	1.43252
33	0.68835	1.40437	0.67575	1.42480
34	0.69253	1.39740	0.68005	1.41746
35	0.69654	1.39076	0.68419	1.41047
36	0.70039	1.38442	0.68817	1.40380
37	0.70409	1.37837	0.69199	1.39743

Table C. Lower and upper 95 percent and 96 percent confidence limit factors for a birth rate based on a Poisson variable of 1 through 99 births, B

B	$L(1 - \alpha = .95, B)$	$U(1 - \alpha = .95, B)$	$L(1 - \alpha = .96, B)$	$U(1 - \alpha = .96, B)$
38	0.70766	1.37258	0.69568	1.39134
39	0.71110	1.36703	0.69923	1.38550
40	0.71441	1.36172	0.70266	1.37991
41	0.71762	1.35661	0.70597	1.37454
42	0.72071	1.35171	0.70917	1.36938
43	0.72370	1.34699	0.71227	1.36442
44	0.72660	1.34245	0.71526	1.35964
45	0.72941	1.33808	0.71816	1.35504
46	0.73213	1.33386	0.72098	1.35060
47	0.73476	1.32979	0.72370	1.34632
48	0.73732	1.32585	0.72635	1.34218
49	0.73981	1.32205	0.72892	1.33818
50	0.74222	1.31838	0.73142	1.33431
51	0.74457	1.31482	0.73385	1.33057
52	0.74685	1.31137	0.73621	1.32694
53	0.74907	1.30802	0.73851	1.32342
54	0.75123	1.30478	0.74075	1.32002
55	0.75334	1.30164	0.74293	1.31671
56	0.75539	1.29858	0.74506	1.31349
57	0.75739	1.29562	0.74713	1.31037
58	0.75934	1.29273	0.74916	1.30734
59	0.76125	1.28993	0.75113	1.30439
60	0.76311	1.28720	0.75306	1.30152
61	0.76492	1.28454	0.75494	1.29873
62	0.76669	1.28195	0.75678	1.29601
63	0.76843	1.27943	0.75857	1.29336
64	0.77012	1.27698	0.76033	1.29077
65	0.77178	1.27458	0.76205	1.28826
66	0.77340	1.27225	0.76373	1.28580
67	0.77499	1.26996	0.76537	1.28340
68	0.77654	1.26774	0.76698	1.28106
69	0.77806	1.26556	0.76856	1.27877
70	0.77955	1.26344	0.77011	1.27654
71	0.78101	1.26136	0.77162	1.27436
72	0.78244	1.25933	0.77310	1.27223
73	0.78384	1.25735	0.77456	1.27014
74	0.78522	1.25541	0.77598	1.26810

Table C. Lower and upper 95 percent and 96 percent confidence limit factors for a birth rate based on a Poisson variable of 1 through 99 births, B

B	$L(1 - \alpha = .95, B)$	$U(1 - \alpha = .95, B)$	$L(1 - \alpha = .96, B)$	$U(1 - \alpha = .96, B)$
75	0.78656	1.25351	0.77738	1.26610
76	0.78789	1.25165	0.77876	1.26415
77	0.78918	1.24983	0.78010	1.26223
78	0.79046	1.24805	0.78143	1.26036
79	0.79171	1.24630	0.78272	1.25852
80	0.79294	1.24459	0.78400	1.25672
81	0.79414	1.24291	0.78525	1.25496
82	0.79533	1.24126	0.78648	1.25323
83	0.79649	1.23965	0.78769	1.25153
84	0.79764	1.23807	0.78888	1.24987
85	0.79876	1.23652	0.79005	1.24824
86	0.79987	1.23499	0.79120	1.24664
87	0.80096	1.23350	0.79233	1.24507
88	0.80203	1.23203	0.79344	1.24352
89	0.80308	1.23059	0.79453	1.24201
90	0.80412	1.22917	0.79561	1.24052
91	0.80514	1.22778	0.79667	1.23906
92	0.80614	1.22641	0.79771	1.23762
93	0.80713	1.22507	0.79874	1.23621
94	0.80810	1.22375	0.79975	1.23482
95	0.80906	1.22245	0.80074	1.23345
96	0.81000	1.22117	0.80172	1.23211
97	0.81093	1.21992	0.80269	1.23079
98	0.81185	1.21868	0.80364	1.22949
99	0.81275	1.21746	0.80458	1.22822

Table D. Sources for resident population and population including Armed Forces abroad: Birth- and death-registration States, 1900-1932, and United States, 1900-2000.

Year	Source
2000-----	U.S. Census Bureau. Unpublished estimates of the July 1, 2000, United States population by age, sex, race, and Hispanic origin. Washington, DC: U.S. Census Bureau. 1990-based estimates, forthcoming, 2002.
1999-----	U.S. Census Bureau, United States population estimates, by age, sex, race, and Hispanic origin: 1980 to 1999. Washington: U.S. Bureau of the Census. Internet release, April 11, 2000. Http://www.census.gov/population/www/estimates/nat_90s_1.html .
1998-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1990 to 1998. Washington: U.S. Bureau of the Census. Internet release, June 4, 1999. Http://www.census.gov/population/www/estimates/uspop.html .
1997-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1990 to 1997. PPL-91R. Rounded populations consistent with U.S. Bureau of the Census file NESTV97. Washington: U.S. Department of Commerce. 1998.
1996-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1990 to 1996. PPL-57. Washington: U.S. Department of Commerce. 1997.
1995-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1990 to 1995. Census file RESD0795, PPL-41. Washington U.S. Department of Commerce. 1996.
1994-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1990 to 1994. PPL-21. Washington: U.S. Department of Commerce. 1995.
1993-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1993. Census file RESO793. Washington: U.S. Department of Commerce. 1995.
1992-----	U.S. Bureau of the Census, United States population estimates, by age, sex, race, and Hispanic origin: 1992. Census file RESPO792. Washington: U.S. Department of Commerce. 1994.
1991-----	U.S. Bureau of the Census, Unpublished data consistent with Current Population Reports, Series P-25, No. 1095, Feb. 1993
1990-----	U.S. Bureau of the Census, Unpublished data from the 1990 census. 1990 CPH-L-74 and unpublished data consistent with Current Population Reports, Series P-25 No. 1095, Feb. 1993.
1989-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1057, Mar. 1990.
1988-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1045, Jan. 1990.
1986-87-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1022, Mar. 1988.
1985-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1000, Feb. 1987.
1984-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 985, Apr. 1986.
1983-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 965, Mar. 1985.
1982-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 949, May 1984.
1981-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 929, May 1983.
1980-----	U.S. Bureau of the Census, U.S. Census of Population: 1980, Number of Inhabitants, PC80-1-A1, United States Summary, 1983.
1971-79-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 917, July 1982.
1970-----	U.S. Bureau of the Census, U.S. Census of Population: 1970, Number of Inhabitants, Final Report PC(1)-A1, United States Summary, 1971.
1961-69-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 519, April 1974.
1960-----	U.S. Bureau of the Census, U.S. Census of Population: 1960, Number of Inhabitants, PC(1)-A1, United States Summary, 1964.
1951-59-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 310, June 30, 1965.
1940-50-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973.
1930-39-----	U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 499, May 1973, and National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947.
1920-29-----	National Office of Vital Statistics, Vital Statistics Rates in the United States, 1900-1940, 1947.
1917-19-----	Same as for 1930-39.
1900-1916-----	Same as for 1920-29.

Table E. Ratio of census-level resident population to resident population adjusted for estimated net census undercount by age, sex, and race: April 1, 1990

Age	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
All ages	0.9815	0.9721	0.9906	0.9802	0.9728	0.9873	0.9432	0.9151	0.9699
10-14	0.9882	0.9891	0.9873	0.9830	0.9841	0.9818	0.9591	0.9586	0.9595
15-19	1.0166	1.0198	1.0133	1.0094	1.0128	1.0059	0.9988	1.0016	0.9959
20-24	1.0002	0.9987	1.0017	0.9975	0.9985	0.9966	0.9593	0.9432	0.9753
25-29	0.9591	0.9439	0.9748	0.9558	0.9441	0.9681	0.9123	0.8732	0.9510
30-34	0.9687	0.9487	0.9892	0.9669	0.9518	0.9828	0.9129	0.8599	0.9651
35-39	0.9790	0.9628	0.9954	0.9764	0.9643	0.9888	0.9303	0.8808	0.9778
40-44	0.9901	0.9758	1.0044	0.9875	0.9764	0.9988	0.9410	0.8943	0.9850
45-49	0.9775	0.9633	0.9916	0.9762	0.9648	0.9877	0.9302	0.8807	0.9762
50-54	...	0.9623	...	...	0.9651	...	...	0.8802	...
55 years and over	...	0.9758	...	...	0.9783	...	...	0.9294	...
15-44	...	...	0.9954	...	...	0.9890	...	...	0.9739
15-54	...	0.9710	...	...	0.9710	...	...	0.9046	...

... Category not applicable.

Table 4-1. Population of birth- and death-registration States, 1900-1932, and United States, 1900-2000

(Population enumerated as of April 1 for 1940, 1950, 1960, 1970, 1980, and 1990 and estimated as of July 1 for all other years)

Year	United States/1		Year	United States/1		Birth-registration States		Death-registration States	
	Population including Armed Forces abroad	Population residing in area		Population including Armed Forces abroad	Population residing in area	Number of States/2	Population residing in area	Number of States/2	Population residing in area
2000	275,371,869	275,264,999							
1999	272,945,300	272,690,813	1949	149,188,000	148,665,000	...	...	...	...
1998	270,509,187	270,298,524	1948	146,631,000	146,093,000	...	...	...	...
1997	267,901,000	267,636,061	1947	144,126,000	143,446,000	...	...	...	...
1996	265,556,890	265,283,783	1946	141,389,000	140,054,000	...	...	...	...
1995	263,033,968	262,755,270	1945	139,928,000	132,481,000	...	...	...	...
1994	260,650,690	260,340,990	1944	138,397,000	132,885,000	...	...	...	...
1993	258,119,768	257,783,004	1943	136,739,000	134,245,000	...	...	...	...
1992	255,457,501	255,077,536	1942	134,860,000	133,920,000	...	...	...	...
1991	252,688,000	252,177,000	1941	133,402,000	133,121,000	...	...	...	...
1990	249,225,000	248,709,873	1940	131,820,000	131,669,275	...	...	...	...
1989	247,342,000	246,819,000	1939	131,028,000	130,879,718	...	...	...	...
1988	245,021,000	244,499,000	1938	129,969,000	129,824,939	...	...	...	...
1987	242,804,000	242,289,000	1937	128,961,000	128,824,829	...	...	...	...
1986	240,651,000	240,133,000	1936	128,181,000	128,053,180	...	...	...	...
1985	238,466,000	237,924,000	1935	127,362,000	127,250,232	...	...	...	...
1984	236,348,000	235,825,000	1934	126,485,000	126,373,773	...	...	...	...
1983	234,307,000	233,792,000	1933	125,690,000	125,578,763	...	...	...	...
1982	232,188,000	231,664,000	1932	124,949,000	124,840,471	47	118,903,899	47	118,903,899
1981	229,966,000	229,466,000	1931	124,149,000	124,039,648	46	117,455,229	47	118,148,987
1980	227,061,000	226,545,805	1930	123,188,000	123,076,741	46	116,544,946	47	117,238,278
1979	225,055,000	224,567,000	1929	---	121,769,939	46	115,317,450	46	115,317,450
1978	222,585,000	222,095,000	1928	---	120,501,115	44	113,636,160	44	113,636,160
1977	220,239,000	219,760,000	1927	---	119,038,062	40	104,320,830	42	107,084,532
1976	218,035,000	217,563,000	1926	---	117,399,225	35	90,400,590	41	103,822,683
1975	215,973,000	215,465,000	1925	---	115,831,963	33	88,294,564	40	102,031,555
1974	213,854,000	213,342,000	1924	---	114,113,463	33	87,000,295	39	99,318,098
1973	211,909,000	211,357,000	1923	---	111,949,945	30	81,072,123	38	96,788,197
1972	209,896,000	209,284,000	1922	---	110,054,778	30	79,560,746	37	92,702,901
1971	207,661,000	206,827,000	1921	---	108,541,489	27	70,807,090	34	87,814,447
1970	204,270,000	203,211,926	1920	---	106,466,420	23	63,597,307	34	86,079,263
1969	202,677,000	201,385,000	1919	105,063,000	104,512,110	22	61,212,076	33	83,157,982
1968	200,706,000	199,399,000	1918	104,550,000	103,202,801	20	55,153,782	30	79,008,412
1967	198,712,000	197,457,000	1917	103,414,000	103,265,913	20	55,197,952	27	70,234,775
1966	196,560,000	195,576,000	1916	---	101,965,984	11	32,944,013	26	66,971,177
1965	194,303,000	193,526,000	1915	---	100,549,013	10	31,096,697	24	61,894,847
1964	191,889,000	191,141,000	1914	---	99,117,567	...	...	24	60,963,309
1963	189,242,000	188,483,000	1913	---	97,226,814	...	...	23	58,156,740
1962	186,538,000	185,771,000	1912	---	95,331,300	...	...	22	54,847,700
1961	183,691,000	182,992,000	1911	---	93,867,814	...	...	22	53,929,644
1960	179,933,000	179,323,175	1910	---	92,406,536	...	...	20	47,470,437
1959	177,264,000	176,513,000	1909	---	90,491,525	...	...	18	44,223,513
1958	174,141,000	173,320,000	1908	---	88,708,976	...	...	17	38,634,759
1957	171,274,000	170,371,000	1907	---	87,000,271	...	...	15	34,552,837
1956	168,221,000	167,306,000	1906	---	85,436,556	...	...	15	33,782,288
1955	165,275,000	164,308,000	1905	---	83,819,666	...	...	10	21,767,980
1954	162,391,000	161,164,000	1904	---	82,164,974	...	...	10	21,332,076
1953	159,565,000	158,242,000	1903	---	80,632,152	...	...	10	20,943,222
1952	156,954,000	155,687,000	1902	---	79,160,196	...	...	10	20,582,907
1951	154,287,000	153,310,000	1901	---	77,585,128	...	...	10	20,237,453
1950	151,132,000	150,697,361	1900	---	76,094,134	...	...	10	19,965,446

--- Data not available.

... Category not applicable.

1/Alaska included beginning 1959 and Hawaii, 1960.

2/The District of Columbia is not included in "Number of States," but it is represented in all data shown for each year.

SOURCE: Published and unpublished data from the U.S. Bureau of the Census; see text.

Table 4-2. Estimated total population by specified Hispanic origin and estimated female population by age and specified Hispanic origin and by race for women of non-Hispanic origin: United States, 2000 [Populations estimated as of July 1]

Age	Hispanic					Non-Hispanic		
	Total	Mexican	Puerto Rican	Cuban	Other Hispanic 1/	Total 2/	White	Black
Total population	32,463,770	21,505,303	2,874,227	1,287,754	6,796,474	242,801,229	196,654,437	33,474,968
Female population								
15-44 years	7,703,905	5,057,093	689,766	234,314	1,722,730	52,443,094	41,040,881	8,241,003
10-14 years	1,405,780	942,944	133,250	33,129	296,460	8,300,429	6,339,079	1,477,492
15-19 years	1,371,244	955,228	117,025	38,685	260,304	8,293,626	6,385,230	1,422,606
15-17 years	807,007	564,134	67,455	24,726	150,693	4,922,536	3,786,352	840,736
18-19 years	564,237	391,094	49,570	13,959	109,611	3,371,090	2,598,878	581,870
20-24 years	1,340,883	924,162	105,339	31,219	280,164	7,725,519	5,936,373	1,332,488
25-29 years	1,277,634	897,787	111,310	28,216	240,314	7,682,253	5,865,078	1,278,164
30-34 years	1,298,026	842,743	122,135	43,715	289,434	8,572,911	6,671,374	1,329,300
35-39 years	1,293,793	777,253	119,129	51,022	346,384	9,898,719	7,879,910	1,454,674
40-44 years	1,122,325	659,920	114,828	41,457	306,130	10,270,066	8,302,916	1,423,771
45-49 years	889,617	532,651	90,400	47,007	219,560	9,231,119	7,555,369	1,203,157

1/ Includes Central and South American and other and unknown Hispanic.

2/ Includes races other than white and black.

NOTE: These population counts are projected from the 1990 Census; see Technical notes in "Births: Final Data for 2000" (reference 4).

SOURCE: Population estimates based on unpublished tabulations prepared by the Housing and Household Economic Statistics Division, U.S. Bureau of the Census.

Table 4-3. Estimated population of the United States, by age, race, and sex: July 1, 2000
 [Figures include Armed Forces stationed in the United States but exclude those stationed outside the United States.]

Age	All races			White			Black			American Indian			Asian and Pacific Islander		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
All ages	275,264,999	134,625,673	140,639,326	226,251,833	111,196,305	115,055,528	35,303,751	16,776,358	18,527,393	2,436,153	1,206,143	1,230,010	11,273,262	5,446,867	5,826,395
Under 1	3,847,481	1,965,047	1,882,434	3,032,117	1,550,984	1,481,133	582,544	296,448	286,096	44,200	22,256	21,944	188,620	95,359	93,261
1-4 years	15,149,281	7,742,402	7,406,879	12,024,272	6,157,583	5,866,689	2,225,263	1,130,514	1,094,749	163,129	82,529	80,600	736,617	371,776	364,841
5-9 years	19,779,125	10,120,590	9,658,535	15,577,168	7,980,513	7,596,655	3,087,493	1,568,587	1,518,906	212,189	107,671	104,518	902,275	463,819	438,456
10-14 years	19,895,072	10,188,863	9,706,209	15,622,403	8,012,069	7,610,334	3,172,100	1,612,266	1,559,834	253,740	128,984	124,756	846,829	435,544	411,285
15-19 years	19,882,596	10,217,726	9,664,870	15,752,025	8,120,209	7,631,816	3,052,443	1,553,963	1,498,480	238,664	119,902	118,762	839,464	423,652	415,812
15-17 years	11,813,541	6,083,998	5,729,543	9,338,648	4,819,935	4,518,713	1,815,186	929,536	885,650	147,955	74,803	73,152	511,752	259,724	252,028
18-19 years	8,069,055	4,133,728	3,935,327	6,413,377	3,300,274	3,113,103	1,237,257	624,427	612,830	90,709	45,099	45,610	327,712	163,928	163,784
20-24 years	18,484,615	9,418,213	9,066,402	14,712,886	7,551,580	7,161,306	2,782,529	1,377,422	1,405,107	201,570	101,031	100,539	787,630	388,180	399,450
25-29 years	17,851,740	8,891,853	8,959,887	14,139,424	7,109,110	7,030,314	2,585,338	1,237,440	1,347,898	193,147	99,124	94,023	933,831	446,179	487,652
30-34 years	19,579,210	9,708,273	9,870,937	15,726,365	7,877,151	7,849,214	2,651,567	1,246,024	1,405,543	183,058	93,824	89,234	1,018,220	491,274	526,946
35-39 years	22,276,274	11,083,762	11,192,512	18,200,643	9,146,412	9,054,231	2,894,789	1,362,451	1,532,338	184,756	93,006	91,750	996,086	481,893	514,193
40-44 years	22,616,089	11,223,698	11,392,391	18,688,970	9,368,469	9,320,501	2,811,534	1,320,333	1,491,201	176,456	86,925	89,531	939,129	447,971	491,158
45-49 years	19,894,379	9,773,643	10,120,736	16,621,658	8,259,236	8,362,422	2,322,393	1,066,116	1,256,277	147,921	71,740	76,181	802,407	376,551	425,856
50-54 years	17,258,706	8,397,152	8,861,554	14,687,835	7,229,181	7,458,654	1,807,267	811,985	995,282	118,135	56,889	61,246	645,469	299,097	346,372
55-59 years	13,313,129	6,394,298	6,918,831	11,448,064	5,560,869	5,887,195	1,329,441	581,641	747,800	86,331	40,856	45,475	449,293	210,932	238,361
60-64 years	10,660,545	5,039,725	5,620,820	9,159,614	4,383,152	4,776,462	1,082,557	462,023	620,534	66,164	30,695	35,469	352,210	163,855	188,355
65-69 years	9,425,450	4,331,954	5,093,496	8,153,007	3,786,811	4,366,196	941,279	401,235	540,044	51,362	23,144	28,218	279,802	120,764	159,038
70-74 years	8,742,083	3,872,003	4,870,080	7,719,181	3,446,922	4,272,259	756,269	313,828	442,441	41,133	18,439	22,694	225,500	92,814	132,686
75-79 years	7,411,303	3,099,993	4,311,310	6,654,362	2,797,502	3,856,860	560,677	219,660	341,017	32,652	14,176	18,476	163,612	68,655	94,957
80-84 years	4,902,200	1,863,271	3,038,929	4,451,192	1,696,212	2,754,980	339,412	120,454	218,958	19,874	8,088	11,786	91,722	38,517	53,205
85 years +	4,295,721	1,293,207	3,002,514	3,880,647	1,162,340	2,718,307	318,856	93,968	224,888	21,672	6,864	14,808	74,546	30,035	44,511

SOURCE: Published and unpublished data from the U.S. Census Bureau; see text.

Table 4-4. Estimated total population and female population aged 15-44 years: United States, each division, State, and territory: July 1, 2000

[Figures include Armed Forces stationed in each area and exclude those stationed outside the United States]

Division and State	Total	Female 15-44 years
United States	275,264,999	60,146,999
New England	13,569,563	2,985,105
Maine	1,258,614	274,971
New Hampshire	1,215,870	279,609
Vermont	597,855	133,068
Massachusetts	6,203,848	1,378,669
Rhode Island	996,088	215,331
Connecticut	3,297,288	703,457
Middle Atlantic	38,467,222	8,253,331
New York	18,277,971	3,982,706
New Jersey	8,204,652	1,757,807
Pennsylvania	11,984,599	2,512,818
East North Central	44,646,401	9,788,443
Ohio	11,270,414	2,468,934
Indiana	5,976,390	1,313,619
Illinois	12,185,560	2,661,294
Michigan	9,918,687	2,196,473
Wisconsin	5,295,350	1,148,123
West North Central	18,910,010	4,069,047
Minnesota	4,827,670	1,059,884
Iowa	2,877,296	597,752
Missouri	5,502,189	1,195,083
North Dakota	629,305	130,848
South Dakota	737,302	155,060
Nebraska	1,670,358	357,517
Kansas	2,665,890	572,903
South Atlantic	50,219,123	10,960,089
Delaware	762,236	174,113
Maryland	5,218,918	1,199,661
District of Columbia	518,358	121,765
Virginia	6,970,356	1,615,486
West Virginia	1,802,371	373,148
North Carolina	7,747,514	1,680,928
South Carolina	3,924,402	886,835
Georgia	7,942,865	1,858,259
Florida	15,332,103	3,049,894
East South Central	16,693,590	3,703,956
Kentucky	3,985,662	880,571
Tennessee	5,533,229	1,221,676
Alabama	4,387,710	974,396
Mississippi	2,786,989	627,313
West South Central	30,720,426	6,783,211
Arkansas	2,576,516	547,182
Louisiana	4,374,770	981,950
Oklahoma	3,380,073	712,026
Texas	20,389,067	4,542,053
Mountain	17,453,687	3,718,453
Montana	887,875	178,857
Idaho	1,273,257	272,224
Wyoming	480,900	99,692
Colorado	4,136,615	895,241
New Mexico	1,747,813	374,412
Arizona	4,882,330	1,010,324
Utah	2,164,606	501,255
Nevada	1,880,291	386,448
Pacific	44,584,977	9,885,364
Washington	5,811,090	1,283,101
Oregon	3,341,110	696,428
California	33,631,461	7,529,362
Alaska	622,138	133,720
Hawaii	1,179,178	242,753
Puerto Rico	3,915,798	913,547
Virgin Islands	120,917	26,140
Guam	154,623	31,164
American Samoa	65,446	14,199
Northern Marianas	71,912	24,349

SOURCE: Published and unpublished data from the U.S. Census Bureau.