Health, United States, 2000
Adolescent Health Chartbook

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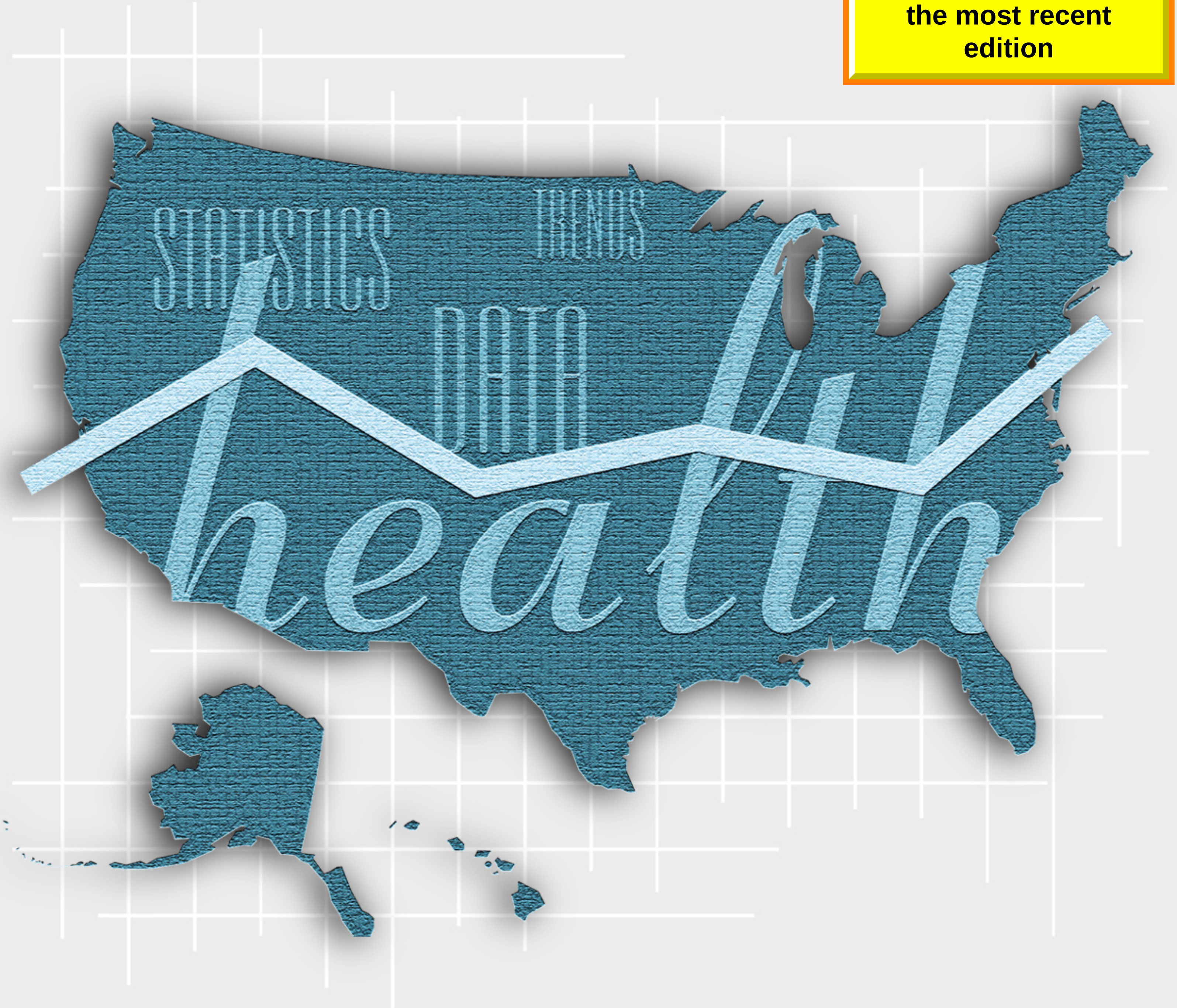

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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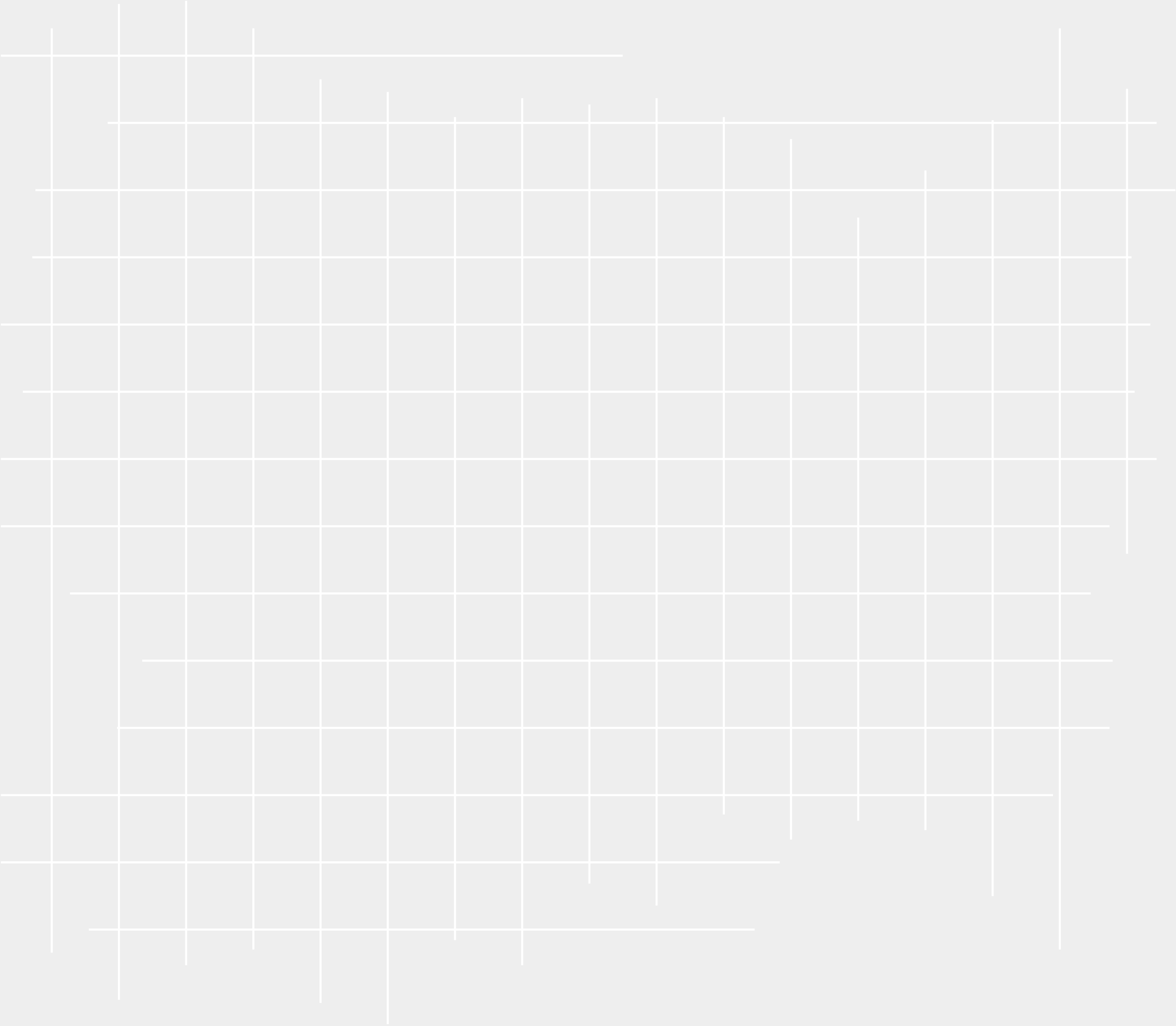

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

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Health, United States, 2000 is the 24th report on the health status of the Nation. This report was compiled by the Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS). The National Committee on Vital and Health Statistics served in a review capacity.

Health, United States presents national trends in health statistics. Major findings are presented in the highlights. The report includes a chartbook on adolescent health and trend tables.

Adolescent Health Chartbook

In each edition of *Health, United States*, a chartbook focuses on a major health topic. This year the Adolescent Health Chartbook describes the health of the adolescent population, 10–19 years of age. Adolescence is a period of accelerated growth and change, bridging the complex transition from childhood to adulthood. Young people experience profound biological, emotional, intellectual, and social changes, and the patterns of behavior they adopt may have long-term consequences for their health and quality of life. The chartbook presents data on the current status of adolescent health, with a focus on the transitions in adolescent health status by single year of age. The 32 figures and accompanying text show differences in health status, injury, mortality, reproductive health, health care utilization, and risk behaviors by age and gender. Many charts also describe racial, ethnic, and sociodemographic differences.

Trend Tables

The chartbook is followed by 146 trend tables organized around four major subject areas: health status and determinants, health care utilization, health care resources, and health care expenditures. A major criterion used in selecting the trend tables is the availability of comparable national data over a period of several years. The tables report data for selected years to highlight major trends in health statistics. Earlier editions of *Health, United States* may present data for additional years that are not included in the current printed report. Where possible, these additional data are available in Lotus 1–2–3 and Excel spreadsheet files as listed in Appendix III.

Racial and Ethnic Data

Several tables in *Health, United States* present data according to race and Hispanic origin consistent with Department-wide emphasis on expanding racial and ethnic detail in presenting health data. Trend data on race and ethnicity are usually in the greatest detail possible, after taking into account the quality of data, the amount of missing data, and the number of observations. The large differences in health status by race and Hispanic origin that are documented in this report may be explained by several factors including socioeconomic status, health practices, psychosocial stress and resources, environmental exposures, discrimination, and access to health care. New standards for presenting Federal data on race and ethnicity are described in Appendix II under Race.

Changes in This Edition

Similar tables appear in each volume of *Health, United States* to enhance the use of this publication as a standard reference source. However, each year new tables are added to reflect emerging topics in public health and changes in the content of ongoing tables are made to enhance their usefulness. New to *Health, United States, 2000* are data on early prenatal care for States (table 7) based on vital statistics; use of ambulatory health care as measured by visits to doctor’s offices, clinics, and emergency departments, as well as home visits from nurses and other health professionals (table 71) based on the National Health Interview Survey (NHIS); access to care by children under 18 years of age as measured by no health care contacts within the past 12 months (table 75), hospital emergency department use by children (table 77) and by adults (table 79) based on NHIS; injury-related visits to hospital emergency departments based on the National Hospital Ambulatory Medical Care Survey (NHAMCS) (table 84); fee-for-service Medicare enrollees and payments based on data from the Health Care Financing Administration (table 134); and health care use and expenditures by Medicare beneficiaries based on the Medicare Current Beneficiary Survey (table 135).

Data for racial and ethnic groups are expanded in tables showing contraceptive use (table 18), infant and neonatal mortality rates by State (tables 24 and 25), limitation of activity (table 57), interval since the last health care contact (table 72), and Medicaid recipients (table 136). In addition, new tables 7, 71, 75, 77, 79, and 135 also present data for racial and ethnic groups.

In other changes, death rates for lung cancer (ICD 162) replace death rates for respiratory cancer (ICD 160–165) in tables 30, 31, and 40; the age range of data on dental visits (table 80) and untreated dental caries (table 81) is expanded to encompass children, adults, and the elderly; Medicare expenditures for managed care and fee-for-service care are added to table 133. Tables that present NHIS, NAMCS, NHAMCS, National Nursing Home Survey, and National Home and Hospice Care Survey data are age adjusted using a new population standard, the year 2000 population (see Appendix II, Age adjustment). A newly designed brochure features representative charts and tables from the report.

Appendixes

Appendix I describes each data source used in the report and the limitations of the data and provides references for further information about the sources.

Appendix II is an alphabetical listing of terms used in the report. It also contains standard populations used for age adjustment, *International Classification of Diseases* (ICD) codes for cause of death and diagnostic and procedure categories.

Appendix III lists tables with additional years of trend data that are available electronically in Lotus 1–2–3 and Excel spreadsheet files on the NCHS home page and CD-ROM.

The Index to Trend Tables is a useful tool for locating data by topic. Tables are cross-referenced by such topics as Child and adolescent health, Women's health, Elderly population, Nutrition related, State data, American Indian, Asian, Black, and Hispanic origin populations, Education, and Poverty status.

Electronic Access

Health, United States has its own home page on the NCHS web site at www.cdc.gov/nchs. Click on ''Top 10 Downloads''. The direct Uniform Resource Locator (URL) address for the *Health, United States* home page is:

www.cdc.gov/nchs/products/pubs/pubd/hus/hus.htm.

Health, United States, 2000, the Adolescent Health Chartbook, and each of the 146 individual trend tables are available as separate Acrobat .pdf files on the *Health, United States* home page. In addition individual tables are downloadable as Lotus 1–2–3 and Excel spreadsheet files. Previous editions of *Health, United States* and chartbooks, starting with the 1993 edition, also may be accessed from the *Health, United States* home page.

Health, United States is also available, along with other NCHS reports, on a CD-ROM entitled ''Publications from the National Center for Health Statistics, featuring *Health, United States, 2000,*'' vol 1 no 6, 2000. These publications can be viewed, searched, printed, and saved using Adobe Acrobat software on the CD-ROM. The CD-ROM may be purchased from the Government Printing Office.

Questions?

For answers to questions about this report, contact:
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The *Adolescent Health Chartbook* is reprinted from *Health, United States, 2000* and includes highlights of the detailed tables and the appendixes from the complete report.

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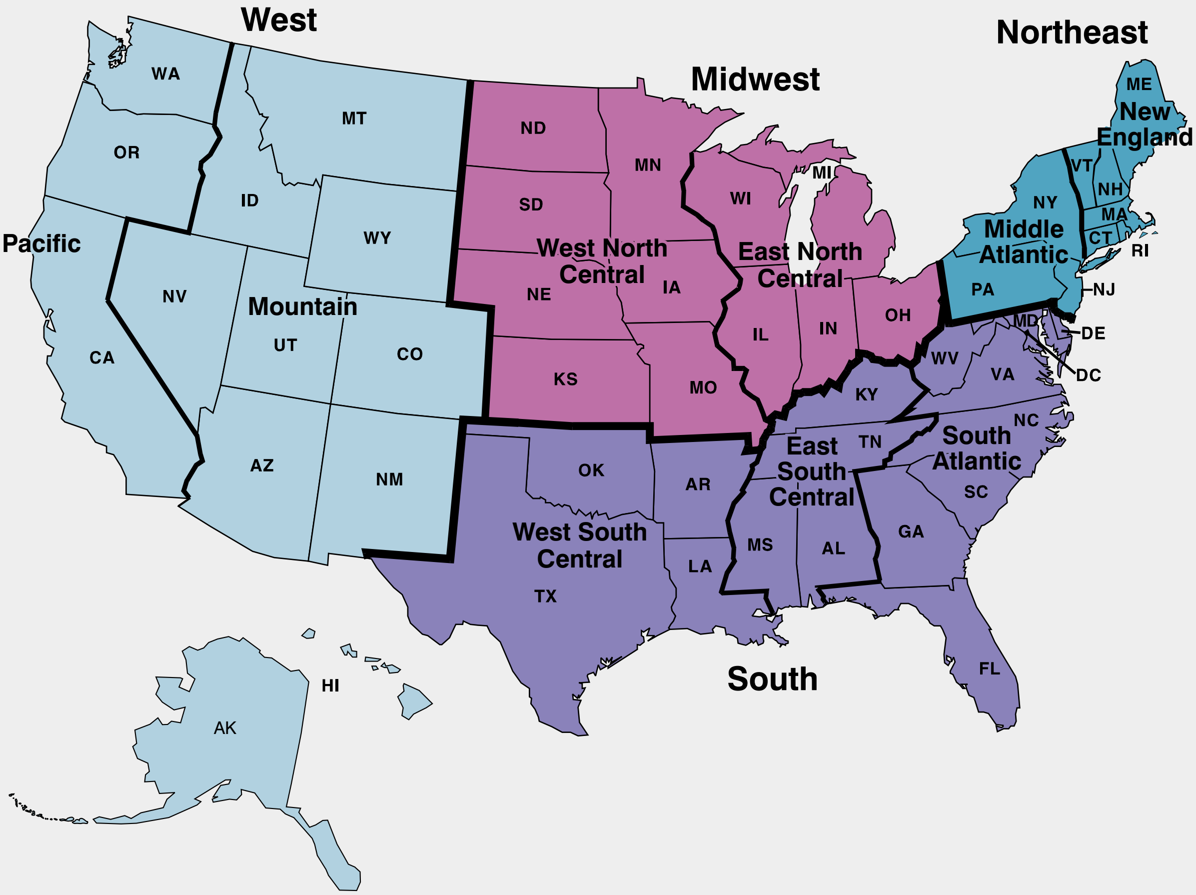

Highlights

Adolescent Population Characteristics

In 1999, 40 million residents of the United States were adolescents 10–19 years of age, comprising approximately 14 percent of the U.S. population. The racial and ethnic composition of the adolescent population of the United States is changing and will be increasingly diverse in the 21st century. Social determinants and educational achievement play an important role in the health of these adolescents.

- In 1999 two-thirds of the adolescent **population** was non-Hispanic white and one-third was of other racial and ethnic groups. By the year 2050, projections of the population indicate that Hispanic, black, American Indian, and Asian adolescents will constitute 56 percent of the adolescent population (figure 1).

- **Poverty** during adolescence has immediate and lasting negative consequences. In 1998, 17 percent of all adolescents lived in families with incomes below the poverty level. One-parent households headed by women experience the highest rates of poverty. Forty percent of adolescents in female-headed families were living in poverty, compared with 8 percent of adolescents in two-parent families (figure 2).

- **Employment** during the adolescent years can have beneficial or negative effects on the health and well-being of youth. In 1999 approximately two-fifths of adolescents 16–19 years of age were employed during the school year and over one-half worked during the summer months. The proportion of adolescents employed during the school year and during the summer increased with age (figure 3).

- Although most adolescents complete high school, in 1998 the **dropout rate** among students 15–19 years of age in grades 10–12 was 4 per 100 students. The proportion of adolescents who dropped out without completing high school increased from 2 percent of students 15–16 years of age to almost 11 percent of those 19 years of age. Students from low-income families dropped out of high school about four times as frequently as students from middle-income and high-income families (figure 4).

Adolescent Health Status

Indicators of adolescent health status include activity limitation, dental health, suicide ideation and attempts, as well as emergency department visit rates, hospital discharge rates, and death rates. The health of adolescents varies by age, gender, race and Hispanic origin.

- **Activity limitation** due to a physical, mental, or emotional health problem is one indicator of adolescent health status. The vast majority of adolescents do not have any activity limitation. In 1997 approximately 8 percent of adolescents 10–17 years of age were reported to have some activity limitation. Receipt of special education services was the only activity limitation identified for about 5 percent of adolescents (figure 5).

- During 1988–94 one-fifth of adolescents 10–19 years of age had at least one **untreated dental caries** or active tooth infection. Three times as many adolescents in families living below the poverty level had untreated caries as did adolescents in families with incomes twice the poverty level or higher (figure 6).

- **Suicidal ideation or attempting suicide** is one indicator of mental or emotional health. In 1999, 25 percent of female adolescents and 14 percent of male adolescents in grades 9–12 reported seriously considering or attempting suicide (figure 7).

- Adolescents may be **victims of violent crimes**, including rape or sexual assault, aggravated and simple assault, and robbery. During the period 1992–97 an average of approximately 3.4 million adolescents 12–19 years of age were reported to be victims of violent crimes each year. The rates of violent crime victimization for adolescents 12–19 years of age were lower in 1997 than in 1992, with declines in each of the major categories of victimization (figure 15).

Emergency Department Visits by Adolescents

- In 1995–97 adolescents 10–19 years of age made about 11.6 million **emergency department visits** each year. Approximately one-half of these visits were for injuries. Injury-related and noninjury-related visit rates increased with age. Among female adolescents pregnancy-related emergency department visit rates increased almost sevenfold between 14 and 19 years (figures 8 and 9).

- In 1995–97 four **causes of injury**—being struck, falls, cuts, and motor vehicle traffic-related injuries—accounted for nearly 60 percent of all injury-related emergency department (ED) visits. ED visit rates for cuts and motor vehicle traffic-related injuries increased with age, while ED visit rates for falls decreased with age (figure 10).

- The most common **emergency department injury diagnoses** include fractures, sprains and strains, open wounds, and contusions. In 1995–97 these four injury diagnoses accounted for 80 percent of first-listed injury diagnoses in emergency department visits for adolescents 10–19 years of age (figure 11).

- Asthma, upper respiratory conditions, and abdominal or gastrointestinal (GI) conditions are among the leading **emergency department (ED) noninjury diagnoses** for adolescents 10–19 years of age. Among female adolescents, the ED visit rate for abdominal and GI conditions, as well as ED visits for sexually transmitted diseases, urinary tract infections, and pregnancy-related conditions, increased markedly with age (figure 12).

Adolescent Hospitalizations

- In 1995–97 adolescents 10–19 years of age had 1.6 million hospitalizations annually. **Hospital discharge rates** increased with age across the adolescent years, but the pattern varied by gender and diagnosis (figure 8).

- In 1995–97 noninjury-related causes accounted for 72 percent of all **hospital discharges** among male adolescents and 39 percent (excluding pregnancy) among female adolescents. Injuries accounted for 26 percent of discharges among males and 8 percent among females. Among female adolescents, pregnancy-related causes (including deliveries and diagnoses associated with pregnancy) accounted for 53 percent of discharges (figure 13).

- Asthma, psychoses, fractures, poisoning, and appendicitis were among the leading first-listed **hospital discharge diagnoses** for adolescents in 1995–97. These five diagnoses accounted for 20 percent of all hospital discharges (figure 14).

Adolescent Mortality

- In 1996–97 about 19,000 adolescents died each year. Nearly 14,000 adolescents died annually from injury-related causes; in contrast 5,000 adolescents died from natural causes. The proportion of all **deaths** from injuries increased with age from 47 percent among adolescents 10 years of age to 81 percent among adolescents 18 years of age (figure 16).

- **Motor vehicle traffic-related injuries and firearm-related injuries** are the two leading causes of injury death among adolescents 10–19 years of age. In 1996–97 these two causes accounted for 55 percent of all deaths and 75 percent of all injury deaths. Motor vehicle traffic death rates increased markedly with age, with the greatest increase occurring between ages 15 years and 16 years for male and female adolescents (figure 17).

- In 1996–97 **motor vehicle traffic-related and firearm-related death rates** among adolescents varied by urbanization of residence, although marked increases with age were apparent in all three urbanization categories. Adolescents living in the most densely populated counties had higher death rates associated with interpersonal violence (firearm homicide), while adolescents living in more rural counties had higher rates of motor vehicle fatalities (figure 18).

Adolescent Reproductive Health

As adolescents develop sexually, they face issues and decisions about their own sexuality. The majority of today's adolescents are becoming sexually active during their teen years and experience many of the health consequences associated with sexual activity, such as pregnancy and sexually transmitted diseases. Disparities by age, race, and Hispanic origin were observed in all measures of reproductive health.

- More than 900,000 adolescents become pregnant each year. In 1996 the **pregnancy rate** was 98.7 pregnancies per 1,000 adolescent women aged 15–19, a decrease of 15 percent since 1991. Pregnancy rates increased with age from 67.8 for adolescents 15–17 years of age to 146.4 for adolescents 18–19 years (figure 19).

- In 1997–98 there were approximately 493,600 births annually to adolescents 13–19 years of age, accounting for 13 percent of all births in each year. There was a consistent pattern of increasing **birth rates** by maternal age. Overall, 19-year-old adolescents were nearly seven times as likely to have a birth as their 15-year-old counterparts (figure 20).

- Infants of adolescent mothers are more likely to be **low birthweight** than infants of mothers in their twenties and thirties. In 1997–98, 13.2 percent of infants born to adolescents under the age of 15 years and 9.5 percent of infants born to adolescents 15–19 years of age were low birthweight. In contrast 7.2 percent of infants born to women in their twenties and thirties were low birthweight (figure 21).

- The **infant mortality** rate is an important indicator of the health and well-being of infants and their adolescent mothers. During 1995–97 there were 10.6 infant deaths per 1,000 live births to adolescent mothers. Among the youngest adolescent mothers (13–14 years of age) the infant mortality rate was 1.8 times that of mothers 19 years of age (figure 22).

- **Sexually transmitted diseases** (STD's) are the most commonly reported infectious diseases among sexually active adolescents; chlamydia and gonorrhea are the most common bacterial causes of STD's. Reported rates for chlamydial and gonococcal infections are higher among female adolescents 15–19 years of age than among male adolescents and adults of either gender (figure 23).

- Although the overall prevalence of **acquired immunodeficiency syndrome** (AIDS) is relatively low among adolescents, adolescents in some minority and racial groups are disproportionately affected by HIV and AIDS (figure 24).

Adolescent Risk Behavior

Many adolescents are engaging in risk behaviors that are harmful or dangerous to themselves and others, with consequences to their health and well-being that may be immediate or long-term. There were distinct differences in the percentage of students engaging in risk behaviors by grade level, gender, race, and Hispanic origin.

- In 1999 one-half of all high school students reported that they had ever been **sexually active**. Sixty-six percent of female students and 64 percent of male students in the 12th grade had ever had sexual intercourse, compared with 33 percent of female students and 45 percent of male students in the 9th grade. Between 1991 and 1999 the proportion of high school students reporting sexual experience decreased by 8 percent (figure 25).

- In 1999 more than one-third of high school students reported **smoking cigarettes** in the previous 30 days, and 17 percent reported smoking frequently (20 or more days). The prevalence of cigarette smoking among high school students in 1999 was 27 percent higher than in 1991. (figure 26).

- In 1999 about one-half of all high school students (48 percent of female and 52 percent of male students) reported **alcohol use** in the previous 30 days. Binge drinking, that is, having 5 or more drinks on 1 occasion, was reported by 28 percent of female students and 35 percent of male students during the same 30-day period (figure 27).

- **Marijuana** is the most commonly used illicit drug among high school students. In 1999 almost one-half (47 percent) of high school students had ever used marijuana, and more than one-fourth had used marijuana one or more times in the past 30 days (figure 28).

- **Weapon carrying** is associated with violence and serious injury. In 1999, 6 percent of female and 29 percent of male high school students reported carrying a gun or other weapon in the past 30 days. Between 1991 and 1999 the percent of students who reported carrying a weapon decreased by 35 percent (figure 29).

- **Physical activity** provides important health benefits for adolescents. In 1999 more than two-thirds of all high school students participated in moderate to vigorous physical activity. Male and female students were more likely to participate in 9th grade than in higher grades (figure 30).

Adolescent Health Care Access

Adolescents have lower rates of health care utilization than younger and older persons, despite the health problems that affect the adolescent population, such as sexually transmitted diseases, emotional and behavioral problems, unintended pregnancy, drug and alcohol abuse, and injuries and violence. Access to and use of health care services is dependent in part on health insurance coverage or the ability to pay for services.

- In 1997, 17 percent of adolescents had no **health care coverage**. One-third of adolescents in families with incomes below the poverty level were uninsured compared with 8 percent of adolescents in families with incomes greater than two times the poverty level. The proportion of adolescents without health care coverage increased with age in every income category (figure 31).

- Lack of health insurance coverage has a significant impact on adolescents' access to routine health care. In 1997 the percent of adolescents who had not had a **health care visit** in the past year was 2.6 times as high for those without health insurance as for those with health insurance. The percent of adolescents without a health care visit declined with age among females and increased with age among males (figure 32).

Mortality Trends

In 1998 life expectancy at birth increased to an all-time high and life expectancy for black males increased for the fifth consecutive year. Infant mortality was unchanged from 1997. The death rate for HIV infection declined for the third straight year. Death rates for heart disease, cancer, stroke, homicide, and suicide also decreased in 1998.

- In 1998 **life expectancy** at birth reached an all-time high of 76.7 years and **infant mortality** remained at a record low 7.2 deaths per 1,000 live births (tables 23 and 28).

- Between 1993 and 1998 **life expectancy** at birth for black males increased 3.0 years to a record high of 67.6 years, due in large part to continuing declines in mortality from HIV infection and homicide. However, life expectancy was still 6.9 years shorter for black males than for white males in 1998 (table 28).

- Mortality from **heart disease**, the leading cause of death, declined 3 percent in 1998, continuing a long-term downward trend. The 1998 age-adjusted death rate for heart disease was about one-half the rate in 1970 (tables 30, 32, and 37).

- Mortality from **cancer**, the second leading cause of death, decreased 1.6 percent in 1998, continuing the decline that began in 1990. Over the preceding 20-year period, 1970–90, age-adjusted cancer death rates steadily increased (tables 30, 32, and 39).

- Mortality from **stroke**, the third leading cause of death, appears to have resumed a downward trend. In 1998 the age-adjusted death rate fell 3.1 percent, declining for the third straight year following a leveling off earlier in the decade. Between 1980 and 1992 stroke mortality declined at an average rate of 3.6 percent per year (tables 30, 32, and 38).

- Mortality from **unintentional injuries,** the fifth leading cause of death, was unchanged between 1997 and 1998. Since the 1970’s the trend in injury mortality has been generally downward (tables 30 and 32).

- The age-adjusted death rate for **suicide**, the eighth leading cause of death, has been edging downward during the 1990’s. The age-adjusted suicide rate was 10.4 deaths per 100,000 population in 1998, compared with 11.5 in 1990 (tables 30, 32, and 47).

- The age-adjusted **homicide** rate fell almost 9 percent in 1998, continuing a downward trend that began in the early 1990’s. At 7.3 homicides per 100,000 population in 1998, this was the lowest rate in about three decades. Despite the overall decline in homicide mortality, this cause is still the leading cause of death for young black males 15–24 years of age (tables 30 and 46).

- Mortality from **HIV infection** declined 21 percent in 1998, following a 48-percent decline in 1997 and a 29-percent decline in 1996. This 3-year decline contrasts sharply with the period 1987–94, when HIV mortality increased at an average rate of 16 percent per year (tables 30 and 43).

Disparities in Mortality

Despite overall declines in mortality, disparities among racial and ethnic groups, for many causes of death, are substantial. Disparities among persons of different education levels continue. Persons with less than a high school education have death rates at least double those with education beyond high school.

- In 1997 **infant mortality** rates were highest among infants of black, Hawaiian, and American-Indian mothers (13.7, 9.0, and 8.7 deaths per 1,000 live births). Infant mortality was lowest for infants of Chinese-American mothers (3.1 per 1,000). Mortality rates for infants of Hispanic mothers and non-Hispanic white mothers were the same (6.0 per 1,000 live births) (table 20).

- **Infant mortality** decreases as the mother’s level of education increases and this disparity is greater for white mothers than for mothers in other racial and ethnic groups. In 1997 mortality for infants of non-Hispanic white mothers with less than 12 years of education was more than double that for infants whose mothers had 13 or more years of education. The disparity in infant mortality by mother's education was 29 percent for non-Hispanic black mothers and 12 percent for Mexican-American mothers (table 21).

- **Homicide among young black males** 15–24 years of age declined 10.4 percent per year on average between 1993, the year the rate peaked, and 1998. Despite the decline, the rate in 1998 (96.5 deaths per 100,000 population) was still almost 8 times the rate for young white males. Among adults 25–44 years of age, the homicide rate for black males was nearly 7 times the rate for white males, and the **HIV infection** death rate for adult black males 25–44 years of age was 6 times the rate for white males in this age group (tables 43 and 46).

- In 1998 the **homicide rate among young Hispanic males** 15–24 years of age (41.1 deaths per 100,000 population) was about 7 times the rate for non-Hispanic white males. Among adults 25–44 years of age, the homicide rate for Hispanic males was more than 3 times the rate, and the **HIV infection** death rate for Hispanic males 25–44 years of age was more than 2 times the rate for non-Hispanic white males (tables 43 and 46).

- The risk of suicide is higher for elderly white males than for other groups. In 1998 the **suicide rate among white males** 85 years of age and over (62.7 deaths per 100,000 population) was more than 3 times that for young white males 15–24 years (table 47).

- In 1998 among **American Indians** the age-adjusted death rates for **motor vehicle-related injuries** (31.8 deaths per 100,000 population) and **diabetes** (29.6) were 2 and 2.5 times the rates for white persons and the death rate for **cirrhosis** (22.0) was 3 times the rate for white persons. Death rates for the American-Indian population are known to be underestimated (table 30).

- In 1998 overall mortality was 53 percent higher for **black Americans** than for white Americans. In 1998 the age-adjusted death rates for the black population exceeded those for the white population by 78 percent for **stroke**, 50 percent for **heart disease**, 33 percent for **cancer**, and almost 700 percent for **HIV infection** (table 30).

- In 1998 the overall age-adjusted death rate for **Asian-American** males was 40 percent lower than the rate for white males. However the **homicide** rate among Asian males was 14 percent lower than for white males and the death rate for **stroke** was 8 percent higher for Asian males than for white males. Death rates for Asian Americans are known to be underestimated somewhat (tables 36, 38, and 46).

- In 1998 the age-adjusted death rate for **chronic obstructive pulmonary diseases (COPD)**, the fourth leading cause of death, was 43 percent higher for males than females. Between 1990 and 1998 age-adjusted death rates for males were relatively stable while death rates for females increased at an average annual rate of almost 3 percent (tables 30 and 32).

- Death rates are higher among persons with less **education**. In 1998 the age-adjusted death rate for chronic diseases among adults with fewer than 12 years of education was more than twice the rate among those with more than 12 years of education. The death rate for injuries for the least educated was 3 times the rate for the most educated adults (table 35).

- Between 1992 and 1998 the **occupational injury** death rate decreased 13 percent to 4.5 deaths per 100,000 employed workers. The two industries with the highest death rates were mining and agriculture, forestry, and fishing (23–24 deaths per 100,000). Construction with a death rate of 14.5 per 100,000 accounted for the largest number of deaths, nearly 20 percent of all occupational injury deaths (table 50).

Natality

Although birth rates for teens continued the downward trend that began in 1992, birth rates for women in their principal childbearing ages (twenties) increased in 1998 and overall fertility increased for the first time since 1990. The number of births to unmarried women increased 3 percent in 1998, the highest number ever reported. The proportion of babies born with low birthweight continued to edge upward.

- In 1998 the **birth rate for teenagers** (15–19 years) declined for the seventh consecutive year, to 51.1 births per 1,000 women aged 15–19 years. Between 1991 and 1998 the teen birth rate declined more for 15–17 year-olds than for 18–19 year-olds (21 percent compared with 13 percent) (table 3).

- In 1998 the **birth rate for unmarried women** increased slightly to 44.3 births per 1,000 unmarried women aged 15–44 years, but was still below its highest level, 46.9 in 1994. Between 1994 and 1998 birth rates for unmarried black women and unmarried Hispanic women each declined about 11 percent (table 9).

- **Low birthweight** is associated with elevated risk of death and disability in infants. In 1998 the rate of low birthweight (infants weighing less than 2,500 grams at birth) increased to 7.6 percent overall, up from 7.0 percent in 1990. Since 1990 the low-birthweight rate increased for most racial and ethnic groups, except for black infants. The rise in multiple births has influenced the upward trend in low birthweight (table 12).

- **Cigarette smoking during pregnancy** is a risk factor for poor birth outcomes such as low birthweight and infant death. In 1998 the proportion of mothers who smoked cigarettes during pregnancy declined to a record low of 12.9 percent, down from 19.5 percent in 1989. However the percent of teenage mothers 15–19 years who smoked increased between 1994 and 1998 (table 11).

Morbidity

Activity limitation and health status (self- or family member-assessed) are two summary measures of morbidity presented in this report. Additional measures of morbidity that are presented include the incidence of specific diseases.

- **Activity limitation** due to a chronic condition is substantially higher among those with lower family incomes. In 1997 non-Hispanic white and non-Hispanic black persons who were poor were nearly three times as likely to report activity limitation as were those with family income at least twice the poverty threshold (29–30 percent compared with 11 percent of the noninstitutionalized population, age adjusted) (table 57).

- In 1998 the percent of persons reporting **fair or poor health** was 3.9 times as high for persons living below the poverty threshold as for those with family income at least twice the poverty threshold (22.2 percent and 5.7 percent, age adjusted) (table 58).

- The continuing decline in the number of newly reported **AIDS cases** is evidence of the beneficial effects of new treatment regimens. In 1998, 20 percent fewer cases were reported than in the previous year. Despite the declines, AIDS incidence continues to disproportionately affect the non-Hispanic black and Hispanic populations (table 53).

- In 1998 **tuberculosis (TB)** incidence declined for the sixth consecutive year to 6.8 cases per 100,000 population, a reflection of the apparent strengthening of TB-control programs nationwide. Despite the progress in controlling TB, the 1998 rate remained above the national objective for 2000 of 3.5 cases per 100,000 (table 52).

- Between 1990 and 1998 the incidence of primary and secondary **syphilis** declined 87 percent to 2.6 cases per 100,000 population, below the national objective for 2000 of 4 per 100,000 (table 52).

- The decline in **gonorrhea** incidence that characterized the 1980's slowed in the 1990's. In 1998, gonorrhea incidence increased for the first time since 1980, to 133 cases per 100,000 population, well below the rate when national reporting began in the mid-1970's, but still above the 2000 objective of 100 per 100,000 (table 52).

- Overall **cancer incidence** has been declining in the 1990's, more so for males than for females. Between 1992 and 1996 cancer incidence rates declined 15 percent for males and 2 percent for females. Despite these declines, cancer incidence is one-third higher among males than females (table 55).

- **Prostate cancer and lung cancer** are the two most frequently diagnosed cancers in men. In 1996 incidence of prostate cancer was 65 percent higher in black men than in white men, and lung cancer incidence, 48 percent higher (table 55).

- **Breast cancer** incidence in 1996 was 11 percent lower for black women than for white women. However survival was lower for black women than for white women. The 5-year relative survival rate for breast cancer diagnosed in 1989–95 was 71 percent for black women and 86 percent for white women (tables 55 and 56).

- Between 1980 and 1998 the **injuries with lost workdays** rate decreased 26 percent to 2.9 per 100 full-time equivalents (FTE's) in the private sector. Within the goods-producing industries, manufacturing had the highest injury rate (4.2 injuries with lost workdays per 100 FTE's) and within the service-producing sector, the highest injury rate was reported for transportation, communication, and public utilities (4.2) (table 51).

Health Behaviors

Cigarette smoking is the single leading preventable cause of death in the United States. It increases the risk of lung cancer, heart disease, emphysema, and other respiratory diseases. Cigarette smoking by adults has remained stable at about 25 percent since 1990. Heavy and chronic use of alcohol and use of illicit drugs increase the risk of disease and injuries.

- **Cigarette smoking** is more prevalent among American-Indian men and non-Hispanic black men than among other men. In 1995–98, 41 percent of American-Indian men and 31 percent of non-Hispanic black men were current smokers compared with 27 percent of non-Hispanic white men, 24 percent of Hispanic men, and 18 percent of Asian men. Among women, the prevalence of smoking was highest among American-Indian women (29 percent) and lowest among Hispanic women (14 percent) and Asian women (11 percent) (percents are age adjusted and are for persons 18 years of age and over) (table 61).

- In 1998, 62 percent of adults 18 years of age and over reported they were **current drinkers**, 22 percent reported they were lifetime abstainers, and 16 percent were former drinkers. Women were about twice as likely as men to be lifetime abstainers (29 percent compared with 15 percent) (table 65).

- **Binge drinking**, having five or more alcoholic drinks on at least one occasion in the past month, is more common among young people 18–25 years of age than among younger or older persons. In 1998 among young adults, binge drinking was 1.5–2.4 times as likely for non-Hispanic white persons (38 percent) as for Hispanic and non-Hispanic black persons (25 and 16 percent). In 1998 rates of binge drinking in these populations were higher than in 1997 but similar to rates observed in 1996 (table 62).

- In 1997 there were more than 161,000 **cocaine-related emergency department visits**, twice as many as in 1990. The greatest increases occurred for persons 35 years and over, reflecting an aging population of drug abusers being treated in emergency departments. However, the proportion of adults aged 35 years and over who reported using cocaine in the past month has remained stable during this period at less than 1 percent (tables 62 and 64).

Prevention Services

Use of preventive health services has substantial positive effects on the long-term health status of those who receive the services. The use of several different types of preventive services has been increasing. However, disparities in use of preventive health care by family income and by race and ethnicity remain in evidence.

■ Between 1990 and 1998 the percent of mothers receiving **prenatal care** in the first trimester of pregnancy increased from 76 to 83 percent. The largest increases in receipt of early prenatal care have occurred for racial and ethnic groups with the lowest levels of use, thereby reducing disparities in use of early care. However in 1998 the percent of mothers with early prenatal care still varied substantially among racial and ethnic groups from 69 percent for American-Indian mothers to 92 percent for Cuban mothers (table 6).

■ In 1998, 79 percent of children 19–35 months of age received the combined **vaccination** series of 4 doses of DTP (diphtheria-tetanus-pertussis) vaccine, 3 doses of polio vaccine, 1 dose of measles-containing vaccine, and 3 doses of Hib (Haemophilus influenzae type b) vaccine, up from 69 percent in 1994. Children living below the poverty threshold were less likely to have received the combined vaccination series than were children living at or above poverty (74 compared with 82 percent) (table 73).

■ In 1998 only 100 cases of **measles** were reported, down from 28,000 cases in 1990, providing evidence of the success of vaccination efforts to increase population immunity to measles (table 52).

■ Regular **mammography** screening for women aged 50 years and over has been shown to be effective in reducing deaths from breast cancer. In 1998, 69 percent of women aged 50 years and over reported mammography screening in the previous 2-year period, up from 61 percent in 1994. Among women living below the poverty threshold in 1998, 53 percent reported recent screening compared with 72 percent of women with family income at or above poverty (table 82).

Access to Care

Access to health care is important for preventive care and for prompt treatment of illness and injuries. Some indicators of access to health care services include having a usual source of health care, having a recent health care contact, use of the emergency department, and treatment of health problems such as dental caries. Access to health care varies by health insurance status, poverty status, race, and ethnicity.

■ In 1997, 14 percent of children under 18 years of age had no **health insurance coverage**. More than one-quarter of children with family income of 1–1.5 times the poverty level were without coverage compared with only 6 percent of those with income above twice the poverty level (table 128).

■ In 1997–98, 13 percent of children under 18 years of age did not have a **health care visit to an office or clinic** within the previous 12-month period. Uninsured children were nearly three times as likely as those with health insurance to be without a recent visit (29 percent compared with 10 percent) (table 75).

■ In 1997–98, about 7 percent of children under 18 years of age had **no usual source of health care**. More than one-quarter of children without health insurance coverage had no usual source of health care (table 76).

■ In 1998, 20 percent of children under 18 years of age had an **emergency department visit** within the past 12 months. Children living below the poverty threshold were 50 percent more likely than nonpoor children to have a recent emergency department visit (27 percent compared with 18 percent) (table 77).

■ In 1998, three-quarters of children under 18 years of age had a **dental visit** in the past year. Hispanic and non-Hispanic black children were less likely than non-Hispanic white children to have a recent dental visit (62 percent, 70 percent, and 77 percent, respectively) (table 80).

■ In 1998 one in five adults 18 years of age and over had an **emergency department visit** within the past 12 months. Emergency department visits were more common among young adults 18–24 years of age and elderly persons 75 years of age and over (25 and 24 percent) than among adults 25–64 years (17–19 percent) (table 79).

- In 1988–94, 28 percent of adults 18–64 years of age had at least one untreated **dental cavity**, down from 48 percent in 1971–74. Although substantial declines in untreated dental cavities have occurred for adults at all income levels, nearly one-half of adults living in poverty compared with one in five nonpoor adults had an untreated cavity in 1988–94 (table 81).

Outpatient Care

Major changes continue to occur in the delivery of health care in the United States, driven in large part by the need to rein in rising costs. One significant change has been a decline in use of inpatient services and an increase in outpatient services such as outpatient surgery and home health care.

- In 1997, 61 percent of all **surgical operations** in community hospitals were performed on outpatients, up from 51 percent in 1990, 35 percent in 1985, and 16 percent in 1980 (table 95).

- Among the elderly, use of **home health care** grew by more than 70 percent during the period from 1992 to 1996, while the use of **hospice** services remained fairly stable over the same period (data are age adjusted) (table 88).

Inpatient Care and Resources

Utilization of hospital inpatient services has declined, as has the number of beds in community hospitals. Utilization of nursing home care has also declined.

- **Hospital discharge rates** are higher among poor persons than among those with higher family incomes. In 1998 among persons under 65 years of age, hospital discharge rates for the poor were double those for persons with family income above twice the poverty level (175 and 87 per 1,000 population). Average length of stay was 1.5 days longer for the poor than for the nonpoor (5.3 and 3.8 days) (data are age adjusted) (table 89).

- Between 1985 and 1998 the **hospital discharge rate** declined by one-quarter from 138 discharges per 1,000 population to 103 per 1,000, while **average length of stay** declined by almost 1.5 days, from 6.3 to 4.9 days (data are age adjusted) (table 90).

- Between 1990 and 1998 the number of **community hospital beds** declined from 927,000 to 840,000. Community hospital occupancy, estimated at 63 percent in 1998, has been relatively stable since the mid-1990's, after declining from 67 percent in 1990 and 76 percent in 1980 (table 109).

- In 1997 there were almost 1.5 million elderly **nursing home residents** 65 years of age and over. One-half of the elderly residents were 85 years of age and over and three-fourths were female. Between the mid-1970's and 1997, nursing home utilization rates increased for the black population and decreased for the white population (table 96).

- In 1998 there were 1.8 million **nursing home beds** in facilities certified for use by Medicare and Medicaid beneficiaries. Between 1995 and 1998 nursing home bed occupancy in those facilities was relatively stable, estimated at 84 percent in 1998 (table 113).

- Between 1984 and 1994 the supply of beds in inpatient and residential **mental health organizations** declined 14 percent to 98 beds per 100,000 population. The decline was greatest for state and county mental hospitals with a reduction of 45 percent to 31 beds per 100,000 population (table 110).

Health Care Expenditures

National Health Expenditures

After 25 years of double-digit annual growth in national health expenditures, the rate of growth slowed during the 1990's. However the United States continues to spend more on health than any other industrialized country.

■ In 1998 **national health care expenditures** in the United States totaled almost $1.15 trillion, increasing less than 6 percent from the previous year and continuing the slowdown in growth of the 1990's. During the 1980's national health expenditures grew at an average annual rate of 11 percent (table 115).

■ This slowdown in growth is also reflected in the **Consumer Price Index (CPI)**. The rate of increase in the medical care component of the CPI declined from 6.3 percent in 1990–95 to 3.3 percent in 1995–99 (table 116).

■ The combination of strong economic growth and the slowdown in the rate of increase in health spending over the last few years has stabilized **health expenditures as a percent of the gross domestic product (GPD)** at 13.4–13.7 percent between 1995 and 1998, after increasing steadily from 8.9 percent in 1980 (table 115).

■ Despite the slowdown in the growth of health spending, the United States continues to spend a larger share of **GDP** on health than any other major industrialized country. The United States devoted 13.4 percent of GDP to health in 1997 compared with about 10–11 percent each in Germany, Switzerland, and France, the countries with the next highest shares. (table 114).

Expenditures by Type of Care and Source of Funds

Expenditures for hospital care as a percent of national health expenditures continue to decline. The sources of funds for medical care differ substantially according to the type of medical care being provided.

■ **Expenditures for hospital care** continued to decline as a percent of national health expenditures from 42 percent in 1980 to 33 percent in 1998. Physician services accounted for 20 percent of the total in 1998, drugs for 11 percent, and nursing home care for 8 percent (table 118).

■ **Home health care expenditures** declined 6 percent between 1996 and 1998 as Medicare's new cost controls and fraud-and-abuse activities restrained growth in spending (table 118).

■ Between 1995 and 1998 **drug expenditures** increased at an average annual rate of 11 percent. The rate of increase for drug expenditures during this period was more than double the rate of increase for total national health expenditures. In 1999 prescription drugs posted one of the highest rates of increase in the Consumer Price Index, 5.7 percent (tables 116 and 118).

■ Between 1993 and 1998 the average annual increase in **total expenses in community hospitals** was 3.7 percent, following a period of higher growth that averaged 9.3 percent per year from 1985 to 1993 (table 122).

■ In 1998, 34 percent of **personal health care expenditures** were paid by the Federal Government and 10 percent by State and local government; private health insurance paid 33 percent and 20 percent was paid out-of-pocket (table 119).

■ In 1998 the major **sources of funds** for hospital care were Medicare (32 percent) and private health insurance (31 percent). Physician services were also primarily funded by private health insurance (51 percent) and Medicare (22 percent). In contrast, nursing home care was financed primarily by Medicaid (46 percent) and out-of-pocket payments (33 percent) (table 119).

■ In 1997 the average monthly charge per **nursing home** resident was $3,609. Residents for whom the source of payment was private insurance, family support, or their own income paid close to the average charge compared with an average monthly charge of over $6,000 when Medicare was the payor and $3,100 when Medicaid was the source of payment (table 124).

- **The National Institutes of Health (NIH)** account for about 80 percent of Federal funding for health research and development. In 1997 the National Cancer Institute accounted for 20 percent of NIH's research and development budget, the National Heart, Lung and Blood Institute for 12 percent, and the National Institute of Allergy and Infectious Diseases for 10 percent. The Department of Defense accounted for 7 percent of Federal funding for health research and development (table 126).

- In 1999 **Federal expenditures for HIV-related activities** increased 12 percent to $10 billion, compared with a 7-percent increase the previous year. Of the total Federal HIV-related spending in 1999, 58 percent was for medical care, 20 percent for research, 14 percent for cash assistance, and 8 percent for education and prevention (table 127).

Publicly Funded Health Programs

The two major publicly-funded health programs are Medicare and Medicaid. Medicare is funded by the Federal government and reimburses the elderly and the disabled for their health care. Medicaid is funded jointly by the Federal and State governments to provide health care for the poor. Medicaid benefits and eligibility vary by State. Medicare and Medicaid health care utilization and costs vary considerably by State.

- In 1998 the **Medicare** program had 38.8 million enrollees and expenditures of $213 billion (table 133).

- In 1996, 82 percent of **Medicare** beneficiaries were non-Hispanic white, 9 percent were non-Hispanic black, and 6 percent were Hispanic. Some 22–24 percent of Hispanic and non-Hispanic black beneficiaries were persons under 65 entitled to Medicare through disability compared with 10 percent of non-Hispanic white beneficiaries (table 135).

- In 1996, 10 percent of non-Hispanic white **Medicare** beneficiaries had a nursing home stay compared with 8 percent of non-Hispanic black beneficiaries and 5 percent of Hispanic beneficiaries. White beneficiaries were also more likely to have received dental care than non-Hispanic black or Hispanic beneficiaries (44 percent compared with 19 percent and 28 percent) (table 135).

- Total health expenditures per **Medicare** beneficiary (including non-Medicare health expenditures) varied from $7,800 for Hispanic beneficiaries to $8,900 for non-Hispanic white and $10,670 for non-Hispanic black beneficiaries in 1996 (table 135).

- In 1998 **hospital insurance (HI)** accounted for 64 percent of Medicare expenditures. Expenditures for home health agency care decreased to 9 percent of the HI expenditures in 1998, down from 13 percent in 1997. Expenditures for skilled nursing facilities continued to climb as a percent of the HI expenditures (10 percent in 1998) (table 133).

- In 1998 **supplementary medical insurance (SMI)** accounted for 36 percent of Medicare expenditures. Payments to managed care organizations increased from 6 percent of the SMI expenditures in 1990 to 20 percent in 1998 (table 133).

- Of the 33 million **Medicare enrollees** in the fee-for-service program in 1997, 11 percent were 85 years of age and over and 14 percent were under 65 years of age. Among elderly fee-for-service Medicare enrollees, payments increase with age from an average of $4,000 per enrollee for those aged 65–74 years to $7,900 for those 85 years and over (table 134).

- In 1997 **Medicare payments per enrollee** averaged $5,416 in the United States, ranging from $3,700–$3,800 in North Dakota, South Dakota, Vermont, and Montana to more than $6,700 in Massachusetts, the District of Columbia, and Louisiana (table 143).

- In 1998 **Medicaid** vendor payments totaled $142 billion for 40.6 million recipients (table 136).

- In 1998 children under the age of 21 years comprised 47 percent of **Medicaid** recipients but accounted for only 16 percent of expenditures. The aged, blind, and disabled accounted for 26 percent of recipients and 71 percent of expenditures (table 136).

- Of the 40.6 million **Medicaid** recipients in 1998, 41 percent were white, 24 percent black, 16 percent Hispanic, and 16 percent were of unknown race and ethnicity (table 136).

- In 1998, 22 percent of **Medicaid** payments went to nursing facilities, 15 percent to general hospitals, 14 percent to prepaid health care, and 10 percent to prescribed drugs (table 137).

- In 1998, 50 percent of **Medicaid** recipients used prepaid health care at a cost averaging $955 per recipient. One-fifth of recipients used early and periodic screening and family planning services but these services received just over 1 percent of Medicaid funds in 1998. The annual cost per recipient for screening and family planning averaged about $220 for each service (table 137).

- In 1998 the percent of **Medicaid recipients enrolled in managed care** varied substantially among the States from 0 in Alaska and Wyoming to 98–100 percent in Montana, Colorado, and Tennessee (table 144).

- Between 1997 and 1998 spending on health care by the **Department of Veterans Affairs** increased by less than 2 percent to $17.4 billion. In 1998, 38 percent of the total was for inpatient hospital care, down from 58 percent in 1990; 42 percent for outpatient care, up from 25 percent in 1990; and 10 percent for nursing home care, unchanged since 1990. In 1998, 55 percent of inpatients and 41 percent of outpatients were low-income veterans without service-connected disability (table 138).

- In 1997 **State mental health agency per capita expenditures** for mental health services ranged from $23 in Tennessee and West Virginia to $113 in New York and averaged $64 per capita for the total United States (table 142).

Privately Funded Health Care

About 70 percent of the population has private health insurance, most of which is obtained through the workplace. The share of employees' total compensation devoted to health insurance has declined in recent years. The health insurance market continues to change rapidly as new types of managed care products are introduced. The use of traditional fee-for-service medical care continues to decline.

- Between 1994 and 1997 the age-adjusted proportion of the population under 65 years of age with **private health insurance** has remained stable at 71–72 percent after declining from 76 percent in 1989. Some 92 percent of private coverage was obtained through the workplace (a current or former employer or union) in 1997 (table 128).

- In 1999 **private employers' health insurance costs** per employee-hour worked increased from $1.00 to $1.03 after declining from $1.14 in 1994. Among private employers the share of total compensation devoted to health insurance declined from 6.7 percent in 1994 to 5.4 percent in 1998 and 1999 (table 121).

- The average monthly contribution by full-time employees for family **medical care benefits** was 40 percent higher in small companies ($182 in 1996) than in medium and large companies ($130 in 1997) (table 132).

- During the 1990's the use of **traditional fee-for-service** medical care benefits by full-time employees in private companies declined sharply. In 1996 in small companies, 36 percent of full-time employees who participated in medical care benefits were in fee-for-service plans, down from 74 percent in 1990. In 1997 in medium and large companies, 27 percent of participating full-time employees were in fee-for-service plans, down from 67 percent in 1991. In 1996–97 full-time employees in private companies who participated in medical care benefits were more likely to be enrolled in preferred provider organizations (PPO's) than in health maintenance organizations (HMO's) (table 132).

- In 1999, 30 percent of the U.S. population was enrolled in **health maintenance organizations (HMO's)**, ranging from 23–24 percent in the Midwest and South to 37 percent in the Northeast and 41 percent in the West. HMO enrollment has been steadily increasing. Enrollment in 1999 was 81 million persons, more than double the enrollment in 1993 (table 131).

- In 1997 non-Hispanic black and Hispanic persons were less likely to have private health insurance than were non-Hispanic white persons. However among those with private health insurance coverage, non-Hispanic black and Hispanic persons were more likely than their non-Hispanic white counterparts to enroll in **HMO's**. The elderly were less likely to be enrolled in private HMO's than were younger adults and children (table 130).

- In 1999 the percent of the population enrolled in **HMO's** varied among the States from 0 in Alaska to 52–53 percent in California and Massachusetts. Other States with more than 40 percent of the population enrolled in HMO's in 1999 included Rhode Island, Delaware, Maryland, and Oregon (table 145).

- In 1998 the proportion of the population without **health care coverage** (either public or private) was 16.3 percent, compared with 16.1 percent the previous year and 12.9 percent in 1987. In 1998 the proportion of the population without health care coverage varied from 10 percent or less in Hawaii, Rhode Island, Vermont, Minnesota, Iowa, and Nebraska, to 20 percent or more in Mississippi, Texas, New Mexico, Arizona, Nevada, and California (table 146).

The Adolescent Health Chartbook describes the health of the adolescent population, 10–19 years of age. Adolescence is a period of accelerated growth and change, bridging the complex transition from childhood to adulthood. Young people experience profound biological, emotional, intellectual, and social changes, and the patterns of behavior they adopt may have long-term consequences for their health and quality of life.

Definitions of adolescence, and the years encompassed, vary. Adolescence is generally regarded as the period of life from puberty to maturity; the meaning of ‘‘puberty’’ and ‘‘maturity’’ are often debated by health professionals. Many adolescents begin puberty by age 10, although there is significant individual variation in the developmental and maturation time line. By age 19, most adolescents have completed high school and are embarking on widely divergent paths and living situations—from college to military service to employment. They are completing their teen years and entering the young adult realm, with new legal standing, responsibilities and independence.

The population commonly referred to as ‘‘teenagers’’ constitutes a unique cohort in American population and society. This second decade of life is often a turbulent period, in which adolescents experience hormonal changes, physical maturation, and frequently, opportunities to engage in risk behaviors. During this period adolescents experience special vulnerabilities, health concerns, and barriers to accessing health care.

The teenage years are also a time of exploration, idealism, and cynicism. Adolescents have remarkable creativity, energy, and potential. This period offers adolescents an opportunity to begin planning for their futures, to adopt healthy attitudes about risk behaviors, and to develop meaningful roles in their communities. More teens than ever before are making committments to community service through volunteer activities.

Organization of the Chartbook

The chartbook presents data on the current status of adolescent health, with a focus on the changes in health status during the adolescent period. Many of the health status measures are shown by single year of age or by two- or three-year age intervals to highlight the changes that occur in health as adolescents move through this important developmental period. Summary measures combining 5- or 10-year age groups (the norm for analyses of childhood health events) do not adequately capture the wide variation in health status and the vast developmental differences between younger and older adolescents.

Race and ethnic variation in adolescent health is discussed when the data sources allow for such analysis. Gender differences in some aspects of health status among adolescents become more apparent with age. These are presented when the data allow for such analysis and the differences are notable.

Socioeconomic status, as measured by family income, poverty status, or level of parents’ education, is strongly associated with the health of adolescents as well as the health of persons of all ages in the United States (1). Differences in the life circumstances of high- and low-socioeconomic status adolescents and their families influence health and health risk behavior through a number of pathways. Low family income decreases the ability to afford comfortable housing, healthy food, and appropriate health care, and to live in a safe and healthy environment. To fully assess the impact of socioeconomic factors in the health of adolescents, it is important to include examination of their school and family environments, as well as their broader sociostructural environments (2). A comprehensive presentation on socioeconomic status and adolescent health is beyond the scope of this chartbook. However, information on selected social determinants of health (figures 2–4) and the strong relationship between socioeconomic status and adolescent health has been documented in charts based on data sources that allow such analysis (figures 5, 6, 31, 32).

Characterizing the health of adolescents requires not only measuring mortality and morbidity but also describing other indicators of adolescent health. Risk behaviors, including behaviors that contribute to unintentional and intentional injuries, tobacco use, alcohol and other drug use, sexual behavior, physical inactivity, and unhealthy dietary behaviors may have a profound impact on current and future health. Reproductive health is a key element in adolescent health. The decision to become sexually active can have long-term and lasting consequences for some adolescents.

Healthy People 2010, a nationwide health promotion and disease prevention agenda that sets specific health objectives for the year 2010, also encompasses adolescent health (3). Twenty objectives have been designated as ‘‘critical adolescent objectives’’. Several of these objectives are included as leading Health Indicators in *Healthy People 2010*. Leading Health Indicators have been identified as major public health concerns of the U.S. and will be used to spotlight health achievements and challenges in the next decade. Throughout this chartbook, data that relate to either the 20 critical adolescent objectives or the Leading Health Indiators are noted as such.

This chartbook is divided into sections on population characteristics, health status, reproductive health, risk behaviors, and health care access. References are made to related tables in *Health, United States*. The 32 figures and accompanying text are followed by technical notes and data tables for each figure. Data tables include points graphed and for some charts additional related data are presented. The technical notes describe in further detail information about data sources and methods used that are not covered in the *Health, United States* Appendixes.

Population Characteristics

The first section of the chartbook describes selected sociodemographic characteristics of the adolescent population. One of the most notable characteristics is the changing distribution in the racial and ethnic composition of the adolescent population (figure 1). Today approximately 66 percent of adolescents are non-Hispanic white. It is estimated that in 2050, this proportion will decrease to 44 percent.

Other sociodemographic measures, including family structure, poverty status, employment, and dropout rates, describe the economic circumstances of adolescents (figures 2–4). Family structure affects adolescents' economic well-being (figure 2). Educational achievement is one of the most important indicators of lifetime economic opportunity and is associated with health status. Adolescents who drop out of high school will have fewer opportunities to succeed in the work force than their peers who complete high school (figure 4).

Health Status

The second section of the chartbook presents selected measures of physical, dental, and mental health status. Although adolescents do have physical health problems, they are at a greatly reduced risk from life-threatening illnesses that affect the very young or very old. Some adolescents experience a disability or chronic health condition that limits their activity or requires special education services (figure 5). The negative effects of poverty on dental health status as measured by untreated dental caries are apparent in figure 6.

Many of the normal transitions of life, such as the adjustment to the physical and biological changes to their bodies and new levels of independence and responsibility can be stressful for teenagers. Although mood swings are a common feature of adolescence, more serious suicidal thoughts or suicide attempts are indicators of a mental or emotional health problem (figure 7).

Adolescents are the victims of violent acts in their homes, schools, and communities. During the period 1992–97 an average of 3.4 million adolescents each year were victims of violent crime, including rape or sexual assault, aggravated and simple assault, and robbery (figure 15).

To further assess adolescent health status, data on emergency department visits and hospital discharges were analyzed (figures 8–14). These sources identify health events for which emergency department care or inpatient hospital care was received and provide information on leading diagnoses for injury and noninjury among adolescents.

Injuries are a major cause of emergency department visits among adolescents. In 1995–97 four external causes of injury accounted for nearly 60 percent of all injury-related visits: falls, being struck by or against an object or person, cuts, and motor-vehicle crashes (figure 10). The most common injury diagnoses were fractures, sprains and strains, open wounds, and contusions (figure 11). Asthma, upper respiratory conditions and abdominal or gastrointestinal conditions were among the leading noninjury-related diagnoses for adolescents' visits to emergency departments in 1995–97 (figure 12).

Hospital discharge rates for both injury and noninjury diagnoses increased with age for male and female adolescents (figure 13). Asthma, psychoses, appendicitis, fractures, and poisoning were among the leading first-listed diagnoses for hospitalized adolescents in 1995–97, accounting for 20 percent of all hospital discharges (figure 14).

Mortality rates are a measure of the most serious adolescent health events. Leading causes of injury mortality are presented in figures 16–18. Motor vehicle traffic-related injuries and firearm-related injuries are the two leading causes of death among adolescents 10–19 years of age, accounting for 55 percent of all deaths (figure 17). Changes in mortality by single year of age across the adolescent period are significant and striking. Where adolescents reside, that is, in urban, suburban, or rural settings, influences mortality risks. In 1996–97 adolescents living in the most densely populated metropolitan counties had higher death rates associated with interpersonal violence, while those in rural counties had higher rates of motor vehicle-related fatalities (figure 18).

Reproductive Health

The onset of puberty is one of the benchmarks of adolescence. For the first time in their lives, adolescents are facing issues and decisions about their own sexuality. The majority of today's adolescents are becoming sexually active during their teen years and experiencing many of the health consequences associated with sexual activity, such as pregnancy or sexually transmitted disease. More than 900,000 adolescents become pregnant each year (figure 19). Sexually transmitted diseases are the most commonly reported infectious diseases among sexually active adolescents (figure 23). Although the overall incidence of AIDS in adolescents is relatively low, the rate of HIV infection is higher. Sexual activity and drug use among adolescents place them at high risk for HIV transmission (figure 24) (4). Disparities by age, race and Hispanic origin were observed in all the measures of reproductive health.

In 1997–98 there were approximately 493,600 births each year to adolescent mothers, 13–19 years of age. Birth rates increased with age among all race and ethnicity groups, but varied widely by group (figure 20). Adolescent mothers have a higher risk of low-birthweight infants than mothers in their twenties and thirties (figure 21). Preterm or low-birthweight infants have a markedly increased risk of death or lifelong morbidity. The infant mortality rate among infants of adolescent mothers declines with increasing maternal age (figure 22). The infant mortality rate is an important indictor of the well-being of infants and their adolescent mothers.

Risk Behavior

Adolescents today are confronting societal and peer-related pressures to use tobacco, alcohol, or other drugs and to have sex at earlier ages. Many adolescents are engaging in risk behaviors that are harmful or dangerous to themselves and others, with consequences to their health and well-being that may be immediate or long term. Many of the patterns of behavior initiated during the adolescent years are associated with adult morbidity and mortality.

In 1999 one-half of all high school students had been sexually active; the proportion of students who reported ever having sexual intercourse and those who reported having multiple sex partners increased significantly with age (figure 25).

More than one-third of high school students reported smoking in the previous 30 days (figure 26). Although adolescents cannot legally purchase alcohol, drinking is commonplace among many high school students. One-half of all high school students reported drinking in the past 30 days (figure 27). Marijuana is the most commonly used illicit drug among high school students. In 1999 almost one-half of high school students used marijuana in their lifetime (figure 28).

Weapon carrying is associated with the most serious injuries resulting from violence. In 1999, 6 percent of female high school students and 29 percent of male students reported carrying a gun or other weapon (for example, a knife or club) in the previous 30 days (figure 29).

Although physical activity provides important health benefits for adolescents, the proportion of high school students who participate in physical activity was higher among students in 9th grade than in grades 10–12 (figure 30).

Health Care Access

Lack of health insurance is associated with diminished access to and use of preventive health services. Adolescents from poor and near poor families are morely likely to be uninsured than those from nonpoor families (figure 31). In 1997 adolescents without health insurance were more than twice as likely to not have visited a physician or other health professional in the past year as adolescents with health insurance (figure 32).

Chartbook Data Sources

The data presented in the chartbook are from nationally representative health surveys or vital statistics. One of the data sources, the Youth Risk Behavior Survey (YRBS), is a survey of high school students in grades 9–12. Figures based on the YRBS present data for adolescents by grade level rather than by age. Measures of risk behavior in YRBS are limited to the population of adolescents enrolled and attending high school. Consequently, the measures of risk behaviors in the chartbook may be slightly lower than if all high school-aged adolescents were included in the survey. In 1996, 5 percent of adolescents 14–17 years of age were not enrolled in school. These adolescents are at increased risk of alcohol, drug, and tobacco use, and are more likely to engage in violence-related behavior (5).

For data from the following systems, multiple years are combined to increase the reliability of estimates: the National Hospital Ambulatory Medical Care Survey (1995–97), the National Hospital Discharge Survey (1995–97), the National Crime Victimization Survey (1992–97), the National Vital Statistics System, Mortality (1996–97), the National Vital Statistics System, Natality (1997–98), the National Linked File of Live Births and Infant Deaths (1995–97), and the AIDS Surveillance System (1996–98). The Third National Health and Nutrition Examination Survey was designed to provide estimates for the period 1988–94. See Technical Notes and Appendix I for descriptions of data sources.

In national surveys that are not specifically designed to study adolescents, the number of observations may not be large enough to analyze differences among age, sex, and race/ethnicity groups. For certain topics, data are presented for all races combined in the chart, and significant race differences (if they exist) are discussed in the accompanying text.

Other Sources of Data

In addition to the data sources used in this chartbook, we would like to acknowledge other sources of available data on adolescent health. Each of the following sources makes a unique contribution to the collective body of knowledge on adolescent health. The National Longitudinal Study of Adolescent Health (National Institutes of Health) was designed to study the influences on health and health behaviors in adolescence, with an emphasis on the social contexts in which adolescents live (6). Monitoring the Future (National Institute on Drug Abuse) is a nationally representative, annual survey of 8th-, 10th-, and 12th-grade students' values, behaviors, and lifestyle orientations (7). The 1998 National Alternative High School Youth Risk Behavior Survey (Centers for Disease Control and Prevention) collected information on health-risk behaviors among students who are at high risk for failing or dropping out of regular high school or who have been expelled from regular high school because of illegal activity or behavioral problems (8). *Great Transitions: Preparing Adolescents for a New Century*, is a report from the Carnegie Council on Adolescent Development about the nature and scope of adolescent problems (9). The National Adolescent Health Information Center at the University of California, San Francisco, with funding from Health Resources and Services Administration (HRSA) compiled data from a wide range of sources in their report *America's Adolescents: Are They Healthy?* (10). In 1997 the Commonwealth Fund conducted surveys of the health of adolescent girls and boys (11, 12). The Kaiser Family Foundation/YM Magazine National Survey of Teens: Teens Talk about Dating, Intimacy, and Their Sexual Experiences reports on a national survey of teens concerning the kinds of sexual situations they face (13). The U.S. Department of Health and Human Services (DHHS) has developed a website to provide information about America's adolescents (http://youth.hhs.gov/).

Data Gaps

Available data sources present several limitations for studying adolescent health. In some sources of data adolescents may not be considered as a separate group. They may be included in tabulations for children under age 15 or under age 18, or they may be included with young adults, ages 15–24. In such cases, trends pertaining specifically to adolescents cannot be separated from those pertaining to children or young adults. In data sources that do categorize adolescents separately, there are inconsistencies in the age ranges employed, making comparisons of data sources difficult. Furthermore, data for adolescents are often not available by single year of age. A major focus of this chartbook has been to address this limitation by presenting data by single year of age when possible.

Another obstacle in assessing the health status of the adolescent population is the lack of information on detailed racial and ethnic minority groups. The socioeconomic status and cultures of ethnic and racial groups may vary widely with important health consequences. Adolescents who are not white or black may be categorized as ''other'', masking notable health differences. In the chartbook, we presented the most detailed race and ethnic categories available given the constraints of numbers of observations.

For many data sources on adolescent health information on the socioeconomic status of the adolescents is not available. Educational attainment is often used as a measure of socioeconomic status for adults, but this is not a useful measure for an age group that has not yet completed their education. School-based surveys may collect health information directly from adolescents who are not knowledgeable about their family's income or other measures of socioeconomic status.

There are also important preventive measures for which data are not available, such as the percent of adolescents who are routinely up to date on all their vaccinations.

Several areas exist in which the special needs or problems of adolescents have been recognized. But national data are not available to more fully explore these areas. Some of those issues are briefly discussed here.

■ Adolescents have unique needs in health care services and to meet these health care needs, routine health services must be available in a wide range of settings. While these needs have been recognized by researchers and health policy planners, information about the health services sought by and provided for adolescents is limited (10).

■ Female adolescents have an increased sensitivity about their bodies and the changes in shape and weight that accompany maturation. Some adolescents may develop eating disorders, such as anorexia or bulimia. Eating disorders may have potentially serious medical complications, yet they often go undetected and untreated. The prevalence of eating disorders is particularly difficult to measure because of the underlying denial and secretive nature of the behavior.

■ Although adolescent sexual activity has been well-documented, the extent to which sex is consensual has not been fully evaluated. Because many myths concerning rape persist among adolescents, acquaintance rape and date rape are often unreported and untreated (14, 15).

Conclusion

The health and risk behaviors of adolescents have consequences for their current and long term well-being as well as consequences for society. Today's adolescents are the future adults, parents, leaders, and work force of the Nation.

This chartbook examines a variety of current measures of health status, risk behavior, and health care from national data sources. The differences in health status between younger and older adolescents are documented. The health of the adolescent population also varies by sex, race and ethnicity, and socioeconomic status. Understanding patterns of health among adolescents requires attention to differences in the population and recognition of the economic and racial disparities that exist.

Overall, the majority of adolescents are healthy when assessed by traditional measures of morbidity and mortality. Many of the health threats for adolescents are primarily social and behavioral. Health-risk behaviors often are established during youth, extend into adulthood, and are interrelated (16). Adolescent risk behaviors have been linked to subsequent morbidity or mortality. Motor vehicle and firearm-related injuries are the leading causes of death for adolescents. Intervention and prevention strategies targeting risk behaviors during adolescence may prevent or reduce adolescent and adult morbidity and mortality and promote a healthier transition from childhood to adulthood.

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Race and Ethnicity

- In 1999 almost 40 million residents of the United States were adolescents 10–19 years of age, comprising approximately 14 percent of the U.S. population. Two-thirds of the adolescent population were non-Hispanic white and one-third were of other racial and ethnic groups.

- The race and Hispanic-origin distribution of the adolescent population, like the general population, changed significantly in the past 20 years, and is projected to continue to change. Projections of the population indicate that Hispanic, black, American Indian, and Asian adolescents will constitute 56 percent of the adolescent population by the year 2050.

- Increasing racial and ethnic diversity in the general population is reflected in changes in the adolescent population. Although black adolescents are currently the largest minority group of adolescents, Hispanic adolescents will soon become the largest group. The proportion of adolescents who are of Asian or Pacific Islander origin nearly tripled between 1980 and 1999, from 1.6 percent to 4.2 percent. In contrast, there has been little change in the proportion of the adolescent population who are American Indians or Alaska Natives.

- A large influx of immigrants contributed to changes in the population distribution. In 1990, 19 percent of adolescents lived in immigrant families—that is, the adolescent was an immigrant or had immigrant parents (1). Most future growth in the U.S. population is expected to occur primarily through immigration and higher fertility rates among minority populations (1, 2).

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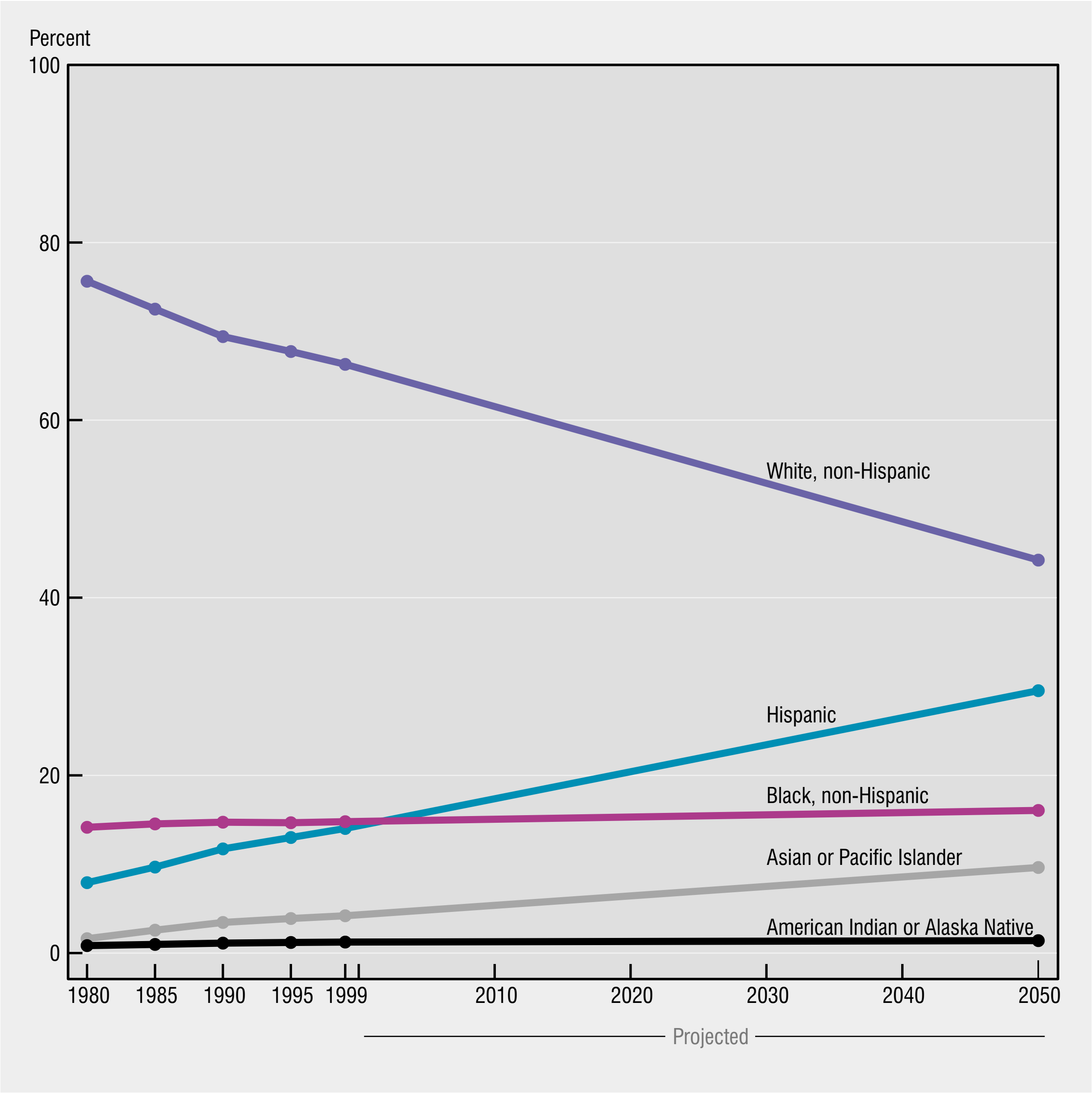
Figure 1. Race and Hispanic origin of adolescents 10–19 years of age: United States, 1980–2050



NOTES: Persons of Hispanic origin may be of any race. See Data Table for data points graphed.

SOURCE: U.S. Bureau of the Census, Population Estimates and Projections. See Technical Notes for population estimate methods. See related *Health, United States, 2000*, table 1.

Poverty and Family Structure

Poverty during adolescence has immediate and lasting negative consequences. Adolescents who are poor are more likely than adolescents in other families to drop out of school (1), to become teen parents (2), and to earn less and be unemployed more frequently as adults (3). Furthermore, poverty is strongly associated with poorer access to health care and poorer health status of adolescents. The structure of an adolescent's family is generally linked to the economic resources and support available to that adolescent.

- In 1998, 17 percent of all adolescents lived in families with incomes below the poverty threshold ($16,660 a year for a family of four), while an additional 20 percent of adolescents lived in families near poverty (one to two times the poverty threshold).
- Adolescents who live in a household with one parent are substantially more likely to have family incomes near or below the poverty line than adolescents living in a household with two parents.
- One-parent households headed by women experience the highest rates of poverty for a variety of reasons, including pay inequities for women and lack of paternal financial support. In 1998, 40 percent of all adolescents in female head-of-household families were living in poverty, compared with 8 percent of adolescents in two-parent families. Non-Hispanic black and Hispanic adolescents in female head-of-household families were twice as likely to have family incomes below the poverty line as their non-Hispanic white counterparts.
- In 1998, 24 percent of non-Hispanic white adolescents lived with a single parent (mother or father), compared with 59 percent of non-Hispanic black adolescents and 37 percent of adolescents of Hispanic origin.
- In contrast to many measures of adolescent health, no age differences were observed in family structure and poverty for adolescents.

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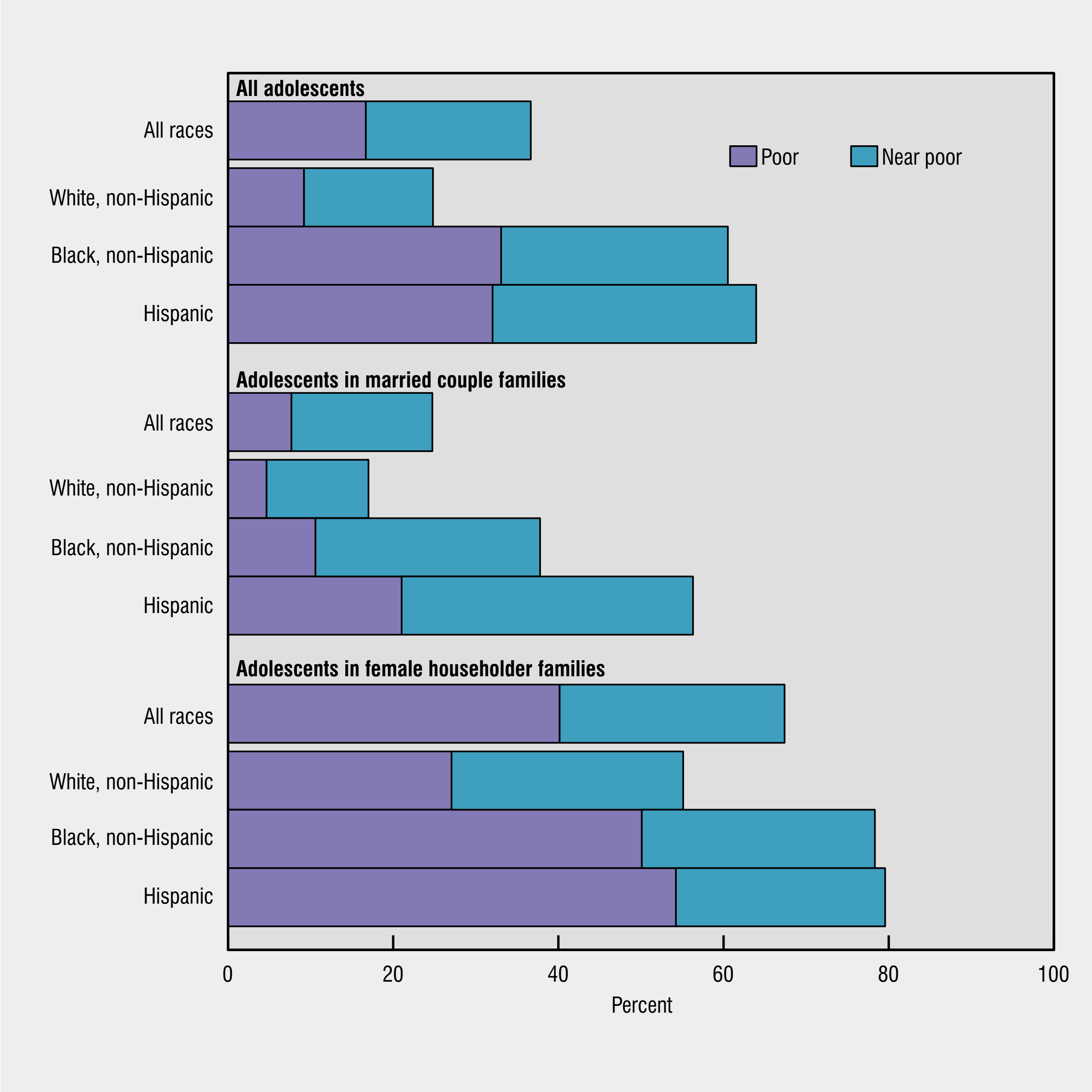
Figure 2. Poverty by family structure, race, and Hispanic origin among adolescents 10–17 years of age: United States, 1998



NOTES: Poverty status is derived from the ratio of the family's income to the Federal poverty threshold, given family size. Poor is less than 100 percent of the poverty threshold; near poor is between 100 and 199 percent of the poverty threshold. See Technical Notes for further discussion of poverty threshold. See Data Table for data points graphed.

SOURCE: U.S. Bureau of the Census, Current Population Survey, March Supplement 1999.

Employment

Employment during the adolescent years may have beneficial or negative effects on the health and well-being of youth. Early work experience among adolescents may aid in the development of personal responsibility, smooth the transition from youth to adulthood, and improve occupational attainment and income (1). In some instances, adolescent employment may contribute to the basic economic resources of the adolescent's family. However, there are health and safety concerns for working adolescents. Working teens are more likely to have problems in school and are less able to participate in after school activities than their peers. They also are at risk of occupational injury and of illness due to toxic exposure (2–4).

■ In the United States, adolescents are often employed in jobs after school, on weekends, and during vacations. Employment refers to jobs in which the adolescent has an ongoing relationship with a particular employer. Freelance jobs such as babysitting or lawn mowing are not included in the adolescent employment statistics.

■ The most common jobs for adolescents are in fast-food and service industries, restaurants, retail and grocery stores, farms, nursing homes, and factories. Low-income teens are more likely than their higher income peers to be employed in high-risk jobs such as agriculture, manufacturing, and construction (2).

■ In 1999 approximately two-fifths of all adolescents 16–19 years of age worked during the school year (April). During the summer months (July) when most adolescents are not in school, employment and hours worked increase substantially. In 1999 over one-half of all adolescents 16–19 were employed during the summer months.

■ The proportion of teens who worked increased with age. For example, in 1999 the proportion of teens working during the school year increased from 26 percent of 16-year olds to 56 percent of 19-year olds. Overall, adolescent males and females were equally likely to be employed.

■ Hazardous work environments put adolescents at risk of serious injury or death. During the period 1992–97 there were over 400 fatalities in the work place to adolescents 17 years of age or younger (5). Causes of death included highway and nonhighway vehicle-related incidents, homicides, falls, electrocutions, and fires.

■ In 1998 almost 260,000 adolescents 15–19 years of age were treated in emergency departments for occupational injuries (6). Common nonfatal injuries include sprains and strains, burns, cuts, and bruises. Most persons less than 18 years of age enter the workplace with minimal prior experience for a job (3). More than one-half of adolescents 14–16 years of age treated in emergency departments for work injuries reported that they had received no training in the prevention of the injury they sustained. Healthy People 2010 objectives call for a reduction in the incidence of adolescent work injuries (7).

■ Teens who work more than 20 hours a week are considered to be at a higher risk of negative health outcomes (3). In 1999, 43 percent of employed adolescents worked for more than 20 hours per week during the school year. That number increased to 68 percent during the summer.

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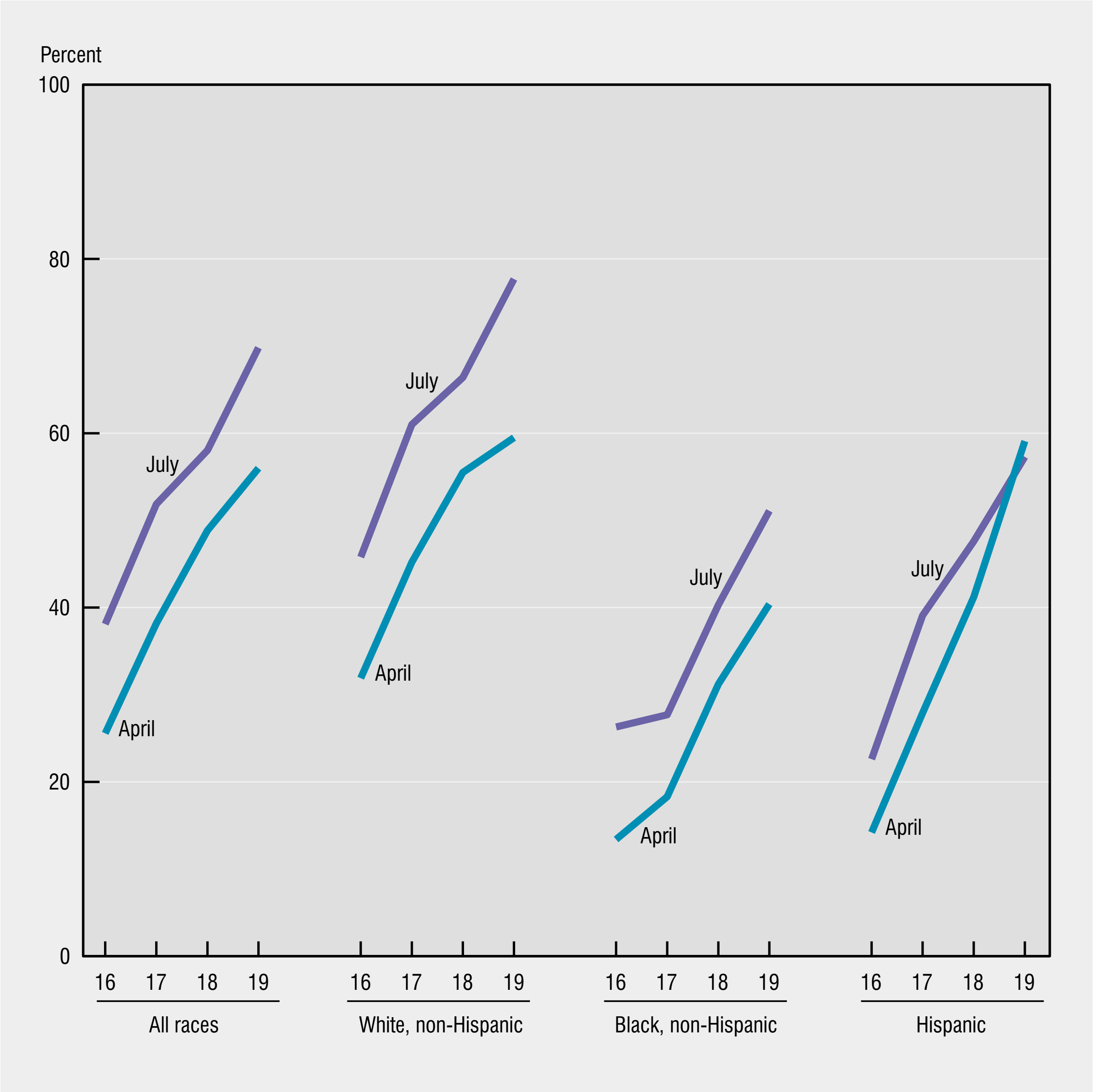
Figure 3. Employment during April and July among adolescents 16–19 years of age, by age, race, and Hispanic origin: United States, 1999



NOTES: Employment is defined as a job in which the adolescent has an ongoing relationship with a particular employer for any number of hours per week. The Bureau of Labor Statistics uses April as representative of school year employment and July as representative of summer employment. See Data Table for data points graphed.

SOURCE: Bureau of Labor Statistics, Current Population Survey, Basic Monthly Survey, April and July 1999.

Dropout Rates

Although the majority of adolescents complete high school, those students who drop out of school have fewer opportunities to succeed in the work force or to assume a fully functional place in society at large than those students who complete high school. High school dropouts have lower earnings, experience more unemployment, and are more likely to receive welfare or be in prison than their peers who complete high school or college (1). The event dropout rate is a measure of the proportion of students who drop out in a single year without successfully completing a high school program.

- In October of 1998, 4.2 percent of students 15–19 years of age, who were in grades 10–12 the previous October, were not enrolled again and had not completed high school. In total these dropouts account for approximately 400 thousand of the 9.8 million adolescents 15–19 years of age enrolled in school. The cumulative effect of several hundred thousand adolescents leaving school each year translates into several million young adults who are out of school, but lacking a high school credential.

- The event dropout rates increased with age. Adolescents 18 years of age were twice as likely to drop out as those 15–17 years old. Although the highest dropout rates were among adolescents 19 years of age, this group comprised the smallest portion (8 percent) of all students enrolled the previous October. Increasing relative age of a student within school grade has been associated with behavioral problems, absenteeism, negative self-image, and high dropout rates (2).

- Socioeconomic status is strongly associated with the decision to stay in school. Students from low income families (lowest 20 percent of family incomes) dropped out of high school at a rate over 3 times that of adolescents from middle income families, and over 4 times the rate of adolescents from high income families (highest 20 percent of family incomes).

- In 1998 non-Hispanic black and Hispanic students were more likely to leave school before graduating than non-Hispanic white students.

- In 1998, 85 percent of young adults 18–24 years of age completed high school (3). Reducing the dropout rate increases the percent of young adults who complete a high school education.

- Out of school adolescents are more likely than those in school to smoke, to use alcohol, marijuana, or cocaine, to have been involved in a physical fight, and to have been sexually active (4).

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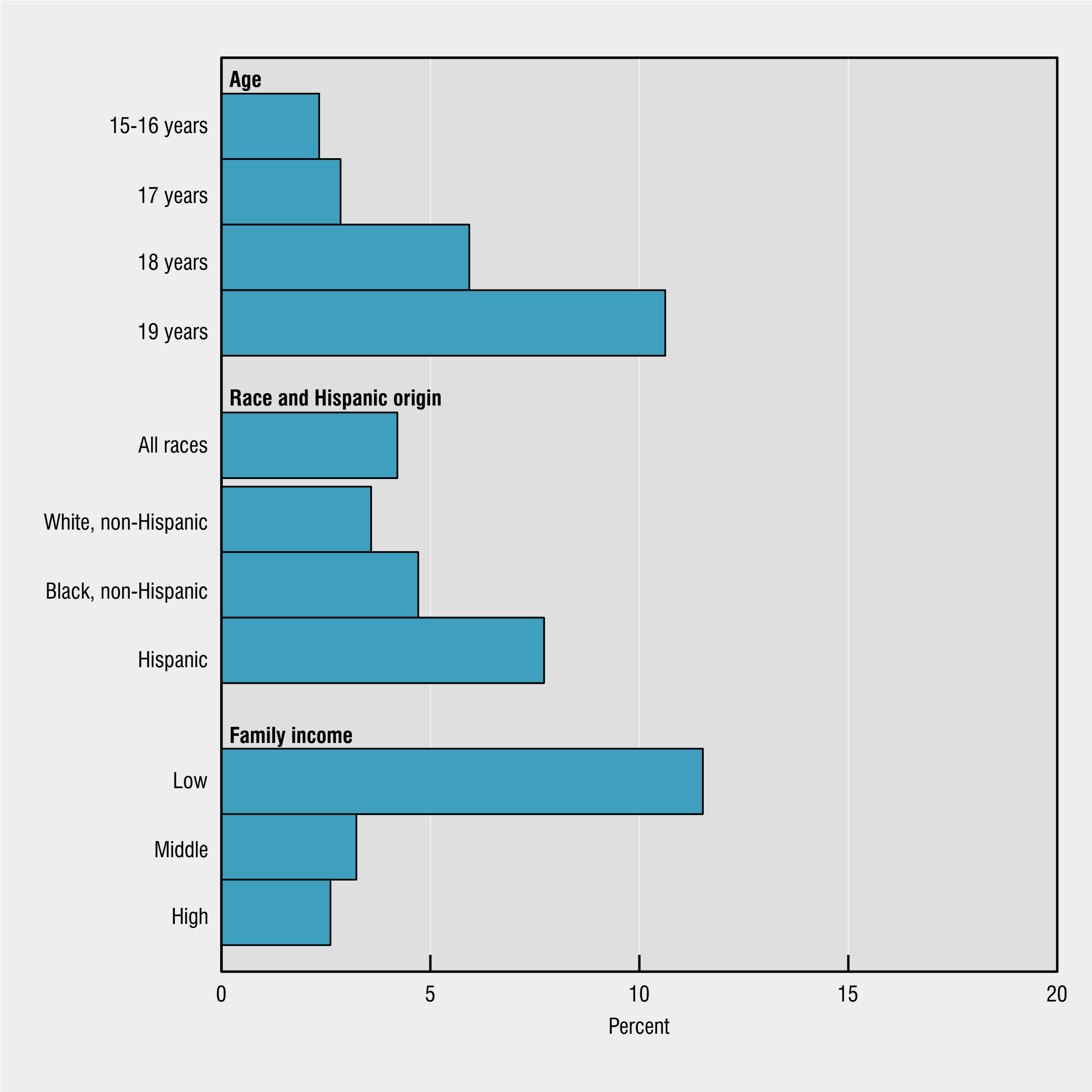
Figure 4. Event dropout rates among adolescents 15–19 years of age, by age, race, Hispanic origin, and family income: United States, 1998



NOTES: The event dropout rate is the percent of those in grades 10–12, ages 15–19, who were enrolled the previous October, but who were not enrolled and had not graduated the following October. Low income is the bottom 20 percent of all family incomes; high income is the top 20 percent of all family incomes; middle income is the 60 percent in between. Age when a person dropped out may be one year younger because the dropout event can occur at any time over a 12-month period. See Data Table for data points graphed.

SOURCE: U.S. Bureau of the Census, Current Population Survey, October 1998.

Activity Limitation

Activity limitation due to a physical, mental, or emotional health problem is a broad measure of health and functioning for adolescents. Limitations in activity are due to one or more chronic health conditions that include, but are not limited to, learning disabilities; hearing, visual, and speech problems; mental retardation or other developmental problems (such as cerebral palsy); mental and emotional problems; musculoskeletal problems; the long-term effects of injury; asthma; and diabetes. Adolescents with one or more of these conditions often need special education services, and many receive special health services through special education programs.

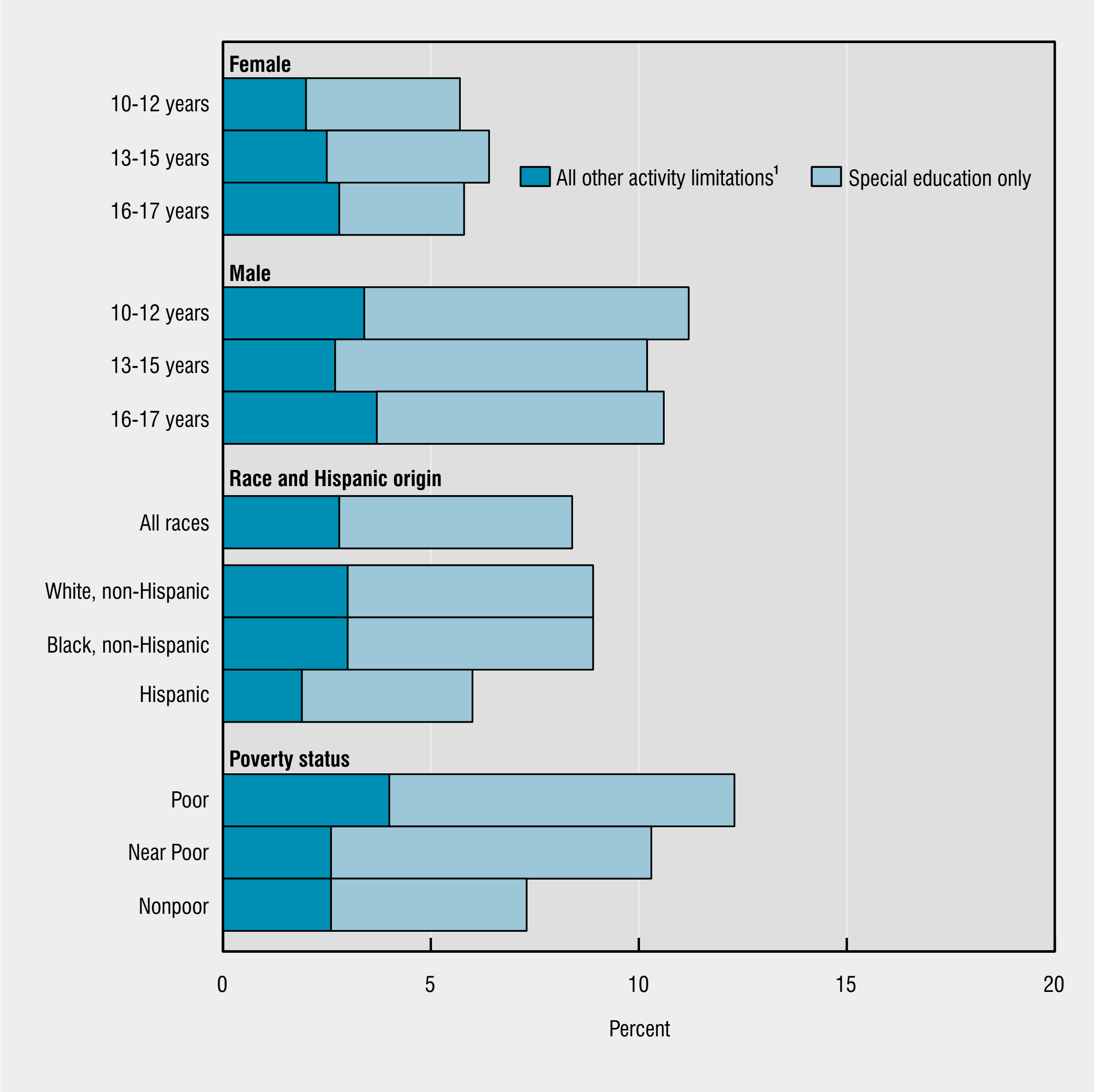
■ In 1997 approximately 8 percent of all adolescents 10–17 years of age were reported to have some activity limitation; 3 percent had one or more activity limitations, which may have also required receipt of special education services. Limitations included needing another person's assistance with personal care needs, such as eating, bathing, dressing, and getting around the home; difficulty walking or difficulty remembering or experiencing periods of confusion. Performing in school is a normal activity for adolescents; among 5 percent of adolescents, activity limitation was limited to receipt of special education services because of difficulty understanding or accomplishing routine school work.

■ Differences in receipt of special education services were apparent by gender, but not age. In every age group, male adolescents were twice as likely as female adolescents to receive special education services. All other activity limitations were reported for a smaller proportion of adolescents and did not differ significantly between males and females.

■ Non-Hispanic white and non-Hispanic black adolescents were more likely to report enrollment in special education services or other activity limitations than their Hispanic peers.

■ The proportion of adolescents with health-related activity limitations varied by poverty status. Adolescents in families with incomes below or near the poverty threshold were more likely to report receipt of special education services than adolescents in nonpoor families in 1997. Adolescents in families with incomes below the poverty threshold were more likely to report other activity limitations than adolescents in near poor or nonpoor families.

Figure 5. Activity limitation among adolescents 10–17 years of age, by sex, age, race, Hispanic origin, and poverty status: United States, 1997



[1] This category may include adolescents receiving special education.

NOTES: Poverty status is derived from the ratio of the family's income to the Federal poverty threshold, given family size. Poor is less than 100 percent of the poverty threshold; near poor is between 100 and 199 percent of the poverty threshold; nonpoor is 200 percent of the poverty threshold or more. See Technical Notes for discussion of activity limitation. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey. See related *Health, United States, 2000*, table 57.

Untreated Dental Caries

The overall quality of life for adolescents can be negatively affected by untreated dental caries or tooth decay. Dental caries are bacterial infections. If left untreated, dental caries advance and may cause severe pain and possible tooth loss.

- During 1988–94 one-fifth (19 percent) of adolescents 10–19 years of age had at least one untreated caries lesion or active tooth infection. No difference in the proportion of untreated dental caries by age was observed. Healthy People 2010 objectives call for no more than 15 percent of 15-year olds to have one or more teeth with untreated decay (1).

- Although the percent of adolescents affected by dental caries has been decreasing since the 1970s (2), substantial racial and socioeconomic disparities persist. During 1988–94 non-Hispanic black and Mexican-American adolescents were twice as likely as non-Hispanic white adolescents to have at least one untreated caries lesion. The percent of adolescents with untreated caries was three times as high for adolescents with family incomes near or below the Federal poverty level as for adolescents in families with incomes twice the poverty level or higher.

- Dental visits are necessary to treat decayed teeth. In 1997, 77 percent of adolescents had a dental visit in the past year (3). However, poor adolescents (64 percent) were less likely to have had a dental visit in the past year than near-poor and nonpoor adolescents (80 percent).

- Dental insurance reduces economic barriers to dental care; low-income adolescents, particularly those living near poverty are less likely to have dental insurance (51 percent) than adolescents with higher family incomes (65 percent) or those living below the poverty level (60 percent) (4).

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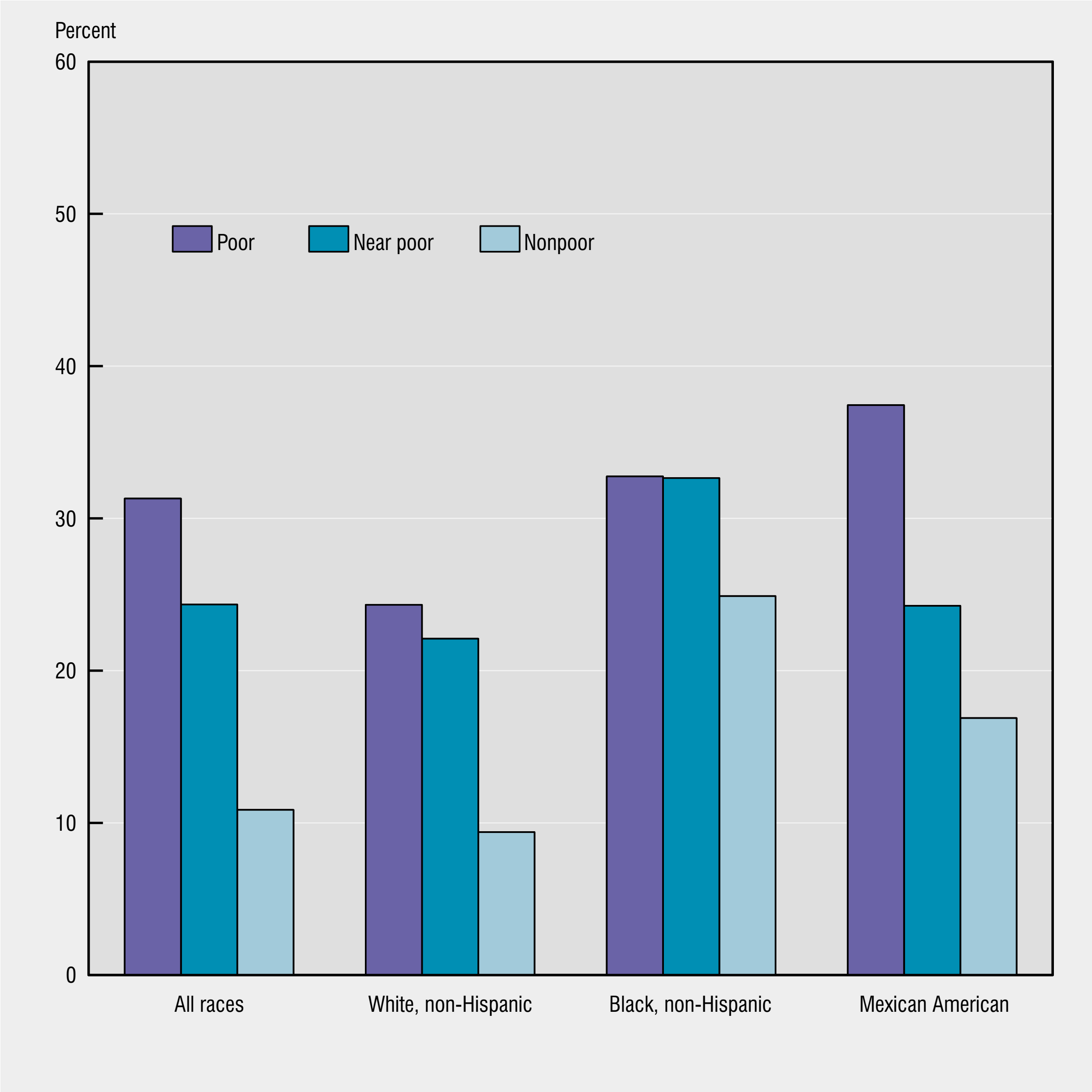
Figure 6. Untreated dental caries among adolescents 10–19 years of age, by family income, race, and Hispanic origin: United States, 1988–94



NOTES: Data are based on dental examinations of a sample of the civilian noninstitutionalized population. The income groups are derived from the ratio of the family's income to the Federal poverty threshold, given family size. Poor is less than 100 percent of the poverty threshold; near poor is between 100 and 199 percent of the poverty threshold; nonpoor is 200 percent of the poverty threshold or more. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, The Third National Health and Nutrition Examination Survey (NHANES III). See related *Health, United States, 2000*, table 81.

Suicide Ideation and Attempts

In 1997 suicide was the third leading cause of injury death among adolescents 13–19 years of age. However, many teens seriously consider suicide without attempting, or attempt without completing suicide. Among those adolescents seriously considering suicide, factors influencing suicidal thoughts may include depression, feelings of hopelessness or worthlessness, and a preoccupation with death, but may not be related to risk factors associated with actually attempting suicide (1). Factors which may contribute to attempting suicide among adolescents include impulsive, aggressive, and antisocial behavior; family influences, including a history of violence and family disruption; severe stress in school or social life; and rapid sociocultural change (2). Substance abuse or dependence can be an important contributor in the escalation from suicidal thoughts to suicide attempts (3).

■ In 1999 one-fifth of all high school students reported having seriously considered or attempted suicide during the previous 12 months. Less than one-half of students who seriously considered suicide actually attempted suicide (8 percent of all students). Less than 3 percent of all students reported having an injurious attempt, that is, a suicide attempt that resulted in an injury, poisoning, or overdose that had been treated by a doctor.

■ Female students were substantially more likely to consider suicide than male students. This difference was identified for all racial/ethnic and grade level subgroups.

■ Although a substantial decrease in suicide attempts was apparent between 9th and 12th grade among female students, a decrease by grade level among male students was not significant. Suicide attempts among non-Hispanic white and Hispanic female students were significantly higher than among their male counterparts; among non-Hispanic black students there was no difference by gender. In contrast, the rate of completed suicides is higher among male adolescents than female adolescents (figure 16).

■ Healthy People 2010 identifies a reduction in the rate of suicide attempts by adolescents as a critical adolescent objective (4).

References

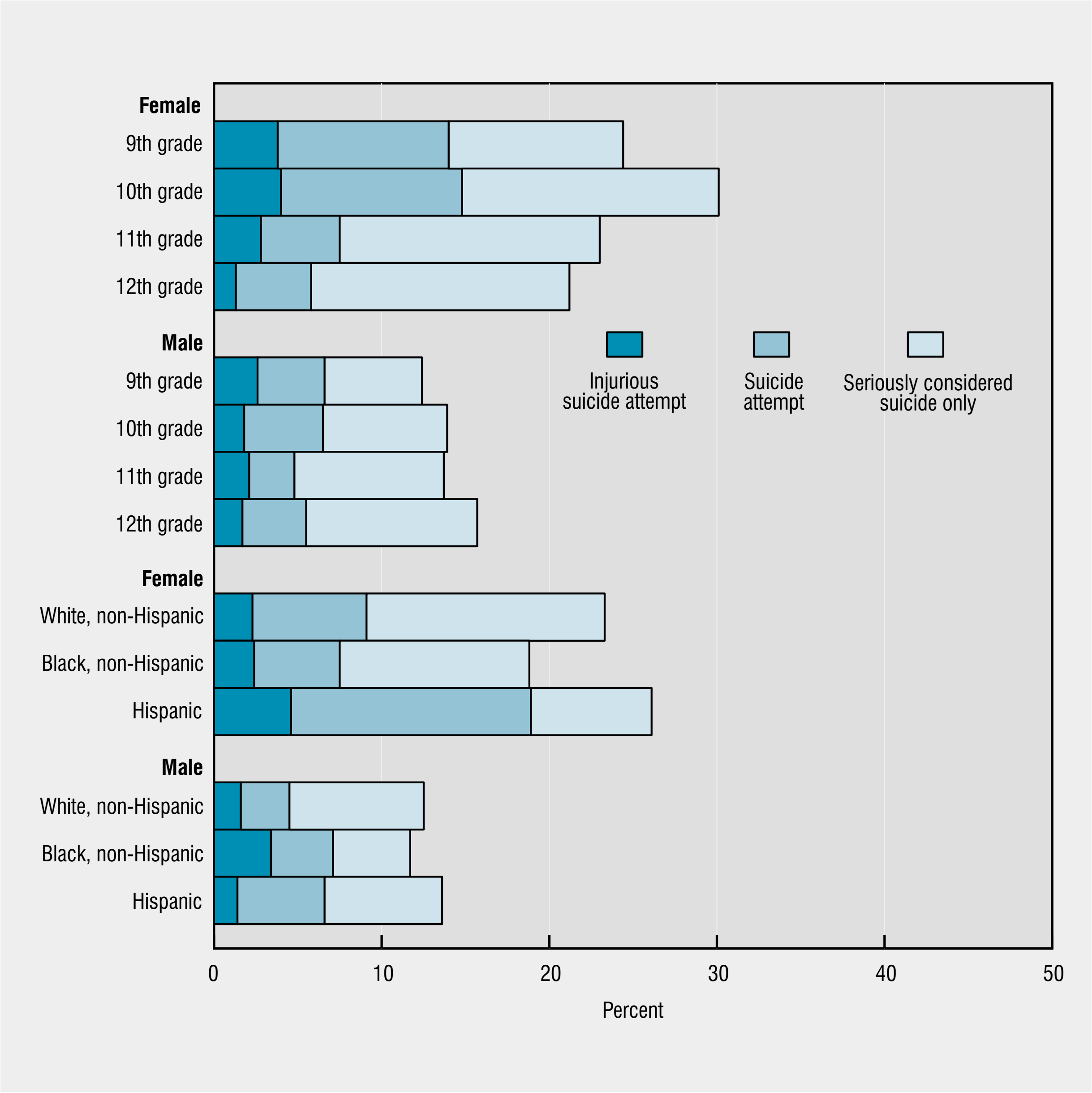
1. Behrman RE, Kliegman RM, Arvin AM, eds. Nelson Textbook of Pediatrics. 15th ed. Philadelphia: W.B. Saunders Company. 1996.

2. Goodwin FK, Brown GL. Risk factors for youth suicide. In: Alcohol, Drug Abuse, and Mental Health Administration. Report of the Secretary's Task Force on Youth Suicide. Vol 2. Washington: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration; DHHS publication no. (ADM)89–1622. 1989.

3. Gould MS, King R, Greenwald S, et al. Psychopathology associated with suicidal ideation and attempts among children and adolescents. J Am Acad Child Adolesc Psychiatry 37(9):915–23. 1998.

4. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

Figure 7. Suicide ideation and attempts among students in grades 9–12, by grade level, sex, race, and Hispanic origin: United States, 1999



NOTES: Response is for the 12 months preceding the survey. Among students attempting suicide, 6 percent did not report seriously considering suicide. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, National Youth Risk Behavior Survey (YRBS).

Emergency Department Visits, Hospital Discharges, and Death Rates

Though there is frequently focus on the causes of mortality among adolescents, examination of morbidity and mortality provides a more complete picture of the health status of that population. Emergency department and inpatient hospital utilization data provide information on morbidity that was sufficiently serious to result in either emergency department or inpatient hospital use.

- In 1995–97 adolescents 10–19 years of age made an average of 11.6 million visits to emergency departments annually and had an average of 1.6 million hospitalizations per year. In 1996–97 about 19 thousand adolescents died each year. In general, emergency department use, hospitalizations, and mortality increased with age, but patterns varied by sex.

- Emergency department visit rates for male adolescents 18–19 years of age were 1.6 times the rate for those 10 years of age. For female adolescents, the rates at age 18–19 years were 2.5 times that at age 10 years. From age 10 through about age 16 years, emergency department visit rates for males and females were similar. At age 16 years, visit rates began to increase more rapidly among females primarily because of conditions related to pregnancy and sexual activity (see figure 12).

- Hospital discharge rates increased with age. The hospital discharge rate for male adolescents 19 years of age was 1.5 times the rate for those 10 years of age. In contrast, among female adolescents 19 years of age the discharge rate was nearly 9 times the rate for those 10 years of age. For male and female adolescents 11–13 years of age, discharge rates were similar, but from ages 14 –19 years, the rate for females was higher than that for males with differences increasing with age. Hospitalization for pregnancy and delivery was the cause of those differences (see figure 13).

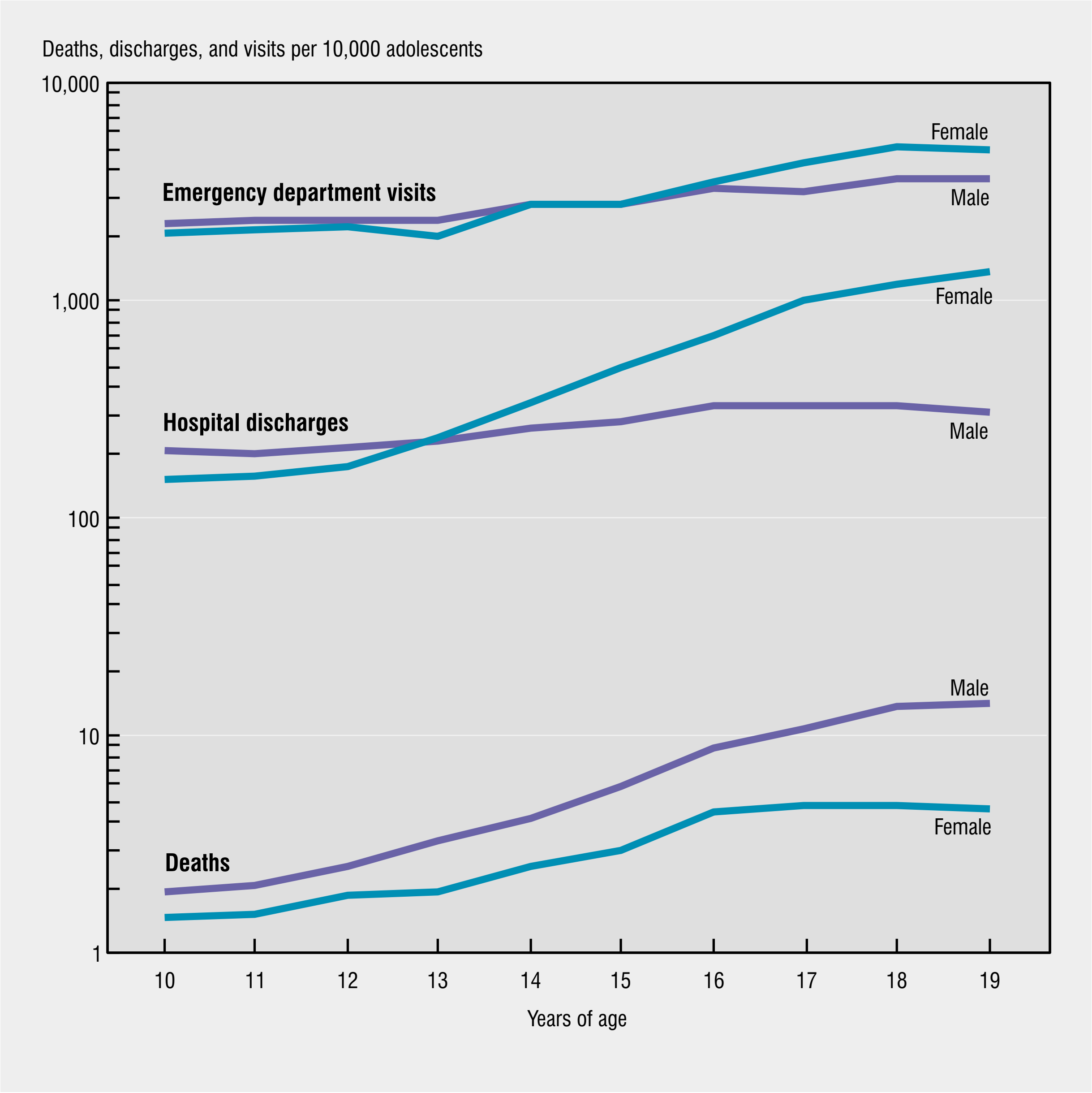
- Mortality among female and male adolescents did not follow the same pattern observed for emergency department and hospital utilization. Death rates for male adolescents exceeded those for female adolescents at each age and the difference increased substantially with age. These differences were primarily due to the age-related increases in injury mortality among males (see figures 16 and 17).

- The death rate for males 19 years of age was 8 times the rate of those 10 years of age. For females the death rate at age 19 was 3 times the rate at age 10. (Note: death rates are generally shown as per 100,000 population, but for comparability to morbidity measures, they are shown only in figure 8 as per 10,000.) Reduction of adolescent mortality is a Healthy People 2010 critical adolescent objective (1).

Reference

1. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: 2000.

Figure 8. Emergency department visit rates, hospital discharge rates, and death rates among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: Death rates are for 1996–97 only. See Appendix I, National Hospital Ambulatory Medical Care Survey and National Hospital Discharge Survey; Appendix II, Cause of Death, and Rate: Death. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey (NHAMCS); National Hospital Discharge Survey (NHDS); National Vital Statistics System.

Emergency Department Visits

Use of the emergency department may be influenced by underlying health status, the severity of the current illness or injury, access to other sources of health care, and health insurance status.

- In general, adolescents 10–19 years of age visit the emergency department less often than younger children, young adults 20–24 years, and the elderly 65 years and older. Adolescents visit the emergency department about as often as adults 25–64 years. Adolescents and young adults 20–24 are more likely than others to use the emergency department for reasons related to an injury.

- In 1995–97 visits to emergency departments for injuries comprised about one-half of all visits for adolescents 10–19 years, with higher proportions for males than for females (63 percent compared with 41 percent). This is related to the higher visit rates among males for injuries associated with being struck or cut (see figure 10).

- Injury-related emergency department visit rates among male adolescents were consistently higher than noninjury visit rates. In contrast, noninjury visit rates among female adolescents exceeded injury-related visit rates by ages 14–15 and the gap widened with age.

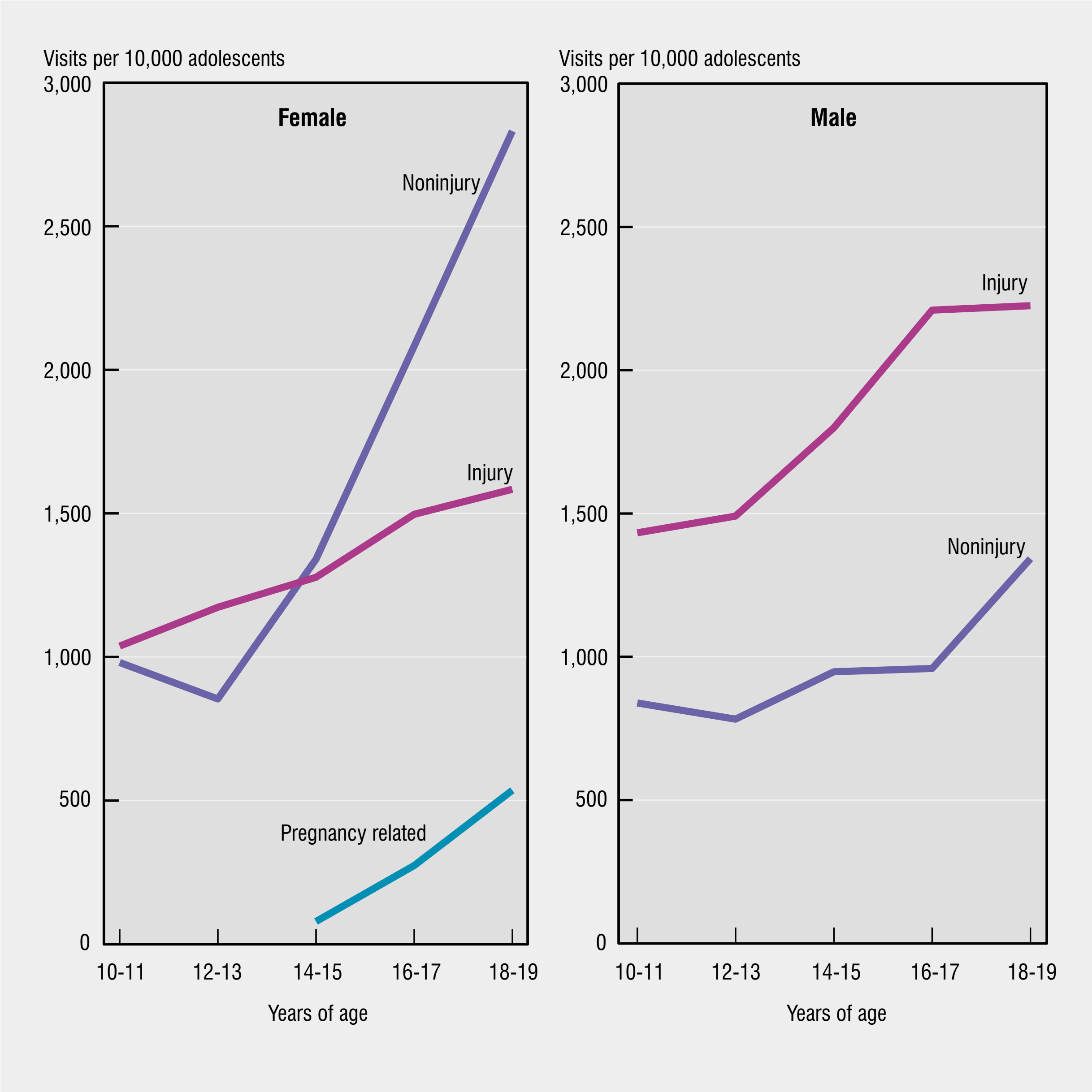
- Emergency department visit rates for injury increased with age. The injury-related visit rates for adolescent females and males 18–19 years of age were 1.5 and 1.6 times the rates for their respective counterparts 10–11 years of age.

- Emergency department visits for noninjury causes increased with age for both sexes. In 1995–97 the noninjury visit rate among males 18–19 years of age was 1.6 times that of those 10–11 years. In contrast, among female adolescents 18–19 years of age, the noninjury (and nonpregnancy-related) visit rate was triple that of adolescents 10–13 years of age.

- Pregnancy-related emergency department visit rates increased almost sevenfold between ages 14 and 19 years (see figures 19 and 20). Pregnancy-related causes accounted for about 11 percent of all visits for female adolescents 18–19 years of age.

- Emergency department visit rates increased with age for white and black adolescents. In 1995–97 age-specific emergency department visit rates for noninjury and nonpregnancy-related conditions for black adolescents were 1.6–2.0 times those for white adolescents. Similarly, pregnancy-related visit rates for black female adolescents 16–19 years were nearly 3 times the rates for white females. Visit rates for injuries were not significantly different for white and black adolescents.

Figure 9. Emergency department visit rates for injury, noninjury, and pregnancy-related diagnoses among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: See Technical Notes for discussion of emergency department visits. See also Appendix I, National Hospital Ambulatory Medical Care Survey. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey (NHAMCS).

Injury-Related Visits to Emergency Departments

Injuries are a major cause of emergency department visits. The morbidity associated with injuries is costly on an individual and a societal level (1, 2). A greater understanding of the epidemiology of injuries should lead to improved injury prevention strategies and decreases in the incidence of injuries.

- Four external causes of injury—being struck by or against an object or person, falls, motor vehicle traffic-related injuries, and being cut by a sharp object—accounted for nearly 60 percent of all injury-related visits to emergency departments among adolescents in 1995–97. Of these four causes, only motor vehicle traffic-related injuries are a significant source of mortality among adolescents.

- One in five injury-related emergency department visits among adolescents resulted from ‘‘being struck by or against an object or a person’’. Sports-related injuries made up 41 percent of the injuries in this category. At each age, the ‘‘struck by...’’ rate for males was about twice the rate for females. Rates for male adolescents 14–19 years of age were higher than for younger males.

- Visit rates for falls (16 percent of all injury-related visits) generally decreased with age. Rates in this category were similar for males and females across ages 10–19 years.

- Injury visit rates associated with motor vehicle traffic injuries (14 percent of all injury-related visits) were similar for males and females at each age, with large relative increases at 14–15 years and at 16–17 years for both sexes. In contrast to nonfatal motor vehicle injuries, motor vehicle traffic-related death rates for males were higher than for females at each age from 10–19 years (see figure 17).

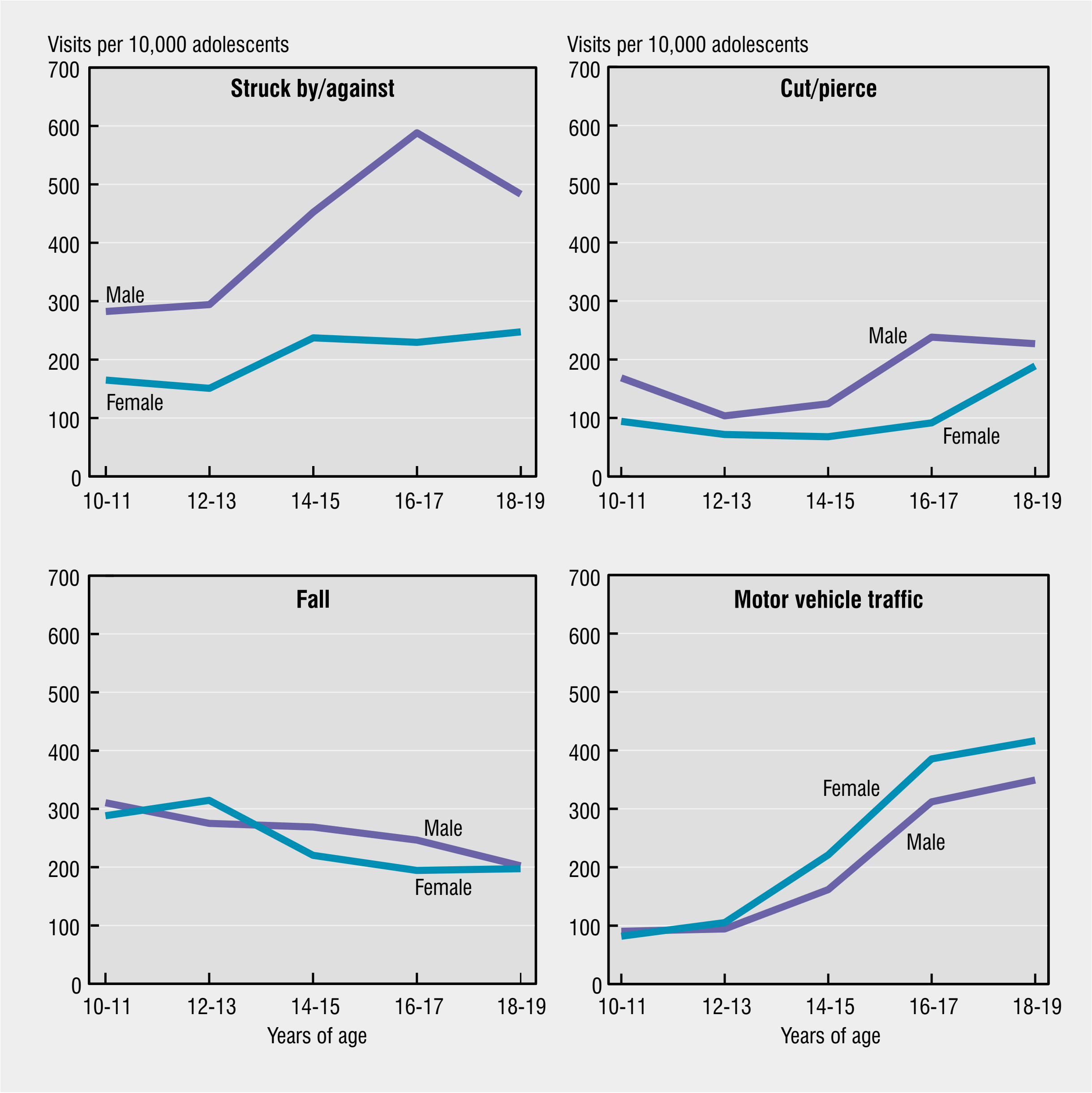
- Visits for injuries from being cut (9 percent of all injury-related visits) also increased with age, especially from ages 12–13 years to 16–19 years.

References

1. Rice DP, Mackenzie EJ, Associates. Cost of injury in the United States: A report to Congress. San Francisco, California: Institute for Health and Aging, University of California and Injury Prevention Center. The Johns Hopkins University. 1989.

2. Burt CW, Fingerhut LA. Injury visits to hospital emergency departments: United States, 1992–95. National Center for Health Statistics. Vital Health Stat 13(131). 1998.

Figure 10. Emergency department visit rates for selected external causes of injury among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: See Technical Notes for discussion of emergency department visits. See also Appendix I, National Hospital Ambulatory Medical Care Survey. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey (NHAMCS). See related *Health, United States, 2000*, table 84.

Injury-Related Visits to Emergency Departments

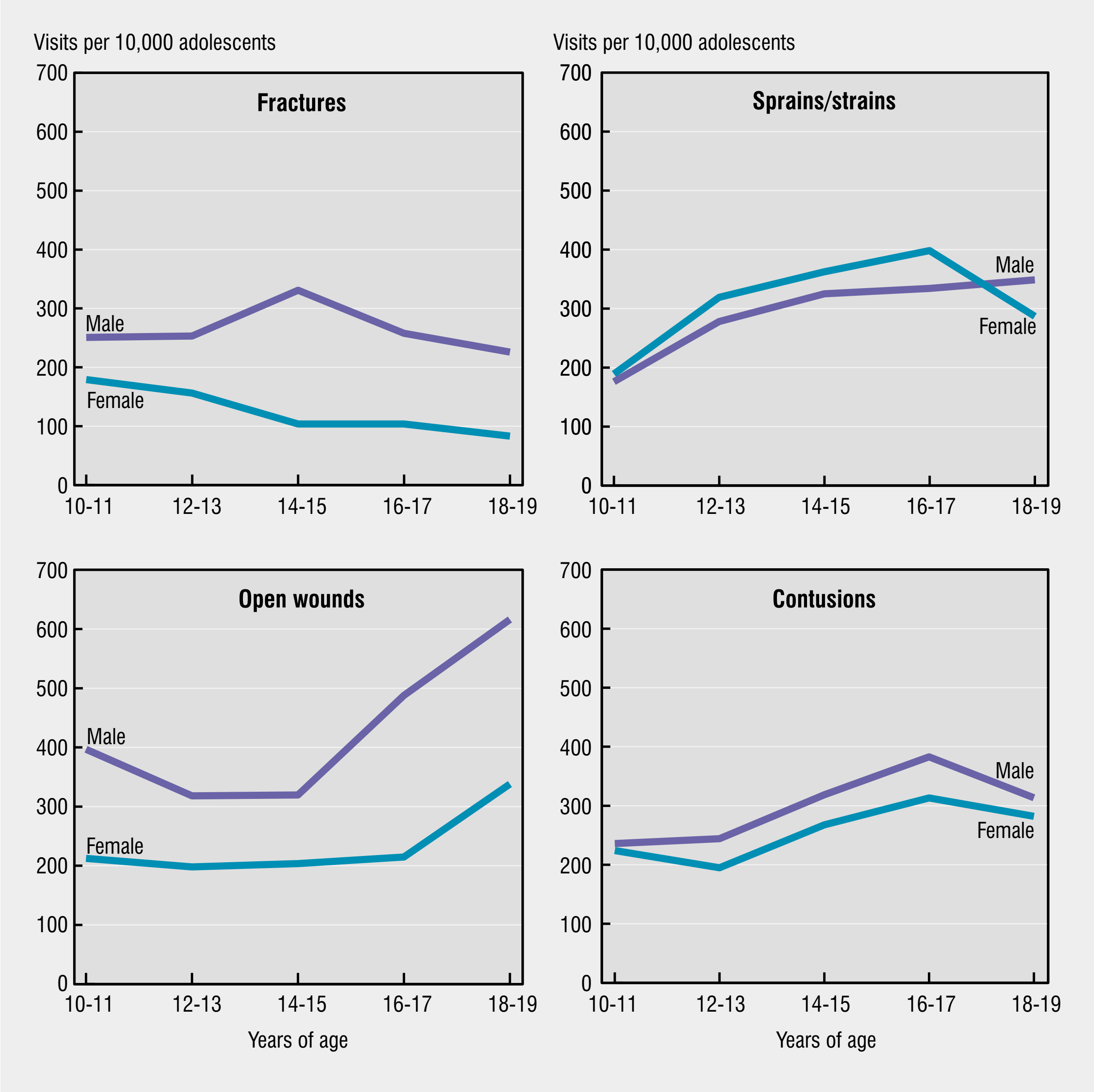
In 1995–97 open wounds, fractures, sprains and strains, and contusions were the four most common injury diagnoses for emergency department visits among adolescents 10–19 years of age. These four injury diagnoses accounted for 80 percent of all first-listed injury diagnoses for adolescents. Open wound injuries were the most often reported diagnoses for male adolescents and sprains, strains and contusions were the most often reported for female adolescents.

■ The emergency department visit rate for open wounds for male adolescents 18–19 years of age was nearly twice that for adolescents 12–15 years of age. Open wound injury visit rates for female adolescents 10–19 years of age were about one-half the rates for males at each age. These injuries are caused primarily by knives and other instruments for cutting or piercing.

■ Emergency department visit rates for fractures among male adolescents did not vary by age. The rates for female adolescents declined with age; the visit rate for fractures at 18–19 years was less than one-half the rate at 10–11 years. Among males 14–19 years of age, age-specific visit rates for fractures were about 3 times those for females. Upper extremity fracture was the most common fracture site reported for males and females. Injuries resulting from falls and being struck were the primary causes of these fractures.

■ Sprains, strains and contusions were the most commonly reported diagnoses in emergency department visits for female adolescents 10–19 years, accounting for one-half of all first-listed injury diagnoses. There were no significant gender differences by age for visits for sprains and strains or contusions. Among the leading external causes of these injuries were motor vehicle traffic crashes, falls, being struck and overexertion.

Figure 11. Emergency department visit rates for selected injury diagnoses among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: See Technical Notes for discussion of emergency department visits. See also Appendix I, National Hospital Ambulatory Medical Care Survey. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey (NHAMCS).

Noninjury Visits to Emergency Departments

Asthma, upper respiratory conditions and abdominal or gastro-intestinal (GI) conditions are among the leading principal diagnoses made in emergency departments for adolescents 10–19 years of age. In 1995–97 these three groups of conditions accounted for 40 percent of all first-listed noninjury diagnoses for emergency department visits among adolescent males 10–19 years. In addition, female adolescents also had visits for sexually transmitted diseases and urinary tract infections, which together with the other three groups of conditions accounted for 50 percent of all noninjury (nonpregnancy-related) visits. Pregnancy-related conditions accounted for 5 percent of all female adolescent visits.

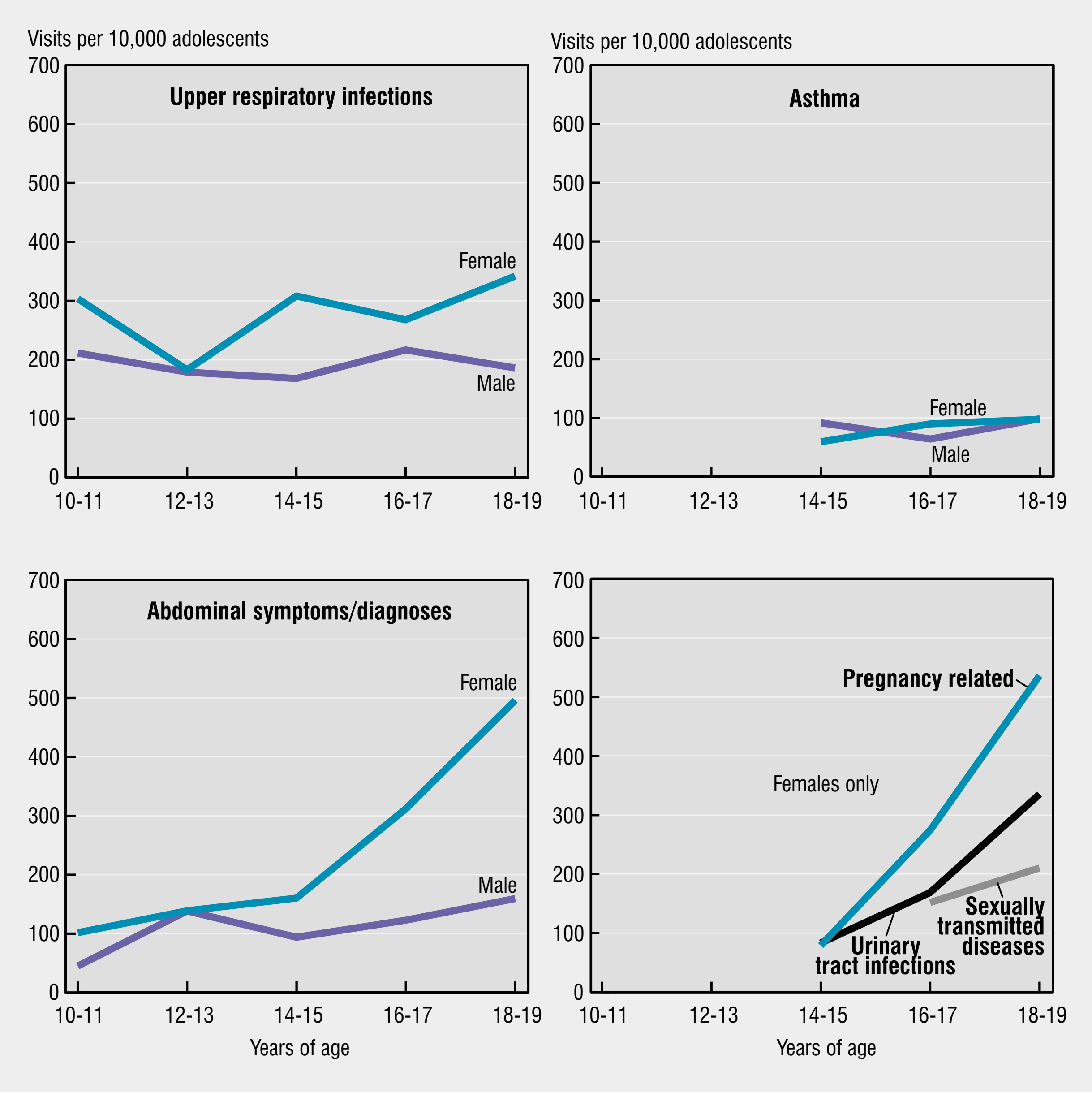
■ Upper respiratory conditions, predominantly colds, and ear infections, were the most common cause of noninjury-related emergency department visits among adolescents. The rate of emergency department visits for upper respiratory conditions was similar throughout the adolescent age range.

■ Emergency department visits for the treatment of asthma were approximately one-third as frequent as were visits for upper respiratory infections. The need for urgent treatment of asthma symptoms may be related to acute exposure to specific precipitating factors (for example, poor air quality and pets) or may be due to chronically suboptimal treatment of existing asthma. Visit rates for asthma did not vary by age or sex.

■ Nearly one-half of all emergency department visits for abdominal or GI conditions were due to stomach pains; another one-fourth were due to gastroenteritis and colitis. Among female adolescents, the visit rate for GI conditions increased with age and was almost 5 times as high for those 18–19 years of age as those 10–11 years. Visit rates among female adolescents were approximately twice the rate of their male counterparts, with the difference increasing with age.

■ Among female adolescents, the rate of emergency department visits for treatment of sexually transmitted diseases, urinary tract infections, and pregnancy-related conditions increased markedly with age. (See also figures 19 and 23.)

Figure 12. Emergency department visit rates for selected noninjury diagnoses among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: Data points are not shown in figure when rates are unreliable. See Technical Notes for discussion of emergency department visits. See also Appendix I, National Hospital Ambulatory Medical Care Survey. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey (NHAMCS).

Hospital Discharge Rates

Hospitalization is dependent not only on an individual's medical condition, but also on ambulatory care access and utilization (1). Delaying or not receiving timely and appropriate care for chronic conditions and other health problems may lead to the development of more serious health conditions that require hospitalization.

- Adolescents are among the least likely of all persons to be hospitalized (2). Only younger children have lower inpatient hospitalization rates. For noninjury and nonpregnancy causes, adolescents have the lowest rates of hospitalization, followed by those for younger children and young adults. Adolescents have higher hospital discharge rates for injuries than younger children but lower than older persons.

- Hospital discharges vary by sex, in large part because of hospitalizations for pregnancy-related causes (including deliveries and diagnoses associated with pregnancy) among female adolescents. In 1995–97 noninjury-related causes, excluding pregnancy, accounted for about 72 percent of all hospital discharges among male adolescents and 39 percent among female adolescents. Injuries accounted for 26 percent of all hospital discharges among males and 8 percent among females. Among female teens, pregnancy-related causes accounted for 53 percent of all discharges.

- Hospitalizations for injury and noninjury causes increased with age for both sexes. The noninjury discharge rate among males increased marginally. In contrast, among female adolescents, the noninjury (nonpregnancy related) discharge rate doubled between ages 10–11 years and 18–19 years. Hospital discharge rates for pregnancy increased dramatically between ages 12–13 years and 18–19 years (see also figures 19 and 20).

- As a proportion of all discharges for females, pregnancy-related causes ranged from about 3 percent at 12–13 years to about 73 percent of all hospital discharges at 19 years. For adolescents 17 years of age and older, the pregnancy-related discharge rate for females exceeded the injury and other noninjury rates for males and females.

- The injury hospital discharge rate for adolescent males 18–19 years of age was 3 times the rate for males 10–11 years of age. Similarly, the rate for female adolescents 16–19 years of age was 3 times that of those 10–13 years.

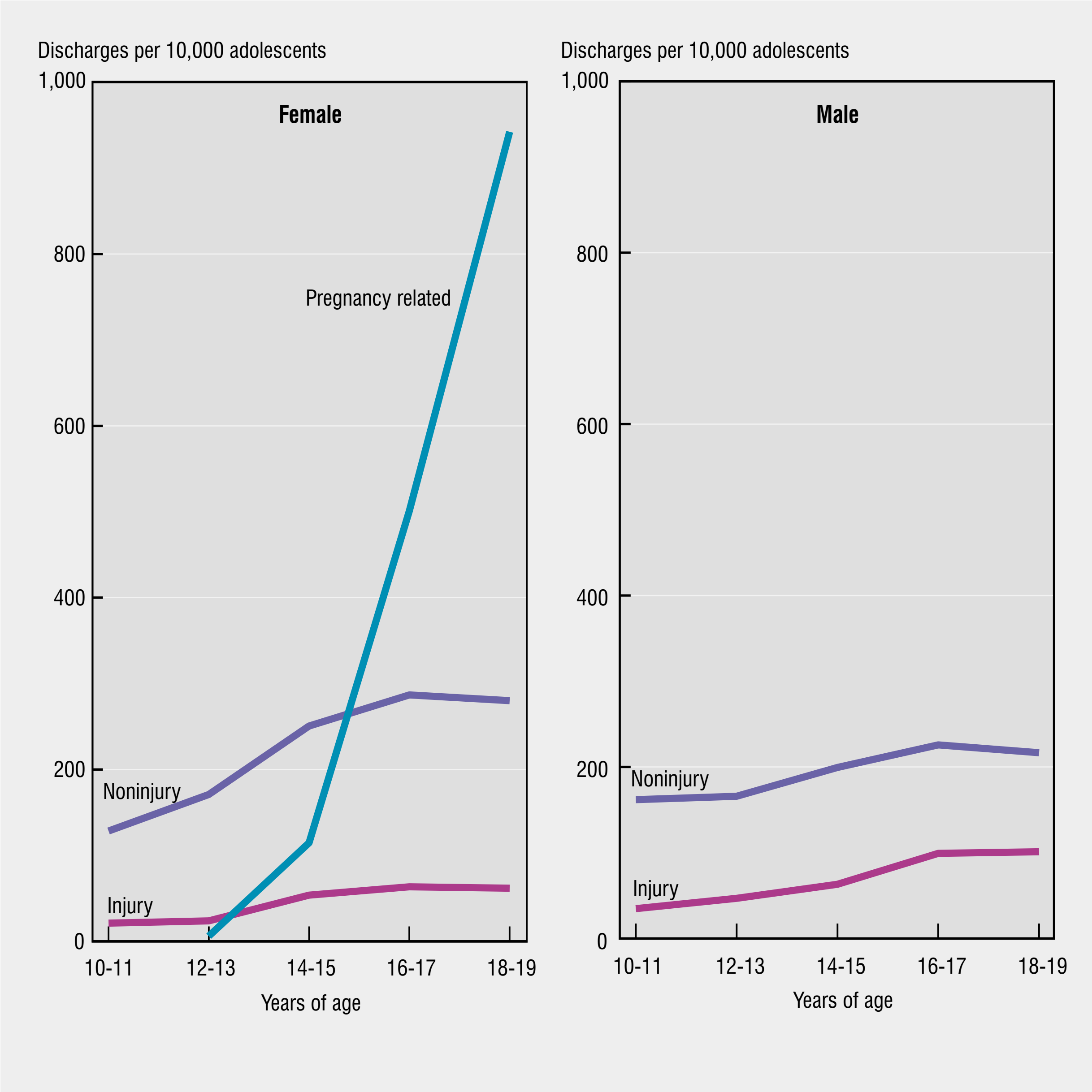
- Among adolescents 14–19 years of age, the noninjury/not pregnancy-related discharge rate for female adolescents exceeded that for male adolescents by more than 25 percent. At each age, the injury discharge rate for males exceeded the rate for females.

References

1. Weisman JS, Epstein AM. Falling through the safety net. Johns Hopkins University Press. 1994.

2. Kozak LJ, Lawrence L. National Hospital Discharge Survey: Annual summary, 1997. National Center for Health Statistics. Vital Health Stat 13(144). 1999.

Figure 13. Short-stay hospital discharge rates for injury, noninjury, and pregnancy-related diagnoses among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: See Technical Notes for discussion of hospital diagnoses. See also Appendix I, National Hospital Discharge Survey. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Discharge Survey (NHDS).

Hospital Discharge Rates

■ Asthma, psychoses, fractures, poisoning, and appendicitis were among the leading first-listed diagnoses for hospitalized adolescents in 1995–97, accounting for 20 percent of all hospital discharges (and for 27 percent of all nonpregnancy-related hospital discharges). Patterns by age and sex differ for each of these causes.

■ Asthma hospital discharge rates for males declined sharply with age, while rates for females were relatively unchanged across the age span 10–19 years. For both male and female adolescents 10–11 years of age, asthma accounted for 13 percent of all noninjury/nonpregnancy-related hospitalizations; by ages 18–19 years fewer than 5 percent of these discharges were for asthma.

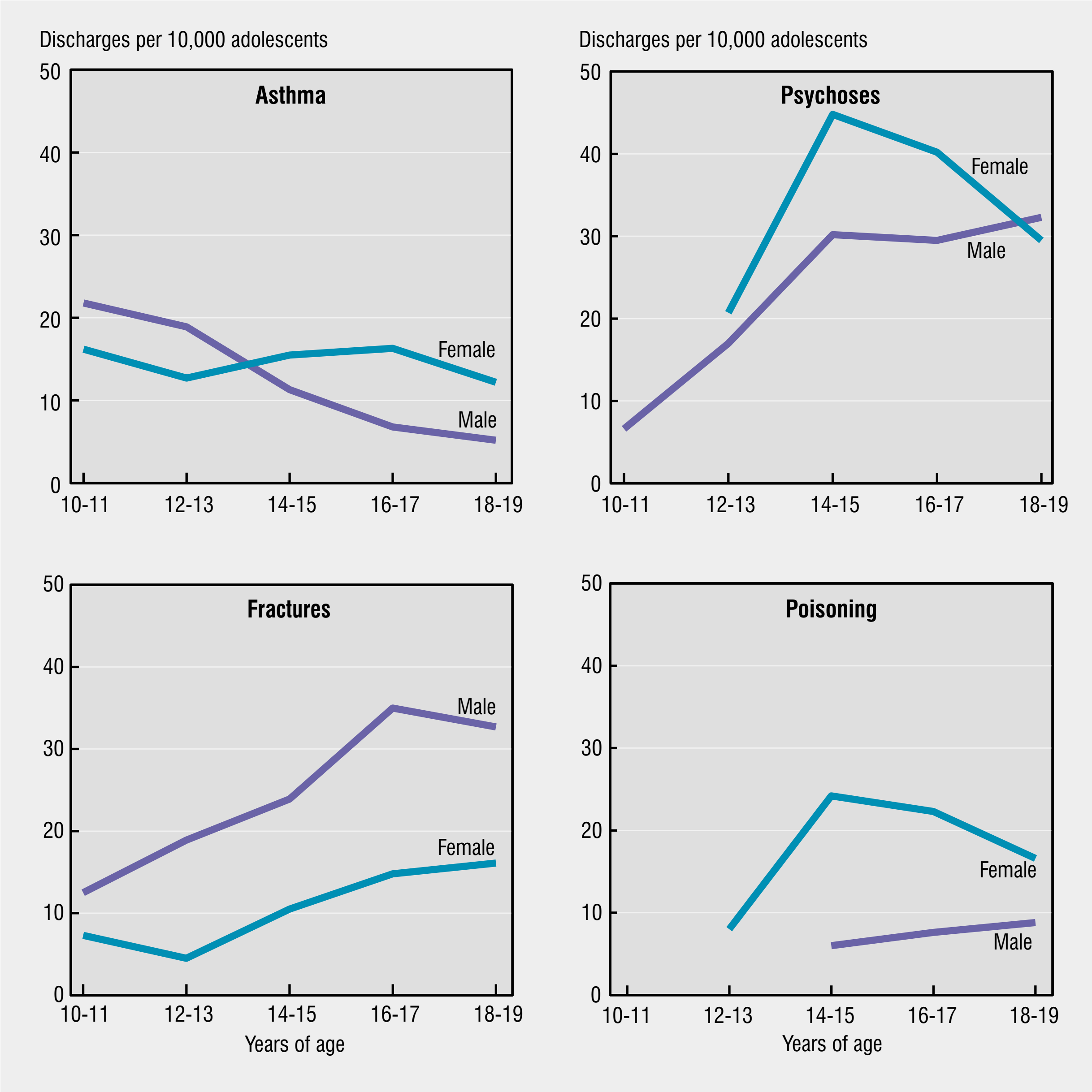
■ Psychoses[1] hospitalizations among adolescents 10–19 years of age increased sharply up to ages 14–15 years and then plateaued. Rates for males and females were similar, with rates at ages 14–19 years about twice the rates at ages 12–13 years. The leading diagnosis for this group is ‘‘major depressive disorder, single episode’’ accounting for 33 percent of all male and 47 percent of all female psychoses diagnoses.

■ Fractures were the leading cause of injury-related hospitalizations. Hospital discharge rates for fractures increased with age among male and female adolescents. Among male adolescents 16–19 years of age rates were 2.5 times those of younger adolescents (10–11 years); among females 16–19 years of age rates were twice those of younger adolescents (10–11 years).

■ Female adolescents were significantly more likely than male adolescents to be hospitalized for poisoning. The rates among female adolescents 14–17 years of age were 3 times those of female adolescents 12–13 years, with a slight decline among female adolescents 18–19 years. The rates among male adolescents 14–19 years of age remained fairly constant.

[1] ICD-9 CM codes include those for all psychoses, ICD 290–299.

Figure 14. Short-stay hospital discharge rates for selected diagnoses among adolescents 10–19 years of age, by age and sex: United States, average annual 1995–97



NOTES: Data points are not shown in figure when rates are unreliable. See Technical Notes for discussion of hospital diagnoses. See also Appendix I, National Hospital Discharge Survey. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Discharge Survey (NHDS). See related *Health, United States, 2000*, tables 92 and 93.

Violent Crime Victimization

Adolescents are the victims of violent acts in the home, at school, and in the community. Violent crime includes rape or sexual assault, aggravated and simple assaults, and robbery.

- During the period 1992–97 an average of approximately 3.4 million adolescents 12–19 years of age were reported to be victims of violent crime each year. Sixty-five percent of the victimizations were classified as simple assaults, 21 percent as aggravated assaults, 10 percent as robbery, and 4 percent as rape and sexual assault. The proportions for aggravated assault and for robbery were somewhat higher for male adolescents than for female adolescents; there were more female than male victims (10 percent) of rape and sexual assault.

- The 1992–97 overall rate of violent victimizations for male adolescents was 50 percent higher than for female adolescents. Among the youngest adolescents, male victimization rates were nearly twice those for females; however, the disparity narrowed with increasing age. Among males there was no variation in the rates by age; among females adolescents 18–19 years of age were more likely to be victims of violence than those 12–13 years.

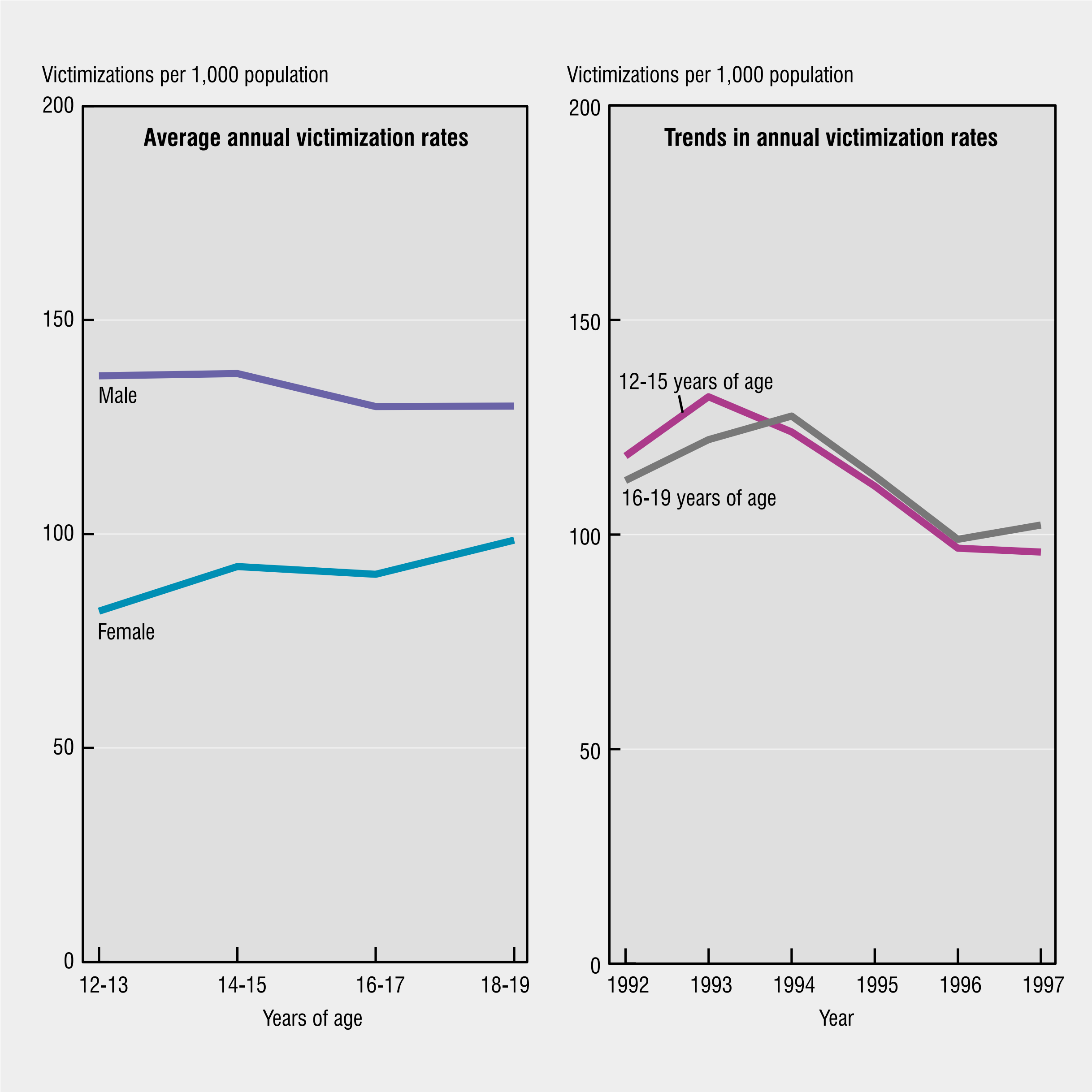
- Among female adolescents 12–19 years of age the rates for rape and sexual assault increased with age (data not shown). The reported rates for older adolescents were about twice those for younger adolescents. Overall, female adolescents and young adult women are four times as likely to be victims of sexual assault as women in all other age groups (1).

- From 1992 to 1997 the rate of violent crime victimization for adolescents 12–15 years and 16–19 years decreased. Declines were noted for each of the major categories of victimization.

Reference

1. Rickert VI, et al. Date rape among adolescents and young adults. J Pediatr Adolesc Gynecol 11(4):167–75. 1998.

Figure 15. Violent crime victimization rates among adolescents 12–19 years of age, by age and sex: United States, 1992–97



NOTES: See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Bureau of Justice Statistics, Department of Justice. National Crime Victimization Survey.

Death Rates

- Injuries cause more deaths among adolescents than do natural causes[1]. For the period 1996–97, nearly 14,000 adolescents died annually from injuries compared with about 5,000 adolescents who died from natural causes; that is, 73 percent of all deaths among adolescents 10–19 years of age were caused by an injury. The proportion of all deaths that were injuries increases with age from 47 percent at age 10 years to 81 percent at age 18 years.

- Among male adolescents injury death rates exceeded natural cause death rates at each age 11–19 years (the rates were similar at 10 years of age), and the difference increased with age. Among male adolescents 19 years of age, the injury death rate was 12 times the rate of those 10 years of age. Compared with death rates for injuries, death rates for natural causes increased more slowly with age. Among male adolescents 19 years of age, the natural cause death rate was twice that of males 10 years of age.

- Among female adolescents 10–12 years, death rates for natural causes exceeded those for injuries; the rates were similar at age 13 years, and for those 14–19 years of age injury death rates were higher than natural cause death rates. Injury death rates for female adolescents did not increase as consistently with age as did the rates for male adolescents.

- The injury death rate for males 10–19 years of age was 2.7 times that for females, while for natural causes the death rate for males was 1.3 times the rate for females.

- Among adolescents unintentional injuries comprised the majority of injury deaths, 57 percent among males and 74 percent among females. For both sexes, the proportion of unintended injury deaths declined with age, as homicide and suicide deaths increased with age.

- The unintentional injury death rates increased with age, with a particularly large relative increase, 73 percent for males and 79 percent for females, between ages 15 and 16 years. Suicide and homicide rates for males also increased with age, more sharply for ages 10–15 years than for ages 16–19 years. Unlike the pattern for males, suicide rates for females 15–19 years did not increase.

- Race and ethnicity specific death rates also increased with age. In 1996–97 injury death rates were higher for black and American Indian adolescents than for non-Hispanic white, Hispanic, and Asian and Pacific Islander adolescents. The higher rates for black adolescents were due to higher homicide rates at each age; striking disparities exist in homicide rates for black adolescents compared with other race and ethnic groups. Higher rates for American Indian adolescents were due to higher unintentional injury mortality as well as higher suicide rates especially among those 15 years of age and over. Death rates for natural causes were consistently higher for black adolescents and lower for Asian and Pacific Islander adolescents than for non-Hispanic and Hispanic adolescents.

- Healthy People 2010 has identified reduction of adolescent mortality as a critical adolescent objective. The objectives call for a reduction of death rates to 16.8 per 100,000 for adolescents 10–14 years of age and 43.2 per 100,000 for adolescents 15–19 years of age (1). Healthy People 2010 has specifically targeted the reduction of suicide and homicide rates as critical adolescent objectives.

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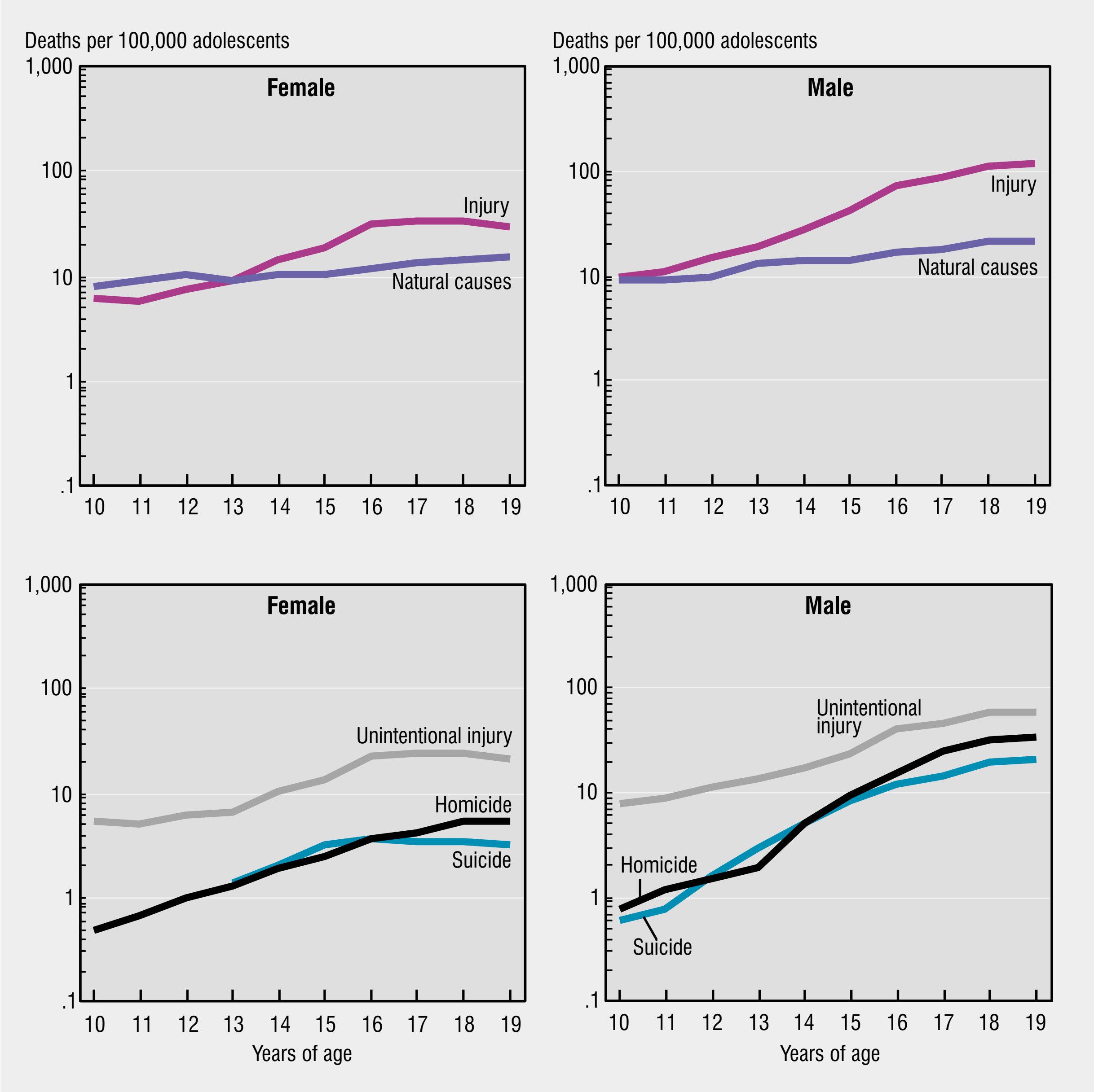
[1] “Natural” is a term similar to “noninjury” that is used to categorize causes of death.

Reference

1. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: 2000.

Figure 16. Death rates for injury, by intent of injury, and natural causes among adolescents 10–19 years of age, by age and sex: United States, average annual 1996–97



NOTES: Suicide rates for females 10–12 years of age are unreliable and are not shown. Death rates are graphed on a log scale to clearly illustrate how rates change across the entire age span 10–19 years. See Technical Notes for discussion of cause of death coding. See also Appendix II, Cause of Death. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System. See related *Health, United States, 2000*, tables 33, 45, 46, 47, and 48.

Motor Vehicle and Firearm-Related Deaths

- Motor vehicle traffic-related injuries and firearm-related injuries are the two leading causes of death among adolescents 10–19 years of age.

- For the period 1996–97, motor vehicle traffic injuries were the leading cause of injury death for adolescents 10–19 years of age (averaging 6,260 deaths per year), followed by injuries from firearms (averaging 4,250 per year). Together these two causes accounted for 55 percent of all deaths and for 75 percent of all injury deaths for adolescents. By comparison, malignant neoplasms, the leading natural cause of death for this age group, accounted for 6 percent of all deaths.

- For motor vehicle traffic injury deaths, rates increased markedly with age for male and female adolescents. Notably, between ages 15 and 16 years the rates for males and females doubled. A similar increase at these ages was noted in the emergency department visit rates for motor vehicle traffic-related injuries. (Figure 10). Motor vehicle death rates for males 10–17 years were 1.3–1.7 times those for females; by ages 18 and 19 years, the death rates for males were 2.1–2.5 times those for females.

- Disparities by race and ethnicity were apparent in the rates of death from motor vehicle injuries for male and female adolescents, although the differences for males were more pronounced. Among males and females motor vehicle injury rates were highest among American Indian or Alaska Native adolescents and lowest among Asian or Pacific Islander adolescents. Rates among non-Hispanic white teens were higher than those of non-Hispanic black and Hispanic teens.

- The high rates of death from motor vehicle injuries are partially attributable to risk behavior among adolescents. In 1999, 33 percent of high school students reported that in the previous 30 days they rode in a car with a driver who had been drinking alcohol, and 13 percent reported that they drove after drinking alcohol (1). Sixteen percent of students surveyed had rarely or never worn seat belts when riding in a car or truck driven by someone else. Overall, male students (21 percent) were significantly more likely than female students (12 percent) to have rarely or never worn seat belts (1).

- Healthy People 2010 has identified reduction of deaths caused by motor vehicle crashes and the reduction of deaths and injuries caused by alcohol- and drug- related motor vehicle crashes as critical adolescent objectives (2). The objectives also call for increased use of safety belts and a reduction in the proportion of adolescents who report that they rode, during the previous 30 days, with a driver who had been drinking alcohol.

- Firearm death rates also increase substantially with age; the rate for males 19 years of age was 28 times the rate for those 11 years of age. In contrast, the firearm death rates for 19 year old females was 10 times the rate for 11 year old females. The disparity between male and female firearm-related death rates increased from threefold for the youngest adolescents (10–11) to ninefold for older adolescents (18–19 years).

- Differences exist in firearm-related death rates by race and ethnicity for male and female adolescents. Rates were strikingly higher among black adolescents than among other race and ethnic groups. Firearm death rates were lowest among non-Hispanic white and Asian or Pacific Islander adolescents.

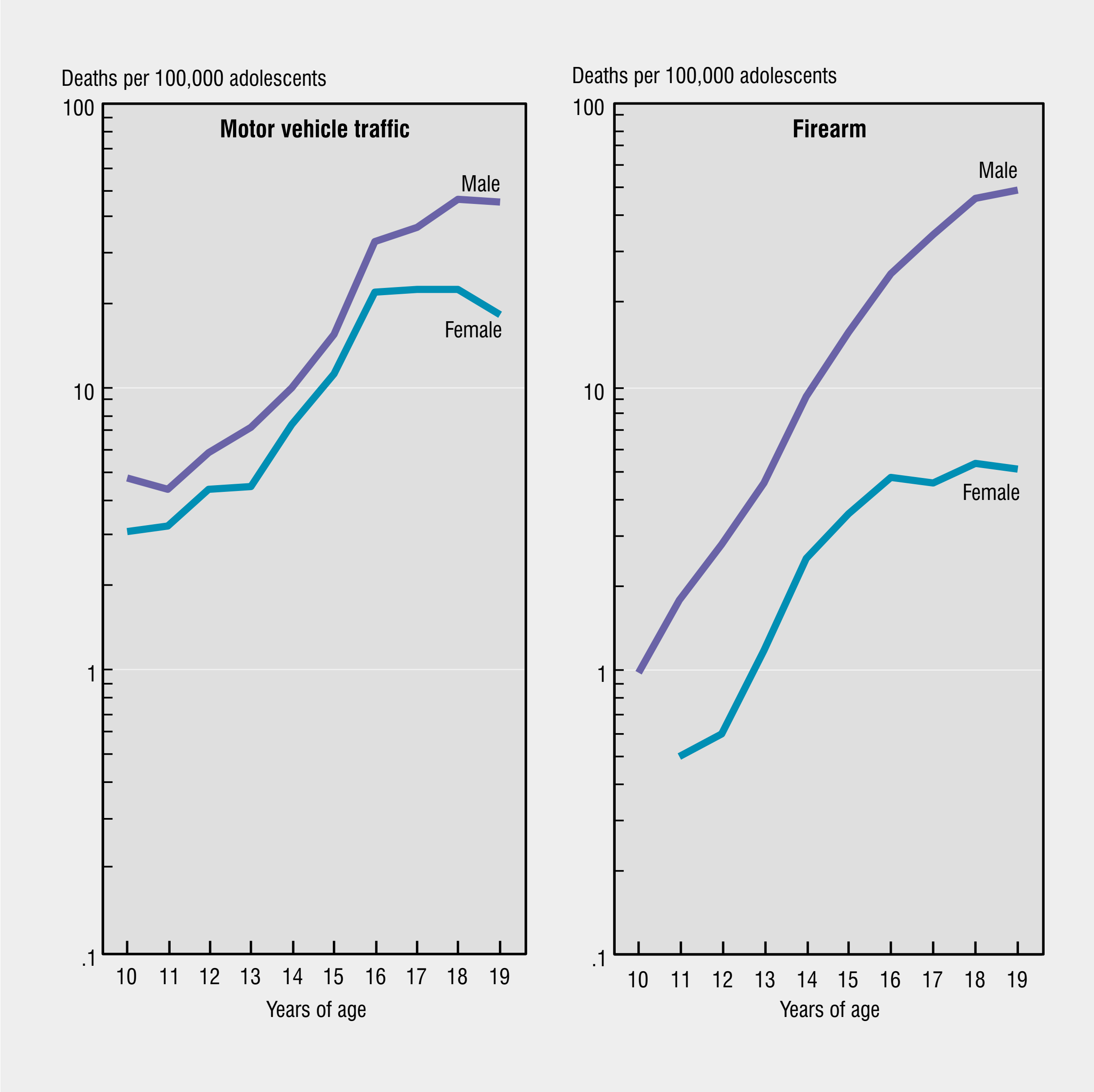
- Firearm deaths include deaths that were classified as unintentional, suicide, homicide, legal intervention, or undetermined intent. Among adolescents 10–19 years of age, 60 percent of all firearm deaths were homicides, 31 percent were suicides, 6 percent were unintentional and 2 percent were of undetermined intent.

References

1. Centers for Disease Control and Prevention. Youth Risk Behavior Survey. 1999.

2. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

Figure 17. Death rates for motor vehicle traffic-related and firearm-related injuries among adolescents 10–19 years of age, by age and sex: United States, average annual 1996–97



NOTES: The firearm death rate for females 10 years of age is unreliable and is not shown. Death rates are graphed on a log scale to clearly illustrate how rates change across the entire age span 10–19 years. See Technical Notes for discussion of cause of death coding. See also Appendix II, Cause of Death. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System. See related *Health, United States, 2000*, tables 45 and 48.

Motor Vehicle and Firearm-Related Deaths

Where adolescents reside, whether in urban, suburban, or more rural settings, has been shown to influence mortality risks (1–3). Teenagers living in the most densely populated metropolitan counties have higher death rates associated with interpersonal violence, while those in more rural counties have higher rates of motor vehicle fatalities. In general, motor vehicle death rates are higher in less densely populated settings and firearm homicide is higher in more densely populated settings (1).

■ In 1996–97 motor vehicle traffic death rates in nonmetropolitan counties were 2–3 times the rates in the core metropolitan (counties with large central cities) counties, while rates in the noncore but still metropolitan counties were in between.

■ In all urbanization categories, the motor vehicle traffic death rates increased with age, with most of the increase occurring by age 17 years. Motor vehicle traffic death rates for adolescents 16 years of age (when many adolescents can begin to drive) were approximately twice those for adolescents 15 years of age in all three county groups. Between ages 18 and 19 years the rate declined by 5–7 percent in each of the three county groups.

■ Age and urbanization patterns for firearm mortality differ from those for motor vehicle mortality. Most notably, the increases in firearm death rates by age were steeper. Between ages 11 and 13 years, firearm death rates more than doubled and were higher in nonmetropolitan counties than in either of the two metropolitan groups. With increasing age, the pattern changed and rates in the core counties were higher than those in noncore metropolitan and nonmetropolitan counties. With each single year of age between 13 and 16 years, firearm death rates in the core counties doubled or nearly doubled. Between 16 and 19 years, the rate came close to doubling again. Core county firearm death rates for 15–19 year olds were more than twice the rates in the other two county groups.

■ The manner or intent of firearm deaths, that is, whether deaths were ruled unintentional, a suicide, or a homicide, differs significantly by urbanization category. For example, the higher firearm death rates among younger adolescents in the nonmetropolitan areas resulted from higher unintentional and suicide rates. Among older adolescents, the majority of firearm deaths in the core counties were homicides while among adolescent who resided in the nonmetropolitan counties, suicide was the mostly likely manner of firearm death.

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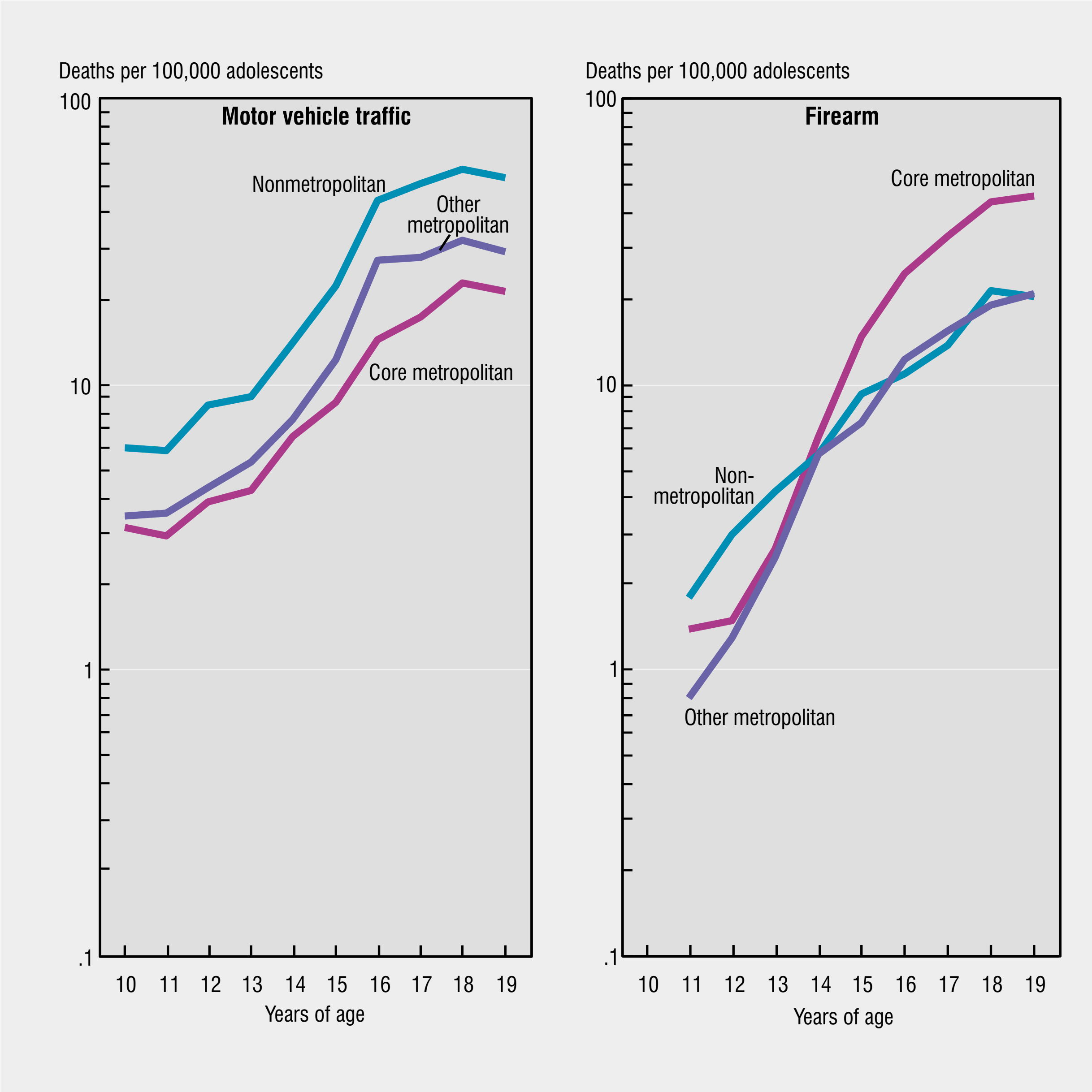
Figure 18. Death rates for motor vehicle traffic-related and firearm-related injuries among adolescents 10–19 years of age, by age and urbanization: United States, average annual 1996–97



NOTES: Death rates are graphed on a log scale to clearly illustrate how rates change across the entire age span 10–19 years. See Technical Notes for discussion of cause of death coding. See also Appendix II, Cause of Death and Appendix II, Urbanization. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System. See related *Health, United States, 2000*, tables 45 and 48.

Pregnancy Rates

Annually, more than 900,000 adolescents become pregnant. The majority (78 percent) of teen pregnancies are unplanned, accounting for one-fourth of all accidental pregnancies each year (1). The consequences of unintended pregnancy for adolescents include unintended births, reduced educational attainment, fewer employment opportunities, increased likelihood of welfare, and poorer health and developmental outcomes among their infants (2). About one-fourth of unintended pregnancies end in abortion (1).

- Teen pregnancy rates are much higher in the United States than in many other developed countries. In the mid-1990s rates were twice as high as in England and Wales or Canada, and 8 times as high as in Japan (3).

- The number of pregnancies is estimated as the sum of live births, induced abortions, and fetal losses (miscarriages and stillbirths). In 1996 the pregnancy rate was 98.7 pregnancies per 1,000 young women 15–19 years of age. Pregnancy rates increased with age, from 2.8 for the youngest adolescents, 10–14 years of age (see Data Table), to 67.8 for adolescents 15–17 years and 146.4 for adolescents 18–19 years. A Healthy People 2010 critical adolescent objective calls for a reduction in pregnancies among female adolescents to no more than 46 pregnancies per 1,000 adolescents (4).

- Teen pregnancy rates vary by race and Hispanic origin. In 1996 pregnancy rates were more than twice as high among non-Hispanic black and Hispanic teens as among non-Hispanic white teens. Abortion rates were higher among non-Hispanic black teens than either Hispanic or non-Hispanic white teens.

- The teenage pregnancy rate for young women 15–19 years of age decreased 15 percent since reaching a peak of 116.5 per 1,000 in 1991 (5). Birth rates and abortion rates for adolescents declined in recent years. Fetal losses also declined as the number of young women becoming pregnant declined.

- Between 1990 and 1995 the proportion of teenagers who ever had intercourse decreased from 55 to 50 percent (6). Moreover, contraceptive use among sexually active teens increased over those years, and contracepting teens chose more effective contraceptive methods. These factors contributed to the decrease in pregnancy rates among teenagers.

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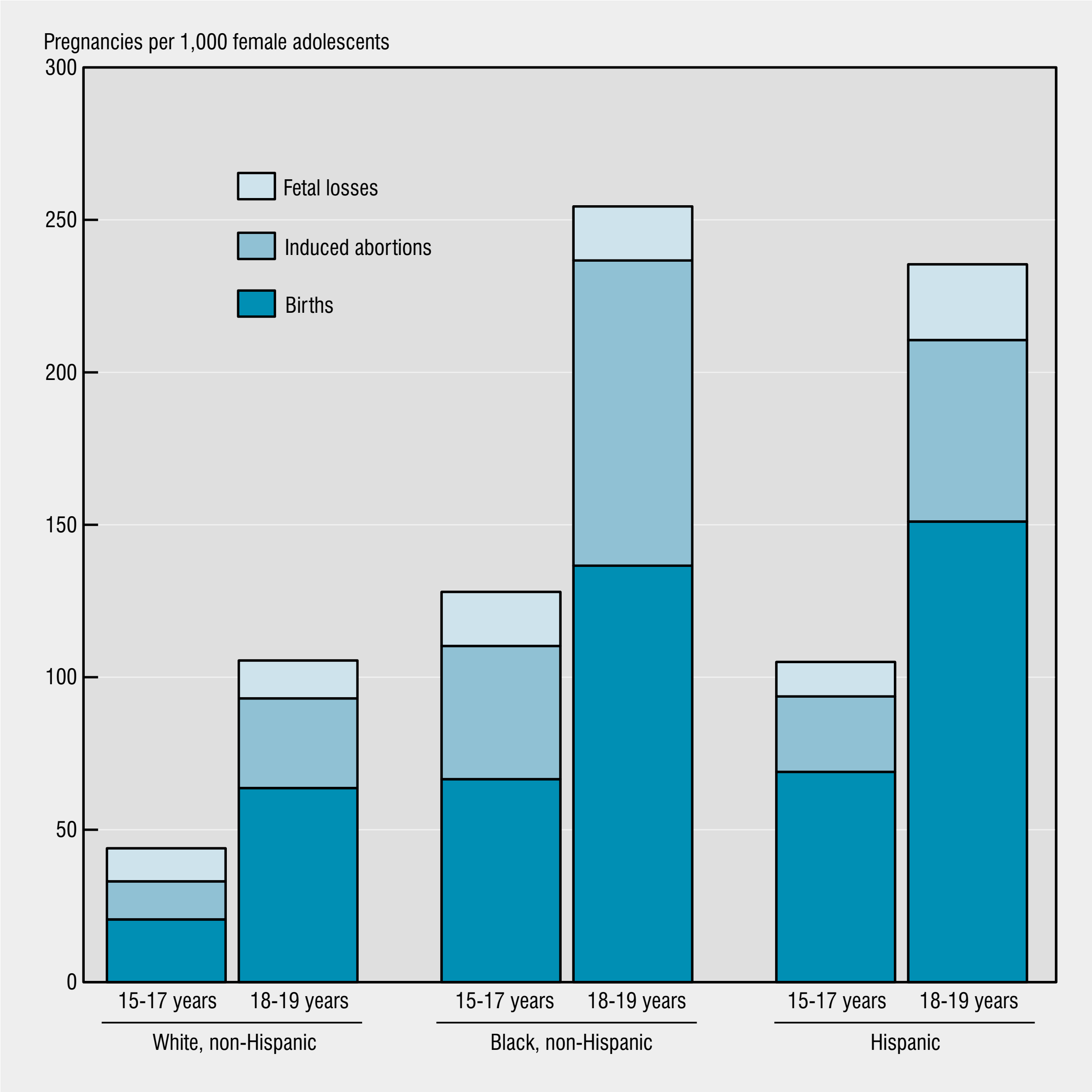
Figure 19. Pregnancy rates according to outcome of pregnancy among adolescents 15–19 years of age, by age, race, and Hispanic origin: United States, 1996



NOTES: Persons of Hispanic origin may be of any race. See Technical Notes for discussion of pregnancy rate estimation. See Data Table for data points graphed.

SOURCE: Ventura SJ, Mosher WD, Curtin SC, Abma JC, Henshaw SK. Trends in pregnancies and pregnancy rates by outcome: Estimates for the United States, 1976–96. Vital Health Stat 21(56). Hyattsville, Maryland: National Center for Health Statistics. 2000. See related *Health, United States, 2000*, tables 3, 8, 16, and 17.

Birth Rates

Adolescents who become mothers are less likely to complete high school or to have steady employment, and more likely to receive public assistance and to experience marital instability, compared with peers who delay childbearing (1). Economic and social disadvantage are among the causes, as well as the consequences, of teenage child bearing (2). Infants born to teenage mothers are at a greater risk of low birthweight and infant mortality. (See figures 21 and 22.) Teen mothers are also less likely to receive adequate and timely prenatal care and more likely to smoke (3). Second and higher order births further increase the risk of poor outcomes for young women and their children.

- In 1997–98 there were approximately 493,600 births annually to adolescents 13–19 years of age, accounting for nearly 13 percent of all births in each year. The birth rate for adolescent women 15–19 years of age was 51.5 births per 1,000 adolescent women, and the birth rate for very young adolescents (13–14 years of age) was 2.6.

- There is a consistent pattern of increasing birth rate by maternal age. Overall 19-year old teens were nearly seven times as likely to have a birth as their 15-year old counterparts.

- Birth rates vary considerably by race and Hispanic origin. In 1997–98 Hispanic and non-Hispanic black teens had the highest birth rates followed by American Indian teens; Asian or Pacific Islander teens had the lowest birth rates. Among young women 19 years of age, the birth rate among Hispanics and non-Hispanic blacks was about 3.5 times that of Asian or Pacific Islanders (149.3 and 141.0 compared with 42.6 per 1,000).

- Teenage birth rates have steadily declined in the 1990’s and have fallen almost 18 percent among adolescents 15–19 years of age since 1991 (4). There has also been a 21-percent decrease in the rates of second and higher order births to teens in the 1990’s, while the proportion of births to teenagers that were second and higher order declined from 25 percent in 1991 to 22 percent in 1998 (4, 5).

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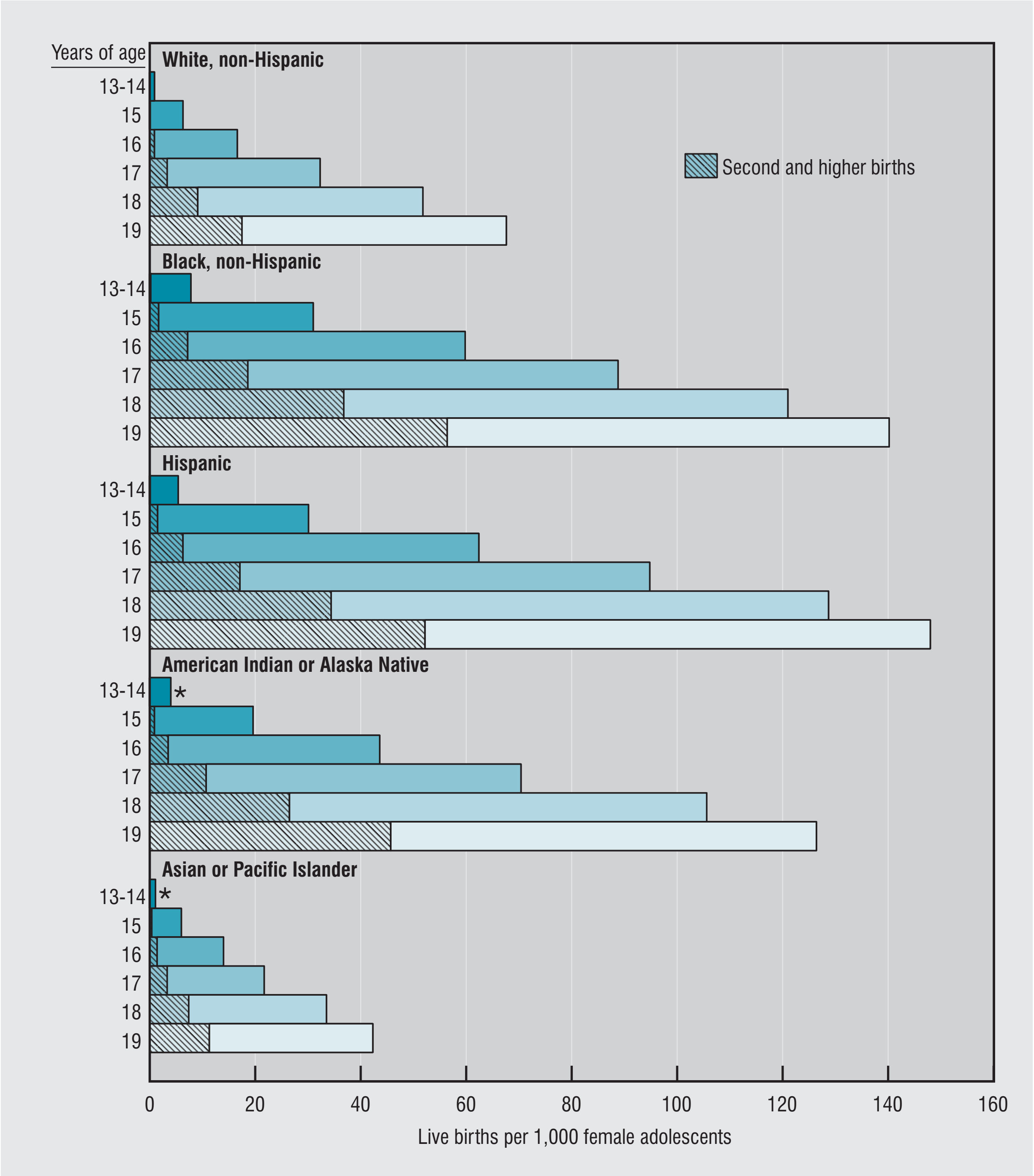
Figure 20. Birth rates among adolescents 13–19 years of age, by birth order, age, race, and Hispanic origin: United States, average annual 1997–98



* Second and higher live births were too few to be considered reliable and are not shown separately.

NOTES: Excludes live births with unknown birth order. See Appendix II, Rates, birth. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System. See related *Health, United States, 2000*, table 3.

Low Birthweight

Birthweight, along with period of gestation, is one of the most important predictors of an infant's subsequent health and survival. Low birthweight (less than 2,500 grams or about 5.5 pounds) may result from premature birth, being small for gestational age, or both of these factors. Low-birthweight infants face an increased risk of physical and developmental complications and death (1). Nearly two-thirds of infant deaths in 1997 occurred among low-birthweight babies (2).

■ In 1997–98, 9.5 percent of infants born to adolescents ages 15–19 were low birthweight. For mothers under 15 years of age, 13.2 percent of infants were low birthweight. In contrast, 7.2 percent of infants born to women in their twenties and thirties were low birthweight.

■ Low-birthweight rates vary by race and Hispanic origin. The percent of infants with low birthweight is higher among non-Hispanic black teens than among all other groups and is almost double that of American Indian or Alaska Native teens.

■ Very low-birthweight infants, those weighing less than 1,500 grams, are at the highest risk of dying in their first year. In 1997–98 the percent of very low-birthweight infants of adolescent mothers decreased with increasing maternal age among all race and ethnic groups except American Indian or Alaska Native infants.

■ A number of factors may influence low birthweight including smoking during pregnancy. The rate of smoking during pregnancy for young women ages 15–19 increased between 1994 and 1998. Young women ages 15–19 have the highest rate of smoking during pregnancy of all age groups. Among teen mothers, non-Hispanic whites have the highest smoking rates followed by Native Americans (3, 4). Very low birthweight is primarily associate with preterm birth.

■ Healthy People 2010 objectives call for a reduction in low-birthweight births for all women to no more than 5 percent of live births and very low-birthweight births to no more than 1 percent of live births (5).

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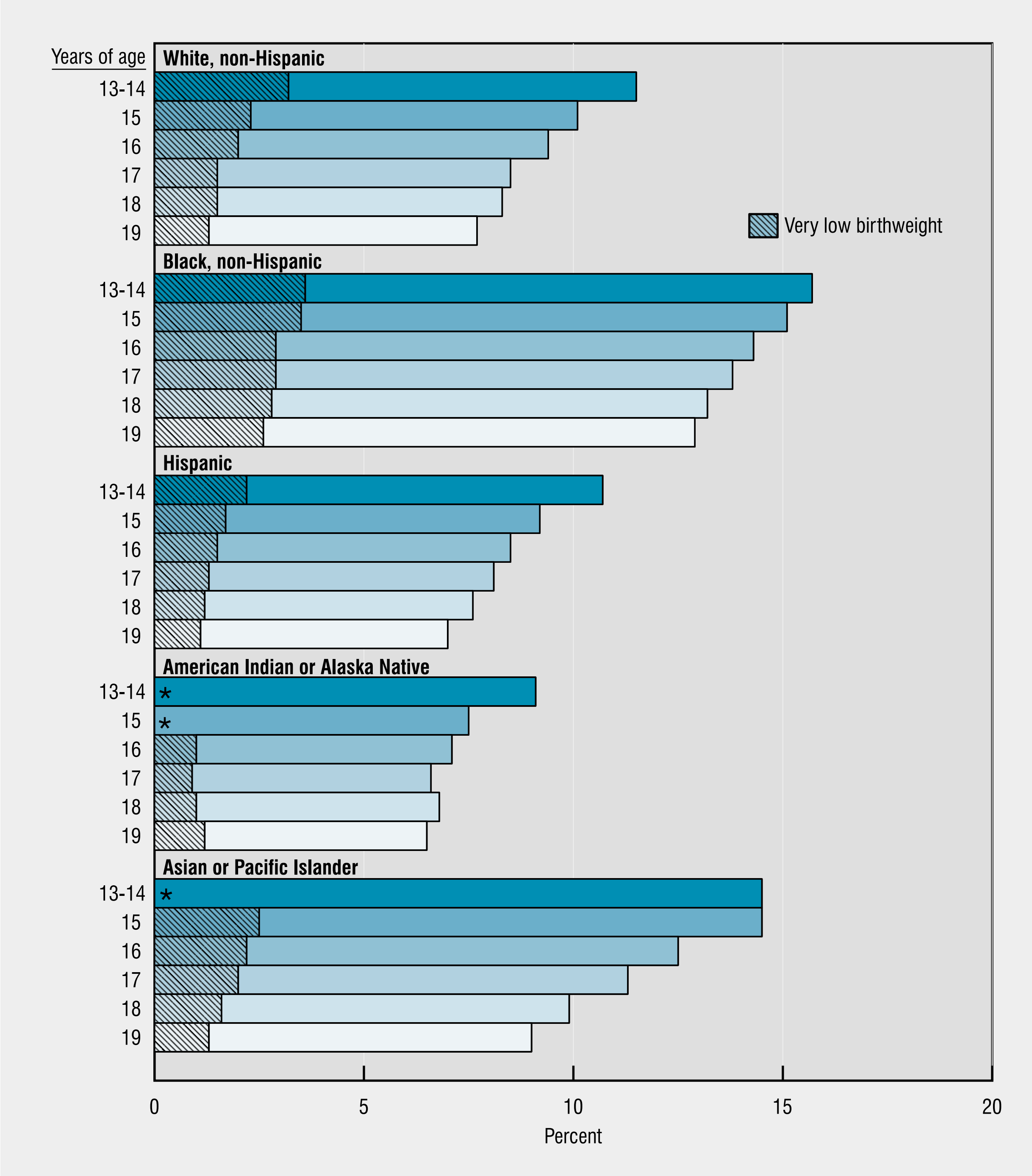
Figure 21. Low-birthweight live births among adolescent mothers 13–19 years of age, by maternal age, race, and Hispanic origin: United States, average annual 1997–98



* Very low-birthweight live births were too few to be considered reliable, and are not shown separately. See Data Table for data points graphed.

NOTES: Low birthweight is less than 2,500 grams; very low birthweight is less than 1,500 grams. Excludes live births with unknown birthweight.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System. See related *Health, United States, 2000*, table 12.

Infant Mortality

Infant mortality is defined as the death of an infant before his or her first birthday. The infant mortality rate is an important indicator of the well-being of infants and their adolescent mothers because it is associated with a variety of factors, such as maternal health, quality of and access to medical care, socioeconomic conditions, and public health practices (1).

- During 1995–97 among infants born to adolescent mothers there were 10.6 infant deaths per 1,000 live births. The Healthy People 2010 objective for infant mortality among all mothers is no more than 4.5 infant deaths per 1,000 live births (2).
- Overall, infants of the youngest adolescent mothers (13–14 years) had higher infant mortality rates than infants of mothers 15–19 years of age (17.1 versus 10.4).
- Infant mortality rates vary significantly among racial and ethnic groups. Non-Hispanic black adolescent mothers had higher infant mortality rates than other adolescent mothers (14.4), nearly twice those of Hispanic mothers (7.6).
- Among infants of non-Hispanic white and Hispanic adolescent mothers, mortality rates decreased with increasing maternal age; infant mortality rates plateaued among infants of non-Hispanic black mothers 16 years and older. Non-Hispanic white and Hispanic mothers 13 and 14 years of age were approximately twice as likely to have an infant death as mothers 19 years of age; for black mothers this relative difference was 1.4.
- Infant mortality is associated with a variety of factors affecting the mother's health during pregnancy and the infant's environment and health care during the first year of life. It is important that adolescent mothers receive timely prenatal care and avoid risky behaviors such as the use of alcohol and tobacco during pregnancy. Maternal smoking during pregnancy increases the risk of infant mortality (3). In 1998, 18 percent of mothers 15–19 years of age reported smoking during pregnancy, the highest percent of any age group (4).
- Among infants of adolescent mothers, as for infants of all mothers, Sudden Infant Death Syndrome (SIDS) is the leading cause of infant mortality after the first month of life (5). The American Academy of Pediatrics recommends putting infants to sleep on their backs because of the lower risk for SIDS associated with this position.

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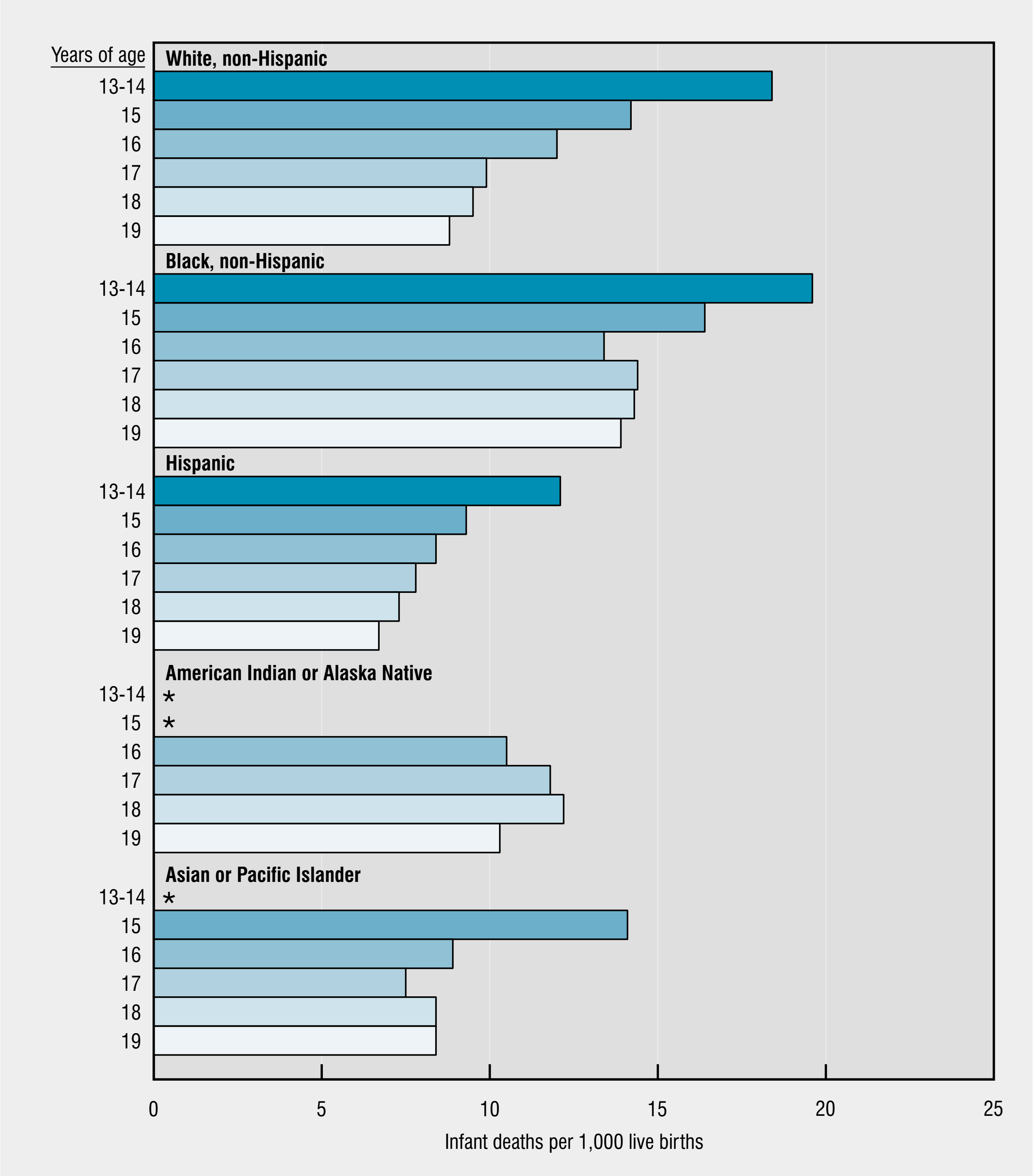
Figure 22. Infant mortality rates among infants of adolescent mothers 13–19 years of age, by maternal age, race, and Hispanic origin: United States, average annual 1995–97



* Infant deaths in this age and race group were too few to be considered reliable and are not shown.

NOTES: See Data Table for data points graphed. For further discussion, see Appendix I, National Linked File of Live Births and Infant Deaths.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Linked Files of Live Births and Infant Deaths. See related *Health, United States, 2000*, tables 20–25.

Sexually Transmitted Diseases

Sexually transmitted diseases (STD’s) are the most commonly reported infectious diseases among sexually active adolescents. Compared with adults, adolescents are at a higher risk for acquiring STD’s: they are more likely to have multiple sexual partners and short-term relationships, to engage in unprotected intercourse, and to have partners who are themselves at high risk for STD’s (1, 2). Adolescent women may also have physiologically increased susceptibility to infection due to increased cervical ectopy and lack of immunity (1).

■ Sexually active adolescents often face barriers to receiving STD prevention services, such as concern about confidentiality, lack of insurance or ability to pay, and lack of transportation.

■ Chlamydia, gonorrhea, and syphilis are the most common bacterial causes of STD’s, and are curable with antimicrobials. Syphilis is relatively rare among adolescents. When left untreated, chlamydia and gonorrhea can cause pelvic inflammatory disease, abscesses in the fallopian tubes and ovaries, and chronic pelvic pain, and may result in ectopic pregnancy or infertility. In young men untreated infections can cause urethritis and epididymitis. STD’s may also increase susceptibility to HIV infection two- to fivefold.

■ In 1998 in the U.S. population, female adolescents 15–19 years of age had higher reported rates of chlamydial infections than adolescent males and older persons of either gender. The higher reported rates of chlamydia among female adolescents than among male adolescents is primarily attributable to detection of asymptomatic infection in young women through screening, while their sex partners may not be diagnosed or reported. Symptomatic male adolescents may be treated without testing, and therefore may not be captured by disease surveillance (1).

■ The reduction of the proportion of adolescents with chlamydia infections is a Healthy People 2010 critical adolescent objective, with a target of 3 percent of males and females, 15–24 years of age, who attend family planning or STD clinics (3).

■ In 1998 rates of gonorrhea in the U.S. population were also higher among female adolescents 15–19 years of age than adolescent males and older persons. Between 1990 and 1998 the gonorrhea rate among adolescents decreased by 50 percent (from 1,114.4 cases per 100,000 in 1990 to 560.6 in 1998). Healthy People 2010 objectives call for a reduction of the incidence of gonorrhea to no more than 19 cases per 100,000 people in the total population (3).

■ Large race and ethnic disparities in STD rates exist among adolescents. Non-Hispanic black adolescents had higher rates of chlamydia and gonorrhea than adolescents in other race and ethnic groups. Differences in socioeconomic status, contraceptive use, and sexual risk behaviors, may influence the disparity in rates (4, 5).

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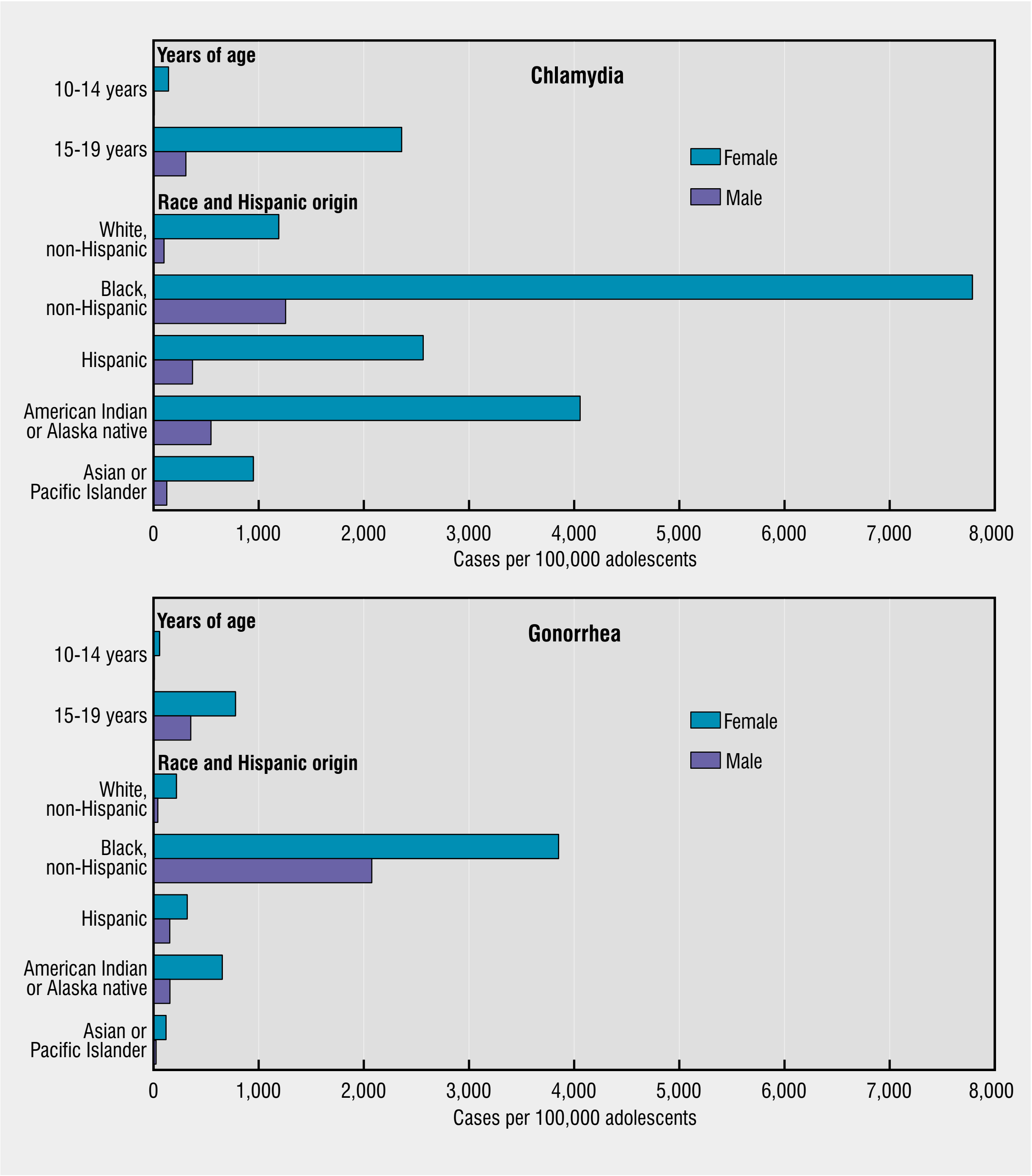
Figure 23. Sexually transmitted disease rates reported for adolescents 10–19 years of age, by age, sex, race, and Hispanic origin: United States, 1998



NOTES: Data for States not reporting race/ethnicity and age for the majority of cases were excluded. See Technical Notes for further discussion. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for STD, HIV, and TB Prevention: Sexually Transmitted Disease Surveillance, 1998. See related *Health, United States, 2000*, table 52.

Acquired Immunodeficiency Syndrome (AIDS)

Acquired immunodeficiency syndrome (AIDS), with its associated morbidity and mortality, results from infection with the human immunodeficiency virus (HIV). Before the introduction of highly active antiretroviral therapy, the average incubation period from acquisition of HIV to the development of AIDS was estimated to be 8–10 years (1). Overall declines in AIDS incidence and deaths in 1996 and 1997 provide evidence of the widespread beneficial effects of new treatment regimens. Rather than an inevitable progression of HIV infection, a diagnosis of AIDS now increasingly represents late diagnosis, poor access to care, or treatment failure (2).

■ In 1996–98 AIDS rates increased with age among all racial and ethnic groups. Adolescents in some minority racial and ethnic groups are disproportionately affected by HIV and AIDS. In 1996–98 non-Hispanic black and Hispanic adolescents in every age group had higher rates of AIDS than non-Hispanic white adolescents. AIDS rates among American Indian or Alaska Native and Asian or Pacific Islander adolescents remain very low.

■ Although the overall prevalence of AIDS in adolescents is relatively low, the rate of HIV infection is higher. It is likely that most young adults who develop AIDS acquired HIV infection during their adolescent years. Sexual activity and drug use activities among adolescents place them at high risk for HIV transmission. Sexually transmitted diseases common among adolescents, chlamydia and gonorrhea, are believed to facilitate HIV transmission (1).

■ HIV prevention strategies include promoting knowledge of risk behaviors that increase the risk of HIV infection, increasing awareness of methods to reduce risk, and improving access to effective care and treatment programs to improve health and survival among persons who are already infected. Healthy People 2010 identified a reduction in the number of cases of HIV infection among adolescents as a critical adolescent objective (3).

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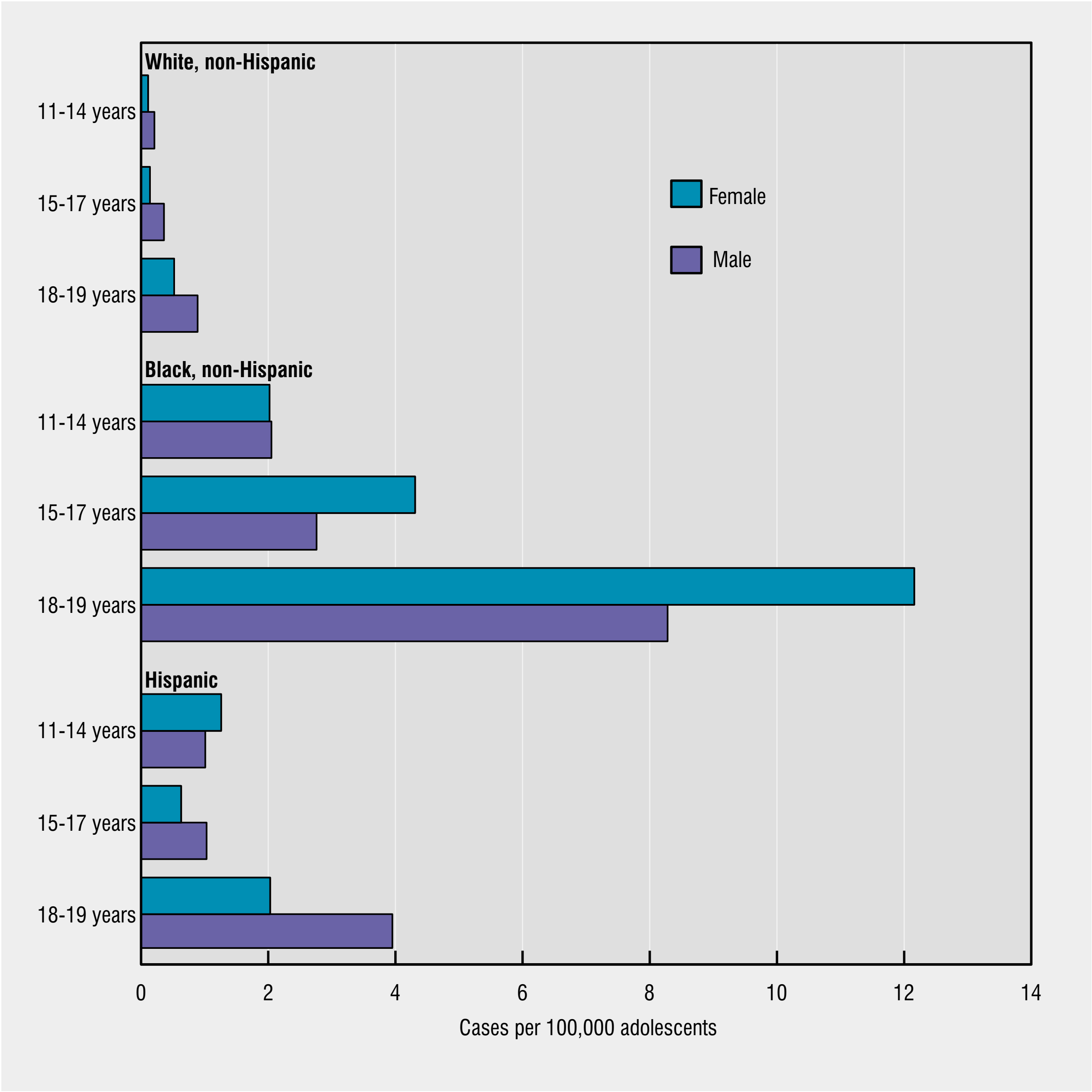
Figure 24. Acquired immunodeficiency syndrome (AIDS) rates reported for adolescents 11–19 years of age, by age, sex, race, and Hispanic origin: United States, average annual 1996–98



NOTES: States not reporting race/ethnicity and age for the majority of cases were excluded from the analysis. See Technical Notes for further discussion. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for STD, HIV, and TB Prevention. See related *Health, United States, 2000*, tables 53 and 54.

Sexual Activity

Sexually active adolescents have an increased risk of HIV infection, other sexually transmitted diseases (STD's), and unintended pregnancy. Teenagers who begin having sex at younger ages are exposed to these risks over a longer period of time. Those who have had multiple sex partners (four or more sex partners in their lifetime) are at an increased risk of pregnancy, acquiring sexually transmitted diseases, and HIV infection.

- In 1999 one-half of all high school students had been sexually active.

- The proportion of students who report ever having sexual intercourse and those who report having multiple sex partners increases significantly with age. In 1999, 66 percent of female students and 64 percent of male students in the 12th grade ever had intercourse compared with 33 percent of female students and 45 percent of male students in the 9th grade.

- Overall, non-Hispanic black students, both male and female, were significantly more likely to have had sexual intercourse than non-Hispanic white and Hispanic students. Among females, non-Hispanic black students were nearly twice as likely as non-Hispanic white and Hispanic students to have had multiple (four or more) sex partners. Among males, non-Hispanic black students were twice as likely as Hispanic students and four times as likely as non-Hispanic white students to have had multiple sex partners.

- In 1999 the percent of students who reported they had sexual intercourse during the previous 3 months increased from 27 percent of 9th grade students to 51 percent of 12th grade students (1). Among currently sexually active students, 58 percent used a condom during their last sexual intercourse. The proportion of students using condoms decreased with grade level, from 67 percent of 9th grade students to 48 percent of those in 12th grade (1). Condoms are very effective at preventing the transmission of STDs and HIV, but are less effective than some other contraceptive methods at preventing pregnancy.

- A Healthy People 2010 critical adolescent objective calls for an increase in the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active (2). This measure is also a Leading Health Indicator.

- Between 1991 and 1999 the prevalence of sexual experience among adolescents decreased 8 percent. The prevalence of multiple sex partners decreased 13 percent (3). These behavioral changes are consistent with decreases in related reproductive health outcomes among adolescents (see figures 19 and 23).

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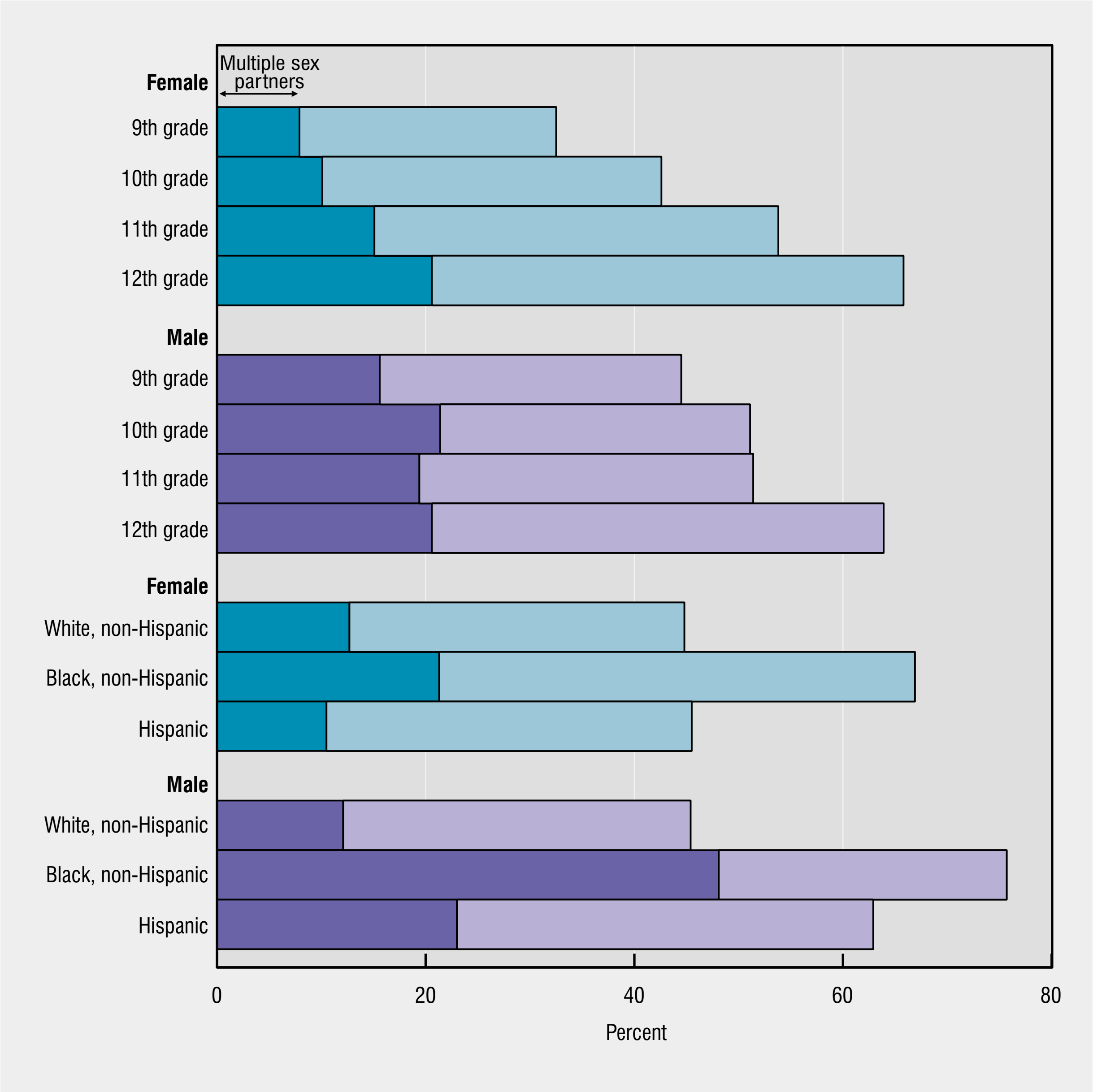
Figure 25. Lifetime sexual activity among students in grades 9–12, by sex, grade level, race, and Hispanic origin: United States, 1999



NOTES: Multiple sex partners is defined as four or more sex partners in the student's lifetime. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Survey (YRBS).

Cigarette Smoking

Smoking has serious long-term effects on health, including the risk of nicotine addiction, smoking-related diseases, and premature death. Over 80 percent of adults who are addicted to tobacco began smoking as adolescents (1). It has been estimated that tobacco-related illnesses will cause the premature death of approximately 5 million persons who were 17 years or younger in 1995 (2).

■ In 1999 more than one-third of all high school students reported smoking on one or more days in the previous 30 days (current smoking), and nearly 17 percent reported smoking frequently (that is, on 20 or more days).

■ The percent of students who reported current smoking increased with grade level, as did the percent who reported frequent smoking.

■ Many adolescents begin smoking before reaching 9th grade. One-fourth (25 percent) of students had smoked a whole cigarette before 13 years of age.

■ Rates of smoking differ substantially between racial and ethnic groups. In 1999 non-Hispanic white and Hispanic students were more likely to smoke than non-Hispanic black students. Non-Hispanic white students were more likely to be frequent smokers than Hispanic and non-Hispanic black students.

■ Among non-Hispanic black students, females were less likely to smoke than males. In contrast, among Hispanic and non-Hispanic white students smoking rates did not differ significantly for males and females.

■ Smoking among adolescents has increased in recent years. In 1999 the prevalence of current cigarette smoking was 27 percent higher than in 1991; current cigarette smoking increased 56 percent among black students, 29 percent among Hispanic students, and 25 percent among white students (3, 4).

■ Adolescents are at risk from other forms of tobacco use as well. In 1999, 8 percent of students used smokeless tobacco in the past month (14 percent of male students and 1 percent of female students) and 18 percent smoked cigars (25 percent of male students and 10 percent of female students) (3).

■ Tobacco use is the single leading preventable cause of death in the United States (1). A Healthy People 2010 critical adolescent objectives calls for a reduction in the proportion of young people in grades 9–12 who have used tobacco products; this measure is also a Leading Health Indicator (5).

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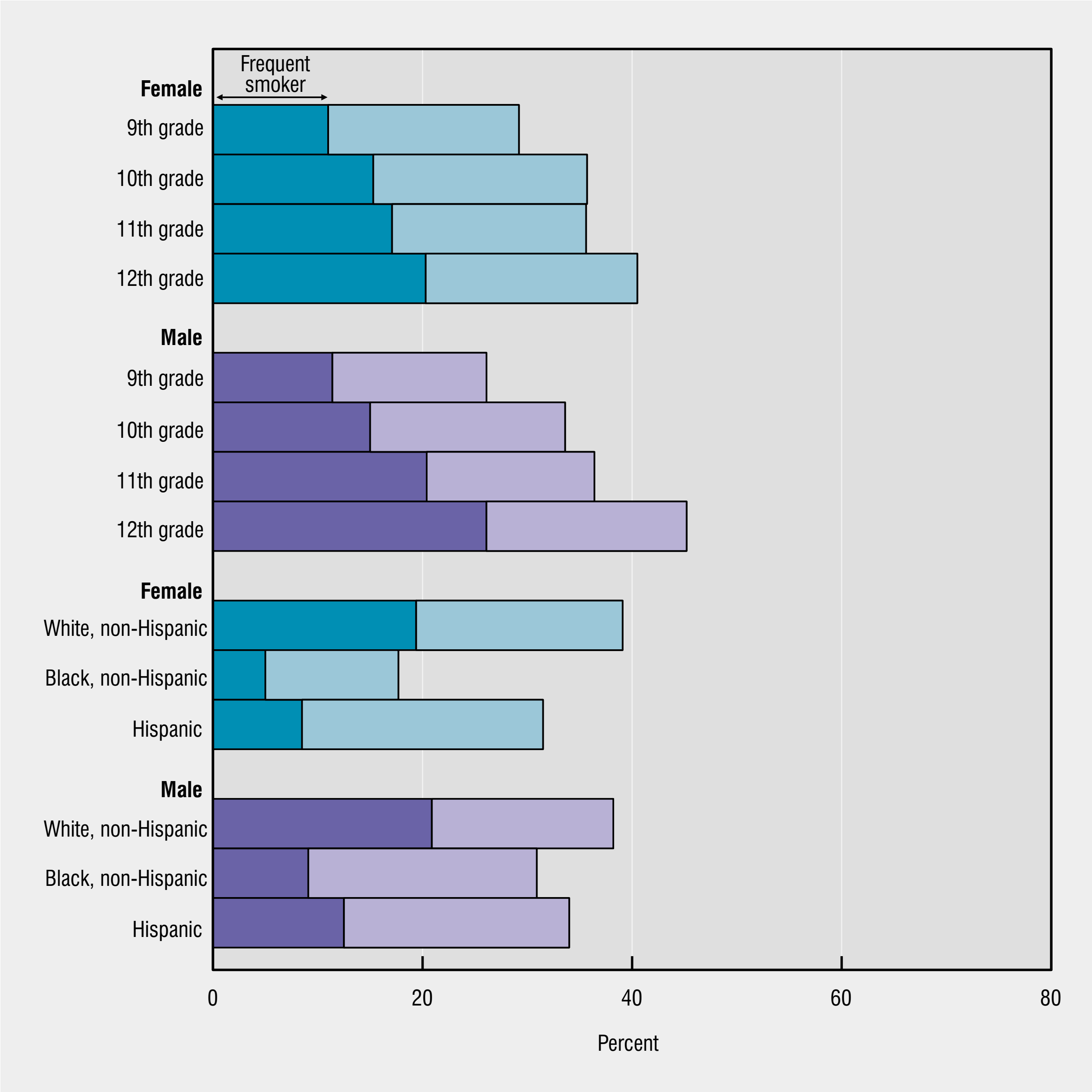
5. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

Figure 26. Current cigarette smoking among students in grades 9–12 by sex, grade level, race, and Hispanic origin: United States, 1999



NOTES: Current cigarette smoking is defined as having smoked cigarettes on one or more days of the 30 days preceding the survey; frequent cigarette smoking is defined as having smoked cigarettes on 20 or more days of the 30 days preceding the survey. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Survey (YRBS).

Alcohol Use

Alcohol is the most commonly used psychoactive substance during adolescence. Its use is associated with motor vehicle crashes, injuries, and deaths; with problems in school and in the workplace; and with fighting, crime, and other serious consequences (1). Heavy, episodic drinking or binge drinking, in which five or more drinks are consumed on one occasion, increases the likelihood of negative outcomes.

■ In 1999 one-half of high school students (48 percent of female students and 52 percent of male students) reported drinking in the previous 30 days. Twenty-eight percent of female students and 35 percent of male students reported binge drinking.

■ Current drinking and binge drinking increased significantly between grades 9 and 12 for both male and female students; the increase was sharper among male students.

■ For many students, initiation of drinking began before high school. Almost one-third (32 percent) of students reported that they first drank alcohol (more than a few sips) before age 13 (2). Male students were more likely than female students to begin drinking before age 13 (37 percent compared with 27 percent). Researchers have found that the younger the age of drinking onset, the greater the likelihood that an individual will, at some point in life, develop a clinically defined alcohol disorder (3).

■ Current drinking among non-Hispanic black male and female students was substantially lower than among non-Hispanic white and Hispanic students. Non-Hispanic black students were significantly less likely to engage in binge drinking than their non-Hispanic white and Hispanic counterparts.

■ Reduction in the proportion of adolescents engaging in binge drinking of alcoholic beverages is a Healthy People 2010 critical adolescent objective. This measure is also a Leading Health Indicator (4).

■ Adolescents who combine drinking and driving are at an increased risk of injury or death. In 1999, 13 percent of high school students reported that in the previous 30 days they drove after drinking alcohol (2). Thirty-three percent of high school students reported that in the previous 30 days they rode in a car with a driver who had been drinking alcohol (2); reducing this proportion is a Healthy People 2010 objective (4).

References

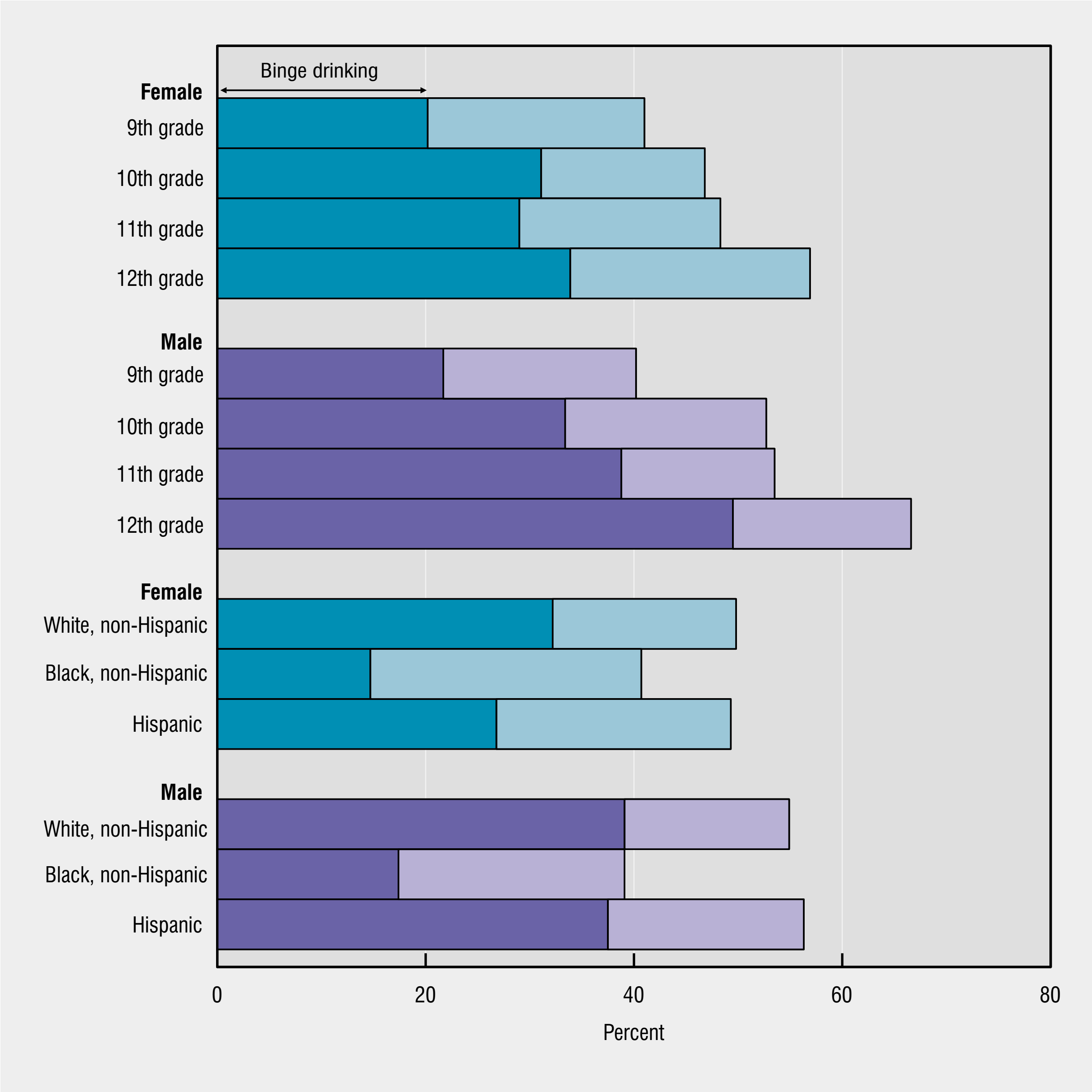
1. National Institute on Alcohol Abuse and Alcoholism. Ninth special report to the U.S. Congress on alcohol and health. Secretary of Health and Human Services. Bethesda, Maryland: National Institutes of Health. (NIH Publication No. 97–4017). June 1997.

2. Centers for Disease Control and Prevention. Youth Risk Behavior Survey. 1999.

3. Grant BR, Dawson DA. Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. J Subst Abuse 9:103–10. 1998.

4. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

Figure 27. Current alcohol use among students in grades 9–12, by sex, grade level, race, and Hispanic origin: United States, 1999



NOTES: Current alcohol use is defined as having 1 or more drinks on 1 or more days of the 30 days preceding the survey; binge alcohol use is defined as having 5 or more drinks on at least one occasion in the 30 days preceding the survey. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Survey (YRBS).

Marijuana Use

Drug use by adolescents can have immediate as well as long-term health and social consequences. Marijuana is the most commonly used illicit drug among high school students. Marijuana use has both health and cognitive risks, particularly damage to pulmonary functions as a result of chronic use (1, 2). Possession and/or use of marijuana is illegal and can lead to a variety of penalties.

- In 1999 almost one-half (47 percent) of high school students had used marijuana during their lifetime and one-fourth (27 percent) of high school students had used marijuana one or more times in the past 30 days (that is, current use). Male students were more likely than female students to report ever using marijuana and using it in the past 30 days.

- Both female and male students in the higher grades (10th–12th) were more likely to have ever used marijuana than students in 9th grade. Current use of marijuana among male and female students also increased significantly between 9th and 12th grade. Of students who had ever used marijuana, 11 percent first tried it before age 13 (8 percent of female students and 15 percent of male students) (3).

- Among female students, current and lifetime use of marijuana varied little by race and ethnicity. Among males there were no significant differences by race and ethnicity in marijuana use.

- Marijuana use among high school students increased substantially between 1990 and 1999 (4). Fifty percent more students had used marijuana at least once in 1999 than in 1990 (47 percent versus 31 percent), and almost twice as many students had used marijuana during the 30 days preceding the survey (27 percent versus 14 percent).

- A Healthy People 2010 critical adolescent objective calls for a reduction in the proportion of adolescents reporting use of marijuana and other illicit substances in the past 30 days (5).

- Adolescents face health consequences from other drug use, as well. Cocaine use is linked with health problems that range from eating disorders to disability to death from heart attacks and strokes (6). In 1999, 10 percent of high school students reported using some form of cocaine (powder, ‘‘crack,’’ or ‘‘freebase’’) during their lifetime and 4 percent reported using cocaine in the past 30 days (3).

References

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2. Pope HG Jr., Yurgelun-Todd D. The residual cognitive effects of heavy marijuana use in college students. J Am Med Assoc 275(7). 1996.

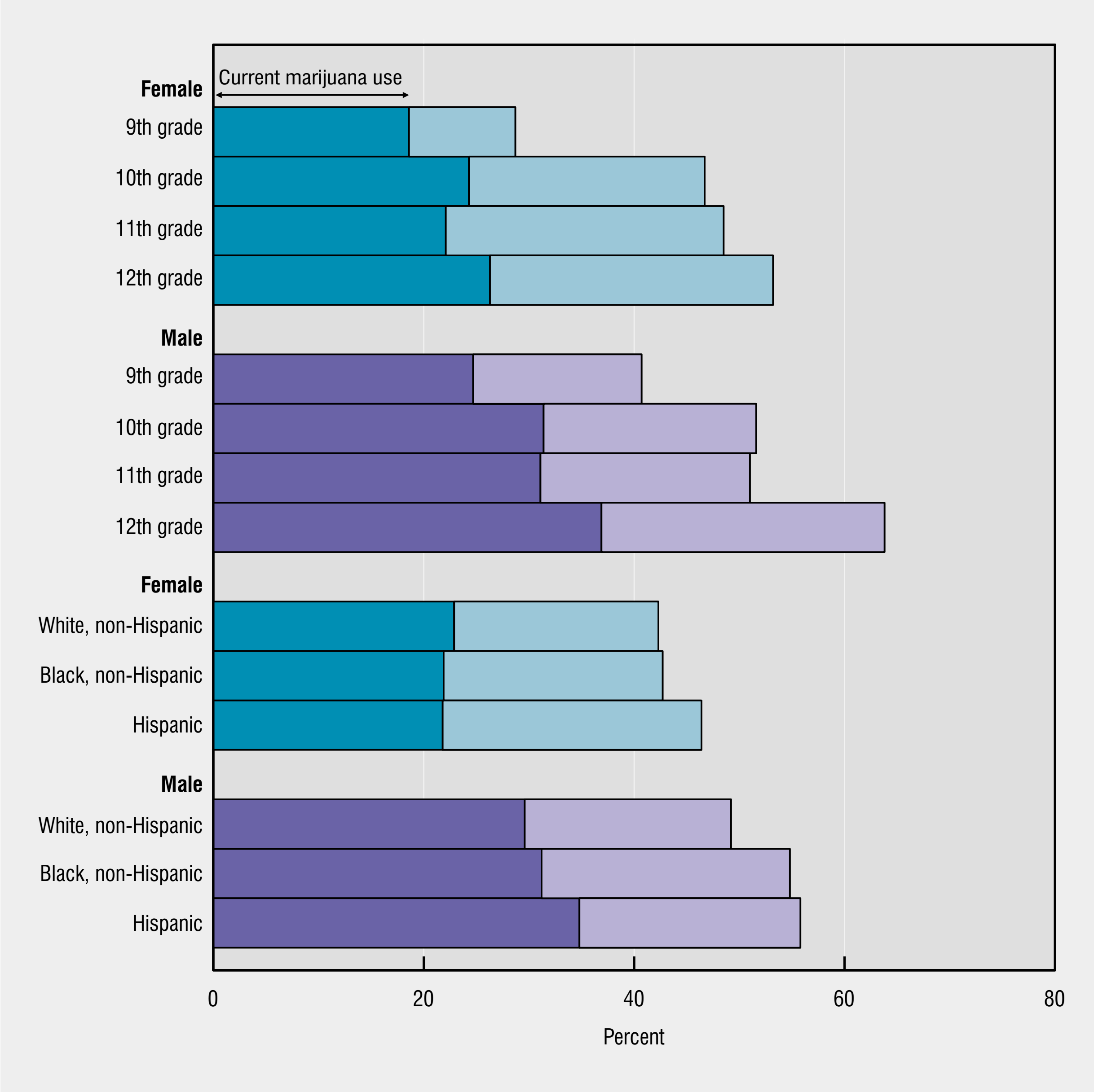
3. Centers for Disease Control and Prevention. Youth Risk Behavior Survey. 1999.

4. Centers for Disease Control and Prevention. Alcohol and other drug use among high school students—United States, 1990. Morb Mortal Wkly Rep 40(45);776–7,783–4. 1991.

5. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

6. Blanken AJ. Measuring use of alcohol and other drugs among adolescents. Public Health Rep 108(Supplement 1). 1993.

Figure 28. Lifetime marijuana use among students in grades 9–12, by sex, grade level, race, and Hispanic origin: United States, 1999



NOTES: Lifetime marijuana use is defined as having ever used marijuana. Current marijuana use is defined as having used marijuana 1 or more times in the 30 days preceding the survey. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Survey (YRBS).

Weapon Carrying

Weapon carrying is associated with the most serious injuries resulting from violence. Carrying a weapon significantly increases the risk that a violent argument will result in death, disability, or other serious injury (1). Although weapon carrying does not always lead to injury, it is strongly associated with exposure to intimidation and threats and perceptions of fear and vulnerability (2).

■ In 1999, 17 percent of high school students reported carrying a gun or other weapon in the past 30 days. Healthy People 2010 objectives call for a reduction to less than 15 percent in the prevalence of weapon carrying by adolescents in grades 9–12 (3).

■ Male students were significantly more likely than female students to carry a gun or other weapon. Among both male and female students, the percent of students who reported carrying a weapon did not differ significantly between 9th and 12th grade.

■ Among male students, non-Hispanic black students were more likely to carry a gun than non-Hispanic white and Hispanic students. Among female students, non-Hispanic black and Hispanic students were more likely to carry guns and other weapons than non-Hispanic white students.

■ The proportion of students who reported carrying a weapon on school property was smaller. In 1999, 7 percent of all students brought a weapon to school; 11 percent of male students carried a weapon on school property compared with 3 percent of female students (4). A Healthy People 2010 critical adolescent objective calls for a reduction of weapon carrying by adolescents on school property to 6 percent (3).

■ Not all violence-related behavior involves weapons. In 1999, 27 percent of female students and 44 percent of male students were involved in one or more physical fights (4). Reduction in physical fighting among adolescents is a Healthy People 2010 critical adolescent objective (3).

■ Between 1991 and 1999 the percent of students who carried a weapon decreased by 35 percent (26 percent in 1991, 17 percent in 1999). In 1999 high school students were also less likely to engage in physical fights or to be injured in physical fights than students in 1991 (5).

■ In 1996, 5 percent of adolescents 14–17 years of age were not enrolled in school. These adolescents were more likely than their in-school peers to engage in violence-related behavior (6).

References

1. Centers for Disease Control and Prevention. Measuring the health behavior of adolescents: The Youth Risk Behavior Surveillance System and recent public health reports on high-risk adolescents. Public Health Rep 108(1). 1993.

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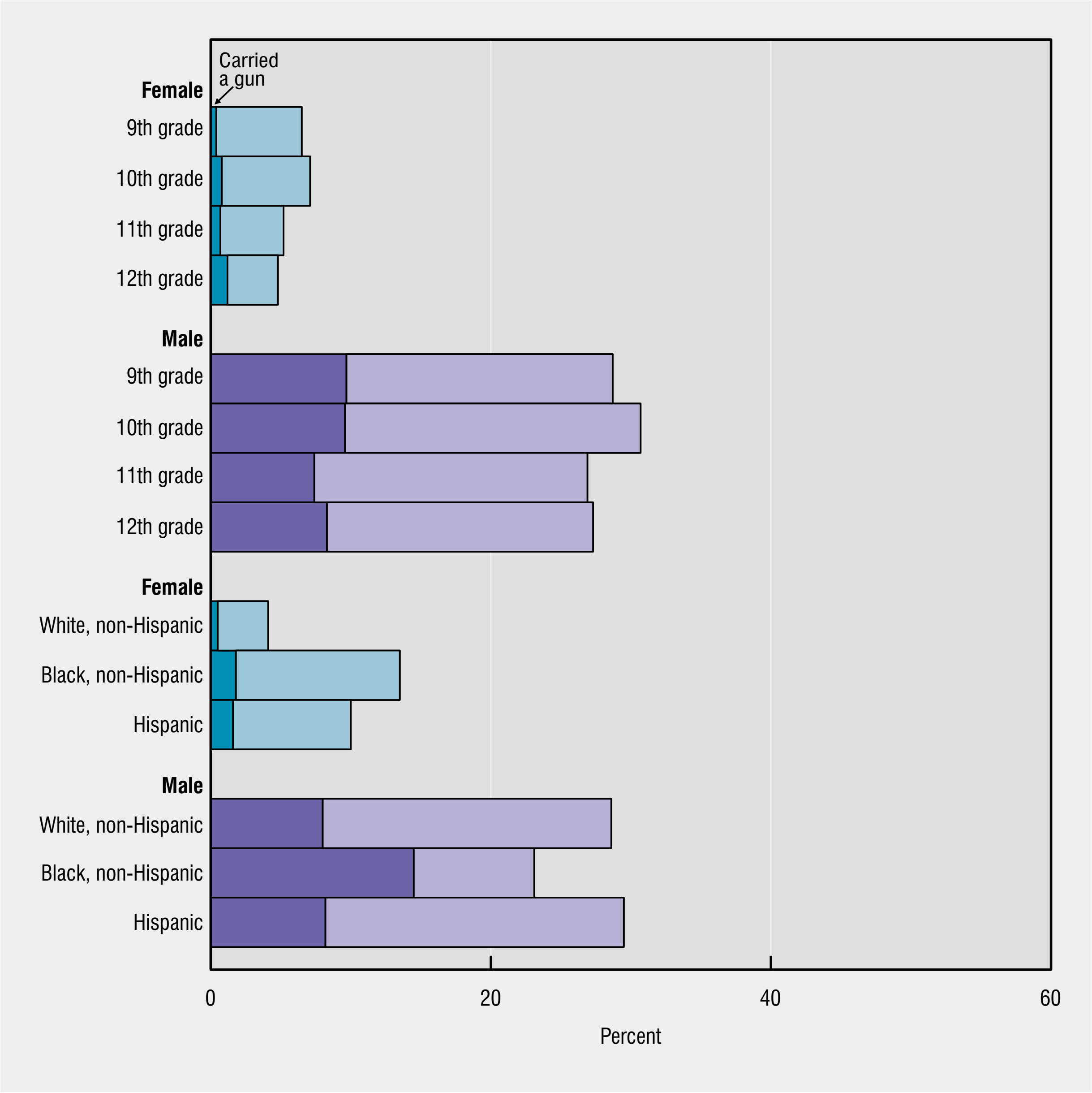
3. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

4. Centers for Disease Control and Prevention. Youth Risk Behavior Survey. 1999.

5. Brener ND, Simon TR, Krug EG, Lowry R. Recent trends in violence-related behaviors among high school students in the United States. JAMA 282:440–46. 1999.

6. Centers for Disease Control and Prevention. Health risk behaviors among adolescents who do and do not attend school: United States, 1992. Morb Mortal Wkly Rep 43:129–32. 1994.

Figure 29. Weapon carrying in the past 30 days among students in grades 9–12, by sex, grade level, race, and Hispanic origin: United States, 1999



NOTES: Weapons include a gun, knife, or club. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Survey (YRBS).

Physical Activity

Physical activity provides important health and emotional benefits for adolescents. It lowers blood pressure, aids in weight management, and improves cardiorespiratory function (1). A physically active lifestyle may continue into adulthood, while less active adolescents are more likely to remain less active as adults. Among adolescents, low physical activity has been associated with other negative health behaviors (2).

■ In 1999 over two-thirds (70 percent) of all high school students participated in moderate to vigorous physical activity in the previous 7 days. Healthy People 2010 objectives highlight the importance of both vigorous and moderate physical activity among adolescents (3). Specifically, increasing the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness is a critcal adolescent objective and a Leading Health Indicator.

■ Physical activity generally declines during adolescence. Female and male students in grade 9 were more likely to have participated in moderate or vigorous physical activity than students in grades 10–12.

■ Adolescents’ participation in physical activity differs by sex. Male students were substantially more likely than female students to have participated in moderate or vigorous physical activity.

■ Non-Hispanic white students were more likely than Hispanic or non-Hispanic black students to have participated in moderate or vigorous physical activity.

■ Participation in physical education (PE) classes assures a minimum level of physical activity and provides a forum to teach physical activity strategies and activities that can be continued into adulthood. In 1999 over one-half (56 percent) of all high school students were enrolled in PE class. Students in grade 9 were twice as likely to be enrolled in PE class as students in grades 11 and 12 (4). However, only 29 percent of students participated in PE classes every day.

■ Regular physical activity and a healthy diet are both important for maintaining a healthy weight. Overweight and obesity are major contributors to many preventable causes of death. Adolescents who are overweight are at a greater risk of being overweight as adults (5). In 1988–94, approximately 11 percent of adolescents 12–17 years of age were overweight (*Health, United States, 2000*, table 69). The proportion of adolescents from poor households who were overweight was almost twice that of adolescents from middle-and high-income households.

■ The prevelance of overweight and obesity has been identified as a Leading Health Indicator in Healthy People 2010; a critical adolescent objective calls for a reduction in the proportion of adolescents who are overweight or obese (3).

References

1. Centers for Disease Control and Prevention. Mortality patterns—United States, 1997. Morb Mortal Wkly Rep 48(30):664–8. August 1999.

2. Pate RR, Heath GW, Dowda M, Trost SG. Associations between physical activity and other health behaviors in a representative sample of U.S. adolescents. Am J Public Health 86(11):1577–81. 1996.

3. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

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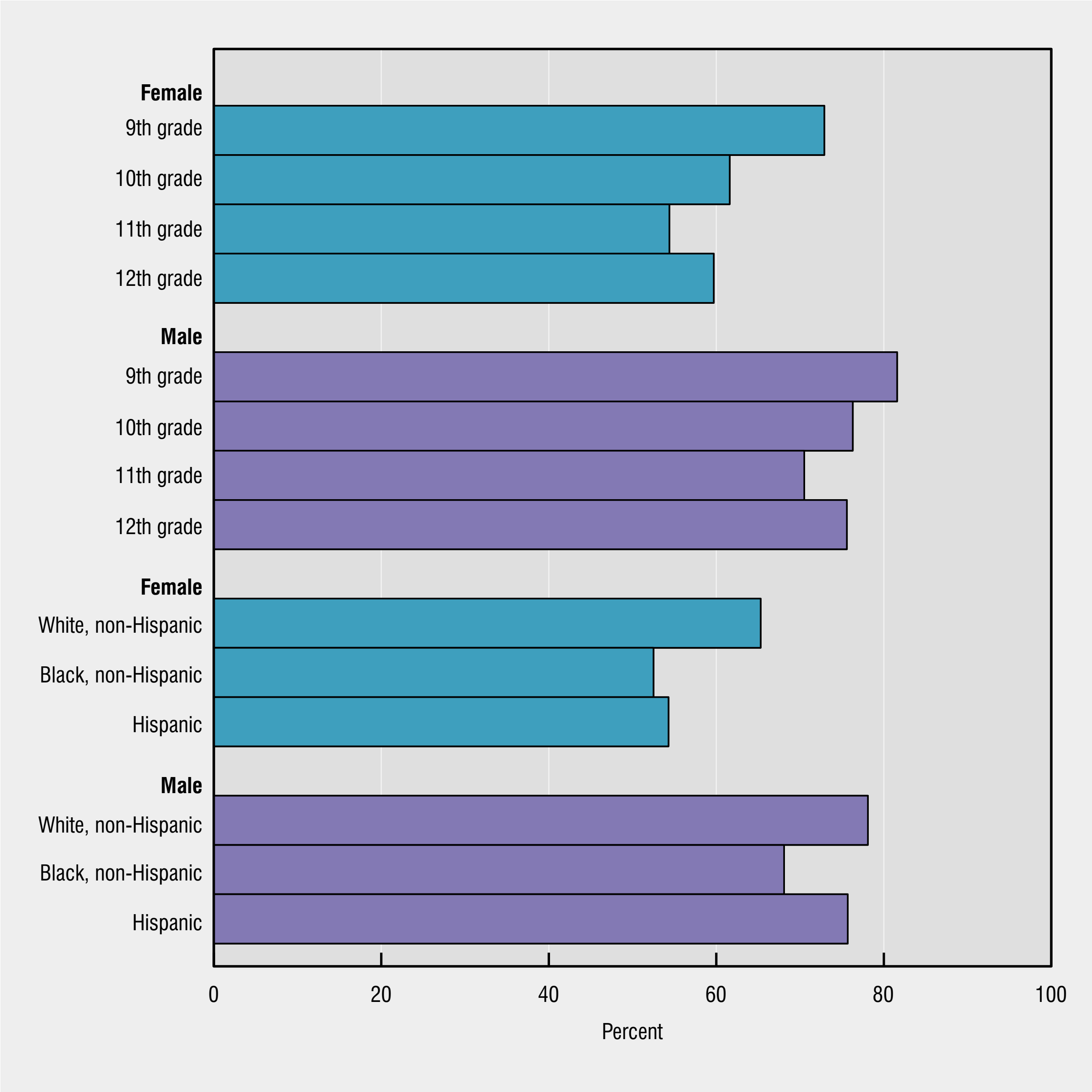
5. Troiano RP, Flegal KM, Kuczmarski RJ, Campbell SM, Johnson CL. Overweight prevalence and trends for children and adolescents: The National Health and Nutrition Examination Surveys, 1963–1991. Archives of Pediatr Adolesc Med. 149. 1995.

Figure 30. Participation in moderate to vigorous physical activity among students in grades 9–12, by sex, grade level, race, and Hispanic origin: United States, 1999



NOTES: Moderate to vigorous physical activity is defined as activity which caused the person to sweat or breathe hard for at least 20 minutes on 3 or more of the previous 7 days or walking or biking for at least 30 minutes on 5 or more of the previous 7 days. See Technical Notes for survey methods. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Survey (YRBS).

Health Care Coverage

Access to and use of health care services for adolescents is dependent, to a great degree, on the ability to pay for services. Compared with their insured counterparts, uninsured adolescents are five times as likely to lack a usual source of care, four times as likely to have unmet health needs, and twice as likely to go without a physician contact during the course of a year (1).

- Adolescents are more likely to be uninsured than younger children. In 1997, 17 percent of adolescents 10–19 years of age were uninsured compared with 12.5 percent of children under 6 years of age (tables 128, *Health, United States, 2000*).

- Family income is a key factor in the likelihood that an adolescent will be uninsured. One-third of adolescents in families with incomes below the poverty level have no health insurance, compared with 8 percent of adolescents in families with incomes greater than two times the poverty level.

- Medicaid (Title XIX of the Social Security Act) is a joint Federal and State program to provide medical care for qualified poor or medically needy persons. Expansions in Medicaid will extend eligibility until 19 years of age to all poor children by the year 2002. However, in 1996 one-third of uninsured adolescents 13–18 years were eligible for Medicaid but were not enrolled (2).

- Since 1984 the percent of adolescents with some form of health insurance coverage has remained essentially unchanged. However, the prevalence of private health insurance decreased, while the prevalence of public health insurance increased (1). Healthy People 2010 objectives call for a reduction to 0 percent in the proportion of children (including adolescents) and adults under 65 years of age without health care coverage (3).

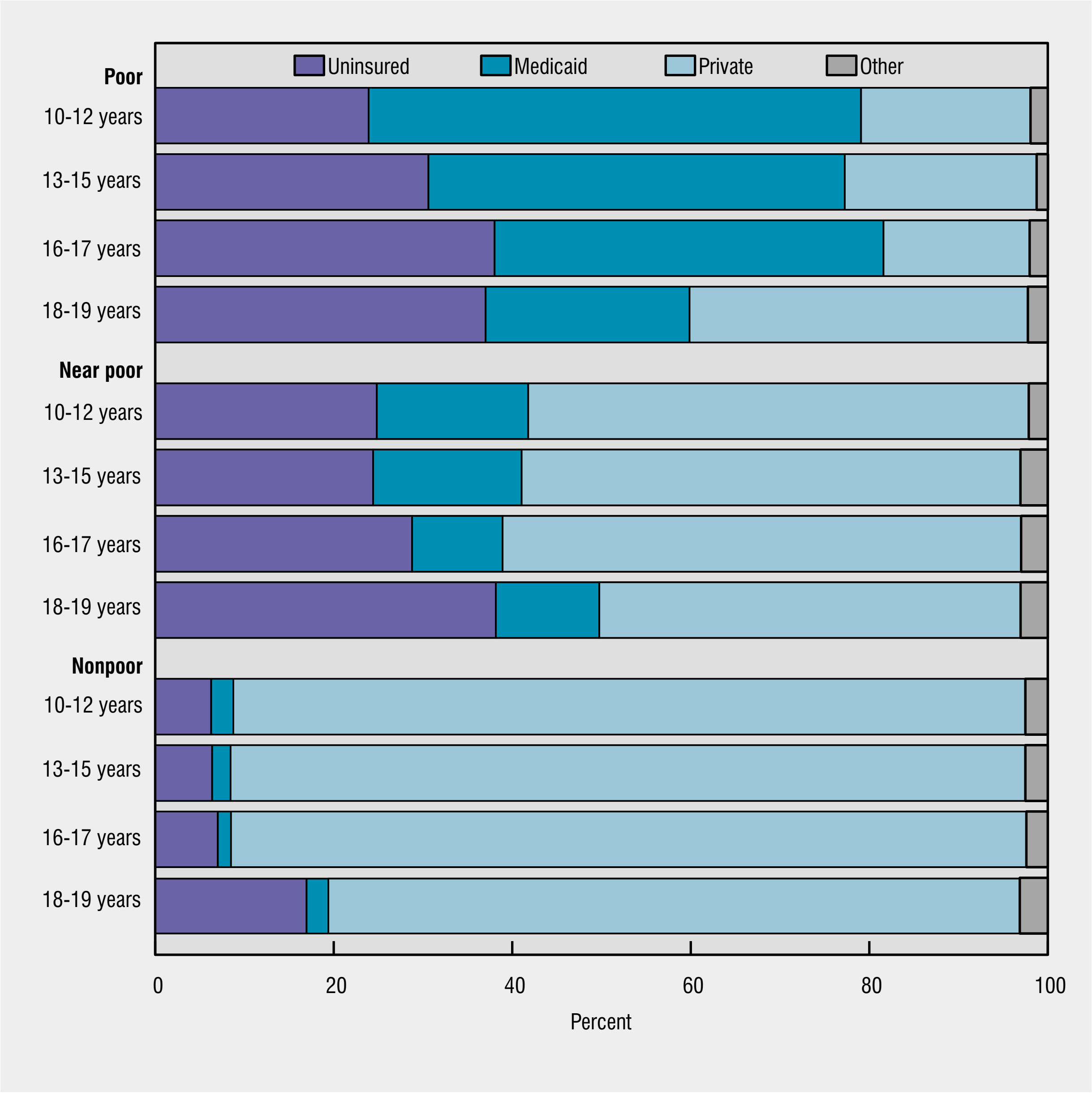
References

1. Newacheck PW, Brindis CD, Cart CU, et al. Adolescent health insurance coverage: recent changes and access to care. Pediatrics 104(2 Pt 1):195–202. August 1999.

2. Selden TM, Banthin JS, Cohen JW. Medicaid's problem children: Eligible but not enrolled. Health Aff 17:192–200. May/June 1998.

3. U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington: January 2000.

Figure 31. Health care coverage of adolescents 10–19 years of age, by type of health care coverage, age, and poverty status: United States, 1997



NOTES: Poverty status is derived from the ratio of the family's income to the Federal poverty threshold, given family size. Poor is less than 100 percent of the poverty threshold; near poor is between 100 and 199 percent of the poverty threshold; nonpoor is 200 percent of the poverty threshold or more. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey. See related *Health, United States, 2000*, table 128.

Health Care Visits

Adolescents have lower rates of health care utilization than younger and older persons, despite the health problems that affect the adolescent population, such as sexually transmitted diseases, emotional and behavioral health problems, unintended pregnancy, drug and alcohol abuse, injuries, and violence (1). Routine health care for adolescents includes physical examinations, preventive interventions and education, observations, and screening, as well as sick care (2).

■ Lack of health insurance coverage has a significant impact on adolescents' access to routine health care. Other barriers to health care for adolescents include lack of experience negotiating complex medical systems and concerns about confidentiality.

■ Among female adolescents, the percent without a recent health care visit decreased with age. In contrast, older male adolescents (18 and 19 years of age) were more likely to lack a recent health care visit than their younger counterparts.

■ Health care use among adolescents varied by insurance status and race. In 1997 the proportion of adolescents who had not visited a physician or other health professional in the past year was more than twice as high for adolescents without health insurance as for those with health insurance. Non-Hispanic black and Hispanic adolescents without health insurance were less likely to have at least one health care visit than non-Hispanic white adolescents without health insurance.

■ Adolescents 10–19 years of age have fewer health care visits than children less than 10 years of age. In 1997, 82 percent of adolescents had one or more contacts with a physician or other health care professional compared with 91 percent of children less than 10 years of age (3).

■ To meet the health care needs of adolescents, routine health care services need to be available in a wide range of settings, including community-based clinics, school-based and school-linked health clinics, physicians' offices, family planning clinics, and health maintenance organizations (1).

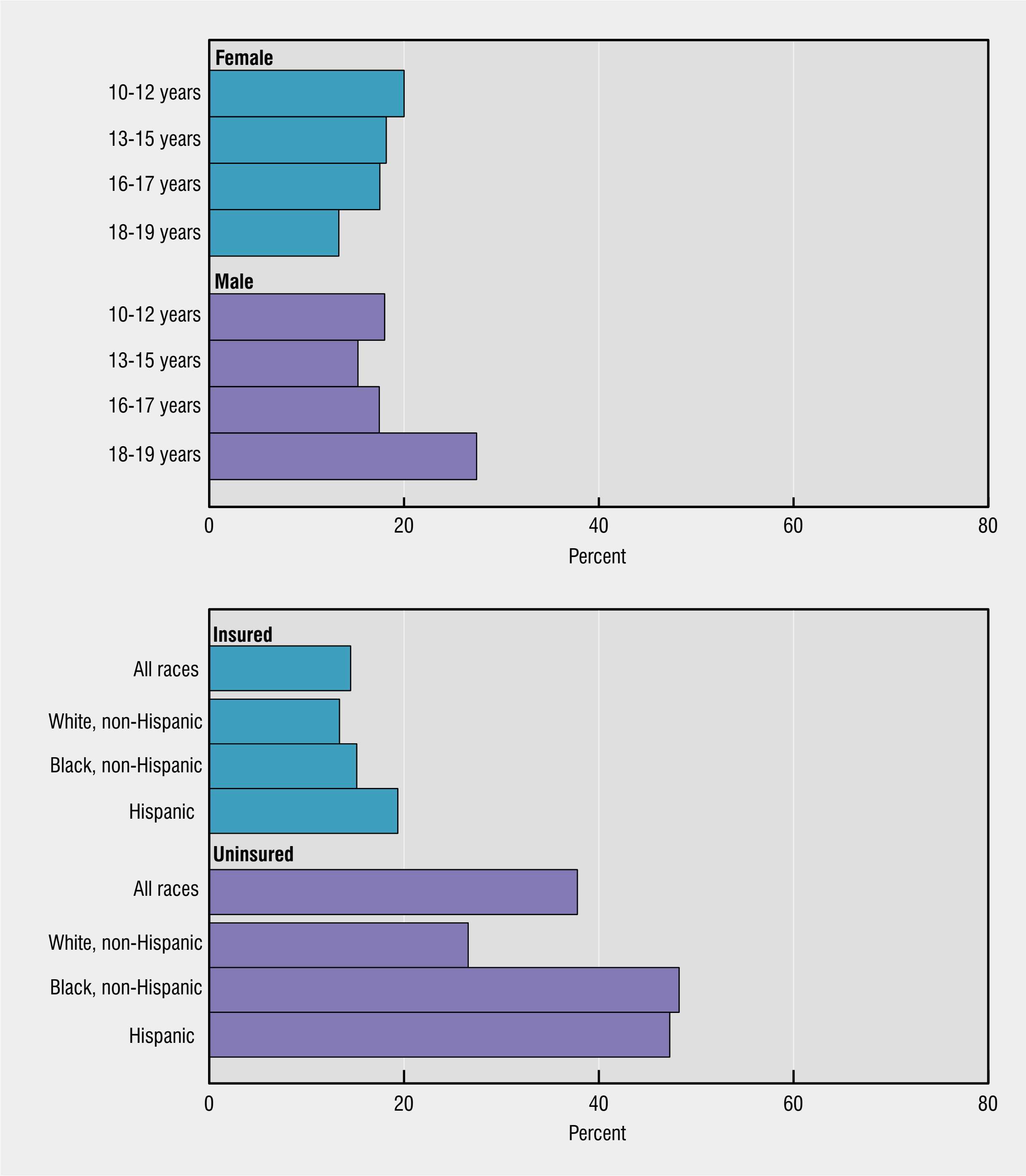
References

1. Irwin CE, Brindis C, Holt KA, Langlykke K, eds. Health care reform: Opportunities for improving adolescent health. Arlington, Virginia: National Center for Education in Maternal and Child Health. 1994.

2. Green M ed. Bright futures: Guidelines for health supervision of infants, children, and adolescents. Arlington, Virginia: National Center for Education in Maternal and Child Health. 1994.

3. Centers for Disease Control and Prevention. National Health Interview Survey. 1997.

Figure 32. Lack of a health care visit in the past 12 months among adolescents 10–19 years of age, by age, sex, health care coverage, race, and Hispanic origin: United States, 1997



NOTE: Health care visit is defined as being seen by a physician or other health professional in a doctor's office, clinic, or some other place. Excluded are visits to emergency rooms, hospitalizations, home visits, and telephone calls. See Data Table for data points graphed.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

Data Sources

Appendix I describes the data sources used in the chartbook except for the Youth Risk Behavior Survey and the National Crime Victimization Survey described below.

Youth Risk Behavior Survey (figures 7 and 25–30)

Seven of the figures in the chartbook are based on data from the Youth Risk Behavior Survey (YRBS). YRBS, conducted by the Centers for Disease Control and Prevention's National Center for Chronic Disease Prevention and Health Promotion, monitors health-risk behaviors among youth and young adults including behaviors that contribute to unintentional and intentional injuries, tobacco use, alcohol and other drug use, sexual behavior contributing to unintended pregnancy and STD's, physical inactivity and unhealthy dietary behaviors (1). Other national surveys that monitor various measures of adolescent behavior include Monitoring the Future and the National Household Survey on Drug Abuse. YRBS was selected as the data source for the chartbook because it provides data for a broader spectrum of youth risk behaviors than the other two sources.

The Youth Risk Behavior Survey of high school students was conducted in 1990, 1991, 1993, 1995, 1997, and 1999. The 1999 YRBS school-based survey employed a three-stage cluster sample design to produce a nationally representative sample of students in grades 9–12. The first-stage sampling frame contained 1,270 primary sampling units (PSU's), consisting of large counties or groups of smaller, adjacent counties. From the sampling frame, 52 PSU's were selected from 16 strata formed on the basis of the degree of urbanization and the relative percent of black and Hispanic students in the PSU. The PSU's were selected with probability proportional to school enrollment size. At the second sampling stage, 187 schools were selected with probability proportional to school enrollment size. Schools with substantial numbers of black and Hispanic students were sampled at higher rates than all other schools. The third stage of sampling consisted of randomly selecting one or two intact classes of required subjects from grades 9–12 at each chosen school. All students in the selected classes were eligible to participate in the survey. A weighting factor was applied to each student record to adjust for nonresponse and for the varying probabilities of selection, including those resulting from the oversampling of black and Hispanic students. SUDAAN was used to compute standard errors (2).

The YRBS data are subject to at least three limitations. First, these data apply only to adolescents who attend high school. In 1996, 5 percent of persons 14–17 years of age were not enrolled in school. Second, the extent of underreporting or overreporting cannot be determined, although the survey questions demonstrate good test-retest reliability. Finally, the survey provides no information on socioeconomic status and other variables that might explain subgroup differences.

National Crime Victimization Survey (figure 15)

The National Crime Victimization Survey (NCVS) is the Nation's primary source of information on criminal victimization, including crimes not reported to the police. Each year, data are obtained from a nationally representative sample of approximately 43,000 households comprising more than 80,000 persons 12 years of age and over on the frequency, characteristics, and consequences of criminal victimization in the United States. The survey collects information on victimization by rape, sexual assault, robbery, assault, theft, household burglary, and motor vehicle theft.

As defined in NCVS, violent crime can be classified into three categories: simple and aggravated assault; rape/sexual assault; and robbery. Violent crime does not include personal theft, such as purse snatching, or property crimes, such as household theft. Crime victimization rates are calculated as the number of events per 1,000 population.

An assault is an unlawful physical attack, whether aggravated or simple, on a person. Aggravated assault is defined as an attack or attempted attack with a weapon regardless of whether an injury occurred as well as an attack without a weapon when serious injury results. Serious injury includes broken bones, loss of teeth, internal injuries, loss of consciousness, and any injury requiring 2 or more days of hospitalization. Simple assault is an attack without a weapon, resulting in either minor injury or in undetermined injury and requiring less than 2 days of hospitalization. It also includes attempted assault without a weapon and verbal threats of assault. Robbery is a theft, completed or attempted, directly from a person, of property or cash by force or threat of force, with or without a weapon. Rape or sexual assault is a completed or attempted attack generally involving unwanted sexual contact between the victim and offender.

NCVS uses a generalized variance function (GVF) to calculate standard errors for their estimates. GVF represents the curve fitted to the individual crime measures. Standard errors were calculated using the jackknife repeated replication technique. For more information about NCVS, see /www.ojp.usdoj.gov/bjs/.

Measures and Methods

Demographic Measures

The chartbook focuses on the changes that occur in the health status of adolescents, by single year of age. For this chartbook adolescents are defined as individuals 10–19 years of age. Some data sources did not have sufficient numbers of observations to allow calculation of reliable estimates by single year of age, and so age was grouped in 2- or 3-year categories. For some measures there were no differences by age; in those charts, data were presented for variables that did show variation within the adolescent population, such as gender, race and ethnicity, and poverty status. Data from YRBS were presented for grades 9, 10, 11, and 12, rather than by age because of the sample design of that survey.

When race and ethnicity differences are presented, data are shown for non-Hispanic white, non-Hispanic black, and Hispanic adolescents except for the figure on untreated dental caries (figure 6), which includes data for Mexican Americans. Hispanic persons may be of any race. The race and ethnicity distribution (figure 1), birth rates (figure 20), and low- and very low-birthweight percents (figure 21) are shown for five groups: non-Hispanic white, non-Hispanic black, American Indian or Alaska Native, Asian or Pacific Islander, and Hispanic adolescents. For those charts, data for white and black adolescents are also included in the data table. Depending on the variable of interest, some data sources did not have sufficient numbers of observations to allow calculation of reliable estimates of the adolescent population by race and ethnicity within age categories.

Population (figure 1)

Population figures for 1980 and 1990 are based on decennial censuses, figures for 1985 are based on intercensal estimates of resident population, and figures for 1991–99 are based on postcensal estimates of resident population. Estimates for 2000–50 are middle series population projections of the U.S. Bureau of the Census. (U.S. population estimates by age, sex, race, and Hispanic origin: 1980 to 1991. Current Population Reports. Series P-25, No. 1095. Washington: U.S. Government Printing Office, Feb 1993; unpublished estimates tables for 1995–99 that are available on the Census Bureau Web site, for data years 1995–99; U.S. Bureau of the Census, Day JC. Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050. Current population reports; Series P-25, No. 1130. Washington: U.S. Department of Commerce. 1996, for data years 2000–50.)

Poverty (figures 2, 5, 6, and 31) and Family Income (figure 4)

The Federal poverty threshold is used as the measure of poverty status in figures 2, 5, 6, and 31. The income classes are derived from the ratio of the family’s income to the family’s Federal poverty threshold, given family size. In 1997 a family of four with an annual income below $16,400 was below the Federal poverty line. Poor is defined as less than 100 percent of the poverty threshold. Near poor is between 100 and 199 percent of the poverty threshold (that is, between $16,400 and $32,799 for a family of four in 1997), and nonpoor is 200 percent of the poverty threshold or more. In 1998 the poverty threshold for a family of four increased to $16,660 a year. (www.census.gov/hhes/poverty/threshld.html).

Estimates of poverty by family structure (figure 2) are for adolescents who are related to the householder and who are under age 18. The data do not include adolescents who are in foster care or institutional care.

Family income level is used as the measure of socioeconomic status in figure 4. Low income is the bottom 20 percent of all family incomes; high income is the top 20 percent of all family incomes; and middle incomes is the 60 percent in between.

Activity Limitation (figure 5)

The prevalence of activity limitation among adolescents, 10–17 years of age, is based on parent responses in the 1997 National Health Interview Survey family core questionnaire. The adolescent was considered to have an activity limitation if the parent gave a positive response to any of the following questions about the adolescent:

- Because of a physical, mental, or emotional problem, does ____ need the help of other persons with personal care needs, such as eating, bathing, dressing, or getting around inside the home?
- Because of a health problem does ____ have difficulty walking without any special equipment?
- Is ____ limited in any way because of difficulty remembering or because of periods of confusion? . . . in any activities because of physical, mental, or emotional problems?
- Does ____ receive Special Education?

Suicide Ideation and Attempts (figure 7)

In 1999 estimates of suicide ideation and attempts among high school students are based on positive responses to questions on YRBS that asked if the student ‘‘seriously considered suicide’’ or ‘‘actually attempted suicide’’ in the past 12 months. Some students (6 percent) who reported attempting suicide did not report seriously considering suicide, suggesting that these attempts might have been unplanned.

Emergency Department Visits (figures 9–12)

An injury-related visit in the National Hospital Ambulatory Medical Care Survey, Emergency Department Component, is defined as follows: ‘‘yes’’ was checked on the patient record form in response to the question, ‘‘Is visit related to injury or poisoning?’’ or a cause of injury or a nature of injury diagnosis was provided, or an injury-related reason for visit was reported (3). All other diagnoses are for noninjury visits except those that are pregnancy related. See table I for a listing of the code numbers used to define the diagnostic categories.

Table I. Codes for diagnostic categories from the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM)

Diagnostic category	*ICD–9–CM code numbers*
Noninjury:	
Psychoses	290–299
Upper respiratory infection	460–465, 381, 382, 34.0
Asthma	493
STD's	54.1, 77.98, 78.10, 78.11, 78.19, 78.88, 79.4, 90–92, 94, 98.10, 98.16–.17, 98.30, 98.36–.39, 98.86, 99.0–.2, 99.40–.41, 99.5, 112.1, 131.0, 131.8–.9, 614.0–.5, 614.7–.9, 615.0–.9, 616.10, 623.5, 628.2, 647.0–.2, 980–988.
Urinary tract infection	595.0, 595.9, 599.0, 590.1, 590.8, 590.9
Abdominal/gastrointestinal	789.0, 558.9, 535.0, 535.5–9, 540, 541, 531–534
Pregnancy related	630–677 or V22, V23, V27
Injury:	
Fractures[1]	800.0, 800.5, 801.0, 800.5, 803.0, 803.5, 804.0,804.5, 807–829
Sprains and Strains	840–848
Open Wounds[2]	870–873, 874.8,874.9, 875–884, 888–894
Contusions	920–924
Poisoning	960–989
External cause of injury:	
Motor vehicle traffic	E810–E819, E958.5, E988.5
Fall	E880–E886, E888, E957, E968.1, E987
Struck by, against	E916–E917, E960.0, E968.2, E973, E975
Cut/pierce	E920, E956, E966, E974, E986

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[1] This set of ICD codes differs from the traditional categorization of fractures that has generally included ICD codes 800–829. ICD codes for skull fracture with intracranial injuries and spinal fractures with spinal cord injuries are excluded. Those codes are categorized with internal organ injuries.

[2] This set of codes differs from the traditional grouping of ICD codes 870–897. Omitted are injuries to the larynx, trachea, pharynx, and thyroid, which would be categorized with internal organ injuries. In addition, codes for traumatic amputations are grouped separately.

The external cause of injury is defined using only the first-listed cause. The category ‘‘being struck by or against an object or a person’’ is a broad one that includes a specific code for sports-related injuries.

It should be noted that principal diagnoses based on emergency department (ED) data are not as detailed as discharge diagnoses from in-patient settings. Thus, when one compares ED data for adolescents 10–19 years using the traditional fracture category (ICD–9–CM codes 800–829) with the new categorization for fractures, the correspondence is over 99 percent. On the other hand, comparing fractures groupings using data from the National Hospital Discharge Survey, about 6 percent of discharges had a principal diagnosis of skull fracture with intracranial injury and about 2 percent had a spinal fracture with spinal cord injury.

Hospital Discharge Rates (figures 13 and 14)

Cause-specific hospital discharge data from the National Hospital Discharge Survey are defined based on the first-listed diagnosis. See table I for a listing of the code numbers used to define the diagnostic categories.

Mortality (figures 16–18)

See Appendix I, National Center for Health Statistics, National Vital Statistics System for a description of the data source. External cause of injury codes (E-codes) are assigned for all deaths for which the underlying cause of death as listed on the death certificate was an injury. See table II for code numbers used to define cause of death categories. The E-codes are designed to classify environmental events, circumstances, and conditions that contributed to the injury. E-codes have two dimensions: cause or mechanism of injury (for example, firearm, motor vehicle, and poisoning) and intent or manner of death (including unintentional, suicide, homicide, intent undetermined, and other.) For a discussion of the urbanization strata, see Appendix II, Urbanization.

Mortality data are graphed on a log scale because of the large variation in death rates from different causes and for different ages. Use of a log scale facilitates presentation and comparison of mortality from causes or ages with disparate rates. The log scale also emphasizes relative rather than absolute change.

Table II. Codes for cause of death categories from the *International Classification of Diseases, Ninth Revision (ICD-9)*

Cause of death	*ICD-9 Code numbers*
Natural causes	001–799
Injury[1]	E800–E869, E880–E929, E950–E999
Motor vehicle traffic	E810–E819, E958.5, E988.5
Fall	E880–E886, E888, E957, E968.1, E987
Struck	E916–E917, E968.2, E960.0, E973, E975
Cut	E920, E956, E966, E974, E986
Firearm	E922, E955.0–E955.4, E965.0–E965.4, E970, E985.0–E985.4
Unintentional injury	E800–E869, E880–E929
Suicide	E950–E959
Homicide	E960–E969

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[1] Injury codes exclude adverse effects and complications of medical care.facilitates presentation and comparison of

Pregnancy Rates (figure 19)

Pregnancies are estimated as the sum of the three outcomes: live births, induced abortions, and fetal losses (miscarriages and stillbirths). The birth data are complete counts of all live births. See Appendix I, National Center for Health Statistics, National Vital Statistics System for a description of the data sources for live births.

Abortion estimates in this report are based on national estimates compiled by the Alan Guttmacher Institute (AGI) from their surveys of all known abortion providers. The AGI estimates are distributed by age, race, and Hispanic origin, according to estimates prepared by the CDC’s National Center for Chronic Disease Prevention and Health Promotion based on reports from State health departments. See Appendix I, Alan Guttmacher Institute and National Center for Chronic Disease Prevention and Health Promotion, Abortion Surveillance for a description of data sources for abortion estimates.

Information on fetal losses is based on the 1995 National Survey of Family Growth (NSFG). See Appendix I, National Center for Health Statistics, National Survey of Family Growth for a description of this data source. The proportion of pregnancies ending in fetal loss (excluding induced abortions) in the 5 years preceding the 1995 survey are used. The rate of pregnancy loss depends on the degree to which losses at very early gestations are detected.

Information on abortion and fetal losses, needed to calculate pregnancy rates, was not available for American Indian or Alaska Native and Asian or Pacific Islander adolescents.

Sexually Transmitted Diseases (figure 23)

Sexually transmitted disease surveillance is conducted by the Division of STD Prevention, National Center for HIV, STD, and TB Prevention, CDC, based on cases reported to State health departments.

In 1998, 49 States and the District of Columbia reported cases of chlamydial infection; for the State of New York, only cases from New York City were reported. While case reporting of chlamydial infections is improving, it remains incomplete in many areas. A combination of factors limit the documentation of the incidence of chlamydia: variable compliance with public health laws and regulations that require health care providers and laboratories to report cases to local health authorities, large numbers of asymptomatic persons who can be identified only through screening, limited resources to support screening activities, and incomplete management systems for collecting, maintaining, and analyzing case reporting (4).

In 1998 cases of gonorrhea were reported by all 50 States, the District of Columbia, and selected cities. Reporting of gonococcal infections has likely been biased toward reporting of infections in persons of minority race or ethnicity who attend public STD clinics (5).

In 1998 incidence rates for chlamydia and gonorrhea were calculated as the number of cases per 100,000 adolescents based on the 1997 postcensal population estimates from the Bureau of the Census data (U.S. Bureau of the Census: 1991–97 Estimates of the Population of Counties by Age, Sex and Race/Hispanic origin 1991 to 1997; machine-readable data files). The cited rates are not adjusted for sexual activity rates, and therefore underestimate the actual prevalence in the sexually active adolescent population.

The percent of cases for which race/ethnicity and age were unknown or unspecified differed considerably by area. States were excluded from analysis if race/ethnicity and age were not reported for the majority of cases. For 1998 Colorado, District of Columbia, Michigan, New Jersey, New York, Ohio, and South Carolina were excluded. Otherwise, if race/ethnicity or age was unknown or unspecified, cases were distributed according to the distribution of cases for which these data were available.

AIDS (figure 24)

AIDS rates are calculated as AIDS cases per 100,000 adolescents, for the year reported and the age at diagnosis. Population denominators for the 50 States and District of Columbia are based on official postcensus estimates from the U.S. Bureau of Census. Age-, sex-, and race/ethnicity-specific rates are based on year-specific additional detail files on ‘‘Monthly Population Estimates, 1990 to 1999’’ found on the U.S. Bureau of Census Web page (www.census.gov/population/www/estimates/uspop.html). The pooled 3-year rate from 1996–1998 is the number of cases reported during that 36-month period for each age, sex, and race/ethnicity category divided by the sum of the 1996, 1997, and 1998 age, sex, and race/ethnicity category population, multiplied by 100,000. See Appendix I, National Center for HIV, STD, and TB Prevention, AIDS Surveillance for a description of the AIDS surveillance system.

Health Care Visit (figure 32)

The estimates of the proportion of adolescents without a health care visit in the past 12 months were based on the 1997 National Health Interview Survey. Information was reported by the adolescent’s parent for adolescents 10–17 years of age and self-response for those 18–19 years of age. A health care visit was defined as being seen by a physician or other health professional, in a doctor’s office, clinic, or other setting. Emergency department visits were excluded.

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2. Shah BV, Barnwell BG, Bieler GS. SUDAAN user's manual, release 7, first edition. Research Triangle Park, North Carolina: Research Triangle Institute. 1996.

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5. Fox KK, Whittington W, Levine WC, et al. Gonorrhea in the United States, 1981–1996: demographic and geographic trends. Sex Transm Dis 25(7):386–93. 1998.

Data Tables for Figures 1–32

Figure 1. Percent of adolescents 10–19 years of age

Year	*White, non-Hispanic*	*Black, non-Hispanic*	*Hispanic*	*White*	*Black*	*American Indian/ Alaska Native*	*Asian/Pacific Islander*
1980	75.6	14.2	7.9	83.1	14.5	0.8	1.6
1985	72.5	14.5	9.7	81.5	15.0	1.0	2.6
1990	69.4	14.7	11.7	80.1	15.3	1.1	3.4
1995	67.7	14.7	13.0	79.5	15.4	1.2	3.9
1999	66.3	14.8	14.0	79.0	15.6	1.2	4.2
Projected							
2000	65.9	14.7	14.1	78.7	15.6	1.2	4.5
2010	60.5	15.1	17.9	76.7	16.3	1.2	5.9
2020	55.7	15.7	20.8	74.5	17.1	1.3	7.1
2030	52.0	15.7	23.8	73.4	17.4	1.3	7.9
2040	48.0	15.9	26.6	71.9	17.8	1.3	8.9
2050	44.2	16.1	29.5	70.7	18.3	1.4	9.6

Figure 2. Poverty by family structure among adolescents 10–17 years of age

Family structure, race, and Hispanic origin	*Poor*	*Near poor*
	Percent	
All adolescents:		
All races	16.7	20.0
White, non-Hispanic	9.2	15.6
Black, non-Hispanic	33.1	27.5
Hispanic	32.0	31.9
Adolescents in married couple families:		
All races	7.7	17.1
White, non-Hispanic	4.7	12.3
Black, non-Hispanic	10.6	27.2
Hispanic	21.0	35.3
Adolescents in female householder families:		
All races	40.2	27.2
White, non-Hispanic	27.1	28.0
Black, non-Hispanic	50.1	28.2
Hispanic	54.2	25.3

Figure 3. Employment in April and July among adolescents 16–19 years of age

	Age in years				
Race and Hispanic origin	*16*	*17*	*18*	*19*	*16–19*
			Percent		
All races:					
April	25.6	38.2	48.9	56.0	42.1
July	38.1	51.9	58.0	69.8	54.5
White, non-Hispanic:					
April	31.9	45.2	55.5	59.5	48.1
July	45.8	61.0	66.4	77.7	62.9
Black, non-Hispanic:					
April	13.4	18.3	31.2	40.4	25.5
July	26.3	27.7	40.3	51.1	35.9
Hispanic:					
April	14.2	27.9	41.2	59.1	36.0
July	22.6	39.1	47.6	57.3	41.5

Figure 4. Event dropout rates among adolescents 15–19 years of age

	Age				*Race and Hispanic origin*				*Family income*		
	15–16 years	*17 years*	*18 years*	*19 years*	*All races*	*White, non-Hispanic*	*Black, non-Hispanic*	*Hispanic*	*Low*	*Middle*	*High*
Percent	2.3	2.8	5.9	10.6	4.2	3.6	4.7	7.7	11.5	3.2	2.6
SE	0.4	0.4	0.7	1.7	0.3	0.4	0.9	1.4	1.3	0.4	0.5

SE Standard error.

Figure 5. Activity limitations among adolescents 10–17 years of age

	Special education only		*All other limitations*[1]		*Total limitations*	
Age, sex, race, and income	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
Female						
10–17 years	3.6	0.3	2.4	0.2	5.9	0.3
10–12 years	3.7	0.4	2.0	0.3	5.7	0.5
13–15 years	3.9	0.5	2.5	0.3	6.4	0.6
16–17 years	3.0	0.5	2.8	0.4	5.7	0.6
Male						
10–17 years	7.4	0.4	3.2	0.3	10.7	0.5
10–12 years	7.8	0.6	3.4	0.4	11.2	0.7
13–15 years	7.5	0.6	2.7	0.4	10.3	0.7
16–17 years	6.9	0.7	3.7	0.5	10.6	0.8
Race and Hispanic origin						
All races	5.6	0.2	2.8	0.2	8.4	0.3
White, non-Hispanic	5.9	0.3	3.0	0.2	9.0	0.4
Black, non-Hispanic	5.9	0.6	3.0	0.4	8.9	0.7
Hispanic	4.1	0.4	1.9	0.3	6.1	0.5
Poverty status						
Poor	8.3	0.8	4.0	0.5	12.3	0.9
Near poor	7.7	0.7	2.6	0.4	10.2	0.8
Nonpoor	4.7	0.3	2.6	0.2	7.4	0.4

[1] May include special education.
SE Standard error.

Figure 6. Untreated dental caries among adolescents 10–19 years of age

	Poverty status					
	Poor		*Near poor*		*Nonpoor*	
Race and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
All races	31.3	2.3	24.3	2.9	10.9	1.0
White, non-Hispanic	24.3	4.3	22.1	3.7	9.4	1.0
Black, non-Hispanic	32.8	2.9	32.7	3.5	24.9	3.2
Mexican American	37.4	3.2	24.3	2.6	16.9	3.9

SE Standard error.

Figure 7. Suicide ideation and attempts among students in grades 9–12

	Female						*Male*					
	Seriously considered suicide[1]		*All suicide attempts*[2]		*Injurious suicide attempts*		*Seriously considered suicide*[1]		*All suicide attempts*[2]		*Injurious suicide attempts*	
Grade level, race, and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	24.4	2.0	14.0	1.3	3.8	0.7	11.9	1.4	6.1	1.2	2.6	0.8
10th	30.1	1.6	14.8	1.7	4.0	0.9	13.7	1.9	6.3	1.2	1.8	0.6
11th	23.0	1.9	7.5	1.2	2.8	0.8	13.7	1.8	4.8	0.9	2.1	0.7
12th	21.2	1.9	5.8	1.2	1.3	0.4	15.6	1.8	5.4	1.3	1.7	0.6
Total	24.9	1.1	10.9	0.8	3.1	0.4	13.7	0.8	5.7	0.6	2.1	0.3
White, non-Hispanic	23.2	1.2	9.0	1.2	2.3	0.6	12.5	0.7	4.5	0.6	1.6	0.4
Black, non-Hispanic	18.8	1.2	7.5	1.3	2.4	0.7	11.7	1.4	7.1	2.7	3.4	2.0
Hispanic	26.1	1.5	18.9	2.0	4.6	1.0	13.6	1.5	6.6	1.3	1.4	0.4

SE Standard error.

[1] Includes students who attempted suicide.

[2] Six percent of students attempting suicide did not report seriously considering suicide.

Injurious suicide attempt - an injury, poisoning or overdose that was treated by a doctor or nurse.

Figure 8. Emergency department visit, hospital discharge, and death rates among adolescents 10–19 years of age

Age	Female		Male	
	Rate	*SE*	*Rate*	*SE*
Emergency department visits	Events per 10,000 adolescents			
10 years	2,071.0	160.6	2,302.3	172.7
11 years	2,110.1	180.0	2,393.7	203.8
12 years	2,219.3	172.7	2,358.3	180.7
13 years	2,028.7	190.3	2,345.6	181.4
14 years	2,781.3	218.5	2,828.0	182.7
15 years	2,786.6	187.1	2,825.2	194.5
16 years	3,515.3	252.6	3,326.6	221.4
17 years	4,431.4	225.4	3,164.1	232.2
18 years	5,082.7	305.5	3,657.2	253.5
19 years	5,076.3	362.1	3,686.0	290.8
Hospital discharges				
10 years	152.8	13.1	205.1	16.4
11 years	156.9	13.4	199.3	19.1
12 years	177.2	15.8	211.4	15.6
13 years	234.8	17.3	227.3	16.6
14 years	343.5	21.5	259.3	18.2
15 years	502.9	25.9	280.3	18.0
16 years	712.6	31.0	336.1	21.4
17 years	1,000.6	43.6	328.0	19.1
18 years	1,222.5	48.7	334.7	20.7
19 years	1,357.5	54.9	312.2	19.8
Deaths				
10 years	1.5	0.1	1.9	0.1
11 years	1.5	0.1	2.1	0.1
12 years	1.8	0.1	2.5	0.1
13 years	1.9	0.1	3.3	0.1
14 years	2.5	0.1	4.3	0.1
15 years	3.0	0.1	5.8	0.1
16 years	4.5	0.1	9.0	0.2
17 years	4.8	0.1	10.9	0.2
18 years	4.9	0.1	14.0	0.2
19 years	4.7	0.1	14.4	0.2

SE Standard error.

Figure 9. Injury, noninjury, and pregnancy-related emergency department visit rates among adolescents 10–19 years of age

	Injury		*Noninjury*		*Pregnancy related*	
Sex and age	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*
Female			Visits per 10,000 adolescents			
10–11 years	1,038.0	77.4	981.4	88.8	*	*
12–13 years	1,173.2	99.3	854.4	76.0	*	*
14–15 years	1,277.9	94.0	1,340.6	102.0	78.9	21.6
16–17 years	1,496.9	110.8	2,082.9	122.5	274.3	39.2
18–19 years	1,584.2	111.1	2,831.8	200.6	536.2	79.9
Male						
10–11 years	1,432.8	108.7	839.0	76.2	. . .	. . .
12–13 years	1,491.3	94.6	782.7	69.4	. . .	. . .
14–15 years	1,799.0	108.8	948.0	88.8	. . .	. . .
16–17 years	2,209.9	151.6	959.2	88.5	. . .	. . .
18–19 years	2,225.0	150.9	1,342.6	122.7	. . .	. . .

SE Standard error.
* Number in this category is too small to calculate reliable rates; relative standard error greater than 30 percent.
. . . Category not applicable.

Figure 10. Emergency department visit rates for selected external causes of injury among adolescents 10–19 years of age

	Female		*Male*	
Age and external cause	*Rate*	*SE*	*Rate*	*SE*
Struck by or against		Visits per 10,000 adolescents		
10–11 years	164.9	30.2	282.4	45.2
12–13 years	150.8	31.9	294.1	37.7
14–15 years	237.1	38.2	452.3	51.9
16–17 years	229.4	39.7	588.4	68.9
18–19 years	247.5	38.9	483.1	59.7
Cut or pierce				
10–11 years	94.1	21.3	168.5	28.3
12–13 years	71.7	17.2	103.7	20.5
14–15 years	67.9	18.0	124.2	24.2
16–17 years	91.5	25.0	238.2	33.9
18–19 years	189.0	34.4	226.9	36.1
Fall				
10–11 years	288.1	39.7	310.4	47.0
12–13 years	314.6	51.5	275.1	41.5
14–15 years	220.1	39.0	268.7	46.5
16–17 years	194.4	30.6	246.3	45.3
18–19 years	197.4	32.2	202.1	33.4
Motor vehicle traffic				
10–11 years	81.7	28.7	90.1	25.4
12–13 years	105.1	25.2	94.3	23.7
14–15 years	221.1	38.2	161.6	33.4
16–17 years	385.3	50.4	311.9	49.1
18–19 years	416.6	48.4	349.2	50.3

SE Standard error.

Figure 11. Emergency department visit rates for selected injury diagnoses among adolescents 10–19 years of age

	Female		Male	
Age and injury diagnosis	*Rate*	*SE*	*Rate*	*SE*
Fractures	Visits per 10,000 adolescents			
10–11 years	179.1	32.8	250.7	38.7
12–13 years	156.2	34.0	253.2	30.9
14–15 years	103.7	22.4	330.9	44.1
16–17 years	103.8	27.3	257.7	41.9
18–19 years	83.0	21.2	225.7	40.8
Sprains and strains				
10–11 years	189.0	39.1	175.9	31.9
12–13 years	319.1	46.7	277.9	39.9
14–15 years	362.3	46.9	325.2	42.3
16–17 years	398.3	50.3	334.1	44.1
18–19 years	286.9	43.1	348.8	43.2
Open wounds				
10–11 years	212.4	31.0	396.7	51.9
12–13 years	198.0	41.3	318.0	40.6
14–15 years	203.5	33.6	319.5	33.7
16–17 years	214.7	30.6	488.0	52.4
18–19 years	338.2	57.4	616.2	76.4
Contusions				
10–11 years	223.9	37.4	235.9	37.6
12–13 years	194.8	34.9	244.0	36.2
14–15 years	267.6	40.4	318.5	41.6
16–17 years	313.3	48.3	382.7	54.0
18–19 years	282.2	34.6	313.6	40.4

SE Standard error.

Figure 12. Emergency department visit rates for selected noninjury diagnoses among adolescents 10–19 years of age

	Female		*Male*	
Age and noninjury diagnosis	*Rate*	*SE*	*Rate*	*SE*
Upper respiratory infections	Visits per 10,000 adolescents			
10–11 years	303.8	46.5	211.4	36.2
12–13 years	183.1	36.0	179.1	32.6
14–15 years	308.3	52.4	168.4	31.4
16–17 years	268.0	31.6	216.7	36.9
18–19 years	342.0	44.9	186.3	34.7
Asthma				
10–11 years	*	*	96.7	17.8
12–13 years	*	*	*	*
14–15 years	59.3	14.7	91.6	26.6
16–17 years	89.9	19.5	64.2	17.3
18–19 years	97.6	24.4	98.6	25.8
Abdominal symptoms				
10–11 years	101.7	24.6	45.0	13.2
12–13 years	138.8	26.3	138.5	27.0
14–15 years	160.5	30.0	93.9	23.0
16–17 years	311.9	47.6	122.9	27.4
18–19 years	495.9	59.7	159.6	29.7
Sexually transmitted diseases				
10–11 years	*	*	*	*
12–13 years	*	*	*	*
14–15 years	*	*	*	*
16–17 years	151.8	31.2	*	*
18–19 years	210.4	39.1	*	*
Urinary tract infections				
10–11 years	*	*	*	*
12–13 years	*	*	*	*
14–15 years	83.1	23.5	*	*
16–17 years	168.7	39.0	*	*
18–19 years	335.3	49.4	*	*
Pregnancy-related diagnoses				
10–11 years	*	*	. . .	. . .
12–13 years	*	*	. . .	. . .
14–15 years	78.9	21.6	. . .	. . .
16–17 years	274.3	39.2	. . .	. . .
18–19 years	536.2	79.9	. . .	. . .

* Number in this category is too small to calculate reliable rates; relative standard error greater than 30 percent.
. . . Category not applicable.

Figure 13. Injury, noninjury, and pregnancy-related hospital discharge rates among adolescents 10–19 years of age

	Injury		*Noninjury*		*Pregnancy related*	
Sex and age	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*
Female	Discharges per 10,000 adolescents					
10–11 years	21.2	2.5	128.4	10.1	*	*
12–13 years	23.8	2.7	170.9	12.9	5.9	1.2
14–15 years	53.8	5.0	250.6	15.6	114.7	7.8
16–17 years	63.5	5.2	286.8	15.6	501.0	21.8
18–19 years	61.9	5.3	280.1	14.7	942.3	36.9
Male						
10–11 years	34.7	3.8	161.9	13.6	. . .	. . .
12–13 years	46.7	4.2	165.9	11.2	. . .	. . .
14–15 years	63.2	5.1	199.4	13.1	. . .	. . .
16–17 years	99.3	7.1	225.9	14.6	. . .	. . .
18–19 years	101.1	7.4	216.7	13.3	. . .	. . .

SE Standard error.
* Number in this category is too small to calculate reliable rates; relative standard error greater than 30 percent.
. . . Category not applicable.

Figure 14. Hospital discharge rates for selected diagnoses among adolescents 10–19 years of age

	Female		*Male*	
Age and diagnoses	*Rate*	*SE*	*Rate*	*SE*
Asthma	Discharges per 10,000 adolescents			
10–11 years	16.2	2.4	21.8	2.8
12–13 years	12.7	1.7	18.9	2.4
14–15 years	15.5	2.8	11.3	1.5
16–17 years	16.3	2.4	6.8	1.2
18–19 years	12.2	1.7	5.2	2.1
Psychoses				
10–11 years	*	*	6.6	1.4
12–13 years	20.7	3.7	17.0	2.9
14–15 years	44.8	6.9	30.2	4.5
16–17 years	40.2	5.9	29.5	4.0
18–19 years	29.5	3.3	32.3	4.6
Poisoning				
10–11 years	*	*	*	*
12–13 years	8.0	1.8	*	*
14–15 years	24.2	3.6	6.0	1.3
16–17 years	22.3	2.9	7.6	1.3
18–19 years	16.6	2.5	8.8	1.8
Fractures				
10–11 years	7.3	1.2	12.5	1.8
12–13 years	4.5	1.0	18.9	2.0
14–15 years	10.5	2.2	23.9	2.8
16–17 years	14.8	2.5	35.0	3.9
18–19 years	16.1	2.4	32.7	4.1

SE Standard error.
* Number in this category is too small to calculate reliable rates; relative standard error greater than 30 percent.

Figure 15. Violent crime victimization rates among adolescents 12–19 years of age

Age	*Female*		*Male*	
	Rate	*SE*	*Rate*	*SE*
	Victimizations per 1,000 adolescents			
12–13 years	82.0	4.8	137.0	6.0
14–15 years	92.4	5.1	137.5	6.1
16–17 years	90.6	5.1	129.8	5.9
18–19 years	98.6	5.4	129.9	6.1

Year	*12–15 years of age*		*16–19 years of age*	
	Rate	*SE*	*Rate*	*SE*
1992	118.3	7.9	112.6	7.8
1993	132.1	6.3	122.1	6.2
1994	123.9	5.4	127.6	5.6
1995	111.3	5.1	113.7	4.8
1996	96.8	4.9	98.9	5.1
1997	95.9	5.2	102.2	5.4

SE Standard error.

Figure 16. Injury and natural cause death rates among adolescents 10–19 years of age

Sex and age	*Injury*								*Natural cause*	
	All injury		*Unintentional*		*Suicide*		*Homicide*			
	Rate	*SE*	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*
Female	Deaths per 100,000 adolescents									
10 years	6.3	0.4	5.6	0.4	*	*	0.5	0.1	8.4	0.5
11 years	6.0	0.4	5.1	0.4	*	*	0.7	0.1	9.1	0.5
12 years	7.8	0.5	6.4	0.4	*	*	1.0	0.2	10.6	0.5
13 years	9.6	0.5	6.9	0.4	1.4	0.2	1.3	0.2	9.5	0.5
14 years	14.4	0.6	10.4	0.5	2.1	0.2	1.9	0.2	11.0	0.5
15 years	19.6	0.7	13.5	0.6	3.3	0.3	2.6	0.3	10.6	0.5
16 years	32.0	0.9	24.1	0.8	3.8	0.3	3.8	0.3	12.5	0.6
17 years	33.8	1.0	25.7	0.8	3.5	0.3	4.3	0.3	14.1	0.6
18 years	34.3	1.0	24.9	0.8	3.5	0.3	5.5	0.4	14.8	0.6
19 years	30.7	0.9	21.5	0.8	3.3	0.3	5.6	0.4	16.0	0.7
Male										
10 years	9.8	0.5	8.3	0.5	0.6	0.1	0.8	0.1	9.6	0.5
11 years	11.1	0.5	9.0	0.5	0.8	0.1	1.2	0.2	9.6	0.5
12 years	15.2	0.6	11.6	0.6	1.6	0.2	1.5	0.2	10.3	0.5
13 years	19.9	0.7	14.3	0.6	3.1	0.3	2.0	0.2	13.2	0.6
14 years	28.6	0.9	17.7	0.7	5.4	0.4	5.1	0.4	14.0	0.6
15 years	44.0	1.1	25.1	0.8	8.4	0.5	9.6	0.5	14.3	0.6
16 years	73.2	1.4	43.4	1.0	12.4	0.6	16.3	0.6	16.8	0.7
17 years	90.5	1.5	49.0	1.1	14.7	0.6	25.6	0.8	18.0	0.7
18 years	117.6	1.8	61.5	1.3	19.7	0.7	34.0	1.0	22.0	0.8
19 years	121.6	1.8	61.3	1.3	21.9	0.8	36.1	1.0	22.3	0.8

SE Standard error.
* Number in this category is too small to calculate reliable rates; fewer than 20 deaths.

Figure 17. Death rates for motor vehicle traffic-related and firearm-related injuries among adolescents 10–19 years of age

	Motor vehicle deaths				*Firearm-related deaths*			
	Female		*Male*		*Female*		*Male*	
Age	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*
	Deaths per 100,000 adolescents							
10 years	3.1	0.3	4.8	0.3	*	*	1.0	0.2
11 years	3.3	0.3	4.4	0.3	0.5	0.1	1.8	0.2
12 years	4.4	0.3	5.9	0.4	0.6	0.1	2.8	0.3
13 years	4.5	0.3	7.3	0.4	1.2	0.2	4.6	0.3
14 years	7.5	0.4	10.0	0.5	2.5	0.3	9.4	0.5
15 years	11.3	0.6	15.5	0.6	3.6	0.3	15.9	0.6
16 years	21.7	0.8	33.0	0.9	4.9	0.4	25.6	0.8
17 years	22.6	0.8	37.3	1.0	4.7	0.4	34.5	0.9
18 years	22.2	0.8	46.7	1.1	5.5	0.4	46.7	1.1
19 years	18.4	0.7	45.5	1.1	5.2	0.4	49.8	1.1

SE Standard error.
* Number in this category is too small to calculate reliable rates; fewer than 20 deaths.

Figure 18. Death rates for motor vehicle traffic-related and firearm-related injuries among adolescents 10–19 years of age

	Core		*Other metropolitan*		*Nonmetropolitan*	
Age	*Rate*	*SE*	*Rate*	*SE*	*Rate*	*SE*
Motor vehicle	Deaths per 100,000 adolescents					
10 years	3.2	0.4	3.5	0.3	6.0	0.6
11 years	3.0	0.4	3.6	0.3	5.9	0.6
12 years	3.9	0.4	4.4	0.3	8.5	0.7
13 years	4.3	0.5	5.4	0.4	9.2	0.8
14 years	6.7	0.6	7.7	0.5	14.0	0.9
15 years	8.7	0.6	12.3	0.6	22.2	1.2
16 years	14.4	0.8	27.4	0.9	44.7	1.6
17 years	17.4	0.9	28.1	0.9	51.1	1.7
18 years	23.0	1.1	32.0	0.9	56.6	1.9
19 years	21.5	1.0	29.7	0.9	53.8	1.9
Firearm						
10 years	*	*	*	*	*	*
11 years	1.4	0.3	0.8	0.1	1.8	0.3
12 years	1.5	0.3	1.3	0.2	3.0	0.4
13 years	2.7	0.4	2.5	0.3	4.3	0.5
14 years	6.7	0.6	5.8	0.4	5.7	0.6
15 years	14.9	0.8	7.4	0.4	9.3	0.7
16 years	24.8	1.1	12.4	0.6	11.1	0.8
17 years	33.4	1.2	15.4	0.6	13.8	0.9
18 years	44.5	1.5	19.1	0.7	21.5	1.2
19 years	46.1	1.5	21.1	0.7	20.5	1.1

SE Standard error.
* Number in this category is too small to calculate reliable rates; fewer than 20 deaths.

Figure 19. Pregnancy rates for adolescents 10–19 years of age

Age, race, and Hispanic origin	*Birth*	*Abortion*	*Fetal loss*	*Pregnancy*
Age 10–14 years	Outcomes per 1,000 female adolescents			
All races	1.2	1.1	0.5	2.8
White, non-Hispanic	0.4	0.5	0.2	1.1
Black, non-Hispanic	3.8	3.9	1.0	8.7
Hispanic	2.6	1.3	0.4	4.3
American Indian/Alaska Native	1.7	- - -	- - -	- - -
Asian/Pacific Islander	0.6	- - -	- - -	- - -
Age 15–17 years				
All races	33.8	19.0	15.0	67.8
White, non-Hispanic	20.6	12.5	10.8	43.9
Black, non-Hispanic	66.6	43.7	17.7	128.1
Hispanic	69.0	24.7	11.3	105.0
American Indian/Alaska Native	46.4	- - -	- - -	- - -
Asian/Pacific Islander	14.9	- - -	- - -	- - -
Age 18–19 years				
All races	86.0	44.9	15.5	146.4
White, non-Hispanic	63.7	29.4	12.4	105.6
Black, non-Hispanic	136.6	100.1	17.7	254.4
Hispanic	151.1	59.5	24.8	235.4
American Indian/Alaska Native	122.3	- - -	- - -	- - -
Asian/Pacific Islander	40.4	- - -	- - -	- - -
Age 15–19 years				
All races	54.4	29.2	15.2	98.7
White, non-Hispanic	37.6	19.1	11.4	68.1
Black, non-Hispanic	94.2	65.9	17.7	177.8
Hispanic	101.8	38.6	16.7	157.1
American Indian/Alaska Native	73.9	- - -	- - -	- - -
Asian/Pacific Islander	24.6	- - -	- - -	- - -

- - - Data not available.

Figure 20. Birth rates for adolescents 13–19 years of age

Race and Hispanic origin	*13–14*	*15*	*16*	*17*	*18*	*19*
	Births per 1,000 female adolescents					
All Races						
Total	2.6	13.5	29.8	50.0	73.9	91.0
First birth	2.5	12.8	27.0	42.1	56.3	61.8
Second and higher	0.1	0.6	2.6	7.6	17.0	28.5
White, non-Hispanic						
Total	0.9	6.3	16.7	32.5	52.1	68.0
First birth	0.9	6.2	15.7	29.0	42.7	50.1
Second and higher	*0.0	0.1	0.9	3.3	9.1	17.5
Black, non-Hispanic						
Total	7.9	31.3	60.2	89.4	121.7	141.0
First birth	7.6	29.3	52.6	70.2	84.2	83.8
Second and higher	0.2	1.7	7.2	18.6	36.8	56.4
Hispanic						
Total	5.5	30.3	63.1	95.8	130.0	149.3
First birth	5.3	28.6	56.1	77.7	94.3	95.8
Second and higher	0.1	1.5	6.3	17.1	34.4	52.2
White						
Total	1.6	10.5	24.8	43.9	66.3	83.5
First birth	1.6	10.0	22.8	37.8	52.3	59.0
Second and higher	0.0	0.4	1.8	5.7	13.6	23.9
Black						
Total	7.6	30.4	58.7	87.1	118.7	137.5
First birth	7.4	28.6	51.3	68.6	82.2	81.9
Second and higher	0.2	1.7	7.0	18.0	35.8	54.7
American Indian or Alaska Native						
Total	4.0	19.8	44.4	71.3	107.1	127.9
First birth	3.8	18.7	40.1	59.7	79.1	80.7
Second and higher	*	*0.9	3.5	10.7	26.5	45.7
Asian or Pacific Islander						
Total	1.1	6.0	14.0	21.8	33.7	42.6
First birth	1.0	5.6	12.6	18.4	26.1	31.0
Second and higher	*	0.4	1.4	3.3	7.4	11.3

* Rates based on fewer than 50 events are considered unreliable. Rates based on fewer than 20 events are considered highly unreliable and are not shown.

Figure 21. Low-birthweight live births among adolescent mothers 13–19 years of age

	Maternal age in years					
Race and Hispanic origin	*13–14*	*15*	*16*	*17*	*18*	*19*
	Percent of live births					
All races						
All low birthweight	13.2	11.6	10.7	9.8	9.4	8.8
Moderately low birthweight	10.1	9.1	8.5	8.0	7.6	7.2
Very low birthweight	3.1	2.5	2.1	1.8	1.8	1.6
White, non-Hispanic						
All low birthweight	11.5	10.0	9.5	8.6	8.3	7.7
Moderately low birthweight	8.3	7.8	7.4	7.0	6.8	6.4
Very low birthweight	3.2	2.3	2.0	1.5	1.5	1.3
Black, non-Hispanic						
All low birthweight	15.7	15.0	14.4	13.8	13.3	12.9
Moderately low birthweight	12.1	11.6	11.4	10.9	10.4	10.3
Very low birthweight	3.6	3.5	2.9	2.9	2.8	2.6
Hispanic						
All low birthweight	10.7	9.2	8.4	8.0	7.6	7.0
Moderately low birthweight	8.5	7.5	7.0	6.8	6.4	5.9
Very low birthweight	2.2	1.7	1.5	1.3	1.2	1.1
White						
All low birthweight	11.1	9.7	9.0	8.4	8.1	7.5
Moderately low birthweight	8.4	7.7	7.2	6.9	6.7	6.2
Very low birthweight	2.7	2.0	1.8	1.4	1.4	1.2
Black						
All low birthweight	15.8	14.9	14.3	13.7	13.2	12.9
Moderately low birthweight	12.1	11.5	11.4	10.8	10.4	10.2
Very low birthweight	3.6	3.4	2.9	2.9	2.8	2.6
American Indian or Alaska Native						
All low birthweight	9.1	7.5	7.1	6.6	6.9	6.5
Moderately low birthweight	*8.0	6.4	6.1	5.7	5.8	5.3
Very low birthweight	*	*	*1.0	*0.9	*1.0	1.2
Asian or Pacific Islander						
All low birthweight	14.5	14.4	12.5	11.3	9.9	9.0
Moderately low birthweight	*9.9	12.0	10.3	9.3	8.3	7.7
Very low birthweight	*	*2.5	*2.2	2.0	1.6	1.3

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* Rates based on fewer than 50 events are considered unreliable. Rates based on fewer than 20 events are considered highly unreliable and are not shown.

Low birthweight - less than 2,500 grams.
Moderately low birthweight - 1,500–2,499 grams.
Very low birthweight - less than 1,500 grams.

Figure 22. Infant mortality rates among infants of adolescent mothers 13–19 years of age

	Maternal age in years						
Race and Hispanic origin	*13–14*	*15*	*16*	*17*	*18*	*19*	*13–19*
	Infant deaths per 1,000 live births						
All races	17.1	13.7	11.4	10.6	10.3	9.5	10.6
White, non-Hispanic	18.4	14.2	12	9.9	9.5	8.8	9.9
Black, non-Hispanic	19.6	16.4	13.4	14.4	14.3	13.9	14.4
Hispanic	12.1	9.3	8.4	7.8	7.3	6.7	7.6
White	15.2	12.1	10.6	9.1	8.8	8.2	9.1
Black	19.6	16.3	13.3	14.3	14.3	13.8	14.4
American Indian or Alaska Native	*	*	*10.5	11.8	12.2	10.3	11.2
Asian or Pacific Islander	*	*14.1	*8.9	*7.5	8.4	8.4	8.7

* Rates based on fewer than 50 events are considered unreliable. Rates based on fewer than 20 events are considered highly unreliable and are not shown.

Figure 23. Sexually transmitted disease rates reported for adolescents 10–19 years of age

	Chlamydia		*Gonorrhea*	
Age, race, and Hispanic origin	*Female*	*Male*	*Female*	*Male*
	Reported cases per 100,000 adolescents			
10–14 years	142.5	7.9	58.0	8.5
15–19 years	2,359.4	308.4	779.7	354.6
White, non-Hispanic	1,190.8	100.6	218.2	41.7
Black, non-Hispanic	7,786.3	1,256.2	3,851.7	2,075.9
Hispanic	2,564.2	371.2	320.8	155.5
American Indian or Alaska Native	4,056.7	547.1	654.4	156.7
Asian or Pacific Islander	949.8	126.6	119.4	24.8

Figure 24. Acquired immunodeficiency syndrome reported rates for adolescents 11–19 years of age

Age, race, and Hispanic origin	*Female*	*Male*
	Reported cases per 100,000 adolescents	
White, non-Hispanic		
11–14 years	0.11	0.21
15–17 years	0.14	0.36
18–19 years	0.52	0.89
Black, non-Hispanic		
11–14 years	2.02	2.04
15–17 years	4.31	2.76
18–19 years	12.16	8.28
Hispanic		
11–14 years	1.26	1.01
15–17 years	0.63	1.03
18–19 years	2.03	3.95

Figure 25. Lifetime sexual activity among students in grades 9–12

	Female				*Male*			
	Ever had sexual intercourse		*Multiple sex partners*		*Ever had sexual intercourse*		*Multiple sex partners*	
Grade level and race and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	32.5	3.9	7.9	1.2	44.5	3.1	15.6	1.7
10th	42.6	2.6	10.1	1.4	51.1	3.9	21.4	4.2
11th	53.8	2.3	15.1	2.4	51.4	2.9	19.4	2.8
12th	65.8	3.9	20.6	2.7	63.9	3.2	20.6	2.0
Total	47.7	2.2	13.1	1.2	52.2	2.3	19.3	2.0
White, non-Hispanic	44.8	2.3	12.7	1.2	45.4	2.4	12.1	1.5
Black, non-Hispanic	66.9	5.8	21.3	4.5	75.7	3.3	48.1	6.5
Hispanic	45.5	3.2	10.5	1.9	62.9	2.8	23.0	3.2

SE Standard error.
Multiple sex partners - 4 or more partners in lifetime.

Figure 26. Cigarette smoking in the past 30 days among students in grades 9–12

	Female				*Male*			
	Current smoker		*Frequent smoker*		*Current smoker*		*Frequent smoker*	
Grade level, race, and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	29.2	2.5	11.0	1.4	26.1	3.1	11.4	1.6
10th	35.7	2.1	15.3	2.0	33.6	1.5	15.0	2.0
11th	35.6	2.7	17.1	1.6	36.4	3.0	20.4	2.9
12th	40.5	3.0	20.3	3.1	45.2	3.4	26.1	5.2
Total	34.9	1.3	15.6	1.3	34.7	1.5	17.9	1.6
White, non-Hispanic	39.1	1.8	19.4	1.9	38.2	1.9	20.9	1.7
Black, non-Hispanic	17.7	1.8	5.0	1.6	21.8	3.6	9.1	2.2
Hispanic	31.5	2.4	8.5	1.6	34.0	2.3	12.5	2.3

SE Standard error.
Current smoker - smoked 1 or more days.
Frequent smoker- smoked 20 or more days.

Figure 27. Alcohol use in the past 30 days among students in grades 9–12

	Female				*Male*			
	Current drinking		*Binge drinking*		*Current drinking*		*Binge drinking*	
Grade level and race and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	41.0	3.0	20.2	1.6	40.2	2.3	21.7	2.0
10th	46.8	1.7	31.1	1.9	52.7	3.0	33.4	2.8
11th	48.3	2.6	29.0	2.4	53.5	3.0	38.8	3.0
12th	56.9	3.0	33.9	2.9	66.6	2.3	49.5	2.8
Total	47.7	1.4	28.1	1.1	52.3	1.5	34.9	1.4
White, non-Hispanic	49.8	2.4	32.2	1.6	54.9	2.1	39.1	1.7
Black, non-Hispanic	40.7	3.9	14.7	2.8	39.1	4.7	17.4	2.7
Hispanic	49.3	2.8	26.8	2.3	56.3	2.9	37.5	2.5

SE Standard error.
Current drinking - alcohol use on 1 or more days.
Binge drinking - 5 or more drinks on 1 occasion.

Figure 28. Lifetime and current Marijuana use among students in grades 9–12

	Female				*Male*			
	Ever used		*Current use*		*Ever used*		*Current used*	
Grade level, race, and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	28.7	2.8	18.6	2.0	40.7	3.4	24.7	2.6
10th	46.7	2.1	24.3	2.2	51.6	4.2	31.4	3.3
11th	48.5	2.1	22.1	2.3	51.0	3.2	31.1	3.3
12th	53.2	3.4	26.3	2.9	63.8	2.4	36.9	3.6
Total	43.4	1.2	22.6	0.9	51.0	2.1	30.8	1.9
White, non-Hispanic	42.3	1.6	22.9	1.3	49.2	3.0	29.6	2.5
Black, non-Hispanic	42.7	2.7	21.9	2.9	54.8	5.9	31.2	4.8
Hispanic	46.4	2.9	21.8	2.0	55.8	3.1	34.8	3.5

SE Standard error.
Current use - used marijuana 1 or more times in the past 30 days.

Figure 29. Weapon carrying in the past 30 days among students in grades 9–12

	Female				*Male*			
	Carried a weapon		*Carried a gun*		*Carried a weapon*		*Carried a gun*	
Grade level, race, and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	6.5	1.1	0.4	0.1	28.7	2.9	9.7	2.0
10th	7.1	1.1	0.8	0.2	30.7	2.2	9.6	1.4
11th	5.2	0.8	0.7	0.2	26.9	2.5	7.4	1.2
12th	4.8	1.1	1.2	0.5	27.3	2.7	8.3	1.6
Total	6.0	0.6	0.8	0.1	28.6	1.8	9.0	1.2
White, non-Hispanic	3.6	0.4	0.5	0.1	28.6	2.5	8.0	1.4
Black, non-Hispanic	11.7	2.1	1.8	0.6	23.1	3.7	14.5	3.5
Hispanic	8.4	1.4	1.6	0.5	29.5	1.6	8.2	1.0

SE Standard error.
Weapon - such as a knife, gun, or club.

Figure 30. Participation in moderate to vigorous physical activity among students in grades 9–12

	Female		*Male*		*All students*	
Grade level, race, and Hispanic origin	*Percent*	*SE*	*Percent*	*SE*	*Percent*	*SE*
9th	72.9	2.9	81.6	2.2	77.3	2.1
10th	61.6	3.7	76.3	2.1	68.9	2.4
11th	54.4	2.2	70.5	2.3	62.6	1.4
12th	59.7	2.7	75.6	1.9	67.6	2.0
Total	62.7	1.2	76.4	1.4	69.5	1.0
White, non-Hispanic	65.3	1.4	78.1	2.0	71.9	1.2
Black, non-Hispanic	52.5	1.7	68.1	4.2	60.0	2.4
Hispanic	54.3	2.6	75.7	2.3	64.9	2.2

SE Standard error.

Figure 31. Health care coverage of adolescents 10–19 years of age

Family income and age	*Uninsured* Percent	SE	*Medicaid* Percent	SE	*Private* Percent	SE	*Other* Percent	SE
Poor								
10–19 years	31.4	1.4	42.9	1.6	23.9	1.6	1.9	0.4
10–12 years	23.9	1.8	55.2	2.2	19.0	1.8	2.0	0.7
13–15 years	30.6	2.1	46.6	2.3	21.5	2.0	1.3	0.5
16–17 years	38.0	2.8	43.6	3.0	16.4	2.2	2.1	0.9
18–19 years	37.0	2.9	22.8	2.4	37.9	3.9	2.2	0.8
Near poor								
10–19 years	28.0	1.2	14.6	0.9	54.7	1.4	2.7	0.5
10–12 years	24.8	1.7	17.0	1.5	56.1	2.0	2.1	0.5
13–15 years	24.4	1.8	16.6	1.5	55.9	2.1	3.1	0.7
16–17 years	28.8	2.2	10.1	1.4	58.1	2.4	3.0	0.9
18–19 years	38.2	2.5	11.6	1.6	47.2	2.7	3.1	0.8
Nonpoor								
10–19 years	8.2	0.5	2.1	0.2	87.0	0.6	2.6	0.3
10–12 years	6.3	0.6	2.5	0.3	88.7	0.8	2.5	0.4
13–15 years	6.4	0.6	2.1	0.3	89.0	0.8	2.1	0.3
16–17 years	7.0	0.7	1.5	0.4	89.1	0.9	2.4	0.4
18–19 years	17.0	1.3	2.4	0.5	77.5	1.5	3.1	0.6

SE Standard error.

Figure 32. No health care visits among adolescents 10–19 years of age

Age	*Female* Percent	SE	*Male* Percent	SE
10–19 years	17.7	0.8	18.9	0.8
10–12 years	20.0	1.5	18.0	1.4
13–15 years	18.2	1.3	15.3	1.2
16–17 years	17.5	1.7	17.5	1.4
18–19 years	13.3	1.8	27.5	2.5

Race and Hispanic origin	*Insured* Percent	SE	*Uninsured* Percent	SE
All races	14.5	0.6	37.8	1.8
White, non-Hispanic	13.4	0.7	26.6	2.5
Black, non-Hispanic	15.1	1.5	48.2	4.2
Hispanic	19.4	1.5	47.3	2.7

SE Standard error.

Appendixes

Appendix Contents

Appendix Contents

Appendix I

Sources of Data

Introduction

This report consolidates the most current data on the health of the population of the United States, the availability and use of health resources, and health care expenditures. The information was obtained from the data files and/or published reports of many governmental and nongovernmental agencies and organizations. In each case, the sponsoring agency or organization collected data using its own methods and procedures. Therefore, the data in this report vary considerably with respect to source, method of collection, definitions, and reference period.

Much of the data presented in the detailed tables are from the ongoing data collection systems of the National Center for Health Statistics. For an overview of these systems, see: Kovar MG. Data systems of the National Center for Health Statistics. National Center for Health Statistics. Vital Health Stat 1(23). 1989. However, health care personnel data come primarily from the Bureau of Health Professions, Health Resources and Services Administration, and the American Medical Association. National health expenditures data were compiled by the Office of the Actuary, Health Care Financing Administration.

Although a detailed description and comprehensive evaluation of each data source is beyond the scope of this appendix, users should be aware of the general strengths and weaknesses of the different data collection systems. For example, population-based surveys obtain socioeconomic data, data on family characteristics, and information on the impact of an illness, such as days lost from work or limitation of activity. They are limited by the amount of information a respondent remembers or is willing to report. Detailed medical information, such as precise diagnoses or the types of operations performed, may not be known and so will not be reported. Health care providers, such as physicians and hospitals, usually have good diagnostic information but little or no information about the socioeconomic characteristics of individuals or the impact of illnesses on individuals.

The populations covered by different data collection systems may not be the same, and understanding the differences is critical to interpreting the data. Data on vital statistics and national expenditures cover the entire population. Most data on morbidity and utilization of health resources cover only the civilian noninstitutionalized population. Thus, statistics are not included for military personnel who are usually young; for institutionalized people who may be any age; or for nursing home residents who are usually old.

All data collection systems are subject to error, and records may be incomplete or contain inaccurate information. People may not remember essential information, a question may not mean the same thing to different respondents, and some institutions or individuals may not respond at all. It is not always possible to measure the magnitude of these errors or their impact on the data. Where possible, the tables have notes describing the universe and the method of data collection to enable the user to place his or her own evaluation on the data. In many instances data do not add to totals because of rounding.

Some information is collected in more than one survey and estimates of the same statistic may vary among surveys. For example, cigarette use is measured by the Health Interview Survey, the National Household Survey of Drug Abuse, and the Monitoring the Future Survey. Estimates of cigarette use may differ among surveys because of different survey methodologies, sampling frames, questionnaires, definitions, and tabulation categories.

Overall estimates generally have relatively small sampling errors, but estimates for certain population subgroups may be based on small numbers and have relatively large sampling errors. Numbers of births and deaths from the vital statistics system represent complete counts (except for births in those States where data are based on a 50-percent sample for certain years). Therefore, they are not subject to sampling error. However, when the figures are used for analytical purposes, such as the comparison of rates over a period, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances. When the number of events is small and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the figures. Estimates that are unreliable because of large sampling errors or small numbers of events are noted with asterisks in selected tables. The criteria used to designate unreliable estimates are indicated as notes to the applicable tables.

The descriptive summaries that follow provide a general overview of study design, methods of data collection, and reliability and validity of the data. More complete and detailed discussions are found in the publications referenced at the end of each summary. The data set or source is listed under the agency or organization that sponsored the data collection.

Department of Health and Human Services

Centers for Disease Control and Prevention

National Center for Health Statistics

National Vital Statistics System

Through the National Vital Statistics System, the National Center for Health Statistics (NCHS) collects and publishes data on births, deaths, marriages, and divorces in the United States. Fetal deaths are classified and tabulated separately from other deaths. The Division of Vital Statistics obtains information on births and deaths from the registration offices of all States, New York City, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. Geographic coverage for births and deaths has been complete since 1933. U.S. data shown in detailed tables in this book are for the 50 States and the District of Columbia, unless otherwise specified.

Until 1972 microfilm copies of all death certificates and a 50-percent sample of birth certificates were received from all registration areas and processed by NCHS. In 1972 some States began sending their data to NCHS through the Cooperative Health Statistics System (CHSS). States that participated in the CHSS program processed 100 percent of their death and birth records and sent the entire data file to NCHS on computer tapes. Currently, the data are sent to NCHS through the Vital Statistics Cooperative Program (VSCP), following the same procedures as CHSS. The number of participating States grew from 6 in 1972 to 46 in 1984. Starting in 1985 all 50 States and the District of Columbia participated in VSCP.

In most areas practically all births and deaths are registered. The most recent test of the completeness of birth registration, conducted on a sample of births from 1964 to 1968, showed that 99.3 percent of all births in the United States during that period were registered. No comparable information is available for deaths, but it is generally believed that death registration in the United States is at least as complete as birth registration.

Demographic information on the birth certificate such as race and ethnicity is provided by the mother at the time of birth. Medical and health information is based on hospital records. Demographic information on the death certificate is provided by the funeral director based on information supplied by an informant. Medical certification of cause of death is provided by a physician, medical examiner, or coroner.

U.S. Standard Certificates—U.S. Standard Live Birth and Death Certificates and Fetal Death Reports are revised periodically, allowing careful evaluation of each item and addition, modification, and deletion of items. Beginning with 1989 revised standard certificates replaced the 1978 versions. The 1989 revision of the birth certificate includes items to identify the Hispanic parentage of newborns and to expand information about maternal and infant health characteristics. The 1989 revision of the death certificate includes items on educational attainment and Hispanic origin of decedents as well as changes to improve the medical certification of cause of death. Standard certificates recommended by NCHS are modified in each registration area to serve the area's needs. However, most certificates conform closely in content and arrangement to the standard certificate, and all certificates contain a minimum data set specified by NCHS. For selected items, reporting areas expanded during the years spanned by this report. For items on the birth certificate, the number of reporting States increased for mother's education, prenatal care, marital status, Hispanic parentage, and tobacco use; and on the death certificate, for educational attainment and Hispanic origin of the decedent.

Birth certificate items—

Race—Data on birth rates, birth characteristics, and fetal death rates for 1980 and more recent years for liveborn infants and fetal deaths are presented in this report according to race of mother, unless specified otherwise. Before 1980 data were tabulated by race of newborn and fetus, taking into account the race of both parents. If the parents were of different races and one parent was white, the child was classified according to the race of the other parent. When neither parent was white, the child was classified according to father's race, with one exception: if either parent was Hawaiian, the child was classified Hawaiian. Before 1964, if race was unknown, the birth was classified as white. Beginning in 1964 unknown race was classified according to information on the previous record.

Maternal age—Mother's age was reported on the birth certificate by all States. Data are presented for mothers age 10–49 years through 1996 and 10–54 years starting in 1997, based on mother's date of birth or age as reported on the birth certificate. The age of mother is edited for upper and lower limits. When the age of the mother is computed to be under 10 years or 55 years or over (50 years or over in 1964–96), it is considered not stated and imputed according to the age of the mother from the previous birth record of the same race and total birth order (total of fetal deaths and live births). Before 1963 not stated ages were distributed in proportion to the known ages for each racial group. Beginning in 1997 the birth rate for the maternal age group 45–49 years includes data for mother's age 50–54 years in the numerator and is based on the population of women 45–49 years in the denominator.

Maternal education—Mother's education was reported on the birth certificate by 38 States in 1970. Data were not available from Alabama, Arkansas, California, Connecticut, Delaware, District of Columbia, Georgia, Idaho, Maryland, New Mexico, Pennsylvania, Texas, and Washington. In 1975 these data were available from 4 additional States, Connecticut, Delaware, Georgia, Maryland, and the District of Columbia, increasing the number of States reporting mother's education to 42 and the District of Columbia. Between 1980 and 1988 only three States, California, Texas, and Washington did not report mother's education. In 1988 mother's education was also missing from New York State outside of New York City. In 1989–91 mother's education was missing only from Washington and New York State outside of New York City. Starting in 1992 mother's education was reported by all 50 States and the District of Columbia.

Prenatal care—Prenatal care was reported on the birth certificate by 39 States and the District of Columbia in 1970. Data were not available from Alabama, Alaska, Arkansas, Connecticut, Delaware, Georgia, Idaho, Massachusetts, New Mexico, Pennsylvania, and Virginia. In 1975 these data were available from 3 additional States, Connecticut, Delaware, and Georgia, increasing the number of States reporting prenatal care to 42 and the District of Columbia. Starting in 1980 prenatal care information was available for the entire United States.

Marital status—Mother's marital status was reported on the birth certificate by 39 States and the District of Columbia in 1970, and by 38 States and the District of Columbia in 1975. The incidence of births to unmarried women in States with no direct question on marital status was assumed to be the same as the incidence in reporting States in the same geographic division. Starting in 1980 for States without a direct question, marital status was inferred by comparing the parents' and child's surnames and other information concerning the father. In 1980–96 marital status was reported on the birth certificates of 41–45 States. In 1997, all but four States (Connecticut, Michigan, Nevada, and New York) and, in 1998, all but two States (Michigan and New York) included a direct question about mother's marital status on their birth certificates.

Hispanic origin—In 1980 and 1981 information on births of Hispanic parentage was reported on the birth certificate by the following 22 States: Arizona, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Maine, Mississippi, Nebraska, Nevada, New Jersey, New Mexico, New York, North Dakota, Ohio, Texas, Utah, and Wyoming. In 1982 Tennessee, and in 1983 the District of Columbia began reporting this information. Between 1983 and 1987 information on births of Hispanic parentage was available for 23 States and the District of Columbia. In 1988 this information became available for Alabama, Connecticut, Kentucky, Massachusetts, Montana, North Carolina, and Washington, increasing the number of States reporting information on births of Hispanic parentage to 30 States and the District of Columbia. In 1989 this information became available from an additional 17 States, increasing the number of Hispanic-reporting States to 47 and the District of Columbia. In 1989 only Louisiana, New Hampshire, and Oklahoma did not report Hispanic parentage on the birth certificate. In 1990 Louisiana began reporting Hispanic parentage. Hispanic origin of the mother was reported on the birth certificates of 49 States and the District of Columbia in 1991 and 1992; only New Hampshire did not provide this information. Starting in 1993 Hispanic origin of mother was reported by all 50 States and the District of Columbia. In 1990, 99 percent of birth records included information on mother’s origin.

Tobacco use—Information on tobacco use during pregnancy became available for the first time in 1989 with the revision of the U.S. Standard Birth Certificate. In 1989 data on tobacco use were collected by 43 States and the District of Columbia. The following States did not require the reporting of tobacco use in the standard format on the birth certificate: California, Indiana, Louisiana, Nebraska, New York, Oklahoma, and South Dakota. In 1990 information on tobacco use became available from Louisiana and Nebraska, increasing the number of reporting States to 45 and the District of Columbia. In 1991–93 information on tobacco use was available for 46 States and the District of Columbia with the addition of Oklahoma to the reporting area; and in 1994–97, for 46 States, the District of Columbia, and New York City.

Death certificate items—

Education of decedent—Information on educational attainment of decedents became available for the first time in 1989 due to the revision of the U.S. Standard Certificate of Death. Mortality data by educational attainment for 1989 were based on data from 20 States and by 1994–96 increased to 45 States and the District of Columbia. In 1994–96 the following States either did not report educational attainment on the death certificate or the information was more than 20 percent incomplete: Georgia, Kentucky, Oklahoma, Rhode Island, and South Dakota. In 1997 and 1998 information on decedent’s education was available from Oklahoma, increasing the reporting area to 46 States and the District of Columbia. Information on the death certificate about the decedent’s educational attainment is reported by the funeral director based on information provided by an informant such as next of kin.

Calculation of unbiased death rates by educational attainment based on the National Vital Statistics System requires that the reporting of education on the death certificate be complete and consistent with the reporting of education on the Current Population Survey, the source of population estimates that form the denominators for death rates. Death records with education not stated have not been included in the calculation of rates. Therefore the levels of the rates shown in this report are underestimated by approximately the percent not stated, which ranged from 3 to 5 percent.

The validity of information about the decedent’s education was evaluated by comparing self-reported education obtained in the Current Population Survey with education on the death certificate for decedents in the National Longitudinal Mortality Survey (NLMS). (Sorlie

PD, Johnson NJ: Validity of education information on the death certificate, Epidemiology 7(4):437–9, 1996.) Another analysis compared self-reported education collected in the first National Health and Nutrition Examination Survey (NHANES I) with education on the death certificate for decedents in the NHANES I Epidemiologic Followup Study. (Makuc DM, Feldman JJ, Mussolino ME: Validity of education and age as reported on death certificates, American Statistical Association 1996 Proceedings of the Social Statistics Section, 102–6, 1997.) Results of both studies indicated that there is a tendency for some people who did not graduate from high school to be reported as high school graduates on the death certificate. This tendency results in overstating the death rate for high school graduates and understating the death rate for the group with less than 12 years of education. The bias was greater among older than younger decedents and somewhat greater among black than white decedents.

In addition, educational gradients in death rates based on the National Vital Statistics System were compared with those based on the NLMS, a prospective study of persons in the Current Population Survey. Results of these comparisons indicate that educational gradients in death rates based on the National Vital Statistics System were reasonably similar to those based on NLMS for white persons 25–64 years of age and black persons 25–44 years of age. The number of deaths for persons of Hispanic origin in NLMS was too small to permit comparison for this ethnic group.

Hispanic origin—In 1985 mortality data by Hispanic origin of decedent were based on deaths to residents of the following 17 States and the District of Columbia whose data on the death certificate were at least 90 percent complete on a place-of-occurrence basis and of comparable format: Arizona, Arkansas, California, Colorado, Georgia, Hawaii, Illinois, Indiana, Kansas, Mississippi, Nebraska, New York, North Dakota, Ohio, Texas, Utah, and Wyoming. In 1986 New Jersey began reporting Hispanic origin of decedent, increasing the number of reporting States to 18 and the District of Columbia in 1986 and 1987. In 1988 Alabama, Kentucky, Maine, Montana, North Carolina, Oregon, Rhode Island, and Washington were added to the reporting area, increasing the number of States to 26 and the District of Columbia. In 1989 an additional 18 States were added, increasing the Hispanic reporting area to 44 States and the District of Columbia. In 1989 only Connecticut, Louisiana, Maryland, New Hampshire, Oklahoma, and Virginia were not included in the reporting area. Starting with 1990 data in this book, the criterion was changed to include States whose data were at least 80 percent complete. In 1990 Maryland, Virginia, and Connecticut, in 1991 Louisiana, and in 1993 New Hampshire were added, increasing the reporting area for Hispanic origin of decedent to 47 States and the District of Columbia in 1990, 48 States and the District of Columbia in 1991 and 1992, and 49 States and the District of Columbia in 1993–96. Only Oklahoma did not provide this information in 1993–96. Starting in 1997 Hispanic origin of decedent was reported by all 50 States and the District of Columbia. Based on data from the U.S. Bureau of the Census, the 1990 reporting area encompassed 99.6 percent of the U.S. Hispanic population. In 1990 more than 96 percent of death records included information on origin of decedent.

Race and Hispanic origin—Death rates by race and Hispanic origin are based on information from death certificates (numerators of the rates) and on population estimates from the Census Bureau (denominators) (see Appendix I, Bureau of the Census). Race and ethnicity information on the death certificate are reported by the funeral director as provided by an informant, often the surviving next of kin, or, in the absence of an informant, on the basis of observation. Race and ethnicity information from the Census is by self-report. To the extent that race and Hispanic origin are inconsistent between these two data sources, death rates will be biased. Studies have shown that persons self-reported as American Indian, Asian, or Hispanic on census and survey records may sometimes be reported as white or non-Hispanic on the death certificate, resulting in an underestimation of deaths and death rates for the American Indian, Asian, and Hispanic groups. Bias also results from undercounts of some population groups in the census, particularly young black and white males and elderly persons, resulting in an overestimation of death rates. The net effects of misclassification and under coverage result in overstated death rates for the white population and black population estimated to be 1 percent and 5 percent, respectively; and understated death rates for other population groups estimated as follows: American Indians, 21 percent; Asian or Pacific Islanders, 11 percent; and Hispanics, 2 percent. For more information, see Rosenberg HM, Maurer JD, Sorlie PD, Johnson NJ, et al. Quality of death rates by race and Hispanic origin: A summary of current research, 1999. National Center for Health Statistics. Vital Health Stat 2(128). 1999.

Infant and maternal mortality rates are calculated with denominators comprised of number of live births rather than population estimates. Starting with 1980 infant and maternal mortality trends are based on maternal race and ethnicity of the live birth in the denominator. Before 1980 infant and maternal mortality trends were based on child's race in the denominator, which took into account the race of both parents. Infant and maternal mortality trends for Hispanics commenced with 1985 and are based on Hispanic origin of mother.

Vital event rates for the American Indian or Alaska Native population shown in this book are based on the total U.S. resident population of American Indians and Alaska Natives as enumerated by the U.S. Bureau of Census. In contrast the Indian Health Service calculates vital event rates for this population based on U.S. Bureau of Census county data for American Indians and Alaska Natives who reside on or near reservations.

Mortality data in *Health, United States* are presented for four major race groups, white, black, American Indian or Alaska Native, and Asian or Pacific Islander, in accordance with 1977 U.S. Office of Management and Budget (OMB) standards for presenting Federal statistics on race. Over the next several years, major changes will occur in the way Federal agencies collect and tabulate data on race and Hispanic origin in accordance with new guidelines from OMB (see Appendix II, Race). The major difference between the current and new guidelines is the adoption of data-collection procedures in which respondents can identify with more than one race group.

Alaska data—For 1995 the number of deaths occurring in Alaska is in error for selected causes because NCHS did not receive changes resulting from amended records and because of errors in processing the cause-of-death data. Differences are concentrated among selected causes of death, principally Symptoms, signs, and ill-defined conditions (ICD-9 Nos. 780–799) and external causes.

For more information, see: National Center for Health Statistics, Technical Appendix, *Vital Statistics of the United States, 1992*, Vol. I, Natality, DHHS Pub. No. (PHS) 96–1100 and Vol. II, Mortality, Part A, DHHS Pub. No. (PHS) 96–1101, Public Health Service. Washington: U.S. Government Printing Office, 1996; or visit the NCHS home page at www.cdc.gov/nchs/.

National Linked File of Live Births and Infant Deaths

National linked files of live births and infant deaths are data sets for research on infant mortality. To create these data sets, death certificates are linked with corresponding birth certificates for infants who die in the United States before their first birthday. Linked data files include all of the variables on the national natality file, including the more accurate racial and ethnic information, as well as the variables on the national mortality file, including cause of death and age at death. The linkage makes available for the analysis of infant mortality extensive information from the birth certificate about the pregnancy, maternal risk factors, and infant characteristics and health items at birth. Each year 97–98 percent of infant death records are linked to their corresponding birth records.

National linked files of live births and infant deaths were first produced for the 1983 birth cohort. Birth cohort linked file data are available for 1983–91 and period linked file data for 1995–97. While birth cohort linked files have methodological advantages, their production incurs substantial delays in data availability, since it is necessary to wait until the close of a second data year to include all infant deaths to the birth cohort. Starting with data year 1995, more timely linked file data are produced in a period data format preceding the release of the corresponding birth cohort format. Other changes to the data set starting with 1995 data include the addition of record weights to correct for the 2.2–2.5 percent of records that could not be linked and the addition of an imputation for not stated birthweight.

For more information, see: Prager K. Infant mortality by birthweight and other characteristics: United States, 1985 birth cohort. National Center for Health Statistics. Vital Health Stat 20(24). 1994; MacDorman MF, Atkinson JO. Infant mortality statistics from the 1997 period linked birth/death data set. Monthly vital statistics report; vol 47 no 23, supp. Hyattsville, MD: National Center for Health Statistics. 1999; or visit the NCHS home page at www.cdc.gov/nchs/.

Compressed Mortality File

The Compressed Mortality File (CMF) used to compute death rates by urbanization level is a county-level national mortality and population database. The mortality data base of CMF is derived from the detailed mortality files of the National Vital Statistics System starting with 1968. The population data base of CMF is derived from intercensal and postcensal population estimates and census counts of the resident population of each U.S. county by age, race, and sex. Counties are categorized according to level of urbanization based on an NCHS-modified version of the 1993 rural-urban continuum codes for metropolitan and nonmetropolitan counties developed by the Economic Research Service, U.S. Department of Agriculture. See Appendix II, Urbanization. For more information about the CMF, contact: D. Ingram, Analytic Studies Branch, Division of Health and Utilization Analysis, National Center for Health Statistics, 6525 Belcrest Road, Hyattsville, MD 20782.

National Survey of Family Growth

Data from the National Survey of Family Growth (NSFG) are based on samples of women ages 15–44 years in the civilian noninstitutionalized population of the United States. The first and second cycles, conducted in 1973 and 1976, excluded most women who had never been married. The third, fourth, and fifth cycles, conducted in 1982, 1988, and 1995, included all women ages 15–44 years.

The purpose of the survey is to provide national data on factors affecting birth and pregnancy rates, adoption, and maternal and infant health. These factors include sexual activity, marriage, divorce and remarriage, unmarried cohabitation, contraception and sterilization, infertility, breastfeeding, pregnancy loss, low birthweight, and use of medical care for family planning and infertility.

Interviews are conducted in person by professional female interviewers using a standardized questionnaire. In 1973–88 the average interview length was about 1 hour. In 1995 the average interview lasted about 1 hour and 45 minutes. In all cycles black women were sampled at higher rates than white women, so that detailed statistics for black women could be produced.

Interviewing for Cycle 1 of NSFG was conducted from June 1973 to February 1974. Counties and independent cities of the United States were sampled to form a frame of primary sampling units (PSU's), and 101 PSU's were selected. From these 101 PSU's, 10,879 women 15–44 years of age were selected, 9,797 of these were interviewed. Most never-married women were excluded from the 1973 NSFG.

Interviewing for Cycle 2 of NSFG was conducted from January to September 1976. From 79 PSU's, 10,202 eligible women were identified; of these, 8,611 were interviewed. Again, most never-married women were excluded from the sample for the 1976 NSFG.

Interviewing for Cycle 3 of NSFG was conducted from August 1982 to February 1983. The sample design was similar to that in Cycle 2: 31,027 households were selected in 79 PSU'S. Household screener interviews were completed in 29,511 households (95.1 percent). Of the 9,964 eligible women identified, 7,969 were interviewed. For the first time in NSFG, Cycle 3 included women of all marital statuses.

Interviewing for Cycle 4 was conducted between January and August 1988. The sample was obtained from households that had been interviewed in the National Health Interview Survey in the 18 months between October 1, 1985, and March 31, 1987. For the first time, women living in Alaska and Hawaii were included so that the survey covered women from the noninstitutionalized population of the entire United States. The sample was drawn from 156 PSU's; 10,566 eligible women ages 15–44 years were sampled. Interviews were completed with 8,450 women.

Between July and November of 1990, 5,686 women were interviewed by telephone in the first NSFG telephone reinterview. The average length of interview in 1990 was 20 minutes. The response rate for the 1990 telephone reinterview was 68 percent of those responding to the 1988 survey and still eligible for the 1990 survey.

Interviewing for Cycle 5 of NSFG was conducted between January and October of 1995. The sample was obtained from households that had been interviewed in 198 PSU's in the National Health Interview Survey in 1993. Of the 13,795 eligible women in the sample, 10,847 were interviewed. For the first time, Hispanic as well as black women were sampled at a higher rate than other women.

In order to make national estimates from the sample for the millions of women ages 15–44 years in the United States, data for the interviewed sample women were (a) inflated by the reciprocal of the probability of selection at each stage of sampling (for example, if there was a 1 in 5,000 chance that a woman would be selected for the sample, her sampling weight was 5,000), (b) adjusted for nonresponse, and (c) forced to agree with benchmark population values based on data from the Current Population Survey of the U.S. Bureau of the Census (this last step is called ''poststratification'').

Quality control procedures for selecting and training interviewers, coding, editing, and processing the data were built into NSFG to minimize nonsampling error.

More information on the methodology of NSFG is available in the following reports: French DK. National Survey of Family Growth, Cycle I: Sample design, estimation procedures, and variance estimation. National Center for Health Statistics. Vital Health Stat 2(76). 1978; Grady WR. National Survey of Family Growth, Cycle II: Sample design, estimation procedures, and variance estimation. National Center for Health Statistics. Vital Health Stat 2(87). 198l; Bachrach CA, Horn MC, Mosher WD, Shimizu I. National Survey of Family Growth, Cycle III: Sample design, weighting, and variance estimation. National Center for Health Statistics. Vital Health Stat 2(98). 1985; Judkins DR, Mosher WD, Botman SL. National Survey of Family Growth: Design, estimation, and inference. National Center for Health Statistics. Vital Health Stat 2(109). 1991; Goksel H, Judkins DR, Mosher WD. Nonresponse adjustments for a telephone followup to a National In-Person Survey. Journal of Official Statistics 8(4):417–32. 1992; Kelly JE, Mosher WD, Duffer AP, Kinsey SH. Plan and operation of the 1995 National Survey of Family Growth. Vital Health Stat 1(36). 1997; Potter FJ, Iannacchione VG, Mosher WD, Mason RE, Kavee JD. Sampling weights, imputation, and variance estimation in the 1995 National Survey of Family Growth. Vital Health Stat 2(124). 1998; or visit the NCHS home page at www.cdc.gov/nchs/.

National Health Interview Survey

The National Health Interview Survey (NHIS) is a continuing nationwide sample survey in which data are collected through personal household interviews. Information is obtained on personal and demographic characteristics including race and ethnicity by self-reporting or as reported by an informant. Information is also obtained on illnesses, injuries, impairments, chronic conditions, utilization of health resources, and other health topics.

The sample design plan of NHIS follows a multistage probability design that permits a continuous sampling of the civilian noninstitutionalized population residing in the United States. The survey is designed in such a way that the sample scheduled for each week is representative of the target population, and the weekly samples are additive over time. The response rate for the ongoing portion of the survey (core) has been between 94 and 98 percent over the years. Response rates for special health topics (supplements) have generally been lower. For example, the response rate was 80 percent for the 1994 Year 2000 Supplement, which included questions about cigarette smoking and use of such preventive services as mammography.

In 1985 NHIS adopted several new sample design features although, conceptually, the sampling plan remained the same as the previous design. Two major changes included reducing the number of primary sampling locations from 376 to 198 for sampling efficiency and oversampling the black population to improve the precision of the statistics. The sample was designed so that a typical NHIS sample for the data collection years 1985–94 consisted of approximately 7,500 segments containing about 59,000 assigned households. Of these households, an expected 10,000 were vacant, demolished, or occupied by persons not in the target population of the survey. The expected sample of 49,000 occupied households yielded a probability sample of about 127,000 persons. In 1994 there was a sample of 116,179 persons.

In 1995 the NHIS sample was redesigned again. Major design changes included increasing the number of primary sampling units from 198 to 358 and oversampling the black and Hispanic populations to improve the precision of the statistics. The sample was designed so that a typical NHIS sample for the data collection years 1995–2004 will consist of approximately 7,000 segments. The expected sample of 44,000 occupied respondent households will yield a probability sample of about 106,000 persons. In 1997 there was a sample of 103,477 persons and in 1998 the sample was comprised of 98,785 persons.

The NHIS questionnaire that was fielded from 1982 to 1996 consisted of two parts: a set of basic health and demographic items known as the Core questionnaire and one or more sets of questions on current health topics (Supplements). Information was collected from responsible family members residing in the household. Proxy responses were acceptable for Core and Supplement questionnaires when family members were not present at the time of interview. Data for children were collected from proxy respondents.

In 1997 the NHIS questionnaire was redesigned and consists of three parts: a basic module, a periodic module, and a topical module. The basic module functions as the new Core questionnaire and is comprised of three components (Family Core, Sample Adult Core, Sample Child Core). For the Family Core, information is obtained about all members of the family by interviewing adult members of the household or from adult proxy respondents. For the Sample Adult Core, one adult in the household is randomly selected to participate; proxy respondents are not used in this component. For families with children under 18 years of age, one child in the household is randomly selected for participation in the Sample Child Core. Data for this component are collected from a knowledgeable adult in the household. Periodic and topical modules will be incorporated into future years of NHIS.

In 1997 the collection methodology changed from paper and pencil questionnaires to computer-assisted personal interviewing (CAPI). The NHIS questionnaire was also revised extensively in 1997. In some instances, basic concepts measured in NHIS changed and in other instances the same concepts were measured in a different way. While some questions remain the same over time, they may be preceded by different questions or topics. For some questions, there was a change in the reference period for reporting an event or condition. Because of the extensive redesign of the questionnaire in 1997 and the introduction of the CAPI method of data collection, data from 1997 and later years may not be comparable with earlier years.

A description of the survey design, the methods used in estimation, and the general qualifications of the data obtained from the survey are presented in: Massey JT, Moore TF, Parsons VL, Tadros W. Design and estimation for the National Health Interview Survey, 1985–94. National Center for Health Statistics. Vital Health Stat 2(110). 1989; Kovar MG, Poe GS. The National Health Interview Survey design, 1973–84, and procedures, 1975–83. National Center for Health Statistics. Vital Health Stat 1(18). 1985; Adams PF, Hendershot G, Marano M. Current estimates from the National Health Interview Survey, 1996. National Center for Health Statistics. Vital Health Stat 10(200). 1999; or visit the NCHS home page at www.cdc.gov/nchs/.

National Immunization Survey

The National Immunization Survey (NIS) is a continuing nationwide telephone sample survey to gather data on children 19–35 months of age. Estimates of vaccine-specific coverage are available for national, State, and 28 urban areas considered to be high risk for undervaccination.

NIS uses a two-phase sample design. First, a random-digit-dialing (RDD) sample of telephone numbers is drawn. When households with age-eligible children are contacted, the interviewer collects information on the vaccinations received by all age-eligible children. In 1998 the overall response rate was 68 percent, yielding data for 32,511 children aged 19–35 months. The interviewer also collects information on the vaccination providers. In the second phase, all vaccination providers are contacted by mail. The vaccination information from providers was obtained for 66 percent of all children who were eligible for provider followup in 1998. Providers' responses are combined with information obtained from the households to provide a more accurate estimate of vaccination coverage levels. Final estimates are adjusted for noncoverage of nontelephone households.

A description of the survey design and the methods used in estimation are presented in: Zell ER, Ezzati-Rice TM, Battaglia PM, Wright RA. National Immunization Survey: The Methodology of a Vaccination Surveillance System. Public Health Reports 2000; 115:65–77; or visit the NCHS home page at www.cdc.gov/nchs/.

National Health and Nutrition Examination Survey

For the first program or cycle of the National Health Examination Survey (NHES I), 1960–62, data were collected on the total prevalence of certain chronic diseases as well as the distributions of various physical and physiological measures, including blood pressure and serum cholesterol levels. For that program, a highly stratified, multistage probability sample of 7,710 adults, of whom 86.5 percent were examined, was selected to represent the 111 million civilian noninstitutionalized adults 18–79 years of age in the United States at that time. The sample areas consisted of 42 primary sampling units (PSU's) from the 1,900 geographic units.

NHES II (1963–65) and NHES III (1966–70) examined probability samples of the nation's noninstitutionalized children between the ages of 6 and 11 years (NHES II) and 12 and 17 years (NHES III) focusing on factors related to growth and development. Both cycles were multistage, stratified probability samples of clusters of households in land-based segments and used the same 40 PSU's. NHES II sampled 7,417 children with a response rate of 96 percent. NHES III sampled 7,514 youth with a response rate of 90 percent.

For more information on NHES I, see: Gordon T, Miller HW. Cycle I of the Health Examination Survey: Sample and response, United States, 1960–62. National Center for Health Statistics. Vital Health Stat 11(1). 1974. For more information on NHES II, see: Plan, operation, and response results of a program of children's examinations. National Center for Health Statistics. Vital Health Stat 1(5). 1967. For more information on NHES III, see: Schaible WL. Quality control in a National Health Examination Survey. National Center for Health Statistics. Vital Health Stat 2(44). 1972.

In 1971 a nutrition surveillance component was added and the survey name was changed to the National Health and Nutrition Examination Survey (NHANES). In NHANES I, conducted from 1971 to

1974, a major purpose was to measure and monitor indicators of the nutrition and health status of the American people through dietary intake data, biochemical tests, physical measurements, and clinical assessments for evidence of nutritional deficiency. Detailed examinations were given by dentists, ophthalmologists, and dermatologists with an assessment of need for treatment. In addition, data were obtained for a subsample of adults on overall health care needs and behavior, and more detailed examination data were collected on cardiovascular, respiratory, arthritic, and hearing conditions.

The NHANES I target population was the civilian noninstitutionalized population 1–74 years of age residing in the coterminous United States, except for people residing on any of the reservation lands set aside for the use of American Indians. The sample design was a multistage, stratified probability sample of clusters of persons in land-based segments. The sample areas consisted of 65 PSU’s selected from the 1,900 PSU’s in the coterminous United States. A subsample of persons 25–74 years of age was selected to receive the more detailed health examination. Groups at high risk of malnutrition were oversampled at known rates throughout the process. Household interviews were completed for more than 96 percent of the 28,043 persons selected for the NHANES I sample, and about 75 percent (20,749) were examined.

For NHANES II, conducted from 1976 to 1980, the nutrition component was expanded from the one fielded for NHANES I. In the medical area primary emphasis was placed on diabetes, kidney and liver functions, allergy, and speech pathology. The NHANES II target population was the civilian noninstitutionalized population 6 months–74 years of age residing in the United States, including Alaska and Hawaii.

NHANES II utilized a multistage probability design that involved selection of PSU’s, segments (clusters of households) within PSU’s, households, eligible persons, and finally, sample persons. The sample design provided for oversampling among those persons 6 months–5 years of age, those 60–74 years of age, and those living in poverty areas. A sample of 27,801 persons was selected for NHANES II. Of this sample 20,322 (73.1 percent) were examined. Race information for NHANES I and NHANES II was determined primarily by interviewer observation.

The estimation procedure used to produce national statistics for NHANES I and NHANES II involved inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and poststratified ratio adjustment to population totals. Sampling errors also were estimated to measure the reliability of the statistics.

For more information on NHANES I, see: Miller HW. Plan and operation of the Health and Nutrition Examination Survey, United States, 1971–73. National Center for Health Statistics. Vital Health Stat 1(10a) and 1(10b). 1977 and 1978; and Engel A, Murphy RS, Maurer K, Collins E. Plan and operation of the NHANES I Augmentation Survey of Adults 25–74 years, United States, 1974–75. National Center for Health Statistics. Vital Health Stat 1(14). 1978.

For more information on NHANES II, see: McDowell A, Engel A, Massey JT, Maurer K. Plan and operation of the second National Health and Nutrition Examination Survey, 1976–80. National Center for Health Statistics. Vital Health Stat 1(15). 1981. For information on nutritional applications of these surveys, see: Yetley E, Johnson C. Nutritional applications of the Health and Nutrition Examination Surveys (HANES). Ann Rev Nutr 7:441–63. 1987.

The Hispanic Health and Nutrition Examination Survey (HHANES), conducted during 1982–84, was similar in content and design to the previous National Health and Nutrition Examination Surveys. The major difference between HHANES and the previous national surveys is that HHANES employed a probability sample of three special subgroups of the population living in selected areas of the United States rather than a national probability sample. The three HHANES universes included approximately 84, 57, and 59 percent of the respective 1980 Mexican-, Cuban-, and Puerto Rican-origin populations in the continental United States. The Hispanic ethnicity of these populations was determined by self-report.

In the HHANES three geographically and ethnically distinct populations were studied: Mexican Americans living in Texas, New Mexico, Arizona, Colorado, and California; Cuban Americans living in Dade County, Florida; and Puerto Ricans living in parts of New York, New Jersey, and Connecticut. In the Southwest 9,894 persons were selected (75 percent or 7,462 were examined), in Dade County 2,244 persons were selected (60 percent or 1,357 were examined), and in the Northeast 3,786 persons were selected (75 percent or 2,834 were examined).

For more information on HHANES, see: Maurer KR. Plan and operation of the Hispanic Health and Nutrition Examination Survey, 1982–84. National Center for Health Statistics. Vital Health Stat 1(19). 1985.

The third National Health and Nutrition Examination Survey (NHANES III) is a 6-year survey covering the years 1988–94. Over the 6-year period, 39,695 persons were selected for the survey of which 30,818 (77.6 percent) were examined in the mobile examination center.

The NHANES III target population is the civilian noninstitutionalized population 2 months of age and over. The sample design provides for oversampling among children 2–35 months of age, persons 70 years of age and over, black Americans, and Mexican Americans. Race is reported for the household by the respondent.

Although some of the specific health areas have changed from earlier NHANES surveys, the following goals of the NHANES III are similar to those of earlier NHANES surveys:

- to estimate the national prevalence of selected diseases and risk factors
- to estimate national population reference distributions of selected health parameters
- to document and investigate reasons for secular trends in selected diseases and risk factors

Two new additional goals for the NHANES III survey are:

- to contribute to an understanding of disease etiology
- to investigate the natural history of selected diseases

For more information on NHANES III, see: Ezzati TM, Massey JT, Waksberg J, et al. Sample design: Third National Health and Nutrition Examination Survey. National Center for Health Statistics. Vital Health Stat 2(113). 1992; Plan and operation of the Third National Health and Nutrition Examination Survey, 1988–94. National Center for Health Statistics. Vital Health Stat 1(32). 1994; or visit the NCHS home page at www.cdc.gov/nchs/.

National Health Provider Inventory (National Master Facility Inventory)

The National Master Facility Inventories (NMFI's) were a series of surveys of inpatient health facilities in the United States. They included hospitals, nursing and related-care homes, and other custodial care facilities. The last NMFI was conducted in 1982. In 1986 a different inventory was conducted, the Inventory of Long-Term Care Places (ILTCP). This was a survey of nursing and related-care homes and facilities for the mentally retarded. In 1991 the National Health Provider Inventory (NHPI) was conducted. This was a survey of nursing homes, board and care homes, home health agencies, and hospices. The NMFI, ILTCP, and NHPI were used as a basis for sampling frames for other surveys conducted by the National Center for Health Statistics (National Nursing Home Survey and National Home and Hospice Care Survey).

National Home and Hospice Care Survey

The National Home and Hospice Care Survey (NHHCS) is a sample survey of health agencies and hospices. Initiated in 1992, it was also conducted in 1993, 1994, and 1996. The original sampling frame consisted of all home health-care agencies and hospices identified in the 1991 National Health Provider Inventory (NHPI). The 1992 sample contained 1,500 agencies. These agencies were revisited during the 1993 survey (excluding agencies that had been found to be out of scope for the survey). In 1994 in-scope agencies identified in the 1993 survey were revisited, with 100 newly identified agencies added to the sample. For 1996 the universe was again updated, and a new sample of 1,200 agencies was drawn.

The sample design for the 1992–NHHCS was a stratified three-stage probability design. Primary sampling units were selected at the first stage, agencies were selected at the second stage, and current patients and discharges were selected at the third stage. The sample design for the 1996 NHHCS has a two-stage probability design in which agencies were selected at the first stage and current patients and discharges were selected at the second stage. Current patients were on the rolls of the agency as of midnight on the day before the survey. Discharges were selected to estimate the number of discharges from the agency during the year before the survey.

After the samples were selected, a patient questionnaire was completed for each current patient and discharge by interviewing the staff member most familiar with the care provided to the patients. The respondent was requested to refer to the medical records for each patient. For additional information see: Haupt BJ. Development of the National Home and Hospice Care Survey. National Center for Health Statistics. Vital Health Stat 1(33). 1994; or visit the NCHS home page at www.cdc.gov/nchs/.

National Hospital Discharge Survey

The National Hospital Discharge Survey (NHDS) is a continuing nationwide sample survey of short-stay hospitals in the United States. The scope of NHDS encompasses patients discharged from noninstitutional hospitals, exclusive of military and Department of Veterans Affairs hospitals, located in the 50 States and the District of Columbia. Only hospitals having six or more beds for patient use are included in the survey and, before, 1988 those in which the average length of stay for all patients was less than 30 days. In 1988 the scope was altered slightly to include all general and children’s general hospitals regardless of the length of stay. Although all discharges of patients from these hospitals are within the scope of the survey, discharges of newborn infants from all hospitals are excluded from this report.

The original sample was selected in 1964 from a frame of short-stay hospitals listed in the National Master Facility Inventory. A two-stage stratified sample design was used, and hospitals were stratified according to bed size and geographic region. Sample hospitals were selected with probabilities ranging from certainty for the largest hospitals to 1 in 40 for the smallest hospitals. Within each sample hospital, a systematic random sample of discharges was selected from the daily listing sheet. Initially, the within-hospital sampling rates for selecting discharges varied inversely with the probability of hospital selection so that the overall probability of selecting a discharge was approximately the same across the sample. Those rates were adjusted for individual hospitals in subsequent years to control the reporting burden of those hospitals.

In 1985, for the first time, two data collection procedures were used for the survey. The first was the traditional manual system of sample selection and data abstraction. In the manual system, sample selection and transcription of information from the hospital records to abstract forms were performed by either the hospital staff or representatives of NCHS or both. The second was an automated method, used in approximately 17 percent of the sample hospitals in 1985, involving the purchase of data tapes from commercial abstracting services. These tapes were then subjected to the NCHS sampling, editing, and weighting procedures.

In 1988 NHDS was redesigned. The hospitals with the most beds and/or discharges annually were selected with certainty, but the remaining sample was selected using a three-stage stratified design. The first stage is a sample of PSU’s used by the National Health Interview Survey. Within PSU’s, hospitals were stratified or arrayed by abstracting status (whether subscribing to a commercial abstracting service) and within abstracting status arrayed by type of service and bed size. Within these strata and arrays, a systematic sampling scheme with probability proportional to the annual number of discharges was used to select hospitals. The rates for systematic sampling of discharges within hospitals vary inversely with probability of hospital selection within PSU. Discharge records from hospitals submitting data via commercial abstracting services and selected State data systems (approximately 40 percent of sample hospitals in 1997 and 1998) were arrayed by primary diagnoses, patient sex and age group, and date of discharge before sampling. Otherwise, the procedures for sampling discharges within hospitals are the same as those used in the prior design.

In 1997 the hospital sample was updated by continuing the sampling process among hospitals that were NHDS-eligible for the sampling frame in 1997 but not in 1994. The additional hospitals were added at the end of the list for the strata where they belonged, and the systematic sampling was continued as if the additional hospitals had been present during the initial sample selection. Hospitals that were no longer NHDS-eligible were deleted. A similar updating process occurred in 1991 and 1994.

The basic unit of estimation for NHDS is the sample patient abstract. The estimation procedure involves inflation by the reciprocal of the probability of selection, adjustment for nonresponding hospitals and missing abstracts, and ratio adjustments to fixed totals. In 1997, 513 hospitals were selected, 501 were within scope, 474 participated (95 percent), and 300,000 medical records were abstracted. In 1998, 513 hospitals were selected, 495 were within scope, 478 participated (97 percent), and 307,000 medical records were abstracted.

For more detailed information on the design of NHDS and the magnitude of sampling errors associated with the NHDS estimates, see: Lawrence L, Hall MJ. 1997 Summary: National Hospital Discharge Survey. Advance data from vital and health statistics; no 308. Hyattsville, Maryland: National Center for Health Statistics. 1999; and Haupt BJ, Kozak LJ. Estimates from two survey designs: National Hospital Discharge Survey. National Center for Health Statistics. Vital Health Stat 13(111). 1992; or visit the NCHS home page at www.cdc.gov/nchs/.

National Survey of Ambulatory Surgery

The National Survey of Ambulatory Surgery (NSAS) is a nationwide sample survey of ambulatory surgery patient discharges from short-stay non-Federal hospitals and freestanding surgery centers. NSAS was conducted annually between 1994 and 1996. The sample consisted of eligible hospitals listed in the 1993 SMG Hospital Market Database and the 1993 SMG Freestanding Outpatient Surgery Center Database or Medicare Provider-of-Service files. Facilities specializing in dentistry, podiatry, abortion, family planning, or birthing were excluded.

A three-State stratified cluster design was used, and facilities were stratified according to primary sampling unit (PSU). The second stage consisted of the selection of facilities from sample PSU's, and the third stage consisted of a systematic random sample of cases from all locations within a facility where ambulatory surgery was performed. Locations within hospitals dedicated exclusively to dentistry, podiatry, pain block, abortion, or small procedures (sometimes referred to as ''lump and bump'' rooms) were not included. In 1996 of the 751 hospitals and freestanding ambulatory surgery centers selected for the survey, 601 were in-scope and 488 responded for an overall response rate of 81 percent. These facilities provided information for approximately 125,000 ambulatory surgery discharges. Up to six procedures were coded to the *International Classification of Diseases, 9th Revision, Clinical Modification*. Estimates were derived using a multistage estimation procedure: inflation by reciprocals of the probabilities of selection; adjustment for nonresponse; and population weighting ratio adjustments.

For more detailed information on the design of NSAS, see: McLemore T, Lawrence L. Plan and operation of the National Survey of Ambulatory Surgery. National Center for Health Statistics. Vital Health Stat 1(37). 1997; or visit the NCHS home page at www.cdc.gov/nchs/.

National Nursing Home Survey

NCHS conducted five National Nursing Home Surveys, the first survey from August 1973–April 1974; the second survey from May 1977–December 1977; the third from August 1985–January 1986; the fourth from July 1995–December 1995; and the fifth from July 1997–December 1997.

Much of the background information and experience used to develop the first National Nursing Home Survey was obtained from a series of three ad hoc sample surveys of nursing and personal care homes called the Resident Places Surveys (RPS-1, -2,

-3). The three surveys were conducted by the National Center for Health Statistics during April–June 1963, May–June 1964, and June–August 1969. During the first survey, RPS-1, data were collected on nursing homes, chronic disease and geriatric hospitals, nursing home units, and chronic disease wards of general and mental hospitals. RPS-2 concentrated mainly on nursing homes and geriatric hospitals. During the third survey, RPS-3, nursing and personal care homes in the coterminous United States were sampled.

For the initial National Nursing Home Survey (NNHS) conducted in 1973–74, the universe included only those nursing homes that provided some level of nursing care. Homes providing only personal or domiciliary care were excluded. The sample of 2,118 homes was selected from the 17,685 homes that provided some level of nursing care and were listed in the 1971 National Master Facility Inventory (NMFI) or those that opened for business in 1972. Data were obtained from about 20,600 staff and 19,000 residents. Response rates were 97 percent for facilities, 88 percent for expenditures, 98 percent for residents, and 82 percent for staff.

The scope of the 1977 NNHS encompassed all types of nursing homes, including personal care and domiciliary care homes. The sample of about 1,700 facilities was selected from 23,105 nursing homes in the sampling frame, which consisted of all homes listed in the 1973 NMFI and those opening for business between 1973 and December 1976. Data were obtained from about 13,600 staff, 7,000 residents, and 5,100 discharged residents. Response rates were 95 percent for facilities, 85 percent for expenses, 81 percent for staff, 99 percent for residents, and 97 percent for discharges.

The scope of the 1985 NNHS was similar to the 1973–74 survey in that it excluded personal or domiciliary care homes. The sample of 1,220 homes was selected from a sampling frame of 20,479 nursing and related-care homes. The frame consisted of all homes in the 1982 NMFI; homes identified in the 1982 Complement Survey of NMFI as ‘‘missing’’ from the 1982 NMFI; facilities that opened for business between 1982 and June 1984; and hospital-based nursing homes obtained from the Health Care Financing Administration. Information on the facility was collected through a personal interview with the administrator. Accountants were asked to complete a questionnaire on expenditures or provide a financial statement. Resident data were provided by a nurse familiar with the care provided to the resident. The nurse relied on the medical record and personal knowledge of the resident. In addition to employee data that were collected during the interview with the administrator, a sample of registered nurses completed a self-administered questionnaire. Discharge data were based on information recorded in the medical record. Additional data about the current and discharged residents were obtained in telephone interviews with next of kin. Data were obtained from 1,079 facilities, 2,763 registered nurses, 5,243 current residents, and 6,023 discharges. Response rates were 93 percent for facilities, 68 percent for expenses, 80 percent for registered nurses, 97 percent for residents, 95 percent for discharges, and 90 percent for next of kin.

The scope of the 1995 and 1997 NNHS was similar to the 1985 and the 1973–74 NNHS in that they included only nursing homes that provided some level of nursing care. Homes providing only personal or domiciliary care were excluded. The 1995 sample of 1,500 homes was selected from a sampling frame of 17,500 nursing homes. The frame consisted of an updated version of the 1991 National Health Provider Inventory (NHPI). Data were obtained from about 1,400 nursing homes and 8,000 current residents. Data on current residents were provided by a staff member familiar with the care received by residents and from information contained in resident’s medical records.

The 1997 sample of 1,488 nursing homes was the same basic sample used in 1995. Excluded were out-of-scope and out-of-business places identified in the 1995 survey and included were a small number of additions to the sample from a supplemental frame of places not in the 1995 frame. The 1997 NNHS included the discharge component not available in the 1995 survey.

Statistics for all five surveys were derived by a ratio-estimation procedure. Statistics were adjusted for failure of a home to respond, failure to fill out one of the questionnaires, and failure to complete an item on a questionnaire.

For more information on the 1973–74 NNHS, see: Meiners MR. Selected operating and financial characteristics of nursing homes, United States, 1973–74 National Nursing Home Survey. National Center for Health Statistics. Vital Health Stat 13(22). 1975. For more information on the 1977 NNHS, see: Van Nostrand JF, Zappolo A, Hing E, et al. The National Nursing Home Survey, 1977 summary for the United States. National Center for Health Statistics. Vital Health Stat 13(43). 1979. For more information on the 1985 NNHS, see: Hing E, Sekscenski E, Strahan G. The National Nursing Home Survey: 1985 summary for the United States. National Center for Health Statistics. Vital Health Stat 13(97). 1985. For more information on the 1995 NNHS, see: Strahan G. An overview of nursing homes and their current residents: Data from the 1995 National Nursing Home Survey. Advance data from vital and health statistics; no 280. Hyattsville, MD: National Center for Health Statistics. 1997. For more information on the 1997 NNHS, see the Advance Data report available in the summer of 1999; or visit the NCHS home page at www.cdc.gov/nchs/.

National Ambulatory Medical Care Survey

The National Ambulatory Medical Care Survey (NAMCS) is a continuing national probability sample of ambulatory medical encounters. The scope of the survey covers physician-patient encounters in the offices of nonfederally employed physicians classified by the American Medical Association or American Osteopathic Association as ‘‘office-based, patient care’’ physicians. Patient encounters with physicians engaged in prepaid practices (health maintenance organizations (HMO’s), independent practice organizations (IPA’s), and other prepaid practices) are included in NAMCS. Excluded are visits to hospital-based physicians, visits to specialists in anesthesiology, pathology, and radiology, and visits to physicians who are principally engaged in teaching, research, or administration. Telephone contacts and nonoffice visits are excluded, also.

A multistage probability design is employed. The first-stage sample consists of 84 primary sampling units (PSU’s) in 1985 and 112 PSU’s in 1992 selected from about 1,900 such units into which the United States has been divided. In each sample PSU, a sample of practicing non-Federal office-based physicians is selected from master files maintained by the American Medical Association and the American Osteopathic Association. The final stage involves systematic random samples of office visits during randomly assigned 7-day reporting periods. In 1985 the survey excluded Alaska and Hawaii. Starting in 1989 the survey included all 50 States.

In the 1998 survey a sample of 2,500 physicians was selected. The response rate was 68 percent, and data were provided on 23,339 records.

The estimation procedure used in NAMCS basically has three components: inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and ratio adjustment to fixed totals.

For more detailed information on NAMCS, see: Woodwell, DA National Ambulatory Medical Care Survey: 1997 summary. Advance data from vital and health statistics; no 305. Hyattsville, MD: National Center for Health Statistics. 1999; or visit the NCHS home page at www.cdc.gov/nchs/.

National Hospital Ambulatory Medical Care Survey

The National Hospital Ambulatory Medical Care Survey (NHAMCS), initiated in 1992, is a continuing annual national probability sample of visits by patients to emergency departments (ED’s) and outpatient departments (OPD’s) of non-Federal, short-stay or general hospitals. Telephone contacts are excluded.

A four-stage probability sample design is used in NHAMCS, involving samples of primary sampling units (PSU’s), hospitals with ED’s and/or OPD’s within PSU’s, ED’s within hospitals and/or clinics within OPD’s, and patient visits within ED’s and/or clinics. In 1997 and 1998 the hospital response rate for NHAMCS was 96 percent for ED’s and 88–90 percent for OPD’s. Hospital staff were asked to complete Patient Record Forms (PRF) for a systematic random sample of patient visits occurring during a randomly assigned 4-week reporting period. On the PRF, up to three physicians’ diagnoses were collected and coded by NCHS to the *International Classification of Diseases, Clinical Modification* (ICD–9–CM).

Additionally, if the cause-of-injury check box was marked on the PRF, up to three external causes of injury were coded by NCHS to the ICD–9–CM Supplementary Classification of External Causes of Injury and Poisoning. In 1997 the number of PRF's completed for ED's was 22,209 and for OPD's was 30,107. In 1998 the number of PRF's completed for ED's was 24,175 and for OPD's 29,402.

For more detailed information on NHAMCS, see: McCaig LF, McLemore T. Plan and operation of the National Hospital Ambulatory Medical Care Survey. National Center for Health Statistics. Vital Health Stat 1(34). 1994; or visit the NCHS home page at www.cdc.gov/nchs/.

National Center for HIV, STD, and TB Prevention

AIDS Surveillance

Acquired immunodeficiency syndrome (AIDS) surveillance is conducted by health departments in each State, territory, and the District of Columbia. Although surveillance activities range from passive to active, most areas employ multifaceted active surveillance programs, which include four major reporting sources of AIDS information: hospitals and hospital-based physicians, physicians in nonhospital practice, public and private clinics, and medical record systems (death certificates, tumor registries, hospital discharge abstracts, and communicable disease reports). Using a standard confidential case report form, the health departments collect information that is then transmitted electronically to CDC without personal identifiers.

AIDS surveillance data are used to detect epidemiologic trends, to identify unusual cases requiring followup, and for semiannual publication in the *HIV/AIDS Surveillance Report*. Studies to determine the completeness of reporting of AIDS cases meeting the national surveillance definition suggest reporting at greater than or equal to 90 percent.

Decreases in the AIDS incidence and in the number of AIDS deaths, first noted in 1996, have been ascribed to the effect of new treatments, which prevent or delay the onset of AIDS and premature death among HIV-infected persons, and result in an increase in the number of persons living with HIV and AIDS. A growing number of States require confidential reporting of persons with HIV infection and participate in CDC's integrated HIV/AIDS surveillance system that compiles information on the population of persons newly diagnosed with and living with HIV infection.

For more information on AIDS surveillance, see: Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, published semiannually; or contact: Chief, Surveillance Branch, Division of HIV/AIDS Prevention Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), Centers for Disease Control and Prevention, Atlanta, GA 30333; or visit the NCHSTP home page at www.cdc.gov/nchstp/od/nchstp.html.

Epidemiology Program Office

National Notifiable Diseases Surveillance System

The Epidemiology Program Office (EPO) of CDC, in partnership with the Council of State and Territorial Epidemiologists (CSTE), operates the National Notifiable Diseases Surveillance System. The purpose of this system is primarily to provide weekly provisional information on the occurrence of diseases defined as notifiable by CSTE. In addition, the system also provides summary data on an annual basis. State epidemiologists report cases of notifiable diseases to EPO, and EPO tabulates and publishes these data in the *Morbidity and Mortality Weekly Report* (MMWR) and the *Summary of Notifiable Diseases, United States* (entitled *Annual Summary* before 1985). Notifiable disease surveillance is conducted by public health practitioners at local, State, and national levels to support disease prevention and control activities.

Notifiable disease reports are received from 52 areas in the United States and 5 territories. To calculate U.S. rates, data reported by 50 States, New York City, and the District of Columbia are used. (New York State is reported as Upstate New York, which excludes New York City.)

CSTE and CDC annually review the status of national infectious disease surveillance and recommend additions or deletions to the list of nationally notifiable diseases based on the need to respond to emerging priorities. For example, genital chlamydial infections became nationally notifiable in 1995. However, reporting nationally notifiable diseases to CDC by States is voluntary. Reporting is currently mandated by law or regulation only at the State level. Therefore, the list of diseases that are considered notifiable varies slightly by State. For example, reporting of mumps to CDC is not done by some States in which this disease is not notifiable to local or State authorities.

Completeness of reporting varies because not all cases receive medical care and not all treated conditions are reported. Estimates of underreporting of some diseases have been made. For example, it is estimated that only 22 percent of cases of congenital rubella syndrome are reported. Only 10–15 percent of all measles cases were reported before the institution of the Measles Elimination Program in 1978. Recent investigations suggest that fewer than 50 percent of measles cases were reported following an outbreak in an inner city and that 40 percent of hospitalized measles cases are currently reported. Data from a study of pertussis suggest that only one-third of severe cases causing hospitalization or death are reported. Data from a study of tetanus deaths suggest that only 40 percent of tetanus cases are reported to CDC.

For more information, see: Centers for Disease Control and Prevention, Summary of Notifiable Diseases, United States, 1998 *Morbidity and Mortality Weekly Report*, 47(53) Public Health Service, DHHS, Atlanta, GA, 1998; or write: Chief, Surveillance Systems Branch, Division of Public Health Surveillance and Informatics. Epidemiology Program Office, Centers for Disease Control and Prevention, 4770 Buford Highway, MS K74, Atlanta, GA, 30341–3717; or visit the EPO home page at www.cdc.gov/epo/phs.htm.

National Center for Chronic Disease Prevention and Health Promotion

Abortion Surveillance

In 1969 CDC began abortion surveillance to document the number and characteristics of women obtaining legal induced abortions, monitor unintended pregnancy, and assist efforts to identify and reduce preventable causes of morbidity and mortality associated with abortions. For each year since 1969 abortion data have been available from 52 reporting areas: 50 States, the District of Columbia, and New York City. The total number of legal induced abortions is available from all reporting areas; however, not all areas collect information regarding the characteristics of women who obtain abortions. Furthermore the number of States reporting each characteristic and the number of States with complete data for each characteristic vary from year to year. State data with more than 15 percent unknown for a given characteristic are excluded from the analysis of that characteristic.

For 48 reporting areas, data concerning the number and characteristics of women who obtain legal induced abortions are provided by central health agencies such as State health departments and the health departments of New York City and the District of Columbia. For the other four areas, data concerning the number of abortions are provided by hospitals and other medical facilities. In general the procedures are reported by the State in which the procedure is performed. However, two reporting areas (the District of Columbia and Wisconsin) report abortions by State of residence; occurrence data are unavailable for these areas.

The total number of abortions reported to CDC is about 10 percent less than the total estimated independently by the Alan Guttmacher Institute, a not-for-profit organization for reproductive health research, policy analysis, and public education.

For more information, see: Centers for Disease Control and Prevention, CDC Surveillance Summaries, July 30, 1999. *Morbidity and Mortality Weekly Report* 1999; 48 (NoSS-4), Abortion Surveillance-United States, 1996; or contact: Director, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for Disease Control and Prevention, Atlanta, GA 30341; or visit the NCCDPHP home page at www.cdc.gov/nccdphp.

Health Resources and Services Administration

Bureau of Health Professions

Nurse Supply Estimates

Nursing estimates in this report are based on a model developed by the Bureau of Health Professions to meet the requirements of Section 951, P.L. 94–63. The model estimates the following for each State: (a) population of nurses currently licensed to practice; (b) supply of full- and part-time practicing nurses (or available to practice); and (c) full-time equivalent supply of nurses practicing full time plus one-half of those practicing part time (or available on that basis).

The three estimates are divided into three levels of highest educational preparation: associate degree or diploma, baccalaureate, and master’s and doctorate.

Among the factors considered are new graduates, changes in educational status, nursing employment rates, age, migration patterns, death rates, and licensure phenomena. The base data for the model are derived from the National Sample Surveys of Registered Nurses, conducted by the Division of Nursing, Bureau of Health Professions, HRSA. Other data sources include National League for Nursing for data on nursing education and National Council of State Boards of Nursing for data on licensure.

Substance Abuse and Mental Health Services Administration

Office of Applied Studies

National Household Surveys on Drug Abuse

Data on trends in use of marijuana, cigarettes, alcohol, and cocaine among persons 12 years of age and over are from the National Household Survey on Drug Abuse (NHSDA). The 1998 survey is the 18th in a series that began in 1971 under the auspices of the National Commission on Marijuana and Drug Abuse. From 1974 to September 1992, the survey was sponsored by the National Institute on Drug Abuse. Since October 1992, the survey has been sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA).

Since 1991 the National Household Survey on Drug Abuse has covered the civilian noninstitutionalized population 12 years of age and over in the United States. This includes civilians living on military bases and persons living in noninstitutionalized group quarters, such as college dormitories, rooming houses, and shelters. Hawaii and Alaska were included for the first time in 1991.

In 1994 the survey underwent major changes that affect the reporting of substance abuse prevalence rates. New questionnaire and data-editing procedures were implemented to improve the measurement of trends in prevalence and to enhance the timeliness and quality of the data. Because it was anticipated that the new methodology would affect the estimates of prevalence, the 1994 NHSDA was designed to generate two sets of estimates. The first set, called the 1994-A estimates, was based on the same questionnaire and editing method that was used in 1993. The second set, called the 1994-B estimates, was based on the new questionnaire and editing methodology. A description of this new methodology can be found in Advance Report 10, available from SAMHSA. Because of the 1994 changes, many of the estimates from the 1994-A and earlier NHSDA’s are not comparable with estimates from the 1994-B and later NHSDA’s. To be able to describe long-term trends in drug use accurately, an adjustment procedure was developed and applied to the pre-1994 estimates. This adjustment uses the 1994 split sample design to estimate the magnitude of the impact of the new methodology for each drug category. The adjusted estimates are presented in this volume of *Health, United States*. A description of the adjustment method can be found in the 1998 NHSDA Main Findings, NHSDA Series H-11, Appendix E, available from SAMHSA.

The 1998 survey employed a multistage probability sample design. Young people (age 12–34 years), black Americans, Hispanics, and residents of Arizona and California were oversampled. The sample included 25,500 respondents. The screening and interview response rates were 93.0 percent and 77.0 percent, respectively.

For more information on the National Household Survey on Drug Abuse (NHSDA), see: NHSDA Series:

H-9 National Household Survey on Drug Abuse: Population Estimates 1998, H-10 Summary of Findings from the 1998 National Household Survey on Drug Abuse, and H-11 National Household Survey on Drug Abuse Main Findings 1998; or write: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Room 16C-06, 5600 Fishers Lane, Rockville, MD 20857; or visit the SAMHSA Web site at www.samhsa.gov.

Drug Abuse Warning Network

The Drug Abuse Warning Network (DAWN) is a large-scale, ongoing drug abuse data collection system based on information from hospital emergency departments and from medical examiner facilities. The major objectives of the DAWN data system include the monitoring of drug abuse patterns and trends, the identification of substances associated with drug abuse episodes, and the assessment of drug-related consequences and other health hazards. Estimates reported in this publication are from the hospital emergency department (ED) component of DAWN.

Hospitals eligible for DAWN are non-Federal, short-stay general hospitals that have a 24-hour emergency department. Since 1988 the DAWN emergency department data have been collected from a representative sample of these hospitals located throughout the coterminous United States, including 21 oversampled metropolitan areas. Within each facility, a designated DAWN reporter is responsible for identifying eligible drug-abuse episodes by reviewing emergency department records and abstracting and submitting data on each reportable case. To be included in DAWN, the patient presenting to the ED must meet all of the following four criteria: (a) The patient was between the ages of 6 and 97 and was treated in the hospital's ED. (b) The patient's presenting problem(s)—the reason for the ED visit—was induced by or related to drug use, regardless of when the drug use occurred. (c) The episode involved the use of an illegal drug or the use of a legal drug or other chemical substance contrary to directions. (d) The patient's reason for using the substance(s) was dependence, suicide attempt or gesture, and/or psychic effect.

The data from the DAWN sample are used to generate estimates of the total number of emergency department drug abuse episodes and drug mentions in all eligible hospitals in the coterminous United States and in the 21 metropolitan areas. Overall, a response rate of 77 percent of sample hospitals was obtained in the 1997 survey.

For further information, see Drug Abuse Warning Network (DAWN) Series D-9, Drug Abuse Warning Network Annual Emergency Department Data, 1997; DAWN Series: D-10, Mid-Year 1998 Preliminary Emergency Department Data from the Drug Abuse Warning Network; DAWN Series D-4, Drug Abuse Warning Network Annual Medical Examiner Data 1996; or write: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Room 16-105, 5600 Fishers Lane, Rockville, MD 20857; or visit the SAMHSA home page at www.samhsa.gov.

Uniform Facility Data Set

The Uniform Facility Data Set (UFDS), is part of the Drug and Alcohol Services Information System (DASIS) maintained by the Substance Abuse and Mental Health Services Administration. UFDS is a census of all substance abuse treatment and prevention facilities that are licensed, certified, or otherwise recognized by the individual State substance abuse agencies, and an additional group of substance abuse treatment facilities identified from other sources. It seeks information from all specialized facilities that treat substance abuse. These include facilities that only treat substance abuse, as well as specialty substance abuse units operating within larger mental health (for example, community mental health centers), general health (for example, hospitals), social service (for example, family assistance centers), and criminal justice (for example, probation departments) agencies. UFDS solicits data concerning facility and client characteristics for a specific reference day (on or about October 1) including number of individuals in treatment, substance of abuse (alcohol, drugs, or both), types of services, and source of revenue. Public and private facilities are included.

Treatment facilities contacted through UFDS are identified from the National Master Facility Inventory (NMFI), which lists all State-sanctioned substance abuse treatment and prevention facilities and additional treatment facilities identified through business directories and other sources. In 1996 only State-sanctioned facilities were included in the published tables. The 1997 and 1998 data include the facilities identified through business directories and other sources. Response rates to the surveys were 86, 88, and 91 percent in 1996, 1997, and 1998, respectively.

For further information on UFDS, contact: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Room 16–105, 5600 Fishers Lane, Rockville, MD 20857; or visit the OAS statistical information section of the SAMHSA home page: www.samhsa.gov.

Center for Mental Health Services

Surveys of Mental Health Organizations

The Survey and Analysis Branch of the Division of State and Community Systems Development conducts a biennial inventory of mental health organizations (IMHO's) and general hospital mental health services (GHMHS). One version is designed for specialty mental health organizations and another for non-Federal general hospitals with separate psychiatric services. The response rate to most of the items on these inventories is relatively high (90 percent or better) as is the rate for data presented in this report. However, for some inventory items, the response rate may be somewhat lower.

IMHO and GHMHS are the primary sources for Center for Mental Health Services data included in this report. This data system is based on questionnaires mailed every other year to mental health organizations in the United States, including psychiatric hospitals, non-Federal general hospitals with psychiatric services, Department of Veterans Affairs psychiatric services, residential treatment centers for emotionally disturbed children, freestanding outpatient psychiatric clinics, partial care organizations, freestanding day-night organizations, and multiservice mental health organizations, not elsewhere classified.

Federally funded community mental health centers (CMHC's) were included separately through 1980. In 1981, with the advent of block grants, the changes in definition of CMHC's and the discontinuation of CMHC monitoring by the Center for Mental Health Services, organizations formerly classified as CMHC's, have been reclassified as other organization types, primarily ‘‘multiservice mental health organizations, not elsewhere classified,'' and ‘‘freestanding psychiatric outpatient clinics.''

Beginning in 1983 any organization that provides services in any combination of two or more services (for example, outpatient plus partial care, residential treatment plus outpatient plus partial care) and is neither a hospital nor a residential treatment center for emotionally disturbed children is classified as a multiservice mental health organization.

Other surveys conducted by the Survey and Analysis Branch encompass samples of patients admitted to State and county mental hospitals, private mental hospitals, multiservice mental health organizations, the psychiatric services of non-Federal general hospitals and Department of Veterans Affairs medical centers, residential treatment centers for emotionally disturbed children, and freestanding outpatient and partial care programs. The purpose of these surveys is to determine the sociodemographic, clinical, and treatment characteristics of patients served by these facilities.

For more information, write: Survey and Analysis Banc, Division of State and Community Systems Development, Center for Mental Health Services, Room 15C-O4, 5600 Fishers Lane, Rockville, MD 20857. For further information on mental health, see: Center for Mental Health Services, *Mental Health, United States, 1998.* Manderscheid R, Henderson MJ, eds. DHHS Pub. No. (SMA) 99–3285. Washington: Superintendent of Documents, U.S. Government Printing Office. 1998; or visit the Center for Mental Health Services home page at www.samhsa.gov/cmhs/cmhs.htm.

National Institutes of Health

National Cancer Institute

Surveillance, Epidemiology, and End Results Program

In the Surveillance, Epidemiology, and End Results (SEER) Program the National Cancer Institute (NCI) contracts with 11 population-based registries throughout the United States to provide data on all residents diagnosed with cancer during the year and to provide current followup information on all previously diagnosed patients.

This report covers residents of one of the following geographic areas at the time of the initial diagnosis of cancer: Atlanta, Georgia; Detroit, Michigan; Seattle-Puget Sound, Washington; San Francisco-Oakland, California; Connecticut; Iowa; New Mexico; Utah; and Hawaii.

Population estimates used to calculate incidence rates are obtained from the U.S. Bureau of the Census. NCI uses estimation procedures as needed to obtain estimates for years and races not included in the data provided by the U.S. Bureau of the Census. Rates presented in this report may differ somewhat from previous reports due to revised population estimates and the addition and deletion of small numbers of incidence cases.

Life tables used to determine normal life expectancy when calculating relative survival rates were obtained from NCHS and in-house calculations. Separate life tables are used for each race-sex-specific group included in the SEER Program.

For further information, see: National Cancer Institute, *Cancer Statistics Review 1973–96* by L.A.G. Ries, et al. Public Health Service. Bethesda, MD, 1999; or visit the SEER home page: www.seer.ims.nci.nih.gov.

National Institute on Drug Abuse

Monitoring the Future Study (High School Senior Survey)

Monitoring the Future Study (MTF) is a large-scale epidemiological survey of drug use and related attitudes. It was initiated by the National Institute on Drug Abuse (NIDA) in 1975 and is conducted annually through a NIDA grant awarded to the University of Michigan's Institute for Social Research. MTF is composed of three substudies: (a) annual survey of high school seniors initiated in 1975; (b) ongoing panel studies of representative samples from each graduating class that have been conducted by mail since 1976; and (c) annual surveys of 8th and 10th graders initiated in 1991.

The survey design is a multistage random sample with stage one being the selection of particular geographic areas, stage two the selection of one or more schools in each area, and stage three the selection of students within each school. Data are collected using self-administered questionnaires administered in the classroom by representatives of the Institute for Social Research. Dropouts and students who are absent on the day of the survey are excluded. Recognizing that the dropout population is at higher risk for drug use, this survey was expanded to include similar nationally representative samples of 8th and 10th graders in 1991. Statistics that are published in the *Dropout Rates in the United States: 1997* (published by the National Center for Educational Statistics, Pub. No. 1999–082) stated that among persons 15–16 years of age, 2.7 percent have dropped out of school. Among persons 17 years of age, 2.4 percent have dropped out of school, while the dropout percent increases to 5.9 percent of persons 18 years of age, and to 10.2 percent for persons 19 years of age. Therefore, surveying eighth graders (where drop out rates are much lower than for high school seniors) should be effective for picking up students at higher risk for drug use.

Approximately 45,300 8th, 10th, and 12th graders in 433 schools were surveyed in 1999. In 1999 the annual senior samples were comprised of roughly 14,100 seniors in 143 public and private high schools nationwide, selected to be representative of all seniors in the continental United States. The 10th grade samples involve about 13,900 students in 140 schools in 1999, and the 1999 eighth grade samples have approximately 17,300 students in 150 schools.

For further information on Monitoring the Future Study, see: National Institute on Drug Abuse, National

Survey Results on Drug Use from the Monitoring the Future Study, 1975–1998, Vol. I, Secondary School Students, NIH Pub. No. 99–4660, Bethesda, MD: Public Health Service, printed September 1999; or visit the NIDA home page at www.nida.nih.gov or the Monitoring the Future home page at monitoringthefuture.org/.

Health Care Financing Administration

Office of the Actuary

Estimates of National Health Expenditures

Estimates of expenditures for health (National Health Accounts) are compiled annually by type of expenditure and source of funds.

Estimates of expenditures for health services come from an array of sources. The American Hospital Association (AHA) data on hospital finances are the primary source for estimates relating to hospital care. The salaries of physicians and dentists on the staffs of hospitals, hospital outpatient clinics, hospital-based home health agencies, and nursing home care provided in the hospital setting are considered to be components of hospital care. Expenditures for home health care and for services of health professionals (for example, doctors, chiropractors, private duty nurses, therapists, and podiatrists) are estimated primarily using a combination of data from the U.S. Bureau of the Census' Service Annual Survey and the quinquennial Census of Service Industries.

The estimates of retail spending for prescription drugs are based on results of HCFA-sponsored study conducted by the Actuarial Research Corporation and on industry data on prescription drug transactions. Expenditures for other medical nondurables and vision products and other medical durables purchased in retail outlets are based on estimates of personal consumption expenditures prepared by the U.S. Department of Commerce's Bureau of Economic Analysis, U.S. Bureau of Labor Statistics/Consumer Expenditure Survey, and the 1987 National Medical Expenditure Survey conducted by the Agency for Health Care Policy and Research. Those durable and nondurable products provided to inpatients in hospitals or nursing homes, and those provided by licensed professionals or through home health agencies are excluded here, but are included with the expenditure estimates of the provider service category.

Nursing home expenditures cover care rendered in establishments providing inpatient nursing and health-related personal care through active treatment programs for medical and health-related conditions. These establishments cover skilled nursing and intermediate care facilities, including those for the mentally retarded. Spending estimates are based upon data from the U.S. Bureau of the Census Services Annual Survey, and the quinequennial Census of Service Industries.

Expenditures for construction include those spent on the erection or renovation of hospitals, nursing homes, medical clinics, and medical research facilities, but not for private office buildings providing office space for private practitioners. Expenditures for noncommercial research (the cost of commercial research by drug companies is assumed to be imbedded in the price charged for the product; to include this item again would result in double counting) are developed from information gathered by the National Institutes of Health.

Source of funding estimates likewise come from a multiplicity of sources. Data on the Federal health programs are taken from administrative records maintained by the servicing agencies. Among the sources used to estimate State and local government spending for health are the U.S. Bureau of the Census' *Government Finances* and Social Security Administration reports on State-operated Workers' Compensation programs. Federal and State-local expenditures for education and training of medical personnel are excluded from these measures where they are separable. For the private financing of health care, data on the financial experience of health insurance organizations come from special Health Care Financing Administration analyses of private health insurers, and from the Bureau of Labor Statistics' survey on the cost of employer-sponsored health insurance and on consumer expenditures. Information on out-of-pocket spending from the U.S. Bureau of the Census' Services Annual Survey, U.S. Bureau of Labor

Statistics' Consumer Expenditure Survey, the 1987 National Medical Expenditure Survey conducted by the Agency for Health Care Policy and Research, and from private surveys conducted by the American Hospital Association, American Medical Association, and the American Dental Association are used to develop estimates of direct spending by customers.

For more specific information on definitions, sources, and methods used in the National health accounts, see: National Health Accounts: Lessons from the U.S. experience, by Lazenby HC, Levit KR, Waldo DR, et al. Health Care Financing Review, vol 14 no 4. Health Care Financing Administration. Washington: Public Health Service. 1992 and National Health Expenditures, 1994, Levit KR, Lazenby HC, Sivarajan L, et al. Health Care Financing Review, vol 17 no 3. Health Care Financing Administration. Washington: Public Health Service. 1996; or visit the Health Care Financing Administration home page at www.hcfa.gov.

Estimates of State Health Expenditures

Estimates of spending by State are created using the same definitions of health care sectors used in producing the National Health Expenditures (NHE). The same data sources used in creating NHE are also used to create State estimates whenever possible. Frequently, however, surveys that are used to create valid national estimates lack sufficient size to create valid State-level estimates. In these cases, alternative data sources that best represent the State-by-State distribution of spending are substituted, and the U.S. aggregate expenditures for the specific type of service or source of funds are used to control the level of State-by-State distributions. This procedure implicitly assumes that national spending estimates can be created more accurately than State-specific expenditures.

Despite definitional correspondence, NHE differ from the sum of State estimates. NHE include expenditures for persons living in U.S. territories and for military and Federal civilian employees and their families stationed overseas. The sum of the State level expenditures exclude health spending for those groups. For hospital care, exclusion of purchases of services in non-U.S. areas accounts for a 0.9 percent reduction in hospital expenditures from those measured as part of NHE.

For more information, contact: Office of the Actuary, Health Care Financing Administration, 7500 Security Blvd., Baltimore, MD 21244–1850; or visit the Health Care Financing Administration home page at www.hcfa.gov.

Medicare National Claims History Files

The Medicare Common Working File (CWF) is a Medicare Part A and Part B benefit coordination and claims validation system. There are two National Claims History (NCH) files, the NCH 100 percent-Nearline File, and the NCH Beneficiary Program Liability (BPL) File. The NCH files contain claims records and Medicare beneficiary information. The NCH 100 percent Nearline File contains all institutional and physician/supplier claims from the CWF. It provides records of every claim submitted, including all adjustment claims. The NCH BPL file contains Medicare Part A and Part B beneficiary liability information (such as deductible and coinsurance amounts remaining). The records include all Part A and Part B utilization and entitlement data. Records for 1998 were maintained on more than 38 million enrollees and 49,290 institutional providers including 6,176 hospitals, 15,022 skilled nursing facilities, 9,662 home health agencies, 2,290 hospices, 2,905 outpatient physical therapy facilities, 582 comprehensive outpatient rehabilitation facilities, 3,512 end-state renal dialysis facilities, 3,560 rural health clinics, 1,100 community mental health centers, 2,623 ambulatory surgical centers, and 1,858 federally qualified health centers. About 860 million claims were processed in fiscal year 1998.

Data from the NCH files provide information about enrollee use of benefits for a point in time or over an extended period. Statistical reports are produced on enrollment, characteristics of participating providers, reimbursement, and services used.

For further information on the NCH files see: Health Care Financing Administration, Office of Information Services, Enterprise Data Base Group, Division of Information Distribution, Data Users Reference Guide or call the Medicare Hotline at 410 786-3689.

For further information on Medicare, visit the HCFA home page at www.hcfa.gov.

Medicare Current Beneficiary Survey

The Medicare Current Beneficiary Survey (MCBS) is a continuous survey of a nationally representative sample of about 18,000 aged and disabled Medicare beneficiaries enrolled in Medicare Part A (hospital insurance), or Part B (medical insurance), or both, and residing in households or long-term care facilities. The survey provides comprehensive time-series data on utilization of health services, health and functional status, health care expenditures, and health insurance, and beneficiary information such as income, assets, living arrangement, family assistance, and quality of life. The longitudinal design of the survey allows each sample person to be interviewed three times a year for 4 years, whether he or she resides in the community or a facility or moves between the two settings, using the version of the questionnaire appropriate to the setting. Sample persons in the community are interviewed using computer-assisted personal interviewing (CAPI) survey instruments. Because long-term care facility residents often are in poor health, information about institutionalized patients is collected from proxy respondents such as nurses and other primary care givers affiliated with the facility. The sample is selected from the Medicare enrollment files with oversampling among disabled persons under age 65 and among persons 80 years of age and over.

Medicare claims are linked to survey-reported events to produce the Cost and Use file that provides complete expenditure and source of payment data on all health care services, including those not covered by Medicare.

For a description of the MCBS, see: A profile of the Medicare Current Beneficiary Survey, by GS Adler. Health Care Financing Review, vol 15 no 4. Health Care Financing Administration. Washington: Public Health Service. 1994. For further information on the MCBS visit the HCFA home page at www.hcfa.gov.

Medicaid Data System

Many State Medicaid agencies continue to submit data annually to the Health Care Financing Administration (HCFA) using the Form HCFA-2082, *Statistical Report on Medical Care: Eligibles, Recipients, Payments, and Services*. However, the majority of Medicaid data are derived from the Medicaid Statistical Information System (MSIS). States participating in MSIS provide HCFA with a larger data base through the submission of computer tapes. HCFA then extracts comparable data to produce a mirror copy of the HCFA-2082 report. The Federal reporting period is between October 1 and September 30 of the fiscal year.

The following information may help when using the Medicaid data:

- HCFA performs many statistical edits to ensure consistency and identification of aberrant and missing data. HCFA may substitute cell values only when necessary in order to maintain consistency.

- Medical Vendor Payments exclude lump sum adjustments (such as payments to disproportionate share (DSH) hospitals). States must adjust payments to qualified hospitals that provide inpatient services to a disproportionate number of Medicaid recipients and/or other low income persons.

- The number of recipients and eligibles reported on the HCFA-2082 are referred to as ‘‘Unduplicated,’’ which simply means that each person is counted once based on their eligibility grouping (for example, Aged or Blind or Disabled) when they first receive medical services.

- The Medicaid data presented in *Health, United States* are contained in the Medicaid statistical system (HCFA-2082 Report and the MSIS tapes). Data reported on the quarterly Medicaid financial report (HCFA-64) submitted to HCFA by States for reimbursement may differ from the Medicaid statistical report primarily because the HCFA-64 includes disproportionate share hospital payments, payments to health maintenance organizations and Medicare, and quarterly payment adjustments.

For further information on Medicaid data, see *Medicaid Statistics, Program and Financial Statistics, Fiscal Year 1997*, HCFA Pub. No. 10129, Health Care Financing Administration, Baltimore, MD. U.S. Government Printing Office, May 1999; or call the Medicaid Hotline at 410-786-0165. For additional information and data visit the HCFA Web site at www.hcfa.gov.

Online Survey Certification and Reporting Database

The Online Survey Certification and Reporting (OSCAR) database has been maintained by the Health Care Financing Administration (HCFA) since 1992. OSCAR is an updated version of the Medicare and Medicaid Automated Certification System that has been in existence since 1972. OSCAR is an administrative database containing detailed information on all Medicare and Medicaid health care providers in addition to all currently certified Medicare and Medicaid nursing home facilities in the United States and Territories. (Data for the territories are not shown in this report.) The purpose of the nursing home facility survey certification process is to ensure that nursing facilities meet the current HCFA long-term care requirements and thus can participate in serving Medicare and Medicaid beneficiaries. Included in the OSCAR database are all certified nursing facilities, certified hospital-based nursing homes, and certified units for other types of nursing home facilities (for example, life-care communities or board and care homes). Facilities not included in OSCAR are all noncertified facilities (that is, facilities that are only licensed by the State and are limited to private payment sources) and nursing homes that are part of the Department of Veterans Affairs. Also excluded are nursing homes that are intermediate care facilities for the mentally retarded.

Information on the number of beds, residents, and resident characteristics is collected during an inspection of all certified facilities. The information present on OSCAR is based on each facility's own administrative record system in addition to interviews with key administrative staff members.

All certified nursing homes are inspected by representatives of the State survey agency (generally the Department of Health) at least once every 15 months. Therefore a complete census must be based on a 15-month reporting cycle rather than a 12-month cycle. The 1995 data shown in *Health, United States, 2000*, come from a 15-month cycle ending on July 31, 1995. The 1996 data are based on a cycle ending on January 24, 1997, and the 1997 and 1998 data from cycles ending December 29, 1997, and December 13, 1998, respectively. Some nursing homes are inspected twice or more often during any given reporting cycle. In order to avoid overcounting, the data must be edited and duplicates removed. The editing and compilation of the data were performed by Cowles Research Group and published in the group's *Nursing Home Statistical Yearbook* series.

For more information, see: Cowles CM, 1995 Nursing Home Statistical Yearbook. 1996 Nursing Home Statistical Yearbook. 1997 Nursing Home Statistical Yearbook. Anacortes, WA: Cowles Research Group (CRG), 1995; 1997; 1998; Cowles CM, 1998 Nursing Home Statistical Yearbook. Washington, DC: American Association of Homes and Services for the Aging (AAHSA), 1999; HCFA: OSCAR Data Users Reference Guide, 1995, available from HCFA, Health Standards and Quality Bureau, HCFA/HSQB S2 11-07, 7500 Security Boulevard, Baltimore, MD 21244; or visit the HCFA home page at www.hcfa.gov or the CRG Web page at www.LongTermCareInfo.com/CRG. The e-mail contact for CRG is MickCowles@aol.com and for AAHSA is akerman@aahsa.org.

Department of Commerce

Bureau of the Census

Census of Population

The census of population has been taken in the United States every 10 years since 1790. In the 1990 census data were collected on sex, race, age, and marital status from 100 percent of the enumerated population. More detailed information such as income, education, housing, occupation, and industry were collected from a representative sample of the population. For most of the country, one out of six households (about 17 percent) received the more detailed questionnaire. In places of residence estimated to have less than 2,500 population, 50 percent of households received the long form.

For more information on the 1990 census, see: U.S. Bureau of the Census, *1990 Census of Population, General Population Characteristics*, Series 1990, CP-1; or visit the Census Bureau home page at www.census.gov.

Current Population Survey

The Current Population Survey (CPS) is a household sample survey of the civilian noninstitutionalized population conducted monthly by the U.S. Bureau of the Census. CPS provides estimates of employment, unemployment, and other characteristics of the general labor force, the population as a whole, and various other subgroups of the population.

The 1999 CPS sample is located in 754 sample areas, with coverage in every State and the District of Columbia. In an average month during 1999, the number of housing units or living quarters eligible for interview was about 50,000; of these about 7 percent were, for various reasons, unavailable for interview. In 1994 major changes were introduced, which included a complete redesign of the questionnaire and the introduction of computer-assisted interviewing for the entire survey. In addition, there were revisions to some of the labor force concepts and definitions.

The estimation procedure used involves inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and ratio adjustment. Beginning in 1994 new population controls based on the 1990 census adjusted for the estimated population undercount were utilized.

For more information, see: U.S. Bureau of the Census, *The Current Population Survey, Design, and Methodology*, Technical Paper 40, Washington: U.S. Government Printing Office, Jan. 1978; U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, Feb. 1994, vol 41 no 2 and Feb. 1995, vol 42 no 2, Washington: U.S. Government Printing Office, Feb. 1994 and Feb. 1995; or visit the CPS home page at www.bls.gov.

Population Estimates

National population estimates are derived by using decennial census data as benchmarks and data available from various agencies as follows: births and deaths (National Center for Health Statistics); immigrants (Immigration and Naturalization Service); Armed Forces (Department of Defense); net movement between Puerto Rico and the U.S. mainland (Puerto Rico Planning Board); and Federal employees abroad (Office of Personnel Management and Department of Defense). State estimates are based on similar data and also on a variety of data series, including school statistics from State departments of education and parochial school systems. Current estimates are consistent with official decennial census figures and do not reflect estimated decennial census underenumeration.

After decennial population censuses, intercensal population estimates for the preceding decade are prepared to replace postcensal estimates. Intercensal population estimates are more accurate than postcensal estimates because they take into account the census of population at the beginning and end of the decade. Intercensal estimates have been prepared for the 1960's, 1970's, and 1980's to correct the ''error of closure'' or difference between the estimated population at the end of the decade and the census count for that date. The ''error of closure'' at the national level was quite small during the 1960's (379,000). However, for the 1970's it amounted to almost 5 million and for the 1980's, 1.5 million.

For more information, see: U.S. Bureau of the Census, U.S. population estimated by age, sex, race, and Hispanic origin: 1990–96, release PPL-57, March 1997; or visit the Census Bureau home page: www.census.gov.

Department of Labor

Bureau of Labor Statistics

Annual Survey of Occupational Injuries and Illnesses

Since 1971 the Bureau of Labor Statistics (BLS) has conducted an annual survey of establishments in the private sector to collect statistics on occupational injuries and illnesses. The Survey of Occupational Injuries and Illnesses is a Federal/State program in which employer reports are collected from about 169,000 private industry establishments and processed by State agencies cooperating with BLS. Data for the mining industry and for railroad activities are provided by Department of Labor's Mine Safety and Health Administration and Department of Transportation's Federal Railroad Administration. Excluded from the survey are self-employed individuals; farmers with fewer than 11 employees; private households; Federal Government agencies; and employees in State and local government agencies. Establishments are classified in industry categories based on the 1987 Standard Industrial Classification (SIC) Manual, as defined by the Office of Management and Budget.

Survey estimates of occupational injuries and illnesses are based on a scientifically selected probability sample, rather than a census of the entire population. An independent sample is selected for each State and the District of Columbia that represents industries in that jurisdiction. BLS includes all the State samples in the national sample.

Establishments included in the survey are instructed in a mailed questionnaire to provide summary totals of all entries for the previous calendar year to its Log and Summary of Occupational Injuries and Illnesses (OSHA No. 200 form). Additionally, from the selected establishments, approximately 550,000 injuries and illnesses with days away from work are sampled in order to obtain demographic and detailed case characteristic information. An occupational injury is any injury, such as a cut, fracture, sprain, or amputation, that results from a work-related event or from a single instantaneous exposure in the work environment. An occupational illness is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to factors associated with employment. It includes acute and chronic illnesses or diseases that may be caused by inhalation, absorption, ingestion, or direct contact. Lost workday cases are cases that involve days away from work, or days of restricted work activity, or both. The response rate is about 92 percent.

The number of injuries and illnesses reported in any given year can be influenced by the level of economic activity, working conditions and work practices, worker experience and training, and the number of hours worked. Long-term latent illnesses caused by exposure to carcinogens are believed to be understated in the survey's illness measures. In contrast, new illnesses such as contact dermatitis and carpal tunnel syndrome are easier to relate directly to workplace activity.

For more information, see: Bureau of Labor Statistics, Occupational Injuries and Illnesses in 1998, Washington: U.S. Department of Labor, December 1999; or visit the BLS Internet site at stats.bls.gov/oshhome.htm.

Census of Fatal Occupational Injuries

The Census of Fatal Occupational Injuries (CFOI), administered by the Bureau of Labor Statistics (BLS) in conjunction with participating State agencies, compiles comprehensive and timely information on fatal work injuries occurring in the 50 States and the District of Columbia. To compile counts that are as complete as possible, the BLS census uses diverse sources to identify, verify, and profile fatal work injuries. Key information about each workplace fatality (occupation and other worker characteristics, equipment or machinery involved, and circumstances of the event) is obtained by cross-referencing the source records. Work relationship is verified for each work injury fatality by using at least two independent source documents. For a fatality to be included in the census, the decedent must have been employed (that is, working for pay, compensation, or profit) at the time of the event, engaged in a legal work activity, or present at the site of the incident as a requirement of his or her job. These criteria are generally broader than those used by Federal and State agencies administering specific laws and regulations. Fatalities that occur during a person's commute to or from work are excluded from the census counts.

Data for the CFOI are compiled from various Federal, State, and local administrative sources—including death certificates, workers' compensation reports and claims, reports to various regulatory agencies, medical examiner reports, and police reports—as well as news reports. Diverse sources are used because studies have shown that no single source captures all job-related fatalities. Source documents are matched so that each fatality is counted only once. To ensure that a fatality occurred while the decedent was at work, information is verified from two or more independent source documents or from a source document and a follow-up questionnaire.

States may identify additional fatal work injuries after data collection closeout for a reference year. In addition, other fatalities excluded from the published count because of insufficient information to determine work relationship may subsequently be verified as work related. States have up to one year to update their initial published State counts. Occupational fatalities and rates shown in this report are revised, except for the most recent year, and may differ from original data published by CFOI. Increases in the published counts based on additional information have averaged less than 100 fatalities per year or less than 1.5 percent of the total.

For more information, see: Bureau of Labor Statistics, *Fatal Workplace Injuries in 1997: A Collection of Data and Analysis. Report 934*, Washington: U.S. Department of Labor, July 1999; or visit the CFOI Internet site at www.bls.gov/oshfat1.htm.

Consumer Price Index

The Consumer Price Index (CPI) is a monthly measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The all-urban index (CPI-U) introduced in 1978 covers residents of metropolitan areas as well as residents of urban parts of nonmetropolitan areas (about 87 percent of the U. S. population in 1990).

In calculating the index, price changes for the various items in each location were averaged together with weights that represent their importance in the spending of all urban consumers. Local data were then combined to obtain a U.S. city average.

The index measures price changes from a designated reference date, 1982–84, which equals 100. An increase of 22 percent, for example, is shown as 122. This change can also be expressed in dollars as follows: the price of a base period ‘‘market basket’’ of goods and services bought by all urban consumers has risen from $10 in 1982–84 to $16.30 in 1998.

The current revision of CPI, projected to be completed in 2000, reflects spending patterns based on the Survey of Consumer Expenditures from 1993 to 1995, the 1990 Census of Population, and the ongoing Point-of-Purchase Survey. Using an improved sample design, prices for the goods and services required to calculate the index are collected in urban areas throughout the country and from retail and service establishments. Data on rents are collected from tenants of rented housing and residents of owner-occupied housing units. Food, fuels, and other goods and services are priced monthly in urban locations. Price information is obtained through visits or calls by trained BLS field representatives using computer-assisted telephone interviews.

The earlier 1987 revision changed the treatment of health insurance in the cost-weight definitions for medical care items. This change has no effect on the final index result but provides a clearer picture of the role of health insurance in the CPI. As part of the revision, three new indexes have been created by separating previously combined items, for example, eye care from other professional services and inpatient and outpatient treatment from other hospital and medical care services.

Effective January 1997 the hospital index was restructured by combining the three categories—room, inpatient services and outpatient services—into one category, hospital services. Differentiation between inpatient and outpatient and among service types are under this broad category. In addition new procedures for hospital data collection identify a payor, diagnosis, and the payor’s reimbursement arrangement from selected hospital bills.

A new geographic sample and item structure were introduced in January 1998 and expenditure weights were updated to 1993–95. Pricing of a new housing sample using computer-assisted data collection started in June 1998. In January 1999 the index will be rebased from the 1982–84 time period to 1993–95.

For more information, see: Bureau of Labor Statistics, *Handbook of Methods*, BLS Bulletin 2490, U.S. Department of Labor, Washington, Apr. 1997; IK Ford and P Sturm. CPI revision provides more accuracy in the medical care services component, *Monthly Labor Review*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, Apr. 1988; or visit the BLS home page at www.bls.gov.

Employment and Earnings

The Division of Monthly Industry Employment Statistics and the Division of Employment and Unemployment Analysis of the Bureau of Labor Statistics publish data on employment and earnings. The data are collected by the U.S. Bureau of the Census, State Employment Security Agencies, and State Departments of Labor in cooperation with BLS.

The major data source is the Current Population Survey (CPS), a household interview survey conducted monthly by the U.S. Bureau of the Census to collect labor force data for BLS. CPS is described separately in this appendix. Data based on establishment records are also compiled each month from mail questionnaires by BLS, in cooperation with State agencies.

For more information, see: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, Jan. 2000, vol 47 no 1, Washington: U.S. Government Printing Office. Jan. 2000.

Employer Costs for Employee Compensation

Employer costs for employee compensation cover all occupations in private industry, excluding farms and households and State and local governments. These cost levels are published once a year with the payroll period including March 12th as the reference period.

The cost levels are based on compensation cost data collected for the Bureau of Labor Statistics Employment Cost Index (ECI), released quarterly. Employee Benefits Survey (EBS) data are jointly collected with the ECI data. Cost data were collected from the ECI's March 1993 sample that consisted of about 23,000 occupations within 4,500 sample establishments in private industry and 7,000 occupations within 1,000 establishments in State and local governments. The sample establishments are classified industry categories based on the 1987 Standard Industrial Classification (SIC) system, as defined by the U.S. Office of Management and Budget. Within an establishment, specific job categories are selected to represent broader major occupational groups such as professional specialty and technical occupations. The cost levels are calculated with current employment weights each year.

For more information, see: U.S. Department of Labor, Bureau of Labor Statistics, *Employment Cost Indexes and Levels, 1975–95*, Bulletin 2466, Oct. 1995.

Department of Veterans Affairs

Data are obtained from the Department of Veterans Affairs (VA) administrative data systems. These include budget, patient treatment, patient census, and patient outpatient-clinic information. Data from the three patient files are collected locally at each VA medical center and are transmitted to the national databank at the VA Austin Automated Center where they are stored and used to provide nationwide statistics, reports, and comparisons.

The Patient Treatment File

The patient treatment file (PTF) collects data, at the time of the patient's discharge, on each episode of inpatient care provided to patients at VA hospitals, VA nursing homes, VA domiciliaries, community nursing homes, and other non-VA facilities. The PTF record contains the scrambled social security number, dates of inpatient treatment, date of birth, State and county of residence, type of disposition, place of disposition after discharge, as well as the ICD–9–CM diagnostic and procedure or operative codes for each episode of care.

The Patient Census File

The patient census file collects data on each patient remaining in a VA medical facility at midnight on a selected date of each year, normally September 30. This file includes patients admitted to VA hospitals, VA nursing homes, and VA domiciliaries. The census record includes information similar to that reported in the patient treatment file record.

The Outpatient Clinic File

The outpatient clinic file (OPC) collects data on each instance of medical treatment provided to a veteran in an outpatient setting. The OPC record includes the age, scrambled social security number, State and county of residence, VA eligibility code, clinic(s) visited, purpose of visit, and the date of visit for each episode of care.

For more information, write: Department of Veterans Affairs, National Center for Veteran Analysis and Statistics, Biometrics Division 008Cl2, 810 Vermont Ave., NW, Washington, DC 20420; or visit the VA home page at www.va.gov.

Environmental Protection Agency

Aerometric Information Retrieval System

The Environmental Protection Agency's Aerometric Information Retrieval System (AIRS) compiles data on ambient air levels of particulate matter smaller than 10 microns (PM-10), lead, carbon monoxide, sulphur dioxide, nitrogen dioxide, and tropospheric ozone. These pollutants were identified in the Clean Air Act of 1970 and in its 1977 and 1990 amendments because they pose significant threats to public health. The National Ambient Air Quality Standards (NAAQS) define for each pollutant the maximum concentration level (micrograms per cubic meter) that cannot be exceeded during specific time intervals. Data shown in this publication reflect attainment of NAAQS during a 12-month period based on analysis using county level air-monitoring data from AIRS and population data from the Bureau of the Census.

Data are collected at State and local air pollution monitoring sites. Each site provides data for one or more of the six pollutants. The number of sites has varied, but generally increased over the years. In 1993 there were 4,469 sites, 4,668 sites in 1994, and 4,800 sites in 1995. The monitoring sites are located primarily in heavily populated urban areas. Air quality for less populated areas is assessed through a combination of data from supplemental monitors and air pollution models.

For more information, see: Environmental Protection Agency, *National Air Quality and Emissions Trend Report, 1994*, EPA-454/R-95-014, Research Triangle Park, NC, Oct. 1995, or write: Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, NC 27711. For additional information on this measure and similar measures used to track the Healthy People 2000 Objectives and Health Status Indicators, see: National Center for Health Statistics, *Monitoring Air Quality in Healthy People 2000*, Statistical Notes, No. 9. Hyattsville, MD: 1995; or visit the EPA AIRS home page at www.epa.gov/airs/.

United Nations

Demographic Yearbook

The Statistical Office of the United Nations prepares the *Demographic Yearbook*, a comprehensive collection of international demographic statistics.

Questionnaires are sent annually and monthly to more than 220 national statistical services and other appropriate government offices. Data forwarded on these questionnaires are supplemented, to the extent possible, by data taken from official national publications and by correspondence with the national statistical services. To ensure comparability, rates, ratios, and percents have been calculated in the statistical office of the United Nations.

Lack of international comparability between estimates arises from differences in concepts, definitions, and time of data collection. The comparability of population data is affected by several factors, including (a) the definitions of the total population, (b) the definitions used to classify the population into its urban and rural components, (c) the difficulties relating to age reporting, (d) the extent of over- or underenumeration, and (e) the quality of population estimates. The completeness and accuracy of vital statistics data also vary from one country to another. Differences in statistical definitions of vital events may also influence comparability.

International demographic trend data are available from the United Nations on a CD-ROM entitled United Nations Demographic Yearbook: Historical

Supplement, 1948–97. First Issue DYB-CD, in press. United Nations publication sales number E/F.99.XIII.12.

For more information, see: United Nations, *Demographic Yearbook 1996*, United Nations, New York, 1998; or visit the United Nations home page at www.un.org or their Web site locator at www.unsystem.org.

World Health Statistics Annual

The World Health Organization (WHO) prepares the *World Health Statistics Annual*, an annual volume of information on vital statistics and causes of death designed for use by the medical and public health professions. Each volume is the result of a joint effort by the national health and statistical administrations of many countries, the United Nations, and WHO. United Nations estimates of vital rates and population size and composition, where available, are reprinted directly in the *Statistics Annual*. For those countries for which the United Nations does not prepare demographic estimates, primarily smaller populations, the latest available data reported to the United Nations and based on reasonably complete coverage of events are used.

Information published on late fetal and infant mortality is based entirely on official national data either reported directly or made available to WHO.

Selected life table functions are calculated from the application of a uniform methodology to national mortality data provided to WHO, in order to enhance their value for international comparisons. The life table procedure used by WHO may often lead to discrepancies with national figures published by countries, due to differences in methodology or degree of age detail maintained in calculations.

The international comparability of estimates published in the *World Health Statistics Annual* is affected by the same problems discussed above for the *Demographic Yearbook*. Cross-national differences in statistical definitions of vital events, in the completeness and accuracy of vital statistics data, and in the comparability of population data are the primary factors affecting comparability.

For more information, see: World Health Organization, *World Health Statistics Annual 1996*, World Health Organization, Geneva, 1998; or visit the WHO home page at www.who.org.

Alan Guttmacher Institute

Abortion Survey

The Alan Guttmacher Institute (AGI) conducts an annual survey of abortion providers. Data are collected from hospitals, nonhospital clinics, and physicians identified as providers of abortion services. A universal survey of 3,092 hospitals, nonhospital clinics, and individual physicians was compiled. To assess the completeness of the provider and abortion counts, supplemental surveys were conducted of a sample of obstetrician-gynecologists and a sample of hospitals (not in original universe) that were identified as providing abortion services through the American Hospital Association Survey.

The number of abortions estimated by AGI through the mid to late 1980's was about 20 percent more than the number reported to the Centers for Disease Control and Prevention (CDC). Since 1989 the AGI estimates have been about 12 percent higher than those reported by CDC.

For more information, write: The Alan Guttmacher Institute, 120 Wall Street, New York, NY 10005; or visit AGI's home page at www.agi-usa.org.

American Association of Colleges of Osteopathic Medicine

The American Association of Colleges of Osteopathic Medicine (AACOM) compiles data on various aspects of osteopathic medical education for distribution to the profession, the government, and the public. Questionnaires are sent annually to all schools of osteopathic medicine requesting information on characteristics of applicants and students, curricula, faculty, grants, contracts, revenues, and expenditures. The response rate is 100 percent.

For more information, see: *Annual Statistical Report, 1998*, American Association of Colleges of Osteopathic Medicine: Rockville, MD, 1998; or visit the AACOM home page at www.aacom.org.

American Association of Colleges of Pharmacy

The American Association of Colleges of Pharmacy (AACP) compiles data on the Colleges of Pharmacy, including information on student enrollment and types of degrees conferred. Data are collected through an annual survey; the response rate is 100 percent.

For further information, see: *Profile of Pharmacy Students*. The American Association of Colleges of Pharmacy, 1426 Prince Street, Alexandria, VA; or visit the AACP home page at www.aacp.org.

American Association of Colleges of Podiatric Medicine

The American Association of Colleges of Podiatric Medicine (AACPM) compiles data on the Colleges of Podiatric Medicine, including information on the schools and enrollment. Data are collected annually through written questionnaires. The response rate is 100 percent.

For further information, write: The American Association of Colleges of Podiatric Medicine, 1350 Piccard Drive, Suite 322, Rockville, MD 20850–4307; or visit the AACPM home page at www.aacpm.org.

American Dental Association

The Division of Educational Measurement of the American Dental Association (ADA) conducts annual surveys of predoctoral dental educational institutions. The questionnaire, mailed to all dental schools, collects information on student characteristics, financial management, and curricula.

For more information, see: American Dental Association, *1997–98 Survey of Predoctoral Dental Educational Institutions*. Chicago, 1998; or visit the ADA home page at www.ada.org.

American Hospital Association

Annual Survey of Hospitals

Data from the American Hospital Association (AHA) annual survey are based on questionnaires sent to all hospitals, AHA-registered and nonregistered, in the United States and its associated areas. U.S. government hospitals located outside the United States were excluded. Questionnaires were mailed to all hospitals on AHA files. For nonreporting hospitals and for the survey questionnaires of reporting hospitals on which some information was missing, estimates were made for all data except those on beds, bassinets, and facilities. Data for beds and bassinets of nonreporting hospitals were based on the most recent information available from those hospitals. Facilities and services and inpatient-service area data include only reporting hospitals and, therefore, do not include estimates.

Estimates of other types of missing data were based on data reported the previous year, if available. When unavailable, the estimates were based on data furnished by reporting hospitals similar in size, control, major service provided, length of stay, and geographic and demographic characteristics.

For more information on the AHA Annual Survey of Hospitals, see: American Hospital Association, (Health Forum), *Hospital Statistics, 2000 ed*. Chicago, 1999; or visit an AHA page at www.aha.org.

American Medical Association

Physician Masterfile

A masterfile of physicians has been maintained by the American Medical Association (AMA) since 1906. The Physician Masterfile contains data on almost every physician in the United States, members and nonmembers of AMA, and on those graduates of American medical schools temporarily practicing overseas. The file also includes graduates of international medical schools who are in the United States and meet education standards for primary recognition as physicians.

A file is initiated on each individual upon entry into medical school or, in the case of international graduates, upon entry into the United States. Between 1969–85 a mail questionnaire survey was conducted every 4 years to update the file information on professional activities, self-designated area of specialization, and present employment status. Since 1985 approximately one-third of all physicians are surveyed each year.

For more information on the AMA Physician Masterfile, see: Division of Survey and Data Resources, American Medical Association, *Physician Characteristics and Distribution in the U.S.*, 2000–2001 ed. Chicago, 1999; or visit the AMA home page at www.ama-assn.org.

Annual Census of Hospitals

From 1920 to 1953 the Council on Medical Education and Hospitals of the AMA conducted annual censuses of all hospitals registered by AMA.

In each annual census, questionnaires were sent to hospitals asking for the number of beds, bassinets, births, patients admitted, average census of patients, lists of staff doctors and interns, and other information of importance at the particular time. Response rates were always nearly 100 percent.

The community hospital data from 1940 and 1950 presented in this report were calculated using published figures from the AMA Annual Census of Hospitals. Although the hospital classification scheme used by AMA in published reports is not strictly comparable with the definition of community hospitals, methods were employed to achieve the greatest comparability possible.

For more information on the AMA Annual Census of Hospitals, see: American Medical Association, Hospital service in the United States, Journal of the American Medical Association, 16(11):1055–1144. 1941; or visit the AMA home page at www.ama-assn.org.

Association of American Medical Colleges

The Association of American Medical Colleges (AAMC) collects information on student enrollment in medical schools through the annual Liaison Committee on Medical Education questionnaire, the fall enrollment questionnaire, and the American Medical College Application Service (AMCAS) data system. Other data sources are the institutional profile system, the premedical students questionnaire, the minority student opportunities in medicine questionnaire, the faculty roster system, data from the Medical College Admission Test, and one-time surveys developed for special projects.

For more information, see: Association of American Medical Colleges, *Statistical Information Related to Medical Education*, Washington. 1999, or visit the AAMC home page at www.aamc.org.

Association of Schools and Colleges of Optometry

The Association of Schools and Colleges of Optometry (ASCO) compiles data on the various aspects of optometric education including data on schools and enrollment. Questionnaires are sent annually to all the schools and colleges of optometry. The response rate is 100 percent.

For further information, write: Annual Survey of Optometric Educational Institutions, Association of Schools and Colleges of Optometry, 6110 Executive Blvd., Suite 690, Rockville, MD 20852; or visit the ASCO home page at www.opted.org.

Association of Schools of Public Health

The Association of Schools of Public Health (ASPH) compiles data on the 29 schools of public health in the United States and Puerto Rico. Questionnaires are sent annually to all member schools, and the response rate is 100 percent.

Unlike health professional schools that emphasize specific clinical occupations, schools of public health offer study in specialty areas such as biostatistics, epidemiology, environmental and occupational health, health administration, health planning, nutrition, maternal and child health, social and behavioral sciences, and other population-based sciences.

For further information, write: Association of Schools of Public Health, 1660 L Street, NW, Suite 204, Washington, D.C. 20036–5603; or visit the ASPH home page at www.asph.org.

InterStudy

National Health Maintenance Organization Census

From 1976 to 1980 the Office of Health Maintenance Organizations conducted a census of health maintenance organizations (HMO's). Since 1981 InterStudy has conducted the census. A questionnaire is sent to all HMO's in the United States asking for updated enrollment, profit status, and Federal qualification status. New HMO's are also asked to provide information on model type. When necessary, information is obtained, supplemented, or clarified by telephone. For nonresponding HMO's State-supplied information or the most current available data are used.

In 1985 a large increase in the number of HMO's and enrollment was partly attributable to a change in the categories of HMO's included in the census: Medicaid-only and Medicare-only HMO's have been added. Also component HMO's, which have their own discrete management, can be listed separately; whereas, previously the oldest HMO reported for all of its component or expansion sites, even when the components had different operational dates or were different model types.

For further information, see: *The InterStudy Competitive Edge,*. InterStudy Publications, St. Paul, MN, 1999; or visit the InterStudy home page at www.hmodata.com.

National League for Nursing

The division of research of the National League for Nursing (NLN) conducts The Annual Survey of Schools of Nursing in October of each year. Questionnaires are sent to all graduate nursing programs (master's and doctoral), baccalaureate programs designed exclusively for registered nurses, basic registered nursing programs (baccalaureate, associate degree, and diploma), and licensed practical nursing programs. Data on enrollments, first-time admissions, and graduates are completed for all nursing education programs. Response rates of approximately 80 percent are achieved for other areas of inquiry.

For more information, see: National League for Nursing, *Nursing Data Review*, New York, 1998; or visit the NLN home page at www.nln.org.

Glossary

The glossary is an alphabetical listing of terms used in *Health, United States*. It includes cross references to related terms and synonyms. It also contains the standard populations used for age adjustment and *International Classification of Diseases* (ICD) codes for cause of death and diagnostic and procedure categories. New standards for presenting Federal data on race and ethnicity are described under Race.

Abortion—The Centers for Disease Control and Prevention's (CDC) surveillance system counts legal induced abortions only. For surveillance purposes, legal abortion is defined as a procedure performed by a licensed physician or someone acting under the supervision of a licensed physician to induce the termination of a pregnancy.

Acquired immunodeficiency syndrome (AIDS)—All 50 States and the District of Columbia report AIDS cases to CDC using a uniform surveillance case definition and case report form. The case reporting definitions were expanded in 1985 (*MMWR* 1985; 34:373–5); 1987 (*MMWR* 1987; 36 (supp. no. 1S): 1S-15S); 1993 for adults and adolescents (*MMWR* 1992; 41 (no. RR-17): 1–19); and 1994 for pediatric cases (*MMWR* 1994; 43 (no. RR-12): 1–19). The revisions incorporated a broader range of AIDS-indicator diseases and conditions and used HIV diagnostic tests to improve the sensitivity and specificity of the definition. The 1993 expansion of the case definition caused a temporary distortion of AIDS incidence trends. In 1995 new treatments for HIV and AIDS (protease inhibitors) were approved. These therapies have prevented or delayed the onset of AIDS and premature death among many HIV-infected persons. AIDS incidence data are published semiannually by CDC in HIV/AIDS Surveillance Report. See related *Human immunodeficiency virus (HIV) infection*.

Active physician—See *Physician*.

Activities of daily living (ADL)—Activities of daily living are activities related to personal care and include bathing or showering, dressing, getting in or out of bed or a chair, using the toilet, and eating. If a sample person from the Medicare Current Beneficiary Survey had any difficulty performing an activity by himself or herself and without special equipment, or did not perform the activity at all because of health problems, the person was categorized as having a limitation in that activity. The limitation may have been temporary or chronic at the time of the interview. Sample persons who were administered a community interview answered health status and functioning questions themselves if able to do so. A proxy, such as a nurse, answered questions about the sample person's health status and functioning for long-term care facility interview. In the National Health Interview Survey respondents were asked about needing the help of another person with personal care needs because of a physical, mental, or emotional problem. Persons are considered to have an ADL limitation if the causal condition for the ADL limitation is chronic. See related *Instrumental activities of daily living (IADL)*; *Limitation of activity*.

Addition—An addition to a psychiatric organization is defined by the Center for Mental Health Services as a new admission, a readmission, a return from long-term leave, or a transfer from another service of the same organization or another organization. See related *Mental health disorder; Mental health organization; Mental health service type*.

Admission—The American Hospital Association defines admissions as patients, excluding newborns, accepted for inpatient services during the survey reporting period. See related *Days of care; Discharge; Patient*.

Age—Age is reported as age at last birthday, that is, age in completed years, often calculated by subtracting date of birth from the reference date, with the reference date being the date of the examination, interview, or other contact with an individual.

Age adjustment—Age adjustment, using the direct method, is the application of age-specific rates in a population of interest to a standardized age distribution in order to eliminate differences in observed rates that result from age differences in population composition. This adjustment is usually done when comparing two or more populations at one point in time or one population at two or more points in time.

Age-adjusted rates are calculated by the direct method as follows:

$$\sum_{i=1}^{n} r_i \times (p_i / P)$$

where r_i = age-specific rates for the population of interest

p_i = standard population in age group i

$P = \sum_{i=1}^{n} p_i$ for the age groups that comprise the age range of the rate being age adjusted

n = total number of age groups over the age range of the age-adjusted rate

Age adjustment by the direct method requires use of a standard age distribution. Historically, NCHS and the States used a standard distribution for mortality statistics based on the 1940 U.S. population. Morbidity statistics were age adjusted to different standards including 1970 and 1980. Findings from a Department of Health and Human Services workshop on age adjustment recommended that a new standard based on the year 2000 projected resident population be implemented beginning with data year 1999 for mortality statistics (Anderson RN, Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National vital statistics reports; vol 47 no 3. Hyattsville, Maryland: National Center for Health Statistics. 1998. This report is available through the NCHS homepage at: www.cdc.gov/nchs. The year 2000 projected resident population is available through the Bureau of the Census homepage at: www.census.gov/prod/1/pop/p25-1130/.) In *Health, United States* the new standard will be used for all data systems and implementation will be phased in by data system. In this edition of *Health, United States,* estimates from the National Health Interview Survey, the National Ambulatory Medical Care Survey, the National Hospital Ambulatory Medical Care Survey, the National Nursing Home Survey (resident rates table), and the National Home and Hospice Care Survey are age adjusted to the year 2000 standard.

Table I. Standard million age distribution used to adjust death rates to the U.S. population in 1940

Age	*Standard million*
All ages	1,000,000
Under 1 year	15,343
1–4 years	64,718
5–14 years	170,355
15–24 years	181,677
25–34 years	162,066
35–44 years	139,237
45–54 years	117,811
55–64 years	80,294
65–74 years	48,426
75–84 years	17,303
85 years and over	2,770

Mortality data—Death rates are age adjusted to the U.S. standard million population (relative age distribution of 1940 enumerated population of the United States totaling 1,000,000) (table I). Age-adjusted rates are calculated using age-specific death rates per 100,000 population rounded to 1 decimal place. Adjustment is based on 11 age groups with 2 exceptions. First, age-adjusted death rates for black males and black females in 1950 are based on nine age groups, with under 1 year and 1–4 years of age combined as one group and 75–84 years and 85 years of age and over combined as one group. Second, age-adjusted death rates by educational attainment for the age group 25–64 years are based on four 10-year age groups (25–34 years, 35–44 years, 45–54 years, and 55–64 years).

The rate for years of potential life lost (YPLL) before age 75 years is age adjusted to the U.S. standard million population (table I) and is based on eight age groups (under 1 year, 1–14 years, 15–24 years, and 10-year age groups through 65–74 years).

Maternal mortality rates for Complications of pregnancy, childbirth, and the puerperium, ICD-9 codes 630–676, are calculated as the number of deaths per 100,000 live births. These rates are age adjusted to the 1970 distribution of live births by mother's age in the United States as shown in table II. See related *Rate: Death and related rates; Years of potential life lost.*

Table II. Numbers of live births and mother's age groups used to adjust maternal mortality rates to live births in the United States in 1970

Mother's age	*Number*
All ages	3,731,386
Under 20 years	656,460
20–24 years	1,418,874
25–29 years	994,904
30–34 years	427,806
35 years and over	233,342

SOURCE: U.S. Bureau of the Census: Population estimates and projections. *Current Population Reports.* Series P-25, No. 499. Washington. U.S. Government Printing Office, May 1973.

National Health Interview Survey—Beginning with *Health, United States 2000* data from the National Health Interview Survey (NHIS) are age adjusted to the year 2000 projected resident population (table III). Information on the age groups utilized in the age adjustment procedure is contained in the footnotes on the relevant tables. In editions before *Health, United States 2000* data from NHIS were age adjusted to the 1970 civilian noninstitutionalized population. The 1970 civilian noninstitutionalized population was derived as follows: Civilian noninstitutionalized population = civilian population on July 1, 1970 - institutionalized population. Institutionalized population = (1 - proportion of total population not institutionalized on April 1, 1970) x total population on July 1, 1970.

Health Care Surveys—Data from the National Hospital Discharge Survey (NHDS) and the National Survey of Ambulatory Surgery (NSAS) are age adjusted to the 1970 civilian noninstitutionalized population using five age groups: under 15 years, 15–44 years, 45–64 years, 65–74 years, and 75 years and over (table III). Data from the National Ambulatory Medical Care Survey (NAMCS), the National Hospital Ambulatory Medical Care Survey (NHAMCS), the National Nursing Home Survey (NNHS) (resident rates table), and the National Home and Hospice Care Survey (NHHCS) are age adjusted to the year 2000 standard. Information on the age groups utilized in the age adjustment procedure is contained in the footnotes on the relevant tables.

Table III. Populations and age groups used to age adjust NCHS survey data

Population, survey, and age	*Number in thousands*
U.S. civilian noninstitutionalized population in 1970 NHDS and NSAS	
All ages	199,584
Under 15 years	57,745
15–44 years	81,189
45–64 years	41,537
65 years and over	19,113
65–74 years	12,224
75 years and over	6,889
U.S. resident population in 1980 NHES and NHANES	
6–11 years	20,834
6–8 years	9,777
9–11 years	11,057
12–17 years	23,410
12–14 years	10,945
15–17 years	12,465
20–74 years	144,120
20–34 years	58,401
35–44 years	25,635
45–54 years	22,800
55–64 years	21,703
65–74 years	15,581
U.S. resident population projected in 2000 NHIS, NAMCS, NHAMCS, NHHCS, and NNHS	
All ages	274,634
18 years and over	203,851
25 years and over	117,593
65 years and over	34,710
Under 18 years	70,783
2–17 years	63,229
18–44 years	108,150
25–34 years	37,233
35–44 years	44,659
45–64 years	60,991
45–54 years	37,030
55–64 years	23,961
65–74 years	18,136
75 years and over	16,574

SOURCES: U.S. Bureau of Census: *Current Population Reports*. P25–721, Estimates of the Population of the United States by Age, Sex, and Race: 1970 to 1977; P25-1095, U.S. Population Estimates by Age, Sex, Race, Hispanic Origin: 1980 to 1991, table 1; P25-1130, Population Projections of the United States by Age, Sex, Race, and Hispanic Origin, table 2. U.S. Government Printing Office, Washington, DC, 1978; 1993; 1996.

National Health and Nutrition Examination Survey—Data from the National Health Examination Survey (NHES) and the National Health and Nutrition Examination Survey (NHANES) are age adjusted to the 1980 U.S. resident population using five age groups for adults: 20–34 years, 35–44 years, 45–54 years, 55–64 years, and 65–74 years (table III). Data for children aged 6–11 years and 12–17 years are age adjusted within each group using two subgroups: 6–8 years and 9–11 years; and 12–14 years and 15–17 years (table III).

AIDS—See *Acquired immunodeficiency syndrome*.

Air quality standards—See *National ambient air quality standards*.

Air pollution—See *Pollutant*.

Alcohol abuse treatment clients—See *Substance abuse treatment clients*.

Ambulatory care—Health care provided to persons without their admission to a health facility.

Ambulatory surgery—According to the National Survey of Ambulatory Surgery (NSAS), ambulatory surgery refers to previously scheduled surgical and nonsurgical procedures performed on an outpatient basis in a hospital or freestanding ambulatory surgery center's general or main operating rooms, satellite operating rooms, cystoscopy rooms, endoscopy rooms, cardiac catheterization labs, and laser procedure rooms. Procedures performed in locations dedicated exclusively to dentistry, podiatry, abortion, pain block, or small procedures were not included. In NSAS, data on up to six surgical and nonsurgical procedures are collected and coded. See related *Outpatient surgery; Procedure*.

Average annual rate of change (percent change)—In this report average annual rates of change or growth rates are calculated as follows:

$$[(P_n / P_o)^{1/N} - 1] \times 100$$

where P_n = later time period
P_o = earlier time period
N = number of years in interval.

This geometric rate of change assumes that a variable increases or decreases at the same rate during each year between the two time periods.

Average length of stay—In the National Health Interview Survey, the average length of stay per discharged patient is computed by dividing the total number of hospital days for a specified group by the total number of discharges for that group. Similarly, in the National Hospital Discharge Survey, the average length of stay is computed by dividing the total number of days of care, counting the date of admission but not the date of discharge, by the number of patients discharged. The American Hospital Association computes the average length of stay by dividing the number of inpatient days by the number of admissions. See related *Days of care; Discharge; Patient*.

Bed—Any bed that is set up and staffed for use by inpatients is counted as a bed in a facility. For the American Hospital Association the count is the average number of beds, cribs, and pediatric bassinets during the entire reporting period. In the Health Care Financing Administration's Online Survey Certification and Reporting database, all beds in certified facilities are counted on the day of certification inspection. The World Health Organization defines a hospital bed as one regularly maintained and staffed for the accommodation and full-time care of a succession of inpatients and situated in a part of the hospital where continuous medical care for inpatients is provided. The Center for Mental Health Services counts the number of beds set up and staffed for use in inpatient and residential treatment services on the last day of the survey reporting period. See related *Hospital; Mental health organization; Mental health service type; Occupancy rate*.

Birth cohort—A birth cohort consists of all persons born within a given period of time, such as a calendar year.

Birth rate—See *Rate: Birth and related rates*.

Birthweight—The first weight of the newborn obtained after birth. Low birthweight is defined as less than 2,500 grams or 5 pounds 8 ounces. Very low birthweight is defined as less than 1,500 grams or 3 pounds 4 ounces. Before 1979 low birthweight was defined as 2,500 grams or less and very low birthweight as 1,500 grams or less.

Body mass index (BMI)—BMI is a measure that adjusts body weight for height. It is calculated as weight in kilograms divided by height in meters squared. Sex- and age- specific cut points of BMI are used in this book in the definition of overweight for children and adolescents. Healthy weight for adults is defined as a BMI of 19 to less than 25; overweight, as greater than or equal to a BMI of 25; and obesity, as greater than or equal to a BMI of 30. BMI cut points are defined in the Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 1995. U.S. Department of Agriculture, Agricultural Research Service, Dietary Guidelines Advisory Committee. 1995. pp.23–4; NHLBI Obesity Education Initiative Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults—The Evidence Report. Obes Res 1998;6:51S–209S or access on the internet at www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm; and in the Healthy People 2010 Objectives: Draft for Public Comment. September 15, 1998. Objectives 2.1, 2.2, and 2.3.

Cause of death—For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on information reported on the death certificate and utilizing the international rules for selecting the underlying cause of death from the reported conditions. Beginning with 1979 the *International Classification of Diseases, Ninth Revision* (ICD-9) has been used for coding cause of death. Data from earlier time periods were coded using the appropriate revision of the ICD for that time period. (See tables IV and V.) Changes in classification of causes of death in successive revisions of the ICD may introduce discontinuities in cause-of-death statistics over time. For further discussion, see Technical Appendix in National Center for Health Statistics: *Vital Statistics of the United States, 1995, Volume II, Mortality, Part A* available on the NCHS web site at www.cdc.gov/nchs/about/major/dvs/mortdata.htm. See related *Human immunodeficiency virus infection; International Classification of Diseases, Ninth Revision*.

Table IV. Revision of the *International Classification of Diseases*, according to year of conference by which adopted and years in use in the United States

Revision of the International Classification of Diseases	Year of conference by which adopted	Years in use in United States
First	1900	1900–1909
Second	1909	1910–1920
Third	1920	1921–1929
Fourth	1929	1930–1938
Fifth	1938	1939–1948
Sixth	1948	1949–1957
Seventh	1955	1958–1967
Eighth	1965	1968–1978
Ninth	1975	1979–1998

Cause-of-death ranking—Cause-of-death ranking for infants is based on the List of 61 Selected Causes of Infant Death and HIV infection (ICD-9 Nos. *042-*044). Cause-of-death ranking for other ages is based on the List of 72 Selected Causes of Death, HIV infection, and Alzheimer's disease. The List of 72 Selected Causes of Death was adapted from one of the special lists for mortality tabulations recommended by the World Health Organization for use with the *Ninth Revision of the International Classification of Diseases*. Two group titles—Certain conditions originating in the perinatal period and Symptoms, signs, and ill-defined conditions—are not ranked from the List of 61 Selected Causes of Infant Death; and two group titles—Major cardiovascular diseases and Symptoms, signs, and ill-defined conditions— are not ranked from the List of 72 Selected Causes. In addition, category titles that begin with the words ''Other'' and ''All other'' are not ranked. The remaining category titles are ranked according to number of deaths to determine the leading causes of death. When one of the titles that represent a subtotal is ranked (for example, unintentional injuries), its component parts are not ranked (in this case, motor vehicle-related injuries and all other unintentional injuries). See related *International Classification of Diseases, Ninth Revision*.

Civilian noninstitutionalized population; Civilian population—See *Population*.

Cocaine-related emergency department episodes—The Drug Abuse Warning Network monitors selected adverse medical consequences of cocaine and other drug abuse episodes by measuring contacts with hospital emergency departments. Contacts may be for drug overdose, unexpected drug reactions, chronic

Table V. Cause-of-death codes, according to applicable revision of *International Classification of Diseases*

	Code numbers			
Cause of death	*Sixth Revision*	*Seventh Revision*	*Eighth Revision*	*Ninth Revision*
Natural causes	. . .	. . .	. . .	001–799
Communicable diseases	. . .	. . .	. . .	001–139, 460–466, 480–487
Chronic and other noncommunicable diseases	. . .	. . .	. . .	140–459, 467–479, 488–799
Injury and adverse effects/External causes	. . .	. . .	. . .	E800–E999
Meningococcal infection	. . .	. . .	. . .	036
Septicemia	. . .	. . .	. . .	038
Human immunodeficiency virus infection[1]	. . .	. . .	. . .	*042–*044
Malignant neoplasms	140–205	140–205	140–209	140–208
Colorectal	153–154	153–154	153–154	153, 154
Peritoneum and pleura	. . .	. . .	158, 163.0	158, 163
Respiratory system	160–164	160–164	160–163	160–165
Trachea, bronchus and lung	. . .	. . .	. . .	162
Breast	170	170	174	174–175
Prostate	177	177	185	185
Benign neoplasms	. . .	. . .	. . .	210–239
Diabetes mellitus	260	260	250	250
Anemias	. . .	. . .	. . .	280–285
Meningitis	. . .	. . .	. . .	320–322
Alzheimer's disease	. . .	. . .	. . .	331.0
Diseases of heart	410–443	400–402, 410–443	390–398, 402, 404, 410–429	390–398, 402, 404–429
Ischemic heart disease	. . .	. . .	. . .	410–414
Cerebrovascular diseases	330–334	330–334	430–438	430–438
Atherosclerosis	. . .	. . .	. . .	440
Pneumonia and influenza	480–483, 490–493	480–483, 490–493	470–474, 480–486	480–487
Chronic obstructive pulmonary diseases	241, 501, 502, 527.1	241, 501, 502, 527.1	490–493, 519.3	490–496
Coalworkers' pneumoconiosis	. . .	. . .	515.1	500
Asbestosis	. . .	. . .	515.2	501
Silicosis	. . .	. . .	515.0	502
Chronic liver disease and cirrhosis	581	581	571	571
Nephritis, nephrotic syndrome, and nephrosis	. . .	. . .	. . .	580–589
Complications of pregnancy, childbirth, and the puerperium	640–689	640–689	630–678	630–676
Congenital anomalies	. . .	. . .	. . .	740–759
Certain conditions originating in the perinatal period	. . .	. . .	. . .	760–779
Newborn affected by maternal complications of pregnancy	. . .	. . .	. . .	761
Newborn affected by complications of placenta, cord, and membranes	. . .	. . .	. . .	762
Disorders relating to short gestation and unspecified low birthweight	. . .	. . .	. . .	765
Birth trauma	. . .	. . .	. . .	767
Intrauterine hypoxia and birth asphyxia	. . .	. . .	. . .	768
Respiratory distress syndrome	. . .	. . .	. . .	769
Infections specific to the perinatal period	. . .	. . .	. . .	771
Sudden infant death syndrome	. . .	. . .	. . .	798.0
Unintentional injuries[2]	E800–E962	E800–E962	E800–E949	E800–E949
Motor vehicle-related injuries[2]	E810–E835	E810–E835	E810–E823	E810–E825
Suicide	E963, E970–E979	E963, E970–E979	E950–E959	E950–E959
Homicide and legal intervention	E964, E980–E985	E964, E980–E985	E960–E978	E960–E978
Firearm-related injuries	. . .	. . .	E922, E955, E965, E970, E985	E922, E955.0–E955.4, E965.0–E965.4, E970, E985.0–E985.4

. . . Cause-of-death code numbers are not provided for causes not shown in *Health, United States*.

[1] Categories for coding human immunodeficiency virus infection were introduced in 1987. The * indicates codes are not part of the Ninth Revision.

[2] In the public health community, the term ''unintentional injuries'' is preferred to ''accidents and adverse effects'' and ''motor vehicle-related injuries'' to ''motor vehicle accidents.''

abuse, detoxification, or other reasons in which drug use is known to have occurred.

Cohort fertility—Cohort fertility refers to the fertility of the same women at successive ages. Women born during a 12-month period comprise a birth cohort. Cohort fertility for birth cohorts of women is measured by central birth rates, which represent the number of births occurring to women of an exact age divided by the number of women of that exact age. Cumulative birth rates by a given exact age represent the total childbearing experience of women in a cohort up to that age. Cumulative birth rates are sums of central birth rates for specified cohorts and show the number of children ever born up to the indicated age. For example, the cumulative birth rate for women exactly 30 years of age as of January 1, 1960, is the sum of the central birth rates for the 1930 birth cohort for the years 1944 (when its members were age 14) through 1959 (when they were age 29). Cumulative birth rates are also calculated for specific birth orders at each exact age of woman. The percent of women who have not had at least one live birth by a certain age is found by subtracting the cumulative first birth rate for women of that age from 1,000 and dividing by 10. For method of calculation, see Heuser RL. *Fertility tables for birth cohorts by color: United States, 1917–73*. Rockville, Maryland. NCHS. 1976. See related *Rate: Birth and related rates*.

Community hospitals—See *Hospital*.

Compensation—See *Employer costs for employee compensation*.

Condition—A health condition is a departure from a state of physical or mental well-being. An impairment is a health condition that includes chronic or permanent health defects resulting from disease, injury, or congenital malformations. All health conditions, except impairments, are coded according to the *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD–9–CM)*.

Based on duration, there are two categories of conditions, acute and chronic. In the National Health Interview Survey, an *acute condition* is a condition that has lasted less than 3 months and has involved either a physician visit (medical attention) or restricted activity. A *chronic condition* refers to any condition lasting 3 months or more or is a condition classified as chronic regardless of its time of onset (for example, diabetes, heart conditions, emphysema, and arthritis). The National Nursing Home Survey uses a specific list of chronic conditions, also disregarding time of onset. See related *International Classification of Diseases, Ninth Revision, Clinical Modification*.

Consumer Price Index (CPI)—CPI is prepared by the U.S. Bureau of Labor Statistics. It is a monthly measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The medical care component of CPI shows trends in medical care prices based on specific indicators of hospital, medical, dental, and drug prices. A revision of the definition of CPI has been in use since January 1988. See related *Gross domestic product; Health expenditures, national*.

Crude birth rate; Crude death rate—See *Rate: Birth and related rates; Rate: Death and related rates*.

Current drinker—Starting with 1997 the National Health Interview Survey is collecting information on alcohol consumption in the sample adult questionnaire. Adult respondents are asked two screening questions about lifetime alcohol consumption: ‘‘In any one year, have you had at least 12 drinks of any type of alcoholic beverage? In your entire life, have you had at least 12 drinks of any type of alcoholic beverage?’’ Persons who report at least 12 drinks in a lifetime are then asked a series of questions about alcohol consumption in the past year: ‘‘In the past year, how often did you drink any type of alcoholic beverage? In the past year, on those days that you drank alcoholic beverages, on the average, how many drinks did you have? In the past year, on how many days did you have 5 or more drinks of any alcoholic beverage?’’

Current smoker— Before 1992 a current smoker was defined by the following questions from the National Health Interview Survey (NHIS) ‘‘Have you ever smoked 100 cigarettes in your lifetime?’’ and ‘‘Do you smoke now?’’ (traditional definition). In 1992 the definition of current smoker in the NHIS was modified to specifically include persons who smoked on ‘‘some days.’’ In 1992 cigarette smoking data were collected for a half-sample with half the respondents (one-quarter sample) using the traditional smoking questions and for the other half of respondents (one-quarter sample) using a revised smoking question (‘‘Do you smoke every day, some days, or not at all?’’). An unpublished analysis of the 1992 traditional smoking measure revealed that the crude percent of current smokers 18 years of age and over remained the same as 1991. The statistics for 1992 combine data collected using the traditional and the revised questions. For further information on survey methodology and sample sizes pertaining to the NHIS cigarette data for data years 1965–92 and other sources of cigarette smoking data available from the National Center for Health Statistics, see: National Center for Health Statistics, *Bibliographies and Data Sources, Smoking Data Guide*, No. 1, DHHS Pub. No. (PHS) 91–1308–1, Public Health Service. Washington. U.S. Government Printing Office. 1991.

Starting with 1993 data estimates of cigarette smoking prevalence were based on the revised definition that is considered a more complete estimate of smoking prevalence. In 1993–95 estimates of cigarette smoking prevalence were based on a half-sample. Smoking data were not collected in 1996. Starting in 1997 smoking data were collected in the sample adult questionnaire.

Days of care—According to the American Hospital Association, days, hospital days, or inpatient days are the number of adult and pediatric days of care rendered during the entire reporting period. Days of care for newborns are excluded.

In the National Health Interview Survey, hospital days during the year refer to the total number of hospital days occurring in the 12-month period before the interview week. A hospital day is a night spent in the hospital for persons admitted as inpatients.

In the National Hospital Discharge Survey, days of care refers to the total number of patient days accumulated by patients at the time of discharge from non-Federal short-stay hospitals during a reporting period. All days from and including the date of admission but not including the date of discharge are counted. See related *Admission; Average length of stay; Discharge; Hospital; Patient*.

Death rate—See *Rate: Death and related rates*.

Dental visit—In the National Health Interview Survey respondents are asked ‘‘About how long has it been since you last saw or talked to a dentist? Include all types of dentists, such as orthodonists, oral surgeons, and all other dental specialists as well as hygienists.’’

Diagnosis—See *First-listed diagnosis*.

Diagnostic and other nonsurgical procedures—See *Procedure*.

Discharge—The National Health Interview Survey defines a hospital discharge as the completion of any continuous period of stay of one night or more in a hospital as an inpatient. According to the National Hospital Discharge Survey and the American Hospital Association, discharge is the formal release of an inpatient by a hospital (excluding newborn infants), that is, the termination of a period of hospitalization (including stays of 0 nights) by death or by disposition to a place of residence, nursing home, or another hospital. See related *Admission; Average length of stay; Days of care; Patient*.

Domiciliary care homes—See *Nursing home*.

Drug abuse treatment clients—See *Substance abuse treatment clients*.

Education—Two approaches to defining educational categories are used in this report. The more recent approach used to collect and present survey data defines education categories based on information about educational credentials, such as diplomas and degrees. The older approach defines education categories based on years of education completed. Educational attainment is used to present vital statistics data and National Health Interview Survey (NHIS) data prior to 1997. In the older approach, the education variable in NHIS was measured by asking, ‘‘What is the highest grade or year of regular school ___ has ever attended?’’ and ‘‘Did___ finish the grade/year?’’ Responses were used to categorize individuals according to years of education completed (for example, less than 12 years, 12 years, 13–15 years, 16 or more years).

Beginning in 1997 the NHIS questionnaire was changed to ask ‘‘What is the highest level of school ___ has completed or the highest degree received?’’ Responses were used to categorize individuals according to educational credentials (for example, no high school diploma or general equivalency diploma (GED); high school diploma or GED; some college, no bachelor’s degree; bachelor’s degree or higher).

Data from the 1996 and 1997 NHIS were used to compare distributions of educational attainment for adults 25 years of age and over using categories based on educational credentials (1997) with categories based on years of education completed (1996). A larger percent of persons reported ‘‘some college’’ than ‘‘13–15 years’’ of education and a correspondingly smaller percent reported ‘‘high school diploma or GED’’ than ‘‘12 years of education.’’ In 1997, 19 percent of adults reported no high school diploma, 31 percent high school diploma or GED, 26 percent some college, and 24 percent bachelor’s degree or higher. In 1996, 18 percent of adults reported less than 12 years of education, 37 percent 12 years of education, 20 percent 13–15 years, and 25 percent 16 or more years of education.

See related Appendix I, *National Vital Statistics System*. For further information on measurement of education see Kominski R and Siegel PM. Measuring education in the Current Population Survey. *Monthly Labor Review*, Sept. 1993: 34–38.

Emergency department—According to the National Hospital Ambulatory Medical Care Survey (NHAMCS), an emergency department is a hospital facility for the provision of unscheduled outpatient services to patients whose conditions require immediate care and is staffed 24 hours a day. Off-site emergency departments open less than 24 hours are included if staffed by the hospital’s emergency department. See related *Emergency department visit; Outpatient department*.

Emergency department visit—Starting with the 1997 National Health Interview Survey, respondents to the sample adult and sample child questionnaires are asked about the number of visits to hospital emergency rooms during the past 12 months. Visits resulting in a hospital admission are included. In the National Hospital Ambulatory Medical Care Survey an emergency department visit is a direct personal exchange between a patient and a physician or other health care providers working under the physician’s supervision, for the purpose of seeking care and receiving personal health services. Visits resulting in a hospital admission are excluded. See related *Emergency department; Injury-related visit*.

Employer costs for employee compensation—A measure of the average cost per employee hour worked to employers for wages and salaries and benefits. Wages and salaries are defined as the hourly straight-time wage rate, or for workers not paid on an hourly basis, straight-time earnings divided by the corresponding hours. Straight-time wage and salary rates are total earnings before payroll deductions, excluding premium pay for overtime and for work on weekends and holidays, shift differentials, nonproduction bonuses, and lump-sum payments provided in lieu of wage increases. Production bonuses, incentive earnings, commission payments, and cost-of-living adjustments are included in straight-time wage and salary rates. Benefits covered are paid leave—paid vacations, holidays, sick leave, and other leave; supplemental pay— premium pay for overtime and work on weekends and holidays, shift differentials, nonproduction bonuses, and lump-sum payments provided in lieu of wage increases; insurance benefits—life, health, and sickness and accident insurance; retirement and savings benefits—pension and other retirement plans and savings and thrift plans; legally required benefits—social security, railroad retirement and supplemental retirement, railroad unemployment insurance, Federal and State unemployment insurance, workers’ compensation, and other benefits required by law, such as State temporary disability insurance; and other benefits—severance pay and supplemental unemployment plans.

Expenditures—See *Health expenditures, national*.

Family income—For purposes of the National Health Interview Survey and National Health and Nutrition Examination Survey, all people within a household related to each other by blood, marriage, or adoption constitute a family. Each member of a family is classified according to the total income of the family. Unrelated individuals are classified according to their own income. In the National Health and Nutrition Examination Survey and the National Health Interview Survey (in years prior to 1997) family income is the total income received by members of a family (or by an unrelated individual) in the 12 months before the interview. Starting in 1997 the National Health Interview Survey collected family income data on the calendar year prior to the interview. (For example, 1997 family income data are based on 1996 calendar year information). Family income includes wages, salaries, rents from property, interest, dividends, profits and fees from their own businesses, pensions, and help from relatives. In the National Health Interview Survey, family income data are used in the computation of poverty level. For data years 1990–96, about 16–18 percent of persons had missing data on poverty level. Missing values were imputed for family income using a sequential hot deck within matrix cells imputation approach. A detailed description of the imputation procedure as well as data files with imputed annual family income for 1990–96 are available from NCHS on CD-ROM NHIS Imputed Annual Family Income 1990–96, Series 10, Number 9A. See related *Poverty level*.

Federal hospitals—See *Hospital*.

Federal physicians—See *Physician*.

Fee-for-service health insurance—This is private (commercial) health insurance that reimburses health care providers on the basis of a fee for each health service provided to the insured person. Also known as indemnity health insurance. See related *Health insurance coverage*.

Fertility rate—See *Rate: Birth and related rates*.

Fetal death—In the World Health Organization's definition, also adopted by the United Nations and the National Center for Health Statistics, a fetal death is death before the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. For statistical purposes, fetal deaths are classified according to gestational age. In this report tabulations are shown for fetal deaths with stated or presumed gestation of 20 weeks or more and of 28 weeks or more, the latter gestational age group also known as late fetal deaths. See related *Gestation; Live birth; Rate: Death and related rates*.

First-listed diagnosis—In the National Hospital Discharge Survey this is the first recorded final diagnosis on the medical record face sheet (summary sheet).

First-listed external cause of injury—In the National Hospital Ambulatory Medical Care Survey this is the first-listed external cause of injury coded from the Patient Record Form (PRF). Up to three causes of injury can be reported on the PRF. Injuries are coded by NCHS to the *International Classification of Diseases, Ninth Revision, Clinical Modification* Supplementary Classification of External Causes of

Table VI. Codes for first-listed external causes of injury from the *International Classification of Diseases, Ninth Revision, Clinical Modification*

External cause of injury category	*E-Code numbers*
Unintentional	E800–E869, E880–E929
Motor vehicle traffic	E810–E819
Falls	E880–E886, E888
Struck by or against objects or persons	E916–E917
Caused by cutting and piercing instruments or objects	E920
Intentional (suicide and homicide)	E950–E969

Injury and Poisoning. See table VI for listing of injury categories and codes. See related *Injury-related visit*.

General hospitals—See *Hospital*.

General hospitals providing separate psychiatric services—See *Mental health organization*.

Geographic region and division—The 50 States and the District of Columbia are grouped for statistical purposes by the U.S. Bureau of the Census into 4 geographic regions and 9 divisions. The groupings are as follows:

- Northeast
    - New England
        - Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
    - Middle Atlantic
        - New York, New Jersey, Pennsylvania
- Midwest
    - East North Central
        - Ohio, Indiana, Illinois, Michigan, Wisconsin
    - West North Central
        - Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
- South
    - South Atlantic
        - Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
    - East South Central
        - Kentucky, Tennessee, Alabama, Mississippi
    - West South Central
        - Arkansas, Louisiana, Oklahoma, Texas
- West
    - Mountain
        - Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
    - Pacific
        - Washington, Oregon, California, Alaska, Hawaii

Gestation—For the National Vital Statistics System and the Centers for Disease Control and Prevention's Abortion Surveillance, the period of gestation is defined as beginning with the first day of the last normal menstrual period and ending with the day of birth or day of termination of pregnancy. See related *Abortion; Fetal death; Live birth.*

Gross domestic product (GDP)—GDP is the market value of the goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the suppliers (that is, the workers and, for property, the owners) may be either U.S. residents or residents of the rest of the world. See related *Consumer Price Index; Health expenditures, national*.

Health care contact—Starting with 1997 the National Health Interview Survey is collecting information on health care contacts with doctors and other health care professionals. This information is collected in a detailed section pertaining to all types of health care contacts. Analyses of interval since last health care contact are based upon the following question: ''About how long has it been since you last saw or talked to a doctor or other health care professional about your own health? Include doctors seen while a patient in a hospital.'' Analyses of the percent of children without a health care visit are based upon the following question: ''During the past 12 months, how many times has ___seen a doctor or other health care professional about (his/her) health at a doctor's office, a clinic or some other place? Do not include times ____was hospitalized overnight, visits to hospital emergency rooms, home visits or telephone calls.'' Analyses of the distribution of health care visits are based on a summary measure combining information about visits to doctor's offices or clinics, emergency departments, and home visits. See related *Emergency department visit; Home visit.*

Health expenditures, national—See related *Consumer Price Index; Gross domestic product*.

> *Health services and supplies expenditures*—These are outlays for goods and services relating directly to patient care plus expenses for administering health insurance programs and government public health activities. This category is equivalent to total national health expenditures minus expenditures for research and construction.

National health expenditures—This measure estimates the amount spent for all health services and supplies and health-related research and construction activities consumed in the United States during the calendar year. Detailed estimates are available by source of expenditures (for example, out-of-pocket payments, private health insurance, and government programs), type of expenditures (for example, hospital care, physician services, and drugs), and are in current dollars for the year of report. Data are compiled from a variety of sources.

Nursing home expenditures—These cover care rendered in skilled nursing and intermediate care facilities, including those for the mentally retarded. The costs of long-term care provided by hospitals are excluded.

Personal health care expenditures—These are outlays for goods and services relating directly to patient care. The expenditures in this category are total national health expenditures minus expenditures for research and construction, expenses for administering health insurance programs, and government public health activities.

Private expenditures—These are outlays for services provided or paid for by nongovernmental sources—consumers, insurance companies, private industry, philanthropic, and other nonpatient care sources.

Public expenditures—These are outlays for services provided or paid for by Federal, State, and local government agencies or expenditures required by governmental mandate (such as, workmen's compensation insurance payments).

Health insurance coverage—National Health Interview Survey (NHIS) respondents were asked about their health insurance coverage at the time of the interview in 1984, 1989, and 1997 and in the previous month in 1993–96. Questions on health insurance coverage were expanded starting in 1993 compared with previous years. In 1997 the entire questionnaire was redesigned and data were collected using a computer assisted personal interview (CAPI).

Respondents are covered by private health insurance if they indicate private health insurance or if they are covered by a single service hospital plan, except in 1997 when no information on single service plans was obtained. Private health insurance includes managed care such as health maintenance organizations (HMO's).

Until 1996 persons were defined as having Medicaid or other public assistance coverage if they indicated that they had either Medicaid or other public assistance, or if they reported receiving Aid to Families with Dependent Children (AFDC) or Supplementary Security Income (SSI). After welfare reform in late 1996, Medicaid was delinked from AFDC and SSI. In 1997 persons were considered to be covered by Medicaid if they reported Medicaid or a State-sponsored health program.

Medicare or military health plan coverage is also determined in the interview, and in 1997 other government-sponsored program was determined.

If respondents do not report coverage under one of the above types of plans and they have unknown coverage on either private health insurance or Medicaid then they are considered to have unknown coverage.

The remaining respondents are considered uninsured. The uninsured are persons who do not have coverage under private health insurance, Medicare, Medicaid, public assistance, a State-sponsored health plan, other government-sponsored programs, or a military health plan. Persons with only Indian Health Service coverage are considered uninsured. Estimates of the percent of persons who are uninsured based on the NHIS (table 128) are slightly higher than those based on the March Current Population Survey (CPS) (table 146). The NHIS asks about coverage at the time of the survey (or in some survey years, coverage during the previous month), whereas the CPS asks about coverage over the previous calendar year. This may result in higher estimates of Medicaid and other health insurance coverage and correspondingly lower estimates of persons without health care coverage in the CPS compared with the NHIS. In addition, the CPS estimate is for persons of all ages whereas the NHIS estimate is for persons under age 65. See related

Fee-for-service health insurance; Health maintenance organization; Managed care; Medicaid; Medicare.

Health maintenance organization (HMO)—An HMO is a prepaid health plan delivering comprehensive care to members through designated providers, having a fixed monthly payment for health care services, and requiring members to be in a plan for a specified period of time (usually 1 year). Pure HMO enrollees use only the prepaid capitated health services of the HMO's panel of medical care providers. Open-ended HMO enrollees use the prepaid HMO health services but in addition may receive medical care from providers who are not part of the HMO's panel. There is usually a substantial deductible, copayment, or coinsurance associated with the use of nonpanel providers. These open-ended products are governed by State HMO regulations. HMO model types are:

> *Group*—An HMO that delivers health services through a physician group that is controlled by the HMO unit or an HMO that contracts with one or more independent group practices to provide health services.
>
> *Individual practice association (IPA)*—An HMO that contracts directly with physicians in independent practice, and/or contracts with one or more associations of physicians in independent practice, and/or contracts with one or more multispecialty group practices. The plan is predominantly organized around solo-single-specialty practices.
>
> *Mixed*—An HMO that combines features of group and IPA. This category was introduced in mid-1990 because HMO's are continually changing and many now combine features of group and IPA plans in a single plan.

See related *Managed care.*

Health services and supplies expenditures—See *Health expenditures, national.*

Health status, respondent-assessed—Health status was measured in the National Health Interview Survey by asking the respondent, ''Would you say ____________'s health is excellent, very good, good, fair, or poor?''

Hispanic origin—Hispanic origin includes persons of Mexican, Puerto Rican, Cuban, Central and South American, and other or unknown Latin American or Spanish origins. Persons of Hispanic origin may be of any race. See related *Race*.

HIV—See *Human immunodeficiency virus infection*.

Home health care—Home health care as defined by the National Home and Hospice Care Survey is care provided to individuals and families in their place of residence for promoting, maintaining, or restoring health; or for minimizing the effects of disability and illness including terminal illness.

Home visits—Starting with 1997 the National Health Interview Survey is collecting information on home visits received during the past 12 months. Respondents are asked: ''During the past 12 months, did you receive care at home from a nurse or other health care professional? What was the total number of home visits received?'' These data are combined with data on visits to doctor's offices, clinics, and emergency departments to provide a summary measure of health care visits. See related *Emergency department visit; Health care contact*.

Hospice care—Hospice care as defined by the National Home and Hospice Care Survey is a program of palliative and supportive care services providing physical, psychological, social, and spiritual care for dying persons, their families, and other loved ones. Hospice services are available in home and inpatient settings.

Hospital—According to the American Hospital Association, hospitals are licensed institutions with at least six beds whose primary function is to provide diagnostic and therapeutic patient services for medical conditions by an organized physician staff, and have continuous nursing services under the supervision of registered nurses. The World Health Organization considers an establishment to be a hospital if it is permanently staffed by at least one physician, can offer inpatient accommodation, and can provide active medical and nursing care. Hospitals may be classified by type of service, ownership, size in terms of number of beds, and length of stay. In the National Hospital Ambulatory Medical Care Survey (NHAMCS) hospitals include all those with an average length of stay for all patients of less than 30 days (short-stay) or hospitals whose specialty is general (medical or surgical) or children's general. Federal hospitals and hospital units of institutions and hospitals with fewer than six beds staffed for patient use are excluded. See related *Average length of stay; Bed; Days of care; Emergency department; Outpatient department; Patient*.

Community hospitals traditionally included all non-Federal short-stay hospitals except facilities for the mentally retarded. In the revised definition the following additional sites are excluded: hospital units of institutions, and alcoholism and chemical dependency facilities.

Federal hospitals are operated by the Federal Government.

For profit hospitals are operated for profit by individuals, partnerships, or corporations.

General hospitals provide diagnostic, treatment, and surgical services for patients with a variety of medical conditions. According to the World Health Organization, these hospitals provide medical and nursing care for more than one category of medical discipline (for example, general medicine, specialized medicine, general surgery, specialized surgery, and obstetrics). Excluded are hospitals, usually in rural areas, that provide a more limited range of care.

Nonprofit hospitals are operated by a church or other nonprofit organization.

Psychiatric hospitals are ones whose major type of service is psychiatric care. See *Mental health organization*.

Registered hospitals are hospitals registered with the American Hospital Association. About 98 percent of hospitals are registered.

Short-stay hospitals in the National Hospital Discharge Survey are those in which the average length of stay is less than 30 days. The National Health Interview Survey defines short-stay hospitals as any hospital or hospital department in which the type of service provided is general; maternity; eye, ear, nose, and throat; children's; or osteopathic.

Specialty hospitals, such as psychiatric, tuberculosis, chronic disease, rehabilitation, maternity, and alcoholic or narcotic, provide a particular type of service to the majority of their patients.

Hospital-based physician—See *Physician*.

Hospital days—See *Days of care*.

Human immunodeficiency virus (HIV) infection—Mortality coding: Beginning with data for 1987, NCHS introduced category numbers *042-*044 for classifying and coding HIV infection as a cause of death. HIV infection was formerly referred to as human T-cell lymphotropic virus-III/lymphadenopathy-associated virus (HTLV-III/LAV) infection. The asterisk before the category numbers indicates that these codes are not part of the *Ninth Revision of the International Classification of Diseases* (ICD-9). Before 1987 deaths involving HIV infection were classified to Deficiency of cell-mediated immunity (ICD-9 279.1) contained in the title All other diseases; to Pneumocystosis (ICD-9 136.3) contained in the title All other infectious and parasitic diseases; to Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues; and to a number of other causes. Therefore, before 1987, death statistics for HIV infection are not strictly comparable with data for 1987 and later years, and are not shown in this report.

Morbidity coding: The National Hospital Discharge Survey codes diagnosis data using the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM). Discharges with diagnosis of HIV as shown in *Health, United States*, have at least one HIV diagnosis listed on the face sheet of the medical record and are not limited to the first-listed diagnosis. During 1984 and 1985 only data for AIDS (ICD–9–CM 279.19) were included. In 1986–94, discharges with the following diagnoses were included: acquired immunodeficiency syndrome (AIDS), human immunodeficiency virus (HIV) infection and associated conditions, and positive serological or viral culture findings for HIV (ICD–9–CM 042- 044, 279.19, and 795.8). Beginning in 1995 discharges with the following diagnoses were included: human immunodeficiency virus (HIV) disease and asymptomatic human immunodeficiency virus (HIV) infection status (ICD–9–CM 042 and V08). See related *Acquired immunodeficiency syndrome; Cause of death; International Classification of Diseases, Ninth Revision; International Classification of Diseases, Ninth Revision, Clinical Modification*.

ICD; ICD codes—See *Cause of death; International Classification of Diseases, Ninth Revision*.

Incidence—Incidence is the number of cases of disease having their onset during a prescribed period of time. It is often expressed as a rate (for example, the incidence of measles per 1,000 children 5–15 years of age during a specified year). Incidence is a measure of morbidity or other events that occur within a specified period of time. See related *Prevalence*.

Individual practice association (IPA)—See *Health maintenance organization (HMO)*.

Industry of employment—Industries are classified according to the *Standard Industrial Classification (SIC) Manual* of the Office of Management and Budget. Two editions of the SIC are used for coding industry data in *Health, United States*: the 1977 supplement to the 1972 edition and the 1987 edition. The changes between versions include a few detailed titles created to correct or clarify industries or to recognize changes within the industry. Codes for major industry divisions (table VII) were not changed between versions.

Establishments engaged in the same kind of economic activity are classified by the same industry code, regardless of the type of ownership—corporations, sole proprietorships, and government agencies. Data from the Census of Fatal Occupational Injuries are therefore further broken out by private sector and government. Data from the Survey of Occupational Injuries and Illnesses are provided for the private sector only and exclude the self-employed.

The category ‘‘Private sector’’ includes all industry divisions except public administration and military. The category ‘‘Not classified’’ is used for fatalities for which there was insufficient information to determine a specific industry classification.

Table VII. Codes for industries, according to the *Standard Industrial Classification (SIC) Manual*

Industry	Code numbers
Agriculture, forestry, and fishing	01–09
Mining	10–14
Construction	15–17
Manufacturing	20–39
Transportation and public utilities	40–49
Wholesale trade	50–51
Retail trade	52–59
Finance, insurance, and real estate	60–67
Services	70–89
Public administration	91–97

Infant death—An infant death is the death of a live-born child before his or her first birthday. Deaths in the first year of life may be further classified according to age as neonatal and postneonatal. Neonatal deaths are those that occur before the 28th day of life; postneonatal deaths are those that occur between 28 and 365 days of age. See related *Live birth; Rate: Death and related rates*.

Injury-related visit—In the National Hospital Ambulatory Medical Care Survey an emergency department visit was considered injury-related if, on the Patient Record Form (PRF), the checkbox for injury was indicated. In addition, injury visits were identified if the physician’s diagnosis or the patient’s reason for visit code was injury related. See related *Emergency department visit; First-listed external cause of injury*.

Inpatient care—See *Mental health service type*.

Inpatient days—See *Days of care*.

Instrumental activities of daily living (IADL)—Instrumental activities of daily living are activities related to independent living and include preparing meals, managing money, shopping for groceries or personal items, performing light or heavy housework and using a telephone. If a sample person from the Medicare Current Beneficiary Survey had any difficulty performing an activity by himself or herself and without special equipment, or did not perform the activity at all because of health problems, the person was categorized as having a limitation in that activity. The limitation may have been temporary or chronic at the time of the interview. Sample persons who were administered a community interview answered health status and functioning questions themselves if able to do so. A proxy, such as a nurse, answered questions about the sample person's health status and functioning for long-term care facility interview. In the National Health Interview Survey respondents are asked about needing the help of another person for handling routine IADL needs due to a physical, mental, or emotional problem. Persons are considered to have an IADL limitation if the causal condition for the IADL limitation is chronic. See related *Activities of daily living (ADL); Limitation of activity*.

Insured—See *Health insurance coverage*.

Intermediate care facilities—See *Nursing home.*

International Classification of Diseases, Ninth Revision (ICD–9)—The *International Classification of Diseases* (ICD) classifies mortality information for statistical purposes. The ICD was first used in 1900 and has been revised about every 10 years since then. The ICD-9, published in 1977, is used to code U.S. mortality data beginning with data year 1979. (See tables IV and V.) See related *Cause of death; International Classification of Diseases, Ninth Revision, Clinical Modification*.

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD–9–CM)—The ICD–9–CM is based on and is completely compatible with the *International Classification of Diseases, Ninth Revision*. The ICD–9–CM is used to code morbidity

Table VIII. Codes for diagnostic categories from the *International Classification of Diseases, Ninth Revision, Clinical Modification*

Diagnostic category	*Code numbers*
Females with delivery	V27
Human immunodeficiency virus (HIV) (1984–85)	279.19
(1986–94)	042–044, 279.19, 795.8
(Beginning in 1995)	042, V08
Malignant neoplasms	140–208
Large intestine and rectum	153–154, 197.5
Trachea, bronchus, and lung	162, 197.0, 197.3
Breast	174–175, 198.81
Prostate	185
Diabetes	250
Psychoses (excluding alcoholic and drug psychoses)	293–299
Diseases of the nervous system and sense organs	320–389
Diseases of the circulatory system	390–459
Diseases of heart	391–392.0, 393–398, 402, 404, 410–416, 420–429
Ischemic heart disease	410–414
Acute myocardial infarction	410
Congestive heart failure	428.0
Cerebrovascular diseases	430–438
Diseases of the respiratory system	460–519
Bronchitis	466.0, 490–491
Pneumonia	466.1, 480–487.0
Asthma	493
Hyperplasia of prostate	600
Decubitus ulcers	707.0
Diseases of the musculoskeletal system and connective tissue	710–739
Osteoarthritis	715
Intervertebral disc disorders	722
Injuries and poisoning	800–999
Fracture, all sites	800–829
Fracture of neck of femur (hip)	820

Table IX. Codes for procedure categories from the *International Classification of Diseases, Ninth Revision, Clinical Modification*

Procedure category	*Code numbers*
Extraction of lens	13.1–13.6
Insertion of prosthetic lens (pseudophakos)	13.7
Myringotomy with insertion of tube	20.01
Tonsillectomy, with or without adenoidectomy	28.2–28.3
Coronary angioplasty (Prior to 1997)	36.0
(Beginning in 1997)	36.01–36.05, 36.09
Coronary artery bypass graft	36.1
Cardiac catheterization	37.21–37.23
Pacemaker insertion or replacement	37.7–37.8
Carotid endarterectomy	38.12
Endoscopy of large or small intestine with or without biopsy	45.11–45.14, 45.16, 45.21–45.25
Cholecystectomy	51.2
Prostatectomy	60.2–60.6
Bilateral destruction or occlusion of fallopian tubes	66.2–66.3
Hysterectomy	68.3–68.7, 68.9
Cesarean section	74.0–74.2, 74.4, 74.99
Repair of current obstetrical laceration	75.5–75.6
Reduction of fracture	76.7,79.0–79.3
Arthroscopy of knee	80.26
Excision or destruction of intervertebral disc	80.5
Total hip replacement	81.51
Lumpectomy	85.21
Mastectomy	85.4
Angiocardiography with contrast material	88.5

data and the ICD-9 is used to code mortality data. Diagnostic groupings and code number inclusions for ICD–9–CM are shown in table VIII; procedures and code number inclusions are shown in table IX.

ICD-9 and ICD–9–CM are arranged in 17 main chapters. Most of the diseases are arranged according to their principal anatomical site, with special chapters for infective and parasitic diseases; neoplasms; endocrine, metabolic, and nutritional diseases; mental diseases; complications of pregnancy and childbirth; certain diseases peculiar to the perinatal period; and ill-defined conditions. In addition, two supplemental classifications are provided: the classification of factors influencing health status and contact with health service and the classification of external causes of injury and poisoning. See related *Condition; International Classification of Diseases, Ninth Revision; Mental health disorder*.

Late fetal death rate—See *Rate: Death and related rates*.

Leading causes of death—See *Cause-of-death ranking*.

Length of stay—See *Average length of stay*.

Life expectancy—Life expectancy is the average number of years of life remaining to a person at a particular age and is based on a given set of age-specific death rates, generally the mortality conditions existing in the period mentioned. Life expectancy may be determined by race, sex, or other characteristics using age-specific death rates for the population with that characteristic. See related *Rate: Death and related rates*.

Limitation of activity—In the National Health Interview Survey limitation of activity refers to a long-term reduction in a person’s capacity to perform the usual kind or amount of activities associated with his or her age group due to a chronic condition. Limitation of activity is assessed by asking respondents a series of questions about limitations in their ability to perform activities usual for their age group because of a physical, mental, or emotional problem. Respondents are asked about limitations in activities of daily living, instrumental activities of daily living, play, school, work, and difficulty in walking or remembering. For reported limitations the condition causing the limitation is determined and respondents are considered limited if the causal conditions are chronic in nature.

Sample persons from the Medicare Current Beneficiary Survey who reported no limitations in the activities of daily living (ADL) or instrumental activities of daily living (IADL) due to health problems were included in the category ‘‘none’’. Sample persons with limitations in at least one IADL, but no ADL, were included in the category ‘‘IADL’’ only. Sample persons with ADL limitations were categorized by the number of limitations (1 to 2, 3 to 5) regardless of the number of IADL limitations. See related *Activities of daily living; Condition; Instrumental activities of daily living*.

Live birth—In the World Health Organization’s definition, also adopted by the United Nations and the National Center for Health Statistics, a live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as heartbeat, umbilical cord pulsation, or definite movement of voluntary muscles, whether the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born. See related *Gestation; Rate: Birth and related rates*.

Live-birth order—In the National Vital Statistics System this item from the birth certificate refers to the total number of live births the mother has had, including the present birth as recorded on the birth certificate. Fetal deaths are excluded. See related *Live birth*.

Low birthweight—See *Birthweight*.

Managed care—Managed care is a health care plan that integrates the financing and delivery of health care services by using arrangements with selected health care providers to provide services for covered individuals. Plans are generally financed using capitation fees. There are signifcant financial incentives for members of the plan to use the health care providers associated with the plan. The plan includes formal programs for quality assurance and utilization review. Health maintenance organizations (HMO’s), preferred provider organizations (PPO’s), and point of service (POS) plans are examples of managed care. See related *Health maintenance organization; Preferred provider organization*.

Marital status—Marital status is classified through self-reporting into the categories married and unmarried. The term married encompasses all married people including those separated from their spouses. Unmarried includes those who are single (never married), divorced, or widowed. The Abortion Surveillance Reports of the Centers for Disease Control and Prevention classified separated people as unmarried before 1978.

Maternal mortality rate—See *Rate: Death and related rates*.

Medicaid—This program is State operated and administered but has Federal financial participation. Within certain broad federally determined guidelines, States decide who is eligible; the amount, duration, and scope of services covered; rates of payment for providers; and methods of administering the program. Medicaid provides health care services for certain low-income persons. Medicaid does not provide health services to all poor people in every State. It categorically covers participants in the Aid to Families with Dependent Children program and in the Supplemental Security Income program. In most States it also covers certain other people deemed to be medically needy. The program was authorized in 1965 by Title XIX of the Social Security Act. See related *Health expenditures, national; Health maintenance organization; Medicare*.

Medical specialties—See *Physician specialty*.

Medical vendor payments—Under the Medicaid program, medical vendor payments are payments (expenditures) to medical vendors from the State through a fiscal agent or to a health insurance plan. Adjustments are made for Indian Health Service payments to Medicaid, cost settlements, third party recoupments, refunds, voided checks, and other financial settlements that cannot be related to specific provided claims. Excluded are payments made for medical care under the emergency assistance provisions, payments made from State medical assistance funds that are not federally matchable,

Table X. Mental health codes, according to applicable revision of the *Diagnostic and Statistical Manual of Mental Disorders* and *International Classification of Diseases*

Diagnostic category	*DSM-II/ICDA-8*	*DSM-IIIR/ICD-9-CM*
Alcohol related	291, 303, 309.13	291, 303, 305.0
Drug related	294.3, 304, 309.14	292, 304, 305.1–305.9, 327, 328
Organic disorders (other than alcoholism and drug)	290, 292, 293, 294 (except 294.3), 309.0, 309.2–309.9	290, 293, 294, 310
Affective disorders	296, 298.0, 300.4	296, 298.0, 300.4, 301.11, 301.13
Schizophrenia	295	295

disproportionate share hospital payments, cost sharing or enrollment fees collected from recipients or a third party, and administration and training costs.

Medicare—This is a nationwide health insurance program providing health insurance protection to people 65 years of age and over, people entitled to social security disability payments for 2 years or more, and people with end-stage renal disease, regardless of income. The program was enacted July 30, 1965, as Title XVIII, *Health Insurance for the Aged of the Social Security Act*, and became effective on July 1, 1966. It consists of two separate but coordinated programs, hospital insurance (Part A) and supplementary medical insurance (Part B). See related *Health expenditures, national; Health maintenance organization; Medicaid*.

Mental health disorder—The Center for Mental Health Services defines a mental health disorder as any of several disorders listed in the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) or *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (DSM-IIIR). Table X shows diagnostic categories and code numbers for ICD–9–CM/DSM-IIIR and corresponding codes for the *International Classification of Diseases, Adapted for Use in the United States, Eighth Revision* (ICDA-8) and *Diagnostic and Statistical Manual of Mental Disorders, Second Edition* (DSM-II). See related *International Classification of Diseases, Clinical Modification*.

Mental health organization—The Center for Mental Health Services defines a mental health organization as an administratively distinct public or private agency or institution whose primary concern is the provision of direct mental health services to the mentally ill or emotionally disturbed. Excluded are private office-based practices of psychiatrists, psychologists, and other mental health providers; psychiatric services of all types of hospitals or outpatient clinics operated by Federal agencies other than the Department of Veterans Affairs (for example, Public Health Service, Indian Health Service, Department of Defense, and Bureau of Prisons); general hospitals that have no separate psychiatric services, but admit psychiatric patients to nonpsychiatric units; and psychiatric services of schools, colleges, halfway houses, community residential organizations, local and county jails, State prisons, and other human service providers. The major types of mental health organizations are described below.

Freestanding psychiatric outpatient clinics provide only outpatient services on either a regular or emergency basis. The medical responsibility for services is generally assumed by a psychiatrist.

General hospitals providing separate psychiatric services are non-Federal general hospitals that provide psychiatric services in either a separate psychiatric inpatient, outpatient, or partial hospitalization service with assigned staff and space.

Multiservice mental health organizations directly provide two or more of the program elements defined under Mental health service type and are not classifiable as a psychiatric hospital, general hospital, or a residential treatment center for emotionally disturbed children. (The classification of a psychiatric or general hospital or a residential treatment center for emotionally disturbed children takes precedence over a multiservice classification, even if two or more services are offered.)

Partial care organizations provide a program of ambulatory mental health services.

Private mental hospitals are operated by a sole proprietor, partnership, limited partnership, corporation, or nonprofit organization, primarily for the care of persons with mental disorders.

Psychiatric hospitals are hospitals primarily concerned with providing inpatient care and treatment for the mentally ill. Psychiatric inpatient units of Department of Veterans Affairs general hospitals and Department of Veterans Affairs neuropsychiatric hospitals are combined into the category Department of Veterans Affairs psychiatric hospitals because of their similarity in size, operation, and length of stay.

Residential treatment centers for emotionally disturbed children must meet all of the following criteria: (a) Not licensed as a psychiatric hospital and primary purpose is to provide individually planned mental health treatment services in conjunction with residential care; (b) Include a clinical program that is directed by a psychiatrist, psychologist, social worker, or psychiatric nurse with a graduate degree; (c) Serve children and youth primarily under the age of 18; and (d) Primary diagnosis for the majority of admissions is mental illness, classified as other than mental retardation, developmental disability, and substance-related disorders, according to DSM-II/ICDA-8 or DSM-IIIR/ICD–9–CM codes.

State and county mental hospitals are under the auspices of a State or county government or operated jointly by a State and county government.

See related *Addition; Mental health service type*.

Mental health service type—refers to the following kinds of mental health services:

Inpatient care is the provision of 24-hour mental health care in a mental health hospital setting.

Outpatient care is the provision of ambulatory mental health services for less than 3 hours at a single visit on an individual, group, or family basis, usually in a clinic or similar organization. Emergency care on a walk-in basis, as well as care provided by mobile teams who visit patients outside these organizations are included. ‘‘Hotline’’ services are excluded.

Partial care treatment is a planned program of mental health treatment services generally provided in visits of 3 or more hours to groups of patients. Included are treatment programs that emphasize intensive short-term therapy and rehabilitation; programs that focus on recreation, and/or occupational program activities, including sheltered workshops; and education and training programs, including special education classes, therapeutic nursery schools, and vocational training.

Residential treatment care is the provision of overnight mental health care in conjunction with an intensive treatment program in a setting other than a hospital. Facilities may offer care to emotionally disturbed children or mentally ill adults.

See related *Addition; Mental health organization*.

Metropolitan statistical area (MSA)—MSA’s are defined by the U.S. Office of Management and Budget (OMB). The MSA standards are revised before each decennial Census. When Census data become available, the standards are applied to define the actual MSA’s. An MSA is a county or group of contiguous counties that contains at least one city with a population of 50,000 or more or includes a Census Bureau-defined urbanized area of at least 50,000 with a metropolitan population of at least 100,000. In addition to the county containing the main city or urbanized area, an MSA may contain other counties that are metropolitan in character and are economically and socially integrated with the central counties. In New England, cities and towns, rather than counties, are used to define MSA’s. For data from the National Health Interview Survey (NHIS) prior to 1995, metropolitan population is based on MSA’s as defined by OMB in 1983 using the 1980 Census. Starting with the 1995 NHIS, metropolitan population is based on MSA's as defined by OMB in 1993 using the 1990 Census. For further information on MSA's, see U.S. Department of Commerce, Bureau of the Census, *State and Metropolitan Area Data Book*. See related *Urbanization*.

Multiservice mental health organizations—See *Mental health organization*.

National ambient air quality standards—The Federal Clean Air Act of 1970, amended in 1977 and 1990, required the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards. EPA has set specific standards for each of six major pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter whose aerodynamic size is equal to or less than 10 microns (PM-10). Each pollutant standard represents a maximum concentration level (micrograms per cubic meter) that cannot be exceeded during a specified time interval. A county meets the national ambient air quality standards if none of the six pollutants exceed the standard during a 12-month period. See related *Particulate matter; Pollutant*.

Neonatal mortality rate—See *Rate: Death and related rates*.

Non-Federal physicians—See *Physician*.

Nonpatient revenue—Nonpatient revenues are those revenues received for which no direct patient care services are rendered. The most widely recognized source of nonpatient revenues is philanthropy. Philanthropic support may be direct from individuals or may be obtained through philanthropic fund raising organizations such as the United Way. Support may also be obtained from foundations or corporations. Philanthropic revenues may be designated for direct patient care use or may be contained in an endowment fund where only the current income may be tapped.

Nonprofit hospitals—See *Hospital*.

Notifiable disease—A notifiable disease is one that, when diagnosed, health providers are required, usually by law, to report to State or local public health officials. Notifiable diseases are those of public interest by reason of their contagiousness, severity, or frequency.

Nursing care—The following definition of nursing care applies to data collected in National Nursing Home Surveys through 1977. Nursing care is the provision of any of the following services: application of dressings or bandages; bowel and bladder retraining; catheterization; enema; full bed bath; hypodermic, intramuscular, or intravenous injection; irrigation; nasal feeding; oxygen therapy; and temperature-pulse-respiration or blood pressure measurement. See related *Nursing home*.

Nursing care homes—See *Nursing home*.

Nursing home—In the Online Survey Certification and Reporting database, a nursing home is a facility that is certified and meets the Health Care Financing Administration's long-term care requirements for Medicare and Medicaid eligibility. In the National Master Facility Inventory and the National Nursing Home Survey, a nursing home is an establishment with three or more beds that provides nursing or personal care services to the aged, infirm, or chronically ill. The following definitions of nursing home types apply to data collected in National Nursing Home Surveys through 1977.

> *Nursing care homes* must employ one or more full-time registered or licensed practical nurses and must provide nursing care to at least one-half the residents.
>
> *Personal care homes with nursing* have some but fewer than one-half the residents receiving nursing care. In addition, such homes must employ one or more registered or licensed practical nurses or must provide administration of medications and treatments in accordance with physicians' orders, supervision of self-administered medications, or three or more personal services.
>
> *Personal care homes without nursing* have no residents who are receiving nursing care. These homes provide administration of medications and treatments in accordance with physicians' orders,

supervision of self-administered medications, or three or more personal services.

Domiciliary care homes primarily provide supervisory care but also provide one or two personal services.

Nursing homes are certified by the Medicare and/or Medicaid program. The following definitions of certification levels apply to data collected in National Nursing Home Surveys of 1973–74, 1977, and 1985.

Skilled nursing facilities provide the most intensive nursing care available outside of a hospital. Facilities certified by Medicare provide posthospital care to eligible Medicare enrollees. Facilities certified by Medicaid as skilled nursing facilities provide skilled nursing services on a daily basis to individuals eligible for Medicaid benefits.

Intermediate care facilities are certified by the Medicaid program to provide health-related services on a regular basis to Medicaid eligibles who do not require hospital or skilled nursing facility care but do require institutional care above the level of room and board.

Not certified facilities are not certified as providers of care by Medicare or Medicaid.

See related *Nursing care; Resident*.

Nursing home expenditures—See *Health expenditures, national*.

Occupancy rate—The American Hospital Association defines hospital occupancy rate as the average daily census divided by the average number of hospital beds during a reporting period. Average daily census is defined by the American Hospital Association as the average number of inpatients, excluding newborns, receiving care each day during a reporting period. The occupancy rate for facilities other than hospitals is calculated as the number of residents reported at the time of the interview divided by the number of beds reported. In the Online Survey Certification and Reporting database, occupancy is the total number of residents on the day of certification inspection divided by the total number of beds on the day of certification.

Office—In the National Ambulatory Medical Care Survey, an office is any location for a physician's ambulatory practice other than hospitals, nursing homes, other extended care facilities, patients' homes, industrial clinics, college clinics, and family planning clinics. Offices in health maintenance organizations and private offices in hospitals are included. See related *Office visit; Outpatient visit; Physician*.

Office-based physician—See *Physician*.

Office visit—In the National Ambulatory Medical Care Survey, an office visit is any direct personal exchange between an ambulatory patient and a physician or members of his or her staff for the purposes of seeking care and rendering health services. See related *Outpatient visit*.

Operations—See *Procedure*.

Outpatient department—According to the National Hospital Ambulatory Medical Care Survey (NHAMCS), an outpatient department (OPD) is a hospital facility where nonurgent ambulatory medical care is provided. The following are examples of the types of OPD's excluded from the NHAMCS: ambulatory surgical centers, chemotherapy, employee health services, renal dialysis, methadone maintenance, and radiology. See related *Emergency department; Outpatient visit*.

Outpatient surgery—According to the American Hospital Association, outpatient surgery is performed on patients who do not remain in the hospital overnight and occurs in inpatient operating suites, outpatient surgery suites, or procedure rooms within an outpatient care facility. Outpatient surgery is a surgical operation, whether major or minor, performed in operating or procedure rooms. A surgical operation involving more than one surgical procedure is considered one surgical operation. See related *Ambulatory surgery; Procedure*.

Outpatient visit—The American Hospital Association defines outpatient visits as visits for receipt of medical, dental, or other services by patients who are not lodged in the hospital. Each appearance by an outpatient to each unit of the hospital is counted individually as an outpatient visit. In the National Hospital Ambulatory Medical Care Survey an outpatient department visit is a direct personal exchange between a patient and a physician or other health care provider working under the physician's supervision for the purpose of seeking care and receiving personal health services. See related *Emergency department visit; Outpatient department*.

Partial care organization—See *Mental health organization*.

Partial care treatment—See *Mental health service type*.

Particulate matter—Particulate matter is defined as particles of solid or liquid matter in the air, including nontoxic materials (soot, dust, and dirt) and toxic materials (for example, lead, asbestos, suspended sulfates, and nitrates). See related *National ambient air quality standards; Pollutant*.

Patient—A patient is a person who is formally admitted to the inpatient service of a hospital for observation, care, diagnosis, or treatment. See related *Admission; Average length of stay; Days of care; Discharge; Hospital*.

Percent change—See *Average annual rate of change*.

Perinatal mortality rate, ratio—See *Rate: Death and related rates*.

Personal care homes with or without nursing—See *Nursing home*.

Personal health care expenditures—See *Health expenditures, national*.

Physician—Physicians, through self-reporting, are classified by the American Medical Association and others as licensed doctors of medicine or osteopathy, as follows:

> *Active (or professionally active) physicians* are currently practicing medicine for a minimum of 20 hours per week. Excluded are physicians who are not practicing, practicing medicine less than 20 hours per week, have unknown addresses, or specialties not classified (when specialty information is presented).
>
> *Federal physicians* are employed by the Federal Government; non-Federal or civilian physicians are not.
>
> *Hospital-based physicians* spend the plurality of their time as salaried physicians in hospitals.
>
> *Office-based physicians* spend the plurality of their time working in practices based in private offices.

Data for physicians are presented by type of education (doctors of medicine and doctors of osteopathy); place of education (U.S. medical graduates and international medical graduates); activity status (professionally active and inactive); employment setting (Federal and non-Federal); area of specialty; and geographic area. See related *Office; Physician specialty*.

Physician specialty—A physician specialty is any specific branch of medicine in which a physician may concentrate. Data are based on physician self-reports of their primary area of speciality. Physician data are broadly categorized into two general areas of practice: generalists and specialists.

> *Generalist physicians* are synonymous with primary care generalists and only include physicians practicing in the general fields of family and general practice, general internal medicine, and general pediatrics. They specifically exclude primary care specialists.
>
> *Primary care specialists* practice in the subspecialties of general and family practice, internal medicine, and pediatrics. The primary care subspecialties for family practice include geriatric medicine and sports medicine. Primary care subspecialties for internal medicine include diabetes, endocrinology and metabolism, hematology, hepatology, cardiac electrophysiology, infectious diseases, diagnostic laboratory immunology, geriatric medicine, sports medicine, nephrology, nutrition, medical oncology, and

rheumatology. Primary care subspecialties for pediatrics include adolescent medicine, critical care pediatrics, neonatal-perinatal medicine, pediatric allergy, pediatric cardiology, pediatric endocrinology, pediatric pulmonology, pediatric emergency medicine, pediatric gastroenterology, pediatric hematology/oncology, diagnostic laboratory immunology, pediatric nephrology, pediatric rheumatology, and sports medicine.

Specialist physicians practice in the primary care specialties, in addition to all other specialist fields not included in the generalist definition. Specialist fields include allergy and immunology, aerospace medicine, anesthesiology, cardiovascular diseases, child and adolescent psychiatry, colon and rectal surgery, dermatology, diagnostic radiology, forensic pathology, gastroenterology, general surgery, medical genetics, neurology, nuclear medicine, neurological surgery, obstetrics and gynecology, occupational medicine, ophthalmology, orthopedic surgery, otolaryngology, psychiatry, public health and general preventive medicine, physical medicine and rehabilitation, plastic surgery, anatomic and clinical pathology, pulmonary diseases, radiation oncology, thoracic surgery, urology, addiction medicine, critical care medicine, legal medicine, and clinical pharmacology.

See related *Physician*.

Pollutant—A pollutant is any substance that renders the atmosphere or water foul or noxious to health. See related *National ambient air quality standards; Particulate matter*.

Population—The U.S. Bureau of the Census collects and publishes data on populations in the United States according to several different definitions. Various statistical systems then use the appropriate population for calculating rates.

Total population is the population of the United States, including all members of the Armed Forces living in foreign countries, Puerto Rico, Guam, and the U.S. Virgin Islands. Other Americans abroad (for example, civilian Federal employees and dependents of members of the Armed Forces or other Federal employees) are not included.

Resident population includes persons whose usual place of residence (that is, the place where one usually lives and sleeps) is in one of the 50 States or the District of Columbia. It includes members of the Armed Forces stationed in the United States and their families. It excludes international military, naval, and diplomatic personnel and their families located here and residing in embassies or similar quarters. Also excluded are international workers and international students in this country and Americans living abroad. The resident population is usually the denominator when calculating birth and death rates and incidence of disease. The resident population is also the denominator for selected population-based rates that use numerator data from the National Nursing Home Survey.

Civilian population is the resident population excluding members of the Armed Forces. However, families of members of the Armed Forces are included. This population is the denominator in rates calculated for the NCHS National Hospital Discharge Survey, the National Home and Hospice Care Survey, and the National Survey of Ambulatory Surgery.

Civilian noninstitutionalized population is the civilian population not residing in institutions. Institutions include correctional institutions, detention homes, and training schools for juvenile delinquents; homes for the aged and dependent (for example, nursing homes and convalescent homes); homes for dependent and neglected children; homes and schools for the mentally or physically handicapped; homes for unwed mothers; psychiatric, tuberculosis, and chronic disease hospitals; and residential treatment centers. Census Bureau estimates of the civilian noninstitutionalized population are used to calculate sample weights for the NCHS National Health Interview Survey, National Health and Nutrition Examination Survey, National Survey of Family Growth, National Ambulatory Medical

Care Survey, and the National Hospital Ambulatory Medical Care Survey.

Postneonatal mortality rate—See *Rate: Death and related rates.*

Poverty level—Poverty statistics are based on definitions originally developed by the Social Security Administration. These include a set of money income thresholds that vary by family size and composition. Families or individuals with income below their appropriate thresholds are classified as below the poverty level. These thresholds are updated annually by the U.S. Bureau of the Census to reflect changes in the Consumer Price Index for all urban consumers (CPI-U). For example, the average poverty threshold for a family of four was $16,400 in 1997 and $13,359 in 1990. For more information, see U.S. Bureau of the Census: *Money Income of Households, Families, and Persons in the United States, 1996.* Series P-60. Washington. U.S. Government Printing office. See related *Consumer Price Index; Family income*.

Preferred provider organization (PPO)—Health plan generally consisting of hospital and physician providers. The PPO provides health care services to plan members usually at discounted rates in return for expedited claims payment. Plan members can use PPO or non-PPO health care providers, however, financial incentives are built into the benefit structure to encourage utilization of PPO providers. See related *Managed care*.

Prevalence—Prevalence is the number of cases of a disease, infected persons, or persons with some other attribute present during a particular interval of time. It is often expressed as a rate (for example, the prevalence of diabetes per 1,000 persons during a year). See related *Incidence*.

Primary admission diagnosis—In the National Home and Hospice Care Survey the primary admission diagnosis is the first-listed diagnosis at admission on the patient's medical record as provided by the agency staff member most familiar with the care provided to the patient.

Primary care specialties—See *Physician specialty*.

Private expenditures—See *Health expenditures, national*.

Procedure—The National Hospital Discharge Survey (NHDS) and the National Survey of Ambulatory Surgery (NSAS) define a procedure as a surgical or nonsurgical operation, diagnostic procedure, or therapeutic procedure (such as respiratory therapy) recorded on the medical record of discharged patients. A maximum of four procedures per discharge in NHDS and up to six procedures per discharge in NSAS were recorded and coded to the *International Classification of Diseases, Ninth Revision, Clinical Modification*. Previous editions of *Health, United States* classified procedures into surgical and diagnostic and other nonsurgical procedures. The distinction between surgical and diagnostic and nonsurgical procedures has become less meaningful due to the development of minimally invasive and noninvasive surgery. Thus the practice of classifying procedures as surgical or diagnostic has been discontinued. See related *Ambulatory surgery; Outpatient surgery*.

Proprietary hospitals—See *Hospital*.

Psychiatric hospitals—See *Hospital; Mental health organization*.

Public expenditures—See *Health expenditures, national*.

Public health activities—Public health activities may include any of the following essential services of public health—surveillance, investigations, education, community mobilization, workforce training, research, and personal care services delivered or funded by governmental agencies.

Race—In 1977 the Office of Management and Budget (OMB) issued Race and Ethnic Standards for Federal Statistics and Administrative reporting in order to promote comparability of data among Federal data systems. The 1977 standards called for the Federal Government's data systems to classify individuals into the following four racial groups: American Indian or Alaska Native, Asian or Pacific Islander, black, and white. Depending on the data source, the classification by race was based on self-classification or on observation by an interviewer or other person filling out the questionnaire.

In 1997 new standards were announced for classification of individuals by race within the Federal Government's data systems (*Federal Register*, 62FR58781–58790). The 1997 standards have five racial groups: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, and White. These five categories are the minimum set for data on race for Federal statistics. The 1997 standards also offer an opportunity for respondents to select more than one of the five groups, leading to many possible multiple race categories. As with the single race groups, data for the multiple race groups are to be reported when estimates meet agency requirements for reliability and confidentiality. The 1997 standards allow for observer or proxy identification of race but clearly state a preference for self-classification.

All Federal data systems are required to be compliant with the 1997 standards by 2003. Although some data systems already permit tabulation of race-specific estimates under the 1997 standards, most do not. In order to facilitate comparisons of race-specific estimates across the various data systems presented in *Health, United States*, the 1977 standard categories are used in all trend tables and charts. However, for illustration, two health statistics (cigarette

Table XI. Current cigarette smoking by persons 18 years of age and over, according to race and Hispanic origin under the 1977 and 1997 Standards for Federal data on race and ethnicity: United States, average annual 1993–95

1997 Standards	*Sample size*	*Percent*	*Standard error*	*1977 Standards*	*Sample size*	*Percent*	*Standard error*
Race:				Race:			
White only	46,228	25.2	0.26	White	46,664	25.3	0.26
Black or African American only	7,208	26.6	0.64	Black	7,334	26.5	0.63
American Indian or Alaska Native only	416	32.9	2.53	American Indian or Alaska Native	480	33.9	2.38
Asian only	1,370	15.0	1.19	Asian or Pacific Islander	1,411	15.5	1.22
Multiple race total	786	34.5	2.00				
Black or African American; White	83	*21.7	6.05				
American Indian or Alaska Native; White	461	40.0	2.58				
Race, any mention:							
White, any mention	46,882	25.3	0.26				
Black or African American, any mention	7,382	26.6	0.63				
American Indian or Alaska Native, any mention	965	36.3	1.71				
Asian, any mention	1,458	15.7	1.20				
Native Hawaiian or Other Pacific Islander, any mention	53	*17.5	5.10				
Hispanic origin and race:				Hispanic origin and race:			
Not Hispanic or Latino:				Non-Hispanic:			
White only	42,421	25.8	0.27	White	42,976	25.9	0.27
Black or African American only	7,053	26.7	0.65	Black	7,203	26.7	0.64
American Indian or Alaska Native only	358	33.5	2.69	American Indian or Alaska Native	407	35.4	2.53
Asian only	1,320	14.8	1.21	Asian or Pacific Islander	1,397	15.3	1.24
Multiple race total	687	35.6	2.15				
Hispanic or Latino	5,175	17.8	0.65	Hispanic	5,175	17.8	0.65

*Relative standard error 20–30 percent.

NOTES: The 1997 Standards for Federal data on race and ethnicity set five single race groups (White, Black, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander) and allow respondents to report one or more race groups. Estimates for single race and multiple race groups not shown above do not meet standards for statistical reliability or confidentiality (relative standard error greater than 30 percent). Race groups under the 1997 Standards were based on the question, "What is the group or groups which represents _____ race?" For persons who selected multiple groups, race groups under the 1977 Standards were based on the additional question, "Which of those groups would you say best represents ____ race?" Race-specific estimates in this table were calculated after excluding respondents of other and unknown race. Other published race-specific estimates are based on files in which such responses have been edited. Percents are age adjusted to the year 2000 standard using three age groups: Under 18 years, 18–44 years, and 45–64 years of age. See Appendix II, Age adjustment.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey.

Table XII. Private health care coverage for persons under 65 years of age, according to race and Hispanic origin under the 1977 and 1997 Standards for Federal data on race and ethnicity: United States, average annual 1993–95

1997 Standards	*Sample size*	*Percent*	*Standard error*	*1977 Standards*	*Sample size*	*Percent*	*Standard error*
Race:				Race:			
White only	168,256	76.1	0.28	White	170,472	75.9	0.28
Black or African American only	30,048	53.5	0.63	Black	30,690	53.6	0.63
American Indian or Alaska Native only	2,003	44.2	1.97	American Indian or Alaska Native	2,316	43.5	1.85
Asian only	6,896	68.0	1.39	Asian or Pacific Islander	7,146	68.2	1.34
Native Hawaiian or Other Pacific Islander only	173	75.0	7.43				
Multiple race total	4,203	60.9	1.17				
Black or African American; White	686	59.5	3.21				
American Indian or Alaska Native; White	2,022	60.0	1.71				
Asian; White	590	71.9	3.39				
Native Hawaiian or Other Pacific Islander; White	56	59.2	10.65				
Race, any mention:							
White, any mention	171,817	75.8	0.28				
Black or African American, any mention	31,147	53.6	0.62				
American Indian or Alaska Native, any mention	4,365	52.4	1.40				
Asian, any mention	7,639	68.4	1.27				
Native Hawaiian or Other Pacific Islander, any mention	283	68.7	6.23				
Hispanic origin and race:				Hispanic origin and race:			
Not Hispanic or Latino:				Non-Hispanic:			
White only	146,109	78.9	0.27	White	149,057	78.6	0.27
Black or African American only	29,250	53.9	0.64	Black	29,877	54.0	0.63
American Indian or Alaska Native only	1,620	45.2	2.15	American Indian or Alaska Native	1,859	44.6	2.05
Asian only	6,623	68.2	1.43	Asian or Pacific Islander	6,999	68.4	1.40
Native Hawaiian or Other Pacific Islander only	145	76.4	7.79				
Multiple race total	3,365	62.6	1.18				
Hispanic or Latino	31,040	48.8	0.74	Hispanic	31,040	48.8	0.74

NOTES: The 1997 Standards for Federal data on race and ethnicity set five single race groups (White, Black, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander) and allow respondents to report one or more race groups. Estimates for single race and multiple race groups not shown above do not meet standards for statistical reliability or confidentiality (relative standard error greater than 30 percent). Race groups under the 1997 Standards were based on the question, "What is the group or groups which represents _____ race?" For persons who selected multiple groups, race groups under the 1977 Standards were based on the additional question, "Which of those groups would you say best represents ____ race?" Race-specific estimates in this table were calculated after excluding respondents of other and unknown race. Other published race-specific estimates are based on files in which such responses have been edited. Percents are age adjusted to the year 2000 standard using three age groups: Under 18 years, 18–44 years, and 45–64 years of age. See Appendix II, Age adjustment.

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey.

smoking and private health insurance coverage) based on data from the 1993–95 National Health Interview Survey have been tabulated by race and Hispanic origin using both the 1997 and 1977 standards (tables XI and XII). In these illustrations, three separate tabulations using the 1997 standards are shown: 1) Race: mutually exclusive race groups, including several multiple race combinations; 2) Race, any mention: race groups that are not mutually exclusive because each race category includes all persons who mention that race; and 3) Hispanic origin and race: detailed race and Hispanic origin with a multiple race total category. When applicable, comparison tabulations are shown for the 1977 standards. Under the 1997 standards the sample size in each race group declines slightly when compared with the 1977 standards because there are more race groups. There are few multiple race groups with sufficient numbers of observations to meet standards of statistical reliability. Tables XI and XII also illustrate changes in the terms used for specific groups in the 1997 standards. The race designation of Black was changed to Black or African American and the ethnicity designation of Hispanic was changed to Hispanic or Latino.

Additional information is provided in Appendix I under National Vital Statistics System. Also see related *Hispanic origin*.

Rate—A rate is a measure of some event, disease, or condition in relation to a unit of population, along with some specification of time. See related *Age adjustment; Population*.

- *Birth and related rates*

  Birth rate is calculated by dividing the number of live births in a population in a year by the midyear resident population. For census years, rates are based on unrounded census counts of the resident population, as of April 1. For the noncensus years of 1981–89 and 1991, rates are based on national estimates of the resident population, as of July 1, rounded to 1,000's. Population estimates for 5-year age groups are generated by summing unrounded population estimates before rounding to 1,000's. Starting in 1992 rates are based on unrounded national population estimates. Birth rates are expressed as the number of live births per 1,000 population. The rate may be restricted to births to women of specific age, race, marital status, or geographic location (specific rate), or it may be related to the entire population (crude rate). See related *Cohort fertility; Live birth*.

  Fertility rate is the total number of live births, regardless of age of mother, per 1,000 women of reproductive age, 15–44 years.

- *Death and related rates*

  Death rate is calculated by dividing the number of deaths in a population in a year by the midyear resident population. For census years, rates are based on unrounded census counts of the resident population, as of April 1. For the noncensus years of 1981–89 and 1991, rates are based on national estimates of the resident population, as of July 1, rounded to 1,000's. Population estimates for 10-year age groups are generated by summing unrounded population estimates before rounding to 1,000's. Starting in 1992 rates are based on unrounded national population estimates. Rates for the Hispanic and non-Hispanic white populations in each year are based on unrounded State population estimates for States in the Hispanic reporting area. Death rates are expressed as the number of deaths per 100,000 population. The rate may be restricted to deaths in specific age, race, sex, or geographic groups or from specific causes of death (specific rate) or it may be related to the entire population (crude rate).

  Fetal death rate is the number of fetal deaths with stated or presumed gestation of 20 weeks or more divided by the sum of live births plus fetal deaths, stated per 1,000 live births plus fetal deaths. *Late fetal death rate* is the number of fetal deaths with stated or presumed gestation of 28 weeks or more divided by the sum of live births plus late fetal deaths, stated per 1,000 live births plus late fetal deaths. See related *Fetal death; Gestation*.

  Infant mortality rate based on period files is calculated by dividing the number of infant deaths during a calendar year by the number of live births reported in the same year. It is expressed as the number of infant deaths per 1,000 live births. *Neonatal mortality rate* is the number of deaths of children under 28 days of age, per 1,000 live births. *Postneonatal mortality rate* is the number of deaths of children that occur between 28 days and 365 days after birth, per 1,000 live births. See related *Infant death*.

  Birth cohort infant mortality rates are based on linked birth and infant death files. In contrast to period rates in which the births and infant deaths occur in the same period or calendar year, infant deaths comprising the numerator of a birth cohort rate may have occurred in the same year as, or in the year following the year of birth. The birth cohort infant mortality rate is expressed as the number of infant deaths per 1,000 live births. See related *Birth cohort*.

  Perinatal relates to the period surrounding the birth event. Rates and ratios are based on events reported in a calendar year. *Perinatal mortality rate* is the sum of late fetal deaths plus infant deaths within 7 days of birth divided by the sum of live births plus late fetal deaths, stated per 1,000 live births plus late fetal deaths. *Perinatal* *mortality ratio* is the sum of late fetal deaths plus infant deaths within 7 days of birth divided by the number of live births, stated per 1,000 live births.

Maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy. Maternal death is one for which the certifying physician has designated a maternal condition as the underlying cause of death. Maternal conditions are those assigned to Complications of pregnancy, childbirth, and the puerperium, ICD-9 codes 630–676. (See related table V.) *Maternal mortality rate* is defined as the number of maternal deaths per 100,000 live births. The maternal mortality rate is a measure of the likelihood that a pregnant woman will die from maternal causes. The number of live births used in the denominator is a proxy for the population of pregnant women who are at risk of a maternal death.

Region—See *Geographic region and division.*

Registered hospitals—See *Hospital.*

Registered nursing education—Registered nursing data are shown by level of educational preparation. Baccalaureate education requires at least 4 years of college or university; associate degree programs are based in community colleges and are usually 2 years in length; and diploma programs are based in hospitals and are usually 3 years in length.

Registration area—The United States has separate registration areas for birth, death, marriage, and divorce statistics. In general, registration areas correspond to States and include two separate registration areas for the District of Columbia and New York City. All States have adopted laws that require the registration of births and deaths and the reporting of fetal deaths. It is believed that more than 99 percent of the births and deaths occurring in this country are registered.

The *death registration area* was established in 1900 with 10 States and the District of Columbia, and the *birth registration area* was established in 1915, also with 10 States and the District of Columbia. Both areas have covered the entire United States since 1933. Currently, Puerto Rico, U.S. Virgin Islands, and Guam comprise separate registration areas, although their data are not included in statistical tabulations of U.S. resident data. See related *Reporting area*.

Relative survival rate—The relative survival rate is the ratio of the observed survival rate for the patient group to the expected survival rate for persons in the general population similar to the patient group with respect to age, sex, race, and calendar year of observation. The 5-year relative survival rate is used to estimate the proportion of cancer patients potentially curable. Because over one-half of all cancers occur in persons 65 years of age and over, many of these individuals die of other causes with no evidence of recurrence of their cancer. Thus, because it is obtained by adjusting observed survival for the normal life expectancy of the general population of the same age, the relative survival rate is an estimate of the chance of surviving the effects of cancer.

Reporting area—In the National Vital Statistics System, the reporting area for such basic items on the birth and death certificates as age, race, and sex, is based on data from residents of all 50 States in the United States and the District of Columbia. The reporting area for selected items such as Hispanic origin, educational attainment, and marital status, is based on data from those States that require the item to be reported, whose data meet a minimum level of completeness (such as, 80 or 90 percent), and are considered to be sufficiently comparable to be used for analysis. In 1993–96 the reporting area for Hispanic origin of decedent on the death certificate included 49 States and the District of Columbia. See related *Registration area; National Vital Statistics System* in Appendix I.

Resident—In the Online Survey Certification and Reporting database, all residents in certified facilities are counted on the day of certification inspection. In the National Nursing Home Survey, a resident is a person on the roster of the nursing home as of the night before the survey. Included are all residents for whom beds are maintained even though they may be on overnight leave or in a hospital. See related *Nursing home*.

Resident population—See *Population*.

Residential treatment care—See *Mental health service type*.

Residential treatment centers for emotionally disturbed children—See *Mental health organization*.

Self-assessment of health—See *Health status, respondent-assessed*.

Short-stay hospitals—See *Hospital*.

Skilled nursing facilities—See *Nursing home*.

Smoker—See *Current smoker*.

Specialty hospitals—See *Hospital*.

State health agency—The agency or department within State government headed by the State or territorial health official. Generally, the State health agency is responsible for setting statewide public health priorities, carrying out national and State mandates, responding to public health hazards, and assuring access to health care for underserved State residents.

Substance abuse treatment clients—In the Substance Abuse and Mental Health Services Administration's Uniform Facilities Data Set substance abuse treatment clients have been admitted to treatment and have been seen on a scheduled appointment basis at least once in the month before the survey reference date or were inpatients on the survey reference date. Types of treatment include 24-hour detoxification, 24-hour rehabilitation or residential care, and outpatient care.

Surgical operations—See *Procedure*.

Surgical specialties—See *Physician specialty*.

Uninsured—See *Health insurance coverage*.

Urbanization—In this report death rates are presented according to level of urbanization of the decedent's county of residence. Metropolitan and nonmetropolitan counties are categorized into urbanization levels based on an NCHS-modification of the 1993 rural-urban continuum codes. The 1993 rural-urban continuum codes were developed by the Economic Research Service, U.S. Department of Agriculture using the 1993 U.S. Office of Management and Budget definition of metropolitan statistical areas (MSA's). The codes classify metropolitan counties by population size and level of urbanization and nonmetropolitan counties by level of urbanization and proximity to metropolitan areas. NCHS modified the 1993 rural-urban continuum codes to make the definition of core and fringe metropolitan counties comparable to the definitions used for the 1983 codes. For this report, the 10 categories of counties have been collapsed into 5 categories (a) core metropolitan counties contain the primary central city of an MSA with a 1990 population of 1 million or more; (b) fringe metropolitan counties are the noncore counties of an MSA with 1990 population of 1 million or more; (c) medium or small metropolitan counties are in MSA's with 1990 population under 1 million; (d) urban nonmetropolitan counties are not in MSA's and have 2,500 or more urban residents in 1990; and (e) rural counties are not in MSA's and have fewer than 2,500 urban residents in 1990. See related *Metropolitan statistical area (MSA)*.

Usual source of care—Usual source of care was measured in the National Health Interview Survey (NHIS) in 1993 and 1994 by asking the respondent, ''Is there a particular person or place that ____usually goes to when ____is sick or needs advice about ___health?'' In the 1995 and 1996 NHIS, the respondent was asked, ''Is there one doctor, person, or place that ____usually goes to when ____is sick or needs advice about ____health?'' Starting in 1997 the respondent was asked, ''Is there a place that ____usually goes when he/she is sick or you need advice about (his/her) health?'' Persons who report the emergency department as their usual source of care are defined as having no usual source of care for the purposes of this report.

Wages and salaries—See *Employer costs for employee compensation*.

Years of potential life lost—Years of potential life lost (YPLL) is a measure of premature mortality.

Starting with *Health, United States, 1996–97*, YPLL is presented for persons under 75 years of age because the average life expectancy in the United States is over 75 years. YPLL-75 is calculated using the following eight age groups: under 1 year, 1–14 years, 15–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years, 65–74 years. The number of deaths for each age group is multiplied by the years of life lost, calculated as the difference between age 75 years and the midpoint of the age group. For the eight age groups the midpoints are 0.5, 7.5, 19.5, 29.5, 39.5, 49.5, 59.5, and 69.5. For example, the death of a person 15–24 years of age counts as 55.5 years of life lost. Years of potential life lost is derived by summing years of life lost over all age groups. In *Health, United States, 1995* and earlier editions, YPLL was presented for persons under 65 years of age. For more information, see Centers for Disease Control. *MMWR*. Vol 35 no 25S, suppl. 1986.

Appendix III

Additional Data

Trend Tables With Additional Years of Data Available in Electronic Spreadsheet Files

Many of the trend tables in this report present data for extended time periods. Because of space limitations on the printed page, only selected years of data are shown to highlight major trends. For the tables listed below, additional years of data are available in electronic spreadsheet files that may be accessed through the Internet and on CD-ROM.

To access the files on the Internet, go to the FTP server on the NCHS homepage at www.cdc.gov/nchs and select ‘‘Data Warehouse’’ and *Health, United States*.

Spreadsheet files are also available on a CD-ROM entitled ‘‘Publications from the National Center for Health Statistics,’’ featuring *Health, United States, 2000*, vol 1 no 6, 2000. The CD-ROM may be purchased from the Government Printing Office or the National Technical Information Service.

Table number	*Table topic*	*Additional data years available*
1	Resident population	1981–89,1991–96
2	Poverty	1986–89,1991–92
3	Fertility rates and birth rates	1981–84,1986–89,1991–93
5	Live births	1971–74,1976–79,1981–84,1986–89,1991–94
6	Prenatal care	1981–84,1986–89,1991
8	Teenage childbearing	1981–84,1986–89,1991
9	Nonmarital childbearing	1981–84,1986–89,1991
10	Maternal education	1981–84,1986–89,1991
11	Maternal smoking	1991
12	Low birthweight	1981–84,1986–89,1991
13	Low birthweight	1991
16	Abortions	1981–84,1986–88,89
17	Abortions	1981–84,1986–88,89
20	Infant mortality rates	1984,1985–89,1991
21	Infant mortality rates	1984,1985–89,1991
22	Infant mortality rates	1984,1986
23	Infant mortality rates	1981–84,1986–89,1991–94
28	Life expectancy	1975,1981–84
29	Age-adjusted death rates by State	1989–91,1992–94,1993–95,1994–96,1995–97
30	Age-adjusted death rates for selected causes	1991–94
31	Years of potential life lost	1985,1991–97
36	Death rates for all causes	1981–84,1986–89,1991–95
37	Diseases of heart	1981–84,1986–89,1991–94
38	Cerebrovascular diseases	1981–84,1986–89,1991–94
39	Malignant neoplasms	1981–84,1986–89,1991–94
40	Malignant neoplasms of trachea, bronchus, and lung	1981–84,1986–89, 1991–94
41	Malignant neoplasm of breast	1981–84,1986–89, 1991–94
42	Chronic obstructive pulmonary diseases	1981–84,1986–89,1991
43	Human immunodeficiency virus (HIV) infection	1988,1991
44	Maternal mortality	1981–84,1986–89, 1991–94
45	Motor vehicle-related injuries	1981–84,1986–89, 1991–94
46	Homicide	1981–84,1986–89, 1991–94
47	Suicide	1981–84,1986–89, 1991–94
48	Firearm-related injuries	1981–84,1986–87,1989,1991–93

Additional Data

Table number	Table topic	Additional data years available
49	Occupational diseases	1979,1981–84,1986–89
51	Occupational injuries	1981–84,1986–89
52	Notifiable diseases	1985,1988–89,1991–94
59	Cigarette smoking	1987–88,1991
60	Cigarette smoking	1987–88,1991
61	Cigarette smoking	1994–97
62	Use of selected substances	1982,1988
63	Use of selected substances	1981–84,1986–89
85	Ambulatory care visits	1997
87	Additions to mental health organizations	1986,1988
90	Discharges	1988–89,1993,1995
91	Discharges	1989,1994
92	Rates of discharges	1995
93	Discharges	1995
95	Hospital admissions	1991–94
100	Persons employed	1983–84,1986–89,1991–92
102	Physicians	1970,1980,1987,1989,1992–94
105	Staff in mental health organizations	1986,1988
109	Hospitals	1991–94
111	Community hospital beds	1985,1988–89,1995–97
112	Occupancy rates	1985,1988–89,1995–97
116	Consumer Price Index	1965,1975,1985
121	Employers’ costs and health insurance	1992–93,1995–97
122	Hospital expenses	1991–92,1994
123	Nursing home average monthly charges	1964
124	Nursing home average monthly charges	1977
126	Funding for health research	1975,1984,1986–89,1991–92
131	Health maintenance organizations	1984,1986–87,1989,1991–92
136	Medicaid	1986–89,1991–94
137	Medicaid	1986–89,1991–94
138	Department of Veterans Affairs	1985,1988–89,1991–92
143	Medicare	1990,1995–96
146	Persons without health care coverage	1991

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