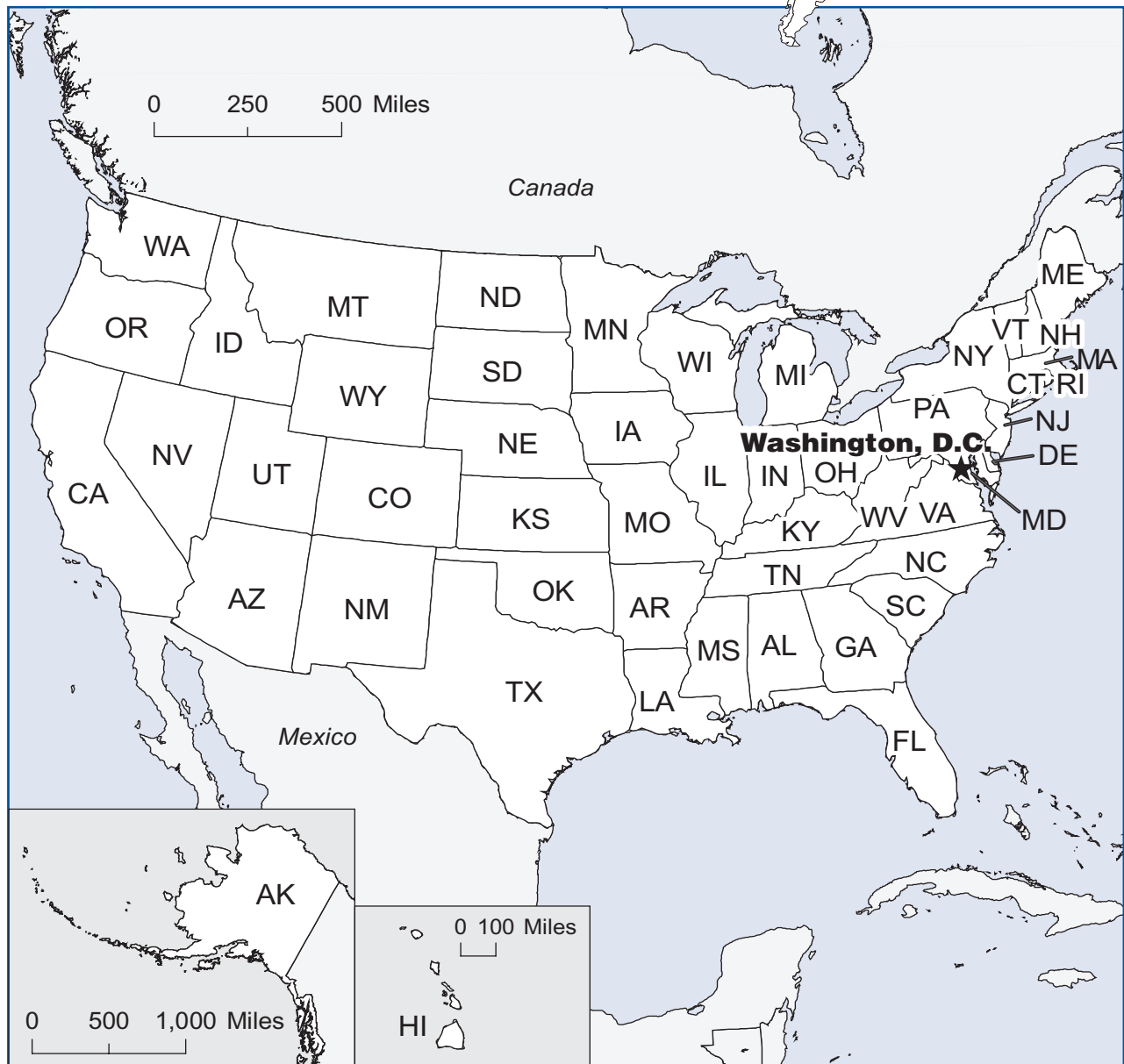


# UNITED STATES OF AMERICA



**Sources:** Second Administrative Level Boundaries Dataset (SALB), a dataset that forms part of the United Nations Geographic Database, available at: [http://www.who.int/whosis/database/gis/salb/salb\\_home.htm](http://www.who.int/whosis/database/gis/salb/salb_home.htm), and the Digital Chart of the World (DCW) located at: <http://www.maproom.psu.edu/dcw>. The boundaries and names shown here are intended for illustration purposes only, and do not imply official endorsement or acceptance by the Pan American Health Organization.

**T**hroughout the 1990s and early 2000s, the United States experienced economic growth, although inequalities in earnings also widened in those years. Summary health indicators improved, but health differences between population groups persisted. The age structure of the population continued to change during this period, which shifted the population's health needs and the provision of health services.

## GENERAL CONTEXT AND HEALTH DETERMINANTS

### Macroeconomic, Political, and Social Issues

In 2003, about half the population in the United States lived in large metropolitan areas and only 20% lived in micropolitan areas (smaller urban areas with an urban core of at least 10,000 but less than 50,000) or in rural counties. This distribution is far from static, however. In fiscal year 2003 some 40 million persons (about 14% of the total population) moved, although most did so for only short distances. Non-Hispanic Whites moved less (12%) than either Blacks or Hispanics (around 18%). (See Figure 1 for the country's population structure.)

The country's real gross domestic product (GDP) grew by 37.6% from 1995 to 2005 (Figure 2), despite an eight-month recession in 2001. The percentage of the population living in poverty declined from 13.5% in 1990 to 11.3% in 2000, but increased thereafter, reaching 12.6% in 2005.

Female-headed households with children (a subgroup of all female-headed households) are one of the groups most vulnerable to poverty. The poverty rate for this subgroup followed a trend similar to that of the overall poverty rate during this period, but at a much higher level—36.2% of these families were below the official poverty line in 2005. This “feminization” of poverty has been partially linked to differences in the earnings of employed men and women. In 2005, women with paid work earned considerably less than men—men 15 years old and older earned a median US\$ 34,349 per year, whereas women earned only US\$ 23,074, or 33% less than men, in part because women tend to be concentrated in lower-paid occupations. In 2005, 20% of working women were in service occupations, while only 13% of men were in these lower-paid jobs; similarly, 22% of working women were in office and administrative support positions compared to 6% of their male counterparts.

Hispanics and Blacks also are among the groups most vulnerable to poverty. Poverty rates for these groups followed trends similar to the overall poverty rate during this period, but at a much higher level; 2005 poverty rates for these groups were 21.8% and 24.9%, respectively.

As the GDP grew in recent decades, so did inequalities in personal income distributions, as measured by the Gini index. Although there have been intervals of stability or decline in the Gini index, such as in 1993–1998, the long-term trend since the mid-1970s has been upward. Over the past 10 years, the Gini index has risen 4.2%, from 0.450 to 0.469.

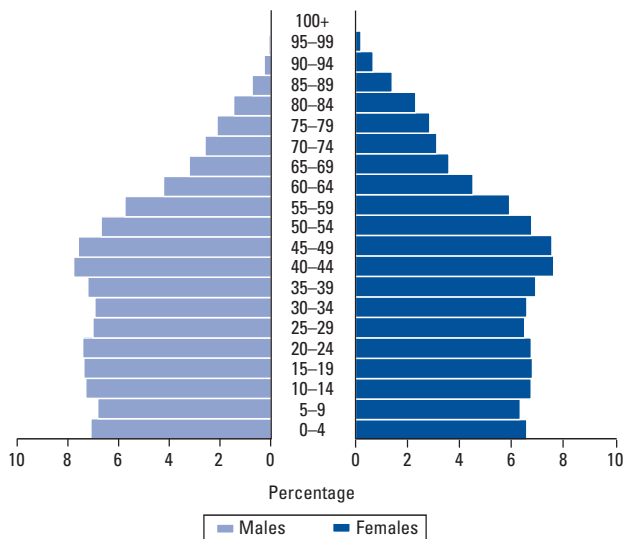
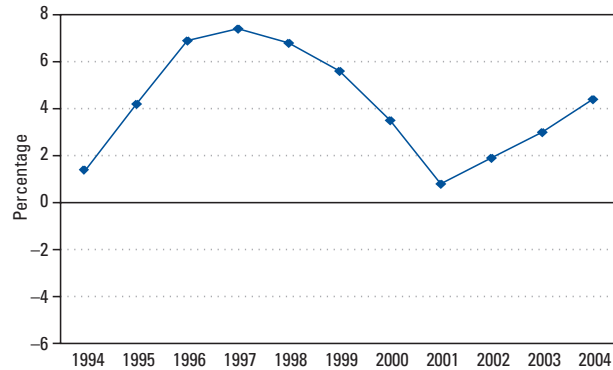
This widening of the earnings gap has been linked to structural changes in the U.S. labor market, whereby more highly skilled persons in the upper income percentiles experienced real gains in wages, while less-skilled workers experienced real wage losses. This has been explained by an industrial shift towards technical services and retail sales, as well as more frequent use of temporary workers, a proportional drop in union membership, a real-value decline of the minimum wage, and increased global competition and immigration.

In 2005, 16% of the population, or 46.6 million people, had no health insurance coverage, up from 14.2% in 2000. Among those living in poverty, 32% had no health coverage, despite the existence of government health insurance targeting the poor, such as Medicaid. Blacks, Asian/Pacific Islanders, Hispanics, and foreign-born persons had a relatively high risk of lacking health insurance coverage. These groups, except for Asian/Pacific Islanders, also had elevated rates of poverty. The lowest health insurance coverage was in the South and the West, both at around 18%, and in the Midwest and the Northeast with coverage levels between 12% and 14%. Not surprisingly, the regions with the highest poverty rates also had the lowest coverage.

The proportion of children without health insurance declined in the early 2000s, falling from 11.9% in 2000 to 11.2%, or 8.3 million children, in 2005. A decline in health insurance coverage by private insurance was more than offset by an increase in Medicaid coverage; 19% of children in poverty were uninsured.

### Demographics, Morbidity, and Mortality

The country's population grew 13% in the 1990s, rising from 249 million people in 1990 to 281 million in 2000 and 296 million in 2005. Some of this growth was due to immigration: in 2000, 11% of the population (about 30 million people) was foreign-born,

**FIGURE 1. Population structure, by age and sex, United States of America, 2005.****FIGURE 2. Gross domestic product, annual growth (%), United States of America, 1994–2004.**

which represents a substantial increase from the 8% figure (almost 20 million persons) in 1990. Many of these immigrants came from Latin America. In fact, throughout the 1990s, the proportion of Hispanics in the country's population changed and increased the population's ethnic makeup. For example, in fiscal year 2004, Mexico had 175,364 immigrants coming to the U.S., ranking it first among the ten countries providing the most immigrants. Also included among the top ten were the Dominican Republic and El Salvador, providing 30,492 and 29,795 immigrants, respectively; other Latin American countries that ranked high included Colombia, Cuba, and Guatemala. The Hispanic population's high fertility rate also contributed to the rapid growth of the Hispanic population in the United States. Hispanic women's fertility rate far exceeds that

of any other ethnic group in the country—in 2004, Hispanic women in the United States had a fertility rate of 97.8 live births per 1,000 women, compared to White non-Hispanic women, who had a rate of 58.4. In 2004, Latinos made up 14.0% of the population, and are now the largest minority group in the country. Of children aged 5–17 years old, 18% spoke a language other than English with their families; for nearly 7 out of every 10 of these children, the language was Spanish.

From 1998 to 2004 the crude birth rates and the fertility rates remained relatively unchanged. Crude birth rates varied between 14.0 live births per 1,000 population and 14.8, and fertility rates fluctuated between 64 and 66 live births per 1,000 women aged 15–44 years. In every ethnic group, women delayed having children until increasingly older ages. From 1998 to 2004, birth rates for teenagers dropped steadily and rates for women in their early 20s generally declined.

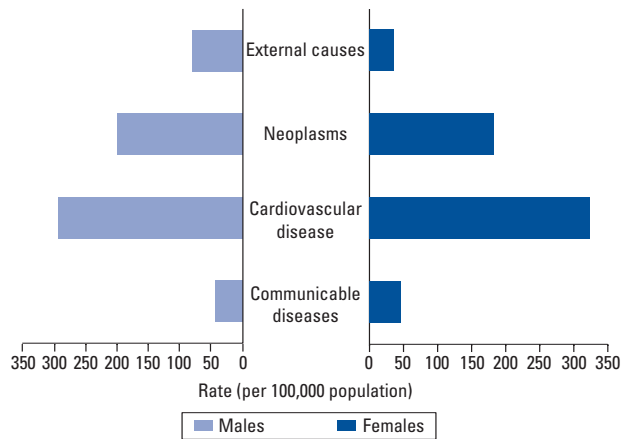
Life expectancy continues to improve, with people aged 65 and over comprising 12% of the U.S. population in 2003. In 2003, life expectancy was 77.5 years, compared to 75.8 in 1995. Women's life expectancy was 5.3 years longer than men's in 2003. Although life expectancy for Blacks also improved throughout the past decade, in 2003 they lagged 5.3 years behind Whites. The growth rate of the older population is expected to continue until 2030, when the last Baby Boomers enter the ranks of the older population. The U.S. Census Bureau projects that the population of the oldest, those aged 85 and older, could grow from 4.2 million in 2000 to nearly 20 million by 2050.

The expected growth of the older adult population over the next 50 years will have an extraordinary impact on the U.S. health care system. The supply and demand for health care workers will be particularly affected. On the one hand, the supply of health care providers may decrease, as large numbers of workers retire or reduce their working hours. On the other, older adults consume a disproportionate share of health care services, so demand will grow. The aging of the population also will affect the type of services used and the preparation of the workforce needed to provide those services.

In 2003, the crude death rate in the United States was 841.9 per 100,000 population, a 1.4% decline from the 2000 rate of 854.0 (Figure 3). The age-adjusted death rate (which adjusts for the aging of the U.S. population) declined by 4.2%, dropping from 869.0 in 2000 to 832.7 in 2003. Death rates increased for people aged 40–49 years old. Death rates for persons aged 65–74 years old decreased by 2.6%, the largest decrease of any age group. Death rates also decreased for age groups 55–64, 75–84, and 85 years and over.

In 2003, the leading causes of death for both men and women, in rank order, were diseases of the heart; malignant neoplasms; cerebrovascular disease; chronic lower respiratory diseases; unintentional injuries (accidents); diabetes mellitus; influenza and pneumonia; Alzheimer's disease; nephritis, nephritic syndrome, and nephrosis; and septicemia. The age-adjusted death rate for

**FIGURE 3. Estimated mortality, by broad groups of causes and sex, United States of America, 2003.**



heart disease in women was 33.6% lower than that for men. The rate for cancer was 31.0% lower for women than men, mainly because more males smoked tobacco, the leading cause of lung cancer and other respiratory cancers. Males also were almost twice as likely to die in accidents, more than four times as likely to commit suicide, and more than three times more likely to be a victim of homicide than females. The overall crude death rate for women was considerably lower than that for men throughout the 1990s but was about the same in 2003.

Death rates varied substantially between rural and urban areas, and these differences also varied from one geographical region to another. From 1994–1996 to 2000–2002, overall age-adjusted death rates declined in each geographical region and in each category of urbanization. The overall age-adjusted death rates for the most urbanized, large central metropolitan counties dropped substantially, from 902.5 deaths per 100,000 population to 833.1. Rates in the most rural, non-metropolitan counties declined less, dropping from 945.8 per 100,000 to 914.3. The South, which had the highest age-adjusted death rates in the most rural counties, also had the least decrease in rates in these same counties between 1994–1996 and 2000–2002. In 2000–2002, the South's age-adjusted death rate for large central metropolitan counties settled below the rate of its most rural counties. In the Midwest, the 2000–2002 age-adjusted death rates for the large central metropolitan counties remained higher than the more rural counties.

## HEALTH OF POPULATION GROUPS

### Children under 5 Years Old

For young children, mortality, morbidity, and access to quality health care are greatly affected by poverty, which explains many of the differences between race and ethnic groups. One-fifth of all children under the age of 6 lived below the poverty threshold in

2005. (In 2005, the official poverty threshold for a family of four was just under US\$ 20,000.)

The infant mortality rate dropped throughout the latter part of the 1990s, but rose in 2002. In 1995, infant mortality was 7.57 deaths per 1,000 live births. More recently, the infant mortality rate was relatively stable, fluctuating around 6.84 deaths per 1,000 live births in 2001, 6.95 in 2002, and 6.84 in 2003. The five leading causes of death in infants in 2003 were congenital anomalies (20% of all infant deaths); disorders relating to short gestation and unspecified low birthweight (17%); sudden infant death syndrome (8%); maternal complications of pregnancy (6%); and newborn affected by complications of placenta, cord, and membranes (4%). Non-Hispanic Blacks, who had substantially higher infant mortality rates than any other ethnic or racial group, experienced a decrease in rates, dropping from 14.65 deaths per 1,000 live births in 1995 to 13.60 in 2003. In 2003, as was the case in previous years, infant mortality rates varied widely by state. In general, states in the Southeast had higher rates, while those in the West and Northeast had lower rates.

Neonatal mortality followed a similar pattern. From 1995 to 2001, neonatal mortality rates decreased from 4.92 deaths per 1,000 live births to 4.54; this rate increased in 2002, to 4.67, and was 4.63 in 2003. Non-Hispanic Blacks, again with the highest rate of any ethnic group, dropped from 9.65 per 1,000 live births in 1995 to 9.22 in 1997, and then increased 9.40 in 1998, and 9.57 in 1999. The rate in 2003 was 9.26. For children aged 28 days to 11 months, mortality rates dropped from 2.65 deaths per 1,000 live births in 1995 to 2.27 in 2000. From 2000 to 2003 the rate remained relatively unchanged. American Indians and Alaskan Natives shared the highest postneonatal mortality rates with non-Hispanic Blacks, at 5.00 deaths per 1,000 live births in 1995; in 2003, the rate dropped to 4.18 for American Indians and Alaskan Natives, and 4.34 for Blacks.

Death rates for children 1–4 years old consistently declined throughout the 1990s and early 2000s. In 2003, the death rate in this age group was 31.5 deaths per 100,000 children aged 1–4 years; the highest rate was among Black children, at 46.8 deaths per 100,000. The leading cause of death for these children in 2003 was unintentional injuries, at 10.9 deaths per 100,000 children aged 1–4 years, or 34.6% of all deaths in this age group. More than half of these deaths were related to motor vehicle traffic accidents, many of which could have been prevented—most of the children who died in motor vehicle accidents were not restrained by children's safety seats or seat belts. The second leading cause of death for this age group was congenital malformations, at 3.4 deaths per 100,000, and representing 10.9% of all deaths. Both of these two cause-specific death rates declined substantially throughout the 1990s. The next three leading causes of death for these children were cancer (7.9% of all deaths in 1–4-year-olds), homicide (7.6%), and heart disease (3.7%). The sixth leading cause of death was influenza and pneumonia, representing 3.3% of all the deaths in this age group.

### Children 5–9 Years Old

In 2000, children aged 5–9 years old made up a little over 7% of the country's population. Children in this age group had the lowest death rate of any age group, and this rate dropped slightly from 16.4 deaths per 100,000 children aged 5–9 years in 2000 to 14.7 in 2003. The leading cause of death for this group was unintentional injuries, with most deaths due to motor vehicle accidents.

Two of the chronic morbidities seen in these children—asthma and lead poisoning—are more likely to affect children living in poverty. In 2004 about 12% of children of all ages had ever been diagnosed with asthma, with children living in poverty having a slightly higher likelihood of developing asthma (14%). Asthma is believed to be the most common reason for school absenteeism. In 2000, about one million of the country's children under age 6 had high enough lead levels in their blood to adversely affect their development, behavior, and ability to learn; a disproportionate number of them were living in poverty. Problems caused by lead poisoning begin to surface at the time children enter school. Lead-based paint used in older homes was the usual source for the poisoning.

### Adolescents 10–14 and 15–19 Years Old

Adolescents living in poverty are at greater risk for poor health. Adolescents who did not live in poverty were 15% more likely to report very good or excellent health than those living in poverty. In 1998, 17% of adolescents came from families living in poverty, and another 20% came from families living in near poverty. Moreover, 40% of all adolescents who lived in families headed by women were living in poverty.

Initiating smoking during adolescence is a good indicator of future smoking rates and smoking-related disease trends. Based on a national survey of adolescents, the percentage of 13–14-year-old eighth graders who had smoked in the previous 30 days dropped from a peak of 19% in 1997 to 9% in 2005. In the same time period, the prevalence of smoking among 17–18-year-old high-school seniors dropped from about 37% to 23%. In 2005, 50% of all 12th-grade students had tried smoking. Rural students smoked more than their urban counterparts.

Under-age alcohol use and most illicit drug use among adolescents declined moderately between 1997 and 2005. In 2005, marijuana was the most commonly reported illicit drug used by adolescents: 38% of 17–18-year-old high-school males and 30% of females reported having smoked marijuana. For 13–14-year-old eighth graders, illicit drug use reported for the 30 days prior to the survey dropped from 13% to 8.5% between 1997 and 2005. Among 17–18-year-old high-school seniors, illicit drug use in the past 30 days dropped from 26% to 23% between 1997 and 2005. Lifetime use of methylenedioxymethamphetamine (MDMA), known as ecstasy on the street, increased between 1997 and 2001 for both groups, however, before beginning to decline. In 1997, 3% of eighth graders had used MDMA, rising to 5% in 2001 be-

fore falling back to 3% in 2005. High-school seniors experienced a similar trend, with rates of MDMA use rising from 7% to 12% between 1997 and 2001, and then falling to 5% in 2005. Adolescent alcohol use is of particular importance because of its association with increased vehicular injuries and fatalities. Use of alcohol among high-school seniors in the 30 days before the survey dropped from 53% to 47% between 1997 and 2005. Likewise, binge drinking (defined as five or more drinks in a row in the last two weeks) by high-school seniors declined from 31% to 28% in the same period. From 1997 to 2005, drug and alcohol use among eighth graders generally followed the same trends, with the prevalence of drug and alcohol use being roughly half that of high school seniors. The exception was in the use of inhalants, which were used by eighth graders at rates twice those of high-school seniors. Rates of inhalant use in the year prior to the survey decreased for both groups between 1995 through 2003. However, in 2003 and 2004 inhalant use increased for both age groups. Alcohol use by eighth graders in the 30 days prior to the survey dropped from close to 25% to 17% between 1997 and 2005; binge drinking in this group dropped slightly, from about 15% to about 11%.

Through the late 1990s through the early 2000s, boys consistently reported using drugs and alcohol at a higher prevalence than girls. In recent years, eighth- and sometimes tenth-grade girls have had higher rates of alcohol and illicit drug use than boys. Boys have higher rates of marijuana use than girls in all grades. Non-Hispanic Whites reportedly used drugs and alcohol at a higher prevalence than Blacks.

Weight issues also plagued adolescents in the United States during the reporting period. Adolescents, along with the rest of the country's population, were increasingly overweight. In 1976–1980, 5% of all 12–19-year-olds were overweight. By 1988–1994, almost 11% were overweight, and by 2003–2004 more than 18% were overweight.

In 2005, nearly one-half (47%) of all high-school students surveyed reported being sexually active: 14% of them reported having had four or more sexual partners and 37% reported not using a condom in their last sexual encounter. Nationwide, almost 8% of high-school students reported that they had had intercourse at least once against their will. Regarding sexually transmitted infections among adolescents, chlamydia and gonorrhea were relatively common and syphilis relatively rare in 2004. Females aged 10–14 and 15–19 years old were estimated to have rates of chlamydia infection close to 132 per 100,000 and 2,762 per 100,000, respectively. Gonorrhea rates among females in these two age groups were 37 per 100,000 and 611 per 100,000, respectively. Males in those two age groups had chlamydia rates of 11 and 458, respectively, and gonorrhea rates of almost 6 and 253, respectively. In 2004, females 15–19 years old had the highest reported rates of both chlamydia and gonorrhea of any sex and age group in the country. Differences in reported STI rates between adolescent females and males were largely attributed to the fact that fe-

males are tested and screened more often than males, so detection of sexually transmitted infections is more common among the former. Insufficient funds for services, lack of transportation, and lack of confidentiality made access to STI prevention services more difficult for active adolescents than for older age groups.

From 1997 to 1998, new AIDS cases in 13–19-year-old females dropped by 17%; for males of the same age group they dropped by 22%. By 1999, however, while AIDS cases in adolescent males had declined again, new cases in adolescent females increased by 17%. However, beginning in 2000, the number of new cases for males between ages 13 and 19 began rising at a faster pace than new cases for females. By 2002, the number of new cases was comparable for males and females, and in 2003 males had far more new cases reported than females, at 249 and 209 new AIDS cases, respectively.

In 1991, more than one-quarter of all high-school students reported carrying a weapon. In 2005, nearly 19% of all high school students 14–18 years old reported carrying a gun, knife, or club in the month prior to the survey, and almost 7% reported bringing a weapon to school. With each national survey between 1991 and 1999, fewer high-school students reported carrying a weapon, although there was no change in the rates between 1999 and 2005. Between 1993 and 2003, smaller percentages of high-school students reported carrying a weapon to school in the last 30 days, although there was no difference in this percentage between 2003 and 2005. In addition, in 2005, 43% of male high school students and 28% of female students were involved in a physical fight in the 12 months prior to the survey. Between 1993 and 2003 adolescents also were more frequently the victims of violent crimes than adults. Compared to adults, adolescents reportedly were victimized at rates three times higher for simple assault, two times higher for aggravated assault, two times higher for robbery, and 2.5 times higher for rape and sexual assault. There were more adolescent males who were victims of violent crimes than females.

Adolescent victimization rates increased with age for females, but decreased for males. In 2003, there were reportedly 32 female victims of violent crime per 1,000 females aged 12–15 years and 70 male victims per 1,000 males aged 12–15 years. In 2003, there was an annual rate of 38 female victims per 1,000 females aged 16–19 years and 68 male victims per 1,000 males aged 16–19 years. The overall nonfatal violent victimization rate for youth ages 12–17 decreased by half between 1993 and 2003. Females aged 12–19 years old were more than twice as likely to be victims of reported sexual assault and rape than all other age groups of females.

Many adolescents suffered from depression and many of them were suicidal. In 2005, 17% of all high-school students surveyed reported that they had seriously contemplated suicide. Suicide was reportedly attempted by 8% of all 14–18-year-old high school students in the 12 months prior to the survey. Female high

school students were more likely to seriously consider suicide than males.

### Adults 20–59 Years Old

This age group makes up most of the country's population. Mortality patterns change drastically from one end to the other of the age range: for example, in 2003, there were 3,250 deaths due to diseases of the circulatory system among 25–34-year-olds, but there were 37,732 deaths due to this cause among 45–54-year-olds. That same year, deaths due to cancer totaled only 3,741 among 25–34-year-olds, but reached 49,843 among 45–54-year-olds. Cause specific death counts for such diseases as Alzheimer's and diabetes followed similar patterns.

### Older Adults 60 Years Old and Older

The rapid growth in the proportion of the elderly in the population is challenging health and long-term care service systems, because the elderly require more frequent and more expensive care. In addition to the many distinctive health problems the elderly face, access to health care also complicates the provision of health services for many. Disproportionate numbers of the elderly live in more rural areas where there are greater distances to travel to reach health care facilities and fewer physicians per population.

Older adults suffer from more chronic health problems than other age groups, problems such as heart disease, hypertension, arthritic symptoms, diabetes, and osteoporosis. Women report higher levels of hypertension, asthma, chronic bronchitis, and arthritic symptoms, while men report higher levels of heart disease, cancer, diabetes, and emphysema. The prevalence of some conditions is increasing over time. In 1997–1998, 47% of people older than age 65 reported having hypertension; in 2003–2004, nearly 52% did. During the same period, the percentage reporting diabetes went from 13% to 16%. Roughly half of the elderly showed reduced hip-bone density between 1988 and 1994.

Mental health issues were also particularly important among the elderly—with aging, the incidence of memory impairment due to Alzheimer's disease and other dementias increases. The prevalence of moderate or severe memory impairment is six times as high for people age 85 and older as it is for people age 65–69. In 2002, the proportion of people age 85 and older with moderate or severe memory impairment was 32%, compared to 5% of those age 65–69.

Compared to most other age groups, a disproportionately high percentage of the elderly fall prey to depression, and suicide also is relatively more common among them. In 2002, 16% of women and 10% of men age 65–69 reported depressive symptoms; for those age 85 and older, 22% of women and 15% of men reported such symptoms.

In 1999, approximately 6.6 million Americans aged 65 and older used assistive devices and/or received personal care for a

chronic disability. Slightly more than one-half of these persons (3.4 million) relied on help for their long-term care needs from unpaid caregivers, usually family members and friends. The other half either received paid care exclusively while living in their home (314,600), used assistive devices only to maintain independence (1.3 million), or lived in an institution, such as a nursing home or some other type of long-term care facility (1.6 million).

The leading risk factors that contribute to poor health and quality of life among the country's elderly are overweight (in 2003–2004, nearly 30% of those over age 65 were obese and close to three-fourths were overweight), diets deficient in fruits/vegetables and milk products, lack of physical activity (in 2002 only 21% of those over age 65 reported engaging in regular leisure time physical activity), and smoking. The percentage of older Americans who smoke has declined dramatically over the past 37 years.

The leading causes of death for the elderly in 2002–2003 were heart disease (1,632 deaths per 100,000 elderly) and cancer (1,100 per 100,000), which account for more than one-half of all deaths in this group. Additional leading causes of death in this age group were cerebrovascular diseases (stroke; 404 elderly deaths per 100,000 elderly), chronic lower respiratory diseases (301 per 100,000), influenza and pneumonia (155 per 100,000), and diabetes (151 per 100,000). The importance of influenza and pneumonia as a cause of mortality indicates the crucial role vaccines can play in preventing these diseases in this population.

### Family Health

According to the Census Bureau's Current Population Survey, in 2000, women heading households with children represented nearly one-quarter of all families in the United States. More than two million of these women were grandmothers who were the primary caregivers for children in their homes, and almost one-fifth of these grandmother-headed families lived in poverty at some time in the 12 months prior to the survey.

Poverty was the most important determinant for family health. Despite attempts by federal, state, and local governments, as well as non-profit organizations, to provide a safety net to protect the health of the most vulnerable families, poor health conditions persisted. Although improvements were seen in child mortality rates, other health indicators often associated with poverty worsened. For example, the proportion of low-birthweight newborns (under 2,500 g) increased from 7.4% in 1996 to 8.1% in 2004. Likewise, the percentage of births with very low birthweight (under 1,500 g) increased from 1.37% to 1.47%. Among mothers 20 years of age and older, low-birthweight rates were highest for those who had not completed high school and lowest for those who had more than a high school education. Non-Hispanic Black mothers, dealing with much higher levels of poverty, were especially vulnerable, with 13.7% of all live births for non-Hispanic Black women having low birthweights in 2004.

Children of families who came off the welfare rolls after the 1996 reforms potentially faced reduced access to health care. The creation of the State Children's Health Insurance Program (SCHIP) in 1997 helped to minimize the number of children who lost health coverage. Poor children (under 100% of the federal poverty guidelines) are largely eligible for Medicaid, and the percentage of poor children who were uninsured fell from 24% to 19% between 1997 and 2005. For near-poor children (between 100% and 200% of the federal poverty guidelines), who are largely eligible for SCHIP, the decline was more significant. The percentage of near-poor children who were uninsured fell from 24% in 1997 to 16% in 2005.

### Workers

Occupational risks of death varied by gender and age: men were 10 times more likely to die than women during work, probably partially reflecting the differences in occupation. Workers 35–64 years of age had the highest work-related fatality rate.

From 1980 through 2005 there were 150,799 work-related deaths in the United States. The number of deaths due to injuries at work went from 5,430 in 2000 to 5,702 in 2005. Since 1992, rates have shown corresponding changes, from a high of 5.3 deaths due to injuries at work per 100,000 employed workers to the current rate of 4.0 per 100,000. Leading causes of job-related deaths during this period were motor vehicle accidents, homicides, machine-related accidents, falls, electrocutions, and being struck by falling objects. Risks of death varied by gender and age; males were 12 times more likely to die during work than women, reflecting in part the differences in occupation. Workers 65 years old and older had the highest work-related fatality rate of any age group (11.8 work-related deaths per 100,000 workers 65 years and older, a rate 2.9 times greater than the overall workplace fatality rate for all workers).

In 2005, 60% of women 18 years old and older were either employed or looking for work, and 3.5 million women held more than one job at the same time. In 2005, median weekly earnings were US\$ 713 for men 16 years and older vs. US\$ 580 for women, approximately 81.3% of male weekly wages. Working women suffered more musculoskeletal disorders such as sprains, strains, carpal tunnel syndrome, and tendonitis than men. In 2004, 34% of all work-related injuries and illnesses suffered by women were musculoskeletal, compared to 30% among men. Women also were the victims of 64% of nonfatal assault injuries at the workplace; most assaults occurred in service occupations.

### Persons with Disabilities

Disabilities affected every segment of the population, but those living in poverty are disproportionately affected. According to a Census Bureau survey, 51.2 million people, or 18% of Amer-

icans, reported a disability in 2002 and 32.5 million (12%) reported a severe disability. In the adult population, 20% of women and 17% of men reported a disability. Among children under 15 years of age, boys are more likely than girls to report a disability (11% versus 6%, respectively).

From 12% to 23% of children under age 18 have a special health care need—a chronic condition with a functional limitation or other negative consequences. Among the most prevalent conditions in 2002 were asthma (12% of children aged from birth to 17 years), respiratory allergies (12% of children aged from birth to 17 years), learning disabilities (8% of those aged 3–7 years), and attention deficit hyperactivity disorder (7% of those aged 3–17 years). About 12% of children ages 3–21 used special education services in 2003–2004, up from 11.7% in 1999–2000. State and federal government education departments spend US\$ 50 billion per year for special education programs for 3–21-year-olds, compared to US\$ 27.3 billion spent on regular education.

In 2002, people with severe disabilities were highly likely to have Medicare or Medicaid coverage, to live below the poverty level, to report their health status to be fair or poor, to receive public assistance, and to have a household income below US\$ 20,000. The poverty rate for people age 25 to 64 years with no disability was 8%, compared to 11% for those with a non-severe disability, and 26% for those with a severe disability.

Among adults aged 21 to 64 years who had a disability, about 56% had been employed in the one-year period prior to the interview. People with a severe disability reported the lowest employment rate (42%), as compared to those with a non-severe disability (82%) and those with no reported disability (88%).

Disabilities affected every segment of the population, but adults 65 years and older struggled with an inordinate share of disabilities and impairments. According to a survey conducted in 2004, 19.7% reported a chronic disability. About 19% of women aged 65 and older and 14% of men aged 65 and older reported trouble seeing, even when wearing contact lenses or glasses. For women in this age group, 34% reported trouble hearing; for men in this age group, 48% did. Among this elderly population, 13.7% of men and 23.6% of women reported difficulty walking two to three blocks.

### Indigenous Peoples and Other Ethnic and Special Groups

Blacks, Latinos, Native Americans, and Asian/Pacific Islanders in the country incur a disproportionate share of mortality, morbidity, disability, and adverse health conditions compared to non-Hispanic Whites. Life expectancy and infant mortality trends show a widening gap between majority and minority ethnic/racial groups, even as these health indicators improved for most groups over the 1990s. These overriding health differences between ethnic and racial populations were strongly related to so-

cioeconomic differences and differences in the prevalence of poverty in each group.

The Latino population, the largest and fastest growing minority in the United States, comprised 12.5% of the population in 2000 and included persons of Mexican, Puerto Rican, Cuban, and South and Central American descent, among others. Health disparities within the country's Latino population—age-adjusted death rates were substantially lower for Latinos of Cuban descent than for those of Mexican or Puerto Rican descent—primarily reflected socioeconomic differences. Overall, health indicators for Latinos improved during the 1990s and early 2000s.

African-Americans, who made up more than 12% of the population in 2000, have three times the portion of their population living in poverty than do non-Hispanic Whites; one-third of all Blacks live in poverty. Half of the Black population lives in urban areas often typified by inadequate housing, poorly funded schools, lack of living-wage employment opportunities, and violence. African-American death rates were higher than those for Whites for most leading causes of death. For African-Americans 15–24 years old, homicide was the leading cause of death for males and the second leading cause of death for females. But Blacks had lower age-adjusted death rates for suicide, chronic lower respiratory diseases, Alzheimer's disease, chronic liver disease and cirrhosis, and Parkinson's disease than Whites. Overall, many health indicators improved for Black communities in the 1990s and early 2000s; colorectal, respiratory, and breast cancer death rates dropped, and there were gains in leading health indicators such as infant mortality and overall death rates.

Asian/Pacific Islanders, who speak more than 30 different languages and originate from a variety of very different cultures, represented almost 4% of the country's population in 2000. Overall, they had roughly the same socioeconomic and health status as the majority White population. Some in this group had been in the United States for generations, but others had arrived more recently. Given its diversity, health challenges in this population varied substantially from group to group. Southeast Asian men suffered more lung cancer than the majority male population, and older Filipino men living in California had greater rates of high blood pressure than other California men of the same age. Southeast Asian immigrants are 40 times more likely to have tuberculosis and hepatitis B than the general population.

In 2000, those who reported themselves as only American Indian or Alaskan Native made up 0.9% of the population, accounting for 2.5 million persons, and those reporting as Native American or Alaskan Native plus at least another race represented 0.6% of the population, or 1.6 million persons. This minority resides primarily in urban areas or on reservations, and many receive their health care through clinics and hospitals provided by the federal government's Indian Health Service. The population is very young, partly because many die before reaching old age. This native population was much more likely than



the general population to die from diabetes mellitus related to obesity and from liver disease due to alcohol abuse. Accidents and violence (homicides and suicides) are leading causes of death among Native Americans and Alaskan Natives. Alcoholism, which contributed to many of the major causes of death, is a leading health and social problem in this community. Smoking prevalence also is higher among them, increasing risk for smoking-related diseases.

In 2004, nearly 54,000 refugees were admitted into the United States, representing a significant increase from the previous two years of relatively low admissions following the terrorist attacks in 2001 (27,000 in 2002 and 28,000 in 2003). There were two principal groups of refugees admitted in 2004, Somali Bantu from Kenya (totaling about 12,000) and Hmong from Thailand (totaling about 14,000). In addition to these refugees, about 23,000 Cuban entrants were also admitted in 2004. Refugees and entrants often have health problems that need to be addressed as part of their initial resettlement, and federal and state governments provide health care coverage for these new arrivals through Medicaid (if they meet that program's eligibility criteria) or special refugee health coverage available for their first eight months in the country (if they do not meet Medicaid criteria).

## HEALTH CONDITIONS AND PROBLEMS

### COMMUNICABLE DISEASES

#### Vector-borne Diseases

Most **malaria** cases reported in the United States were acquired outside of the country. The few that were acquired domestically were due to blood transfusion, congenital transmission, or undetermined mode of transmission. Of the 1,337 cases of malaria reported in 2002, only 5 were domestically acquired: one person acquired malaria from blood transfusion, one from congenital transmission, and three from an undetermined mode of transmission.

In 2004, there were 1,324 cases of malaria reported, representing a 3.6% increase from 2003 (1,278 reported cases). Approximately 50% of the cases reported in the United States in 2004 were due to *Plasmodium falciparum* and 24% of cases were attributed to *Plasmodium vivax*.

In 2005, there were 3,000 cases of **West Nile virus** reported, representing a 15.4% increase from 2004. Of these, 1,294 were West Nile encephalitis or meningitis, 1,607 were West Nile fever, and 99 were unspecified.

In 2004, 19,804 cases of **Lyme disease** were reported, for a national average of 6.7 cases per 100,000 persons. In the 12 states where Lyme disease is most common, the average was 27.4 cases per 100,000 persons.

Most other vector-borne diseases are acquired outside of the country, with the exception of **tularemia** and **arboviral en-**

**cephalitis**, which are endemic in the United States. **Plague** is extremely rare in the United States, with an average of only 10–15 cases reported each year.

#### Vaccine-preventable Diseases

Life threatening or debilitating diseases which were once common in the United States, now remain at sustained low levels thanks to the widespread use of vaccines, particularly among children. In 2004, there were no cases of **diphtheria**, **paralytic wild-type polio**, or **congenital rubella syndrome**; there were fewer than 12 cases of **measles** and **tetanus** reported in the country. In March 2005, the U.S. Centers for Disease Control and Prevention announced a major public health milestone, the elimination of rubella virus in the United States.

In 1983, vaccines for seven diseases were available and recommended for routine use in the United States. By the summer of 2006, vaccines for 16 diseases were available and recommended for children and adolescents. Since 2000, pneumococcal conjugate vaccine; meningococcal conjugate vaccine; a comprehensive booster for tetanus, diphtheria, and pertussis; universal use of hepatitis A vaccine; rotavirus vaccine; human papillomavirus vaccine; and a routine recommendation for influenza vaccination for children 6 to 59 months of age have been added to the routine immunization recommendations in the United States. These new vaccines have great potential to reduce the burden of diseases preventable through vaccination, but their use requires a large investment of resources, infrastructure development, and public and provider education.

An economic evaluation of the impact of seven vaccines—diphtheria-tetanus-acellular pertussis (DTaP); tetanus; *Haemophilus influenzae* type b (Hib); polio; measles-mumps-rubella; hepatitis B; and varicella routinely given as part of the childhood immunization schedule—found them to be enormously effective. Routine childhood vaccination with these vaccines, which prevent nearly 14 million cases of disease and more than 33,000 deaths over the lifetime of children born in any given year, resulted in an annual cost saving of US\$ 9.9 billion in direct medical cost and an additional US\$ 33.4 billion in savings in indirect costs.

Childhood vaccination coverage rates are at record high levels for every vaccine and for all vaccination series measures, and have generally improved since 2000. In 2000, 73% of children aged 19–35 months had received four doses of DTP vaccine, three doses of polio vaccine, one dose of measles-containing vaccine, and three doses of Hib and hepatitis B vaccine. In 2004 this combined coverage improved to 81%. Vaccine coverage also has greatly improved for some new vaccines. During the 1990s, approximately 11,000 hospitalizations and 100 deaths occurred annually due to **varicella**. Great progress was made in educating health care providers and the public about the benefits of varicella vaccine, and coverage in 2004 reached 88%.

Unfortunately, the burden from vaccine-preventable diseases among adults in the United States remains high. **Pneumonia** and **influenza** were the fifth leading cause of death in all persons aged 65 and older, based on 2000 national mortality data. Although vaccines are available for adults against these two diseases, in 2004 only 65% of persons 65 years of age and older reported having had an influenza vaccination, and 57% of persons 65 years of age and older reported having a pneumococcal vaccination. A critical challenge in the United States is extending the successes in childhood immunization to adults.

### Diseases Preventable by Blood Screening

Before being released for use in patients, blood donations are screened for hepatitis B and C viruses; human immunodeficiency virus (HIV 1 and 2); human T-lymphotropic virus, types I and II; and the bacterium that causes syphilis.

### Intestinal Infectious Diseases

Foodborne diseases cause an estimated 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the United States each year. Known pathogens account for an estimated 14 million illnesses, 60,000 hospitalizations, and 1,800 deaths. Three pathogens, *Salmonella*, *Listeria*, and *Toxoplasma*, are responsible for 1,500 deaths each year, more than 75% of those caused by known pathogens; unknown agents account for the remaining 62 million illnesses, 265,000 hospitalizations, and 3,200 deaths.

*Escherichia coli* O157:H7 is estimated to cause 73,000 illnesses in the United States annually. From 1982 to 2002, 49 states reported 350 outbreaks, representing 8,598 cases, 1,493 hospitalizations, 354 hemolytic uremic syndrome cases, and 40 deaths. The transmission route for 183 of the cases was foodborne, 74 unknown, 50 person-to-person, 31 waterborne, 11 animal contact, and 1 laboratory-related. The food vehicle for 75 foodborne outbreaks was ground beef; produce was responsible for 38 outbreaks.

In the United States, contaminated drinking water in homes and businesses is usually a result of water main breaks or other emergency situations. Parasites cause the majority of problems. During 1999–2000, 39 outbreaks associated with drinking water were reported by 25 states. These outbreaks caused illness among an estimated 2,068 persons and were linked to 2 deaths. Of the 39 outbreaks, 28 (71.8%) were linked to groundwater sources, and 18 (64.3%) of those were associated with private or non-community wells that were not regulated by the United States Environmental Protection Agency.

### Chronic Communicable Diseases

In 2000, 16,309 new **tuberculosis** (TB) cases were reported, for a rate of 5.8 new cases per 100,000 population. By 2004, new tuberculosis cases had dropped to 14,517, for a rate of 4.9 per 100,000. Although tuberculosis disease rates continued to decline between 2000 and 2004, TB continues to be an important endemic disease in the United States. Most cases were among

younger and middle-aged adults. In 2004, 34% of the cases were among 25–44-year-olds and 29% among 45–64-year-olds; only 11% were in children under 15 years old. Moreover, between 2000 and 2004 the number of cases among U.S.-born persons decreased from 53% of all cases to 46%, while the number of cases among the foreign-born population increased from 47% of all cases to 54%. Because the U.S.-born and the foreign-born population both increased, new tuberculosis cases had a net decrease from 2000 to 2004 among both populations, from 3.5 to 2.6 new cases per 100,000 for the U.S.-born population and from 25.3 to 22.8 per 100,000 among the foreign-born. In 2004, California, New York, and Texas accounted for 42% of the overall national case total. The District of Columbia, Hawaii, California, Texas, New York, and Alaska had the highest rates, followed by southern states. As did tuberculosis incidence rates, tuberculosis death rates also declined through the early 2000s. In 2000 the tuberculosis-specific death rate was 0.3 per 100,000 population; according to preliminary data, by 2003, this rate had dropped to 0.2 per 100,000.

The decline in tuberculosis rates has been attributed to increased efforts to identify and promptly treat cases and to ensure treatment compliance, to improved infection controls in institutional settings, to a decrease in the incidence of AIDS, and to the declining frequency of multi-drug resistant cases.

**Leprosy** remains relatively uncommon in the United States. In 2002, 96 cases were reported in the country.

### Acute Respiratory Infections

Pneumonia and influenza were two of the leading causes of death in the United States in the early 2000s. The age-adjusted death rate for **influenza** and **pneumonia** was 21.8 per 100,000 population in 2003. Although influenza vaccine is provided widely to the public during flu season, production delays have led to vaccine shortfalls in three of the last five influenza seasons (2000–2001 through 2004–2005).

### HIV/AIDS and Other Sexually Transmitted Infections

At the end of 2004, there were more than 944,305 cumulative AIDS cases and 529,113 AIDS deaths in the country. Approximately 415,193 persons were living with AIDS by the end of 2004.

AIDS incidence and mortality rates were both higher in men, with males accounting for 73% of all adult and adolescent HIV/AIDS cases in 2004. From 2001 to 2004, the estimated number of HIV/AIDS cases decreased 2% among males and 15% among females. During this period, the estimated number of HIV/AIDS cases increased among men who have sex with men and decreased among injection drug users, heterosexual adults, adolescents, and children. Women were especially at risk of acquiring HIV infection through heterosexual sex and subsequently developing AIDS, since it is easier for women to sexually acquire HIV from male partners than for males to acquire it from female partners. An estimated 10,410 women became newly in-

ected with HIV in 2004; approximately 68% of them were African-American, 16% were White, and 15% were Hispanic. An estimated three-quarters of all infected women were infected with HIV through heterosexual contact, and the majority of the remaining women were infected through injection drug use. Among men and women who inject heroin and cocaine, sharing HIV-infected needles is the primary means of transmission. HIV-infected women who inject drugs are more likely to develop AIDS from their infection than are their male counterparts with the same HIV concentration in their blood.

New pediatric AIDS cases have been declining steadily since 1994 when the government issued guidelines recommending testing and treatment of pregnant women and neonates to reduce perinatal HIV transmission. The vast majority of AIDS cases occur through perinatal exposure. In 2003, about 150 new AIDS cases were reported among children under age 13, compared with more than 700 cases in 1990.

AIDS is not uniformly distributed geographically: rates continued to be high in metropolitan areas in the country's Northeast, which had the second highest rate of any region in the U.S. This reflected the differential distribution between urban and rural areas—northeastern cities lie within the major drug-trade corridor that follows Interstate 95 and have disproportionately higher percentages of injection drug users. The South had the highest AIDS rates in the country in 2000–2004, which is attributable primarily to those areas with the greater concentrations of poverty, such as inner cities and the rural South.

Sexually transmitted infections take an especially heavy toll on women's health. Each year an estimated one million women in the United States suffer a symptomatic episode of **pelvic inflammatory disease**.

Every 7–10 years, drops in **syphilis** in the country have been followed by epidemics. The rate of primary and secondary syphilis reported in the United States decreased during the 1990s, and in 2000 was the lowest since reporting began in 1941. However, the rate of reported primary and secondary syphilis has increased each year since 2001, primarily among men. In 2004, reported primary and secondary syphilis cases increased to 7,980, from 7,177 in 2003, an increase of 11.2%. The number of reported cases in women increased for the first time in over a decade, though only slightly. Cases of congenital syphilis continued to decline; 353 cases were reported in 2004, down from 432 in 2003.

Reported **chlamydia** rates continued to increase from 2000 to 2004. In 2004, 929,462 cases of genital *Chlamydia trachomatis* were reported, an increase of 5.9% compared with the 2003 rate. These trends are probably due to continued expansion of screening programs for chlamydia, the use of improved diagnostic tests that have greater sensitivity, and improved surveillance systems for this disease. There were 330,132 cases of **gonorrhea** reported in the United States in 2004. Since 2000, the reported gonorrhea rate has decreased 15.2%, after a plateau in 1998 and 1999. Chlamydia was the most common of the three sexually transmit-

ted infections, with reported rates of 319.6 cases per 100,000 population in 2004; gonorrhea ranked second, with 113 per 100,000; and syphilis was a distant third, with 2.7 per 100,000.

About 6.2 million Americans get a new genital **human papillomavirus** (HPV) infection each year. Approximately 10 of the 30 identified genital HPV types can lead, in rare cases, to development of cervical cancer. Research has shown that for most women (90%), cervical HPV infection becomes undetectable within two years. Although only a small proportion of women have persistent infection, persistent infection with “high-risk” types of HPV is the main risk factor for cervical cancer.

Sexually transmitted infection rates are disproportionately high among ethnic minorities, a disparity that is associated with these groups' higher levels of poverty and lack of access or failure to access health services.

### Zoonoses

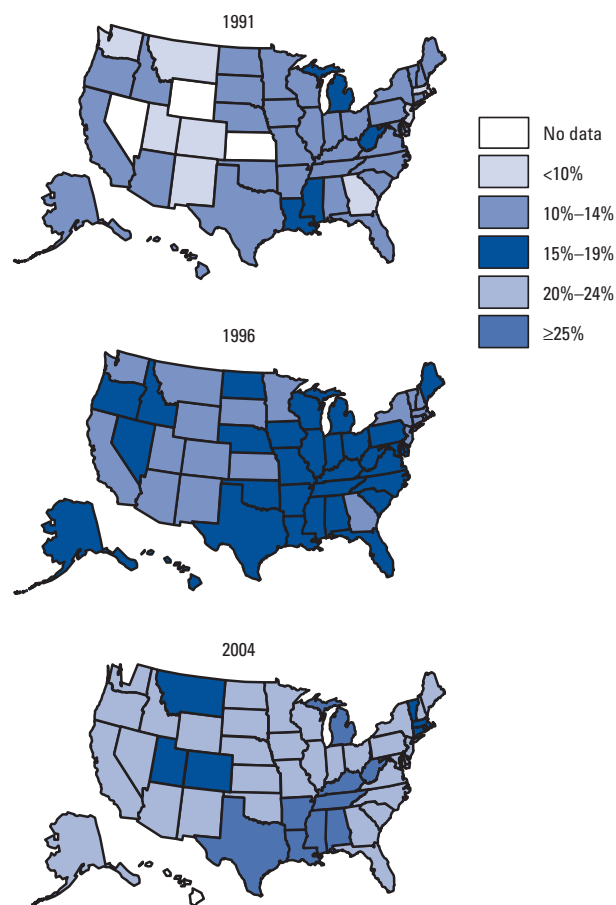
In 2001, 49 states, the District of Columbia, and Puerto Rico reported 7,437 cases of **rabies** in animals and no cases in humans to the Centers for Disease Control and Prevention (Hawaii is the only state that has never reported an indigenously acquired rabies case in humans or animals). The total number of reported cases increased by 0.92% from those reported in 2000 (7,369 cases). Wild animals accounted for 93% of reported cases of rabies in 2001. Raccoons continued to be the most frequently reported rabid wildlife species (37.2% of all animal cases during 2001), followed by skunks (30.7%), bats (17.2%), foxes (5.9%), and other wild animals, including rodents and lagomorphs (0.7%). Reported cases in raccoons and foxes decreased 0.4% and 3.5%, respectively, from the totals reported in 2000. Reported cases in skunks and bats increased 2.6% and 3.3%, respectively, from the totals reported in 2000.

## NONCOMMUNICABLE DISEASES

### Nutritional and Metabolic Diseases

In the 2000s, the country has continued to face an epidemic of **obesity**. In 1988–1994, the percentage of the adult population that was obese was 22.3%; by 2003–2004 the percentage had increased to 32.2%. An additional 34.1% of adults were overweight in the latter two years. The proportion of adults who are obese varies widely by state (Figure 4). Among children and adolescents aged 2–19 years, 34.8% were at risk of overweight in 2003–2004. A reported 27% of adults did not engage in any physical activity and only one-quarter consumed the recommended fruits and vegetables five or more times daily. Excessively overweight persons have higher mortality rates than those not overweight, being at higher risk for diabetes, cardiovascular disease, and certain cancers. Each year an estimated 300,000 adults in the country die prematurely of causes related to obesity. The total cost of obesity-related illness in the United States is about US\$ 100 billion per year.

**FIGURE 4. Obesity<sup>a</sup> trends among adults, United States of America, 1991, 1996, and 2004.**



**Source:** U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Behavioral Risk Factor Surveillance System (BRFSS).

<sup>a</sup>BMI  $\geq 30$ , or about 30 lb overweight for a 5'4" person.

The proportion of the adult population with **diabetes** rose from 8.4% in 1988–1994 to 9.4% in 1999–2002. The rapid increase in obesity, an important risk factor for Type 2 diabetes, is an important factor in this increase. Rates of childhood diabetes also are increasing rapidly, due in part to increasing levels of childhood obesity. The direct and indirect costs associated with diabetes are estimated to be US\$ 132 billion per year.

### Cardiovascular Diseases

Cardiovascular disease, mainly heart disease and stroke, is a major cause of death in the country, accounting for 36.9% of all deaths in 2003. More than 24 million people in the United States are estimated to have some form of cardiovascular disease. In 2003, an estimated 6.8 million inpatient cardiovascular operations and procedures were performed in the United States. In

2006 the estimated direct and indirect costs of cardiovascular disease were estimated at US\$ 403.1 billion.

Cardiovascular disease rates are not uniform across the United States. After adjusting for age, cardiovascular disease rates were highest in the South in 2003. Because cardiovascular disease rates increase with age and proportionately there are more elderly women than elderly men, the death rate from this disease was higher among women.

### Malignant Neoplasms

Approximately one-quarter of all deaths in the country are due to cancer. The 2003 annual health care and loss-of-productivity costs of cancer morbidity and mortality are estimated at US\$ 192 billion.

In 2006, it was estimated that 1.4 million new cases of invasive cancer, excluding skin cancer and carcinoma in situ, were diagnosed in the United States. Over 100,000 in situ cancers, primarily breast and melanoma, were estimated for the same year. Among men, the most common cancers diagnosed in 2006 were **prostate, lung and bronchus, and colon and rectum**. Prostate cancers represented one-third of all new cancers in men. Among women, the most common cancers diagnosed were **breast, lung and bronchus, and colon and rectum**; these cancer sites combined represented more than half of all cancers diagnosed in women. On average, there was a one-in-two chance that a man would develop invasive cancer over his lifetime, and a one-in-three chance for a woman.

The overall incidence of cancer was relatively stable between 1992 and 2003, although trends for women have shown a small annual increase of 0.3% since 1987. Breast cancer incidence rates increased slowly throughout the 1990s, but remained level during 2001–2003. Rates for colon and rectum cancers began to decline in the mid-1980s for both men and women, with decreases reported in the last ten years for most racial and ethnic populations. Lung and bronchus cancer incidence rates have declined for men for more than 20 years but continue to increase for women, though more slowly during the past decade. Prostate cancer incidence has increased since the mid-1990s.

Lung cancer was the leading cause of cancer deaths among men and women, and is primarily caused by smoking tobacco. In 2006, an estimated 90,330 men and 72,130 women died of lung cancer. Breast cancer deaths were second for women at 40,970, and prostate cancer was second for men at 27,350 deaths. There was an estimated total of 564,830 cancer deaths in the United States in 2006, with 291,270 occurring in men and 273,560 in women.

### OTHER HEALTH PROBLEMS OR ISSUES

#### Disasters

The United States experienced a variety of natural disasters throughout the reporting period. Hurricanes on the Atlantic

coast, the Gulf of Mexico, and the Pacific coast; earthquakes near the San Andreas fault and other fault lines, especially on the Pacific coast; tornadoes in the Plains states; and floods in every section of the country have left in their wake loss of life, injuries, major disruptions in daily life, and extensive property damage. As was the case with many sectors, the public and private health care sectors were challenged to respond.

In 2005, 48 major disasters were declared. Winter storms caused major disasters to be declared in seven states. Puerto Rico and 20 states suffered seasonal storms, including tropical storms, and/or flooding, all leading to major disasters being declared. Three states declared major disasters due to tornadoes and 11 states sustained destruction due to fires. Major disasters were declared in American Samoa due to a cyclone and in the Northern Mariana Islands due to a typhoon. Hurricanes led to major disaster declarations in six states. Hurricane Katrina, a strong category 3 hurricane on the Saffir-Simpson scale, was one of the strongest storms to strike the United States coast in the last 100 years and ranks among the worst natural disasters in the country's history. The hurricane caused the city of New Orleans to be evacuated, marking the first time a major American city has been completely evacuated. Inland effects included high winds and some flooding in several states and widespread destruction in the states of Alabama, Florida, Louisiana, and Mississippi. The damage to individuals and to families torn apart by the hurricane was immeasurable, with estimates of over 1,800 deaths directly and indirectly due to Katrina—the highest total death count in the country due to a disaster since the 1928 major hurricane in southern Florida. Katrina's damage was compounded when Hurricane Rita made landfall soon after near the Texas-Louisiana border. The impact of these hurricanes highlighted the myriad of challenges posed by natural disasters, and the response to this disaster will help guide future public health and medical emergency preparedness response efforts. The importance of this cannot be underestimated since the Atlantic Basin is predicted to have an active hurricane phase during the next 10–20 years.

### Violence and Other External Causes

In the United States, the home is the second most common site of unintentional fatal injuries; motor vehicles on the road is the first. More than 18,000 people in the United States die each year from unintentional injuries that occur in the home. Falls account for one-third of unintentional injury deaths in the home. Males experience substantially more fatal unintentional injuries at home than females. However, females experience slightly more nonfatal home injuries than males. Older adults experience the highest rates of unintentional home injury deaths among all ages, with persons at least 80 years of age experiencing injury death rates more than 20 times greater than their younger counterparts.

Victims of more severe injuries are seen in hospital emergency departments. In 2004, there were more than 41 million injury-related visits to emergency departments in the United States. Al-

most 21% of all injuries seen in hospital emergency departments in 2004 were the result of falls. Motor vehicle crashes accounted for almost 11% of injury-related emergency department visits. There were 2.3 million violence-related injury visits to emergency departments in 2004, with more than 75% of those resulting from an assault and about 23% of the violence-related visits resulting from self-inflicted injuries.

Violence is a significant problem in the United States. From infants to the elderly, it affects people in all stages of life. In 2003, 17,732 people died as a result of homicide and 31,484 died by suicide. The number of violent deaths tells only part of the story. Many more survive violence and are left with permanent physical and emotional scars. Violence also erodes communities by reducing productivity, decreasing property values, and disrupting social services.

In 2004, U.S. residents age 12 or older experienced an estimated 5.2 million violent crimes (rape/sexual assault, robbery, aggravated assault, and simple assault). For violent crimes overall, aggregated rates declined by 9% from 2001–2002 to 2003–2004. Taken together, the one-year (2003–2004) and two-year (2001–2002 to 2003–2004) change estimates indicate that crime rates remain stabilized at the lowest levels experienced since 1973. Of all violent crimes reported by victims in 2004, approximately 4.6 million were aggravated or simple assault, 600,000 were robbery, and 200,000 were rape/sexual assault. Males and youths—those who historically have been the most vulnerable to violent victimization—continued to be victimized at higher rates than others in 2004. During 2004, armed offenders were involved in 22% of all violent crime incidents. The presence of a weapon was related to the type of crime. For example, rape and sexual assault incidents (8%) were less likely than robberies (46%) to be committed by an armed offender. The type of weapon also varied by the type of violence: 19% of robbery incidents occurred with a firearm present, compared to 5% of assault incidents. The rate of firearm violence declined significantly from 1993 to 2004 (from 5.9 to 1.4 victimizations per 1,000 people aged 12 or older).

In 2003, the year for which the most comprehensive data are available, the FBI reported a total of 16,500 murders or non-negligent manslaughters, a 1.7% increase from 2002. Although the rate of homicide changes year to year, the relationship between the victim's characteristics and the homicide tends to remain the same. In 2003, 78% of murder victims were male. When the race of the victim was known, just under 49% were White and the same number were Black, and less than 3% were other races. Murder is generally perpetrated between persons of the same race. Offenders were most often male (90%) and adult (92%). When information on the victim/offender relationship was available, 78% of the offenders were known to the victim; 29% of murders were triggered by an argument. Firearms were used in 71% of homicides.

The average annual number of rape victimizations for 2003–2004 was 65,510, a decrease of 27.9% from 2001–2002. Nationwide, almost 63 per 100,000 females reported being raped in

2000. Metropolitan areas had rates of 65 forcible rapes per 100,000, while rural counties had rates of 43. Cities saw an increase in reported rapes of 1.5% between 1999 and 2000, while suburban areas saw a decline of almost 1%. Rates in rural counties were virtually unchanged. Of all forcible rapes, 12% were perpetrated by juveniles.

There was a decline in the frequency of aggravated assaults reported to law enforcement in 2004. Non-metropolitan counties had the lowest rate of aggravated assaults, at 171 offenses per 100,000 inhabitants; cities had the highest, with 344; and suburbs ranked in the middle, with 234.

### Oral Health

The nation's oral health is the best it has ever been, yet oral diseases remain common in the United States. The nation spends an estimated US\$ 60 billion annually on dental services, including approximately 500 million visits to dental offices. Those who suffer the most from oral health problems include poor Americans, especially children and the elderly. Members of racial and ethnic groups also experience a disproportionate level of oral health problems. Those with disabilities and complex health conditions are also at greater risk for oral diseases, which may further complicate their health.

Most adults show some sign of gum disease. Severe gum disease affects about 14% of adults aged 45–54 years. More than one-third of adults living below the poverty level (18 years and older) have at least one untreated decayed tooth, compared to 16% of adults living above the poverty level. Older Americans who are economically disadvantaged, disabled, homebound, or institutionalized or lack insurance tend to have a greater risk for poor oral health.

Dental decay is one of the most common chronic infectious diseases among U.S. children. Among low-income children, almost 30% of tooth decay remains untreated. More than twice as many children and adolescents from low-income families had untreated decay (20%) as those from families with higher incomes (8%).

Each year, more than 30,000 new cases of cancer of the oral cavity and pharynx are diagnosed, and approximately 7,400 persons die of these diseases.

### Emerging and Reemerging Health Threats

Emerging and reemerging infectious diseases pose a continuing threat in the United States. Although modern advances have conquered some diseases, outbreaks of severe acute respiratory syndrome (SARS) and monkeypox in 2003, and an observed increase in antimicrobial resistance, particularly of methicillin-resistant *Staphylococcus aureus* (MRSA), are recent reminders of the extraordinary ability of microbes to adapt and evolve.

During the 2003 outbreak of SARS, eight people in the United States had laboratory evidence of SARS caused by a new coronavirus (SARS-CoV). All of them had traveled to the U.S. from other parts of the world. That same year, there were 37 confirmed

and 10 probable human cases of monkeypox in the country. Most of them got sick after having had contact with pet prairie dogs that were sick with monkeypox. This was the first time that there had been an outbreak of monkeypox in the United States.

In a recent study, almost 60% of skin infections in adult patients at emergency departments in 11 U.S. cities were caused by MRSA, and invasive MRSA infections (associated with health care facilities or spread within the community) are increasing in communities where these numbers are being tracked. Data suggests that 8% to 20% of clinical MRSA isolates are community-associated.

Global threats also have emerged, including the possibility of a highly pathogenic avian influenza that is capable of infecting humans through direct contact with infected birds. This influenza strain, influenza A (H5N1), first appeared in humans in Hong Kong in 1997 and, since then, has infected more than 200 people in the Eastern Hemisphere, with a mortality rate of over 50%. The threat of influenza A (H5N1) or another novel influenza virus causing an influenza pandemic has led the United States to undertake significant preparedness efforts aimed at preventing or slowing a potential pandemic.

Morbidity and mortality caused by chemical, biological, radiological, and nuclear agents also have emerged as health threats in the United States. In October 2001, the first inhalational anthrax case in the United States since 1976 was identified in a media company worker in Florida. A national investigation was initiated to identify additional cases and determine possible exposures to *Bacillus anthracis*. Surveillance was enhanced to identify cases, which were defined as clinically compatible illness with laboratory-confirmed *B. anthracis* infection. From October 4 to November 20, 2001, 22 cases of anthrax (11 inhalational, 11 cutaneous) were identified; 5 of the inhalational cases were fatal. Twenty (91%) case-patients were either mail handlers or were exposed to worksites where contaminated mail was processed or received. *B. anthracis* isolates from four powder-containing envelopes, 17 specimens from patients, and 106 environmental samples were indistinguishable by molecular subtyping. Illness and death occurred not only at targeted worksites, but also along the path of mail and in other settings. Since this incident, the United States has undertaken significant efforts to increase surveillance and develop and acquire countermeasures for threats from chemical, biological, radiological, and nuclear agents.

## RESPONSE OF THE HEALTH SECTOR

### Health Policies and Plans

There were no fundamental system-wide health reforms in the late 1990s, but there were some major adjustments and new commitments made to meet evolving needs.

Starting in 2006, Medicare beneficiaries were offered coverage for prescription drugs; by May 2006, 90% of Medicare enrollees

were receiving the coverage. Most people pay a monthly premium for this coverage, which is helping to lower prescription drug costs and helps protect against higher costs in the future. Medicare Prescription Drug Coverage is an insurance plan: private companies provide the coverage and beneficiaries choose the drug plan and pay a monthly premium.

In 2005, Congress and the Department of Health and Human Services took steps to address the rising cost of long-term care for people with disabilities (including the elderly). While the majority of those with long-term care needs rely on unpaid care from relatives and friends, the average cost for a private room in a nursing home is US\$ 70,000 per year. The largest public payer for long-term care in the U.S. is the Medicaid program, a federal-state partnership that covers institutional and community-based care for low-income elderly and disabled persons. Medicaid long-term care expenditures were US\$ 47.3 billion in 2004. Medicare, the health insurance program for the elderly and disabled, generally does not cover long-term care, with the exception of some time limited post-acute stays. A relatively new source of financing for long-term care is private long-term care insurance. Approximately 9.2 million long-term care policies were sold from 1987 through 2002, and nearly US\$ 5.6 billion in benefits were paid out in 2004. Because Congress enacted several key reforms to encourage Americans to plan ahead for the possibility of needing long-term care (for example, by purchasing long-term care insurance), the number of private policy holders is increasing at a rapid rate.

Following the terrorist attacks of September 11, 2001, and reinforced by the hurricanes of 2005, emergency preparedness has become a critical area of focus at the federal, state, and community levels, and much progress has been made. In 2004 and 2005, the U.S. Department of Health and Human Services provided more than US\$ 2 billion to states, territories, and localities to strengthen their capacity to respond to terrorism and other public health emergencies. The funds will be used to support the National Response Plan to upgrade infectious disease surveillance and investigation, enhance the readiness of hospitals and the health care system to deal with large numbers of casualties, expand public health laboratory and communications capacities, and improve connectivity between hospitals and local and state health departments to enhance disease reporting.

In 2003, the first-ever federal privacy standards to protect patients' medical records and other health information provided to health plans, doctors, hospitals, and other providers took effect. Developed by the Department of Health and Human Services, these new standards provide patients with access to their medical records and more control over how their personal health information is used and disclosed. They represent a uniform, federal level of privacy protection for consumers across the country by limiting the ways that health plans, pharmacies, hospitals, and other covered entities can use patients' personal medical information. Regulations protect medical records and other individually identifiable health information, whether it is on paper, in

computers, or communicated orally. The law creating these privacy protections also encourages electronic transactions.

Finally, there is increasing recognition, in both the public and private sectors, that significant improvements in health care quality, continuity of care, and efficiency of care may be realized through implementation of health information technology. Several activities have been initiated to support its adoption. In April 2004, the President signed an Executive Order recognizing the need to develop and implement a nationwide interoperable health information technology infrastructure and establishing the position of the National Coordinator for Health Information Technology in the Department of Health and Human Services. It is anticipated that the new infrastructure will be developed as a joint public/private effort and that it will be decentralized by standards and address a variety of privacy and security issues.

### Organization of the Health System

The United States' health system is actually a cluster of health systems of diverse complexity. Federal, state, and local governments have defined, often in concert with one another, their roles in protecting the public's health. State public health departments are not under the jurisdiction of federal health agencies and administrations, and, in many states, city and county local public health departments are not under the jurisdiction of state public health departments. As a rule, direct health care services are provided by the private sector. Many of these governmental and non-governmental services share public funds, technical advice, regulatory standards, and health research provided by federal, state, and local governments.

The federal government manages various programs; oversees research; and provides technical advice and direction, training, funding, and other public health resources, mainly through the Department of Health and Human Services. The Department often works through state and local government programs and with other partners. Many other federal government organizations outside the Department's jurisdiction, such as the Environmental Protection Agency, the Social Security Administration, the Department of Agriculture, the Department of Transportation, and the Department of Homeland Security, also are active in securing the population's safety and health.

Responsibility for individual health care issues is much more decentralized. The government provides health insurance to highly vulnerable groups, such as some families in poverty, the disabled, and the elderly. Most persons, however, acquire private health insurance coverage through their employers or on their own.

Direct health care services, including primary, secondary, and tertiary care, are provided primarily by thousands of private-sector hospitals and clinics throughout the country. The federal government directly funds additional hospitals and clinics that care for military personnel and veterans and for American Indians and Alaskan Natives.

## The Burden of the Obesity Epidemic

The United States is in the midst of an obesity and overweight epidemic. Between the two survey periods 1976–1980 and 2003–2004, the prevalence of obesity in adults and in children 2–5 years old more than doubled. Among 6–11-year-olds and 12–19-year-olds, it more than tripled. One of the health objectives set in the Government’s Healthy People 2010 initiative is to reduce the prevalence of obesity among adults to below 15%, and the Steps Program is one of the most promising initiatives in the effort to achieve this goal. This program will provide grants to communities to implement chronic disease prevention and health promotion activities designed to address such issues as obesity, diabetes, physical inactivity, and poor nutrition.

### Public Health Services

Universally available services such as potable water and municipal solid waste disposal are generally managed or regulated by local and state governments. Health issues that cross local and state boundaries—such as air pollution, food safety, and food supplementation for vulnerable populations—are typically regulated by federal and state governments. Quality of health care and credentialing of health professionals are generally the responsibility of nongovernmental, nonprofit organizations and state governments.

Among many other regulatory, administrative, and advisory roles, state and local governments have adopted responsibility for disease surveillance, drug safety regulations, device safety, workplace safety, air and water contamination standards, and safety behaviors such as seatbelt use and adherence to speed limits. The federal, state, and local governments also respond to disease outbreaks and other health emergencies, such as natural or human-caused disasters.

### Health Promotion

The federal government continues to pursue its ambitious health promotion and disease prevention campaign. “Healthy People 2010” sets a comprehensive, nationwide agenda designed to improve the health of everyone in the United States during the first decade of the 21st century. “Healthy People 2010” is committed to promoting health and preventing illness, disability, and premature death. The initiative has two overarching goals: to help persons of all ages increase the quality and the number of years of healthy life, and to eliminate health differences, be they differences by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation.

“Healthy People 2010” encompasses nearly 500 objectives clustered in 28 focus areas. Many objectives focus on interventions designed to reduce or eliminate illness, disability, or premature death; others deal with broader issues such as improving access to quality health care, strengthening public health services, and improving the availability of health-related information. The campaign enlists communities, the nonprofit and for-

profit private sectors, and government to reduce identified risk factors and enhance protective factors to decrease the incidence of unhealthy conditions and disease.

### Human Resources

In 2004, there were more than 17 million jobs in the health sector or in health occupations outside the health sector, accounting for nearly 12% of the total U.S. workforce. Among these were approximately 2.4 million registered nurses, 1.45 million nursing aides, 1.3 million personal care or home health aides, 567,000 physicians, 230,000 pharmacists, and 150,000 dentists.

Noting that health care is the fastest growing employment sector in the country, the U.S. Bureau of Labor Statistics projected that between 2004 and 2014, the health care sector will grow by more than 27%, compared to a growth under 12% for all other employment sectors. Within health care, jobs in home health care and offices of health practitioners, particularly physician offices, are projected to grow the fastest. The health occupations projected to add the most new jobs over the 10-year period are registered nurses (703,000 new jobs), home health aides (350,000 new jobs), and nursing aides (325,000 new jobs). More than 200,000 physicians and 100,000 new pharmacists will also be needed to fill new jobs as well as replace those who leave existing positions.

Most sources acknowledge a serious nursing shortage, which may become more severe as the population continues to age. Reimbursement issues, working conditions, and regulatory requirements are cited as contributing factors.

### Research and Technological Development in Health

The government and the private sector devote extensive human and financial resources to direct and indirect research on health, including such topics as biomedicine, pharmaceuticals, health systems and policies, food and product safety, and agricultural and environmental health. This work cuts across numerous governmental agencies, as well as the nonprofit and corporate sectors.



In 2005, the U.S. Department of Health and Human Services spent more than US\$ 30 billion on research, demonstration, and evaluation, including investments for medical research, public health, and food and drug safety. The National Institutes of Health invests more than US\$ 27 billion annually in medical research, 80% of which is awarded through almost 50,000 competitive grants to more than 212,000 researchers at more than 2,800 universities, medical schools, and other research institutions in every state and around the world. Another 10% of the Institutes' budget supports projects conducted in its own laboratories by nearly 6,000 scientists.

Within the Department of Health and Human Services, the Centers for Disease Control and Prevention (CDC) spends more than US\$ 650 million on research to meet health and safety challenges, including public health research on emerging infectious diseases, environmental threats, the aging population, and lifestyle choices. Another Department component, the Food and Drug Administration (FDA), conducts research and carries out regulatory activities to ensure the safety of food, drugs, devices, and cosmetics. FDA spends over US\$ 140 million on research. Other major areas of research within the Department of Health and Human Services include health care quality, aging, and mental health services.

Although basic research is conducted by the government, most pharmaceutical and medical device research is paid for by the companies that produce these products. A private organization representing the country's leading pharmaceutical research and biotechnology companies estimated that, industry-wide, research and investment reached US\$ 51.3 billion in 2005.

### Health Sector Expenditures and Financing

The U.S. spent US\$ 1.9 trillion on health care in 2004. The health spending share of GDP grew 0.1%, to 16% in 2004. This was a smaller share increase than experienced in recent years, as economic growth in 2004 was the fastest since 1989. Per capita health expenditures increased from an annual US\$ 4,539 in 2000 to US\$ 6,280 in 2004. Health spending rose 7.9% in 2004, slower than the 8.2% growth in 2003 and 9.1% in 2002.

Although private spending continued to represent the lion's share of health spending in 2004 (US\$ 1.03 trillion compared to total federal/state US\$ 847 billion), federal and state spending for health care rose 8.2% in 2004. Public spending was dominated by

Medicare (US\$ 309 billion in 2004), with Medicaid spending close behind (US\$ 291 billion).

The government provides health insurance coverage to qualified populations living in poverty (primarily through Medicaid) and to those 65 years and older (primarily through Medicare), as well as to the military. In 2004, about 88% of persons covered by private health insurance were on some kind of employment-based plan.

The proportion of the population with government health insurance coverage increased from 24.7% in 2000 to 27.3% in 2005. This change in government coverage was primarily due to the increase in the percentage of the population with Medicaid coverage, which rose from 10.6% in 2000 to 13.0%, or 38.1 million persons, in 2005. Medicare coverage for the elderly remained relatively stable throughout the reporting period, with 42.5 million beneficiaries in 2005. About nine million members of the U.S. military receive health care through the military health program, TRICARE.

In 2004, private payers played a greater role in slowing spending than public payers. Private spending growth slowed to 7.6% in 2004, compared with 8.6% in 2003. Out-of-pocket payments grew 5.5% in 2004, slower than aggregate health spending growth and slower than private insurance premiums, both in aggregate and on a per-enrollee basis. In 2004, the per-enrollee private health insurance premium grew by 8.4%, compared to 2002 growth of 11.5% and 2003 growth of 10.4%.

The share of personal health spending growth associated with prescription drugs has declined since 2000, coincident with a higher share of spending growth for hospital services. Prescription drugs accounted for a 23% share of personal health spending growth between 1997 and 2000, but accounted for only 14% by 2002–2004. Hospital spending, however, accounted for 28% of personal health spending growth between 1997 and 2000, but rose to 38% by 2002–2004.

Hospital spending represented nearly one-third of national health expenditures; the 2004 growth in hospital spending accounted for 33% of the overall increase in health spending. Spending for prescription drugs increased 8.2% in 2004, compared to a growth of 10.2% in 2003 and 14.3% in 2000–2002. In 2004, spending on prescription drugs accounted for nearly 11% of health spending. Spending for physician services constituted 21% of health spending in 2004. Total costs for long-term care of the elderly were US\$ 211.4 billion in 2004.

