INTRODUCTION

Over the years, summary health statistics in the United States have generally improved, but chronic diseases consume an estimated 75% of all health care spending, due in part to the country's aging population (1). Among youth, deaths from accidents and violence are a major public health concern. In 2010, the population was 308.7 million, an increase of 9.7% from 2000. Females made up 50.8% of the total (Figure 1). The population is highly urbanized, with 83.7% living in metropolitan areas (2). Children and youth under 20 years old comprised 27% of the population; adults 20–64 years old, 60%; and those 65 years and older, 13%. In the age group 65 years and older, the male to female ratio is 0.73 (17.0 million men and 23.2 million women). The dependent-age population (persons under 18 years old and 65 years old and older) comprised 37% of the population in both the 2000 and 2010 censuses, but
those 65 years and older increased from 12% (35 million in 2000) to 13% (40.2 million in 2010), while the proportion under 18 years of age fell from 26% in 2000 to 24% (74 million) in 2010.

The percentage of the foreign-born population increased from 11% in 2000 to 13% (38.5 million) in 2009 (3). The foreign-born Hispanic population increased by 45% between 2000 and 2010, and stood at 18.5 million in 2010, representing more than half of the foreign-born population. Of native-born Americans, 75% reported their race as White and 13% reported their race as African-American. Among the foreign-born population, 46% identified themselves as White and 23% as Asian. In 2010, Hispanics comprised the largest minority of the U.S. population (4). The increase in the Mexican-American population was due to births rather than immigration between 2000 and 2010: there were 7.2 million births compared to 4.2 million new immigrant arrivals (5).

On average, the number of children born to a woman of reproductive age was 2.1, with very slight variations by race and ethnicity, except among Hispanic women, who had a total fertility rate of 2.9 in 2008 (6).

In 2010, life expectancy at birth was 78.3 years, a record high for the country. A National Center for Health Statistics (NCHS) study found that Hispanics had a life expectancy of 80.6 years in 2006, longer than all other racial/ethnic groups in the United States. Hispanic males’ life expectancy at birth was 77.9, but at age 65 it was 84. Life expectancy of Hispanic women at birth was 83.1 years, and 86.7 years at age 65 (7). Life expectancy for White females was 81.3 years, followed by African-American females (77.2 years); White men had a life expectancy of 76.5 years and African-American men, 70.2 years. A comparison of life expectancy by gender shows that African-American males closed the life expectancy gap with White males by 23% between 1990 and 2010 and African-American females closed the gap with White females by 29%. From 2000 to 2008, life expectancy increased by around 14 months, but increases have been slightly less for females (1.4%) than for males (2.0%). Also, life expectancy at age 65 increased from 17.9 years in 2000 to 18.8 years in 2008 (8).

HEALTH DETERMINANTS AND INEQUALITIES

Beginning in 2008, the United States underwent the most serious economic downturn since the Great Depression of the 1930s: housing prices declined dramatically, and unemployment levels rose above 9%. While wealth by household dropped across all
economic levels, inequalities between the wealthiest and the middle class widened. Challenging economic times have generated a socioeconomic and political debate, complicated by the need to understand how to equitably address health, education, human security, and citizen-status issues in a population that is becoming increasingly older and more ethnically diverse (3). The annual percentage growth rate of the gross domestic product (GDP) in market prices bottomed out in 2009 at –3.5% before increasing to 3.0% in 2010 (9). Even in 2010, however, there was economic uncertainty as quarterly percentages fluctuated from 3.9% in the first quarter to 2.3% in the fourth (10).

The average rate of poverty for the years 2007–2009 was 13.4% (11), up from 12.0% in 2000 (12). The percentage of the population living at or below the poverty level ranged from 21% in Mississippi to 6.9% in New Hampshire; urban minorities experienced considerably lower poverty rates than rural minorities. In 2005, around 7.3 million (15%) rural Americans were poor, while 13% in urban areas were poor (12). Poverty inequalities were observed by race and ethnicity in 2008: while the poverty rate for all races was 10.3%, for African-Americans the rate was 22.0%, for Hispanics it was 21.3%, and for Whites it was 8.4%. Poverty reached 15.1% of the population, or 15.1 million people, in 2010, for the fourth consecutive annual increase (13). The child poverty rate increased from 16.2% in 2000 to 20.7% by 2009. An estimated 58% of children living with immigrant parents lived in a low-income household. Poor children have higher hospital-admission rates, more disability days, and higher death rates; they also are more likely to have inadequate preventive, curative, and emergency care, and more frequently suffer from inadequate nutrition and food insecurity. Children with single mothers are more than five times as likely to live in poverty as children in households with two parents (14).

In 2007, the high school drop-out rates for 16–24-year-olds, by ethnicity and race, were: 6.1% for Whites, 11.5% for African-Americans, and 19.9% for Hispanics. Of Hispanics born outside the United States, 34% dropped out in 2007. Immediately after high school, 71.7% of Whites enrolled in college; 63.9% of Hispanics did, and 55.7% of African-Americans did (15). In 2010, differences in unemployment were seen by gender and by race or ethnicity. Among those 16 years old and older, 10.5% of males and 8.6% of females were unemployed. Unemployment by racial and ethnic group was 16.0% for African-Americans, 12.5% for Hispanics, 8.7% for Whites, and 7.5% for Asians. Nevada was the state with the highest unemployment rate (14.0%), and four other states had rates of 11.7% or higher. North Dakota had the lowest unemployment rate (3.5%) and four other states had unemployment rates of 6.4% or lower. Foreign-born persons made up 16% of the labor force in 2010 and of these, 50% were Hispanics and 22% were Asians (16).

Inequalities in earning levels by gender also were observed, but over the last 25 years women have closed the earnings gap from 62% of men’s wages to 81% in 2005–2006 (17). Asian men and women earned higher wages than their White, African-American, and Hispanic counterparts in 2007: White, African-American, and Hispanic women earned 86%, 73%, and 65%, respectively, as compared with earnings of Asian women; White, African-American, and Hispanic men earned 84%, 64%, and 56%, respectively, as compared with earnings of Asian men (18).

The number of persons without health insurance has increased dramatically: while in 2008, 46.3 million persons (15.4% of the population) had no health insurance, by 2009 the number had increased to 50.7 million (16.7% of the population). A survey conducted in 2007–2009 revealed that of those with no health insurance, 11% were White, 17% were Asian, 20% were African-American, and 32% were Hispanic (19, 20).

In regard to family security and well-being, marriage rates per 1,000 men or women in 2009 were 19.1 for men and 17.6 for women 15 years and older (21).

THE ENVIRONMENT AND HUMAN SECURITY

Air Pollution

Air pollution is a health problem with many sources. Thanks to regulations mandated by the 1970 Clean Air
Act, the Environmental Protection Agency estimated that in 2010 alone, 160,000 deaths and 100,000 hospital visits had been avoided (22). Pollution by toxic agents from thousands of power plants nationwide is estimated to cause as many as 17,000 deaths a year, chronic respiratory and cardiovascular diseases, and exposure of mercury and lead to children. Smog is estimated to kill as many as 12,000 persons each year, and toxic air pollution from industrial plants contributes to 5,000 deaths per year (23).

**THE WORK ENVIRONMENT AND WORKERS’ HEALTH**

In 2010, a total of 4,690 U.S. workers died from occupational injuries (24) and each year, approximately 49,000 deaths are attributed to work-related illnesses (25). For 2010, approximately 3.1 million workers in private industry and 820,000 in state and local government had a nonfatal occupational injury or illness (26). Work hazards can vary widely depending on place of work and profession. For example, each year between 10,000 and 20,000 physician-diagnosed pesticide poisonings among agricultural workers are reported (27). “For the United States, the overall age-adjusted asbestosis death rate for the 10-year period from 1995 to 2004 was 6.1 deaths per million population among those age 15 years and older; by state, corresponding rates ranged from 0.9 (District of Columbia) to 21.2 (Delaware)” (28). In 2010, 1.2 million workers, nearly 1% of the U.S. labor force, were employed as grounds maintenance workers; 44% of these workers were Hispanic (29). In that year, 144 of these workers died from an occupational injury; 43 were Hispanic. The fatality rate in 2010 was 14.3 deaths per 100,000 grounds maintenance workers, almost 4 times the overall U.S. occupational fatality rate (3.6 deaths per 100,000 full-time-equivalent workers) (30).

**ROAD SAFETY**

There were 10.2 million motor-vehicle accidents leading to 39,000 deaths in 2008 (31). In 2009, it was reported that over 5,400 people were killed and over 400,000 were injured in traffic accidents that involved “driving while distracted.” Among those killed or injured in these crashes, the use of cell phones while driving was a factor in nearly 1,000 (18.5%) of the deaths and 24,000 of the injuries (32).

**ACCIDENTS**

In 2007, there were 23,400 deaths from falls, accounting for 12.8% of all deaths due to accidents/unintentional injuries. Poisonings contributed 40,100 deaths or 22.0% of all injury deaths that year. Accidental drownings and submersion caused 3,400 deaths in 2007 and 40% of these deaths occurred among 1–24-year-olds (33). Drowning accounted for nearly 30% of deaths of 1–4-year-old children who died from an injury in 2007 (34).

**VIOLENCE**

Firearm injuries were responsible for 31,347 deaths, or 17.7% of all injury deaths in 2007. The two major causes of deaths due to firearms were suicide (59.7%) and homicide (37%) in 2009 (35). In 2009, U.S. state and local child protection agencies received approximately 3.6 million reports of children being abused or neglected. Among the 693,174 confirmed cases of child maltreatment, 78.3% were victims of neglect, 17.8% were physically abused, 9.5% were sexually abused, and 7.6% were victims of emotional abuse. One-third of victims (33.4%) were younger than 4 years, with children younger than 1 year having the highest rate of victimization (20.6 per 1,000 children) (36).

Findings from the 2010 National Intimate Partner and Sexual Violence Survey indicate that 35.6% of women in the United States have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime, and 5.9% or 6.9 million women experienced these forms of violence in the year prior to the survey. In addition, 1 in 5 women have experienced an attempted, completed, or alcohol/drug-facilitated rape (defined
as a physically forced or threatened vaginal, oral, or anal penetration) in their lifetime, mostly by a current or former partner. Approximately 80% of female victims of rape experienced their first rape before the age of 25. Nearly 1 in 2 women have experienced other forms of sexual violence in their lifetime (e.g., sexual coercion, unwanted sexual contact) (37).

**Disasters**

During the hurricane season of 2005, four major hurricanes made landfall in the United States; the most devastating was Hurricane Katrina, which caused 1,836 confirmed deaths and some US$ 81.2 billion in economic losses. Since that year, the nation has escaped another major hurricane. The number of reported cases of West Nile neuroinvasive disease increased dramatically in the regions of Louisiana and Mississippi affected by Hurricane Katrina; in 2006 there was a more than two-fold increase in incidence of this disease in these areas over previous years (38). Numerous severe tornado outbreaks in 2011 caused extensive damage in southern and midwestern states, exacting a death toll of 552 people. Major, widespread flooding events in northeastern and southeastern states caused billions of dollars in losses in 2010. Severe drought conditions between 2008 and 2011, particularly in the southcentral and western regions of the country, impacted agricultural production and resulted in thousands of wildfires.

In April 2010 an explosion on an off-shore oil well, the Deepwater Horizon, in the Gulf of Mexico created a major environmental disaster. It is estimated that nearly 5 million barrels of crude oil flowed into the Gulf during the months before the well was successfully capped. Eleven people were killed at the site of the explosion, and fishermen, residents of the area, and response and clean-up workers suffered from neurological, ocular, and respiratory symptoms, among other health effects. The long-term effects of exposure to the oil and oil spill dispersants are not known. The fishery and tourism industries along the Louisiana Gulf Coast suffered severe setbacks, and large numbers of wildlife were killed and their habitats destroyed (39). As of July 2010, British Petroleum estimated that its costs for cleanup of the oil spill and related compensation would approach US$ 39.9 billion (40).

**Health Conditions and Trends**

**Health Problems of Specific Population Groups**

**Maternal and Reproductive Health**

The rate of live births per 1,000 women was 68.7 in 2008. Differences by race/ethnicity were: White (59.6 per 1,000 women), African-American (71.2), and Hispanic (98.6) (41). The age-specific birth rates in 2008 were: 15–19 years (41.5 per 1,000 women), 20–24 years (103.0), 25–29 years (115.1), 30–34 years (99.3), and 35–39 years (46.9). The most notable difference by race/ethnicity was that the Hispanic birth rate for women 20–24 years old was 170.7 per 1,000 live births, more than double that of White women (80.7) and greater than any other racial or ethnic group in 2008.

In 2009, the teen birth rate of 39 per 1,000 women (15–19 years of age) was the lowest in the nation’s history, but there were dramatic differences by racial and ethnic group. For White women the teen birth rate was 26 per 1,000 women, for African-American women the rate was 59, and for Hispanic women the rate was 70 (42). The average age for mothers who had their first baby in 2008 was 25, and among all women having a baby in 2008 the average age was 27, both a year older than in 1990 (43).

In 2007, the rate of pregnancy-related diabetes was 45 per 1,000 live births. Differences by race/ethnicity were: Hispanic women (46 per 1,000 live births), White women (42), and African-American women (39). In 2007, chronic hypertension was reported for 11 of 1,000 live births, while the rate of pregnancy-associated hypertension was 39 per 1,000 live births. The latter condition was more common among African-American women (46 per 1,000 live births).
births) and White women (44) than among Hispanic women (28). Eclampsia—a life-threatening condition—affected 2.8 women per 1,000 live births. Rates of maternal morbidity also varied by age in 2007: women in an outlier group, 40–54 years old, were at highest risk for diabetes, hypertension, and eclampsia, while women under 20 years old were least likely to have diabetes or chronic hypertension during pregnancy. However, women younger than 20 years old had levels of pregnancy-related hypertension that were from 9.4% to 10.6% higher than women in the 20–39-year age group (44). Teenage mothers (15–19 years of age) were more likely to have premature and low-birthweight babies and often received less prenatal care.

The maternal mortality rate (MMR) was 12.7 per 100,000 live births in 2007, or 55% higher than the rate reported in 1990 (8.2). In 2007, the MMR was highest among women aged 35 years and older (32 per 100,000 live births), more than four times higher than women under 20 years of age (7.1) and nearly four times as high as women 20–24 years of age (8.1). The MMR for women 25–34 years of age ranged from 9.4 to 12.1 per 100,000 live births (45). Race/ethnicity differences were noted in 2007 when the MMR among African-American women (28.4 per 100,000 live births) was roughly three times the rates of White women (10.5) and Hispanic women (8.9) (46, 47). In 2007, 2.2% of all deaths among Hispanic women occurred in the perinatal period.

Infants and Children (under 5 years old)

The infant mortality rate (IMR) in 2007 was 6.75 per 1,000 live births (29,000 infant deaths), which represents a 6% decrease since 1998. Over this same period (1998–2007), the neonatal death rate decreased 8% to 4.42 per 1,000 live births and the postneonatal mortality rate decreased 3% to 2.34 deaths per 1,000 live births. In 2007, the IMR of African-American infants (13.3 per 1,000 live births) was more than double that of White (5.6) and Hispanic infants (5.5). Infant mortality rate variability by state showed that Washington had the lowest rate (4.9) and the District of Columbia the highest (12.8).

The five leading causes of infant death for both sexes in 2007 were: congenital anomalies (20% of the total), short gestation (17%), sudden infant death syndrome (SIDS) (8%), maternal complications (6%), and accidents/unintentional injuries (4%). While the mortality rate for SIDS has declined by 50% over the last two decades, it is still high for African-American infants at 108 deaths per 100,000 live births, compared to White (58 per 100,000) and Hispanic infants (29 per 100,000) (33, 48).

The death rate per 1,000 children 1–4 years of age was 28.6 in 2007, but there were significant gender and race/ethnicity disparities. The death rate for African-American males was 45 per 1,000 males; for White and Hispanic males the rate was 28. The mortality rate for African-American females was 39 per 1,000 females, for Hispanic females the rate was 24, and for White females it was 23. The overall male mortality rate of this age group (31.3) was 13% higher than that of females (27.7).

There were 4,703 deaths among children 1–4 years of age in 2007. The five leading causes of death in this age group for both sexes in 2007 were: accidents/unintentional injuries (34%), congenital anomalies (12%), homicide (9%), malignant neoplasms (8%), and heart disease (4%).

Children (5–9 years old)

For 5–9-year-olds, accidents/unintentional injuries and homicides accounted for nearly 1,200 of the 2,700 deaths in this age group in 2007. The five leading causes of death in this age group for both sexes were: accidents/unintentional injuries (36% of the total), malignant neoplasms (18%), congenital anomalies (7%), homicides (5%), and heart disease (4%).

Children (10–14 years old) and Adolescents (15–19 years old)

Death due to accidents/injuries was the leading cause of death for 10–14-year-olds (36% of some 3,400 deaths) and accounted for almost half of deaths for 15–19-year-olds (49% of 13,300 deaths) in 2007. Homicide accounted for 6% of deaths for youth
10–14 years of age and nearly triple that rate (17%) for 15–19-year-olds. A similar pattern is seen for suicide between these age groups: suicide accounted for 5% of deaths among 10–14-year-olds and 11% for those in the 15–19-year age group. Malignant neoplasms accounted for 14% of deaths in the 10–14-year age group and 5% of deaths in the 15–19-year age group (23, 49).

**Adults (20–64 years old)**

Accidents/unintentional injuries, homicide, and suicide represented three-quarters of all deaths (74% of 20,700 deaths) for those 20–24-years of age, and accounted for over half of deaths (59% of 43,000 deaths) among those 25–34 years of age in 2007. The five leading causes of death in the 20–24-year age group for both sexes were: accidents/unintentional injuries (46% of the total), homicide (16%), suicide (13%), malignant neoplasms (5%), and heart disease (4%). The rate of homicide for males was more than six times greater than for females in this age group (50). For those 25–34 years of age the five leading causes of death for both sexes were: accidents/unintentional injuries (35% of the total), suicide (12%), homicide (11%), malignant neoplasms (8%), and heart disease (8%).

While malignant neoplasms and heart disease became more important as causes of death, accidents/unintentional injuries were still the leading cause of death among those 35–44 years of age. For this age group, the five leading causes of death for both sexes in 2007 were: accidents/unintentional injuries (21% of a total of 80,000 deaths), malignant neoplasms (17%), heart disease (15%), suicide (8%), and HIV (5%).

There were 185,000 deaths among those 45–54 years of age in 2007, and the five leading causes of death in this age group for both sexes were: malignant neoplasms (27%), heart disease (20%), accidents/unintentional injuries (11%), liver disease (4%), and suicide (4%). While among those 45–54 years of age deaths from accidents/unintentional injuries dropped to the third leading cause of death for this age group, the number of deaths from this cause, 20,315, was higher than for any cause in younger age groups. Malignant neoplasms and heart disease ranked first and second as causes of death in this age group and all succeeding age groups.

The five leading causes of death among those 55–64 years of age were similar to those for all ages. There were 287,000 deaths among those in this age group in 2007, and the five leading causes of death for both sexes were: malignant neoplasms (36% of the total), heart disease (23%), chronic lower respiratory disease (5%), accidents/unintentional injuries (4%), and diabetes mellitus (4%).

**The Elderly (65 years old and older)**

In 2008, of those 65 years and older, 9.7% lived below the poverty level (6.6% of men and 12.0% of women) (51). Only 46% of males and 37% of females 65 years and older met recommended physical activity standards, and 25% of men and 31% of females 65 years and older were defined as “inactive” in 2006 (52). Studies conducted in 2007–2008 support the idea that malnutrition, especially undernutrition, is prevalent among the elderly population (53). About 80% of older adults have one chronic condition and 50% have at least two. In addition, infectious diseases such as influenza and pneumococcal disease and injuries are major concerns among the elderly (54).

There were 1.8 million deaths among those 65 years of age and older in 2007, and the leading causes of death for both sexes were: heart disease (28%), malignant neoplasms (22%), cerebrovascular disease (6.6%), chronic lower respiratory disease (6%), Alzheimer’s disease (4%), diabetes (3%), influenza and pneumonia (3%), and accidents/unintentional injuries (2%) (55).

The elderly have an increased risk of mental health disorders that often occur in parallel with chronic diseases such as diabetes, heart disease, and arthritis. However, mental health disorders are often undiagnosed, and one in four of the elderly lives with depression, anxiety disorder, or other significant psychiatric conditions (56). The elderly are the highest risk population in the country for suicide, but few suicide-prevention programs target them (57). In fact, while the national rate of suicide was
11.5 per 100,000 population in 2007, the rate was 14.3 per 100,000 persons 65 years and older (58). The suicide rate for White men age 85 and older was four times the national rate (47 per 100,000) (59).

The Family

Children living in a single-head-of-household family are more likely to be poor and not to receive timely health care (60). Of the 74 million children under 18 years old in 2006, 28% lived in a single-parent household; 81% of these families were headed by women and 19% by men. One-parent families represented nearly 33% of all families with children in 2006 (61). In 2006–2010, the percentages of households receiving auxiliary services by type were: food stamps (12%), welfare (4%), and Medicaid (27%) (62).

American Indians and Alaska Natives

As of 2008, there were an estimated 4.9 million American Indians and Alaska Natives in the United States, comprising 1.6% of the population. Nearly 40% (1.9 million) lived on reservations, and 60% lived in metropolitan areas, compared to 83% of the general population. Twenty-seven percent (1.2 million) of American Indians and Alaska Natives are under the age of 18.

Federally recognized tribes (566 tribes in 2012) are provided health and educational assistance through the Indian Health Service (IHS) under the Department of Health and Human Services. The IHS operates a comprehensive health service delivery system for approximately 39% of the American Indian and Alaska Native population, the majority of whom live on reservations and in rural communities in 36 states, mostly in the western United States and Alaska. Some 600,000 American Indians and Alaska Natives are served in urban clinics, and they generally have less access to hospitals, health clinics, and contract health services, which limits their health care options. In 2006, 36% had private health insurance coverage and 24% relied on Medicaid; in 2007, 33% had no health insurance. Of those age 25 years and over, 76% have at least a high school diploma and 14% have a bachelor’s degree. The median family income is US$ 33,627; however, 25% live at the poverty level (63).

American Indians and Alaska Natives had lower age-adjusted mortality rates for certain diseases compared to rates for Whites. In 2007, mortality from heart disease for American Indians and Alaska Natives was 127.3 per 100,000 compared to 187.8 for Whites; for cancer, the rate was 117.8 compared to 177.5 for Whites; for cerebrovascular disease the rate was 31.1 compared to 40.3 for Whites; and the rate for chronic lower respiratory diseases was 30.9 compared to 43.0 for Whites. However, American Indians and Alaska Natives had a rate of alcoholism 3.5 times higher than Whites (64). The age-adjusted mortality rate for American Indians and Alaska Natives from chronic liver disease and cirrhosis was 24.8 per 100,000, more than twice the rate for Whites (9.4) in 2007, and the mortality rate from diabetes (37.2 per 100,000) was 1.8 times higher than for Whites (20.5) (65). Among Native American youth (ages 12 to 17 years) rates of current illicit drug use (18.7%) were higher than any other racial or ethnic group.

Other Groups

Persons with Disabilities

In 2010, 36.4 million Americans (11.9%) had one or more disabilities (66, 67). In 2010, 10% of the working age population had a disability (68). A 2010 survey showed that the prevalence of disability by racial/ethnic group was highest among African-Americans (13.5%), followed by Whites (13.1%) and Hispanics (8.1%) (51, 69). Among adults 65 years of age and older in 2008, 14.3 million (36.7%) were reported as having a disability.

Mortality

Age-adjusted mortality rates have declined for all demographic groups over a period of many decades, but inequalities between African-American and White populations and between males and females
have narrowed only since the mid-1990s. The decrease in death rates in recent years for all groups is attributed to reductions in the leading causes of death. In 2007, the age-adjusted mortality rate for both sexes was 760 per 100,000 population, 906 per 100,000 males and 643 per 100,000 females. The age-adjusted mortality rate for both sexes dropped to 741 in 2009, the lowest on record; African-Americans had the highest rate (924) compared to Whites (732) and Hispanics (519) in that year. The age-adjusted mortality rate of Hispanics showed the largest decrease (22%) between 2000 and 2009, while Whites showed the smallest decline (13%) (70).

The greatest reductions in age-specific mortality rates between 2000 and 2007 were in older age groups: there was a 19% decline in rates for those 65–75 years old, and a 20% decline for those 85 and older. Other age groups showing double-digit mortality rate reductions during this period were: 1–4-year-olds (−13%), 5–14-year-olds (−18%), 55–64-year-olds (−13%), and 75–84-year-olds (−13%). Adults between 25 and 34 years old only experienced a 3.3% increase, however (71).

In 2007, the 10 leading causes of death for both sexes and all ages accounted for 76.2% of all deaths (see Table 1). Heart disease was the leading cause of all deaths and among the top 10 causes in every age group, excluding infants under 1 year old. Malignant neoplasms was the second leading cause and, combined with heart disease, accounted for almost 50% of all deaths in 2007. Malignant neoplasms were the leading cause of death for the 45–54-year and 55–64-year age groups. Cerebrovascular disease was the third leading cause of all deaths and one of the top 10 causes of death as early as 10–14 years of age. Chronic lower respiratory disease was the fourth leading cause and was responsible for more than 4,000 deaths in the 45–54-year age group. While in 2007 accidents/unintentional injuries were the fifth leading cause of death for all ages, they were a leading cause of death in age groups from 1 to 44 years of age. The sixth through tenth leading causes of death were: Alzheimer’s disease, diabetes mellitus, influenza and pneumonia, nephritis, and septicemia; together they accounted for 11.6% of total deaths in 2007 (23, 33).

The first two leading causes of female deaths were the same as for males—heart disease and malignant neoplasms—together accounting for 47% of the 1.9 million female deaths in 2007. These diseases represented mortality rates that were two to three times greater than any other leading cause for

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause(s)</th>
<th>Number of deaths</th>
<th>Percentage of total deaths</th>
<th>Age-adjusted death rate</th>
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<tr>
<td>1</td>
<td>Diseases of the heart</td>
<td>616,067</td>
<td>25.4</td>
<td>190.9</td>
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<tr>
<td>2</td>
<td>Malignant neoplasms</td>
<td>562,875</td>
<td>23.2</td>
<td>178.4</td>
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<td>3</td>
<td>Cerebrovascular diseases</td>
<td>135,952</td>
<td>5.6</td>
<td>42.2</td>
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<td>4</td>
<td>Chronic lower respiratory diseases</td>
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<td>Accidents (unintentional injuries)</td>
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<td>Diabetes mellitus</td>
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<td>Septicemia</td>
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</table>

Source: Reference (33).

women by racial or ethnic group. Percentages of deaths from diabetes for Hispanic women (5.4%) and African-American women (4.9%) were much higher than for White women (2.5%). This was in contrast to chronic lower respiratory disease, which accounted for nearly twice as many deaths among White women (6.1%) compared with African-American (2.6%) or Hispanic women (2.7%).

In 2007, 9 out of 10 leading causes of death were the same for females and males. However, suicide was the seventh leading cause among men but only the fifteenth among women (72). Mortality from chronic liver disease was twice as high among men as women and is the seventh leading cause of death among Hispanic men. In contrast, Alzheimer’s disease was the fifth leading cause of death for women (4.3% of female deaths) and the tenth leading cause for men (1.8% of male deaths) (23, 33).

Communicable Diseases

Vector-borne diseases

Outbreaks of mosquito-borne viral diseases in the U.S. occur occasionally. Dengue virus presents a continuing problem in the country’s tropical and subtropical areas. Dengue was reported in Florida in 2009 for the first time in 75 years, and more than 90 locally transmitted cases have been reported in that state since then. Imported cases of dengue in travelers returning from endemic areas add an additional concern. Dengue became a nationally notifiable disease in the U.S. in January 2010 (73). Human West Nile virus infections were first reported in New York City in 1999, and the virus has since become endemic across the continental U.S. In 2010, there were 1,021 human West Nile virus cases reported to the Centers for Disease Control and Prevention (CDC), of which 629 were neuroinvasive and included 57 deaths. From 1999–2010, there were over 30,700 human West Nile virus cases reported to the CDC, with nearly 1.8 million human infections estimated to have occurred. It should be noted that non-neuroinvasive cases are significantly underreported. A number of other endemic arboviruses cause human morbidity and mortality in the U.S. each year, including eastern equine encephalitis virus, St. Louis encephalitis virus, LaCrosse encephalitis virus, and the tick-borne Powassan virus (74).

Malaria cases occur mostly due to blood transfusions or overseas travel; the average number of cases of malaria reported annually from 2006 to 2009 was 1,500 (75). In 2007, of all malaria cases only one was acquired in the United States and one was acquired from a transfusion (76).

Lyme disease is the most common vector-borne disease in the U.S. In 2009, the CDC reported 38,468 cases of Lyme disease and from 2004 to 2009 reported cases of the disease almost doubled (77). In 2010, there were 22,572 confirmed and 7,597 probable cases of Lyme disease reported to the CDC (78). Other tickborne diseases of concern in the U.S. include anaplasmosis, babesiosis, and ehrlichiosis. Cases of anaplasmosis reported to the CDC increased steadily from 348 cases in 2000 to 1,006 cases in 2008 (79). The majority of reported ehrlichiosis cases are due to *Ehrlichia chaffeensis*, and cases increased steadily from 200 in 2000 to 961 in 2008 (80, 81). Reported cases of Rocky Mountain spotted fever also have increased steadily over the last decade, reaching over 2,500 in 2008; there were 1,682 reported cases in 2010 (82, 83).

Vaccine-preventable Diseases

The United States has greatly reduced its burden of vaccine-preventable diseases through childhood immunization, although work remains to be done. In 2010, for example, California reported 9,120 cases of pertussis with a rate of 233 per million. The state also reported 121 cases of meningococcal disease, 42 cases of varicella, and 29 cases of mumps (84).

HIV/AIDS and Other Sexually-transmitted Infections

By 2008 there were about 491,000 people living with AIDS in the United States. HIV incidence in the United States has been relatively stable with approximately 50,000 new infections each year (85). Over the last decade new AIDS diagnoses have remained relatively constant, with an estimated
Since the onset of the epidemic in 1981, an estimated 1.1 million people have been diagnosed with AIDS in the U.S. In 2008 more than 75% of adults and adolescents living with AIDS were males; almost half became infected with HIV through male-to-male sexual contact. In contrast, two-thirds of females living with an AIDS diagnosis were infected through heterosexual contact. An estimated 18% of males and 32% of females contracted the disease through injection drug use in 2008. Among more than 9,000 children under 13 years of age living with a diagnosis of HIV infection in 2007, 92% had been infected through mother-to-child transmission. In 2007, only 28 children were newly diagnosed with HIV as a result of mother-to-child transmission and the cumulative number of these cases diagnosed from 2003–2007 was 248. The decrease in pediatric HIV cases from the early years of the epidemic is associated with increased HIV testing among young pregnant women and use of antiretroviral drugs to prevent mother-to-child transmission (86).

Three racial/ethnic groups represented the vast majority of those with an AIDS diagnosis in 2008: 43% of cases were reported in the African-American population, 33% in the White population, and 21% in the Hispanic population. The highest rate of AIDS was found in the District of Columbia, where there were 120 cases per 100,000 population in 2009, more than 10 times the national average of 11.2.

Between 2006 and 2009 there were 1,700 reported cases of congenital syphilis in the United States. Although the national target for 2010 was 1 case of congenital syphilis per 100,000 live births, the rate increased from 8.0 to 10.0 cases per 100,000 from 2006 to 2009. Thirty-three states reported cases of congenital syphilis in 2009, and five of them had rates much higher than the national target. For example, in Texas the congenital syphilis rate was 31.5 per 100,000 live births in 2009. Three racial/ethnic groups in 2006–2009 recorded 93% of cases: 47% of cases occurred in African-Americans, a rate of 34.9 cases per 100,000 live births; 33% of cases occurred in Hispanics, a rate of 12.0; and Whites had 13% of cases, a rate of 2.7.

There were 173,000 cases of primary, secondary, and latent syphilis reported over the 2006–2009 period. Rates of syphilis increased from 12.5 per 100,000 in 2006 to 14.8 per 100,000 in 2009. Rates in the south had the highest rate (21.6 cases per 100,000), followed by states in the west (12.1) and midwest (7.3). The rate per 100,000 males was 7.8, about five times higher than for females (1.4 cases per 100,000 females) in 2009. Cases of primary and secondary syphilis by race/ethnicity in 2009 were: African-American (52%), White (30%), and Hispanic (15%).

There were 302,000 reported cases of gonorrhea with a male to female ratio of 0.88 in 2009. While the CDC target for gonorrhea was 19 or fewer cases per 100,000 by 2010, only 7 of 50 states had reached that goal by 2009. Idaho had the lowest rate (7.2) and the District of Columbia had the highest rate (433). Between 2006 and 2009, rates of gonorrhea for males had decreased from 114 to 91 per 100,000 males, but in the District of Columbia, the rate for males remained high at 475. The national rate of gonorrhea for women was 104 per 100,000 women in 2009, with the highest female rate (395) also found in the District of Columbia (87).

Of the 1.2 million reported cases of chlamydia in 2009, 49% of cases were in the African-American population, 29% in the White population, and 19% in the Hispanic population. There were 2.8 times as many cases of chlamydia reported in women as in men in 2009; rates per 100,000 women by racial and ethnic group were: 1,215 for African-American women, 789 for Hispanic women, and 270 for White women.

**Tuberculosis**

In 2010, the United States saw 11,182 cases of tuberculosis (TB) (3.6 cases per 100,000)—the lowest number of reported cases since 1953. However, despite the decline, the goal set for 2010 of less than 0.1 cases per 100,000 was not met. The rate of TB infection among foreign-born persons was 11 times greater than for people born in the U.S. Rates of TB among Hispanics (6.5 per 100,000),
African-Americans (7.0), and Asians (22.4) were much higher than rates for the White population (0.9) in 2010 (88).

**Influenza**

In the United States, on average 5% to 20% of the population develop influenza and more than 200,000 people are hospitalized from seasonal influenza-related complications. Influenza seasons are unpredictable and can be severe. Over a period of 30 years, between 1976 and 2006, estimates of influenza-associated deaths in the United States range from a low of about 3,000 to a high of about 49,000 people (89). During the 2009 influenza season, a global pandemic of influenza caused by the H1N1 influenza virus occurred. The CDC estimates that in the U.S. during that time (April 2009 to April 2010), 61 million people became ill and 12,470 died due to H1N1 influenza (90).

**Chronic, Noncommunicable Diseases**

**Cardiovascular Diseases**

The age-adjusted mortality rate for heart disease for both sexes was 191 per 100,000 in 2007; the rate for males (238 per 100,000 males) was 1.5 times higher than that of females (154 per 100,000 females). African-American men and women had the highest mortality rates from heart disease in 2007, with 306 per 100,000 for African-American males and 205 for African-American females. Rates were considerably lower for White males (240) and White females (153), and for Hispanic males (165) and Hispanic females (112).

**Malignant Neoplasms**

The age-adjusted mortality rate for cancer was 178 per 100,000 in 2007; the rate for males (218 per 100,000 males) was 1.4 times higher than the female rate (151 per 100,000 women). Comparison by racial and ethnic group showed that the mortality rate in African-Americans was highest (282), followed by Whites (221) and Hispanics (141). The age-adjusted mortality rate for cancer of the lung, bronchus, and trachea, for all ages and both sexes, was 51 per 100,000 in 2007. Men had rates 1.6 times greater than women (65 deaths per 100,000 males and 40 per 100,000 females), and African-American males had the highest rates (82) and Hispanic women had the lowest rates (14). The age-adjusted mortality rate of cancer of the colon, rectum, and anus was 17 per 100,000 in 2007; in males the rate was 20 per 100,000 and in females the rate was 14 per 100,000.

The average age-adjusted incidence rate of breast cancer was 121 per 100,000 women in 2007; lower rates were found for African Americans (117) and Hispanics (88). However, mortality rates from breast cancer were higher in 2007 for African-American women (31), compared to 23 for White women and 17 for Hispanic women (91, 92).

It is estimated that about 10,800 new cases of human papillomavirus-associated cervical cancer are diagnosed each year. African-American and Hispanic women are diagnosed at later stages of the disease and have higher age-adjusted mortality rates than other women. In 2007, the age-adjusted mortality rates for cervical cancer by racial and ethnic group were: all groups (7.2), Whites (6.4), African Americans (8.1), and Hispanics (10.1). The age-adjusted mortality rate for cancer of the ovary was 8.2 per 100,000 females in 2007.

For the years 2003–2007, the age-adjusted mortality rate for prostate cancer was 25 per 100,000 men; the highest rate was among African-American men (54), followed by White (23) and Hispanic men (19).

**Diabetes**

In 2010, 25.6 million persons 20 years and older had diabetes—11.8% of men and 10.8% of women; 1.9 million people in this group were newly diagnosed with the disease. Among the population 65 years and older, 10.9 million or 27% had diabetes. About 1 in 400 children and adolescents had type 1 diabetes, and among all cases of diabetes, 95% were type 2 (93). For 2007–2009, age-adjusted diabetes prevalence by racial and ethnic group among persons over 20 years old was: African Americans (12.6%),
Hispanics (11.8%), and Whites (7.1%) (94). In 2010, 6.6% of Mexican-American females of all ages (i.e., includes children) had diagnosed diabetes (95). In 2007, diabetes accounted for more than 71,000 deaths and was a contributing factor in 160,000 additional deaths due to all causes. It is also a factor in high blood pressure, blindness, kidney disease, neuropathy, and amputations. In 2007, the estimated total direct medical costs and indirect costs of diabetes and prediabetes (e.g., disability, lost time at work, and premature deaths) amounted to US$ 218 billion (96).

Chronic Respiratory Diseases

The age-adjusted mortality rate of chronic lower respiratory diseases was 40.8 per 100,000 population in 2007. The rate for the White population (43.0) was much higher than for the African-American (28.1) and Hispanic (17.5) populations (47).

Hypertension

Approximately 68 million (31%) adults aged 18 years and older had hypertension in the 2005–2008 period and the prevalence of hypertension has not changed significantly since 1999 (101). Of these adults, 48 million (70%) were receiving treatment and 31 million (46%) had their condition under control. During this same period, differences in prevalence rates of uncontrolled hypertension were observed among adults 20 years of age and older by sex and race/ethnicity: among African-Americans, 70.6% of men and 51.5% of women had uncontrolled hypertension; in Mexican-Americans the prevalence was 68.8% for men and 51.5% for women; and for Whites it was 63.8% for men and 48.5% for women. Although there appeared to be little or no overall association between the age-adjusted rates of adults with uncontrolled hypertension and poverty, African Americans had both higher levels of poverty and higher uncontrolled rates of hypertension than other racial and ethnic groups. Blood pressure control was poor in 12% of adults with hypertension who did not have a regular source of medical care, in 21% of adults with hypertension who had received medical care less than twice in the previous year, and in 29% of adults with hypertension who did not have health insurance (47, 98).

Nutritional Diseases

Malnutrition

The percentage of U.S. households that were food insecure increased sharply in 2008 with the economic recession and remained essentially unchanged through 2009, at 14.7%. The 2008 and 2009 levels are the highest recorded since national monitoring began in 1995. In 2009 the number of households with “very low” food security was 6.6% and an additional 9.0% had “low” food security; the rate was 9.3% for African-American and Hispanic households nearly double the rate in White households (4.6%). In a 2010 pediatric nutrition survey, the prevalence of underweight children (in the 5th percentile of weight for age) by state ranged from 2.6% in Minnesota to 7.3% in Kentucky (99).

Obesity

A survey conducted in 2007–2008 revealed that more than two-thirds of the U.S. adult population was overweight; 34% of the population was obese, and 5.7% extremely obese. The survey found that for women of different racial and ethnic groups, prevalence of obesity was 50% for African-Americans, 45% for Mexican-Americans, and 33% for Whites. The prevalence rates of obesity for men by race/ethnicity were 37% for African-Americans, 36% for Mexican-Americans, and 32% for Whites. Data from 2010 indicate that Asian-Americans were among the least obese, with a prevalence rate of 8% (100).

Among preschool children aged 2–5, the prevalence of obesity doubled over the span of three decades—from an average of 5% in the period 1976–1980 to 10% in 2007–2008. For children aged 6–11, average prevalence of obesity was 6% in 1976–1980 and it increased to 20% in 2007–2008. Among adolescents aged 12–19, the prevalence of obesity increased from 5% to 18% over the same timeframe. Pediatric obesity can have both physical and
psychological effects. The physical effects include type 2 diabetes, high blood pressure, and sleep apnea, while psychological effects include low self-esteem and social discrimination (47). In 2007–2008 obesity was lower for White adolescent boys (17%) than for African-American (20%) and Mexican-American boys (27%); for adolescent girls the prevalence was 29% for African-Americans, 17% for Mexican-Americans, and 15% for Whites (101).

Mental Disorders

In 2010, the prevalence of any mental illness (AMI) in the past year among adults 18 or older was 20.0% (16.8% for males and 23.0% for females) (102). The prevalence among African-Americans was 19.7%, among Hispanics it was 18.3%, and among Whites it was 20.6% (103). AMI is strongly associated with poverty: among those living below 100% of the federal poverty level AMI prevalence was 29.5%, compared to 17.0% for those living above 200% or more of the federal poverty level. Among children between 5 and 17 years old, 9% suffered from attention deficit hyperactivity disorder and 6% from serious emotional disturbance (104). Adults 50 years of age or older had the lowest rate of AMI (14.3%) while those in the 18–25-year age group had the highest prevalence (29.9%), followed by those in the 26–49-year age group (22.1%) (104, 105, 106).

Other Health Problems

Oral Health

Poor oral health is associated with atherosclerotic vascular disease, preterm, low-birthweight births, and diabetes, including glycemic control (107, 108). Its consequences may interfere with eating, sleeping, working, and learning. The results of the National Health and Nutrition Examination Survey (NHANES III) conducted for 1988–1994 and the subsequent survey for 1999–2004 showed that oral health status had improved for most Americans. However, in the period between the two surveys, the prevalence of dental caries in primary teeth increased from 24% to 28% among children 2–5 years old; the prevalence among children 6–11 years of age in the 1999–2004 survey remained unchanged at about 50%.

The prevalence of dental sealants (a plastic sealant applied to teeth to prevent decay) on permanent teeth among youths and adolescents increased over that period by 36% for youths 6–11 years (from 22% to 30%) and doubled among adolescents 12–19 years (from 18% to 38%). In NHANES III, the prevalence of dental caries in permanent teeth for 6–8-year-olds was 10% and for 9–11-year-olds it was 31%, showing a decrease in those age groups by 30% and 13%, respectively, since the previous survey. Between 1999 and 2004, there were no changes in the prevalence of untreated decay in youths ages 6–11 years (109). The percentage of children aged 0–18 years with a past year dental visit increased from 41% in 1997 to 47% in 2007.

Ocular Health

Except for diabetic retinopathy, the estimated prevalence of major ocular diseases in the United States has not changed substantially over the last decade. Among persons aged 40 years or older, the estimated prevalence of visual impairment (blindness and low vision) was 2.8% in 2000 compared with 2.9% in 2010 (110, 111). Similar comparisons are 17.2% vs. 17.1% for cataracts (111, 112); 1.5% vs. 1.8% for age-related macular degeneration (111, 113); 1.9% vs. 1.9% for open angle glaucoma (111, 114); and 3.4% vs. 5.4% for diabetic retinopathy (111, 115). Nevertheless, given the aging population in the United States, and also the increase in underlying risk factors (e.g., diabetes), the number of patients with these ocular diseases has increased. For example, in 2000, an estimated 4.1 million persons had diabetic retinopathy, compared with 7.7 million persons in 2010 (111, 114).

Risk and Protection Factors

Smoking

Smokers lose 13 to 14 potential years of life compared to non-smokers and tobacco use is related to one in five deaths, yet, as of 2009, 21% of adults
(46.6 million people) in the United States smoked cigarettes. Among persons living below the poverty level, 31% smoke, a level that is significantly higher than the national figure. Smoking rates among Hispanics and Asians (14.5% and 12.0%, respectively) were considerably lower than the national average (116).

**Alcoholism**

A total of 23,200 deaths were alcohol-induced in 2007 (7.3 per 100,000) (33). Mortality from causes related to alcohol consumption for males was 3.2 times higher than for females. The prevalence of alcohol use disorder in the past year among adults by race and ethnic group in 2010 was highest among American Indians or Alaska Natives (14.9%) followed by Hispanics (8.0%) and Whites (7.6%). It is estimated that 79,000 deaths each year can be attributed to excessive alcohol use (blood alcohol content at 0.10% or higher).

**Illegal Drugs**

An estimated 22.6 million persons 12 years or older (8.9% of persons 12 or older) in the United States used illicit drugs in the past month in 2010, and 10.1% of youth 12 to 17 years of age used drugs in the past month. Among persons 12 or older, marijuana was the most commonly used illicit drug, with 6.9% of the population reporting using marijuana in the past month (17.4 million users) in 2010. In 2010, 1.5 million persons 12 or older used cocaine in the past month including 378,000 who used crack cocaine in the past month. In 2010, an estimated 1.2 million persons 12 or older used hallucinogens in the past month, 239,000 used heroin in the past month, 695,000 used ecstasy (MDMA, or 2-4-methylenedioxymethamphetamine) in the past month, and 7.0 million used psychotherapeutic drugs non-medically in the past month. Non-medical use of prescription-type psychotherapeutics includes the non-medical use of pain relievers, tranquilizers, stimulants, or sedatives, and does not include over-the-counter drugs. In 2010, past month prevalence of illicit drug use among African-American persons 12 or older was 10.7% followed by Whites (9.1%), Hispanics (8.1%), and Asians (3.5%) (117).

**Physical Activity**

In 2005, about half of females in the United States met recommended standards for physical activity, with a decrease by age from 53% for women 18–24 years to 36% for those 65 years and older. Nearly two-thirds of males (63%) between the ages of 18 and 65 and an estimated 46% of males age 65 and older met recommended standards. Among those 18–24 years of age, 61% of Whites met recommended activity standards, about 9% more than other racial and ethnic groups. In the age group 65 years and older, 41% of Whites, 37% of Hispanics, and 28% of African-Americans maintained physical activity at recommended levels (118).

**HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION**

**Health Policies and Legislation**

Reducing health care costs, increasing the number of persons with health insurance, expanding the health care workforce, supplementing nutrition programs, making prescription drugs more readily available, advancing health-related technology and research, building infrastructure, and helping military veterans adjust to civilian life were the major objectives of laws and health policies proposed between 2006 and 2010. The Affordable Care Act, passed by the United States Congress in 2010, moves toward affordable, quality health care for all Americans while reducing growth in health care spending. Among other provisions, it mandates that persons with preexisting medical conditions cannot be excluded from health insurance coverage, makes prescription drugs more readily available, supports improvements in health care quality and efficiency, provides substantial funding to expand health insurance coverage to more people, and requires that all persons have health insurance. Portions of this
law are to be phased in over the coming years (119, 120, 121, 122).

Issues of nutrition and food security were addressed in the American Recovery and Reinvestment Act of 2009, which bolsters existing programs such as the National School Lunch Program; the Special Supplemental Nutrition Program for Women, Infants, and Children; Congregate Nutrition Services (providing meals and other nutrition services to the elderly in group settings); Home-Delivery Nutrition Services; and Nutrition Services for Native Americans. Also in regards to nutrition, the Food and Nutrition Act of 2008 strives to achieve an effective use of food surpluses, and provides for improved levels of nutrition among low-income households (123). The American Recovery and Reinvestment Act provides funding for health centers to adopt electronic health records and other health information technology systems so they can improve health care quality, efficiency, and patient safety. It also expands the American Indian health system infrastructure by providing funds for health information technology, construction, and maintenance that will help improve health care as well as for sanitation projects and equipment. Moreover, the legislation provides additional funds for the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, addresses health personnel workforce shortages, supports services provided by the Administration on Aging, funds programs for the National Institute of Standards and Technology, and supports comparative effectiveness research at the National Institutes of Health (124, 125).

The Veterans Benefits Improvement Act of 2010 provides disabled veterans with grants to help them adapt their housing needs and provides funds for research and development in assistive technologies. It also provides funds for food and shelter of homeless veterans (126, 127).

**Health Expenditures and Financing**

Health care expenditures surpassed US$ 2.3 trillion in 2008, 73% more than the US$ 1.4 trillion spent in 2000. In 2008, per capita health care spending was about US$ 7,681 and accounted for 16.2% of the nation’s GDP. Total health care expenditures grew at an annual rate of 4.4% in 2008, down from 6.9% in 2000, yet still outpacing inflation and growth in national income. Since 2000, insurance premiums for health coverage increased by 72%, financially impacting both employers and workers; out-of-pocket expenditures increased 44% from 2000 to 2008 (128, 129). It is estimated that care for people suffering from chronic diseases accounted for 75% of all health care expenditures in 2010 (1).

Public expenditures for health were US$ 1.1 trillion or 43.7% of total health expenditures in 2008; the federal government’s share was 73.8% of public expenditures or US$ 817 billion. Medicare costs (public insurance for people age 65 and older) were US$ 469 billion in 2008 and Medicaid (public insurance for the poor and disabled) and other sources of assistance amounted to US$ 362 billion. Expenditures by the Departments of Defense and Veteran Affairs for hospitalization and medical care were US$ 71 billion in 2008, almost twice that of 2000. Costs for public health activities amounted to US$ 69 billion and maternal and child health programs cost another US$ 2.7 billion. In 2008, US$ 39 billion was dedicated to medical research, an increase of 69% over 2000. Medicare per capita spending grew 6.8% annually from 1989 to 2008, while private health insurance increased 7.1% annually over the same period (130). Analysis of public and private health expenditures by object in 2008 showed outlays that were 1.5 to 2.1 times that of 2000. Physician and clinical services cost consumers and the public sector some US$ 496 billion in 2008; dental services cost US$ 101 billion; home health care, US$ 65.7 billion; prescription drugs, US$ 234 billion; nursing home care, US$ 138 billion; public administration and net cost of private health insurance, US$ 159.6 billion; public health activities, US$ 69 billion; and hospital care, US$ 718 billion (130).

As the elderly population in the United States grows, costs for elder care represent an increasing burden for individuals and the public sector. Medicare financed US$ 65 billion in home health care benefits for 3.3 million people in 2008.
However, home health benefits under Medicare are time limited and have highly medicalized eligibility criteria. Medicare does not cover long-term service and support benefits (also called long-term care) for those with ongoing needs for functional assistance with everyday activities.

Approximately 10 million individuals in 2010 received paid long-term services and support through home health care agencies, home care aides, hospices, and other organizations. In a 2010 survey by Northwestern Mutual, the national average hourly rate for care provided by home health aides was US$ 20.65 per hour. In the continental United States, the highest hourly rate was in Sioux Falls, South Dakota (US$ 33.00 per hour), and the lowest rate was in Louisiana (US$ 13.00 per hour). The costs of assisted-living services, which are provided in group residential settings, also vary greatly by state and region. Assisted living services are predominantly paid for with private funds by individuals. In 2010, approximately 733,300 individuals were living in assisted living facilities in the United States (131). The lowest rates were found in the South where monthly costs were in the US$ 2,700 range; states with the highest monthly rates (US$ 5,398) were mostly in the Northeast (132). In 2010, approximately 1.4 million people lived in nursing homes, with costs for care ranging from US$ 60,000 to US$ 158,000 per year, again varying by state and region of the country (132, 133). The federal-state Medicaid program covers approximately half of nursing home costs nationwide.

The Health Services

In 2008, 596,000 establishments made up the health care sector. These establishments varied greatly in size, staffing patterns, and structure: ambulatory health care services accounted for around 43% of all health care employment and 87% of all health care establishments, while hospitals accounted for 35% of all health care employment and 1% of establishments. Nursing and residential care facilities accounted for 23% of employment and 11% of establishments (134). The health care delivery system requires a fee-for-service and is provided primarily by private institutions or medical practices, but also by nonprofit institutions. It is best described as a fragmented system with complicated rules that are frequently set state-by-state and city-by-city (135).

On average, the consumer paid US$ 3,484 out-of-pocket for health expenditures or 48.6% of the total per capita health expenditures (US$ 7,164) in 2008 (136). Health insurance is a major determinant in whether or not people will be able to access health services. In 2007–2009, 61% of the adult population under 65 years old had private health insurance; for the population under age 18, 54% had private health insurance and 40% had public insurance administered by the federal and state governments. Most people 65 years and older have some form of health insurance, including Medicaid (insurance for the poor) or Medicare (insurance for qualified persons 65 years and older).

Barriers in access to health services include financial barriers as well as factors associated with age, gender, and race/ethnicity. In 2009, 5.2% of the population under age 18 had reduced access to medical care due to cost, 7.1% had reduced access to dental care, and 3.2% had reduced access to prescription drugs. For adults 65 years and over, 5.1% had reduced access to medical care, 6.2% had reduced access to dental care, and 4.2% had reduced access to prescription drugs. Between 1997 and 2009 there were significant increases in the population whose access to health services was limited. For males of all ages, 14% had reduced access to medical care, 15% had reduced access to dental care, and 9% to prescription drugs. For females these figures were substantially higher: 16% had reduced access to medical care, 19% to dental care, and 13% to prescription drugs. At the end of 2009, 15% of adults between 18 and 65 years old reported an inability to access needed dental care due to cost (137).

When people do not have a specific health care group or professional who provides them with health care, they often access health care by way of the hospital emergency room, both for urgent and non-urgent health issues. The percentage of the population without a usual health care provider by race/
ethnicity in 2008–2009 was: White (5.5%), African-American (5.9%), and Hispanic (9.4%). Among persons living below the poverty level, 8.6% did not have a usual health care provider, compared to 2.1% of those with incomes exceeding the poverty threshold by 400% (138). Elderly people living in rural areas, who comprise 22% of the elderly population, have access to fewer and a narrower range of long-term care services than those living in non-rural areas (138).

Researchers in the public and private sectors continue to develop drugs to treat a wide range of diseases including heart disease, cancer, and Alzheimer’s disease. The federal government supports the study of the human genome and stem cell research to develop new cures or measures to prevent disease. The pharmaceutical industry cooperates with the federal government in ensuring annual availability of influenza vaccines. In addition, there has been an emphasis in the pharmacy sector to increase generic drug production to reduce costs.

**KNOWLEDGE, TECHNOLOGY, INFORMATION, AND HUMAN RESOURCE MANAGEMENT**

**Scientific Production in Health**

The United States Government has invested billions of dollars in information technology to consolidate health information among institutions. New technologies help secure data from medical records and facilitate rapid and more comprehensive diagnoses, disease prevention, and education of the population about health risks and preventive medical actions. One objective of health information consolidation is to increase the efficiency and lower the cost of providing care to Medicare and Medicaid clients. Information management technologies facilitate the work of the National Institutes of Health in evaluating clinical trial results against real world patient experiences.

Research in the areas of rehabilitation technologies and electronic assistive technologies will benefit the elderly and the disabled to better manage their own care. Among these assistive devices are computers, ergonomic equipment, lift chairs, adjustable beds, stair lifts, and listening/alerting tools. However, persons without health insurance and those who live in rural areas will have less access to advances in medical care and assistive and rehabilitative devices.

**Human Resources**

In 2010, there were more than 16 million on-site health care jobs in the United States, comprising over 11.5% of the total labor force (139). Registered nurses, who make up the largest component of health care personnel, numbered 2.7 million. In addition, there were 1.5 million nursing aides, orderlies, and attendants, and 1 million home health aides. In 2010, there were over 691,000 active physicians, including 352,908 primary care physicians, 155,700 dentists, and 274,900 pharmacists (140). Health care occupations are projected to be the fastest growing job category in the United States between 2010 and 2020. Large growth is expected in the number of physician assistants (30%), physicians and surgeons (24%), registered nurses (26%), mental health counselors (36%), and vocational nurses (22%) (134). By 2015, demands on the health care workforce will grow as the elderly population entering the Medicare system continues to increase and the Affordable Care Act’s insurance expansions take effect.

By 2015 the shortage of physicians will be exacerbated by an increase in the number of elderly entering the Medicare system and by persons newly provided access to health care due to changes in health insurance legislation (129). The Institute of Medicine estimated in 2008 that the U.S. health care workforce will be too small and not properly organized or trained to meet the health needs of an increasingly aging population. There is a shortage of physicians and other providers who specialize in geriatric health and a lack of competence in providing geriatric care throughout the health workforce. Another persistent concern is the shortage of physicians working in rural areas (141, 142, 143).
HEALTH AND INTERNATIONAL COOPERATION

In 2010, U.S. assistance provided by the Department of State and the United States Agency for International Development (USAID) to Latin America and the Caribbean was estimated at about US$ 4.2 billion. USAID funding for Global Health Initiative Programs (GHI) by region in 2009 was: Caribbean, US$ 5.8 million; Central America, US$ 5.4 million; and South America, US$ 5.7 million. The Western Hemisphere total from USAID was US$ 127.6 million. The Department of State distribution of funds for GHI by region in 2009 was: Central America, US$ 2.7 million, and Latin America and the Caribbean, US$ 1.1 million. The Western Hemisphere total from the State Department was US$ 83.9 million in 2009 (144).

Additional funding and services were provided by the CDC within the Department of Health and Human Services (HHS). The CDC is active in many countries in Latin America and the Caribbean, providing technical support, sharing best practices, and collaborating on health research and policy development. Programs are varied and include public health capacity development through CDC’s Field Epidemiology Training Programs; collaboration on disease outbreaks; intervention efforts to eliminate neglected tropical diseases such as onchocerciasis; pandemic influenza preparedness and response; and basic health research and training of postgraduate staff.

The CDC, the National Institutes of Health, and the Food and Drug Administration, are active in many countries in Latin America and the Caribbean, providing technical support, sharing best practices, and collaborating on health research and policy development. Programs are varied and include public health capacity development through CDC’s Field Epidemiology Training Programs; collaboration on disease outbreaks; intervention efforts to eliminate neglected tropical diseases such as onchocerciasis; pandemic influenza preparedness and response; and basic health research and training of postgraduate staff.

United States Agency for International Development (USAID) programs in Latin America and the Caribbean target poor and marginalized populations, with a particular focus on maternal and child health, family planning, and prevention and control of communicable diseases, especially HIV/AIDS, tuberculosis, and malaria. The Agency supports activities that build capacity of health systems to deliver quality basic health services and expand access to health care, especially for underserved populations. USAID supports strengthening key health systems, including: logistics, systems for contraceptive commodities and medicines, human resource planning and training systems, and information systems to inform technical and management decision-making. USAID also supports countries’ efforts in the areas of health sector reform, decentralization of services, and building capacity in essential public health functions. Examples of USAID support in the Region include programs in Bolivia and Peru to reduce maternal and neonatal mortality, enhance access to health care, and improve potable water systems and sanitation facilities. In Haiti, USAID provided extensive humanitarian assistance in the aftermath of the 2010 earthquake, responded to the subsequent cholera emergency, and has continued to focus on health systems strengthening for effective primary care and infectious disease control. USAID’s subregional HIV/AIDS programs in the Caribbean and Central America assist countries to boost program effectiveness and reduce HIV transmission among high-risk groups. In Honduras, USAID works closely with the Ministry of Health to improve maternal and child health, family planning, and HIV/AIDS prevention, care, and support. USAID has partnered with Brazil on tuberculosis control, training health professionals and supporting treatment protocols and research, as well as innovative approaches to HIV/AIDS and malaria control.
Human Services, nongovernmental organizations such as the American Red Cross and CARE, and other nonprofit and private institutions.

SYNTHESIS AND PROSPECTS

Four of the five leading causes of death in the United States in 2007 were chronic diseases: heart disease, malignant neoplasms, cerebrovascular disease, and lower respiratory diseases. However, one of the important successes in the past decade has been the decline in deaths from breast cancer, prostate cancer, heart disease, stroke, and HIV/AIDS. Disease prevalence by racial and ethnic group showed diabetes being particularly important for Hispanic and African-American women. Lack of physical activity and bad diet have contributed to an epidemic of overweight and obesity which affects 67% of adults over 20 years of age in the country. Regional differences were noted for communicable diseases such as AIDS and other sexually-transmitted infections, where the District of Columbia and southern states saw the highest rates.

Accidents/unintentional injuries and violence are important public health concerns across ethnic and racial groups, particularly for the very young and for males. In 2007, accidents and injuries were the leading cause of death for persons between 1 and 44 years old. Homicide ranked in the top five causes of death for those between 1 and 34 years old. Added to this is the shocking public health issue of hundreds of thousands of women who are battered each year by their intimate partners, although this violence has decreased substantially over the last decade (145).

Life expectancy for both sexes reached 78.2 years in 2009, and while differences between men (75.7 years) and women (80.6 years) are still substantial, the gap is lessening. A paradox has been noted that while Hispanics have higher levels of poverty, their life expectancy is greater than for Whites and African-Americans.

In 2008, health care spending was about US$ 7,681 per capita and accounted for 16.2% of the nation’s GDP. Public expenditures on health rose to about US$ 1.1 trillion in 2008; health care services for chronic diseases required over 75% of total resources in 2009 (7).

The nation faces important political decisions on how to handle rising costs of health care and what roles are to be played by government and the private sector. These decisions are complicated by questions of equity: an estimated 50 million persons are without health insurance, and those living at the poverty level were five times as likely to report a state of fair to poor health as persons with family incomes at least four times the poverty level. Questions of equity also relate to the distribution of available funds to cover Medicaid and Medicare programs and to meet the special needs of the more than 20 million military veterans, particularly the troops with serious injuries and mental health problems returning home from Iraq and Afghanistan. The Government has addressed these issues with billions of dollars funded through legislation for programs to strengthen and expand information management of health records, to cut waste and fraud from Medicare and Medicaid, to strengthen the health care infrastructure, and to train health personnel (72). However, the main thrust of health care policy stems from the Affordable Care Act of 2010, which strives to reduce the number of persons without health care and to reduce health care costs (122).

REFERENCES


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