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Great American Smokeout — November 18, 1999

In 1997, approximately one fourth of U.S. adults and one third of U.S. high school students were cigarette smokers (*1,2*). Since 1977, the American Cancer Society (ACS) has sponsored the Great American Smokeout to encourage adults to stop smoking and young persons not to start. In 1998, an estimated 9 million persons participated in the Great American Smokeout community activities by either smoking less or not at all for 24 hours. Of those participants, 10% reported smoking less or not at all for 1–5 days after the event (ACS, unpublished data, 1998). This year, the Great American Smokeout on Thursday, November 18, will encourage smokers to adopt smoke-free, healthier lifestyles that continue into 2000.

The Great American Smokeout will focus on helping adults to quit smoking and on increasing young persons' awareness of the dangers of tobacco use. For the fourth consecutive year, ACS Commit to Quit program will provide adult smokers with information about methods of quitting smoking, including effective pharmacotherapies. ACS volunteers will conduct smoking-cessation and smoking-prevention activities at hospitals, work sites, schools, shopping malls, military installations, and other locations. To facilitate planning and implementation, the *1999 Guide for Great American Smokeout* activities is offered electronically for ACS volunteers and staff.

Additional information is available from ACS, telephone (800) 227-2345; CDC, telephone (800) 232-1311 or (770) 488-5705; or the ACS Great American Smokeout World-Wide Web site, http://www.cancer.org.*

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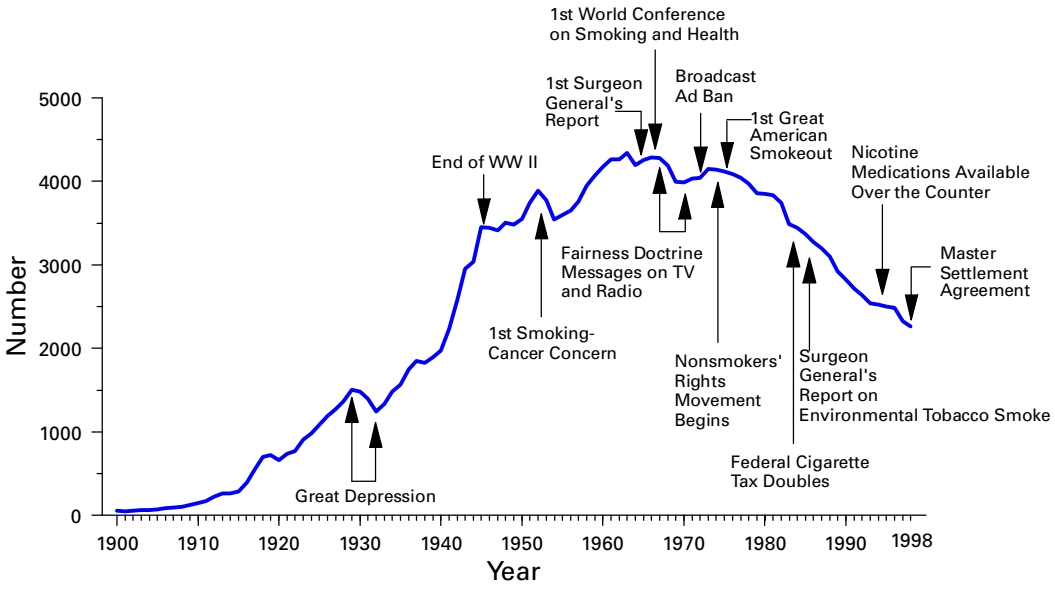
Achievements in Public Health, 1900–1999

Tobacco Use — United States, 1900–1999

Smoking—once a socially accepted behavior—is the leading preventable cause of death and disability in the United States. During the first decades of the 20th century, lung cancer was rare; however, as cigarette smoking became increasingly popular, first among men and later among women, the incidence of lung cancer became epidemic (Figure 1). In 1930, the lung cancer death rate for men was 4.9 per 100,000; in 1990, the rate had increased to 75.6 per 100,000 (*1*). Other diseases and conditions now known to be caused by tobacco use include heart disease, atherosclerotic peripheral vascular disease, laryngeal cancer, oral cancer, esophageal cancer, chronic obstructive pulmonary disease, intrauterine growth retardation, and low birthweight. During the latter part of the 20th century, the adverse health effects from exposure to environmental tobacco smoke also were documented. These include lung cancer, asthma, respiratory infections, and decreased pulmonary function (*2*).

Large epidemiologic studies conducted by Ernst Wynder (see box) and others in the 1940s and 1950s linked cigarette smoking and lung cancer. In 1964, on the basis of approximately 7000 articles relating to smoking and disease, the Advisory Committee to the U.S. Surgeon General concluded that cigarette smoking is a cause of lung and laryngeal cancer in men, a probable cause of lung cancer in women, and the most important cause of chronic bronchitis in both sexes (*3*). The committee stated that "Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action." Substantial public health efforts to reduce the prevalence of tobacco use began shortly after the risk was described in 1964. With the subsequent decline in smoking, the incidence of smoking-related cancers (including cancers of the lung, oral cavity, and pharynx) have also declined (with the exception of

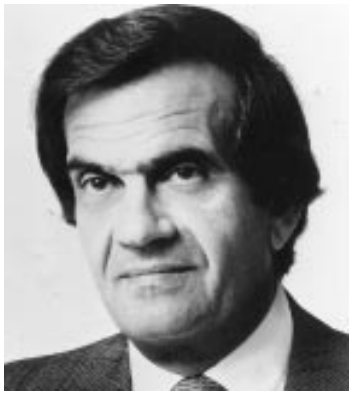
FIGURE 1. Annual adult per capita cigarette consumption and major smoking and health events — United States, 1900–1998



Sources: United States Department of Agriculture; 1986 Surgeon General's Report.

Tobacco Use — Continued

Ernst L. Wynder, M.D.


Courtesy American Health Foundation

Although cigarettes were considered a symbol of popularity and social acceptability from the opening of the 20th century, critics warned of the dangers of what they called "coffin nails," or "little white slavers." They implicated cigarettes in cancer, heart disease, and other serious health problems; however, opposition to the cigarette would gain little ground until compelling scientific evidence linked smoking and disease. Researcher, educator, and activist Ernst Wynder, M.D. (April 30, 1922–July 14, 1999), dedicated his career to producing this evidence.

Ernst Wynder was born in Herford, Germany. His family emigrated to New Jersey in 1938 to escape Nazi persecution. He attended medical school at Washington University, St. Louis, Missouri, and received both a bachelor of science and a medical degree in 1950. Wynder began his lung cancer investigations when he was a medical student. While attending a summer internship at New York University, his curiosity was piqued during the autopsy of a two-pack-a-day smoker who had died from lung cancer. Wynder began collecting case histories of lung cancer victims, first in New York City and then in St. Louis. His research brought him to thoracic surgeon Evarts Graham, who, despite initial skepticism about Wynder's premise (Graham was a heavy smoker), granted access to his extensive case records, and agreed to sponsor the medical student.

In 1950, the *Journal of the American Medical Association* published Wynder and Graham's "Tobacco Smoking as a Possible Etiologic Factor in Bronchiogenic Carcinoma: A Study of 684 Proven Cases." Wynder and Graham's retrospective study was not the first to link smoking and cancer, but its sophisticated design, impressive population size, and unambiguous findings demanded attention and further research. During the next decade, hundreds of reports were published linking cancer and smoking, including large prospective studies, pathologic, and animal investigations. A second effect was to convince doctors that the health risks of smoking were serious. Many gave up the habit, including Graham, who quit smoking in 1952. Too late, it would seem, as he wrote to Wynder in 1957, weeks before the surgeon died from lung cancer.

Wynder devoted his career to the study and prevention of cancer and chronic disease, writing hundreds of scientific papers advocating further research and public education. Through the 1950s and 1960s he worked at the Sloan-Kettering Institute for Cancer Research; in 1969, he founded the American Health Foundation, serving as its medical director. In 1972, the foundation launched *Preventive Medicine*, with Wynder as editor. In 1999, the foundation employed approximately 200 researchers representing medicine, public health, biology, chemistry, nutrition, and behavior science. Wynder endured years of criticism from the tobacco industry and skepticism from many researchers, but he remained determined.

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Tobacco Use — Continued

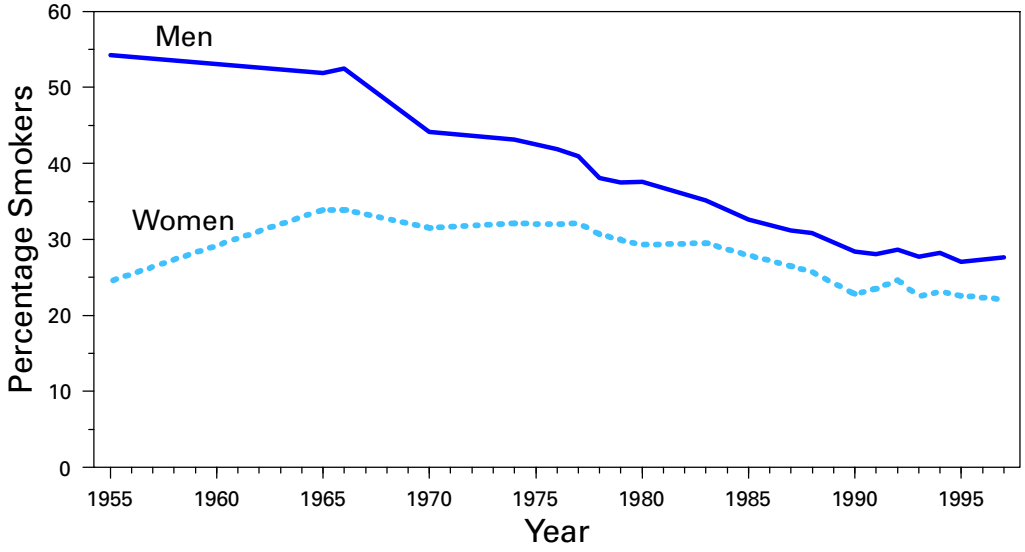
lung cancer among women) (*4*). In addition, age-adjusted death rates per 100,000 persons (standardized to the 1940 population) for heart disease (i.e., coronary heart disease) have decreased from 307.4 in 1950 to 134.6 in 1996 (*4*). During 1964–1992, approximately 1.6 million deaths caused by smoking were prevented (*5*).

Smoking Trends During the Century

Early in the 20th century, several events coincided that contributed to increases in annual per capita consumption, including the introduction of blends and curing processes that allowed the inhalation of tobacco, the invention of the safety match, improvements in mass production, transportation that permitted widespread distribution of cigarettes, and use of mass media advertising to promote cigarettes (*6,7*). Cigarette smoking among women began to increase in the 1920s when targeted industry marketing and social changes reflecting the liberalization of women's roles and behavior led to the increasing acceptability of smoking among women (*8,9*). Annual per capita cigarette consumption increased from 54 cigarettes in 1900 to 4345 cigarettes in 1963 and then decreased to 2261 in 1998 (*10,11*). Some decreases correlate with events, such as the first research suggesting a link between smoking and cancer in the 1950s, the 1964 Surgeon General's report, the 1968 Fairness Doctrine, and increased tobacco taxation and industry price increases during the 1980s (Figure 1).

An important accomplishment of the second half of the 20th century has been the reduction of smoking prevalence among persons aged ≥18 years from 42.4% in 1965 to 24.7% in 1997, with the rate for men (27.6%) higher than for women (22.1%) (Figure 2). The percentage of adults who never smoked increased from 44% in the mid-1960s to 55% in 1997. In 1998, tobacco use varied within and among racial/ethnic groups. The prevalence of smoking was highest among American Indians/Alaska Natives, and second highest among black and Southeast Asian men. The prevalence

FIGURE 2. Trends in cigarette smoking* among persons aged ≥18 years, by sex — United States, 1955–1997



*Before 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes during their lifetime and who reported now smoking every day or some days.

Sources: 1955 Current Population Survey; 1965–1997 National Health Interview Survey.

Tobacco Use — Continued

was lowest among Asian American and Hispanic women (*12*). Smokeless tobacco use has changed little since 1970, with a 5% prevalence in 1970 and a 6% prevalence in 1991 among men, and 2% and 1%, respectively, for women. The prevalence of smokeless tobacco use is highest among high school males, with prevalence being 20% among white males, 6% among Hispanics males, and 4% among blacks males. Prevalence of use tends to be lower in the northeastern region and higher in the southern region of the United States. Total consumption of cigars decreased from 8 million in 1970 to 2 million in 1993 but increased 68% to 3.6 million in 1997 (*13*).

Reductions in smoking result from many factors, including scientific evidence of the relation among disease, tobacco use, and environmental exposure to tobacco; dissemination of this information to the public; surveillance and evaluation of prevention and cessation programs; campaigns by advocates for nonsmokers' rights; restrictions on cigarette advertising; counteradvertising; policy changes (i.e., enforcement of minors' access laws, legislation restricting smoking in public places, and increased taxation); improvements in treatment and prevention programs; and an increased understanding of the economic costs of tobacco.

The cigarette itself has changed. When cigarettes were first associated with lung cancer in the early 1950s, most U.S. smokers smoked unfiltered cigarettes. With a growing awareness of the danger of smoking came the first filter, which was designed to reduce the tar inhaled in the smoke. Later, low tar cigarettes were marketed; however, many smokers compensated by smoking more intensely and by blocking the filter's ventilation holes (*13*). Adenocarcinoma has replaced squamous cell carcinoma as the leading cause of lung cancer-related death in the United States. This increase in adenocarcinoma parallels the changes in cigarette design and smoking behavior (*13*).

Changes in the social norms surrounding smoking can be documented by examining changes in public policy, including availability of Fairness Doctrine counteradvertising messages on television and radio and increased restrictions on tobacco advertising beginning with the ban on broadcast advertising in 1971. Cigarette advertising no longer appears on television or billboards, and efforts to restrict sales and marketing to adolescents have increased. Indoor air policies switched from favoring smokers to favoring nonsmokers. Smoking is no longer permitted on airplanes, and many people, including 12.5% of adult smokers with children, do not smoke at home (*14*). Now 42 states have restrictions on smoking at government work sites and 20 states have restrictions at private work sites.

One of the most effective means of reducing the prevalence of tobacco use is by increasing federal and state excise tax rates. A 10% increase in the price of cigarettes can lead to a 4% reduction in the demand for cigarettes. This reduction is the result of people smoking fewer cigarettes or quitting altogether (*15*). Studies show that low-income, adolescent, Hispanic, and non-Hispanic black smokers are more likely than others to stop smoking in response to a price increase (*15*).

The November 1998 Master Settlement Agreement marks the end of the 20th century with an unprecedented event. Although admitting no wrongdoing, the tobacco companies signed an agreement with the attorneys general of 46 states. This agreement settled lawsuits totaling $206 billion; however, the agreement did not require that any of the state money be spent for tobacco use prevention and control. The American Legacy Foundation was established as a result of a provision in the

Tobacco Use — Continued

Master Settlement Agreement that called for a foundation with a mandate to conduct effective tobacco education programs based on scientific research.

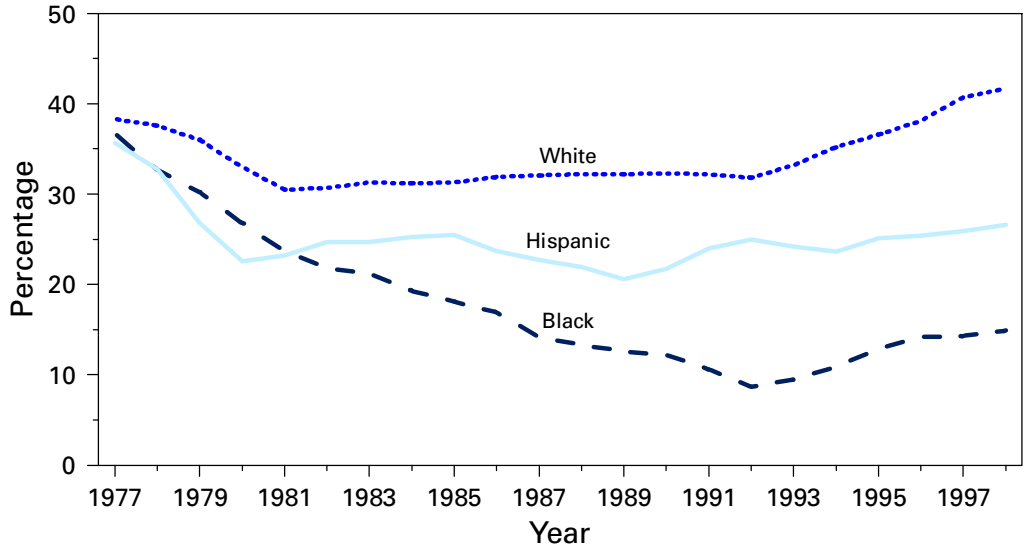
Future Challenges

Despite the achievements of the 20th century, approximately 48 million U.S. adults smoke cigarettes; half of those who continue to smoke will die from a smoking-related disease. Tobacco use is responsible for approximately 430,000 deaths each year—one of every five. Parallel to the health burden is the economic burden of tobacco use, which amounts to at least $50 billion in medical expenditures and $50 billion in indirect costs. If trends continue, approximately 5 million children living today will die prematurely because as adolescents they started smoking cigarettes (*16*). Advances have been made in knowledge of tobacco use and its effect on health; intervention strategies to reduce these effects remain serious challenges.

First, trends from the 1975–1998 Monitoring the Future surveys (*17*) indicate that the 30-day prevalence of tobacco use (smoking on ≥1 of the 30 days before the survey) among high school seniors decreased from the late 1970s to the mid-1980s, and prevalence was approximately 30%; however, during 1991–1997 smoking prevalence increased to 36.5% (Figure 3). Prevalence among high school seniors today is highest among whites and lowest among blacks (*18*). The recent increases in prevalence highlight the need for a nationwide comprehensive prevention program focused on this age group.

Second, decreasing prevalence among adults since the mid-1960s has not continued (Figure 2). Since 1990, prevalence among both men and women has remained constant (approximately 28.0% for men and approximately 22.5% for women). The stagnation emphasizes the need for policy changes that encourage quitting and for improved access to proven treatment interventions (e.g., Food and Drug Administration-approved pharmacotherapy and behavior counseling).

FIGURE 3. Trends in cigarette smoking* among 12th graders, by racial/ethnic group — United States, 1977–1998†



*Smoking on ≥1 of the 30 days before the survey.
†2-year moving averages are used to stabilize estimates.

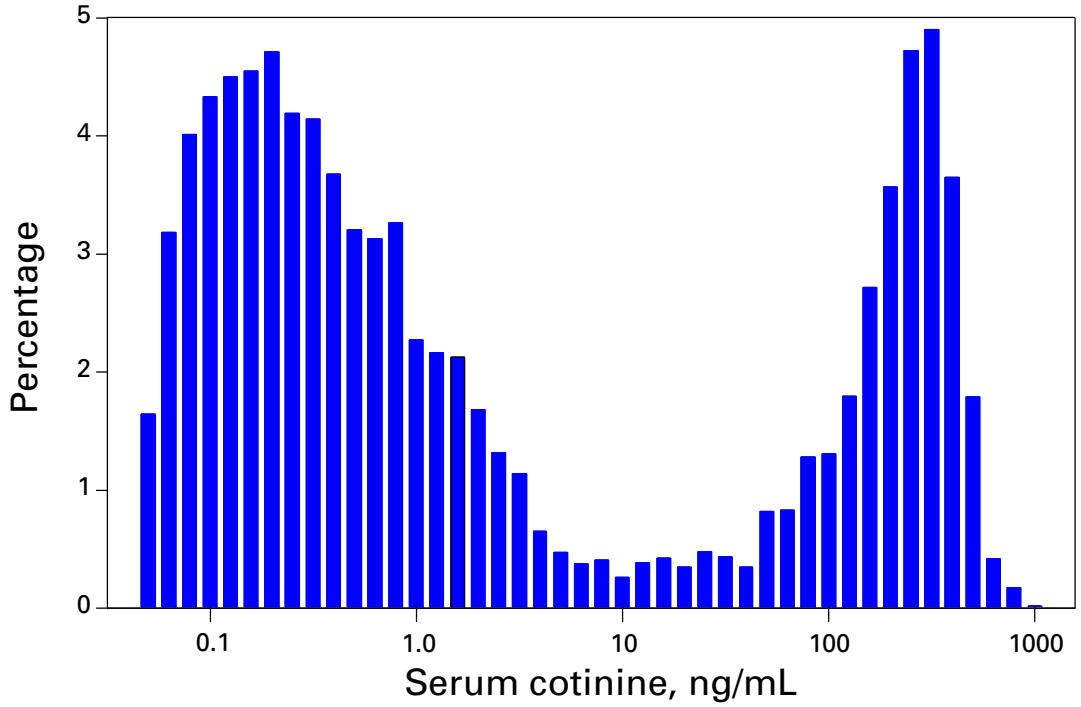
Source: University of Michigan, Monitoring the Future project.

Tobacco Use — Continued

Third, large differences in tobacco use exist in the United States. For example, in 1997, smoking prevalence was 37.9% among American Indian/Alaska Native men, 32.1% among black men, and 27.6% among white men (*19*). There are marked differences in deaths from malignant diseases of the respiratory system; the age-adjusted death rates per 100,000 U.S. residents in 1995 were 80.5 among black men and 53.7 among white men (*12*). Age-adjusted death rates for cerebrovascular disease also reflect the disparity in health outcomes, with the rate being 53.1 per 100,000 among black men and 26.3 among white men (*12*). No single factor determines the patterns of tobacco use among racial/ethnic groups; these patterns result from complex interactions among multiple factors such as socioeconomic status, cultural characteristics, acculturation, stress, biologic elements, targeted advertising, price of tobacco products, and varying capacities of communities to mount effective tobacco-control initiatives. These disparities in use and adverse health outcomes based on race/ethnicity and socioeconomic status need to be addressed.

Fourth, exposure to environmental tobacco smoke (ETS) at home and at work is a substantial problem. One study found that 87.9% of children and adult nonusers of tobacco had detectable levels of serum cotinine (*20*). The distribution of serum cotinine levels is bimodal: one peak for nonsmokers exposed to ETS and a higher one for smokers (Figure 4). Both the number of smokers in the household and the hours exposed at work were associated with increased serum cotinine levels among nonsmokers.

FIGURE 4. Serum cotinine levels among persons aged ≥4 years — United States, third National Health and Nutrition Examination Survey, 1988–1991*



*Smokers have higher levels of serum cotinine. Nonsmokers with measurable cotinine levels include those who reported no exposure to environmental tobacco smoke in the home or work site.

Source: Pirkle JL, Flegal KM, Bennert JT, Brody DJ, Etzel RA, Maurer KR. Exposure of the U.S. population to environmental tobacco smoke. JAMA 1996;275:1233–40.

Tobacco Use — Continued

Fifth, research is needed to determine whether new "highly engineered" products can reduce the harmful effects of tobacco or whether the mistakes associated with low tar and nicotine cigarettes will be repeated (*21*). Several novel tobacco products, (e.g., bidis from India) appear to be increasing in popularity, but little is known about long-term health effects or about social and other factors associated with their use (*22*).

Sixth, a dramatic increase in tobacco use has occurred worldwide. Because of the increase, the World Health Organization (WHO) established the Tobacco Free Initiative, and the World Health Assembly unanimously approved the development of a Framework Convention on Tobacco Control. This WHO effort will promote global cooperation on aspects of tobacco control that transcend national boundaries and will necessitate political action; mobilization of resources; and implementation of national, regional, and global strategies.

Much remains to be done despite the public health achievements in reducing tobacco use in the 20th century. The American Cancer Society has set goals for 2015 of a 25% reduction in cancer incidence and a 50% reduction in cancer mortality rates (*23*). Approximately 50% of that goal can be achieved with a 40%–50% reduction in smoking prevalence by 2005. Commensurate with the cost of the harm caused by tobacco, resources must be expended, including programs preventing adolescents from starting to smoke, getting adults and young people to quit smoking, and eliminating exposure to ETS and disparities among population groups.

Reported by: Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

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Cigarette Smoking Among Adults — United States, 1997

In the United States, cigarette smoking is the leading cause of preventable morbidity and mortality and results in approximately 430,000 deaths each year (*1*). One of the national health objectives for 2000 is to reduce the prevalence of cigarette smoking among adults to no more than 15% (objective 3.4) (*2*). To assess progress toward meeting this objective, CDC analyzed self-reported data about cigarette smoking among U.S. adults from the 1997 National Health Interview Survey (NHIS) Sample Adult Core Questionnaire. This report summarizes the findings of this analysis, which indicate that, in 1997, 24.7% of adults were current smokers and that the overall prevalence of current smoking in 1997 was unchanged from the overall prevalence of current smoking from the 1995 NHIS.

The 1997 NHIS Sample Adult questionnaire was administered to a nationally representative sample (n=36,116) of the U.S. noninstitutionalized civilian population aged ≥18 years; the overall response rate for the survey was 80.4%. Participants were asked, "Have you smoked at least 100 cigarettes in your entire life?" and "Do you now smoke cigarettes every day, some days, or not at all?" Current smokers were persons who reported having smoked ≥100 cigarettes during their lifetime and who smoked every day or some days at the time of the interview. Former smokers were those who had smoked ≥100 cigarettes during their lifetime but who did not smoke currently. Attempts to quit were determined by asking current daily smokers, "During the past 12 months, have you stopped smoking for one day or longer because you were trying to stop smoking?" Data were adjusted for nonresponse and weighted to provide national estimates. Confidence intervals (CIs) were calculated using SUDAAN.

Cigarette Smoking Among Adults — Continued

In 1997, an estimated 48.0 million (24.7%) adults, including 25.7 million (27.6%) men and 22.3 million (22.1%) women, were current smokers (Table 1). Overall, 20.1% (95% CI=±0.5) of adults were every-day smokers, and 4.4% (95% CI=±0.2) were someday smokers (every-day smokers constituted 81.9% [95% CI=±0.9] of all smokers). Prevalence of smoking was highest among persons aged 18–24 years (28.7%) and aged 25–44 years (28.6%) and lowest among persons aged ≥65 years (12%). Prevalence of current smoking was significantly higher among American Indians/Alaska Natives (34.1%), non-Hispanic blacks (26.7%), and non-Hispanic whites (25.3%) than among Hispanics (20.4%) or Asians/Pacific Islanders (16.9%). Current smoking prevalence was highest among persons with nine to 11 years of education (35.4%) and lowest among persons with ≥16 years of education (11.6%), and was higher among persons living below the poverty level* (33.3%) than among those living at or above the poverty level (24.6%).

*Published 1996 poverty thresholds from the Bureau of the Census are used in these calculations.

TABLE 1. Percentage of persons aged ≥18 years who were current smokers,* by selected characteristics — United States, National Health Interview Survey, 1997

	Men (n=15,361)		Women (n=20,455)		Total (n=35,816)	
Characteristic	**%**	**(95% CI†)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Race/Ethnicity§						
White, non-Hispanic	27.4	(± 1.0)	23.3	(±0.8)	**25.3**	**(±0.7)**
Black, non-Hispanic	32.1	(± 2.4)	22.4	(±1.7)	**26.7**	**(±1.4)**
Hispanic	26.2	(± 2.1)	14.3	(±1.4)	**20.4**	**(±1.4)**
American Indian/ Alaska Native¶	37.9	(±13.7)	31.3	(±8.8)	**34.1**	**(±7.7)**
Asian/Pacific Islander	21.6	(± 4.4)	12.4	(±3.5)	**16.9**	**(±2.7)**
Education (yrs)**						
≤8	29.9	(± 3.0)	15.1	(±2.2)	**22.5**	**(±1.9)**
9–11	41.3	(± 3.1)	30.5	(±2.4)	**35.4**	**(±2.0)**
12	31.8	(± 1.7)	25.7	(±1.3)	**28.4**	**(±1.0)**
13–15	27.4	(± 1.7)	23.1	(±1.4)	**25.1**	**(±1.1)**
≥16	13.0	(± 1.2)	10.1	(±1.0)	**11.6**	**(±0.8)**
Age group (yrs)						
18–24	31.7	(± 2.8)	25.7	(±2.4)	**28.7**	**(±1.9)**
25–44	31.2	(± 1.3)	26.1	(±1.1)	**28.6**	**(±0.8)**
45–64	27.6	(± 1.5)	21.5	(±1.3)	**24.4**	**(±1.0)**
≥65	12.8	(± 1.4)	11.5	(±1.1)	**12.0**	**(±0.9)**
Poverty status††						
At or above	27.3	(± 1.0)	21.8	(±0.8)	**24.6**	**(±0.7)**
Below	38.7	(± 2.8)	29.8	(±1.9)	**33.3**	**(±1.7)**
Unknown	23.4	(± 2.0)	18.2	(±1.5)	**20.5**	**(±1.2)**
Total	**27.6**	**(± 0.9)**	**22.1**	**(±0.7)**	**24.7**	**(±0.6)**

*Persons who reported having smoked ≥100 cigarettes during their lifetime and who reported now smoking every day or some days. Excludes 300 respondents for whom smoking status was unknown.
†Confidence interval.
§Excludes 74 respondents of unknown, multiple, and other racial/ethnic categories.
¶Wide variances on estimates reflect the small sample sizes.
**Persons aged ≥25 years. Excludes 305 persons with unknown years of education.
††Published 1996 poverty thresholds from the Bureau of the Census are used in these calculations.

Cigarette Smoking Among Adults — Continued

In 1997, an estimated 44.3 million adults (22.8% [95% CI=±0.5]) were former smokers, including 25.1 million men and 19.2 women. Former smokers constituted 48.0% (95% CI=±0.9) of persons who had ever smoked at least 100 cigarettes. Among current daily smokers in 1997, an estimated 16.0 million (40.7% [95% CI=±1.4]) had stopped smoking for at least 1 day during the preceding 12 months.

Reported by: Epidemiology Br, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The prevalence of smoking among adults aged ≥18 years in 1997 was similar to that in 1995 (*3*). The findings in this report suggest that the goal of reducing the prevalence of cigarette smoking among adults to ≤15% by 2000 will not be attained. The 1997 NHIS data also demonstrate substantial differences in smoking prevalence across populations and suggest that prevalence may be increasing among young adults.

In 1997, smoking prevalence among persons aged 18–24 years was as high as the prevalence among persons aged 25–44 years. Historically, smoking prevalence has been highest among persons aged 25–44 years and significantly lower among persons aged 18–24 years. In addition, the data show a generally higher (although not statistically significant) prevalence among persons aged 18–24 years in 1997 than in 1995. Smoking prevalence among persons aged 25–44 years remained essentially unchanged from 1995 through 1997.

Increased smoking prevalence among persons aged 18–24 years was reported in a recent study from a nationally representative sample of approximately 15,000 students at 116 four-year colleges (*4*). Among these college students, the prevalence of current smoking increased from 22.3% in 1993 to 28.7% in 1997. If high school students retain their smoking behavior as they enter young adulthood, the increases documented in recent NHIS surveys may reflect the increased prevalence among high school students in recent years and the aging of this cohort into young adulthood. Alternatively, the increase may indicate increased initiation of smoking among young adults (*5*). Additional surveillance data are needed to clarify these patterns.

The high prevalence of smoking among persons aged 18–24 years indicates a need to focus tobacco-use treatment interventions on this age group. Interventions for young adults before they become addicted may be critical in reducing tobacco use among young adults. However, only one third of college students aged 18–24 years reported receiving tobacco use prevention information at their educational institution (*6*).

Smoking prevalence reported for racial/ethnic subgroups showed few changes from 1995 (*3*) through 1997. Among Asian/Pacific Islander women, smoking prevalence increased from 4.3% in 1995 to 12.4% in 1997. However, the sample size for Asian/Pacific Islander women was small. In addition, there were procedural changes in the NHIS survey design and changes in the questions defining racial/ethnic groups. Therefore, these data should be interpreted with caution.

The findings in this report are subject to at least two limitations. First, the questionnaire for the 1997 NHIS was completely redesigned. Although the smoking questions remained unchanged, their context changed substantially; therefore, trend analysis or comparison of data from the 1997 NHIS with data from prior years must be conducted with caution. Second, the sample size of certain subgroups was small, potentially creating unstable estimates.

Cigarette Smoking Among Adults — Continued

To reduce the prevalence of smoking among adults, public health programs should include smoking cessation interventions. Before 1999, tobacco-control programs did not specifically include cessation as a major feature, but concentrated on policy interventions and the prevention of the initiation of tobacco use. Although preventing tobacco use among adolescents is critical to the long-term success of tobacco-control goals, reductions in morbidity and mortality in the short term can only be achieved by helping current smokers quit. To assist in this process, *Smoking Cessation: Clinical Practice Guideline* includes recommendations for a multifaceted approach to treating nicotine dependence (*7*). This guideline has specific recommendations for three major target audiences: primary-care clinicians; tobacco cessation specialists and programs; and health-care administrators, insurers, and purchasers. CDC includes cessation as one of the nine core elements for tobacco control (*8*). In addition, CDC's National Tobacco Control Program includes promoting cessation among adults as one of its four goals. The other three goals are preventing smoking initiation, reducing exposure to environmental tobacco smoke, and eliminating disparities among various populations in the health effects of tobacco use.

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Recommendations Regarding the Use of Vaccines That Contain Thimerosal as a Preservative

On October 20, 1999, the Advisory Committee on Immunization Practices (ACIP) reviewed information about thimerosal in vaccines and received updates from CDC's National Immunization Program and several vaccine manufacturers on the current and anticipated availability of vaccines that do not contain thimerosal as a preservative. The review was prompted by a joint statement about thimerosal issued July 8, 1999, by the American Academy of Pediatrics (AAP) and the Public Health Service (PHS) (*1*) and a comparable statement released by the American Academy of Family Physicians (*2*). These statements followed a Congressionally mandated Food and Drug Administration (FDA) review of mercury in drugs and food, which included a reassessment of the use of thimerosal in vaccines.

Thimerosal is a mercury-containing preservative that has been used as an additive in biologics and vaccines since the 1930s because it prevents bacterial and fungal

Thimerosal — Continued

contamination, particularly in multidose containers. Given the widely acknowledged value of reducing exposure to mercury, vaccine manufacturers, FDA, and other PHS agencies are collaborating to reduce the thimerosal content of vaccines or to replace them with formulations that do not contain thimerosal as a preservative as soon as possible without causing unnecessary disruptions in the vaccination system. FDA will expedite review of supplements to manufacturers' product license applications that present formulations for eliminating or reducing the mercury content of vaccines.

Hepatitis B, DTaP, and Hib Vaccines

A single-antigen, preservative-free hepatitis B vaccine (Recombivax HB®, Merck & Co., Inc., West Point, Pennsylvania)* was licensed on August 27, 1999, and a second hepatitis B vaccine (Engerix-B®, SmithKline Beecham Biologicals, Philadelphia, Pennsylvania) that is preservative-free is under consideration for licensure (*3*). One manufacturer reported that the supply of its diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine that does not contain thimerosal as a preservative would be sufficient to meet any increased demand during the next year, and three other manufacturers are developing similar DTaP vaccines that could be licensed in the future. Multiple single-antigen *Haemophilus influenzae* type b (Hib) vaccines and the hepatitis B/Hib combination vaccine that do not contain thimerosal as a preservative are licensed, and the supply of these products is adequate to meet national needs.

The risk, if any, to infants from exposure to thimerosal is believed to be slight. The demonstrated risks for not vaccinating children far outweigh the theoretical risk for exposure to thimerosal-containing vaccines during the first 6 months of life.

Given the availability of vaccines that do not contain thimerosal as a preservative, the progress in developing such additional vaccines, and the absence of any recognized harm from exposure to thimerosal in vaccines, hepatitis B, DTaP, and Hib vaccines that contain thimerosal as a preservative can continue to be used in the routine infant schedule beginning at age 2 months along with monovalent or combination vaccines that do not contain thimerosal as a preservative.

Reported failures to vaccinate newborns at high risk for perinatal hepatitis B virus (HBV) transmission suggest that some institutions may have misinterpreted or improperly implemented the recommendations contained in the joint statement by the AAP and PHS—and subsequent clarification–to postpone hepatitis B vaccination only for newborns who are not at high risk (*1,3*). Chronic HBV infection develops in approximately 90% of infants infected at birth; among chronically infected infants, the risk for premature death from HBV-related liver cancer or cirrhosis is approximately 25% (*4*). All hospitals and pediatric care providers should ensure that newborn infants receive hepatitis B vaccine as recommended (Table 1) (*5*). If the supply of single-antigen hepatitis B vaccines that do not contain thimerosal as a preservative is limited, the priority for its use should be to vaccinate newborn infants (*3*).

Influenza Vaccine

All influenza vaccines contain thimerosal; however, ACIP recommends no changes in the influenza vaccination guidelines, including those for children and pregnant women (*6*). Evidence suggests that children with certain medical conditions (e.g., cardiopulmonary disease, including asthma) are at substantially increased risk for complications of influenza (*7,8*). During the influenza season, rates of cardiopulmonary hospitalizations for otherwise healthy women in their second or third trimester of

*Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

Thimerosal — Continued

TABLE 1. Recommendations for hepatitis B vaccination of newborn infants with thimerosal-containing vaccines and vaccines that do not contain thimerosal as a preservative

Mother's HBsAg status at delivery	Recommendation
Positive or Unknown	Vaccinate at birth. Use vaccine that does not contain thimerosal as a preservative; if unavailable, use thimerosal-containing vaccine.
Negative	Vaccinate at birth or by age 2 months. At birth, use vaccine that does not contain thimerosal as a preservative. At 2 months of age, use either thimerosal-containing vaccine or vaccine that does not contain thimerosal as a preservative.
Negative–High-risk*	Same as "Negative" above, except thimerosal-containing vaccine can be administered at birth.

*Populations or groups that have a high risk for early childhood hepatitis B virus (HBV) transmission, including Alaska Natives, Asian-Pacific Islanders, immigrant populations from countries in which HBV is of high or intermediate endemicity, and households with persons with chronic HBV infection.

pregnancy are similar to that among persons aged ≥65 years who do not have a chronic medical illness and for whom influenza vaccination is also recommended (*9*). Pregnant women with chronic medical conditions are at higher risk and have a hospitalization rate more than two times greater than among pregnant women without other high-risk medical conditions. A substantial safety margin has been incorporated into the health guidance values for organic mercury exposure developed by the Agency for Toxic Substances and Disease Registry and other agencies (*10*). ACIP concluded that the benefits of influenza vaccine outweigh the potential risks for thimerosal.

References

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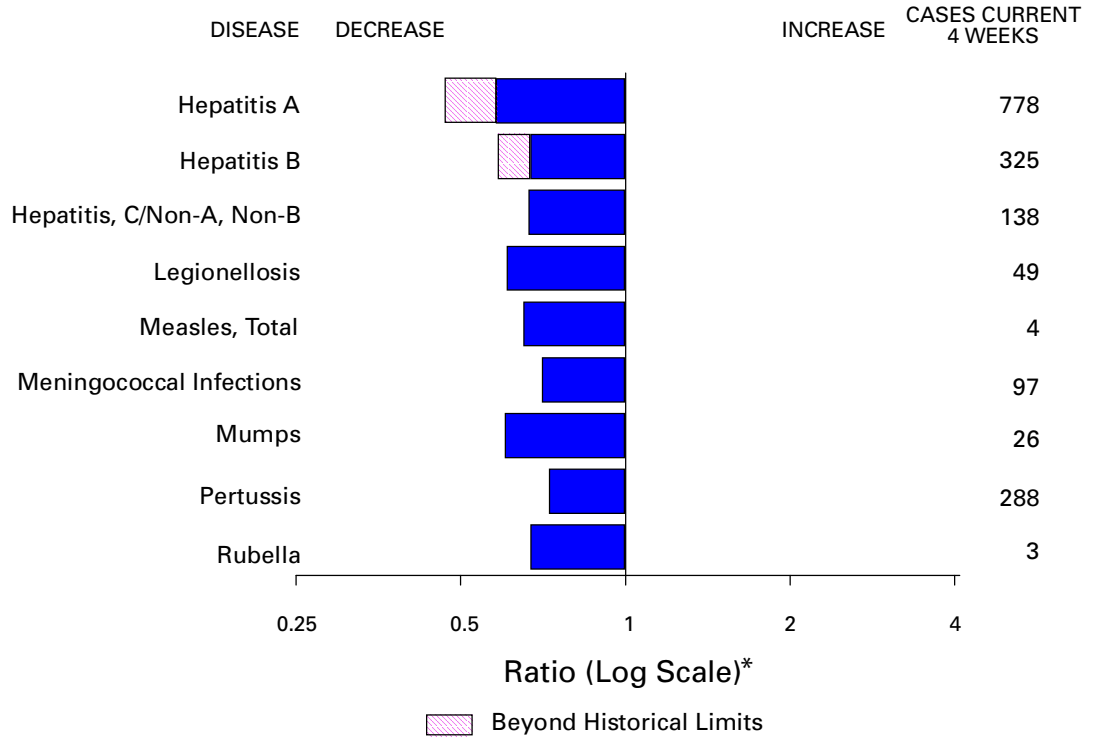
(Continued on page 1007)

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending October 30, 1999, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending October 30, 1999 (43rd Week)

	Cum. 1999		Cum. 1999
Anthrax	-	HIV infection, pediatric*§	121
Brucellosis*	36	Plague	5
Cholera	6	Poliomyelitis, paralytic	-
Congenital rubella syndrome	5	Psittacosis*	17
Cyclosporiasis*	49	Rabies, human	-
Diphtheria	4	Rocky Mountain spotted fever (RMSF)	447
Encephalitis: California*	51	Streptococcal disease, invasive Group A	1,766
eastern equine*	5	Streptococcal toxic-shock syndrome*	31
St. Louis*	10	Syphilis, congenital¶	168
western equine*	-	Tetanus	31
Ehrlichiosis human granulocytic (HGE)*	121	Toxic-shock syndrome	102
human monocytic (HME)*	35	Trichinosis	8
Hansen Disease*	88	Typhoid fever	263
Hantavirus pulmonary syndrome*†	18	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	80		

-:no reported cases
*Not notifiable in all states.
† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§ Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update October 24, 1999.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending October 30, 1999, and October 31, 1998 (43rd Week)

Reporting Area	AIDS		Chlamydia		Cryptosporidiosis		*Escherichia coli* O157:H7*			
							NETSS		PHLIS	
	Cum. 1999†	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	37,420	38,690	473,984	489,113	1,855	3,256	2,763	2,502	1,936	1,946
NEW ENGLAND	1,904	1,517	16,532	16,842	124	139	282	292	293	243
Maine	68	26	738	837	24	29	34	33	-	-
N.H.	38	25	802	819	17	14	28	42	29	42
Vt.	15	18	396	350	34	23	31	19	18	17
Mass.	1,231	766	7,651	6,940	45	66	162	135	171	139
R.I.	90	110	1,920	1,909	4	7	27	11	6	1
Conn.	462	572	5,025	5,987	-	-	U	52	69	44
MID. ATLANTIC	9,663	10,367	51,826	50,792	282	493	235	264	76	84
Upstate N.Y.	1,146	1,250	N	N	138	294	184	188	-	-
N.Y. City	5,100	5,843	21,963	21,862	112	177	9	12	15	12
N.J.	1,741	1,894	8,632	9,818	22	22	42	64	32	51
Pa.	1,676	1,380	21,231	19,112	10	N	N	N	29	21
E.N. CENTRAL	2,519	2,736	68,585	83,074	445	663	592	398	425	320
Ohio	403	567	19,151	22,486	56	64	199	106	168	61
Ind.	285	446	9,080	9,168	34	52	84	89	55	47
Ill.	1,201	1,037	22,045	22,212	60	76	203	102	81	73
Mich.	504	530	18,309	17,680	42	37	106	101	73	62
Wis.	126	156	U	11,528	253	434	N	N	48	77
W.N. CENTRAL	846	750	27,266	29,104	187	249	529	425	370	373
Minn.	161	146	5,658	5,853	71	80	207	181	158	196
Iowa	72	60	3,438	3,752	52	61	107	88	70	56
Mo.	408	363	9,298	10,420	26	23	44	42	57	59
N. Dak.	6	5	707	855	16	29	16	10	14	15
S. Dak.	13	15	1,338	1,277	7	19	44	29	59	34
Nebr.	61	60	2,601	2,346	14	31	90	44	-	-
Kans.	125	101	4,226	4,601	1	6	21	31	12	13
S. ATLANTIC	10,275	10,032	105,331	93,951	327	292	283	208	148	156
Del.	147	122	2,280	2,149	-	3	6	-	3	2
Md.	1,242	1,394	9,734	6,158	17	18	33	35	2	14
D.C.	496	750	N	N	8	21	-	1	U	U
Va.	689	771	11,835	11,237	21	20	65	N	52	51
W. Va.	61	70	1,204	2,007	3	1	10	8	8	8
N.C.	688	703	18,471	18,198	21	N	61	52	49	47
S.C.	847	638	10,092	14,036	-	-	19	11	14	8
Ga.	1,466	1,060	28,524	19,755	121	97	29	66	-	-
Fla.	4,639	4,524	23,191	20,411	136	132	60	35	20	26
E.S. CENTRAL	1,666	1,596	37,694	33,983	24	24	109	108	56	61
Ky.	236	248	6,251	5,264	6	10	40	33	-	-
Tenn.	643	590	11,502	11,311	6	8	43	48	36	39
Ala.	423	417	10,446	8,509	10	N	21	21	16	18
Miss.	364	341	9,495	8,899	2	6	5	6	4	4
W.S. CENTRAL	3,822	4,742	67,530	74,402	79	893	106	84	109	94
Ark.	158	177	4,935	3,196	1	6	13	10	8	10
La.	742	814	10,879	12,440	22	15	9	4	13	7
Okla.	113	254	6,630	8,078	9	N	21	13	24	8
Tex.	2,809	3,497	45,086	50,688	47	872	63	57	64	69
MOUNTAIN	1,469	1,359	26,358	26,967	86	119	266	321	167	228
Mont.	11	26	1,287	1,066	10	10	24	15	-	5
Idaho	21	27	1,396	1,671	7	17	40	36	20	24
Wyo.	10	3	636	579	1	2	14	53	14	55
Colo.	271	254	5,009	6,561	11	17	102	72	86	57
N. Mex.	78	188	3,151	2,965	38	46	11	17	5	18
Ariz.	745	550	10,502	9,615	12	18	28	43	19	26
Utah	129	114	1,808	1,778	N	N	32	67	21	21
Nev.	204	197	2,569	2,732	7	9	15	18	2	22
PACIFIC	5,256	5,591	72,862	79,998	301	384	361	402	292	387
Wash.	305	369	9,736	9,267	N	N	139	90	119	120
Oreg.	185	146	5,041	4,696	88	63	73	99	68	95
Calif.	4,673	4,915	54,214	62,384	213	318	139	207	94	158
Alaska	13	17	1,563	1,541	-	-	1	6	1	-
Hawaii	80	144	2,308	2,110	-	3	9	-	10	14
Guam	5	1	302	350	-	-	N	N	U	U
P.R.	1,094	1,498	U	U	-	N	5	5	U	U
V.I.	36	31	U	U	U	U	U	U	U	U
Amer. Samoa	-	-	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	U	U	U	U	U	U	U

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

†Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update October 24, 1999.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending October 30, 1999, and October 31, 1998 (43rd Week)

Reporting Area	Gonorrhea		Hepatitis C/NA,NB		Legionellosis		Lyme Disease	
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	264,406	292,166	2,791	2,718	722	1,085	9,146	13,788
NEW ENGLAND	5,050	5,018	59	55	65	74	3,146	4,276
Maine	42	57	2	-	3	1	41	72
N.H.	93	76	-	-	6	6	16	39
Vt.	37	32	6	5	13	6	18	11
Mass.	2,116	1,848	48	47	24	31	1,022	661
R.I.	491	319	3	3	8	19	408	556
Conn.	2,271	2,686	-	-	11	11	1,641	2,937
MID. ATLANTIC	32,964	31,679	116	184	131	265	4,433	7,584
Upstate N.Y.	5,644	6,057	81	94	51	82	3,301	3,519
N.Y. City	11,762	9,847	-	-	9	33	29	213
N.J.	5,309	6,638	-	U	13	15	389	1,652
Pa.	10,249	9,137	35	90	58	135	714	2,200
E.N. CENTRAL	45,644	57,446	1,339	582	214	360	105	699
Ohio	11,535	14,666	3	7	65	112	68	40
Ind.	5,009	5,425	1	5	32	62	19	34
Ill.	16,295	18,504	39	37	22	48	12	14
Mich.	12,805	13,590	705	401	59	73	1	12
Wis.	U	5,261	591	132	36	65	5	599
W.N. CENTRAL	10,954	14,377	185	35	42	59	196	192
Minn.	2,180	2,245	9	9	9	6	132	146
Iowa	903	1,276	-	8	11	9	19	23
Mo.	4,686	7,445	165	12	14	16	22	11
N. Dak.	71	69	-	-	1	-	1	-
S. Dak.	160	190	-	-	3	3	-	-
Nebr.	1,128	994	5	4	4	18	10	3
Kans.	1,826	2,158	6	2	-	7	12	9
S. ATLANTIC	79,396	78,574	177	90	112	123	982	778
Del.	1,415	1,249	1	-	11	12	51	58
Md.	8,470	7,972	38	13	25	31	694	558
D.C.	3,166	3,680	1	-	3	6	4	4
Va.	7,965	7,674	10	11	28	18	109	58
W. Va.	363	732	17	6	N	N	16	12
N.C.	16,452	15,776	33	19	13	11	64	49
S.C.	5,764	8,973	22	5	8	10	5	6
Ga.	19,413	16,698	1	9	1	8	-	5
Fla.	16,388	15,820	54	27	23	27	39	28
E.S. CENTRAL	30,143	32,907	214	247	36	59	71	94
Ky.	2,821	3,069	16	19	18	26	9	24
Tenn.	9,268	9,893	80	147	14	21	30	41
Ala.	9,400	10,921	2	4	4	5	19	16
Miss.	8,654	9,024	116	77	-	7	13	13
W.S. CENTRAL	37,865	45,564	281	454	6	29	42	19
Ark.	2,566	3,274	18	20	-	1	4	6
La.	8,653	10,576	102	83	2	3	-	4
Okla.	3,272	4,423	14	12	3	12	4	2
Tex.	23,374	27,291	147	339	1	13	34	7
MOUNTAIN	7,807	7,534	124	340	41	64	16	15
Mont.	45	34	5	7	-	2	-	-
Idaho	69	145	7	86	2	2	5	5
Wyo.	26	28	37	85	-	1	3	1
Colo.	1,984	1,733	20	27	11	15	-	-
N. Mex.	632	723	8	84	1	2	1	4
Ariz.	3,794	3,474	33	11	6	15	-	-
Utah	181	188	6	21	15	21	5	-
Nev.	1,076	1,209	8	19	6	6	2	5
PACIFIC	14,583	19,067	296	731	75	52	155	131
Wash.	1,728	1,652	16	21	13	9	7	7
Oreg.	730	669	17	18	N	N	11	19
Calif.	11,542	16,056	263	638	61	41	137	104
Alaska	252	257	-	-	1	1	-	1
Hawaii	331	433	-	54	-	1	N	N
Guam	39	60	1	1	-	2	-	1
P.R.	266	314	-	-	-	-	N	N
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending October 30, 1999, and October 31, 1998 (43rd Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
					NETSS		PHLIS	
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	1,065	1,240	5,020	6,270	30,479	35,255	24,551	29,216
NEW ENGLAND	51	52	745	1,249	1,415	2,115	1,813	2,006
Maine	3	4	144	201	120	148	90	57
N.H.	2	5	48	74	113	165	121	203
Vt.	4	1	86	57	82	119	73	93
Mass.	16	16	181	438	981	1,164	993	1,189
R.I.	4	8	79	83	119	114	147	34
Conn.	22	18	207	396	U	405	389	430
MID. ATLANTIC	238	370	926	1,369	3,302	5,634	3,244	5,111
Upstate N.Y.	63	81	701	954	1,110	1,365	900	1,222
N.Y. City	111	210	U	U	1,158	1,676	853	1,291
N.J.	43	51	152	189	508	1,244	535	1,190
Pa.	21	28	73	226	526	1,349	956	1,408
E.N. CENTRAL	126	130	137	117	4,585	5,431	2,986	4,123
Ohio	18	14	33	54	1,138	1,317	913	995
Ind.	18	10	12	9	444	580	355	454
Ill.	46	53	10	N	1,391	1,666	399	1,303
Mich.	36	42	79	35	841	993	841	918
Wis.	8	11	3	19	771	875	478	453
W.N. CENTRAL	63	84	619	624	1,911	1,969	1,952	2,034
Minn.	33	50	94	104	556	483	608	568
Iowa	13	7	144	136	232	333	195	261
Mo.	13	14	14	36	599	530	792	738
N. Dak.	-	2	127	122	41	52	48	67
S. Dak.	-	-	150	143	85	100	106	109
Nebr.	-	1	3	7	179	157	-	42
Kans.	4	10	87	76	219	314	203	249
S. ATLANTIC	297	254	1,807	2,048	7,181	7,061	4,599	5,248
Del.	1	3	37	41	123	70	144	107
Md.	84	75	345	398	761	790	827	767
D.C.	17	16	-	-	65	64	U	U
Va.	62	49	483	490	1,117	943	872	775
W. Va.	2	2	94	65	138	129	137	135
N.C.	26	23	362	506	1,130	1,019	1,173	1,208
S.C.	17	6	129	121	576	534	418	470
Ga.	21	33	201	261	1,191	1,383	651	1,304
Fla.	67	47	156	166	2,080	2,129	377	482
E.S. CENTRAL	20	28	223	241	1,588	1,968	924	1,378
Ky.	7	5	33	28	344	322	-	124
Tenn.	6	15	79	125	317	505	473	608
Ala.	6	6	110	86	495	601	374	510
Miss.	1	2	1	2	432	540	77	136
W.S. CENTRAL	16	32	87	28	3,285	4,031	2,838	2,751
Ark.	3	1	14	28	554	512	120	308
La.	10	13	-	-	334	608	472	683
Okla.	2	3	73	N	359	418	291	198
Tex.	1	15	-	-	2,038	2,493	1,955	1,562
MOUNTAIN	42	60	176	229	2,615	2,170	2,200	1,785
Mont.	4	1	54	47	53	71	1	43
Idaho	3	8	-	N	94	101	81	85
Wyo.	1	-	42	55	59	57	49	51
Colo.	16	18	1	42	622	474	644	449
N. Mex.	2	12	9	6	341	264	217	227
Ariz.	9	8	57	47	825	692	692	613
Utah	4	1	8	26	455	305	463	122
Nev.	3	12	5	6	166	206	53	195
PACIFIC	212	230	300	365	4,597	4,876	3,995	4,780
Wash.	23	17	-	-	537	401	670	566
Oreg.	19	15	1	7	382	264	452	287
Calif.	162	191	292	335	3,335	3,920	2,610	3,638
Alaska	1	2	7	23	51	53	15	32
Hawaii	7	5	-	-	292	238	248	257
Guam	-	2	-	-	24	31	U	U
P.R.	-	-	62	45	255	642	U	U
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending October 30, 1999, and October 31, 1998 (43rd Week)

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS					
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999†	Cum. 1998†
UNITED STATES	12,967	17,841	6,167	10,128	5,479	5,941	11,474	13,813
NEW ENGLAND	620	372	638	329	49	65	333	358
Maine	5	12	-	-	-	1	16	11
N.H.	16	15	14	19	1	2	10	-
Vt.	6	6	4	1	3	4	1	4
Mass.	570	246	563	236	30	37	197	197
R.I.	23	31	9	13	2	1	35	49
Conn.	U	62	48	60	13	20	74	97
MID. ATLANTIC	750	2,077	398	1,540	218	266	2,093	2,402
Upstate N.Y.	242	513	45	182	24	35	261	305
N.Y. City	242	630	82	543	79	63	1,120	1,187
N.J.	195	608	121	576	48	82	422	510
Pa.	71	326	150	239	67	86	290	400
E.N. CENTRAL	2,352	2,432	1,121	1,309	1,186	863	1,070	1,380
Ohio	370	434	116	115	75	124	200	202
Ind.	254	143	90	35	605	167	79	130
Ill.	889	1,332	592	1,095	321	355	465	657
Mich.	375	234	255	4	185	160	243	305
Wis.	464	289	68	60	U	57	83	86
W.N. CENTRAL	953	893	617	527	102	114	363	392
Minn.	211	270	209	300	9	9	129	124
Iowa	47	61	44	41	9	2	39	40
Mo.	579	124	320	94	67	85	137	145
N. Dak.	2	7	2	3	-	-	6	8
S. Dak.	13	31	6	21	-	1	17	16
Nebr.	64	339	-	19	7	4	16	18
Kans.	37	61	36	49	10	13	19	41
S. ATLANTIC	2,010	3,592	397	1,114	1,721	2,151	2,414	2,565
Del.	12	29	8	25	8	20	12	32
Md.	138	180	49	63	304	583	223	260
D.C.	46	25	U	U	59	71	35	92
Va.	116	176	48	80	134	126	221	250
W. Va.	8	11	5	7	2	2	35	35
N.C.	185	255	79	149	400	618	348	365
S.C.	111	153	56	73	224	251	210	239
Ga.	201	932	37	221	344	241	521	438
Fla.	1,193	1,831	115	496	246	239	809	854
E.S. CENTRAL	915	1,012	450	771	939	1,035	718	959
Ky.	218	116	-	45	87	88	151	135
Tenn.	508	430	393	511	517	485	257	322
Ala.	96	418	47	208	188	239	254	317
Miss.	93	48	10	7	147	223	56	185
W.S. CENTRAL	2,286	3,591	1,806	1,122	790	904	1,246	2,060
Ark.	73	184	23	56	59	99	140	120
La.	118	288	99	242	200	363	U	246
Okla.	425	428	149	121	158	78	110	146
Tex.	1,670	2,691	1,535	703	373	364	996	1,548
MOUNTAIN	935	1,080	560	639	205	217	369	466
Mont.	7	8	-	3	1	-	10	18
Idaho	24	18	9	13	1	2	14	10
Wyo.	3	3	1	1	-	1	3	4
Colo.	163	179	123	135	2	10	U	54
N. Mex.	113	260	62	145	11	22	52	55
Ariz.	489	522	341	295	182	163	180	181
Utah	58	38	18	28	2	4	35	45
Nev.	78	52	6	19	6	15	75	99
PACIFIC	2,146	2,792	180	2,777	269	326	2,868	3,231
Wash.	96	179	79	156	63	27	136	218
Oreg.	78	131	74	138	9	4	86	116
Calif.	1,943	2,433	-	2,433	194	291	2,455	2,706
Alaska	3	8	2	4	1	1	46	45
Hawaii	26	41	25	46	2	3	145	146
Guam	8	31	U	U	1	1	11	77
P.R.	62	48	U	U	137	152	41	122
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

†Cumulative reports of provisional tuberculosis cases for 1999 are unavailable ("U") for some areas using the Tuberculosis Information System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending October 30, 1999, and October 31, 1998 (43rd Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported*		Total	
	Cum. 1999†	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	1999	Cum. 1999	1999	Cum. 1999	Cum. 1999	Cum. 1998
UNITED STATES	958	902	13,724	18,548	5,256	7,987	2	56	1	23	79	79
NEW ENGLAND	78	62	233	242	83	176	-	6	-	5	11	3
Maine	5	3	11	17	1	2	-	-	-	-	-	-
N.H.	17	10	15	11	13	16	-	-	-	1	1	-
Vt.	5	7	17	15	2	8	-	-	-	-	-	1
Mass.	29	36	75	109	34	66	-	5	-	3	8	2
R.I.	5	5	16	14	33	58	-	-	-	-	-	-
Conn.	17	1	99	76	-	26	-	1	-	1	2	-
MID. ATLANTIC	146	142	784	1,452	529	1,040	-	-	-	2	2	14
Upstate N.Y.	71	47	229	302	158	199	-	-	-	2	2	2
N.Y. City	34	39	242	506	168	365	-	-	-	-	-	-
N.J.	40	49	64	307	41	181	-	-	-	-	-	8
Pa.	1	7	249	337	162	295	-	-	-	-	-	4
E.N. CENTRAL	149	151	2,396	2,998	551	1,213	-	1	1	2	3	15
Ohio	51	45	566	265	81	68	-	-	-	-	-	1
Ind.	21	36	96	132	36	95	-	1	1	1	2	3
Ill.	63	54	564	668	1	205	-	-	-	-	-	-
Mich.	13	9	1,120	1,759	425	387	-	-	-	1	1	10
Wis.	1	7	50	174	8	458	-	-	-	-	-	1
W.N. CENTRAL	81	80	677	1,212	277	345	1	2	-	-	2	-
Minn.	40	62	75	112	49	42	-	1	-	-	1	-
Iowa	9	2	121	384	33	51	-	-	-	-	-	-
Mo.	23	9	380	566	153	205	1	1	-	-	1	-
N. Dak.	1	-	2	3	-	4	-	-	-	-	-	-
S. Dak.	1	-	9	30	1	2	-	-	-	-	-	-
Nebr.	3	1	50	25	14	18	-	-	-	-	-	-
Kans.	4	6	40	92	27	23	U	-	U	-	-	-
S. ATLANTIC	212	162	1,692	1,602	1,014	842	-	10	-	5	15	8
Del.	-	-	2	3	1	3	-	-	-	-	-	1
Md.	55	50	311	350	144	116	-	-	-	-	-	1
D.C.	4	-	54	55	21	11	-	-	-	-	-	-
Va.	16	16	146	181	75	88	-	10	-	3	13	2
W. Va.	6	6	32	6	22	8	-	-	-	-	-	-
N.C.	31	23	134	102	201	195	-	-	-	-	-	-
S.C.	5	3	41	33	63	36	-	-	-	-	-	-
Ga.	55	39	416	505	149	127	-	-	-	-	-	2
Fla.	40	25	556	367	338	258	-	-	-	2	2	2
E.S. CENTRAL	52	51	337	343	348	420	-	2	-	-	2	2
Ky.	6	7	60	28	37	41	-	2	-	-	2	-
Tenn.	28	30	142	199	166	237	-	-	-	-	-	1
Ala.	15	12	49	61	76	65	-	-	-	-	-	1
Miss.	3	2	86	55	69	77	-	-	-	-	-	-
W.S. CENTRAL	45	48	3,463	3,290	756	1,757	1	8	-	4	12	-
Ark.	2	-	48	78	56	93	1	3	-	-	3	-
La.	7	20	73	85	77	127	-	-	-	-	-	-
Okla.	32	25	389	509	108	71	-	-	-	-	-	-
Tex.	4	3	2,953	2,618	515	1,466	-	5	-	4	9	-
MOUNTAIN	98	106	1,103	2,750	495	704	-	3	-	-	3	1
Mont.	3	-	17	87	17	5	-	-	-	-	-	-
Idaho	1	1	36	222	25	38	-	-	-	-	-	-
Wyo.	1	1	7	35	12	9	-	-	-	-	-	-
Colo.	12	21	195	276	81	90	-	-	-	-	-	-
N. Mex.	18	6	43	133	155	274	-	-	-	-	-	-
Ariz.	52	54	643	1,634	130	155	-	1	-	-	1	1
Utah	8	4	46	166	31	62	-	2	-	-	2	-
Nev.	3	19	116	197	44	71	U	-	U	-	-	-
PACIFIC	97	100	3,039	4,659	1,203	1,490	-	24	-	5	29	36
Wash.	5	8	273	875	56	91	-	-	-	-	-	1
Oreg.	38	38	218	363	81	161	-	9	-	-	9	-
Calif.	41	44	2,527	3,354	1,040	1,212	-	15	-	4	19	7
Alaska	6	3	9	16	14	13	-	-	-	-	-	28
Hawaii	7	7	12	51	12	13	-	-	-	1	1	-
Guam	-	-	2	1	2	2	U	1	U	-	1	-
P.R.	1	2	112	62	102	205	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U	U	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

*For imported measles, cases include only those resulting from importation from other countries.

†Of 184 cases among children aged <5 years, serotype was reported for 94 and of those, 26 were type b.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending October 30, 1999, and October 31, 1998 (43rd Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998
UNITED STATES	1,982	2,207	7	280	560	75	4,530	5,409	-	226	345
NEW ENGLAND	97	102	-	8	7	4	536	861	-	7	38
Maine	5	6	-	-	-	-	-	5	-	-	-
N.H.	12	11	-	1	-	-	78	95	-	-	-
Vt.	4	5	-	1	-	-	56	68	-	-	-
Mass.	57	48	-	4	4	4	355	645	-	7	8
R.I.	4	7	-	2	1	-	33	9	-	-	1
Conn.	15	25	-	-	2	-	14	39	-	-	29
MID. ATLANTIC	178	234	-	29	178	10	699	533	-	22	146
Upstate N.Y.	58	64	-	10	6	10	613	284	-	18	114
N.Y. City	46	30	-	3	155	-	10	37	-	-	18
N.J.	41	53	-	-	6	-	12	24	-	1	13
Pa.	33	87	-	16	11	-	64	188	-	3	1
E.N. CENTRAL	345	337	1	34	72	21	364	698	-	2	-
Ohio	122	123	-	14	27	7	184	246	-	-	-
Ind.	56	60	-	4	6	4	62	129	-	1	-
Ill.	93	87	1	9	10	8	65	101	-	1	-
Mich.	42	39	-	7	27	2	49	59	-	-	-
Wis.	32	28	-	-	2	-	4	163	-	-	-
W.N. CENTRAL	217	188	1	13	28	2	333	476	-	123	39
Minn.	49	29	-	1	12	1	187	276	-	5	-
Iowa	39	37	1	7	10	-	47	64	-	29	-
Mo.	85	69	-	2	3	1	51	32	-	2	2
N. Dak.	3	5	-	-	2	-	4	3	-	-	-
S. Dak.	11	7	-	-	-	-	5	8	-	-	-
Nebr.	12	13	-	-	-	-	4	15	-	87	-
Kans.	18	28	U	3	1	U	35	78	U	-	37
S. ATLANTIC	346	365	1	46	44	14	355	277	-	36	18
Del.	8	2	-	-	-	-	5	5	-	-	-
Md.	50	26	1	5	-	1	97	55	-	1	1
D.C.	1	1	-	2	-	-	-	1	-	-	-
Va.	45	36	-	10	8	10	29	30	-	-	1
W. Va.	6	16	-	-	-	-	3	1	-	-	-
N.C.	40	51	-	8	10	1	86	90	-	35	13
S.C.	42	51	-	4	6	-	15	25	-	-	-
Ga.	56	84	-	4	1	2	37	24	-	-	-
Fla.	98	98	-	13	19	-	83	46	-	-	3
E.S. CENTRAL	121	169	1	12	14	1	70	110	-	1	2
Ky.	26	31	-	-	-	-	21	49	-	-	-
Tenn.	43	60	-	-	1	-	27	33	-	-	2
Ala.	30	44	1	9	8	1	19	24	-	1	-
Miss.	22	34	-	3	5	-	3	4	-	-	-
W.S. CENTRAL	165	267	1	33	55	5	157	330	-	15	87
Ark.	31	27	-	-	12	1	19	75	-	6	-
La.	34	51	-	3	7	-	3	8	-	-	-
Okla.	26	37	-	1	-	-	12	31	-	-	-
Tex.	74	152	1	29	36	4	123	216	-	9	87
MOUNTAIN	125	124	1	25	36	10	611	941	-	16	5
Mont.	2	4	-	-	-	-	2	9	-	-	-
Idaho	10	10	-	1	4	-	135	212	-	-	-
Wyo.	4	5	-	-	1	-	2	8	-	-	-
Colo.	32	23	-	5	6	1	179	232	-	1	-
N. Mex.	14	24	N	N	N	7	133	87	-	-	1
Ariz.	42	39	1	8	6	2	100	191	-	13	1
Utah	14	12	-	6	5	-	55	161	-	1	2
Nev.	7	7	U	5	14	U	5	41	U	1	1
PACIFIC	388	421	1	80	126	8	1,405	1,183	-	4	10
Wash.	59	58	-	2	9	6	593	275	-	-	5
Oreg.	69	73	N	N	N	1	47	81	-	-	-
Calif.	249	282	1	64	91	1	731	797	-	4	3
Alaska	5	3	-	2	2	-	4	14	-	-	-
Hawaii	6	5	-	12	24	-	30	16	-	-	2
Guam	2	2	U	1	5	U	1	1	U	-	-
P.R.	5	9	-	-	3	-	16	6	-	-	14
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending October 30, 1999 (43rd Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	605	421	120	39	15	8	42
Boston, Mass.	154	105	29	12	5	3	9
Bridgeport, Conn.	48	35	9	3	-	1	2
Cambridge, Mass.	23	19	2	2	-	-	1
Fall River, Mass.	20	15	4	1	-	-	1
Hartford, Conn.	58	40	10	6	2	-	10
Lowell, Mass.	20	15	4	1	-	-	3
Lynn, Mass.	12	8	3	1	-	-	4
New Bedford, Mass.	34	28	4	2	-	-	1
New Haven, Conn.	48	30	11	4	1	2	4
Providence, R.I.	56	34	14	3	2	1	1
Somerville, Mass.	3	2	1	-	-	-	-
Springfield, Mass.	54	37	10	4	2	1	2
Waterbury, Conn.	26	17	7	-	2	-	-
Worcester, Mass.	49	36	12	-	1	-	4
MID. ATLANTIC	2,188	1,560	406	142	34	44	82
Albany, N.Y.	64	46	13	2	1	2	5
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	38	23	6	8	-	1	3
Elizabeth, N.J.	11	7	3	1	-	-	-
Erie, Pa.	40	28	11	1	-	-	2
Jersey City, N.J.	41	25	10	3	2	1	-
New York City, N.Y.	1,137	795	234	78	7	21	16
Newark, N.J.	U	U	U	U	U	U	U
Paterson, N.J.	25	15	7	3	-	-	2
Philadelphia, Pa.	389	274	66	27	13	9	14
Pittsburgh, Pa.§	51	42	5	2	1	1	4
Reading, Pa.	42	34	3	2	3	-	2
Rochester, N.Y.	108	89	11	5	2	1	8
Schenectady, N.Y.	U	U	U	U	U	U	U
Scranton, Pa.	29	25	3	1	-	-	7
Syracuse, N.Y.	143	105	24	4	5	5	17
Trenton, N.J.	41	26	7	5	-	3	2
Utica, N.Y.	29	26	3	-	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,038	1,396	420	135	46	40	143
Akron, Ohio	52	35	9	3	1	4	3
Canton, Ohio	33	27	6	-	-	-	4
Chicago, Ill.	387	235	97	35	11	8	34
Cincinnati, Ohio	79	54	15	6	1	3	7
Cleveland, Ohio	149	93	38	11	5	2	2
Columbus, Ohio	216	150	40	17	4	5	13
Dayton, Ohio	102	74	17	8	1	2	4
Detroit, Mich.	180	105	49	15	6	5	10
Evansville, Ind.	46	37	5	3	1	-	4
Fort Wayne, Ind.	63	47	11	2	1	2	7
Gary, Ind.	U	U	U	U	U	U	U
Grand Rapids, Mich.	59	44	11	2	-	2	3
Indianapolis, Ind.	158	104	33	12	7	2	11
Lansing, Mich.	51	36	12	3	-	-	3
Milwaukee, Wis.	108	87	18	2	-	1	15
Peoria, Ill.	57	41	11	2	1	2	2
Rockford, Ill.	63	44	16	1	2	-	2
South Bend, Ind.	46	33	9	2	2	-	2
Toledo, Ohio	121	90	18	8	3	2	11
Youngstown, Ohio	68	60	5	3	-	-	6
W.N. CENTRAL	917	660	167	49	18	23	74
Des Moines, Iowa	146	103	25	10	6	2	9
Duluth, Minn.	25	20	4	1	-	-	1
Kansas City, Kans.	25	17	7	1	-	-	3
Kansas City, Mo.	106	64	25	9	3	5	3
Lincoln, Nebr.	42	32	8	1	1	-	5
Minneapolis, Minn.	214	172	26	9	2	5	22
Omaha, Nebr.	67	51	9	5	1	1	10
St. Louis, Mo.	110	62	32	9	2	5	4
St. Paul, Minn.	107	89	10	3	3	2	10
Wichita, Kans.	75	50	21	1	-	3	7

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,050	673	221	99	33	24	70
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	200	112	45	26	11	6	19
Charlotte, N.C.	105	71	20	7	3	4	9
Jacksonville, Fla.	132	86	28	11	4	3	13
Miami, Fla.	103	65	21	12	4	1	10
Norfolk, Va.	50	34	8	4	2	2	2
Richmond, Va.	60	34	17	7	2	-	3
Savannah, Ga.	54	32	10	8	2	2	4
St. Petersburg, Fla.	61	42	14	2	1	2	4
Tampa, Fla.	175	130	31	10	1	3	6
Washington, D.C.	100	62	22	12	3	1	-
Wilmington, Del.	10	5	5	-	-	-	-
E.S. CENTRAL	775	496	178	51	27	22	68
Birmingham, Ala.	169	108	38	11	6	5	13
Chattanooga, Tenn.	57	40	12	3	-	2	4
Knoxville, Tenn.	75	52	19	1	1	2	11
Lexington, Ky.	76	47	18	7	3	1	7
Memphis, Tenn.	160	90	37	21	7	5	16
Mobile, Ala.	71	45	18	2	4	2	2
Montgomery, Ala.	36	27	7	1	1	-	8
Nashville, Tenn.	131	87	29	5	5	5	7
W.S. CENTRAL	1,326	891	264	100	34	37	102
Austin, Tex.	81	48	21	8	-	4	4
Baton Rouge, La.	28	19	4	3	-	2	1
Corpus Christi, Tex.	62	48	11	1	2	-	6
Dallas, Tex.	168	96	47	20	5	-	6
El Paso, Tex.	75	46	15	11	1	2	2
Ft. Worth, Tex.	115	78	22	5	2	8	9
Houston, Tex.	306	203	57	26	10	10	34
Little Rock, Ark.	52	39	7	4	1	1	4
New Orleans, La.	40	21	11	4	3	1	2
San Antonio, Tex.	233	166	42	13	7	5	18
Shreveport, La.	63	50	9	2	-	2	7
Tulsa, Okla.	103	77	18	3	3	2	9
MOUNTAIN	1,022	694	182	91	33	20	75
Albuquerque, N.M.	104	70	22	10	1	1	8
Boise, Idaho	37	30	5	1	1	-	3
Colo. Springs, Colo.	55	41	8	3	1	2	3
Denver, Colo.	129	86	18	15	4	5	8
Las Vegas, Nev.	215	136	44	23	6	6	13
Ogden, Utah	29	23	2	2	2	-	2
Phoenix, Ariz.	195	120	42	18	8	6	13
Pueblo, Colo.	21	16	3	1	1	-	2
Salt Lake City, Utah	107	80	14	9	4	-	10
Tucson, Ariz.	130	92	24	9	5	-	13
PACIFIC	1,007	725	185	63	16	17	81
Berkeley, Calif.	15	10	2	3	-	-	-
Fresno, Calif.	87	64	16	7	-	-	8
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	78	50	15	7	4	2	6
Long Beach, Calif.	56	37	13	5	-	1	9
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	44	32	7	3	1	1	3
Portland, Oreg.	119	94	17	6	1	1	11
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	136	82	34	11	3	6	9
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	168	122	31	9	3	3	13
Santa Cruz, Calif.	28	21	6	1	-	-	2
Seattle, Wash.	124	89	22	7	3	3	11
Spokane, Wash.	61	51	8	2	-	-	3
Tacoma, Wash.	91	73	14	2	1	-	6
TOTAL	10,928¶	7,516	2,143	769	256	235	737

U: Unavailable -: no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

§Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

Withdrawal of Rotavirus Vaccine Recommendation

In July 1999, CDC recommended that health-care providers and parents postpone use of the rhesus rotavirus vaccine-tetravalent (RRV-TV) (RotaShield®*, Wyeth Laboratories, Inc., Marietta, Pennsylvania), for infants, at least until November 1999. This action was based on reports to the Vaccine Adverse Event Reporting System of intussusception (a type of bowel obstruction that occurs when the bowel folds in on itself) among 15 infants who received rotavirus vaccine. Also at that time, the manufacturer, in consultation with the Food and Drug Administration, voluntarily ceased further distribution of the vaccine.

On October 22, 1999, the Advisory Committee on Immunization Practices (ACIP), after a review of scientific data from several sources, concluded that intussusception occurs with significantly increased frequency in the first 1–2 weeks after vaccination with RRV-TV, particularly following the first dose. Therefore, ACIP no longer recommends vaccination of infants in the United States with RRV-TV and withdraws its recommendation that RRV-TV be administered at 2, 4, and 6 months of age. Children who received rotavirus vaccine before July and remain well are not now at increased risk for intussusception.

Rotavirus remains the cause of a substantial health burden for children in the United States. It accounts for 20–40 deaths annually, and >50,000 hospitalizations from severe diarrhea and dehydration. Vaccination against rotavirus would be the optimal means to prevent such illnesses. RRV-TV was recommended because it was shown in prelicensure trials to be a safe and effective vaccine. In those trials, RRV-TV prevented rotavirus in at least 50% of cases of diarrhea and almost all of the hospitalizations. Postlicensure evaluation, however, has identified intussusception as an uncommon, serious adverse event associated with the vaccine.

The relation between intussusception and RRV-TV merits further research. The findings could impact directly on use of this and other rotavirus vaccines. In addition, the worldwide burden of rotavirus disease remains substantial. Thus, the ACIP's decision may not be applicable to other settings, where the burden of disease is substantially higher and where the risks and benefits of rotavirus vaccination could be different.

In the United States, rotavirus remains the primary cause of parents seeking health care for children with severe dehydrating diarrhea, particularly during the winter. Because of the withdrawal of this vaccine recommendation, the ACIP recommends that educational efforts be directed at parents and health-care providers to help parents prevent dehydration and to recognize and immediately seek medical care for severe diarrhea in children. These efforts should focus on the early diagnosis and treatment of severe dehydration from diarrhea, particularly among infants and children aged ≤5 years.

*Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

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