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World No-Tobacco Day — May 31, 1998

Tobacco use is one of the most important determinants of human health trends worldwide (*1*). The annual rate of 3 million deaths attributed to tobacco use will reach approximately 10 million by 2025. Globally, if current trends continue, more than 200 million persons who are currently children and teenagers will die from tobacco-related illnesses (*1*).

In many countries, tobacco use is increasing among young persons, and the age of smoking initiation is declining. Most smokers begin smoking during their teenage years. If young persons do not use tobacco before age 20 years, they are unlikely to initiate use as adults (*2*).

The theme for this year's World No-Tobacco Day, to be held May 31, is "Growing up Without Tobacco." The World Health Organization (WHO) encourages governments, communities, organizations, schools, families, and persons to focus on the increasing epidemic of tobacco-related morbidity and mortality, to take strong actions to prevent nicotine addiction in young persons, to protect nonsmokers from the dangers of environmental tobacco smoke, and to provide effective youth-oriented smoking-cessation programs.

WHO will provide press releases, fact sheets, a poster, and an advisory kit on comprehensive measures to reduce tobacco use. Additional information about World No-Tobacco Day 1998 is available from WHO's World-Wide Web site http://www.who.ch/programmes/psa/toh.htm, from the WHO regional office of the Americas, telephone (202) 861-3200, or from CDC's Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, telephone (770) 488-5705; World-Wide Web site http://www.cdc.gov/tobacco.

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Selected Cigarette Smoking Initiation and Quitting Behaviors Among High School Students — United States, 1997

The continuum of smoking behavior among children and adolescents can be described in stages of preparation, trying, experimentation, regular smoking, and nicotine dependence or addiction (*1*). Persons who have smoked can discontinue at any stage, but quitting becomes more difficult as smokers progress through the continuum and become increasingly dependent on nicotine (*1,2*). Nicotine addiction is characterized by a physiologic need for nicotine, including a tolerance for nicotine, withdrawal symptoms if an attempt is made to quit, and a high probability of relapse after quitting (*1*). To determine the prevalence of selected cigarette smoking initiation and quitting behaviors among youth, CDC analyzed data from the 1997 Youth Risk Behavior Survey (YRBS). Findings indicate that among U.S. high school students in 1997, 70.2% had tried cigarette smoking. Among students who had ever tried cigarette smoking, 35.8% went on to smoke daily. Among those who had ever smoked daily, 72.9% had ever tried to quit smoking and 13.5% were former smokers.

YRBS, a component of CDC's Youth Risk Behavior Surveillance System (*3*), biennially measures the prevalence of priority health risk behaviors among youth through representative national, state, and local surveys. The 1997 national YRBS used a three-stage cluster-sample design to obtain a representative sample of 16,262 students in grades 9–12 in the 50 states and the District of Columbia. The school response rate was 79%, the student response rate was 87%, and the overall response rate was 69%. Data were weighted to provide national estimates, and SUDAAN®* was used to calculate standard errors for determining 95% confidence intervals (CIs). Students completed a self-administered questionnaire that included questions about lifetime and current cigarette use, ever-daily cigarette use, and attempts to quit smoking. Lifetime smokers were defined as students who had ever tried smoking cigarettes, even one or two puffs. Current smokers were defined as students who smoked cigarettes on ≥1 of the 30 days preceding the survey. Ever-daily smokers were defined as students who reported that they had "ever smoked cigarettes regularly, that is, at least one cigarette every day for 30 days." Quit attempts were determined from the question "Have you ever tried to quit smoking cigarettes?" Former cigarette smokers were defined as ever-daily smokers who were not current smokers. The number of persons from racial/ethnic groups other than non-Hispanic black, non-Hispanic white, and Hispanic was too small for meaningful analysis.

The prevalence of lifetime smoking was 70.2% (95% CI=±1.9) overall and did not vary by sex, race/ethnicity, or grade in school (Table 1). More than one third of students (35.8%) who had tried cigarette smoking reported ever smoking daily (Table 1). Ever-daily smoking was highest among white students (41.7%), followed by Hispanic students (24.5%), and black students (14.9%).

Almost three fourths (72.9% [95% CI=±2.7]) of ever-daily smokers had tried to quit smoking (Table 1). Among ever-daily smokers, females (77.6%) were more likely than males (68.7%) and white students (76.0%) were more likely than Hispanic students (61.9%) to report ever having tried to quit. Among ever-daily smokers, 13.5% were former smokers (Table 1).

*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.

Smoking Initiation and Quitting Behaviors — Continued

TABLE 1. Percentage of high school students* who reported selected cigarette smoking initiation and quitting behaviors, by sex, race/ethnicity, and grade — United States, Youth Risk Behavior Survey, 1997

	Lifetime smokers†		Lifetime smokers who have ever smoked daily§		Ever-daily smokers who have ever tried to quit smoking¶		Former smokers**	
Category	**%**	**(95% CI††)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Sex								
Male	70.9	(±1.9)	34.7	(±2.6)	68.7	(± 5.5)	13.0	(±3.0)
Female	69.3	(±2.6)	37.1	(±4.1)	77.6	(± 2.6)	14.0	(±3.4)
Race/Ethnicity§§								
White, non-Hispanic	70.4	(±2.3)	41.7	(±2.4)	76.0	(± 2.3)	13.4	(±3.4)
Black, non-Hispanic	68.4	(±4.4)	14.9	(±2.6)	64.8	(± 9.0)	16.9	(±6.0)
Hispanic	75.0	(±2.7)	24.5	(±3.5)	61.9	(± 8.3)	14.3	(±5.4)
Grade								
9	67.7	(±5.1)	35.7	(±5.3)	66.1	(±11.5)	17.8	(±4.1)
10	70.0	(±3.9)	34.9	(±4.5)	77.3	(± 5.7)	14.6	(±5.6)
11	68.8	(±3.1)	37.1	(±4.4)	73.2	(± 6.2)	10.0	(±3.7)
12	73.7	(±4.1)	35.5	(±3.9)	74.4	(± 4.2)	12.4	(±2.9)
Total	**70.2**	**(±1.9)**	**35.8**	**(±2.6)**	**72.9**	**(± 2.7)**	**13.5**	**(±2.8)**

* N=16,262.
† Ever tried cigarette smoking, even one or two puffs.
§ Ever tried cigarette smoking, even one or two puffs, and have ever smoked at least one cigarette every day for 30 days.
¶ Have ever smoked at least one cigarette every day for 30 days and have ever tried to quit smoking. Excludes data from 55 students who reported that they had never tried to quit, but did not smoke on any of the 30 days preceding the survey.
** Have ever smoked at least one cigarette every day for 30 days and did not smoke on any of the 30 days preceding the survey. Excludes data from 55 students who reported that they had never tried to quit, but did not smoke on any of the 30 days preceding the survey.
†† Confidence interval.
§§ Numbers for racial groups other than whites and blacks were too small for meaningful analysis.

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Editorial Note: As with other drug addictions, nicotine dependence is a progressive, chronic, and relapsing disorder (*1*). The optimal public health strategy is to prevent tobacco use completely or to intervene as early in the smoking behavior continuum as possible. Once adolescents have established a pattern of regular use, their behavior is usually compelled by nicotine dependence as well as social factors. Efforts are needed to help youth break the cycle of addiction and prevent the disability and death associated with tobacco use.

Initiation and quitting behaviors suggest areas for intervention and research. For example, the incidence of lifetime ever smoking among adolescents declined in the mid-1970s and early 1980s, but increased from 1991 to 1994 (*4*), suggesting that this

Smoking Initiation and Quitting Behaviors — Continued

behavior is modifiable. Cigarette advertising and promotion, smoking by adults and older siblings, access to cigarettes, price of cigarettes, peer pressure, and the degree of exposure to effective counteradvertising and school-based prevention programs can influence patterns of initiation (*1,2*).

The findings in this report are consistent with previous studies that indicate approximately 33%–50% of persons who try smoking cigarettes escalate to regular patterns of use (*1*). The 1990–1992 National Comorbidity Survey estimated that 23.6% of persons aged 15–24 years who ever used cigarettes progressed to the final stage in the smoking behavior continuum (i.e., nicotine dependence). This conversion rate (i.e., from any use to dependence) was similar to conversion rates for use of cocaine (24.5%) and heroin (20.1%) (*5*). Although indicators of dependence increase with the frequency of smoking among youth, many less-than-daily smokers experience symptoms of nicotine withdrawal when they attempt to quit (*6*).

Differences described in this report in the rate of conversion from trying a cigarette to daily use may explain some of the racial/ethnic differences in current smoking prevalence estimates among youth (*7,8*). Black adolescents who try cigarette smoking may experience greater social disapproval regarding their smoking behavior than white adolescents (*8*). Among ever-daily smokers, white students were more likely than Hispanics students and female students were more likely than male students to have attempted to quit smoking during high school. Investigation of the influence of early quit attempts on long-term success is needed.

The findings in this report are subject to at least three limitations. First, these data apply only to youth who attend high school and, therefore, are not representative of all persons in this age group. In 1996, 6% of persons aged 16–17 years were not enrolled in a high school program and had not completed high school (*7*). Second, more detailed measures of cessation (i.e., current interest in quitting, recent quit attempts, and longest time abstinent from cigarettes) could not be examined because they were not included in the survey. Third, a cross-sectional survey can measure only the prevalence of various stages in the smoking behavior continuum. Transitions through the stages of smoking behavior are best studied with a longitudinal research design.

Most young persons who smoke regularly are already addicted to nicotine, and the experience of addiction is similar to that among adults (*1*). Although approximately 70% of adolescent smokers regret ever starting (*9*), success rates have been low in the few cessation programs designed for young persons that have reported quit rates at follow-up (13%) (*10*). Adolescents are difficult to recruit for formal cessation programs and, when enrolled, are difficult to retain in the programs (*1*). In September 1997, CDC conducted the first Workgroup on Youth Tobacco Use Cessation to discuss strategies to stimulate research on tobacco-use cessation programs. Tobacco-use cessation programs are being evaluated in schools, health-maintenance organizations, and state health departments and feature adolescent team competitions, pharmacologic agents, telephone counseling, and cooperative learning. Evaluations of these efforts will assist in developing tobacco-use cessation programs for youth that can be used nationwide.

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Smoking Initiation and Quitting Behaviors — Continued

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Cholera Outbreak among Rwandan Refugees — Democratic Republic of Congo, April 1997

In April 1997, a cholera outbreak occurred among 90,000 Rwandan refugees residing in three temporary camps between Kisangani and Ubundu, Democratic Republic of Congo (formerly Zaire). Médecins Sans Frontières (MSF) established two referral medical centers and a cholera treatment center in these camps. Personnel from MSF, Zairean nongovernmental organizations (NGOs), and the Office of the United Nations High Commissioner for Refugees (UNHCR) implemented morbidity and mortality surveillance to monitor refugee health status. This report presents the findings of the surveillance system and indicates this outbreak was characterized by a higher death rate than that observed in previous cholera outbreaks in refugee populations.

The daily number of deaths in the camps was obtained from Zairean Red Cross Society volunteers, who were responsible for burying bodies in mass graves. During March 30–April 20, 1997, a total of 1521 deaths were recorded, most of which occurred outside of health-care facilities. The daily crude mortality rate (CMR) ranged from seven to 14 per 10,000 population; the average daily CMR during this period was 9.9 per 10,000 population.

Active identification and referral for treatment of cholera cases was initiated by hiring Rwandan community health workers who were familiar with the refugees in their section of the camps. Cholera was defined as sudden onset of watery diarrhea resulting in dehydration. Clinical characteristics included vomiting (60% of patients), moderate to severe dehydration (50%–70%), and fever >99.5 F (>37.5 C) (<20%).

Cholera — Continued

During April 4–19, 1997, a total of 545 persons with cholera were admitted to the cholera treatment center (attack rate: 0.9%); 67 (12.3%) died. Most deaths in the treatment center occurred during the night when MSF health-care workers were absent. According to MSF personnel, most patients with cholera were severely malnourished and suffered from concurrent health problems (e.g., malaria or acute respiratory illnesses). Most (80%) persons with cholera were aged ≥5 years. Cholera cases also occurred among health-care workers at the cholera-treatment center. Three of seven stool specimens tested from patients with watery diarrhea were positive for *Vibrio cholerae* O1, biotype El Tor, serotypes Inaba or Ogawa.

Cholera-control interventions included filtration and chlorination of the camps' water systems, health education, and construction and maintenance of latrines. Treatment of cholera patients by intravenous and oral rehydration therapy was instituted by MSF (*1,2*). The overall evaluation of cholera control measures was not possible because of the dispersion of the refugees by unidentified armed forces on April 21, 1997.

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Editorial Note: The findings in this report indicate that the implementation of a rapid surveillance system facilitated recognition of the need for increased health-care services and appropriate intervention strategies. Timely surveillance using simple case definitions is crucial to targeting interventions during the emergency phase of refugee situations.

During emergency situations, CMR (normally <0.5 per 10,000 population per day in developing countries) is the most specific indicator of health status in refugee populations (*3*). The CMR among refugees in this outbreak was 9.9. This rate was substantially higher than that in Tingi-Tingi (a temporary settlement of Rwandan refugees in the Democratic Republic of Congo) in 1997 (2.5 per 10,000 per day) (*4*); lower than in Goma in July 1994 (34–54 per 10,000 per day) (*5*); and similar to those in refugee camps in Thailand in 1979 (10.6 per 10,000 per day) and Somalia in 1980 (10.1 per 10,000 per day) (*3*).

The situation in the Democratic Republic of Congo demonstrates the importance of immediate and unrestricted access to displaced populations by the international community if local authorities do not have the means or the political will to assist in emergency situations. The case-fatality ratio for cholera in this outbreak was substantially higher than that observed in previous outbreaks of cholera in refugee camps (*3,4*). Case-fatality ratios of ≤1% are expected if adequate rehydration services are available (*1*).

Several factors accounted for the high mortality among the refugees in this outbreak. First, the refugees had been without adequate food, shelter, or access to health care during the preceding 5 months. In addition, the location of the camps assigned by local authorities was far from the nearest villages (4–50 miles [7–82 km] from Kisangani) and the only transport available for relief personnel and supplies was a railway line controlled by the military. As a result, relief workers were required to take a ferry across the Congo River, then travel to the camps by off-road vehicles; these transfers required up to 6 hours in both directions, leaving only 4 hours daily for building treat-

Cholera — Continued

ment facilities and for patient care. Finally, the camps were moved during the outbreak, requiring relocation of ill patients, rebuilding of cholera treatment facilities, and delaying the proper construction of water-treatment and sanitation facilities.

As in the refugee crisis in Goma (*5*), active identification of cholera cases with the assistance of Rwandan community health-care workers may have prevented the deaths of many refugees outside of treatment centers. Other intervention strategies included health education of refugees, provision of clean water, construction of latrines, and training health workers in aggressive rehydration therapy using a standardized treatment algorithm. Although these measures may have been effective in preventing the further spread of cholera, they abruptly stopped when the 90,000 refugees were dispersed by unidentified armed forces on April 21, 1997; only 37,000 were repatriated to Rwanda by May 1997.

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Lightning-Associated Deaths — United States, 1980–1995

A lightning strike can cause death or various injuries to one or several persons. The mechanism of injury is unique, and the manifestations differ from those of other electrical injuries. In the United States, lightning causes more deaths than do most other natural hazards (e.g., hurricanes and tornadoes) (*1*), although the incidence of lightning-related deaths has decreased since the 1950s (*1,2*). The cases described in this report illustrate diverse circumstances in which deaths attributable to lightning can occur. This report also summarizes data from the Compressed Mortality File of CDC's National Center for Health Statistics on lightning fatalities in the United States from 1980 through 1995, when 1318 deaths were attributed to lightning.

Case Reports

Case 1. In April 1997, a 34-year-old woman in Florida was struck by lightning at approximately 12:30 p.m. after a severe thunderstorm had passed through the area. She had gone into her back yard to tend animals in a pen. As she walked toward the pen gate, lightning stuck her, throwing her several feet. A neighbor immediately administered cardiopulmonary resuscitation (CPR) but could not revive her and called the emergency medical service (EMS). EMS personnel were unable to resuscitate her, and she was pronounced dead at the scene. She had metal screws in her breast pocket and a cordless hand drill in her hand. The clothing of her upper torso was torn. Autopsy findings included arborization—erythematous marks in a branching pattern

Lightning — Continued

characteristic of lightning injury—on her left anterior torso but no other visible pathology related to the lightning strike.

Case 2. In July 1997, a 47-year-old man in Florida was struck by lightning while golfing at a driving range at approximately 5:30 p.m. The skies reportedly were clear but a storm may have been forming in the area. EMS personnel arrived at 5:40 p.m. and found him without a pulse or spontaneous respirations. He was intubated at the scene, but resuscitation efforts were unsuccessful. He was transported to an emergency department, where his pulse rate and blood pressure were obtained. However, his pupils were fixed and dilated, and he was unresponsive to stimuli. A computerized tomogram (CT) of his head showed cerebral edema but no hemorrhage. Bloody drainage was noted from his nose and right ear. He gradually became hypotensive, and his blood pressure failed to increase with intravenous fluid. He was pronounced dead at 1:25 p.m. the following day. Autopsy indicated burns on his left hand and a second-degree burn with vesicle formation on his right back. His heart had epicardial petechiae on the anterior and posterior surfaces. His brain was edematous and had hypoxic injury to the neurons.

Case 3. In September 1996, a 14-year-old boy in Washington was struck by lightning while riding his motorcycle during a thunderstorm. A bolt of lightning struck a tree near the motorcyclist, traveled along the trunk of the tree, then jumped from the tree to the motorcycle and the rider's feet and groin. Persons who saw the incident found him apneic and immediately began CPR. He was transported to the nearest hospital and was in cardiac arrest on arrival. Although he was successfully resuscitated and admitted to a hospital, he died 5 days later. Autopsy findings included a soft swollen brain with axial herniation and hypoxic injury to the neurons. The right side of his chest had singed hair, a healing burn injury, and damage to the underlying pectoralis muscles. His heart had multiple microscopic foci of myocardial necrosis, and his kidney had pink tubular casts consistent with myoglobinuria.

Summary, 1980–1995

Death attributed to lightning was defined as any recorded death for which the underlying cause of death, or at least one cause of death, was coded E907 (lightning, excluding injury from fall of a tree or object caused by lightning) according to the *International Classification of Diseases, Ninth Revision*. The 1940 census was used for age-adjusted rates.

In the United States from 1980 through 1995, a total of 1318 deaths were attributed to lightning, (average: 82 deaths per year [range: 53–100 deaths]). Of the 1318 persons who died, 1125 (85%) were male, and 896 (68%) were aged 15–44 years. The annual death rate from lightning was highest among persons aged 15–19 years (6 deaths per 10,000,000 population; crude rate: 3 per 10,000,000). The greatest number of deaths attributable to lightning occurred in Florida and Texas (145 and 91, respectively), but New Mexico, Arizona, Arkansas, and Mississippi had the highest rates (10.0, 9.0, 9.0, and 9.0, respectively).

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Editorial Note: The National Weather Service estimates that 100,000 thunderstorms occur in the United States each year; lightning is present in all thunderstorms. A

Lightning — Continued

cloud-to-ground lightning strike, the most destructive form of lightning, occurs when the electrical difference between a thundercloud and the ground overcomes the insulating properties of the surrounding air. The danger may not be apparent; lightning has struck 10 miles away from the rain of a thunderstorm (*3*). In the United States, cloud-to-ground lightning strikes occur approximately 30 million times each year (*4*), most often in Florida and along the southeastern coast of the Gulf of Mexico (*5*).

Data from the National Oceanic and Atmospheric Administration compiled primarily from newspaper clippings for 1959–1990 identified an annual average of 93 deaths and 257 injuries attributable to lightning (*2*). A study based on national mortality statistics from death certificates for 1968–1985 identified an annual average of 107 deaths and an annual death rate of 6.1 per 10,000,000 (*2*). Differences in these averages may be explained by the general decrease in the number of lightning-related deaths since the 1950s (*1,2*). Possible explanations for the decrease include fewer persons living and working in rural areas, improved warning systems, increased public education about safety regarding lightning, and improved medical care (*2*).

Previous studies have identified patterns associated with lightning fatalities. For example, approximately 30% of persons struck by lightning die, and 74% of lightning strike survivors have permanent disabilities. In addition, persons with cranial burns or leg burns from lightning are at higher risk for death than others struck by lightning (*6*). Sixty-three percent of lightning-associated deaths occur within 1 hour of injury (*1*), 92% occur during May–September, and 73% occur during the afternoon and early evening. Of persons who died from lightning strikes, 52% were engaged in outdoor recreational activities, and 25% were engaged in work activities (*2*). Most lightning injuries and deaths can be prevented by taking precautions (see box) (*7*).

Neurologic and cardiopulmonary injuries associated with lightning strikes are the most life-threatening. A lightning strike may immediately cause asystole, ventricular fibrillation, or direct central nervous system injury to the respiratory center. A direct lightning strike (i.e., when the major pathway of current flow is through the victim) can result in cardiac injury that can manifest as life-threatening pericardial effusion or severe cardiac dysfunction (*8*). Because persons struck by lightning have a better

Preventing Deaths and Injuries from Lightning Strikes

- When participating in outdoor activities, be aware of weather forecasts during the thunderstorm season (generally May through September).
- Because lightning often precedes rain, preparations to avoid potential lightning strikes should begin before the rain begins.
- When thunder is heard, seek shelter inside the nearest building or an enclosed vehicle (e.g., a car or truck). If shelter is not available, avoid trees or tall objects because electricity may be conducted from that object to other nearby objects or persons.
- Avoid high ground, water, open spaces, and metal objects (e.g., golf clubs, umbrellas, fences, and tools).
- When indoors, turn off appliances and electronic devices and remain inside until the storm passes.

Lightning — Continued

chance of survival than persons suffering cardiopulmonary arrest from other causes, resuscitation of persons struck by lightning should be initiated immediately (*9*).

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Plesiomonas shigelloides and *Salmonella* serotype Hartford Infections Associated with a Contaminated Water Supply — Livingston County, New York, 1996

On June 24, 1996, the Livingston County (New York) Department of Health (LCDOH) was notified of a cluster of diarrheal illness following a party on June 22, at which approximately 30 persons had become ill. This report summarizes the findings of the investigation, which implicated water contaminated with *Plesiomonas shigelloides* and *Salmonella* serotype Hartford as the cause of the outbreak.

The party was held at a private residence on June 22 and was attended by 189 persons. Food was provided by a local convenience store that sells gasoline, packaged goods, sandwiches, and pizza and prepares food for catered events. The convenience store had not catered any parties during the preceding 5 days but catered two parties on June 23. LCDOH contacted the organizers of these events and found no other reports of illness.

To determine the source and extent of the outbreak and mechanism of contamination, LCDOH conducted a cohort study, an environmental investigation, and microbiologic examinations of stool specimens, leftover food items, and water samples. A menu and guest list were obtained and guests were interviewed by telephone. A probable case was defined as diarrhea (>3 loose stools during a 24-hour period) in a person who attended the party and became ill within 72 hours. Persons with a confirmed case had either *Plesiomonas shigelloides* or *Salmonella* serotype Hartford or both isolated from stool. The caterer and facility employees were interviewed to obtain information on food preparation, and the water source was inspected.

Of the 189 attendees, 98 (52%) were interviewed. Sixty persons reported illness; 56 (57%) of 98 respondents had illnesses meeting the case definition. The mean age for case-patients was 41 years (range: 2–85 years), and 32 (57%) were male. Stool

Plesiomonal shigelloides *and* Salmonella *Infections — Continued*

specimens were obtained from 14 ill attendees: nine yielded only *P. shigelloides*, three only *Salmonella* serotype Hartford, and two had both organisms. One person with culture-confirmed *Salmonella* serotype Hartford was hospitalized. The clinical profiles of the culture-confirmed (n=14) and probable (n=42) cases were similar.

Twenty food and beverage items were served at the party. Three food items were associated with illness: macaroni salad, potato salad, and baked ziti. Of 56 attendees who ate macaroni salad, 43 (77%) became ill, compared with 17 (40%) of 42 who did not eat macaroni salad (relative risk [RR]=2.6; 95% confidence interval [CI]=1.5–4.4). Of 49 guests who ate potato salad, 36 (73%) became ill, compared with 20 (44%) of 45 who did not eat potato salad (RR=2.1; 95% CI=1.2–3.6). Of 46 attendees who ate baked ziti, 36 (78%) became ill, compared with 20 (42%) of 48 that did not eat baked ziti (RR=2.7; 95% CI=1.5–4.9).

Leftover food samples of these three items were collected on June 25 and sent for microbiologic examination. *Salmonella* serotype Hartford was isolated from the macaroni salad and baked ziti. Both *Salmonella* serotype Hartford and *P. shigelloides* were isolated from the potato salad. *Escherichia coli* was isolated from a water sample collected on June 27 from the tap in the store. Water samples collected on July 8 from the well that supplied water to the store contained both *Salmonella* serotype Hartford and *P. shigelloides*.

Preparation of the salads and the baked ziti began on June 21, and prepared food items were stored in a walk-in cooler overnight. On June 22, the ziti was prepared by heating the tomato sauce, pouring it over the meat and pasta, and heating in an oven for 50 minutes at an unknown temperature. The ziti remained in the oven with the heat off until it and the salads were transported to the party.

All foodhandlers denied gastrointestinal illness with onset before June 22. However, three foodhandlers reported illness beginning after June 22; all three reported having eaten foods prepared for the party. *P. shigelloides* was recovered from stool specimens from these three workers only.

The New York State Department of Agriculture and Markets found nine sanitary violations at the caterer's facilities. The water source, an unprotected dug well approximately 10 feet deep, served only the store. The well was fed by shallow ground water and may have received surface runoff from surrounding tilled and manured farm land and water from adjacent streams. A small poultry farm was located approximately 1600 feet upstream of the well. Farm field drainage systems discharged into the source water stream just above the well. A water sample collected at the store on June 27 showed no chlorine residual, indicating that the pellet chlorinator was off-line at the time of the event. The pellet chamber was empty and the system did not contain any filtration mechanism. Well water used for food preparation (i.e., rinsing pasta used in salads, mixing ingredients, cooking food items, and cleaning equipment) was probably contaminated as a result of rainfall on June 19 and June 20 that transported pathogens from the surrounding farmland. The improperly maintained chlorinator allowed these pathogens to reach the food preparation area. After the outbreak, the store was prohibited from preparing food until an adequate water-treatment system that met drinking water standards could be provided. Store employees and the public were instructed not to drink the water.

Reported by: R Van Houten, D Farberman, J Norton, J Ellison, Livingston County Dept of Health, Mt. Morris; J Kiehlbauch, PhD, T Morris, MD, P Smith, MD, State Epidemiologist, New York

Plesiomonal shigelloides *and* Salmonella *Infections — Continued*

State Dept of Health. Foodborne and Diarrheal Diseases Br, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The findings in this report implicated a deficient water supply system as the cause of an outbreak of diarrheal illness caused by *Salmonella* serotype Hartford and *P. shigelloide*s. Unfiltered, untreated surface water led to contamination of food during its preparation.

Most infections with *P. shigelloides* have been associated with drinking untreated water, eating uncooked shellfish, or with travel to developing countries (*1–3*). *P. shigelloides* (previously *Aeromonas shigelloides*) are ubiquitous, facultatively anaerobic, flagellated, gram-negative rods (*3*). Although they are widespread in the environment, few waterborne or foodborne outbreaks have been reported (*4*). *P. shigelloides* have been isolated from a variety of sources, including wild and domestic animals (*2*). Infection is characterized by self-limited diarrhea with blood or mucus, abdominal cramps, and vomiting or fever (*5*). Symptoms usually occur within 48 hours of exposure. Fecal leukocytes and erythrocytes have been found on stool smears (*1*); however, the exact mechanism of the diarrhea (secretory versus inflammatory) is unknown.

Salmonella serotype Hartford is a rare serotype that has been isolated from porcine and bovine sources. In May 1995, freshly squeezed, unpasteurized commercial orange juice was implicated as the cause of an outbreak (*6*). Contamination was thought to have originated from inadequate sanitization of the exterior surfaces of oranges.

In this outbreak, the well water most likely became contaminated with both *P. shigelloides* and *Salmonella* serotype Hartford through runoff from nearby farms. The outbreak could have been prevented if effective public health measures had been in place. Routine testing of well water for total fecal coliform bacteria, turbidity, and chlorine residual may enable early detection of fecal contamination and rapid decontamination. Filtration and chlorination of potable water systems have substantially reduced waterborne outbreaks and subsequent morbidity and mortality. Where possible, water sources subject to contamination from agricultural runoff should not be used for drinking or food preparation. Disinfection and filtration of water from any source can further reduce the risk for waterborne illness.

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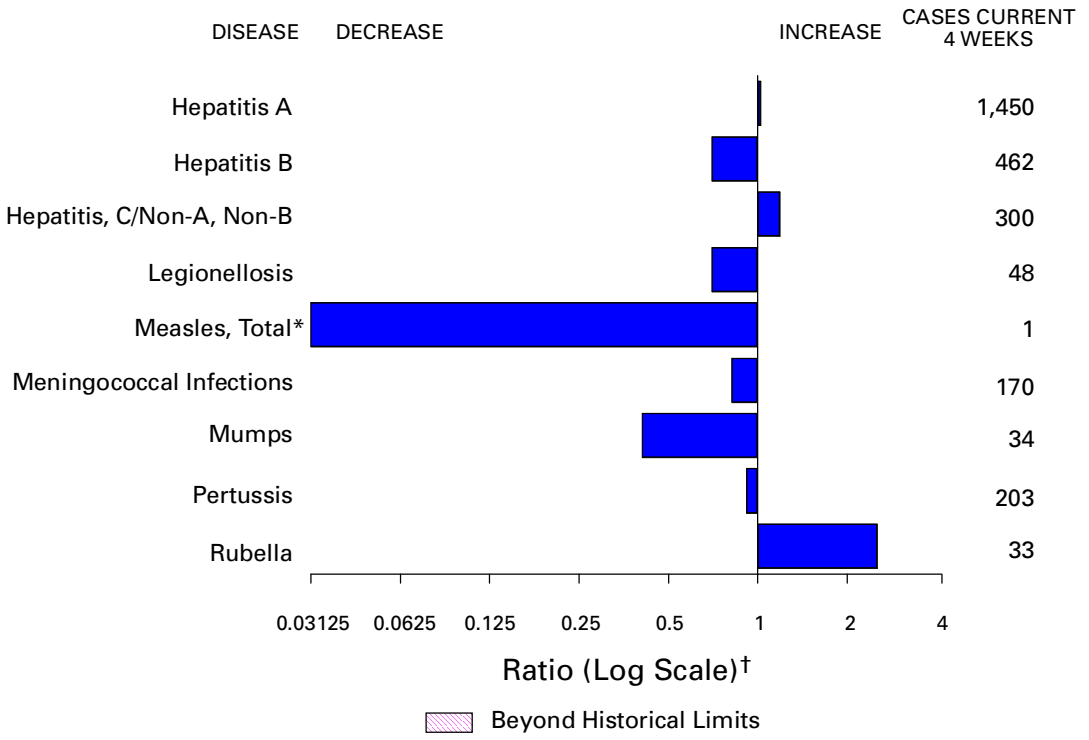
FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending May 16, 1998, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline. (Ratio [log scale] for week 19 measles [total] is .023256.)
†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 May 16, 1998 (19th Week)

	Cum. 1998		Cum. 1998
Anthrax	-	Plague	-
Brucellosis	8	Poliomyelitis, paralytic¶	-
Cholera	3	Psittacosis	13
Congenital rubella syndrome	1	Rabies, human	-
Cryptosporidiosis*	634	Rocky Mountain spotted fever (RMSF)	27
Diphtheria	-	Streptococcal disease, invasive Group A	879
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*	25
eastern equine*	-	Syphilis, congenital**	64
St. Louis*	-	Tetanus	7
western equine*	-	Toxic-shock syndrome	51
Hansen Disease	45	Trichinosis	4
Hantavirus pulmonary syndrome*†	2	Typhoid fever	104
Hemolytic uremic syndrome, post-diarrheal*	9	Yellow fever	-
HIV infection, pediatric*§	88		

-: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 to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update April 26, 1998.
¶ One suspected case of polio with onset in 1998 has also been reported to date.
**Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending May 16, 1998, and May 10, 1997 (19th Week)

Reporting Area	AIDS		Chlamydia		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS§				
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1998	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997
UNITED STATES	16,097	20,911	178,704	165,380	325	166	105,745	100,620	1,581	1,043
NEW ENGLAND	489	666	6,900	6,267	37	25	1,788	2,132	16	28
Maine	10	25	326	331	1	-	14	17	-	-
N.H.	14	8	328	283	6	5	31	52	-	3
Vt.	10	16	144	138	-	-	10	18	-	1
Mass.	211	279	3,135	2,580	17	15	759	813	16	22
R.I.	40	55	868	761	3	1	119	188	-	2
Conn.	204	283	2,099	2,174	10	4	855	1,044	-	-
MID. ATLANTIC	4,607	6,654	22,629	20,422	28	9	12,409	12,598	148	112
Upstate N.Y.	545	1,122	N	N	21	-	1,937	2,118	122	83
N.Y. City	2,631	3,292	12,578	11,167	2	4	5,382	5,086	-	-
N.J.	823	1,450	2,865	3,766	5	4	1,854	2,617	-	-
Pa.	608	790	7,186	5,489	N	1	3,236	2,777	26	29
E.N. CENTRAL	1,299	1,540	30,758	26,099	55	19	20,991	15,270	177	255
Ohio	242	305	9,040	8,153	16	3	5,453	4,977	5	5
Ind.	275	301	2,706	3,204	10	7	1,769	2,205	3	6
Ill.	495	504	8,172	4,128	15	-	6,710	2,051	7	38
Mich.	218	347	8,136	6,689	14	4	6,026	4,416	162	192
Wis.	69	83	2,704	3,925	N	5	1,033	1,621	-	14
W.N. CENTRAL	288	434	10,694	11,261	41	26	5,363	4,914	99	24
Minn.	50	79	1,830	2,470	17	12	650	854	-	1
Iowa	14	58	1,578	1,778	2	-	494	453	10	11
Mo.	139	208	4,250	4,163	8	12	3,204	2,736	85	3
N. Dak.	4	3	290	330	1	1	29	23	-	2
S. Dak.	7	2	616	418	1	-	104	40	-	-
Nebr.	32	34	894	709	6	-	328	261	2	1
Kans.	42	50	1,236	1,393	6	1	554	547	2	6
S. ATLANTIC	4,121	5,123	38,514	31,480	28	14	31,200	30,560	66	76
Del.	44	69	942	612	-	1	500	401	-	-
Md.	488	582	3,026	2,577	10	4	3,337	4,673	3	6
D.C.	343	343	N	N	-	-	1,320	1,475	-	-
Va.	284	420	3,307	4,022	N	7	2,252	2,985	1	8
W. Va.	36	27	1,102	1,169	N	-	305	359	3	3
N.C.	273	282	8,448	6,309	7	2	7,118	5,979	10	22
S.C.	283	264	6,937	4,498	1	-	4,454	3,991	-	17
Ga.	501	689	8,863	3,375	2	-	7,308	4,438	8	-
Fla.	1,869	2,447	5,889	8,918	7	-	4,606	6,259	41	20
E.S. CENTRAL	591	603	12,984	12,112	24	7	12,179	12,259	51	131
Ky.	87	60	2,280	2,388	5	-	1,268	1,628	9	6
Tenn.	184	278	4,512	4,565	15	7	3,750	3,885	39	78
Ala.	183	153	3,461	2,949	4	-	4,388	4,106	3	5
Miss.	137	112	2,731	2,210	-	-	2,773	2,640	-	42
W.S. CENTRAL	1,953	2,038	22,109	20,344	21	4	13,110	13,504	445	105
Ark.	71	83	1,148	989	1	1	1,094	1,657	-	2
La.	333	403	4,362	2,814	-	-	3,691	2,659	2	74
Okla.	106	116	3,857	2,800	3	3	2,081	1,766	1	4
Tex.	1,443	1,436	12,742	13,741	17	-	6,244	7,422	442	25
MOUNTAIN	526	621	6,946	9,354	26	17	2,587	2,809	285	129
Mont.	13	16	402	351	1	-	21	14	4	4
Idaho	12	18	705	569	2	-	60	43	80	18
Wyo.	2	11	262	184	-	-	11	20	128	42
Colo.	91	170	-	1,599	4	4	863	691	10	17
N. Mex.	76	59	1,359	1,278	7	4	267	491	34	26
Ariz.	200	157	3,315	3,696	N	5	1,213	1,171	1	15
Utah	45	46	650	609	8	1	60	77	16	2
Nev.	87	144	253	1,068	4	3	92	302	12	5
PACIFIC	2,223	3,232	27,170	28,041	65	45	6,118	6,574	294	183
Wash.	165	240	4,083	3,389	16	22	691	751	8	9
Oreg.	64	128	2,050	1,732	22	17	286	264	2	2
Calif.	1,947	2,822	19,574	21,803	27	3	4,872	5,225	242	112
Alaska	11	18	726	517	-	-	127	165	1	-
Hawaii	36	24	737	600	N	3	142	169	41	60
Guam	-	2	8	170	N	-	2	22	-	-
P.R.	666	517	U	U	-	U	150	243	-	34
V.I.	15	28	N	N	N	U	-	-	-	-
Amer. Samoa	-	-	-	-	N	U	-	-	-	-
C.N.M.I.	-	-	N	N	N	U	7	14	-	2

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

*Updated monthly to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update April 26, 1998.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending May 16, 1998, and May 10, 1997 (19th Week)

Reporting Area	Legionellosis		Lyme Disease		Malaria		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal
	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998*	Cum. 1997	Cum. 1998
UNITED STATES	371	306	1,344	1,140	377	474	2,410	3,221	2,103	5,689	2,479
NEW ENGLAND	22	26	261	235	17	20	28	63	104	135	484
Maine	1	1	1	3	1	1	1	-	U	11	80
N.H.	2	4	7	5	3	2	1	-	2	1	33
Vt.	1	3	2	2	-	1	2	-	1	2	26
Mass.	8	10	73	45	11	14	19	35	84	69	149
R.I.	4	4	25	33	2	2	-	-	17	7	32
Conn.	6	4	153	147	-	-	5	28	U	45	164
MID. ATLANTIC	80	52	861	716	102	127	82	158	198	1,055	561
Upstate N.Y.	25	12	492	91	28	20	9	17	U	135	390
N.Y. City	12	2	1	53	46	75	19	31	U	550	U
N.J.	3	6	55	173	16	22	18	72	198	221	71
Pa.	40	32	313	399	12	10	36	38	U	149	100
E.N. CENTRAL	117	121	23	18	24	47	356	289	157	572	15
Ohio	52	57	22	6	2	4	67	93	5	112	15
Ind.	17	16	1	8	1	4	65	63	U	48	-
Ill.	12	5	-	1	6	21	132	24	152	288	-
Mich.	23	31	-	3	14	15	72	45	U	82	-
Wis.	13	12	U	U	1	3	20	64	U	42	-
W.N. CENTRAL	28	23	11	11	20	11	61	65	70	165	232
Minn.	3	1	3	8	8	5	3	13	U	45	41
Iowa	2	4	7	-	2	3	-	3	U	20	50
Mo.	10	2	-	2	7	2	46	33	57	59	15
N. Dak.	-	2	-	-	1	-	-	-	U	4	45
S. Dak.	-	1	-	-	-	-	1	-	10	2	33
Nebr.	10	9	-	1	-	1	4	-	3	4	2
Kans.	3	4	1	-	2	-	7	16	U	31	46
S. ATLANTIC	51	36	126	111	98	87	1,033	1,294	382	975	809
Del.	6	5	-	21	1	2	11	11	-	10	17
Md.	10	11	96	74	33	29	232	367	94	100	199
D.C.	3	2	4	5	7	6	30	49	42	30	-
Va.	4	4	4	-	15	21	71	104	89	111	236
W. Va.	N	N	4	-	-	-	1	3	21	21	36
N.C.	6	5	1	3	7	6	293	252	136	123	136
S.C.	4	2	1	1	3	5	126	157	U	90	57
Ga.	-	-	2	1	13	12	191	237	U	171	45
Fla.	17	7	14	6	19	6	78	114	U	319	83
E.S. CENTRAL	12	10	16	24	10	13	394	706	-	428	99
Ky.	8	-	3	3	1	3	43	61	U	61	15
Tenn.	4	4	7	8	6	3	200	288	U	138	61
Ala.	-	2	6	2	3	4	90	177	U	148	23
Miss.	-	4	-	11	-	3	61	180	U	81	-
W.S. CENTRAL	8	5	5	2	10	7	258	452	38	846	68
Ark.	-	-	2	-	-	1	46	65	38	74	1
La.	-	1	-	1	4	4	106	142	-	58	-
Okla.	3	1	-	-	1	2	17	47	U	63	67
Tex.	5	3	3	1	5	-	89	198	U	651	-
MOUNTAIN	20	18	1	2	18	30	80	64	96	173	55
Mont.	1	1	-	-	-	2	-	-	2	2	18
Idaho	-	1	-	-	1	-	-	-	4	4	-
Wyo.	1	1	-	-	-	1	-	-	1	2	33
Colo.	4	4	-	-	6	15	4	2	U	35	-
N. Mex.	2	1	-	-	6	4	10	-	7	6	-
Ariz.	3	4	-	1	4	3	61	54	61	77	4
Utah	8	4	-	-	1	1	3	2	21	6	-
Nev.	1	2	1	1	-	4	2	6	U	41	-
PACIFIC	33	15	40	21	78	132	118	130	1,058	1,340	156
Wash.	3	3	1	-	6	6	6	6	-	108	-
Oreg.	-	-	4	8	8	7	2	3	U	50	-
Calif.	30	11	35	13	63	115	110	119	987	1,073	141
Alaska	-	-	-	-	-	2	-	1	16	33	15
Hawaii	-	1	-	-	1	2	-	1	55	76	-
Guam	-	-	-	-	-	-	-	3	-	13	-
P.R.	-	-	-	-	-	3	84	75	46	-	24
V.I.	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	-	1	5	8	-	-

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

*Additional information about areas displaying "U" for cumulative 1998 Tuberculosis cases can be found in Notice to Readers, *MMWR* Vol. 47, No. 2, p. 39.

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending May 16, 1998, and May 10, 1997 (19th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	1998	Cum. 1998	1998	Cum. 1998	Cum. 1998	Cum. 1997
UNITED STATES	409	455	7,500	9,963	2,693	3,286	-	6	-	10	16	47
NEW ENGLAND	23	25	100	247	30	67	-	-	-	1	1	1
Maine	2	3	10	29	-	3	-	-	-	-	-	-
N.H.	1	3	6	13	7	5	-	-	-	-	-	-
Vt.	2	-	7	6	-	2	-	-	-	-	-	-
Mass.	16	16	25	125	12	34	-	-	-	1	1	1
R.I.	2	2	8	20	11	8	-	-	-	-	-	-
Conn.	-	1	44	54	-	15	-	-	-	-	-	-
MID. ATLANTIC	61	56	472	891	401	502	-	1	-	1	2	12
Upstate N.Y.	24	3	126	94	113	84	-	-	-	-	-	4
N.Y. City	10	19	130	415	104	206	-	-	-	-	-	5
N.J.	25	21	84	140	60	97	-	1	-	-	1	2
Pa.	2	13	132	242	124	115	-	-	-	1	1	1
E.N. CENTRAL	57	70	896	1,204	264	603	-	2	-	2	4	6
Ohio	27	37	122	164	26	35	-	-	-	-	-	-
Ind.	13	5	71	118	24	40	-	2	-	1	3	-
Ill.	16	19	123	308	38	121	-	-	-	-	-	5
Mich.	-	9	508	529	164	182	-	-	-	1	1	1
Wis.	1	-	72	85	12	225	-	-	-	-	-	-
W.N. CENTRAL	31	23	666	695	125	203	-	-	-	-	-	10
Minn.	17	14	28	59	11	13	-	-	-	-	-	1
Iowa	1	2	318	93	19	14	-	-	-	-	-	-
Mo.	9	3	253	392	75	153	-	-	-	-	-	1
N. Dak.	-	-	2	7	2	1	-	-	-	-	-	-
S. Dak.	-	2	8	6	1	-	-	-	-	-	-	8
Nebr.	-	1	13	22	6	8	-	-	-	-	-	-
Kans.	4	1	44	116	11	14	-	-	-	-	-	-
S. ATLANTIC	91	82	643	511	386	406	-	1	-	5	6	2
Del.	-	-	2	11	-	3	-	-	-	1	1	-
Md.	26	33	139	118	58	66	-	-	-	1	1	1
D.C.	-	-	24	13	6	18	-	-	-	-	-	1
Va.	10	6	103	67	37	44	-	-	-	2	2	-
W. Va.	3	3	-	5	3	6	-	-	-	-	-	-
N.C.	12	13	37	76	82	86	-	-	-	-	-	-
S.C.	2	3	12	54	-	41	-	-	-	-	-	-
Ga.	18	17	116	51	59	45	-	-	-	1	1	-
Fla.	20	7	210	116	141	97	-	1	-	-	1	-
E.S. CENTRAL	22	29	139	267	160	238	-	-	-	-	-	1
Ky.	3	4	8	29	16	15	-	-	-	-	-	-
Tenn.	13	17	97	163	118	148	-	-	-	-	-	-
Ala.	6	7	34	42	26	30	-	-	-	-	-	1
Miss.	-	1	-	33	-	45	U	-	U	-	-	-
W.S. CENTRAL	26	20	1,332	1,732	396	299	-	-	-	-	-	4
Ark.	-	1	19	95	22	21	-	-	-	-	-	-
La.	12	3	13	79	9	43	-	-	-	-	-	-
Okla.	12	14	208	626	26	11	-	-	-	-	-	-
Tex.	2	2	1,092	932	339	224	-	-	-	-	-	4
MOUNTAIN	57	49	1,218	1,529	310	325	-	-	-	-	-	1
Mont.	-	-	25	43	3	4	-	-	-	-	-	-
Idaho	-	-	88	66	15	8	-	-	-	-	-	-
Wyo.	-	1	25	17	7	8	-	-	-	-	-	-
Colo.	12	9	93	179	37	68	-	-	-	-	-	-
N. Mex.	4	3	69	106	118	111	-	-	-	-	-	-
Ariz.	31	12	776	707	83	70	-	-	-	-	-	1
Utah	4	3	79	281	25	36	-	-	-	-	-	-
Nev.	6	21	63	130	22	20	U	-	U	-	-	-
PACIFIC	41	101	2,034	2,887	621	643	-	2	-	1	3	10
Wash.	3	1	374	197	47	20	-	-	-	-	-	-
Oreg.	25	17	145	143	47	46	-	-	-	-	-	-
Calif.	10	79	1,486	2,472	518	561	-	2	-	1	3	7
Alaska	1	1	10	16	4	10	-	-	-	-	-	-
Hawaii	2	3	19	59	5	6	-	-	-	-	-	3
Guam	-	-	-	-	-	3	U	-	U	-	-	-
P.R.	2	-	16	140	233	480	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	U	-	U	-	-	-
Amer. Samoa	-	-	-	-	-	-	U	-	U	-	-	-
C.N.M.I.	-	5	-	1	7	21	U	-	U	-	-	1

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

*Of 96 cases among children aged <5 years, serotype was reported for 50 and of those, 24 were type b.

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

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending May 16, 1998, and May 10, 1997 (19th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997
UNITED STATES	1,147	1,572	8	175	240	77	1,380	1,971	2	197	33
NEW ENGLAND	62	96	-	-	7	2	237	464	-	30	-
Maine	4	8	-	-	-	-	5	6	-	-	-
N.H.	1	9	-	-	-	-	19	55	-	-	-
Vt.	1	2	-	-	-	1	24	153	-	-	-
Mass.	30	53	-	-	2	1	183	230	-	4	-
R.I.	3	6	-	-	4	-	-	12	-	-	-
Conn.	23	18	-	-	1	-	6	8	-	26	-
MID. ATLANTIC	123	154	-	10	29	4	165	173	2	93	11
Upstate N.Y.	30	34	-	3	4	4	99	59	1	89	1
N.Y. City	13	27	-	4	1	-	4	44	1	2	10
N.J.	35	31	-	-	4	-	5	10	-	2	-
Pa.	45	62	-	3	20	-	57	60	-	-	-
E.N. CENTRAL	149	230	-	25	31	-	141	200	-	-	3
Ohio	58	84	-	11	10	-	53	60	-	-	-
Ind.	25	27	-	2	4	-	42	20	-	-	-
Ill.	33	76	-	1	9	-	10	27	-	-	-
Mich.	16	21	-	11	7	-	19	28	-	-	-
Wis.	17	22	-	-	1	-	17	65	-	-	3
W.N. CENTRAL	98	115	1	18	7	19	125	111	-	2	-
Minn.	16	17	1	10	3	18	76	67	-	-	-
Iowa	14	23	-	5	3	1	26	7	-	-	-
Mo.	40	58	-	2	-	-	9	20	-	1	-
N. Dak.	-	-	-	1	-	-	-	2	-	-	-
S. Dak.	6	3	-	-	-	-	4	1	-	-	-
Nebr.	4	4	-	-	1	-	4	2	-	-	-
Kans.	18	10	-	-	-	-	6	12	-	1	-
S. ATLANTIC	195	264	1	30	37	4	101	170	-	5	1
Del.	1	4	-	-	-	-	-	-	-	-	-
Md.	18	27	-	-	4	-	19	69	-	-	-
D.C.	-	5	-	-	-	-	1	2	-	-	-
Va.	19	24	-	4	4	-	6	19	-	-	1
W. Va.	5	10	-	-	-	-	1	3	-	-	-
N.C.	25	47	1	7	6	2	42	35	-	3	-
S.C.	30	36	-	4	9	2	12	9	-	1	-
Ga.	40	49	-	1	5	-	1	5	-	-	-
Fla.	57	62	-	14	9	-	19	28	-	1	-
E.S. CENTRAL	80	109	-	-	15	1	35	39	-	-	-
Ky.	13	28	-	-	2	1	16	10	-	-	-
Tenn.	36	34	-	-	3	-	9	12	-	-	-
Ala.	31	30	-	-	5	-	10	10	-	-	-
Miss.	-	17	U	-	5	U	-	7	U	-	-
W.S. CENTRAL	128	150	3	25	27	7	78	40	-	52	3
Ark.	15	22	-	-	-	-	10	2	-	-	-
La.	25	29	1	2	7	-	-	7	-	-	-
Okla.	22	18	-	-	-	-	6	8	-	-	-
Tex.	66	81	2	23	20	7	62	23	-	52	3
MOUNTAIN	69	94	2	16	12	30	314	476	-	5	1
Mont.	2	6	-	-	-	-	1	2	-	-	-
Idaho	3	5	-	1	2	24	157	307	-	-	-
Wyo.	3	-	-	1	1	-	7	3	-	-	-
Colo.	16	30	-	2	3	4	50	127	-	-	-
N. Mex.	13	17	N	N	N	-	55	21	-	1	-
Ariz.	22	16	-	4	-	1	23	9	-	1	1
Utah	7	11	2	3	3	1	14	3	-	2	-
Nev.	3	9	U	5	3	U	7	4	U	1	-
PACIFIC	243	360	1	51	75	10	184	298	-	10	14
Wash.	28	43	-	4	5	10	111	137	-	8	1
Oreg.	46	72	N	N	N	-	8	17	-	-	-
Calif.	164	242	1	33	55	-	61	137	-	1	7
Alaska	1	1	-	2	5	-	-	2	-	-	-
Hawaii	4	2	-	12	10	-	4	5	-	1	6
Guam	-	1	U	-	1	U	-	-	U	-	-
P.R.	2	7	-	2	4	-	2	-	-	-	-
V.I.	-	-	U	-	-	U	-	-	U	-	-
Amer. Samoa	-	-	U	-	-	U	-	-	U	-	-
C.N.M.I.	-	-	U	-	1	U	-	-	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending May 16, 1998 (19th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	479	357	72	35	6	8	35
Boston, Mass.	121	84	25	6	5	1	14
Bridgeport, Conn.	38	33	2	2	-	1	3
Cambridge, Mass.	15	13	1	1	-	-	-
Fall River, Mass.	33	27	5	1	-	-	-
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	14	9	5	-	-	-	-
Lynn, Mass.	16	12	2	2	-	-	2
New Bedford, Mass.	23	19	2	-	-	1	1
New Haven, Conn.	28	18	3	5	-	2	2
Providence, R.I.	52	42	6	3	-	1	3
Somerville, Mass.	6	6	-	-	-	-	-
Springfield, Mass.	47	31	9	6	-	1	3
Waterbury, Conn.	24	17	2	4	-	1	2
Worcester, Mass.	62	46	10	5	1	-	5
MID. ATLANTIC	1,853	1,324	337	111	41	40	89
Albany, N.Y.	42	30	10	-	1	1	3
Allentown, Pa.	27	23	3	1	-	-	-
Buffalo, N.Y.	95	68	15	8	1	3	9
Camden, N.J.	36	25	4	6	-	1	3
Elizabeth, N.J.	28	16	9	3	-	-	-
Erie, Pa.	37	33	2	-	-	2	1
Jersey City, N.J.	37	24	8	4	1	-	-
New York City, N.Y.	1,067	758	204	58	25	22	37
Newark, N.J.	43	14	15	11	2	1	2
Paterson, N.J.	23	15	3	3	1	1	-
Philadelphia, Pa.	U	U	U	U	U	U	U
Pittsburgh, Pa.§	56	43	9	3	-	1	7
Reading, Pa.	31	30	-	-	1	-	3
Rochester, N.Y.	121	89	21	4	3	4	10
Schenectady, N.Y.	21	17	2	2	-	-	1
Scranton, Pa.	30	23	6	1	-	-	3
Syracuse, N.Y.	112	82	17	5	4	4	10
Trenton, N.J.	23	14	5	2	2	-	-
Utica, N.Y.	24	20	4	-	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,979	1,381	379	122	47	50	114
Akron, Ohio	53	40	8	1	1	3	-
Canton, Ohio	25	20	4	1	-	-	3
Chicago, Ill.	399	250	89	36	13	11	30
Cincinnati, Ohio	100	78	15	4	-	3	13
Cleveland, Ohio	134	91	27	11	4	1	2
Columbus, Ohio	218	161	33	14	3	7	18
Dayton, Ohio	119	79	29	5	4	2	8
Detroit, Mich.	198	111	54	17	8	8	5
Evansville, Ind.	38	31	4	2	-	1	1
Fort Wayne, Ind.	53	41	8	3	-	1	4
Gary, Ind.	14	6	3	4	1	-	-
Grand Rapids, Mich.	62	50	8	-	2	2	6
Indianapolis, Ind.	185	136	32	6	6	5	-
Lansing, Mich.	40	28	9	3	-	-	3
Milwaukee, Wis.	110	81	19	5	1	4	10
Peoria, Ill.	52	44	6	1	1	-	5
Rockford, Ill.	64	45	12	3	3	1	3
South Bend, Ind.	50	39	8	2	-	1	1
Toledo, Ohio	U	U	U	U	U	U	U
Youngstown, Ohio	65	50	11	4	-	-	2
W.N. CENTRAL	792	540	139	56	28	15	48
Des Moines, Iowa	U	U	U	U	U	U	U
Duluth, Minn.	26	19	5	1	-	1	1
Kansas City, Kans.	37	23	7	5	2	-	-
Kansas City, Mo.	107	70	13	8	2	1	5
Lincoln, Nebr.	24	20	3	1	-	-	3
Minneapolis, Minn.	215	148	40	13	8	5	26
Omaha, Nebr.	85	66	9	7	2	1	3
St. Louis, Mo.	109	65	25	8	8	3	-
St. Paul, Minn.	102	75	22	4	1	-	8
Wichita, Kans.	87	54	15	9	5	4	2

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,171	730	265	107	38	26	48
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	228	118	65	28	11	5	14
Charlotte, N.C.	58	39	14	3	1	1	2
Jacksonville, Fla.	155	96	41	11	6	1	3
Miami, Fla.	104	71	16	10	4	3	1
Norfolk, Va.	46	28	10	1	-	7	2
Richmond, Va.	85	59	13	8	4	1	3
Savannah, Ga.	63	45	12	6	-	-	5
St. Petersburg, Fla.	58	43	8	4	1	2	2
Tampa, Fla.	196	126	45	16	3	3	9
Washington, D.C.	157	86	39	20	8	3	7
Wilmington, Del.	21	19	2	-	-	-	-
E.S. CENTRAL	683	439	161	53	17	10	51
Birmingham, Ala.	195	131	42	10	7	2	14
Chattanooga, Tenn.	62	38	17	3	1	3	3
Knoxville, Tenn.	95	62	23	8	1	1	9
Lexington, Ky.	68	45	15	5	3	-	7
Memphis, Tenn.	U	U	U	U	U	U	U
Mobile, Ala.	83	53	19	10	1	-	-
Montgomery, Ala.	44	30	9	4	-	1	2
Nashville, Tenn.	136	80	36	13	4	3	16
W.S. CENTRAL	1,645	1,028	377	148	51	38	109
Austin, Tex.	91	60	20	7	2	2	4
Baton Rouge, La.	42	25	10	3	3	1	-
Corpus Christi, Tex.	53	31	17	3	1	1	4
Dallas, Tex.	208	124	53	17	9	5	6
El Paso, Tex.	109	66	27	11	3	2	4
Ft. Worth, Tex.	74	58	11	4	-	1	9
Houston, Tex.	551	314	135	68	17	15	57
Little Rock, Ark.	77	52	17	7	1	-	2
New Orleans, La.	96	63	19	6	5	3	-
San Antonio, Tex.	226	143	55	15	8	4	13
Shreveport, La.	U	U	U	U	U	U	U
Tulsa, Okla.	118	92	13	7	2	4	10
MOUNTAIN	689	498	101	50	17	14	49
Albuquerque, N.M.	97	66	16	9	4	1	2
Boise, Idaho	39	28	6	5	-	-	2
Colo. Springs, Colo.	44	29	10	2	-	3	7
Denver, Colo.	136	102	18	11	1	4	15
Las Vegas, Nev.	U	U	U	U	U	U	U
Ogden, Utah	36	28	5	1	2	-	1
Phoenix, Ariz.	76	45	13	3	5	2	8
Pueblo, Colo.	21	14	5	1	1	-	2
Salt Lake City, Utah	101	74	14	10	-	3	6
Tucson, Ariz.	139	112	14	8	4	1	6
PACIFIC	1,571	1,098	282	121	45	25	136
Berkeley, Calif.	16	13	3	-	-	-	-
Fresno, Calif.	176	125	19	17	11	4	18
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	49	37	9	3	-	-	4
Long Beach, Calif.	76	57	15	4	-	-	5
Los Angeles, Calif.	303	183	63	36	12	9	19
Pasadena, Calif.	21	14	4	2	1	-	3
Portland, Oreg.	28	22	3	2	1	-	1
Sacramento, Calif.	178	131	29	11	4	3	28
San Diego, Calif.	137	89	32	10	6	-	14
San Francisco, Calif.	128	93	16	13	3	3	8
San Jose, Calif.	165	117	37	7	3	1	17
Santa Cruz, Calif.	32	21	8	3	-	-	2
Seattle, Wash.	127	90	25	7	3	2	2
Spokane, Wash.	44	36	5	2	1	-	2
Tacoma, Wash.	91	70	14	4	-	3	13
TOTAL	10,862¶	7,395	2,113	803	290	226	679

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.

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