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WEEKLY REPORT

Achievements in Public Health, 1900–1999

Decline in Deaths from Heart Disease and Stroke — United States, 1900–1999

Heart disease has been the leading cause of death in the United States since 1921, and stroke has been the third leading cause since 1938 (*1*); together they account for approximately 40% of all deaths. Since 1950, age-adjusted death rates from cardiovascular disease (CVD) have declined 60%, representing one of the most important public health achievements of the 20th century. This report summarizes the temporal trends in CVD, advances in the understanding of risk factors for CVD, development of prevention interventions to reduce these risks, and improvements in therapy for persons who develop CVD.

Decline in CVD Death Rates

Age-adjusted death rates per 100,000 persons (standardized to the 1940 U.S. population) for diseases of the heart (i.e., coronary heart disease, hypertensive heart disease, and rheumatic heart disease) have decreased from a peak of 307.4 in 1950 to 134.6 in 1996, an overall decline of 56% (*1*) (Figure 1). Age-adjusted death rates for coronary heart disease (the major form of CVD contributing to mortality) continued to increase into the 1960s, then declined. In 1996, 621,000 fewer deaths occurred from coronary heart disease than would have been expected had the rate remained at its 1963 peak (*1*).

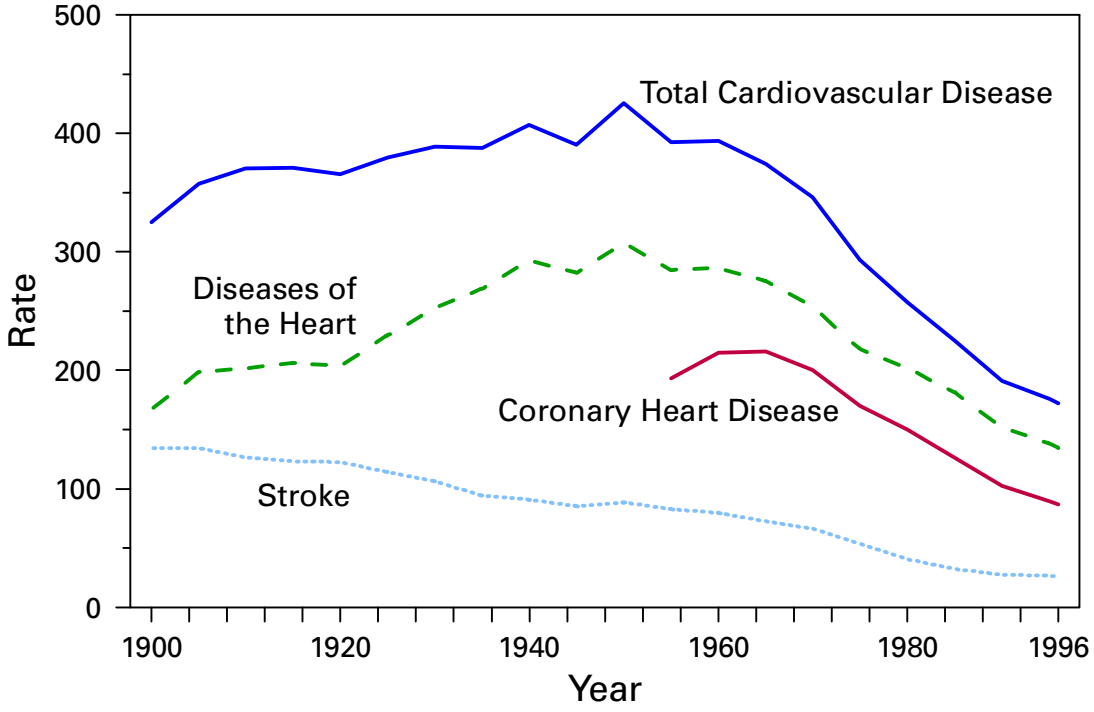
Age-adjusted death rates for stroke have declined steadily since the beginning of the century. Since 1950, stroke rates have declined 70%, from 88.8 in 1950 to 26.5 in 1996. Total age-adjusted CVD death rates have declined 60% since 1950 and accounted for approximately 73% of the decline in all causes of deaths during the same period (*1*).

Disease Epidemiology

Intensive investigation into the CVD epidemic largely began in the 1940s following World War II, although causal hypotheses about CVD and recognition of geographic differences in disease rates occurred earlier (*2–4*). Landmark epidemiologic investigations, including the cross-country comparisons of Ancel Keys (*5*) (see box) and the Framingham Heart Study (*6*), established the major risk factors of high blood choles-

Heart Disease and Stroke — Continued

FIGURE 1. Age-adjusted death rates* for total cardiovascular disease, diseases of the heart, coronary heart disease, and stroke,† by year — United States, 1900–1996



*Per 100,000 population, standardized to the 1940 U.S. population.
†Diseases are classified according to *International Classification of Diseases* (ICD) codes in use when the deaths were reported. ICD classification revisions occurred in 1910, 1921, 1930, 1939, 1949, 1958, 1968, and 1979. Death rates before 1933 do not include all states. Comparability ratios were applied to rates for 1970 and 1975.

Source: Adapted from reference 1; data provided by the National Heart, Lung and Blood Institute, National Institutes of Health.

terol, high blood pressure, and smoking and dietary factors (particularly dietary cholesterol, fat, and sodium). The risk factor concept—that particular biologic, lifestyle, and social conditions were associated with increased risk for disease—developed out of CVD epidemiology (*3,4*). In addition to the major risk factors (i.e., high blood pressure, high blood cholesterol, and smoking), other important factors include socioeconomic status, obesity, and physical inactivity (*7*). Striking regional differences were noted particularly for stroke mortality, with the highest rates observed in the southeastern United States (*1*). Cross-national and cross-cultural studies highlighted the importance of social, cultural, and environmental factors in the development of CVD.

Coronary heart disease and stroke, the two major causes of CVD-related mortality, are not influenced to the same degree by the recognized risk factors. For example, elevated blood cholesterol is a major risk factor for coronary heart disease, and hypertension is the major risk factor for stroke. Physical activity, smoking cessation, and a healthy diet, which can lower the risk for heart disease, also can help lower the risk for stroke (*8*).

Heart Disease and Stroke — Continued

Ancel Keys, Ph.D.

Source: University of Minnesota Archives

In addition to his role in establishing modern cardiovascular disease (CVD) epidemiology, Ancel Keys (born on January 26, 1904) is closely associated with two famous "diets," one loathed by soldiers and the other beloved by health-conscious and taste-conscious diners. As an advisor to the U.S. Department of Defense during World War II, he formulated balanced meals for combat soldiers that became known as K rations. Later, Keys and his wife, Margaret, popularized the Mediterranean diet with a series of best-selling books. Science, diet, and health have been central themes of his professional and private lives.

Keys attended the University of California, Berkeley, where he received a B.A. in economics and political science (1925), an M.S. in biology (1929), and a Ph.D. in oceanography and biology (1930). He earned a second Ph.D. in physiology at Cambridge in 1938. In 1936, he became a professor at the University of Minnesota, where he established the Laboratory of Physiological Hygiene. Keys directed the laboratory from 1939 until his retirement in 1975.

During World War II, Keys studied starvation and subsistence diets, eventually producing his two-volume *Biology of Human Starvation* (1950). His interest in diet and CVD was prompted, in part, by seemingly counterintuitive data: American business executives, presumably among the best-fed persons, had high rates of heart disease, while in post-war Europe, CVD rates had decreased sharply in the wake of reduced food supplies. Keys postulated a correlation between cholesterol levels and CVD and initiated a study of Minnesota businessmen (the first prospective study of CVD) (*1*), culminating in what came to be known as the Seven Countries Study (*2*). These studies found strong associations between the CVD rate of a population and average serum cholesterol and per capita intake of saturated fatty acids.

From the early 1950s, Keys actively promoted his findings to an increasingly health-conscious public. The resulting "cholesterol controversy" revealed sharp divisions in post-war scientific culture over whether the statisticians' "strong associations" could provide scientific certainty. This controversy left greater opportunity for competing food industry groups, health promotion associations, food faddists, physicians, and insurance companies to use the ambiguities and methodologic quibbles inherent in such studies to pursue their own agendas. In its simplest form, the debate over dietary fat and CVD pitted "interventionists" against those calling for further studies—preferably clinical or laboratory studies.

Keys always has been considered an interventionist. He generally has shunned food fads and vigorously promotes the benefits of "reasonably low-fat diets," instead of following "the North American habit for making the stomach the garbage disposal unit for a long list of harmful foods." Keys' studies and recommendations have had a substantial impact on changes in the U.S. diet and the resulting downward trend in CVD.

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Heart Disease and Stroke — Continued

Advances in Prevention

Early intervention studies in the 1960s sought to establish whether lowering risk factor levels would reduce risk for CVD (*2–4*). During the 1970s and 1980s, along with numerous clinical trials demonstrating the efficacy of antihypertensive and lipid-lowering drugs, community trials sought to reduce risk at the community level (*9*). Public health interventions to reduce CVD have benefitted from a combination of the "high risk" approach—aimed at persons with increased risk for CVD—and the population-wide approach—aimed at lowering risk for the entire community (*10*). National programs that combine these complementary approaches and that are aimed at health-care providers, patients, and the general public include the National High Blood Pressure Education Program (*11*), initiated in 1972, and the National Cholesterol Education Program, initiated in 1985 (*12*). Although earlier CDC community demonstration projects focused on cardiovascular health (*9*), CDC established its National Center for Chronic Disease Prevention and Health Promotion in 1989, with a high priority of promoting cardiovascular health.

Factors Contributing to the Decline in CVD Deaths

Reasons for the declines in heart disease and stroke may vary by period and across region or socioeconomic groups (e.g., age, sex, and racial/ethnic groups). Prevention efforts and improvements in early detection, treatment, and care have resulted in a number of beneficial trends (Table 1), which may have contributed to declines in heart disease and stroke. These trends include

- a decline in cigarette smoking among adults aged ≥18 years from approximately 42% in 1965 to 25% in 1995 (*13*). Substantial public health efforts to reduce tobacco use began soon after recognition of the association between smoking and CVD and between smoking and cancer and the first Surgeon General's report on smoking and health published in 1964.
- a decrease in mean blood pressure levels in the U.S. population (*11,13,14*).
- an increase in the percentage of persons with hypertension who have the condition treated and controlled (*11,13,14*).
- a decrease in mean blood cholesterol levels (*12–14*).
- changes in the U.S. diet. Data based on surveys of food supply suggest that consumption of saturated fat and cholesterol has decreased since 1909 (*15*). Data from the National Health and Nutrition Examination surveys suggest that decreases in the percentage of calories from dietary fat and the levels of dietary cholesterol coincide with decreases in blood cholesterol levels (*16*).
- improvements in medical care, including advances in diagnosing and treating heart disease and stroke, development of effective medications for treatment of hypertension and hypercholesterolemia, greater numbers of specialists and health-care providers focusing on CVD, an increase in emergency medical services for heart attack and stroke, and an increase in coronary-care units (*13,17*). These developments have contributed to lower case-fatality rates, lengthened survival times, and shorter hospital stays for persons with CVD (*1,17*).

TABLE 1. Estimated change in risk factors and correlates for heart disease and stroke, by selected characteristics — United States

Characteristic	Baseline year	Baseline estimate	Follow-up year	Follow-up estimate
Adults aged 20–74 years with hypertension*†	1960–1962	37%	1988–1994	23%
Persons with hypertension who are taking action to control their blood pressure (e.g., medication, diet, reducing salt intake, and exercise)	1985	79%	1990	90%
Persons with hypertension whose blood pressure is controlled	1976–1980	11%	1988–1991	29%
Adults aged 20–74 years with high blood cholesterol†§	1960–1962	32%	1988–1994	19%
Mean serum cholesterol levels mg/dL of adults aged ≥18 years†	1960–1962	220	1988–1994	203
Adults aged ≥18 years who are current smokers†	1965	42%	1995	25%
Persons who are overweight†¶	1960–1962	24%	1988–1994	35%
Percentage of calories in the diet from fat**	1976–1980	36%	1988–1994	34%
Percentage of calories in the diet from saturated fat**	1976–1980	13%	1988–1994	12%
Number of physicians indicating cardiovascular diseases as their primary area of practice	1975	5,046	1996	14,304

* Systolic pressure ≥140 mm Hg, diastolic pressure ≥90 mm Hg, or taking antihypertensive medication.
† Estimate is age-adjusted to the 1940 U.S. population.
§ Serum cholesterol level ≥240 mg/dL (6.2 mmol/L).
¶ Defined as a body mass index ≥27.8 kg/m^2 among men and 27.2 kg/m^2 among women.
** Based on 1-day dietary recall.

Source: References 11–14.

Heart Disease and Stroke — Continued

Challenges for the 21st Century

Despite remarkable progress, heart disease and stroke remain leading causes of disability and death. Estimated costs for morbidity and mortality from CVD, including health expenditures and lost productivity, are expected to be $286.5 billion in 1999 (*18*) . In addition, the overall declines in heart disease and stroke mortality mask important differences in rates of decline by race/ethnicity, sex, socioeconomic status, and geographic region. During 1985–1996, for example, heart disease age-adjusted mortality declined 29% among white men, but only 10% among American Indian/Alaskan Native women (*13*). Persons of lower socioeconomic status have higher mortality, morbidity, and risk factor levels for heart disease and stroke than persons of higher socioeconomic status (*13,19*). In addition, the social class gap in heart disease deaths may be increasing as the rates of heart disease decline faster among higher social classes (*19*). Geographically, declines in heart disease deaths did not occur at the same time for all communities. Areas with poorer socioeconomic profiles were more likely to experience a later onset of the decline of heart disease (*19*).

Public health programs at the state level for heart disease and stroke have been limited. In fiscal year 1999, through a new program, CDC funded 11 states with the highest CVD mortality rates to plan, develop, and implement state-based efforts for CVD prevention. In addition to activities such as surveillance, these programs will emphasize policy and environmental interventions, both social and physical, aimed at sustaining positive health behavior change.

Although many trends have been positive, trends for some important indicators have not improved substantially, have leveled off, or are reversing. For example, approximately 70% of persons with hypertension do not have the condition controlled at levels below 140/90 mm Hg, and death rates for stroke have not declined in recent years (*1,11,13*). Heart failure has emerged as a health concern for older adults (*20*), and adults who survive a myocardial infarction or other hypertension-related diseases remain at increased risk for heart failure. In addition, the prevalence of obesity has increased among both children and adults in the United States (*13*).

Major public health challenges for the 21st century include

- reducing risk factor levels and preventing the development of adverse risk factors. Continued research is needed to understand the determinants (social, psychological, environmental, physiologic, and genetic) of CVD risk factors.
- reducing the racial/ethnic disparities in heart disease and stroke mortality.
- increasing the ability to reach underserved groups with appropriate and effective public health messages.
- promoting policy and environmental strategies that enhance healthy behavior.
- determining the relation between genetics and disease. The associations of genetic variants with CVD, and especially the interplay between genetic and environmental factors, may play increasingly important roles in the nation's efforts to prevent CVD.
- identifying new or emerging risk factors and determining their potential for public health intervention. New or emerging risk factors that have been associated with CVD include elevated levels of total homocyst(e)ine, fibrinogen, and C-reactive pro-

Heart Disease and Stroke — Continued

tein, and infectious agents such as *Helicobacter pylori* and *Chlamydia pneumoniae*.

- focusing on secondary prevention and disability. An aging U.S. population and an increasing number of persons surviving life-threatening cardiovascular conditions requires public health programs to focus on issues such as disability and quality of life. Persons with existing cardiovascular conditions are at increased risk for future life-threatening events related to those conditions.
- addressing the needs of the global community. Although CVD death rates are higher in developed nations, most cases occur in developing nations (*8*). Developing countries may face a double burden of infectious and chronic diseases. International collaboration to improve cardiovascular health (*9*) will need to continue to reduce the burden of CVD worldwide.

Reported by: Cardiovascular Health Br, Div of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

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Geographic Variation in Penicillin Resistance in *Streptococcus pneumoniae* — Selected Sites, United States, 1997

Streptococcus pneumoniae is the leading cause of bacterial pneumonia, meningitis, and otitis media in the United States. Since 1995, CDC has maintained a population-based surveillance system for *S. pneumoniae* as part of the Emerging Infections Program's Active Bacterial Core Surveillance to collect information on the susceptibility patterns of all invasive strains of *S. pneumoniae* within the entire area of surveillance (population-based) instead of from selected hospitals only (sentinel surveillance). This report presents surveillance data for 1997, which indicated that the prevalence of *S. pneumoniae* that was not susceptible to penicillin varied among geographic regions and among hospitals within a geographic region.

In 1997, surveillance personnel conducted active surveillance for invasive *S. pneumoniae* infection in seven regions in the United States with a total population of 16 million. The surveillance sites were California (San Francisco County), Connecticut (entire state), Georgia (20-county Atlanta area), Maryland (six-county Baltimore area), Minnesota (seven-county Minneapolis-St. Paul area), Oregon (three-county Portland area), and Tennessee (five urban counties). Invasive infection was defined as isolation of *S. pneumoniae* from a normally sterile site, such as blood or cerebrospinal fluid, in a resident of one of the surveillance areas. Pneumococcal isolates were sent to reference laboratories, where in vitro antibiotic susceptibility testing was conducted by broth microdilution. Intermediate susceptibility to penicillin was defined as a minimum inhibitory concentration (MIC) of 0.12–1.0 μg/mL; resistance was defined as an MIC ≥2.0 μg/mL (*1*). The term "nonsusceptible" refers to both intermediate and resistant organisms.

To determine whether pneumococcal resistance in individual hospitals would be representative of resistance in a surveillance area, the proportion of penicillin-nonsusceptible isolates from individual hospitals was compared with the proportion of nonsusceptible isolates from the entire surveillance area where each hospital was located. To reduce random variation because of hospitals with small numbers of isolates, only hospitals that had ≥10 isolates in 1997 were included in this analysis. The proportion of nonsusceptible isolates for a hospital was considered representative of that surveillance area if the proportion was within 5% of the overall proportion of nonsusceptible isolates for the area. Certain demographic characteristics of the hospital's patient population were assessed to determine predictors of that hospital's repre-

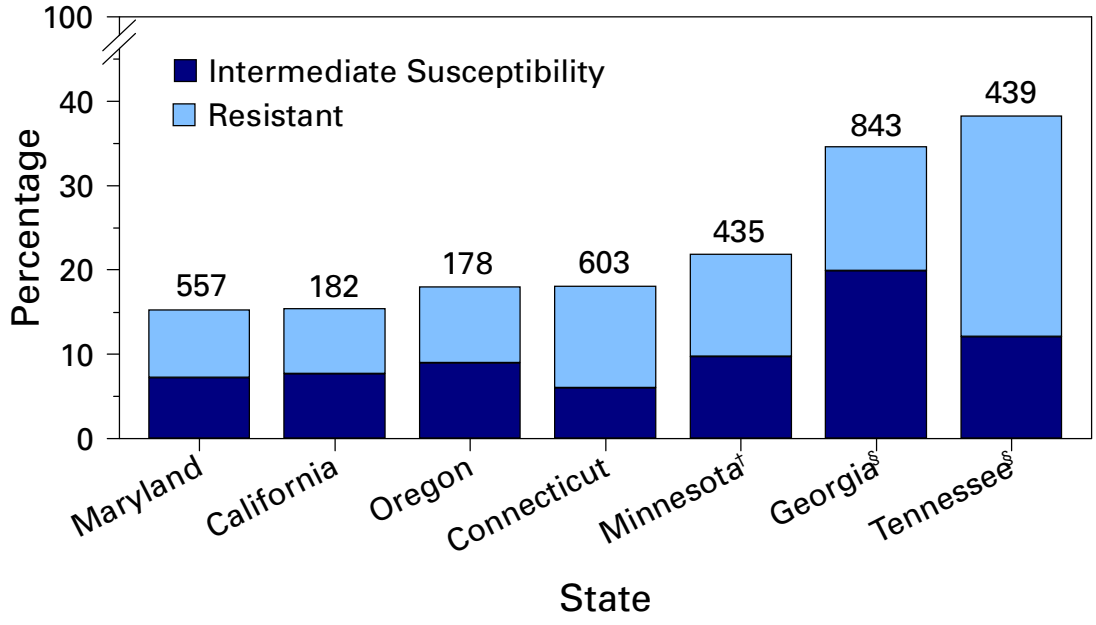
Streptococcus pneumoniae — *Continued*

sentativeness of the proportion of nonsusceptible isolates in the area. In particular, the analysis evaluated hospitals with a high proportion of pediatric cases (>30% of isolates from children aged <18 years), hospitals with a large proportion of cases among blacks (>50% of isolates from black patients), and hospitals with many isolates (≥30 isolates). The chi-square test was used for comparison of proportions.

In 1997, 3237 cases of invasive pneumococcal disease were detected in the surveillance areas. Of the isolates from these cases, 3123 (96.5%) were from blood, 65 (2.0%) from cerebrospinal fluid, 20 (0.6%) from pleural fluid, and 29 (0.9%) from other sources. Overall, 25.0% of isolates were not susceptible to penicillin: 11.4% had intermediate susceptibility and 13.6% were resistant. The proportion of penicillin-nonsusceptible isolates varied significantly among the areas (Figure 1). The proportion of nonsusceptible *S. pneumoniae* was lowest in Maryland (15.3%) and the highest in Tennessee (38.3%).

A substantial number of hospitals in each geographic area had proportions of penicillin-nonsusceptible isolates that were >5% below or above the proportion of nonsusceptible isolates for that area (Table 1). For example, the proportion of nonsusceptible isolates ranged from 0.0% to 39.1% in the 22 hospitals in Connecticut (Figure 2); seven (32%) hospitals had proportions within 5% of the overall proportion of nonsusceptible isolates for Connecticut (18.1%). The number of hospitals with the proportion of nonsusceptible isolates within 5% of the overall proportion for the surveillance area varied by site. In Maryland, significantly more hospitals (65%) had a

FIGURE 1. Number of invasive pneumococcal isolates and percentage of isolates that were nonsusceptible to penicillin, by geographic area* — United States, 1997



*The surveillance sites were San Francisco County, California; the entire state of Connecticut; the 20-county Atlanta area of Georgia; the six-county Baltimore area of Maryland; the seven-county Minneapolis-St. Paul area; the three-county Portland area of Oregon; and five urban counties of Tennessee.

†p=0.01 compared with proportion of penicillin-nonsusceptible isolates in Maryland.

§p<0.01 compared with proportion of penicillin-nonsusceptible isolates in California, Connecticut, Maryland, Minnesota, and Oregon.

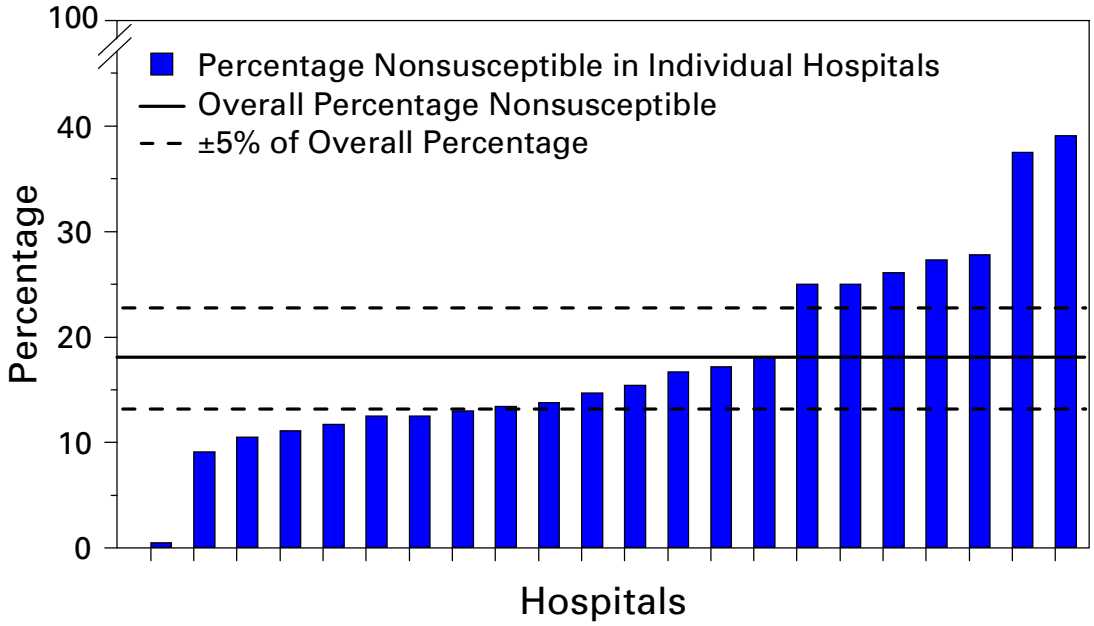
TABLE 1. Proportion of *Streptococcus pneumoniae* isolates that were nonsusceptible to penicillin (PNSP) in surveillance areas or in individual hospitals with ≥10 isolates, by site — selected sites, United States, 1997

Site	Surveillance area*		Hospital			Comparison of hospital and area proportions					
						Hospitals within 5% of area		Hospitals below 5% of area		Hospitals above 5% of area	
	No. isolates in area	Proportion of isolates that were PNSP†	No. hospitals with ≥10 isolates	Median no. isolates per hospital	Range of proportions of PNSP by hospital	No.	(%)	No.	(%)	No.	(%)
California	182	15.4%	4	26	10.0%–20.0%	1	(25)	3	(75)	0	(0)
Connecticut	603	18.1%	22	23	0.0%–39.1%	7	(32)	8	(36)	7	(32)
Georgia	843	34.6%	22	24	18.2%–66.7%	10	(46)	6	(27)	6	(27)
Maryland	557	15.3%	20	26	3.4%–40.0%	13	(65)§	3	(15)	4	(20)
Minnesota	435	21.8%	17	20	0.0%–50.0%	4	(24)	7	(41)	6	(35)
Oregon	178	18.0%	7	19	7.7%–29.4%	4	(57)	1	(14)	2	(29)
Tennessee	439	38.3%	21	15	7.1%–73.5%	5	(24)	8	(38)	8	(38)

*The surveillance areas were San Francisco County, California; the entire state of Connecticut; the 20-county Atlanta area of Georgia; the six-county Baltimore area of Maryland; the seven-county Minneapolis-St. Paul area of Minnesota; the three-county Portland area of Oregon; and five urban counties in Tennessee.
†Includes data from all hospitals in the area.
§$p<0.05$ when the proportion of hospitals within 5% of the overall proportion of PNSP in Maryland is compared with Tennessee and Minnesota.

Streptococcus pneumoniae — *Continued*

FIGURE 2. Percentage of penicillin-nonsusceptible isolates for hospitals with ≥10 pneumococcal isolates, overall prevalence of nonsusceptible isolates, and ±5% of overall prevalence — Connecticut, 1997



proportion of nonsusceptible isolates within 5% of the overall proportion than did hospitals in Tennessee (24%, chi-square=5.5, p=0.02) and Minnesota (24%, chi-square=4.8, p=0.03).

Demographic characteristics of a hospital's patient population that might influence representativeness of the overall proportion of nonsusceptible isolates were analyzed. Hospitals with a higher proportion of isolates from children (>30%) or black patients (>50%) and more isolates overall (≥30) did not differ significantly from other hospitals in the proportion of nonsusceptible isolates within 5% of the overall proportion in their area.

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Editorial Note: Drug-resistant *S. pneumoniae* (DRSP) has become more common in the United States (*2*), increasing from 14% of tested isolates in 1993–94 (*3*) to 25% in

Streptococcus pneumoniae — *Continued*

1997. The findings in this report indicate that despite the overall increase, the prevalence of resistance varies regionally. Resistance also varies substantially by hospital within a region, even in regions where overall resistance is low.

Sentinel surveillance for DRSP, which collects data from a selected sample of hospitals and clinics, is a focused, efficient, and economical method to gather regional epidemiologic information (*3–5*). Sentinel surveillance systems detected the emergence of DRSP in the United States in the late 1980s and provided some data to assess trends at the national and regional levels. However, the prevalence of DRSP among the patient populations of sentinel hospitals may not represent the prevalence among patient populations served by other area health-care facilities. Health departments that plan to target areas with high prevalences of DRSP for campaigns to promote judicious antibiotic use should consider that the prevalence of DRSP can vary markedly among hospitals in one geographic area. Although active population-based surveillance systems can provide a more representative picture of the distribution of resistance within a region, they may be too costly and labor-intensive for most health departments to maintain. The utility of alternative surveillance systems for DRSP, such as pooled hospital antibiograms, electronic laboratory surveillance, and sentinel networks that use many hospitals in selected regions of a state, is being evaluated.

The findings in this study have at least two limitations. First, despite previous associations between higher levels of resistance in children and lower levels in blacks (*6*), the findings described in this report indicate that these demographic characteristics were not consistently correlated with the proportion of nonsusceptible isolates in an individual hospital. The study may not have had sufficient data to define characteristics of hospitals and populations in which the prevalence of resistance is higher or lower than in the general population. Second, the representative range of nonsusceptibility for a surveillance area was defined as ±5% of the overall proportion of nonsusceptible isolates for the area. Further work is needed to define a clinically and epidemiologically meaningful threshold of antibiotic nonsusceptibility among pneumococci.

As the prevalence of resistance increases, the public health response requires a multidisciplinary approach. Surveillance can increase awareness among clinicians and public health practitioners and assist in targeting areas for intervention. Clinical guidelines can improve management of clinical syndromes commonly attributable to pneumococcal infections (*7,8*). Adoption of intervention strategies, including use of pneumococcal vaccines and campaigns to promote judicious use of antibiotics, offer potential to prevent infections with DRSP (*9*). Information and materials regarding judicious use of antimicrobial agents are available on the World-Wide Web at http://www.cdc.gov/ncidod/dbmd/antibioticresistance; additional surveillance data are available at http://www.cdc.gov/ncidod/dbmd/abcs. Information is also available from ABCs, Respiratory Diseases Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, Mailstop C-23, 1600 Clifton Road, N.E., Atlanta, GA 30333.

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Primary Multidrug-Resistant Tuberculosis — Ivanovo Oblast, Russia, 1999

The incidence of tuberculosis (TB) in the Russian Federation has increased steadily from 34 per 100,000 population in 1991 to 78 per 100,000 in 1998 (Central Tuberculosis Research Institute, unpublished data, 1999). To reverse this trend, in 1995, federal and local governments, with assistance from the World Health Organization (WHO), implemented a pilot project using the WHO TB-control strategy of directly observed therapy, short-course (DOTS)* in Ivanovo oblast (1998 population: approximately 1.3 million), a district 165 miles (280 km) northeast of Moscow. This report documents a substantial increase in primary multidrug-resistant TB (P-MDRTB) in the civilian population of Ivanovo from January 1996 through October 1998 and a high prevalence of alcoholism, previous incarceration, unemployment, and history of homelessness among persons infected with both drug-susceptible and drug-resistant *Mycobacterium tuberculosis* strains.

Despite implementation of DOTS in Ivanovo in October 1995, as of October 1998, approximately 30% of 514 never-treated (defined as <1 month of previous treatment), smear-positive TB patients had poor treatment outcomes (i.e., relapse, treatment failure, or death). P-MDRTB, defined as *M. tuberculosis* isolates resistant to at least isoniazid and rifampin in never-treated TB patients, was suspected to be a major con-

*DOTS consists of 1) government commitment to sustained TB control; 2) a bacteriologically confirmed diagnosis; 3) a standardized short-course multidrug regimen for treatment of active TB, provided under direct observation; 4) a regular, uninterrupted supply of drugs and diagnostic materials; and 5) the systematic monitoring and evaluation of program activities. In other countries, DOTS programs have resulted in successful completion of therapy for ≥80% of patients (*1–3*).

Multidrug-Resistant Tuberculosis — Continued

tributing factor to these poor outcomes. WHO requested CDC's assistance to investigate trends in P-MDRTB, identify epidemiologic risk factors for P-MDRTB, and examine outcomes for persons with P-MDRTB.

The Ivanovo TB laboratory performed drug-susceptibility testing on all 514 *M. tuberculosis* isolates; 26 (5%) had primary multidrug resistance. The percentage of P-MDRTB cases more than doubled after program implementation, from 3.8% (seven of 186) in 1996 to 9.4% (11 of 117) during the first 9 months of 1998 (chi-square for linear trend; $p<0.05$).

To identify risk factors for P-MDRTB, a case-control study was conducted in February 1999 of never-treated, smear- and culture-positive pulmonary TB patients reported during October 1995–October 1998. A case of P-MDRTB was defined as culture-confirmed MDRTB in a patient; controls were patients with culture-confirmed drug-susceptible TB. Controls were frequency-matched to cases by quarter-year of report; three controls per case were chosen randomly. Risk factor data, drug susceptibility results, and clinical outcomes were obtained from the WHO project database, a detailed local TB database, and medical chart reviews.

Twenty-six P-MDRTB case-patients and 76 frequency-matched controls were enrolled in the study. The mean ages of both case-patients and controls were similar (44 years versus 46 years; range: 15–76 years); 92% of case-patients and 84% of controls were male. None of the case-patients or controls were infected with human immunodeficiency virus. Case-patients were more likely than controls to have been hospitalized previously (46% versus 25%; odds ratio [OR]=1.9; 95% confidence interval [CI]=0.8–4.3), incarcerated previously (44% versus 29%; OR=1.6; 95% CI=0.7–3.6), unemployed at time of diagnosis (58% versus 55%; OR=1.3; 95% CI=0.6–3.0), or to have a history of alcoholism (65% versus 61%; OR=1.3; 95% CI=0.6–2.9), but the differences were not statistically significant. However, compared with controls, case-patients were significantly more likely to have a history of homelessness (23% versus 5%; OR=3.1; 95% CI=1.1–8.8; p=0.04).

During October 1995–October 1998, 5% (one of 19) of case-patients compared with 77% (43 of 56) of controls were cured (i.e., negative sputum smear at treatment completion and on at least one previous occasion [*3*]) by the standardized 6-month DOTS treatment regimen ($p<0.001$). Furthermore, 27% (six of 22) of case-patients, compared with 8% (six of 75) of controls, died of TB (hazard ratio for death associated with TB among case-patients=2.2; p=0.17, Cox proportional hazard analysis).

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Editorial Note: Worldwide, approximately 8 million TB cases and 2 million TB deaths occur annually (*4*). MDRTB is present on five continents and is increasing (*5*). The four-drug regimen used as part of the WHO DOTS strategy results in high cure rates in areas with low levels of resistance. However, in communities such as Ivanovo that have high levels of drug resistance, additional strategies are needed for patients with

Multidrug-Resistant Tuberculosis — Continued

drug-resistant TB, including rapid assessment of drug susceptibilities and use of alternative, "second-line" TB drugs (*5,6*).

In the Russian Federation, the incidence of all TB and of drug-resistant TB is increasing in the civilian and the prison populations (*7,8*). The findings in this report identify a significant increase in P-MDRTB in the civilian population of Ivanovo from January 1996 through October 1998 and a high prevalence of alcoholism, previous incarceration, unemployment, and history of homelessness among persons infected with drug-resistant and drug-susceptible *M. tuberculosis* strains. Drug resistance contributed to 17% of the poor treatment outcomes observed in Ivanovo; however, most of these poor outcomes probably were associated with delayed diagnosis, treatment interruption, failure to ensure patient adherence, and other program-related factors (*5*). Analysis of the impact of these factors on treatment outcome among the patients in Ivanovo is under way.

The findings in this report are subject to at least three limitations. First, details about previous prison and hospitalization history were not available for all study participants. This limited the ability to identify specific high-risk exposures in the community. Second, the relatively small sample size limited the power to detect statistically significant differences between cases and controls. Third, case-patients and controls described in this report are limited to Ivanovo and may not be representative of TB patients in other geographic regions within Russia.

On the basis of these findings, CDC made two recommendations to improve the outcomes of TB-control activities in Ivanovo. First, to prevent further spread of drug-resistant and drug-susceptible TB, TB-control efforts must target high-risk populations for active case finding and assurance of completion of therapy. Second, rapid drug-susceptibility testing and the use of appropriate second-line TB drug regimens for patients with demonstrated MDRTB should be implemented to improve treatment outcomes in active TB patients and to reduce the widespread emergence of MDRTB in this community. Until second-line drug susceptibility testing is widely available, one or more second-line treatment regimens will need to be used empirically (based on knowledge of drug-resistance profiles in the community) for these patients. Expansion of rapid drug susceptibility testing and a reliable drug supply will facilitate the design of more individualized treatment regimens in patients with drug-resistant TB, improve the likelihood of cure, prevent the transmission of drug-resistant TB, and avert premature deaths attributable to MDRTB.

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Mortality Patterns — United States, 1997

In 1997, a total of 2,314,245 deaths were registered in the United States—445 fewer than the record high of 2,314,690 in 1996 (*1*). The overall age-adjusted death rate* was 479.1 per 100,000 standard (1940) population, the lowest ever recorded. In 1997, nearly two thirds of deaths resulted from heart disease, cancer, and stroke. This report summarizes mortality patterns in 1997 (*1*) and compares them with patterns in 1996.

National death statistics are based on information from death certificates filed in state vital statistics offices and are compiled by CDC into a national database. Cause-of-death statistics are based on the underlying cause of death†. Causes of death are recorded on the death certificate by the attending physician, medical examiner, or coroner using a format specified by the World Health Organization and endorsed by CDC.

Compared with 1996, death rates decreased for all age groups except persons aged ≥85 years. The largest percentage decreases occurred in persons aged 25–34 years (9.2%), 35–44 years (8.2%), and 1–4 years (6.5%).

From 1996 to 1997, age-adjusted death rates declined among whites (from 466.8 to 456.5) and among blacks (from 738.3 to 705.3)§. In 1997, the overall death rates for the black population were higher than for the white population; for seven of the 15 leading causes, age-adjusted death rates were at least 1.5 times greater for blacks than for whites. The largest differences in rates were for human immunodeficiency virus (HIV) infection (7.5 times) and homicide (6.0 times) (Table 1)¶. Death rates were lower for blacks than whites for three leading causes: chronic obstructive pulmonary disease (0.8 times), Alzheimer's disease (0.7 times), and suicide (0.6 times). The 1997 age-adjusted death rates declined 4.3% from 1996 for the Hispanic population (from 365.9 to 350.3). The three leading causes of death for Hispanics were heart disease, cancer, and unintentional injuries.

In 1997, age-adjusted death rates for males were higher than for females (Table 1). From 1996 to 1997, age-adjusted death rates declined for males (from 623.7 to 602.8)

* Age-adjusted to the 1940 U.S. population. Age-adjusted death rates indicate changes in the risk for death more effectively than crude death rates and are better indicators for comparing mortality of population groups with different age structures.

† Defined by the World Health Organization's *International Classification of Diseases, Ninth Revision* (ICD-9) as "(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury."

§ Hispanic ethnicity is independent of race, therefore, Hispanics are included in the race categories. Data for other racial groups were not included because of reporting inaccuracies on death certificates and population censuses.

¶ "Motor-vehicle accidents" and "all other accidents and adverse effects" are not included as causes of death for which the rate has decreased because these causes are subcategories of the leading cause "accidents and adverse effects." When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."

TABLE 1. Age-adjusted death rates* for 1997, percentage changes in age-adjusted death rates for the 15 leading causes of death, 1996–1997 and 1979–1997, and ratio of age-adjusted death rates, by sex and race of decedent, 1997 — United States

Rank†	Cause of death (ICD-9§ code)	1997 Age-adjusted death rate	Percentage change		Male:female	Black:white¶
			1996 to 1997	1979 to 1997		
1	Diseases of heart (390–398, 402, 404–429)	130.5	–3.0	–34.6	1.8	1.5
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (140–208)	125.6	–1.8	– 4.0	1.4	1.3
3	Cerebrovascular diseases (430–438)	25.9	–1.9	–37.7	1.2	1.8
4	Chronic obstructive pulmonary diseases and allied conditions (490–496)	21.1	0.5	44.5	1.5	0.8
5	Accidents** and adverse effects (E800–E949)	30.1	–1.0	–29.8	2.4	1.2
	Motor vehicle accidents (E810–E825)	*15.9*	*–1.9*	*–31.5*	*2.1*	*1.1*
	All other accidents and adverse effects (E800–E807, E826–E949)	*14.2*	*0.0*	*–27.6*	*2.8*	*1.4*
6	Pneumonia and influenza (480–487)	12.9	0.8	15.2	1.5	1.4
7	Diabetes mellitus (250)	13.5	–0.7	37.8	1.2	2.4
8	Suicide (E950–E959)	10.6	–1.9	– 9.4	4.2	0.6
9	Nephritis, nephrotic syndrome, and nephrosis (580–589)	4.4	2.3	2.3	1.5	2.6
10	Chronic liver disease and cirrhosis (571)	7.4	–1.3	–38.3	2.3	1.2
11	Alzheimer's disease (331.0)	2.7	0.0	1250.0	0.9	0.7
12	Septicemia (038)	4.2	2.4	82.6	1.2	2.8
13	Homicide and legal intervention (E960–E978)	8.0	–5.9	–21.6	3.8	6.0
14	Human immunodeficiency virus infection (042–044††)	5.8	–47.7	—§§	3.5	7.5
15	Atherosclerosis (440)	2.1	–4.5	–63.2	1.3	1.0
	All causes	**479.1**	**–2.5**	**–17.0**	**1.6**	**1.5**

* Per 100,000 standard population, age-adjusted to the 1940 U.S. population.
† Based on number of deaths.
§ *International Classification of Diseases, Ninth Revision.*
¶ Both groups include Hispanics. Data for other racial groups were not included because of reporting inaccuracies on death certificates and population censuses.
** When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."
†† These codes are not printed in ICD-9 but were introduced as *042–*044 by CDC's National Center for Health Statistics for classifying and coding human immunodeficiency virus infection.
§§ Data not available.

Mortality Patterns — Continued

and for females (from 381.0 to 375.7). Of the 15 leading causes of death, the greatest difference between the rates for the sexes was for suicide; the suicide rate was more than four times greater for males than for females. Also higher for males was the death rate for homicide (3.8 times) and HIV infection (3.5 times).

In 1997, 327 women died from maternal causes, including complications of pregnancy, childbirth, and the puerperium** within 42 days after pregnancy termination. The maternal mortality rate was 8.4 deaths per 100,000 live births, and was more than three times higher for black than for white women.

In 1997, the infant mortality rate was 7.2 infant deaths per 1000 live births; in 1996, infant mortality was higher but the difference was not statistically significant. Among the 10 leading causes of infant death††, only pneumonia and influenza decreased by a statistically significant amount during 1996–1997. The infant mortality rate was two times higher for black infants than for white infants (*1*).

From 1996 to 1997, mortality increased from septicemia (2.4%) and kidney disease (4.4%); however, mortality decreased for the three leading causes of death: heart disease (3.0%), cancer (1.8%), and stroke (1.9%). HIV-infection mortality dropped in ranking from the eighth leading cause in 1996 to the 14th in 1997 (Table 1). The age-adjusted death rate for HIV infection decreased 47.7%, the largest decline among the 15 leading causes of death. In 1997, 16,516 deaths were attributed to HIV infection. Age-adjusted death rates for HIV were highest for black males (38.5), black females (13.3), white males (5.6), and white females (1.0). HIV infection continued to be the fifth leading cause of death for black females aged 15–24 years, the sixth for black males aged 5–14 years, the sixth for black males aged 15–24 years, and the leading cause for black males aged 25–44 years.

In 1997, overall life expectancy (LE) at birth was 76.5 years (Figure 1). The overall LE increased by 0.4 years from the 1996 LE primarily because of decreases in mortality from HIV infection, heart disease, cancer, stroke, and homicide. White females continue to have the highest LE at birth (79.9 years), followed by black females (74.7 years), white males (74.3 years), and black males (67.2 years). All four race-sex groups had increases in LE during 1996–1997 and achieved record high life expectancies. The gap between the white and black population is 6.0 years, down from 6.6 years in 1996. The gap between men and women is 5.8 years, down from 6.0 years in 1996.

Reported by: Mortality Statistics Br, Div of Vital Statistics, National Center for Health Statistics, CDC.

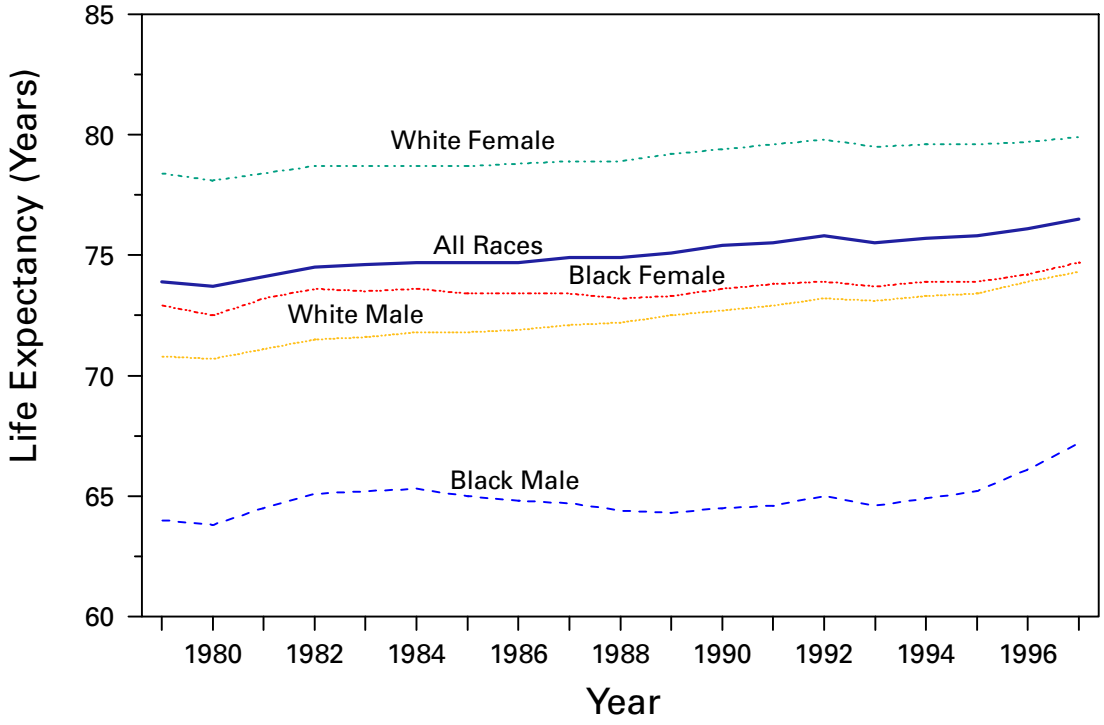
Editorial Note: This report is based on all the death records registered in the United States in 1997 and indicates that decreases have occurred in the risk for death from the top three causes and from HIV infection. Progress in preventing and treating these conditions, however, is offset by increases in mortality from septicemia, kidney disease, and drug-induced causes. The differences in LE by race and sex narrowed in

**ICD-9, codes 630–676.

††Congenital anomalies; disorders relating to short gestation and unspecified low birthweight; sudden infant death syndrome; respiratory distress syndrome; newborn affected by maternal complications of pregnancy; newborn affected by complications of placenta, cord, and membranes; infections specific to the perinatal period; accidents and adverse effects; intrauterine hypoxia and birth asphyxia; and pneumonia and influenza.

Mortality Patterns — Continued

FIGURE 1. Life expectancy at birth, by year of birth, race*, and sex — United States, 1979–1997



*Data for other racial groups were not included because of reporting inaccuracies on death certificates and population censuses.

1997 but disparities remain large and may reflect such factors as socioeconomic status, access to medical care, and the prevalence of specific risks.

Advances in treatment for HIV and acquired immunodeficiency syndrome (AIDS), such as the use of triple combination antiretroviral therapy, resulted in decreases in AIDS incidence and HIV mortality and increases in the number of persons living with HIV and AIDS (*2,3*). During 1987–1994, HIV infection mortality increased an average of 16% annually. In 1995, the age-adjusted death rate for HIV infection was approximately the same as in 1994. Then mortality began to decrease: in 1996 by 28.8% and in 1997 by 47.7%.

LE has increased every year since 1993, the major reasons during 1996–1997 being reduced risk for homicides among teenagers and HIV infection among working age adults, and reduced risk for deaths attributable to heart disease, cancer, and stroke among older persons.

Data in this report are subject to at least two limitations. First, death rates for the American Indian/Alaskan Native and Asian/Pacific Islander populations are not included because of inaccuracies on death certificates and in population censuses that result in reported death rates being lower than actual death rates (*4*). Similar but less severe problems affect the Hispanic population (*4*). Targeted research and evaluation is needed to assess reporting problems and to identify methods that would compensate for inaccuracies (*4*). A second limitation is the quality of medical cause-of-death

Mortality Patterns — Continued

information on the death certificate. Physicians, medical examiners, and coroners sometimes are not trained in the correct completion of this form. Approaches to address this problem include expanded availability of continuing medical education, instructional materials (*5*–*7*), and World-Wide Web resources[§§].

Mortality data from the National Vital Statistics System have been used to document public health trends since 1900 and are key indicators for monitoring groups at risk for death from specific diseases and injuries (*8*). Additional information is available from the National Center for Health Statistics, CDC, 6525 Belcrest Rd., Room 1064, Hyattsville, MD 20782; telephone (301) 436-8500; or from the World-Wide Web, http://www.cdc.gov/nchswww/about/major/dvs/mortdata.htm.

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[§§]From the National Center for Health Statistics, information on writing cause-of-death material is available at http://www.cdc.gov/nchswww/about/major/dvs/handbk.htm, and from the National Association of Medical Examiners, information is available at http://www.thename.org/ main.htm. References to sites of nonfederal organizations on the World-Wide Web are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites.

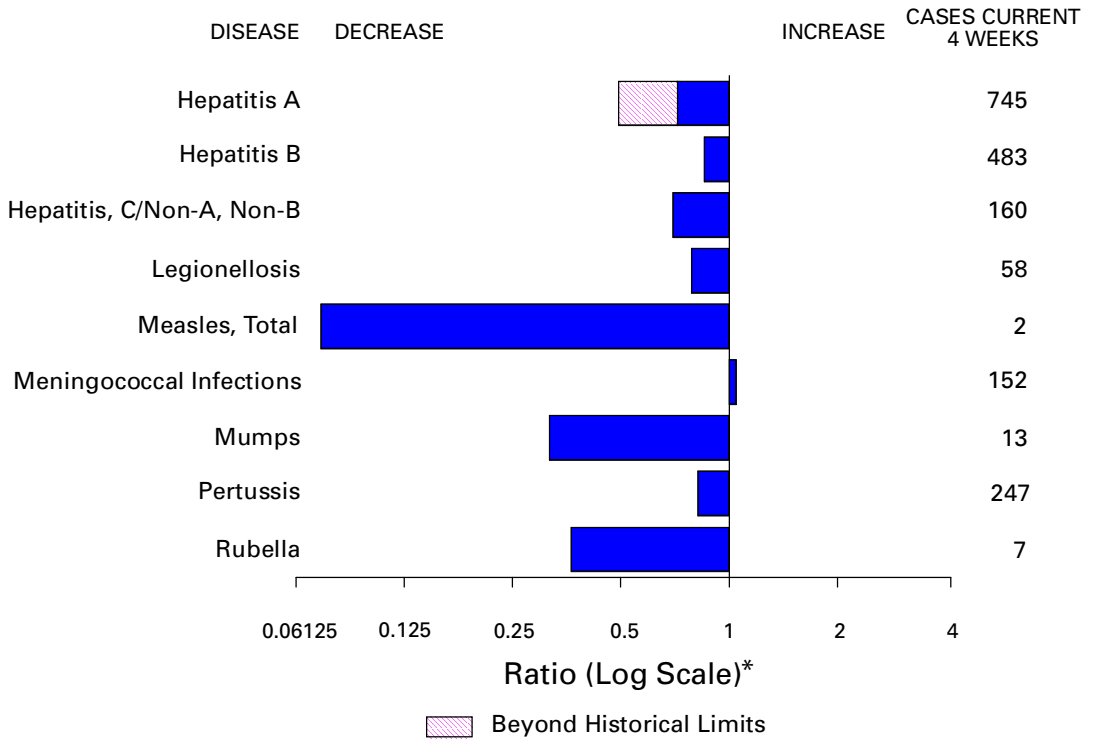
Addendum: Vol. 48, No. 29

In the article "Control of Infectious Diseases," on page 622, at the end of the second paragraph under Sanitation and Hygiene, a footnote should appear. The footnote should read "This trend in mortality does not take into account changes in population composition or changes between revisions of the *International Classification of Diseases* over time. If these changes were taken into account, the downward trend in TB mortality from 1900 to 1940 would not change substantially."

Erratum: Vol. 48, No. 29

In Table IV, "Deaths in 122 U.S. cities, week ending July 24, 1999 (29th Week)," mortality data for the 122 cities were incorrect. The corrected version of Table IV for week 29 is available on the World-Wide Web as part of the interactive *MMWR* tables (Mortality) Table IV, http://wonder.cdc.gov/mmwr/mmwrmort.htm. Paper copies of the corrected table are available from the Surveillance Systems Branch, Division of Public Health Surveillance and Informatics, Epidemiology Program Office, CDC, Mailstop K-74, 4770 Buford Highway, Atlanta, GA 30341; telephone (770) 488-8359; fax (800) 767-8542.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending July 31, 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 July 31, 1999 (30th Week)

	Cum. 1999		Cum. 1999
Anthrax	-	HIV infection, pediatric*§	86
Brucellosis*	21	Plague	2
Cholera	4	Poliomyelitis, paralytic	-
Congenital rubella syndrome	3	Psittacosis*	15
Cyclosporiasis*	14	Rabies, human	-
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	254
Encephalitis: California*	4	Streptococcal disease, invasive Group A	1,334
eastern equine*	2	Streptococcal toxic-shock syndrome*	27
St. Louis*	-	Syphilis, congenital¶	109
western equine*	-	Tetanus	14
Ehrlichiosis human granulocytic (HGE)*	72	Toxic-shock syndrome	71
human monocytic (HME)*	17	Trichinosis	5
Hansen Disease*	50	Typhoid fever	167
Hantavirus pulmonary syndrome*†	7	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	38		

-: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 July 25, 1999.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending July 31, 1999, and August 1, 1998 (30th 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	26,427	27,228	329,744	327,356	793	1,189	1,132	1,267	696	1,091
NEW ENGLAND	1,298	1,007	10,882	11,755	45	90	140	162	117	150
Maine	43	21	193	573	12	19	15	21	-	-
N.H.	31	23	528	555	7	11	18	22	19	30
Vt.	6	14	273	234	9	14	16	8	7	6
Mass.	842	506	5,276	4,809	17	41	75	85	52	84
R.I.	70	81	1,343	1,379	-	5	16	5	6	1
Conn.	306	362	3,269	4,205	-	-	U	21	33	29
MID. ATLANTIC	6,746	7,543	39,234	34,556	112	326	80	136	27	47
Upstate N.Y.	846	966	N	N	71	193	72	93	-	-
N.Y. City	3,592	4,053	21,145	15,196	22	121	2	8	4	9
N.J.	1,278	1,458	6,197	6,665	9	12	6	35	23	28
Pa.	1,030	1,066	11,892	12,695	10	-	N	N	-	10
E.N. CENTRAL	1,719	2,071	48,027	56,524	79	143	211	227	147	188
Ohio	262	435	13,550	15,395	25	44	74	54	52	34
Ind.	224	353	6,367	6,124	14	30	30	58	20	29
Ill.	783	818	16,016	14,932	15	41	65	63	33	39
Mich.	360	350	12,094	12,282	25	18	42	52	17	34
Wis.	90	115	U	7,791	-	10	N	N	25	52
W.N. CENTRAL	611	528	18,494	19,532	66	164	234	184	114	178
Minn.	105	102	3,264	3,999	14	55	81	70	69	85
Iowa	55	49	1,398	2,217	16	39	45	48	12	35
Mo.	295	243	7,870	7,002	12	13	23	18	25	29
N. Dak.	4	4	325	558	11	18	3	6	1	12
S. Dak.	13	11	832	918	3	17	17	8	4	12
Nebr.	45	48	1,919	1,624	9	18	54	19	-	-
Kans.	94	71	2,886	3,214	1	4	11	15	3	5
S. ATLANTIC	7,281	6,810	74,882	58,492	189	126	147	95	72	91
Del.	95	90	1,564	1,438	-	-	2	-	-	1
Md.	793	824	6,397	3	10	12	10	16	-	9
D.C.	274	566	N	N	7	4	-	1	-	-
Va.	372	501	8,417	6,992	10	1	35	-	27	31
W. Va.	40	59	1,088	1,381	-	1	5	6	1	3
N.C.	482	459	13,363	11,752	5	-	27	18	25	32
S.C.	683	449	8,635	10,786	-	-	14	5	10	3
Ga.	1,091	727	18,331	13,290	93	42	14	39	-	-
Fla.	3,451	3,135	17,087	12,850	64	66	40	10	9	12
E.S. CENTRAL	1,145	1,079	23,055	22,962	12	17	65	76	34	43
Ky.	176	155	3,333	3,601	2	7	15	24	-	-
Tenn.	442	374	8,057	7,503	4	6	31	32	18	26
Ala.	287	329	6,616	5,903	4	-	15	17	13	16
Miss.	240	221	5,049	5,955	2	4	4	3	3	1
W.S. CENTRAL	2,858	3,318	47,996	50,296	34	21	41	52	47	64
Ark.	107	123	3,394	2,079	-	4	6	6	5	8
La.	541	581	7,726	8,260	21	10	3	3	6	2
Okla.	74	184	4,738	5,729	3	3	15	10	9	5
Tex.	2,136	2,430	32,138	34,228	10	4	17	33	27	49
MOUNTAIN	1,021	965	19,002	18,429	49	77	94	167	56	146
Mont.	5	18	817	720	8	6	5	8	-	2
Idaho	16	19	786	1,125	3	14	6	15	6	11
Wyo.	4	1	431	374	-	-	3	48	5	53
Colo.	197	186	4,104	4,580	4	6	32	32	23	30
N. Mex.	65	153	2,644	2,083	20	32	6	14	1	11
Ariz.	518	376	7,469	6,288	9	12	18	20	11	15
Utah	84	70	1,126	1,323	-	-	17	23	8	15
Nev.	132	142	1,625	1,936	5	7	7	7	2	9
PACIFIC	3,748	3,907	48,172	54,810	207	225	120	168	82	184
Wash.	218	266	6,728	6,435	-	-	34	29	26	49
Oreg.	118	117	3,418	3,070	79	23	27	44	23	51
Calif.	3,348	3,411	35,409	42,848	128	199	59	93	28	77
Alaska	13	17	1,011	1,105	-	-	-	2	-	-
Hawaii	51	96	1,606	1,352	-	3	-	-	5	7
Guam	5	-	226	221	-	-	N	N	-	-
P.R.	821	1,136	U	U	-	-	5	-	U	U
V.I.	19	18	N	N	-	-	N	N	U	U
Amer. Samoa	-	-	U	U	-	-	N	N	U	U
C.N.M.I.	-	-	N	N	-	-	N	N	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 July 25, 1999.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending July 31, 1999, and August 1, 1998 (30th 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	178,542	188,901	2,085	1,838	524	707	4,565	6,959
NEW ENGLAND	3,277	3,358	59	45	35	43	1,269	2,505
Maine	15	36	2	-	4	1	-	30
N.H.	53	52	-	-	3	3	2	25
Vt.	33	20	4	2	8	3	4	6
Mass.	1,474	1,174	50	40	11	20	436	501
R.I.	342	204	3	3	3	8	216	162
Conn.	1,360	1,872	-	-	6	8	611	1,781
MID. ATLANTIC	21,780	20,946	97	125	101	166	2,462	3,396
Upstate N.Y.	3,517	3,947	62	63	31	44	1,612	1,690
N.Y. City	9,103	6,885	-	-	7	28	12	115
N.J.	3,437	4,279	-	-	5	9	124	641
Pa.	5,723	5,835	35	62	58	85	714	950
E.N. CENTRAL	31,948	38,140	1,077	424	140	247	70	405
Ohio	8,321	9,689	1	7	47	89	46	21
Ind.	3,750	3,511	1	5	43	45	21	16
Ill.	11,322	12,261	21	28	10	28	2	11
Mich.	8,555	9,302	472	279	37	46	1	11
Wis.	U	3,377	582	105	3	39	U	346
W.N. CENTRAL	7,876	9,551	78	24	29	37	83	77
Minn.	1,208	1,463	4	7	1	3	37	46
Iowa	367	700	-	7	13	5	15	17
Mo.	4,093	5,187	66	7	10	9	14	7
N. Dak.	31	49	-	-	-	-	1	-
S. Dak.	83	144	-	-	2	2	-	-
Nebr.	879	632	3	2	3	15	6	3
Kans.	1,215	1,376	5	1	-	3	10	4
S. ATLANTIC	54,524	46,567	132	63	71	79	481	440
Del.	967	782	-	-	6	8	13	36
Md.	5,625	11	30	8	12	24	339	319
D.C.	1,456	2,606	-	-	1	5	3	4
Va.	5,682	4,008	10	7	16	8	48	31
W. Va.	307	472	13	4	N	N	12	7
N.C.	11,505	10,086	27	14	12	6	42	25
S.C.	4,645	6,991	13	3	7	6	4	3
Ga.	12,143	11,295	1	9	-	3	-	2
Fla.	12,194	10,316	38	18	17	18	20	13
E.S. CENTRAL	18,550	21,694	187	102	62	40	70	45
Ky.	1,494	2,053	9	16	45	17	19	11
Tenn.	6,401	6,396	79	84	14	11	28	23
Ala.	5,797	7,444	1	2	3	5	12	11
Miss.	4,858	5,801	98	-	-	7	11	-
W.S. CENTRAL	26,402	30,484	142	305	3	13	17	13
Ark.	1,706	2,323	8	12	-	1	2	6
La.	6,054	6,840	100	19	1	2	-	1
Okla.	2,336	3,120	12	7	2	8	4	2
Tex.	16,306	18,201	22	267	-	2	11	4
MOUNTAIN	5,283	5,047	89	268	31	40	7	6
Mont.	22	26	4	5	-	2	-	-
Idaho	41	104	4	85	-	-	1	1
Wyo.	13	17	30	62	-	1	1	1
Colo.	1,260	1,174	15	15	9	7	-	-
N. Mex.	536	500	5	61	1	2	1	2
Ariz.	2,651	2,283	21	4	4	9	-	-
Utah	104	139	5	19	11	16	2	-
Nev.	656	804	5	17	6	3	2	2
PACIFIC	8,902	13,114	224	482	52	42	106	72
Wash.	1,176	1,097	10	11	9	8	3	4
Oreg.	466	436	14	10	N	N	6	11
Calif.	6,874	11,120	200	406	42	33	97	56
Alaska	169	184	-	1	1	-	-	1
Hawaii	217	277	-	54	-	1	-	-
Guam	32	27	-	-	-	2	-	-
P.R.	170	226	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	24	-	-	-	-	-	-

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

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending July 31, 1999, and August 1, 1998 (30th 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	651	732	3,164	4,302	16,821	19,798	13,320	17,526
NEW ENGLAND	25	42	469	791	863	1,276	945	1,189
Maine	2	3	83	136	76	97	53	39
N.H.	2	3	31	44	75	97	80	128
Vt.	2	-	63	35	43	69	37	50
Mass.	8	16	101	255	613	708	498	706
R.I.	3	2	59	44	56	83	48	31
Conn.	8	18	132	277	U	222	229	235
MID. ATLANTIC	139	204	613	920	1,891	3,427	1,511	3,328
Upstate N.Y.	42	47	427	638	641	792	580	804
N.Y. City	47	114	U	U	391	1,116	489	965
N.J.	29	24	113	115	332	695	442	647
Pa.	21	19	73	167	527	824	-	912
E.N. CENTRAL	65	75	56	76	2,272	3,424	1,756	2,537
Ohio	14	4	20	42	617	817	371	704
Ind.	10	7	-	5	243	393	201	333
Ill.	19	32	2	8	842	1,042	399	648
Mich.	20	27	31	19	532	676	534	572
Wis.	2	5	3	2	38	496	251	280
W.N. CENTRAL	33	51	350	469	1,181	1,235	1,029	1,294
Minn.	6	26	64	78	303	297	347	346
Iowa	12	4	76	101	145	211	70	176
Mo.	11	12	9	23	381	351	469	477
N. Dak.	-	2	88	89	20	36	4	49
S. Dak.	-	-	44	109	54	47	26	63
Nebr.	-	1	2	3	113	102	-	23
Kans.	4	6	67	66	165	191	113	160
S. ATLANTIC	201	151	1,204	1,423	3,837	3,433	2,725	2,819
Del.	1	1	29	26	51	41	84	70
Md.	61	50	238	292	429	470	400	458
D.C.	11	12	-	-	51	45	-	-
Va.	44	26	304	364	662	525	507	477
W. Va.	1	1	69	51	83	82	81	89
N.C.	12	12	240	364	536	488	589	625
S.C.	4	4	97	92	246	220	186	221
Ga.	18	17	122	121	576	533	651	620
Fla.	49	28	105	113	1,203	1,029	227	259
E.S. CENTRAL	13	17	167	172	953	1,008	500	780
Ky.	4	2	24	22	188	213	-	96
Tenn.	5	9	60	93	254	296	250	387
Ala.	3	4	83	55	297	267	217	234
Miss.	1	2	-	2	214	232	33	63
W.S. CENTRAL	9	13	72	109	1,178	1,732	1,319	1,409
Ark.	-	1	14	19	228	198	76	153
La.	6	5	-	-	159	237	220	369
Okla.	2	1	58	90	196	206	130	64
Tex.	1	6	-	-	595	1,091	893	823
MOUNTAIN	24	35	114	112	1,633	1,242	1,077	1,186
Mont.	4	-	41	32	36	49	1	30
Idaho	1	4	-	-	50	58	45	55
Wyo.	1	-	31	44	23	37	22	33
Colo.	8	9	1	4	441	312	444	297
N. Mex.	2	11	4	3	207	137	110	131
Ariz.	5	5	32	23	508	356	402	407
Utah	2	1	4	6	262	180	-	119
Nev.	1	5	1	-	106	113	53	114
PACIFIC	142	144	119	230	3,013	3,021	2,458	2,984
Wash.	11	14	-	-	354	241	279	361
Oreg.	14	12	1	1	262	162	327	198
Calif.	110	115	111	208	2,145	2,472	1,665	2,273
Alaska	-	1	7	21	24	25	6	17
Hawaii	7	2	-	-	228	121	181	135
Guam	-	1	-	-	20	14	-	-
P.R.	-	-	43	31	223	372	-	-
V.I.	U	U	U	U	-	-	-	-
Amer. Samoa	U	U	U	U	-	-	-	-
C.N.M.I.	-	-	-	-	-	17	-	-

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 July 31, 1999, and August 1, 1998 (30th 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	6,966	10,442	3,073	5,747	3,535	4,013	7,614	9,155
NEW ENGLAND	167	249	145	217	32	40	229	248
Maine	4	8	-	-	-	1	12	6
N.H.	7	10	6	12	-	1	4	6
Vt.	4	4	3	-	3	4	-	2
Mass.	138	161	93	145	20	23	135	131
R.I.	14	20	9	12	1	1	25	34
Conn.	U	46	34	48	8	10	53	69
MID. ATLANTIC	418	1,458	213	1,218	147	168	1,403	1,652
Upstate N.Y.	143	287	34	97	19	23	159	205
N.Y. City	100	464	81	487	64	32	783	802
N.J.	103	444	98	437	27	60	301	351
Pa.	72	263	-	197	37	53	160	294
E.N. CENTRAL	1,117	1,534	584	780	657	586	662	973
Ohio	282	315	54	73	58	85	143	151
Ind.	103	102	27	29	197	109	U	97
Ill.	477	822	354	648	289	244	316	459
Mich.	207	148	103	4	113	104	164	200
Wis.	48	147	46	26	U	44	39	66
W.N. CENTRAL	614	527	406	230	78	88	263	251
Minn.	115	92	135	98	5	6	95	81
Iowa	13	40	10	32	7	-	29	20
Mo.	413	65	237	51	54	69	97	93
N. Dak.	2	4	-	3	-	-	2	3
S. Dak.	9	27	4	19	-	1	9	14
Nebr.	37	279	-	15	5	4	12	8
Kans.	25	20	20	12	7	8	19	32
S. ATLANTIC	1,335	2,200	292	721	1,151	1,505	1,685	1,547
Del.	7	13	4	9	6	16	12	20
Md.	77	114	22	37	234	421	155	166
D.C.	34	12	-	-	34	45	29	66
Va.	58	86	28	47	96	97	121	174
W. Va.	6	11	3	7	2	2	26	25
N.C.	125	180	57	89	287	436	230	237
S.C.	78	91	37	34	125	179	189	187
Ga.	123	572	37	158	194	164	380	260
Fla.	827	1,121	104	340	173	145	543	412
E.S. CENTRAL	733	495	360	308	636	707	307	677
Ky.	142	78	-	36	46	67	82	103
Tenn.	469	88	319	122	368	333	U	228
Ala.	67	293	37	148	136	158	169	214
Miss.	55	36	4	2	86	149	56	132
W.S. CENTRAL	985	2,085	741	636	527	536	835	1,314
Ark.	53	116	21	28	40	74	91	71
La.	76	146	53	178	121	201	U	75
Okla.	321	150	102	34	122	22	80	100
Tex.	535	1,673	565	396	244	239	664	1,068
MOUNTAIN	435	640	219	383	148	147	235	312
Mont.	6	5	-	3	-	-	5	12
Idaho	10	12	5	8	1	1	14	7
Wyo.	2	1	1	-	-	1	1	2
Colo.	67	86	56	65	1	8	U	35
N. Mex.	52	159	17	74	10	19	33	36
Ariz.	237	336	134	210	128	103	136	123
Utah	31	21	-	16	2	3	27	36
Nev.	30	20	6	7	6	12	19	61
PACIFIC	1,162	1,254	113	1,254	159	236	1,995	2,181
Wash.	57	69	51	70	39	23	91	144
Oreg.	39	74	40	71	3	2	64	70
Calif.	1,042	1,084	-	1,084	114	210	1,711	1,834
Alaska	-	4	-	2	1	-	35	32
Hawaii	24	23	22	27	2	1	94	101
Guam	7	24	-	-	1	1	-	50
P.R.	35	33	-	-	100	119	41	88
V.I.	-	-	-	-	U	U	U	U
Amer. Samoa	-	-	-	-	U	U	U	U
C.N.M.I.	-	13	-	-	-	142	-	67

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 1998 and 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 July 31, 1999, and August 1, 1998 (30th 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	723	693	8,740	13,012	3,692	5,526	-	32	-	16	48	47
NEW ENGLAND	54	44	119	169	62	114	-	5	-	4	9	3
Maine	5	2	5	13	1	2	-	-	-	-	-	-
N.H.	12	8	8	8	9	10	-	-	-	1	1	-
Vt.	4	2	3	13	1	4	-	-	-	-	-	1
Mass.	20	30	38	60	28	44	-	4	-	2	6	2
R.I.	1	2	11	10	23	35	-	-	-	-	-	-
Conn.	12	-	54	65	-	19	-	1	-	1	2	-
MID. ATLANTIC	107	102	560	993	411	751	-	-	-	2	2	13
Upstate N.Y.	57	31	154	193	119	141	-	-	-	2	2	2
N.Y. City	18	32	100	344	90	256	-	-	-	-	-	-
N.J.	31	32	57	202	40	134	-	-	-	-	-	8
Pa.	1	7	249	254	162	220	-	-	-	-	-	3
E.N. CENTRAL	105	117	1,705	1,884	358	836	-	1	-	1	2	15
Ohio	40	37	419	202	53	46	-	-	-	-	-	1
Ind.	19	27	102	96	28	66	-	1	-	-	1	3
Ill.	38	44	290	455	-	148	-	-	-	-	-	-
Mich.	8	4	868	995	276	250	-	-	-	1	1	10
Wis.	-	5	26	136	1	326	-	-	-	-	-	1
W.N. CENTRAL	60	62	455	986	275	244	-	-	-	-	-	-
Minn.	19	48	45	79	30	23	-	-	-	-	-	-
Iowa	14	1	88	362	106	42	-	-	-	-	-	-
Mo.	20	8	242	438	106	147	-	-	-	-	-	-
N. Dak.	-	-	1	3	-	4	-	-	-	-	-	-
S. Dak.	1	-	8	17	1	1	-	-	-	-	-	-
Nebr.	3	-	38	18	11	11	-	-	-	-	-	-
Kans.	3	5	33	69	21	16	-	-	-	-	-	-
S. ATLANTIC	168	128	1,154	1,020	680	540	-	1	-	3	4	7
Del.	-	-	2	3	-	-	-	-	-	-	-	1
Md.	46	42	220	245	103	86	-	-	-	-	-	1
D.C.	4	-	37	31	14	7	-	-	-	-	-	-
Va.	12	13	97	137	59	56	-	1	-	2	3	2
W. Va.	5	5	24	1	15	4	-	-	-	-	-	-
N.C.	24	19	82	60	137	118	-	-	-	-	-	-
S.C.	3	3	24	18	39	22	-	-	-	-	-	-
Ga.	45	26	294	297	83	110	-	-	-	-	-	2
Fla.	29	20	374	228	230	137	-	-	-	1	1	1
E.S. CENTRAL	52	42	255	253	282	237	-	-	-	-	-	2
Ky.	6	7	39	19	26	28	U	-	U	-	-	-
Tenn.	30	23	130	143	147	166	-	-	-	-	-	1
Ala.	14	10	39	48	51	43	-	-	-	-	-	1
Miss.	2	2	47	43	58	-	-	-	-	-	-	-
W.S. CENTRAL	38	35	1,522	2,307	362	1,233	-	3	-	3	6	-
Ark.	2	-	32	56	31	58	-	-	-	-	-	-
La.	7	16	59	44	72	58	-	-	-	-	-	-
Okla.	26	17	301	334	81	52	-	-	-	-	-	-
Tex.	3	2	1,130	1,873	178	1,065	-	3	-	3	6	-
MOUNTAIN	67	84	830	2,016	384	505	-	2	-	-	2	-
Mont.	1	-	14	66	16	3	-	-	-	-	-	-
Idaho	1	-	27	159	16	19	-	-	-	-	-	-
Wyo.	1	1	4	25	9	2	-	-	-	-	-	-
Colo.	10	17	145	154	54	62	-	-	-	-	-	-
N. Mex.	17	4	31	96	132	201	-	-	-	-	-	-
Ariz.	30	42	494	1,252	100	121	-	1	-	-	1	-
Utah	5	3	32	126	22	43	-	1	-	-	1	-
Nev.	2	17	83	138	35	54	-	-	-	-	-	-
PACIFIC	72	79	2,140	3,384	878	1,066	-	20	-	3	23	7
Wash.	2	6	192	645	39	58	-	-	-	-	-	1
Oreg.	28	33	149	260	52	109	-	8	-	-	8	-
Calif.	33	32	1,786	2,431	767	884	-	11	-	3	14	6
Alaska	5	1	4	14	13	7	-	-	-	-	-	-
Hawaii	4	7	9	34	7	8	-	1	-	-	1	-
Guam	-	-	2	-	2	2	U	1	U	-	1	-
P.R.	1	2	107	35	96	154	-	-	-	-	-	-
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.	-	-	-	1	-	43	U	-	U	-	-	-

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

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

†Of 146 cases among children aged <5 years, serotype was reported for 69 and of those, 16 were type b.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending July 31, 1999, and August 1, 1998 (30th 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	1,520	1,718	3	205	437	72	2,938	3,055	2	156	314
NEW ENGLAND	81	76	-	4	3	6	313	565	-	7	38
Maine	5	5	-	-	-	-	-	5	-	-	-
N.H.	12	9	-	1	-	1	54	43	-	-	-
Vt.	4	1	-	1	-	-	9	50	-	-	-
Mass.	47	33	-	2	2	3	222	436	-	7	8
R.I.	3	3	-	-	-	-	17	5	-	-	1
Conn.	10	25	-	-	1	2	11	26	-	-	29
MID. ATLANTIC	137	179	-	25	169	13	606	326	-	21	142
Upstate N.Y.	37	45	-	6	2	13	520	165	-	17	113
N.Y. City	31	22	-	3	153	-	10	17	-	-	15
N.J.	36	42	-	-	6	-	12	9	-	1	13
Pa.	33	70	-	16	8	-	64	135	-	3	1
E.N. CENTRAL	236	271	-	24	54	15	247	337	-	2	-
Ohio	105	95	-	8	20	7	129	85	-	-	-
Ind.	37	48	-	3	5	6	20	68	-	1	-
Ill.	61	74	-	6	9	2	44	35	-	1	-
Mich.	32	32	-	7	19	-	27	40	-	-	-
Wis.	1	22	-	-	1	-	27	109	-	-	-
W.N. CENTRAL	165	147	1	10	21	8	121	226	-	78	31
Minn.	34	25	-	1	10	3	38	132	-	-	-
Iowa	31	22	-	4	7	-	27	47	-	28	-
Mo.	61	57	1	2	3	5	31	16	-	2	2
N. Dak.	3	2	-	-	1	-	-	3	-	-	-
S. Dak.	9	6	-	-	-	-	5	6	-	-	-
Nebr.	9	10	-	-	-	-	1	8	-	48	-
Kans.	18	25	-	3	-	-	19	14	-	-	29
S. ATLANTIC	263	286	-	36	27	16	195	161	1	22	9
Del.	3	1	-	-	-	-	-	2	-	-	-
Md.	39	24	-	3	-	-	51	28	-	1	-
D.C.	1	-	-	2	-	-	-	1	-	-	-
Va.	32	24	-	8	5	-	13	7	-	-	-
W. Va.	4	12	-	-	-	-	1	1	-	-	-
N.C.	30	41	-	8	9	4	53	65	1	21	6
S.C.	31	42	-	3	4	-	8	20	-	-	-
Ga.	46	65	-	2	1	2	20	10	-	-	-
Fla.	77	77	-	10	8	10	49	27	-	-	3
E.S. CENTRAL	119	121	1	8	10	1	48	70	-	1	-
Ky.	30	19	U	-	-	U	5	28	U	-	-
Tenn.	43	45	-	-	1	-	27	21	-	-	-
Ala.	27	35	-	7	5	1	12	18	-	1	-
Miss.	19	22	1	1	4	-	4	3	-	-	-
W.S. CENTRAL	133	193	-	25	37	8	89	203	1	6	80
Ark.	27	25	-	-	-	-	10	25	-	-	-
La.	34	36	-	3	5	-	3	2	-	-	-
Okla.	24	28	-	1	-	5	12	20	-	-	-
Tex.	48	104	-	21	32	3	64	156	1	6	80
MOUNTAIN	98	96	-	12	27	4	292	578	-	15	5
Mont.	2	3	-	-	-	-	2	3	-	-	-
Idaho	8	6	-	1	3	-	93	165	-	-	-
Wyo.	3	4	-	-	1	-	2	7	-	-	-
Colo.	26	18	-	3	5	-	68	145	-	-	-
N. Mex.	13	17	N	N	N	3	53	70	-	-	1
Ariz.	29	33	-	-	5	-	29	130	-	13	1
Utah	11	10	-	5	3	1	42	34	-	1	2
Nev.	6	5	-	3	10	-	3	24	-	1	1
PACIFIC	288	349	1	61	89	1	1,027	589	-	4	9
Wash.	46	48	-	2	6	1	522	184	-	-	5
Oreg.	48	56	N	N	N	-	24	37	-	-	-
Calif.	185	240	1	51	64	-	468	353	-	4	2
Alaska	5	1	-	1	2	-	3	4	-	-	-
Hawaii	4	4	-	7	17	-	10	11	-	-	2
Guam	1	2	U	1	2	U	1	-	U	-	-
P.R.	5	6	-	-	2	2	15	3	-	-	-
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	-	2	U	-	1	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending July 31, 1999 (30th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	397	293	63	33	6	2	29
Boston, Mass.	U	U	U	U	U	U	U
Bridgeport, Conn.	32	23	5	4	-	-	1
Cambridge, Mass.	6	6	-	-	-	-	-
Fall River, Mass.	16	12	2	1	1	-	-
Hartford, Conn.	47	28	8	8	3	-	5
Lowell, Mass.	23	13	9	1	-	-	1
Lynn, Mass.	16	13	2	1	-	-	1
New Bedford, Mass.	35	28	5	2	-	-	2
New Haven, Conn.	41	34	4	2	1	-	3
Providence, R.I.	56	43	8	5	-	-	6
Somerville, Mass.	8	5	2	1	-	-	3
Springfield, Mass.	37	28	5	2	1	1	1
Waterbury, Conn.	26	21	4	1	-	-	1
Worcester, Mass.	54	39	9	5	-	1	5
MID. ATLANTIC	2,225	1,532	416	182	56	39	84
Albany, N.Y.	50	34	8	1	1	6	4
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	82	52	12	10	7	1	3
Camden, N.J.	14	10	2	2	-	-	-
Elizabeth, N.J.	14	12	-	2	-	-	-
Erie, Pa.	48	33	10	-	5	-	3
Jersey City, N.J.	33	24	6	1	1	1	-
New York City, N.Y.	1,120	771	227	90	16	16	23
Newark, N.J.	58	28	13	11	3	3	1
Paterson, N.J.	14	13	1	-	-	-	-
Philadelphia, Pa.	401	261	73	45	15	7	16
Pittsburgh, Pa.§	77	49	17	4	2	5	3
Reading, Pa.	35	26	5	3	1	-	2
Rochester, N.Y.	125	99	19	6	1	-	12
Schenectady, N.Y.	U	U	U	U	U	U	U
Scranton, Pa.	23	18	3	2	-	-	-
Syracuse, N.Y.	85	68	12	2	3	-	10
Trenton, N.J.	25	20	3	2	-	-	6
Utica, N.Y.	21	14	5	1	1	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,912	1,210	404	164	63	67	104
Akron, Ohio	39	27	4	6	1	1	-
Canton, Ohio	36	30	5	1	-	-	2
Chicago, Ill.	419	215	100	52	16	32	28
Cincinnati, Ohio	57	37	11	6	2	1	2
Cleveland, Ohio	139	91	30	7	4	7	2
Columbus, Ohio	222	153	49	11	3	6	13
Dayton, Ohio	133	94	23	11	5	-	11
Detroit, Mich.	214	116	59	23	11	5	6
Evansville, Ind.	45	21	15	8	1	-	2
Fort Wayne, Ind.	47	28	12	2	2	3	3
Gary, Ind.	18	11	2	2	1	2	-
Grand Rapids, Mich.	41	32	6	1	1	1	5
Indianapolis, Ind.	176	117	37	12	6	4	15
Lansing, Mich.	U	U	U	U	U	U	U
Milwaukee, Wis.	U	U	U	U	U	U	U
Peoria, Ill.	50	33	8	5	3	1	1
Rockford, Ill.	54	42	8	2	1	1	3
South Bend, Ind.	57	45	8	1	2	1	5
Toledo, Ohio	99	73	15	8	3	-	4
Youngstown, Ohio	66	45	12	6	1	2	2
W.N. CENTRAL	750	523	145	39	21	22	36
Des Moines, Iowa	60	41	14	5	-	-	2
Duluth, Minn.	28	22	5	-	1	-	3
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	115	71	22	11	6	5	6
Lincoln, Nebr.	37	32	3	2	-	-	2
Minneapolis, Minn.	202	135	54	6	3	4	13
Omaha, Nebr.	92	61	17	4	5	5	3
St. Louis, Mo.	110	79	19	5	3	4	1
St. Paul, Minn.	106	82	11	6	3	4	6
Wichita, Kans.	U	U	U	U	U	U	U

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	848	541	187	80	22	18	38
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	260	155	63	31	2	9	13
Charlotte, N.C.	86	56	19	5	6	-	11
Jacksonville, Fla.	149	97	36	11	2	3	5
Miami, Fla.	U	U	U	U	U	U	U
Norfolk, Va.	58	35	13	6	3	1	-
Richmond, Va.	59	36	14	3	4	2	2
Savannah, Ga.	52	36	7	7	1	1	3
St. Petersburg, Fla.	76	61	9	4	2	-	4
Tampa, Fla.	U	U	U	U	U	U	U
Washington, D.C.	97	55	25	13	2	2	-
Wilmington, Del.	11	10	1	-	-	-	-
E.S. CENTRAL	603	400	123	36	23	16	32
Birmingham, Ala.	179	117	33	9	7	8	13
Chattanooga, Tenn.	79	60	11	6	1	1	3
Knoxville, Tenn.	88	69	11	2	4	2	-
Lexington, Ky.	71	45	17	3	3	3	7
Memphis, Tenn.	U	U	U	U	U	U	U
Mobile, Ala.	U	U	U	U	U	U	U
Montgomery, Ala.	39	21	11	4	1	2	6
Nashville, Tenn.	147	88	40	12	7	-	3
W.S. CENTRAL	1,190	779	262	83	31	35	60
Austin, Tex.	71	45	19	5	2	-	5
Baton Rouge, La.	15	6	7	2	-	-	-
Corpus Christi, Tex.	46	34	6	2	2	2	5
Dallas, Tex.	187	109	50	14	4	10	1
El Paso, Tex.	88	55	19	10	-	4	1
Ft. Worth, Tex.	126	92	24	6	3	1	10
Houston, Tex.	293	186	64	26	10	7	25
Little Rock, Ark.	69	43	16	1	3	6	-
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	180	132	34	11	2	1	9
Shreveport, La.	U	U	U	U	U	U	U
Tulsa, Okla.	115	77	23	6	5	4	4
MOUNTAIN	869	541	190	82	35	20	44
Albuquerque, N.M.	126	75	23	17	9	2	2
Boise, Idaho	37	26	7	1	1	2	1
Colo. Springs, Colo.	57	37	12	6	2	-	3
Denver, Colo.	99	36	31	14	9	9	3
Las Vegas, Nev.	176	109	48	13	5	1	7
Ogden, Utah	36	25	8	2	1	-	2
Phoenix, Ariz.	73	50	18	1	2	1	7
Pueblo, Colo.	23	18	3	2	-	-	1
Salt Lake City, Utah	108	75	13	15	2	3	8
Tucson, Ariz.	134	90	27	11	4	2	10
PACIFIC	1,526	1,086	283	94	37	26	128
Berkeley, Calif.	20	13	3	2	1	1	1
Fresno, Calif.	97	71	16	7	3	-	10
Glendale, Calif.	28	21	5	2	-	-	3
Honolulu, Hawaii	73	55	12	4	-	2	5
Long Beach, Calif.	71	47	18	5	-	1	10
Los Angeles, Calif.	375	274	65	19	10	7	29
Pasadena, Calif.	26	19	3	1	1	2	4
Portland, Oreg.	125	87	24	8	5	1	5
Sacramento, Calif.	128	95	23	5	3	2	16
San Diego, Calif.	162	110	36	10	2	4	16
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	155	104	31	10	5	5	19
Santa Cruz, Calif.	32	23	7	2	-	-	2
Seattle, Wash.	118	84	23	7	3	1	2
Spokane, Wash.	50	39	7	2	2	-	2
Tacoma, Wash.	66	44	10	10	2	-	4
TOTAL	10,320¶	6,905	2,073	793	294	245	555

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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